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Strategic Asset Allocation Analysis

Gobierno de Chile

Ministerio de Hacienda

MERCER

MARSH MERCER KROLL
GUY CARPENTER OLIVER WYMAN

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Introduction

Assignment

The Ministerio de Hacienda (Ministry of Finance) of the Republic of Chile retained Mercer Investment Consulting, Inc. (Mercer) to assist in the development of suitable asset allocation strategies for the Fondo de Estabilización Económica y Social (FEES) and the Fondo de Reserva de Pensiones (FRP), which were established by the Chilean Government in 2006 to help ensure the sustainability of social spending over time and improve Chile's economic competitiveness. We are pleased to submit this report on strategic asset allocation.

To develop candidate investment strategies for the aforementioned Funds, we used a combination of mean-variance and stochastic modeling (Monte-Carlo simulations).

This asset allocation study reflects explicit inclusion of cash flows modeled for both Funds during the 10 year period for which Monte-Carlo projections were performed. Projected liabilities for the FEES were not modeled quantitatively, but their anticipated characteristics were taken into account qualitatively in evaluating candidate strategies. For the FRP, we developed assumptions for the expected liabilities of this Fund working in conjunction with the Ministerio de Hacienda. These assumptions appear in section 4 of this report.

Underlying investments in the candidate strategic allocations were modeled as being made globally, but excluding investments in Chile and in the Chilean Peso (CLP). We understand that the policy decision to prohibit investment of these funds in Chile and the CLP, which was taken before the study commenced, is based on the desire to diversify away from the Government's primary sources of income (GDP growth and copper).

Following discussion of the pros and cons of adopting alternative frames of reference in terms of currency, including the CLP or a trade weighted, consumption weighted, or other basket of foreign currencies, the Ministerio de Hacienda ultimately directed Mercer to perform the study in US dollar (USD) terms. We do not believe the selection of the USD as the unit of account for this study had a major impact on the content of the recommended portfolios, because the asset classes were limited to global asset classes, with the regional and country allocations for each asset class fixed for modeling purposes at their market capitalization weights. Since the underlying currency allocation of the global developed market asset classes is similar, optimizing in USD is unlikely to have driven a preference of the model for one asset class over another that would not be consistent with the result if modeling had been performed in a different currency or basket of currencies.

Sensitivity analysis was performed by re-optimizing for both Funds in CLP terms. This sensitivity analysis confirmed Mercer's view that the contents of the recommended portfolios would not be highly sensitive to the currency frame of reference.

Although we do not believe the results of this study – in terms of the content of the recommended portfolio – are highly sensitive to the currency in which the study was conducted, we discuss below some of the considerations that factored into selection of the USD as the unit of account for this study.

- There is a basic conflict between optimizing results in CLP terms and having the Funds invest in a way that diversifies against local economic results, as local economic performance drives the appreciation or depreciation of the CLP. If portfolios were optimized in CLP terms, it would be more difficult to ensure the resulting portfolios maintain a low correlation with Chilean GDP growth and copper prices.
- Modeling in a currency that does not have a strong relationship with the global asset classes being modeled may also result in poorly diversified portfolios. Even though the Chilean economy is open, it is relatively small as a proportion of the global economy. Historical data based on which the relationship between the CLP and the asset classes of interest, none of which by definition included any CLP-denominated assets, is limited, and of limited value given the pace and scope of capital markets and economic evolution in Chile and globally in recent decades. The USD on the other hand does have well-specified and reasonably well understood relationships with returns to the global asset classes considered in the analysis. And in fact the US domestic market comprises a substantial portion of global market capitalization for each of these asset classes.
- The currency in which optimization is made should, in Mercer's opinion, reflect the anticipated frame within which results will be evaluated and communicated. The USD is a reasonable, readily comprehensible proxy for Chile's trade- or consumption-weighted basket of currencies. If the focus of evaluation and communication were in CLP terms, then most of the volatility would be driven by CLP exchange rates, which would make the evaluation of performance more problematic. As such, we believe optimization in the USD is an appropriate means for developing candidate portfolios, assuming communication of results and evaluation of performance will also be made in USD terms. Although in theory a trade or consumption-weighted basket might have been employed, this would have complicated analysis without (for reasons detailed in the body of the report) materially affecting the content of the recommended portfolios. And, it is not practical to communicate or evaluate the investment results in a readily comprehensible way to the public, if a currency basket is used as the unit of account.

Many models of the capital markets only focus on mean-variance analysis. Efficient frontier modeling, for example, is a mean-variance approach. "Simple" mean-variance analysis is used to identify candidate portfolios which achieve the highest expected return for a given level of expected risk, where risk is defined by the standard deviation or volatility of returns. Surplus optimization is another type of mean-variance analysis, in which volatility of funded status of the assets against the projected liabilities is the measure of risk. Mean-variance approaches are quite acceptable for certain situations, but in Mercer's opinion, they fail to provide satisfactory results in detailed modeling of the complex interaction among interest rates, inflation, and the return of asset classes exposed to multiple risk factors. Additionally, mean-variance modeling does not take into account the impact of cash flows - both positive and negative - on ultimate portfolio values, and does not adjust for the "path dependent" nature of capital market returns. An example of path dependency is that returns for fixed income are partially dependent on yields at the beginning of the period. Once interest rates are high, subsequent capital market returns tend to be high as well - and vice versa, in low interest rate environments, subsequent returns tend to be lower, all else being equal.

The study incorporated a set of mean-reverting, serially correlated equations to determine inflation, economic growth, and interest rates, among other factors. Although more complex than a mean-variance approach, the resulting Monte-Carlo model permits great flexibility and in Mercer's opinion encompasses in a more realistic manner the multifaceted, dynamic nature of the capital markets.

The initial stage of the analysis focused on mean-variance analysis to identify candidate portfolios that exhibited appropriate levels of risk for each Fund, consistent with the risk parameters provided by the Ministerio de Hacienda. The risk tolerance levels provided for each Fund were as follows:

- FEES Fund: Maximum loss of 1%, 2%, and 5% of the Fund in USD terms in any given year, at the 95th percentile (one-in-twenty downside outcome) of the projected distribution of returns;
- FRP Fund: Maximum loss of 2%, 5%, and 10% of the Fund in USD terms in any given year at the 95th percentile.

Once the candidate portfolios were identified based on the parameters above as a general guide, we conducted stochastic (Monte-Carlo) analysis to simulate the performance of the asset mixes by modeling across 1000 economic scenarios for a period of 10 years (from 2008 to 2017). The forward-looking assumptions used in the analysis can be found in section 4 of this report. The historical results for the economic and asset class variables, as well as a summary of future expectations based on Monte-Carlo simulation results (reported at the median) can be found in section 6 of this report. In addition, the Ministerio de Hacienda has received the entire data set, including distribution of results from the 5th to the 95th percentiles.

For purposes of the FEES, the simulated cash flows and investment results were derived from Monte-Carlo simulations of several key economic variables, including Chilean GDP growth, changes in copper prices, interest rates, and inflation levels. The analysis assumes that 100% of the prior year's investment returns in CLP terms are withdrawn from the Fund each year to be used as structural income, limiting the Fund's potential for capital growth over time. We understand this policy might change in the future; however, any possible changes to this were not reflected in the analysis presented in this report.

For the FRP, the analysis assumes cash inflows or contributions equivalent to a range of 0.2% to 0.5% of prior year Chilean GDP. In cases in which the simulations result in strong economic activity, as defined by local GDP and/or copper prices that are above expectations, the model allocates a higher proportion of contributions within the aforementioned range. By contrast, during periods of economic and copper price underperformance against expectations, the model specifies a minimum contribution of 0.2% of GDP. For the selection of candidate portfolios, we modeled this Fund in asset-only space based on the risk parameters described above and also using funded status optimization. The funded status optimization was used as the basis for the selection of candidate portfolios. This required the development of liability assumptions for this program.

The FRP is not expected to experience any withdrawals until the year 2017 when liability cash outflows will begin to affect this program. We developed liability assumptions working in conjunction with the Ministerio de Hacienda, considering a number of factors, including: projected cash outflow data provided from 2008 to 2038 and an assumed projected liability growth from 2039 to 2048 not exceeding 6%; a projected discount rate to calculate the present value of future outflows; a projected liability duration; and the impact of cash flow activity considering the projected outflows and contributions equivalent to 0.2% of Chilean GDP.

The asset classes considered in the study are identical for both Funds, but the candidate alternative strategic allocations are different, as each of the Funds have different objectives, constraints, and characteristics. We selected the same asset class variables for both programs intentionally to help maximize cost savings opportunities once the Ministerio de Hacienda is prepared to implement the strategies for each Fund. We anticipate cost savings should be realized by utilizing the same investment managers for both Funds in the eventual implementation of the strategies, due the economies of scale that can be achieved considering a larger asset base and the gradual decrease in asset-based fees in the typical fee schedules.

The following sections of this report include important background information as well as key observations, recommendations, and the quantitative and qualitative analysis on which the recommendations were based.

Fiscal Responsibility Law

The Government of Chile enacted a law in September of 2006, known as the Fiscal Responsibility Law, which created the FEES and the FRP to help ensure the sustainability of social spending over time and improve Chile's economic competitiveness.

The FEES was created to act as a financial "buffer" to avoid drastic revisions to fiscal spending as a result of negative short-term economic cycles. Its main function is to accumulate annual fiscal surpluses net of the required contributions designated principally to the FRP and to the recapitalization of the Central Bank of Chile. The FEES will also provide necessary resources to cover fiscal spending in the event of a fiscal deficit due to declining economic fundamentals. In effect, the FEES will accumulate surpluses during times of strong local economic activity and will provide necessary resources to finance fiscal spending during periods of declining economic growth.

The investment policy of the FEES is relatively flexible; the only investment restriction is no investments in Chile (or investments denominated in the CLP) shall be made. However, it is important to take into consideration that the investment returns generated by the FEES are withdrawn and treated as part of structural income to cover fiscal expenditures.

The FRP was designed to finance up to one-third of the fiscal expenditures associated with the minimum pension and assistance benefits guaranteed by the Government. The contingent liabilities associated with these benefit guarantees are expected to grow by an estimated 33% relative to the structural growth of the economy by the year 2015[2]. The contribution source for this Fund will be derived from the effective fiscal surplus, which will be equivalent to a range of 0.2% to 0.5% of the prior year's GDP, with a minimum contribution of 0.2%. No withdrawals will be permitted from the FRP until 2017. The permissible investments of this program must follow the provisions under law Number 3.500 – Article 45. All investment gains, including capital appreciation and capital income, will be re-invested in the FRP.

Fiscal Policy

The objective of Chile's Fiscal Policy is to contribute to the macroeconomic stability of the country and provide public benefits that increase the social opportunities as well as the protection of its citizens. This policy is carried out in accordance with Chile's structural balance concept, which aims to protect Government spending from the effects of economic and copper price cycles – the avoidance of a pro-cyclical bias in the management of public finances. Currently, the policy is based on the goal of achieving a yearly structural surplus of 1% of GDP. The target surplus will be adjusted to 0.5% of GDP starting in the year 2008.

[2] Source: Ministerio de Hacienda – Analisis efectuado por el departamento de estudios de la Dirección de Presupuestos de Chile.

While actual Government revenues may go up and down in tandem with local economic cycles (declining during recessions and growing during economic booms), fiscal expenditures do not follow this pattern because they follow the evolution of the economy's medium term productive capacity. The structural surplus rule is intended to smooth out the impact of higher copper prices on royalty collections coming in from the state-owned copper company CODELCO and taxes collected from other private mining companies.

The rationale for the adoption of the Fiscal Policy framework, which mandates a national budget surplus equivalent to 1% of GDP (not structural balance between fiscal income and fiscal expenditures), was derived from three key fiscal risk factors, including:

1. The expected growth of the fiscal liabilities arising from the minimum pension and assistance benefits guaranteed by the Government;
2. The recapitalization of the Central Bank of Chile, due to the acquisition of private sector debt following the local banking crisis of 1983;
3. External vulnerabilities from Government income, which is principally denominated in local currency, and debt which is mainly denominated in foreign currency. A sudden depreciation of the CLP would result in much higher costs to service foreign currency debt in such an environment. This is important considering the Chilean economy is open and relatively small as a proportion of the global economy.

Government income is derived from two main sources, tax revenues and copper-related revenues. Tax revenues represented an average of approximately 72% of Government revenues from 1994 to 2006, and copper-related revenues represented an average of approximately 10% during the same period[3]. Fiscal expenditures are set so that the difference between expected/structural Government revenues (which are estimated by a panel of experts in various disciplines in June-July each year) and actual government expenditures is equal to 1% of GDP.[3] Fiscal expenditures are planned on an annual basis utilizing this process.

Use of Prospective Fiscal Surpluses: By policy, at least 0.2% (and, should the cash surplus allow, up to 0.5%) of the prior year's GDP is designated to the FRP and up to 0.5% may be assigned to the gradual recapitalization of the Central Bank of Chile for the next five years[4]. Once these fiscal expenditures are covered, the rest of the net surplus is allocated to the FEES. If actual revenues come in below expected revenues, by structural definition this constitutes a deficit, in which case resources will be used from the FEES to cover fiscal expenditures.

[3] Source: Ministerio de Hacienda – 'Chile's Fiscal Policy Framework' – Ministry of Finance, Chile March 2007.

[4] Source: 2006 International Monetary Fund – Chile: 2006 Article IV Consultation – Staff Report; Staff Supplement; Public Information Notice on the Executive Board Discussion; and Statement by the Executive Director of Chile.

Investment Objectives

The objective of Chile's Fiscal Policy is to minimize, to the extent possible, the impact the volatility of the business cycle may have on fiscal spending. Consistent with this objective, and in an effort to disassociate the value of the FEES and FRP in relation to local economic cycles and the volatility of copper prices, the specific investment objectives reflected in this study are to:

- **Develop suitable asset allocation strategies for both Funds, which exhibit a low correlation relative to the main sources of Government revenues (copper price volatility and the cyclicality of local GDP growth);**
- **Identify portfolios whose reward and risk characteristics maximize risk-adjusted return potential;**
- **Improve the efficiency of both Funds relative to the theoretically optimal risk/return spectrum, identifying asset classes which provide further diversification of investments;**
- **Identify potential investment opportunities considering the amendment of current investment policy parameters for the FRP; and**
- **Identify candidate asset allocation strategies that meet the liquidity and risk parameters expressed by the Ministerio de Hacienda considering current investment restrictions where applicable.**

In order to meet these objectives, we performed Monte-Carlo simulations to test the behavior of candidate portfolios under different economic environments, with a particular focus on pursuing low correlation between Chilean GDP growth and copper prices, and returns to the candidate portfolios.

While the level and behavior of GDP is an important determinant of Government revenues, the volatility of Chilean GDP has been low relative to the historical volatility of copper prices over the last decade. For example, royalties and taxes related to copper production represented an average of 10% of total Government revenues from the period of 1994 to 2006; however, it represented only 3% in 2002 and 34% in 2006.[5] In the forward-looking stochastic projections, the average volatility of Chilean GDP growth at the 50th percentile was 3% in nominal terms over the 10-year projection horizon. By comparison, the volatility of copper prices was 26% over the same time horizon. In this context, volatility of copper prices can reasonably be expected to remain more important, compared to volatility of GDP, as a determinant of actual revenues received by the Government.

Since copper is one of the main exports of Chile, it might be expected that there would be a high correlation between copper price and Chilean GDP growth. However, this is not the case in the historical data (1994 to 2006). Using both coincident and lagging correlation time-periods, the finding of low historical correlation was confirmed.

[5] Source: Ministerio de Hacienda – 'Chile's Fiscal Policy Framework' – Ministry of Finance, Chile March 2007.

We used a higher correlation for the forward-looking projections than the historical values, because we believe that copper has become more important as a contributor to the Chilean economy, and that some increased leakage from the copper boom into other sectors of the economy should be expected going forward.

Another key conclusion is that Chilean GDP growth and copper prices are likely to exhibit low correlation relative to the asset classes considered in the strategic asset allocation analysis. Historical correlations have ranged from -0.15 to 0.23 for copper and 0.00 to 0.32 for GDP growth over the last 15 years against the asset classes modeled. Therefore, we used forward-looking projections with low correlations for both of these variables against the asset classes modeled. Accordingly, all of the portfolios considered in the analysis exhibited a low correlation relative to Chilean GDP growth and copper price volatility.

Section 2 of this report profiles the recommended asset allocations for each of the Funds and discusses some key observations. Section 3 describes the two analytical approaches we adopted. Section 4 provides the output of the mean-variance analysis, while section 5 includes the Monte-Carlo simulation results for each of the recommended portfolios along with key observations. Section 6 provides summary quantitative output for each of the variables considered in the analysis (on a forward-looking and historical basis), and section 7 provides testing results (also on a forward-looking and historical basis) of the recommended portfolios. The Appendix, section 8, provides detailed reference information.

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Executive Summary

Background

Observations and Recommendations

Executive Summary

Background

The goal of this strategic asset allocation analysis is to identify suitable portfolios that exhibit a low correlation relative to the principal sources of Government revenues at acceptable levels of risk. This is of crucial importance considering Chile's Fiscal Policy Framework, which defines annual fiscal expenditures as a result of the difference between structural income and effective income. We profile several candidate strategic asset allocations for each Fund, varying by risk level, to provide an overview of the investment opportunity set offered by different investment structures in terms of their long-term return potential and risk characteristics.

For the FEES, we have identified a recommended mix which falls within the risk parameters given by the Ministerio de Hacienda. For FRP, we profile two candidate asset allocations, one reflecting current investment policy parameters (reflecting a combined maximum exposure of 25% to stocks and corporate bonds) and one that relaxes these parameters to illustrate the opportunity set afforded by increasing investments in global equities and global corporate bonds. The overall objective is to identify portfolios that maximize return potential for both programs considering the maximum tolerable risk defined by the Ministerio de Hacienda in the maximum loss scenarios detailed in Section 1 of this report.

The next sub-section of the Executive Summary provides our key observations and recommendations for FEES and FRP.

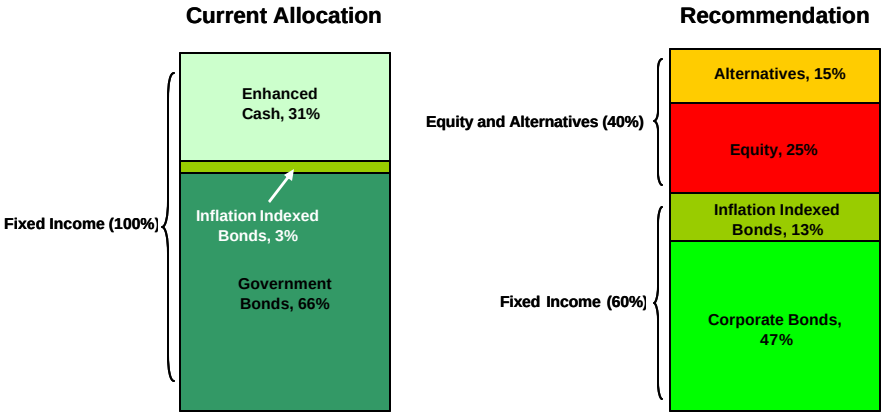
Observations and Recommendations

FEES

We understand that the only explicit investment restriction governing this Fund in terms of its permissible investments is a prohibition on investing in Chile or in securities denominated in the CLP. Given the role of this Fund in the Chilean economic system, and in particular the intention to spend each year's income, the current 100% fixed income profile, which affords a high degree of liquidity, was a reasonable starting position for investment.

We believe there are significant opportunities to enhance diversification and increase potential investment returns over the long-term. We concluded that a maximum exposure of 30% to equities and a maximum exposure of 15% to alternatives for the FEES was appropriate, given both spending policy objectives and the low risk tolerance levels conveyed to us by the Ministerio de Hacienda.

The following exhibit depicts the FEES' current allocation in comparison to the recommended portfolio.



The recommendation above exhibits a higher expected return profile with meaningful allocations to fixed income, equity, and alternative investments. This asset allocation provides more potential for higher returns over the long term without violating current risk parameters.

The summary table on the following page provides key statistical characteristics for the current portfolio and the recommended asset mix. These characteristics were based on the median values of the Monte-Carlo simulation results for the next ten years.

Summary Results

		Current Asset Allocation	Recommendation
Asset Allocation	Global Equity	0%	25%
	Global Fixed Income - Government - Short/Intermediate	66%	0%
	Global Fixed Income - Government - Long	0%	0%
	Global Fixed Income - Corporate - Short/Intermediate	0%	30%
	Global Fixed Income - Corporate - Long	0%	17%
	Global TIPS	4%	13%
	Global Cash	30%	0%
	Global Private Equities	0%	5%
	Global Real Estate	0%	3%
	Global Infrastructure	0%	2%
	Global Absolute Return/Opportunistic	0%	5%
Summary Monte Carlo Simulation Results (Median Values)	Correlation (Nominal Portfolio Returns; Nominal Chile GDP Growth)	0.05	0.12
	Correlation (Nominal Portfolio Returns; Real Chile GDP Growth)	-0.03	0.09
	Correlation (Nominal Portfolio Returns; Nominal Copper Price)	-0.03	0.23
	Correlation (Real Portfolio Returns; Nominal Copper Price)	-0.05	0.21
	Portfolio Expected Nominal Returns (USD)	4.70%	6.78%
	Portfolio Nominal Returns Volatility (USD)	2.16%	7.16%
	Lowest Annual Return Observed from 2008 to 2017 (95th Percentile)	1.00%	-4.48%
	Change in Nominal Returns From Current Allocation	-	2.08%
	Change in Nominal Risk From Current Allocation	-	5.00%
	Portfolio Expected Nominal Returns (CLP)	5.98%	8.12%
	Portfolio Nominal Returns Volatility (CLP)	12.24%	14.30%
	Duration	1.35	1.91
	Liquidity Ratio	9.90	7.86
Historical Results	5-Year Annualized Returns (USD)	3.17%	9.22%
	5-Year Annualized Volatility (USD)	0.75%	4.24%
	5-Year Annualized Returns (CLP)	-2.09%	3.65%
	5-Year Annualized Volatility (CLP)	9.03%	6.98%

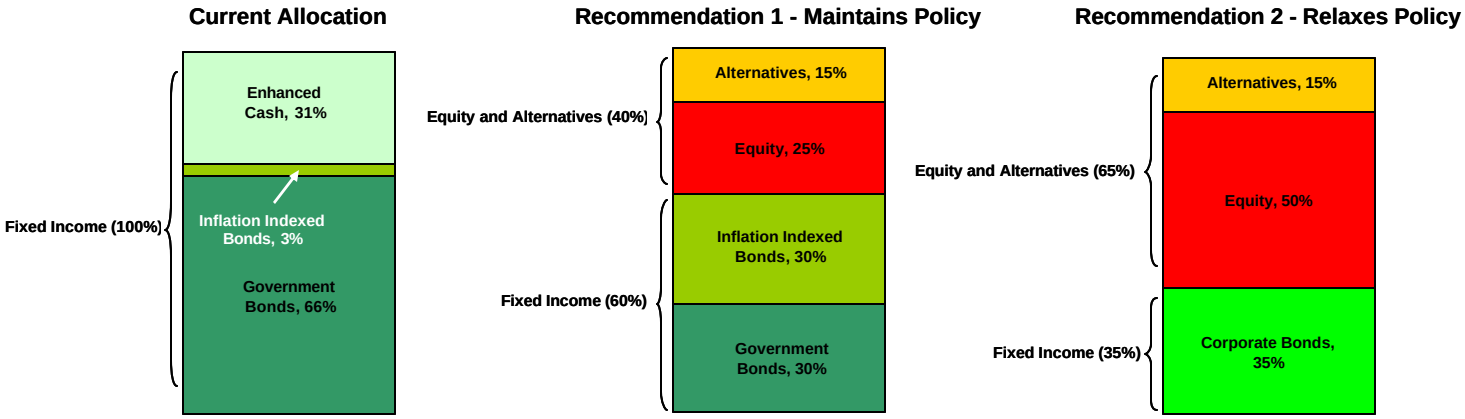
Observations (in USD terms)

- The analysis suggests that the current allocation can provide an expected annualized nominal return of 4.70% with a standard deviation of 2.16% over the next ten years. In addition, it does not exhibit a loss at the 95% confidence interval due to its conservative profile.
- The recommended portfolio exhibits an expected nominal return of 6.78% and a standard deviation of 7.16%. This portfolio offers a premium of 208 basis points in expected return over the current allocation. The lowest return observed at the 95th percentile distribution of the 10-year Monte-Carlo simulations is -4.48%. This portfolio exhibits characteristics that fall within current acceptable risk parameters as defined by the Ministerio de Hacienda.
- The recommended mix offers attractive diversification attributes, providing a 40% exposure to global equities and alternative investments (25% and 15%, respectively) to enhance alpha potential, and a 60% allocation to fixed income instruments for purposes of diversification and capital preservation given the role of the FEES.

FRP

To establish candidate asset allocations for this Fund, we gave consideration to the current maximum investment restriction of 25% to stocks and corporate bonds, combined. We believe that raising this allocation to higher levels would be prudent and reasonable if permitted. Unlike the FEES, the FRP is not expected to experience any outflows for the next ten years. Therefore, adopting a more aggressive asset allocation would be prudent in order to improve growth prospects for this Fund over this time period.

The following exhibit depicts the Fund's current allocation and the two candidate allocations we have recommended in this analysis.



The summary table on the following page provides key statistical characteristics for each of the portfolios profiled above.

Summary Results

		Current Asset Allocation	Recommendation 1 (Maintains Policy)	Recommendation 2 (Relaxes Policy)
Asset Allocation	Global Equity	0%	25%	50%
	Global Fixed Income - Government - Short/Intermediate	66%	0%	0%
	Global Fixed Income - Government - Long	0%	30%	0%
	Global Fixed Income - Corporate - Short/Intermediate	0%	0%	35%
	Global Fixed Income - Corporate - Long	0%	0%	0%
	Global TIPS	3%	30%	0%
	Global Cash	31%	0%	0%
	Global Private Equities	0%	5%	5%
	Global Real Estate	0%	5%	5%
	Global Infrastructure	0%	2%	0%
	Global Absolute Return/Opportunistic	0%	3%	5%
Summary Monte Carlo Simulation Results (Median Values)	Correlation (Nominal Portfolio Returns; Nominal Chile GDP Growth)	0.05	0.13	0.13
	Correlation (Nominal Portfolio Returns; Real Chile GDP Growth)	-0.03	0.09	0.10
	Correlation (Nominal Portfolio Returns; Nominal Copper Price)	-0.03	0.22	0.27
	Correlation (Real Portfolio Returns; Nominal Copper Price)	-0.05	0.22	0.26
	Portfolio Expected Nominal Returns (USD)	4.69%	6.80%	7.55%
	Portfolio Nominal Returns Volatility (USD)	2.14%	7.70%	10.67%
	Lowest Annual Return Observed from 2008 to 2017 (95th Percentile)	1.01%	-5.37%	-8.97%
	Change in Nominal Returns From Current Allocation	-	2.12%	2.86%
	Change in Nominal Risk From Current Allocation	-	5.56%	8.53%
	Portfolio Expected Nominal Returns (CLP)	5.97%	8.17%	8.92%
	Portfolio Nominal Returns Volatility (CLP)	12.23%	14.61%	16.59%
	Duration	1.34	2.55	0.63
	Liquidity Ratio	9.90	8.26	7.90
Historical Results	5-Year Annualized Returns (USD)	3.16%	9.76%	11.89%
	5-Year Annualized Volatility (USD)	0.74%	4.49%	7.14%
	5-Year Annualized Returns (CLP)	-2.10%	4.16%	6.18%
	5-Year Annualized Volatility (CLP)	9.03%	7.22%	6.79%

Observations (in USD terms)

- The current allocation provides an expected nominal return of 4.70% with a standard deviation of 2.16%. This portfolio does not experience a loss at the 95% probability distribution confidence level due to its conservative profile, investing primarily in enhanced cash and government bonds. The asset/liability optimization exhibits a surplus return of -5.81% and a surplus standard deviation of 50.70%. The alternative recommendations provide more attractive characteristics in terms of absolute and relative return potential, as well as current tolerable risk parameters.
- Recommendation 1 maintains the current investment policy guidelines, permitting a total maximum allocation of 25% to stocks and corporate bonds. The recommendation offers an expected return premium of 212 basis points relative to the current allocation, and risk characteristics that fall within tolerable parameters as defined by the Ministerio de Hacienda. Based on the assumed liability projections, the funded status optimization yields a surplus return of -3.32% and a surplus standard deviation of 51.52%.

- Recommendation 2 considers the amendment of current policy guidelines to permit a more significant exposure to global equity and global corporate bonds. This relatively aggressive portfolio does not violate current risk parameters for FRP; however, it does not provide a surplus return relative to the expected return of the liabilities, which suggests even a more aggressive allocation may be warranted. However, this decision should be driven by a careful evaluation of the evolution of the liabilities over time as this data becomes readily available. This asset mix offers an expected return premium of 286 basis points relative to the current. The asset/liability optimization offers a surplus return of -2.23%, which serves as the most optimal result considering (1) the expected liability growth and (2) current risk parameters.

Other Considerations

The FRP is not expected to experience any withdrawals until the year 2017, but liability cash flows will begin to affect this program in the year 2017. We believe that incorporating the economic sensitivities of the relevant liabilities in determining strategic asset allocation is important as a component of determining how much risk can be afforded given the characteristics of the expected outflows and, conversely, how much time and opportunity there may be to focus mainly on capital growth rather than mainly on capital preservation strategies. The funded status optimization suggests it is important to shift the focus away from capital preservation strategies towards capital appreciation. The more aggressive recommendation – Recommendation 2, which has a higher allocation to stocks and corporate bonds relative to Recommendation 1, provides better results in asset/liability space, albeit the expected surplus return remains in negative territory considering current risk parameters (not exceeding an annual loss of 10% assuming a normal distribution of returns). This strategy can only be implemented if current policy guidelines are amended to allow a higher allocation to equities and corporate bonds. A more aggressive portfolio would be needed to achieve a positive surplus return, but this would require the Ministerio de Hacienda to relax its current risk parameters. Recommendation 2 is more closely aligned with the broad asset allocation of other national pension funds in other areas of the world (please see Appendix).

Implementation Considerations

Transition of Assets to New Strategic Allocations

The analysis is strategic in nature and focuses exclusively on the allocation of assets among broad global asset classes (ex Chile) conforming to the objectives communicated to us by the Ministerio de Hacienda. It is important to highlight certain issues pertaining to the portfolio structuring implementation process once the strategic asset allocation is identified for both the FEES and FRP programs.

A practical process may involve providing exposure to the new assets classes considered in the strategic analysis passively. This can be followed by the selection of active investment managers in appropriate segments of the overall portfolio, following the results of a sound portfolio structure review.

The following factors should be considered in the portfolio structuring process:

- Current investment policy guidelines
  - Consideration of permissible investments and applicable parameters;
- Active versus passive management
  - Index strategies make sense in those markets that are highly efficient (i.e., the US large cap segment of the equity market)
  - Active managers have the potential to add value in relatively inefficient areas of the market (i.e., some developed markets, small capitalization equities, emerging markets, alternatives)
- Regional, country, and currency exposure
  - Pursuing a market weight in the corresponding asset classes versus opportunistic allocations implemented by a tactical asset allocation overlay strategy;
  - Global versus regional managers
    - Some regional managers may have stronger dedicated resources employed in specific regions of the world, as opposed to other managers with global scope. However, there are some global managers with significant local resources focused on each region as well;
- Overweighting copper consumers versus copper producers to further reduce the correlation of the portfolio to the volatility of copper prices (i.e., copper producing companies will be at a disadvantage when copper prices decline, but copper consumers should benefit in this environment);
- Manager selection
  - Investment criteria
  - Forward-looking assessment of the performance prospects of candidate investment managers
  - Fees;
- Custody arrangements;
- Monitoring.

These considerations can be addressed once the strategic asset allocation is adopted for both programs.

In addition, the process by which the assets are transitioned from the current conservative investments to the selected new investment strategies is important, particularly for a government-affiliated fund that wishes to be open and transparent in how it conducts its operations.

There are a number of considerations that must be taken into account, including:

- Market timing element in moving into the new asset classes;
- Legal issues;
- Political issues;
- Headline risk;
- Transparency (reporting);
- Liquidity issues; and
- Risk controls.

In theory, the transition to the new asset allocation should take place in one step as soon as possible. In practice, however, we believe conservatism must be exercised in this process given the important considerations listed above. We believe that pursuing the transition in 5% increments (as a proportion of total assets) every calendar quarter (or any non-calendar time period prudent to the specific needs of Chile) would be appropriate and conservative. Hence, we recommend achieving the new optimal asset allocation in two stages, as follows:

Stage 1

Consideration of liquidity issues associated with alternative investments: To achieve investment efficiency, we recommend considering only the most liquid asset classes in the initial stage of implementation. These would exclude alternative investments but would include traditional investments (publicly traded fixed income and equities).

Stage 2

Consideration of additional diversification: Once the traditional asset classes are funded to appropriate levels, the transition into alternative investments should be accomplished to introduce the long-term diversification and expected return potential of these asset classes.

We have included a suggested implementation strategy in the Appendix (item XI), which includes the suggested transition of the assets and the potential timing involved to complete it. This process can be achieved within approximately two to two and one-half years for both Funds, considering the candidate strategic allocations we have selected as a result of the analysis. We created two suggested implementation strategies for FRP – one of them assumes no immediate relaxation to the 25% constraint on equities and corporate bonds, and the other one relaxes these policy restrictions, corresponding to the more aggressive asset allocation recommendation for this Fund (Recommendation 2).

3

Strategic Asset Allocation Approach

Mean Variance Analysis

Stochastic Analysis

Strategic Asset Allocation Approach

Mean Variance Analysis

We utilized mean-variance analysis to identify candidate optimal portfolios at various levels of risk. While the mean-variance analysis is relatively limited in that it only considers one risk factor, the volatility of returns, and assumes a normal distribution of returns, it provides a reasonable guide in terms of the trade-offs of both returns and risk. In addition, the mean variance statistical output also helps us identify diversification opportunities by understanding the relationship between the Funds' respective current allocation relative to an optimal allocation at the same level of risk or at different points along the efficient risk-return spectrum. However, it is important to note that mean-variance analysis is purely a quantitative tool, which needs to be enhanced by considering appropriate and specific qualitative circumstances unique to these Funds.

The integration of both quantitative and qualitative factors in the design of a suitable strategic asset allocation is an essential and fundamental part of this process. As such, we used several investment constraints to avoid unreasonable allocations to asset classes that may be favored by the model on the basis of their attractive reward-to-risk and diversification properties. For example, the capital markets assumptions suggest that alternative investments offer great diversification opportunities and attractive risk-adjusted expected returns, which naturally cause the efficient frontier model to favor these asset classes over more traditional asset classes. In order to avoid this dynamic producing results that would seem unreasonable to stakeholders, we applied an investment constraint of a maximum of 15% to this segment due to the following reasons:

- Consideration of the illiquid nature of these asset classes (relative to traditional asset classes) and the potential liquidity requirements of the FEES, in particular;
- Since the FEES acts as a "buffer" mechanism, there may be instances when relatively large cash outflows may occur, particularly during declining economic conditions;
- Potential headline risk due to
  - Lack of transparency associated with some alternative asset classes;
  - Lack of regulation relative to other asset types; and,
  - Use of leverage.

As a reference point, we considered the exposure of other large national funds to alternative investments (including national pension funds for Australia, Norway, New Zealand, Ireland, some countries in the Middle East, and Japan). We found that some of these national funds have no exposure to alternative investments, while others maintain exposures as high as 20%-30% to various alternative asset classes. While we think alternative investments provide the potential to enhance investment diversification and risk-adjusted results over the long-term, we concluded it would not be prudent to consider allocating close to one-third of the Funds' assets in this specific segment, and adopted the constraint of 15% as a reasonably conservative limit.

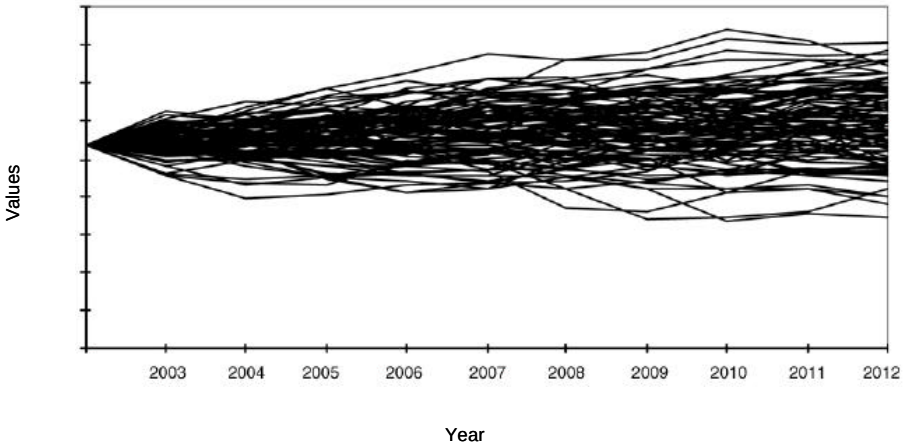
We believe the 15% maximum constraint represents an attractive mid-point in relation to the characteristics of other large national funds in other regions of the world while still providing for a healthy and meaningful exposure in this area to enhance the potential for expected returns and diversification benefits over the long-term.

In terms of the selection of the asset classes considered in the evaluation, we focused on a number of factors, including the permissible investments of both Funds (realizing that the FEES has no explicit restrictions other than investing the assets outside of Chile, contrary to the FRP, which has the 25% restriction on the aggregate allocation to stocks and corporate bonds), the current broad asset allocation, and additional traditional and alternative asset classes that offered attractive risk-reward and diversification characteristics.

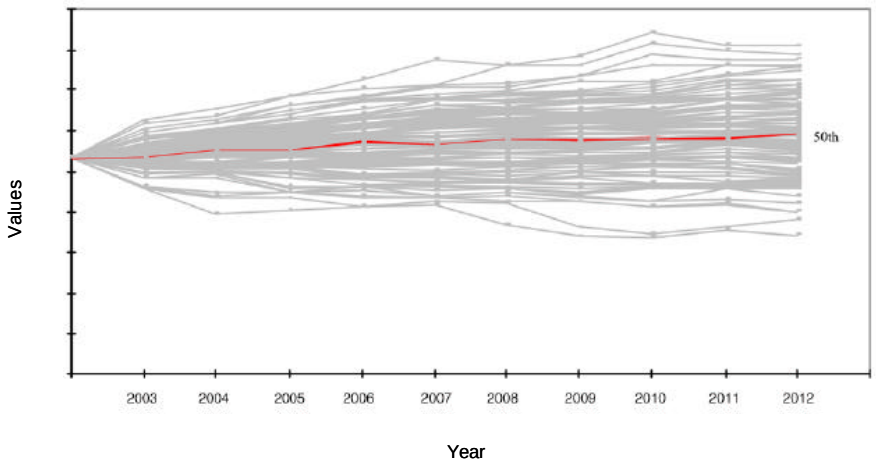
Stochastic Analysis

Once the candidate portfolios were identified using mean-variance analysis, we utilized stochastic modeling to include multiple risk factors and performed projections over a 10-year time horizon. The stochastic modeling process simulates the expected return of a portfolio considering various possible strategic asset allocations. To capture uncertainty, it is necessary to model the variability of changes in the key factors driving asset returns. This is allowed for by specifying standard deviations for the change in each factor governing the likely scale of fluctuations, and correlations, governing the inter-relationships between changes in one factor and another. We therefore assigned values to the uncertainty in the key economic and asset class variables and the correlations between them.

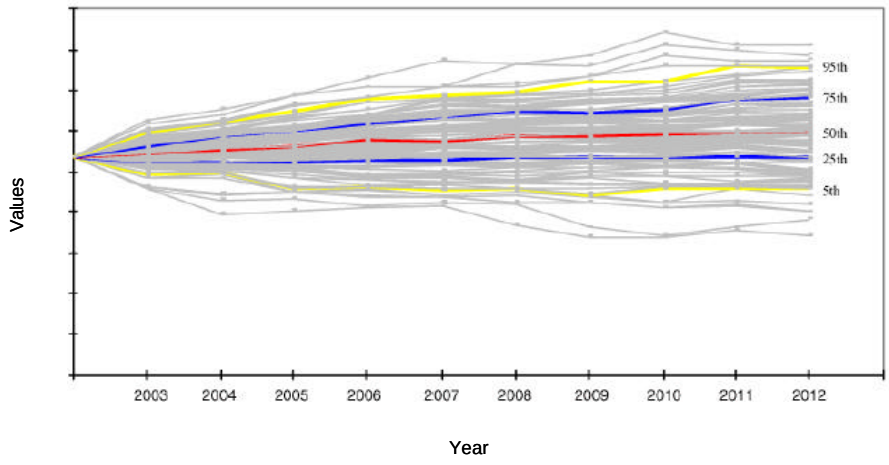
By generating a number of trials, a probability distribution or outcomes can be generated. For any one variable for 1000 trials over a ten-year period, this might look like the pattern in the following chart.



Each strategic asset allocation will produce a different range of outcomes, and we can then make objective comparisons between possible strategies. We can start by focusing on the median outcome, as illustrated on the chart below, for the variable in question (returns, cash flows, terminal fund values, or other asset or economic variable).



To evaluate the degree of uncertainty, we can then look at the distribution of results, for example the 250th best and the 750th outcomes (out of 1000), as being the lower and upper quartiles of the distribution. To give us a feel for best- and worst-case outcomes; we also analyze more extreme results. Typically, these are represented by the 5th and 95th percentiles. These results are illustrated on the chart below.



These stochastic projections provide a more realistic set of outcomes which consider a variety of asset class and economic variables when compared to the output from mean-variance analysis, and serve as an important component of the analysis in the design of a suitable investment strategy. The next section of this report summarizes the Monte-Carlo projections for the key portfolios we considered in the evaluation.

4

Mean Variance Analysis

Capital Markets Assumptions

Liability Assumptions (FRP)

Efficient Frontier Analysis

Mean Variance Analysis

Capital Markets Assumptions

Risk-Return Assumptions – Expected Long-Term Values

Asset Class		Absolute Return	Standard Deviation
Global Equity	1	9.8%	17.5%
Global Government Bonds - Short/Intermediate	2	4.9%	3.0%
Global Government Bonds - Long	3	5.5%	8.0%
Global Corporate Bonds - Short/Intermediate	4	5.5%	3.2%
Global Corporate Bonds - Long	5	6.4%	8.2%
Global TIPS	6	5.2%	4.0%
Global Cash/Enhanced Cash	7	4.0%	1.3%
Global Private Equity	8	12.8%	28.4%
Global Real Estate	9	8.3%	15.0%
Global Infrastructure	10	9.9%	20.2%
Global Absolute Return/Opportunistic	11	7.0%	5.5%

The table above depicts the risk-return assumptions that were used to develop candidate portfolios based on mean variance analysis. The mean variance model seeks to identify the optimal combination of asset classes that provide the highest return for a given level of risk.

Below is the matrix of expected correlations illustrating the expected forward-looking relationships of returns between the various asset classes that the FRP and FEES could potentially have exposure to.

Asset Class Correlation Assumptions – Expected Long Term Values

		1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
Global Equity	1	1										
Global Government Bonds - Short/Intermediate	2	0.30	1									
Global Government Bonds - Long	3	0.35	0.95	1								
Global Corporate Bonds - Short/Intermediate	4	0.35	0.95	0.92	1							
Global Corporate Bonds - Long	5	0.40	0.90	0.95	0.95	1						
Global TIPS	6	0.20	0.50	0.40	0.50	0.40	1					
Global Cash/Enhanced Cash	7	0.00	0.25	0.10	0.25	0.10	0.40	1				
Global Private Equity	8	0.70	0.10	0.20	0.20	0.25	0.15	0.00	1			
Global Real Estate	9	0.50	0.15	0.20	0.20	0.25	0.20	0.00	0.50	1		
Global Infrastructure	10	0.55	0.15	0.20	0.20	0.25	0.20	0.00	0.50	0.23	1	
Global Absolute Return/Opportunistic	11	0.30	0.10	0.10	0.15	0.20	0.10	0.00	0.20	0.20	0.20	1

Liability Assumptions (FRP)

Risk-Return Assumptions – Expected Long-Term Values

We worked in conjunction with the Ministerio de Hacienda to develop what we believe are plausible liability assumptions for FRP. Given the lack of long-dated bond data in the local Chilean market, we had to use proxies in the process of developing what we believe are reasonable return, volatility and correlation assumptions – three essential factors needed in funded status optimization. We used a combination of forward-looking and historical data to support the final assumptions. The various factors we used in the methodology included:

A. Expected Arithmetic Return Assumption: **9.40%**
   1. Cash Flow Data – We received cash outflow projections from the Ministerio de Hacienda extending to the year 2038. The 9.40% figure represents the expected arithmetic return on the liabilities (which is related to the 6.50% geometric discount rate explained in item number 3 below and which will vary depending on the expected standard deviation for the liabilities – the higher the standard deviation, the larger the difference between the arithmetic and geometric expected returns).
   2. Liability Growth Calculation – We calculated the liability growth based on projected cash outflow data provided through 2038. In addition, we extended the liability growth projection for another 10 years, assuming a liability growth not exceeding 6% by 2048. This liability growth is subject to change based on interest rate levels over time, but appears to be an appropriate qualitative assumption and one that the Ministerio de Hacienda believes might be appropriate.
   3. Discount Rate and Duration Calculations – This was calculated using the projected cash outflows through 2048. With these two components, we were able to calculate a discount rate of 6.5% and duration of 25.7 years.

B. Expected Volatility Assumption: **45.0%**
   1. We used yield curve data supplied by the Ministerio de Hacienda. We calculated historical returns over the last 4.75 years using the yield data received for 1- and 10-year maturity Chilean bonds, assuming a duration of 1 year for the 1-year series and 10 years for the 10-year series, as the data supplied reflected zero coupon bonds.
   2. Using regression analysis, we estimated a logarithmic equation to calculate the yields of 30-year bonds, assuming a normal yield curve, and using the historical yields supplied. Once the yields for a hypothetical 30-year bond were prepared, we estimated historical quarterly returns for 30-year bonds going back 4.75 years and assuming an estimated duration of 25.7 years, which we calculated using the estimated cash outflow projections through 2048.

3. To calculate what we think is a reasonable proxy for the expected standard deviation of the liabilities, we interpolated between the historical volatility of the 10-year and hypothetical 30-year return series.

C. Expected Correlation Assumptions: **(please see table below)**
   1. In the absence of more reliable data to estimate the correlations for the liabilities, we used the historical behavior of the estimated 30-year bond returns over the last 4.75 years as a basis to develop the correlation assumptions. We have summarized the correlation assumptions below.

Liability Correlation Assumptions – Proxy for Expected Long Term Values (USD)

Asset Class Variables	Correlation Assumptions
Global Equity	0.00
Global Gov't. Bonds – S/I	-0.30
Global Gov't. Bonds – Long	-0.30
Global Corp. Bonds – S/I	-0.25
Global Corp. Bonds – Long	-0.25
Global Inflation Protected Bonds	-0.20
Global Cash/Enhanced Cash	-0.10
Global Private Equity	0.05
Global Real Estate	0.00
Global Infrastructure	-0.05
Global Absolute Return/Opportunistic	-0.15

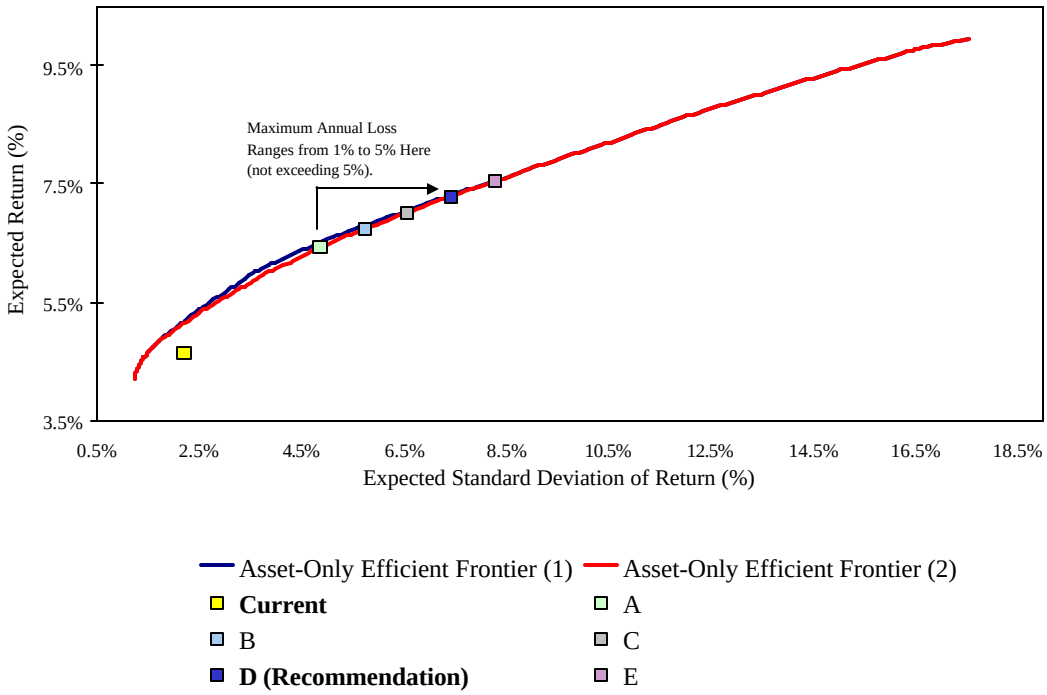
Despite the fact that careful consideration was given to the development of the liability assumptions presented above, we recommend considering this analysis as a strawman until more reliable data becomes available. We had to use a number of estimates to develop what we think are plausible return, volatility, and correlation assumptions for the FRP liabilities. The cash outflow projections provided by the Ministerio de Hacienda for FRP may be subject to change due to future legislative initiatives or demographic changes that vary from the assumptions based on which these projections were developed.

We are confident in the portfolio recommendations, particularly considering the FRP will not experience any outflows until the year 2017, which supports a more aggressive stance relative to the FEES. We recommend monitoring the evolution of the liabilities over time. We recommend the Ministerio de Hacienda consider conducting an asset/liability study by the year 2014, at which point we expect more reliable data should be available to more accurately define the liabilities affecting the FRP. Doing this by the year 2014 should allow enough time to rebalance the portfolio to the new targets by the year 2017 or sooner.

Fondo de Estabilización Económica y Social (FEES)

FEES

Asset-Only Efficient Frontier



Asset-Only Efficient Frontier (1) - Constraints:

- Maximum allocation of 15% to alternative investments.
- Maximum allocation of 5% to private equity.
- Maximum allocation of 5% to real estate.
- Maximum allocation of 2% to infrastructure.
- Maximum allocation of 5% to absolute return/opportunistic strategies.

Asset-Only Efficient Frontier (2) - Constraints:

- Maintains the constraints to alternatives in Frontier 1.
- Includes a maximum constraint of 30% to short-intermediate corporate bonds. The unconstrained frontier (Frontier 1) designated what we believe to be unreasonable allocations to corporate bonds. Thus, a qualitative constraint was included to enhance diversification.

FEES

Statistical Output

	Current	A	B	C	(Recommendation)	E
Global Equity	0%	10%	15%	20%	25%	30%
Gbl Gov't Bonds - Short/Intermediate	66%	0%	0%	0%	0%	0%
Gbl Gov't Bonds - Long	0%	0%	0%	0%	0%	0%
Gbl Corp Bonds - Short/Intermediate	0%	30%	30%	30%	30%	30%
Gbl Corp Bonds - Long	0%	6%	10%	13%	17%	20%
Gbl Inflation Indexed Bonds	4%	39%	30%	22%	13%	5%
Gbl Cash/Enhanced Cash	30%	0%	0%	0%	0%	0%
Gbl Private Equity	0%	4%	5%	5%	5%	5%
Gbl Real Estate	0%	4%	3%	3%	3%	3%
Gbl Infrastructure	0%	2%	2%	2%	2%	2%
Gbl Absolute Return/Opportunistic	0%	5%	5%	5%	5%	5%
Expected Return (Arithmetic)	4.64%	6.42%	6.74%	7.01%	7.29%	7.55%
Expected Standard Deviation	2.20%	4.86%	5.75%	6.55%	7.42%	8.29%
Expected Return (Geometric)	4.62%	6.31%	6.59%	6.81%	7.03%	7.23%
Max Annual Loss @ 95% Confidence Interval	**1.02%**	**-1.57%**	**-2.72%**	**-3.76%**	**-4.91%**	**-6.09%**
Probability of Less Than 0% Return - One Year	**1.79%**	**9.71%**	**12.60%**	**14.92%**	**17.16%**	**19.15%**
Probability of Less Than 0% Return - Three Years	**0.01%**	**1.23%**	**2.36%**	**3.59%**	**5.03%**	**6.54%**
Probability of Less Than 0% Return - Five Years	**0.00%**	**0.18%**	**0.52%**	**1.00%**	**1.70%**	**2.55%**
Probability of Less Than 0% Return - Ten Years	**0.00%**	**0.00%**	**0.01%**	**0.05%**	**0.14%**	**0.29%**

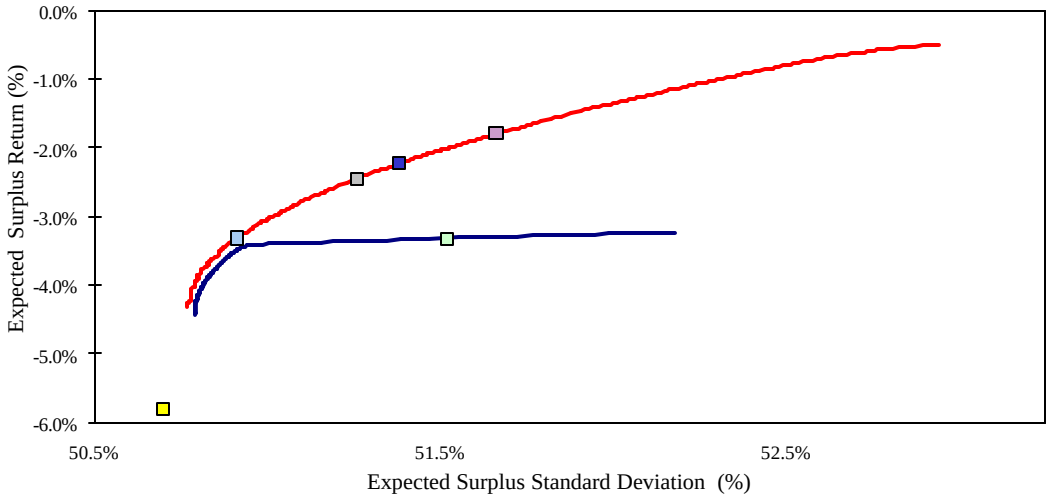
Observations

- Candidates A through D provide attractive expected returns and maintain the tolerable risk parameters expressed by the Ministerio de Hacienda (not exceeding a maximum expected annual loss of 5% for FEES at the 95% probability distribution confidence interval).
- Candidate E exhibits an increase of 5% to stocks and minor changes to long corporate bonds and inflation indexed bonds, which results in an expected maximum annual loss of 6.09%, which falls outside permissible parameters.

Fondo de Reserva de Pensiones (FRP)

FRP

Asset/Liability Efficient Frontier



- Asset/Liability Efficient Frontier (1)
- Asset/Liability Efficient Frontier (2)
- **Current**
- **A [Recommendation 1 (Maintains Policy)]**
- B
- C
- **D [Recommendation 2 (Relaxes Policy)]**
- E

Asset/Liability Efficient Frontier (1) – Constraints/Maintains Current Policy:

- Maximum allocation of 25% to stocks and corporate bonds.
- Maximum allocation of 0% to cash/enhanced cash.
- Maximum allocation of 15% to alternative investments.
- Maximum allocation of 5% to private equity.
- Maximum allocation of 5% to real estate.
- Maximum allocation of 2% to infrastructure.
- Maximum allocation of 5% to absolute return/opportunistic strategies.

Asset/Liability Efficient Frontier (2) – Constraints/Relaxes Policy:

- No constraints to stocks or corporate bonds.
- Maximum allocation of 0% to cash/enhanced cash.
- Maximum allocation of 15% to alternative investments.
- Maximum allocation of 5% to private equity.
- Maximum allocation of 5% to real estate.
- Maximum allocation of 2% to infrastructure.
- Maximum allocation of 5% to absolute return/opportunistic strategies.

FRP

Statistical Output

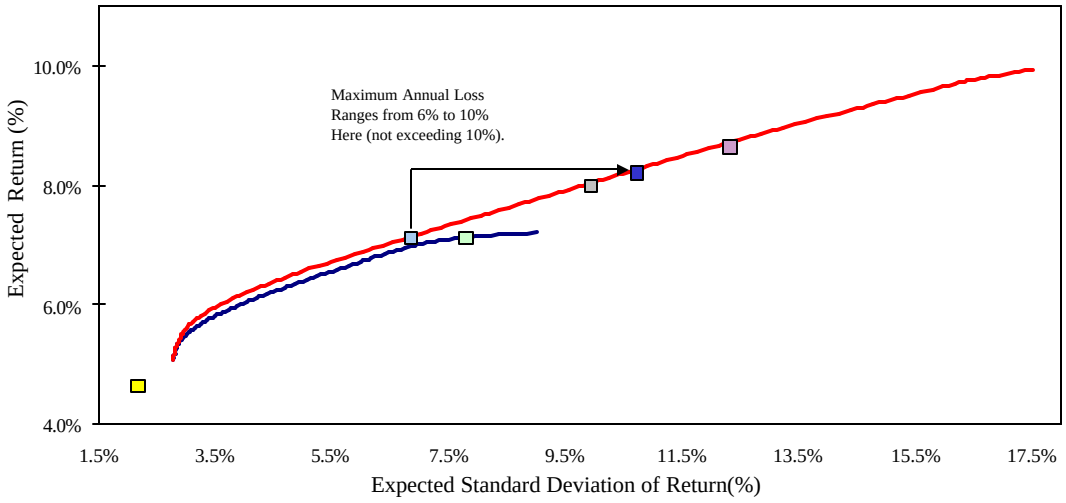
	Current	Recommendation 1 (Maintains Policy)	B	C	Recommendation 2 (Relaxes Policy)	E
Global Equity	0%	25%	25%	45%	50%	60%
Gbl Gov't Bonds - Short/Intermediate	66%	0%	0%	0%	0%	0%
Gbl Gov't Bonds - Long	0%	30%	0%	0%	0%	0%
Gbl Corp Bonds - Short/Intermediate	0%	0%	60%	40%	35%	25%
Gbl Corp Bonds - Long	0%	0%	0%	0%	0%	0%
Gbl Inflation Indexed Bonds	3%	30%	0%	0%	0%	0%
Gbl Cash/Enhanced Cash	31%	0%	0%	0%	0%	0%
Gbl Private Equity	0%	5%	5%	5%	5%	5%
Gbl Real Estate	0%	5%	5%	5%	5%	5%
Gbl Infrastructure	0%	2%	0%	0%	0%	0%
Gbl Absolute Return/Opportunistic	0%	3%	5%	5%	5%	5%
Expected Surplus Return (Arithmetic)	-5.81%	-3.32%	-3.32%	-2.45%	-2.23%	-1.80%
Surplus Standard Deviation (Tracking Error)	50.70%	51.52%	50.91%	51.26%	51.38%	51.66%
Expected Surplus Return (Geometric)	-17.07%	-14.68%	-14.46%	-13.65%	-13.45%	-13.09%

Observations

- These results were developed in funded status optimization, which takes into account the projected liabilities for this program through 2048 in USD.
- Portfolio A maintains current investment guidelines and provides exposure to long government bonds as well as inflation indexed bonds and alternative investments. The expected surplus return of this portfolio (or the difference in the expected return of the portfolio and the expected return of the liabilities) is in negative territory by 3.32% in arithmetic terms. By contrast, the current mix shows a negative surplus return of 5.81%.
- Based on the assumptions for the asset classes considered in the analysis and the proxies used to estimate the projected liabilities, these results may be indicative of the need to adopt a more aggressive asset allocation strategy in light of the projected liabilities, which will start affecting this program by 2017.
- Recommendation 2 exhibits better results relative to the liabilities and a more aggressive stance. Given the expected liabilities of FRP and the decision not to withdraw assets until 2017, we believe portfolio D provides the most attractive potential for return generation over the long term without violating the stated risk parameters while considering the compounding effect of returns over time and the ability to withstand short-term volatility in a 10-year investment horizon.

FRP

Asset-Only Efficient Frontier



Asset-Only Efficient Frontier (1)
Asset-Only Efficient Frontier (2)
Current
A Recommendation 1 (Maintains Policy)
B
C
D Recommendation 2 (Relaxes Policy)
E

Asset-Only Efficient Frontier (1) – Constraints/Maintains Policy:

- Maximum allocation of 25% to stocks and corporate bonds.
- Maximum allocation of 0% to cash/enhanced cash.
- Maximum allocation of 15% to alternative investments.
- Maximum allocation of 5% to private equity.
- Maximum allocation of 5% to real estate.
- Maximum allocation of 2% to infrastructure.
- Maximum allocation of 5% to absolute return/opportunistic strategies.

Asset-Only Efficient Frontier (2) – Constraints/Relaxes Policy:

- No constraints to stocks or corporate bonds.
- Maximum allocation of 0% to cash/enhanced cash.
- Maximum allocation of 15% to alternative investments.
- Maximum allocation of 5% to private equity.
- Maximum allocation of 5% to real estate.
- Maximum allocation of 2% to infrastructure.
- Maximum allocation of 5% to absolute return/opportunistic strategies.

FRP

Statistical Output

	Current	Recommendation 1 (Maintains Policy)	B	C	Recommendation 2 (Relaxes Policy)	E
Global Equity	0%	25%	25%	45%	50%	60%
Gbl Gov't Bonds - Short/Intermediate	66%	0%	0%	0%	0%	0%
Gbl Gov't Bonds - Long	0%	30%	0%	0%	0%	0%
Gbl Corp Bonds - Short/Intermediate	0%	0%	60%	40%	35%	25%
Gbl Corp Bonds - Long	0%	0%	0%	0%	0%	0%
Gbl Inflation Indexed Bonds	3%	30%	0%	0%	0%	0%
Gbl Cash/Enhanced Cash	31%	0%	0%	0%	0%	0%
Gbl Private Equity	0%	5%	5%	5%	5%	5%
Gbl Real Estate	0%	5%	5%	5%	5%	5%
Gbl Infrastructure	0%	2%	0%	0%	0%	0%
Gbl Absolute Return/Opportunistic	0%	3%	5%	5%	5%	5%
Expected Return (Arithmetic)	4.63%	7.12%	7.13%	8.00%	8.21%	8.65%
Expected Standard Deviation	2.18%	7.80%	6.87%	9.94%	10.73%	12.33%
Expected Return (Geometric)	4.61%	6.84%	6.91%	7.54%	7.68%	7.95%
Max Annual Loss @ 95% Confidence Interval	**1.04%**	**-5.71%**	**-4.17%**	**-8.35%**	**-9.44%**	**-11.63%**
Probability of Less Than 0% Return - One Year	**1.55%**	**18.68%**	**15.39%**	**22.10%**	**23.42%**	**25.68%**
Probability of Less Than 0% Return - Three Years	**0.01%**	**6.16%**	**3.87%**	**9.15%**	**10.45%**	**12.89%**
Probability of Less Than 0% Return - Five Years	**0.00%**	**2.33%**	**1.13%**	**4.28%**	**5.24%**	**7.20%**
Probability of Less Than 0% Return - Ten Years	**0.00%**	**0.24%**	**0.06%**	**0.75%**	**1.09%**	**1.94%**

Observations

- Candidates A through D provide attractive expected returns and maintain the tolerable risk parameters expressed by the Ministerio de Hacienda (not exceeding a maximum expected annual loss of 10% for FRP at the 95% probability distribution confidence interval).
- Candidate A, the recommendation considering current investment guidelines, allocates 25% to stocks, 60% to fixed income, and 15% to alternative investments. This portfolio yields a maximum annual loss of 5.71% at the 95th percentile.
- Candidates B and C provide a higher exposure to stocks and a meaningful exposure to corporate bonds, while maintaining the limits to alternative investments.
- Candidate D, the recommendation considering the amendment of current investment guidelines, exhibits a higher allocation to stocks and a modest allocation to corporate bonds (in relation to Recommendation 1).
- Candidate E exhibits an increase of 10% to stocks and a commensurate decrease to corporate bonds, which results in an expected maximum annual loss of 11.63% at the 95th percentile, falling outside permissible parameters.

5

Stochastic Analysis – Detailed Fund Evaluation

Fondo de Estabilización Económica y Social (FEES)

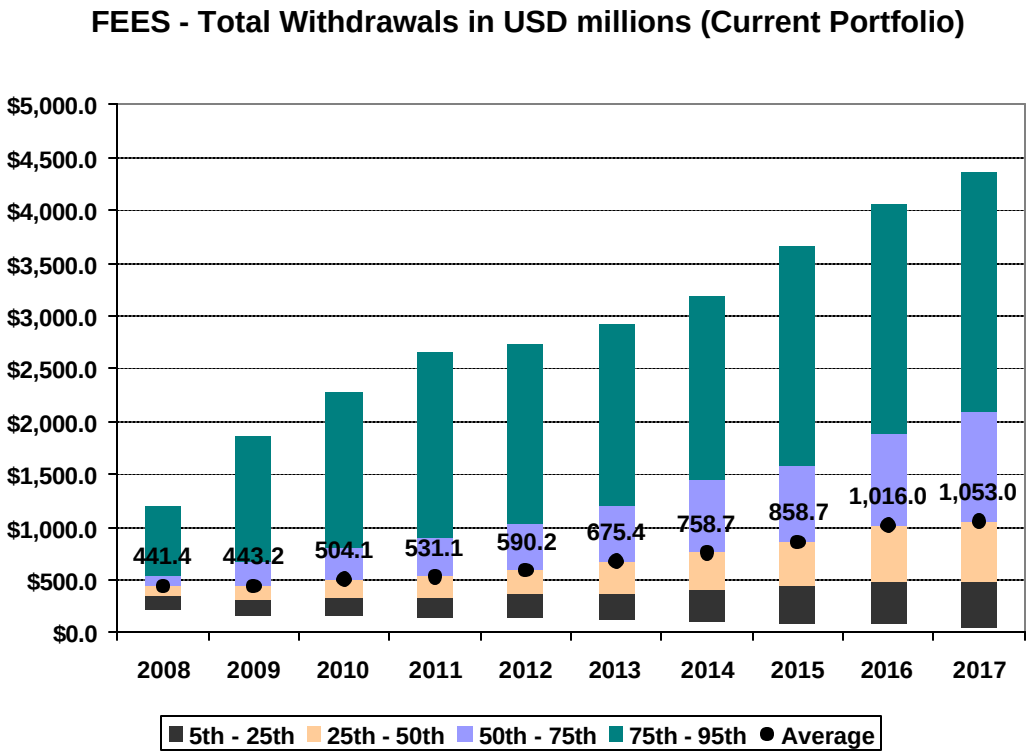
Fondo de Reserva de Pensiones (FRP)

Fondo de Estabilización Económica y Social (FEES)

Asset Allocation and Summary Statistical Output

		Current Asset Allocation	A	B	C	D (Recommendation)	E
Asset Allocation	Global Equity	0%	10%	15%	20%	25%	30%
	Global Fixed Income - Gov - Short/Intermd	66%	0%	0%	0%	0%	0%
	Global Fixed Income - Gov - Long	0%	0%	0%	0%	0%	0%
	Global Fixed Income - Corp Short/Intermd	0%	30%	30%	30%	30%	30%
	Global Fixed Income - Corp Long	0%	6%	10%	13%	17%	20%
	Global TIPS	4%	39%	30%	22%	13%	5%
	Global Cash	30%	0%	0%	0%	0%	0%
	Global Private Equities	0%	4%	5%	5%	5%	5%
	Global Real Estate	0%	4%	3%	3%	3%	3%
	Global Infrastruture	0%	2%	2%	2%	2%	2%
	Global Absolute Return/Opportunistic	0%	5%	5%	5%	5%	5%
Statistics	Correlation (Nominal Portfolio Returns; Nominal Chile GDP Growth)	0.05	0.14	0.13	0.13	0.12	0.12
	Correlation (Nominal Portfolio Returns; Real Chile GDP Growth)	-0.03	0.07	0.08	0.08	0.09	0.09
	Correlation (Nominal Portfolio Returns; Nominal Copper Price)	-0.03	0.19	0.20	0.22	0.23	0.23
	Correlation (Real Portfolio Returns; Nominal Copper Price)	-0.05	0.18	0.19	0.21	0.21	0.22
	Portfolio Expected Nominal Returns (USD)	4.70%	6.12%	6.35%	6.55%	6.78%	6.98%
	Portfolio Nominal Returns Volatility (USD)	2.16%	4.67%	5.39%	6.23%	7.16%	8.06%
	Lowest Annual Return Observed from 2008 to 2017 (95th Percentile)	1.00%	-1.50%	-2.33%	-3.30%	-4.48%	-5.74%
	Change in Nominal Return From Current Allocation	-	1.43%	1.66%	1.85%	2.08%	2.28%
	Change in Nominal Risk From Current Allocation	-	2.51%	3.23%	4.07%	5.00%	5.90%
	Portfolio Expected Nominal Returns (CLP)	5.98%	7.44%	7.69%	7.94%	8.12%	8.33%
	Portfolio Nominal Returns Volatility (CLP)	12.24%	13.11%	13.40%	13.85%	14.30%	14.81%
	Duration	1.35	1.71	1.79	1.83	1.91	1.94
	Liquidity Ratio	9.90	8.01	7.96	7.91	7.86	7.82

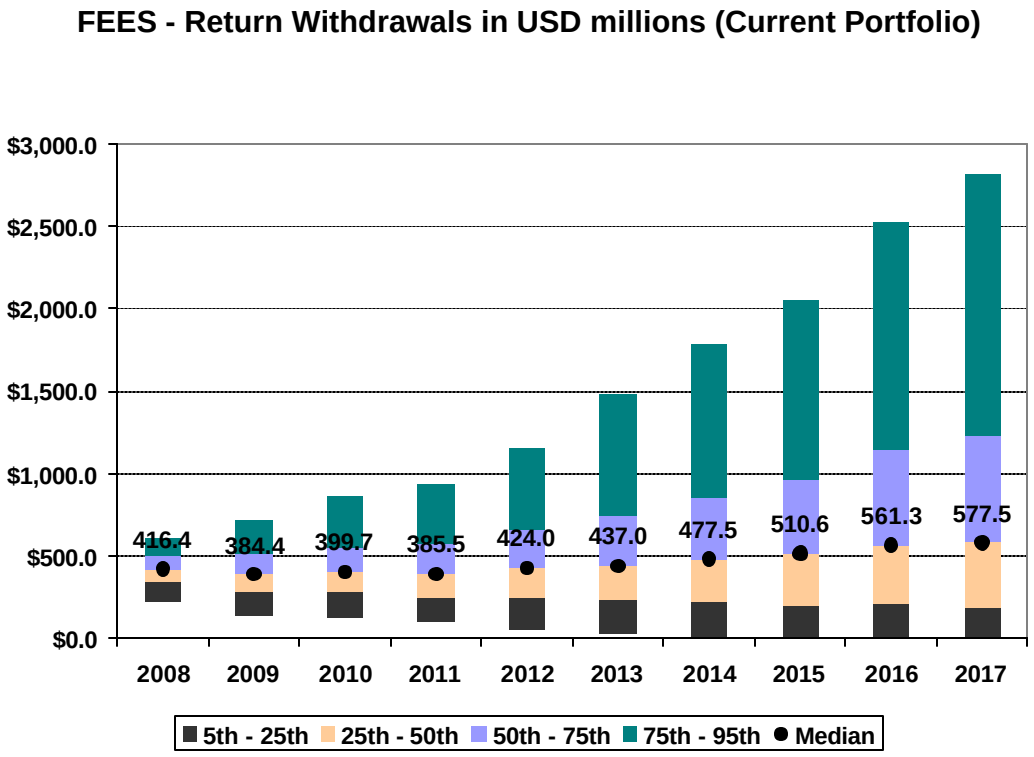
Current Portfolio
Total Cash Outflow Projections



Observations

- The exhibit above shows the expected level of outflows (withdrawals) that are possible from the FEES. Since all the returns from the FEES Fund will be used as a source of revenue for the fiscal program, the median withdrawal level – as a percentage of the Fund's assets – will be highly related to the mean expected returns.
- The extreme values observed in each year in the chart represent the higher or lower levels of outflows from the Fund. In this case, the worst-case scenarios can be a result of weak GDP growth, a decline in copper price and poor investment results. All these factors may induce a higher withdrawal from the Fund.
- The worst-case scenario (5th percentile) is represented by the green part of the bars on the chart. The best-case scenario (95th percentile), on the other hand, can be a result of strong GDP growth, rising copper prices and attractive investment returns. All these factors may induce a lower withdrawal from the Fund. This set of factors is represented by the grey part of the bars in the chart.

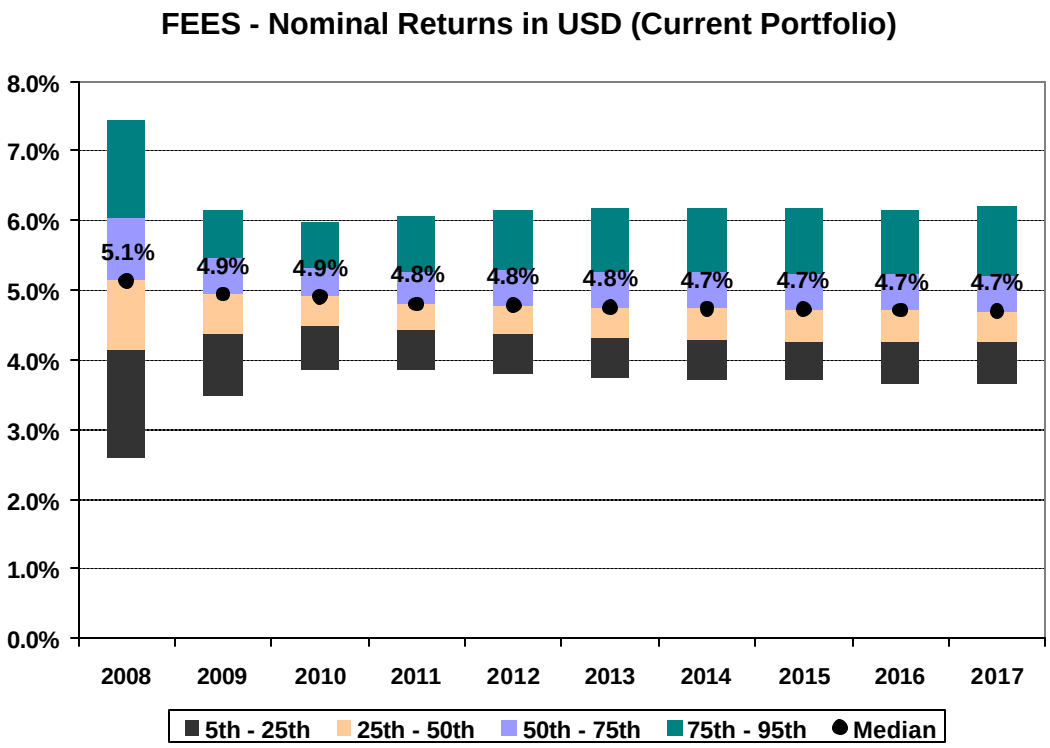
Current Portfolio
Return Withdrawals



Observations

- The exhibit above shows the expected level of outflows from return.
- These asset values are primarily driven by the return potential of the portfolio. Therefore, these values will be higher for riskier portfolios exhibiting higher return potential.
- Since the current portfolio exhibits the lowest return potential of all the portfolios presented in this report, it will also provide the lowest expected outflow if everything else is held constant.

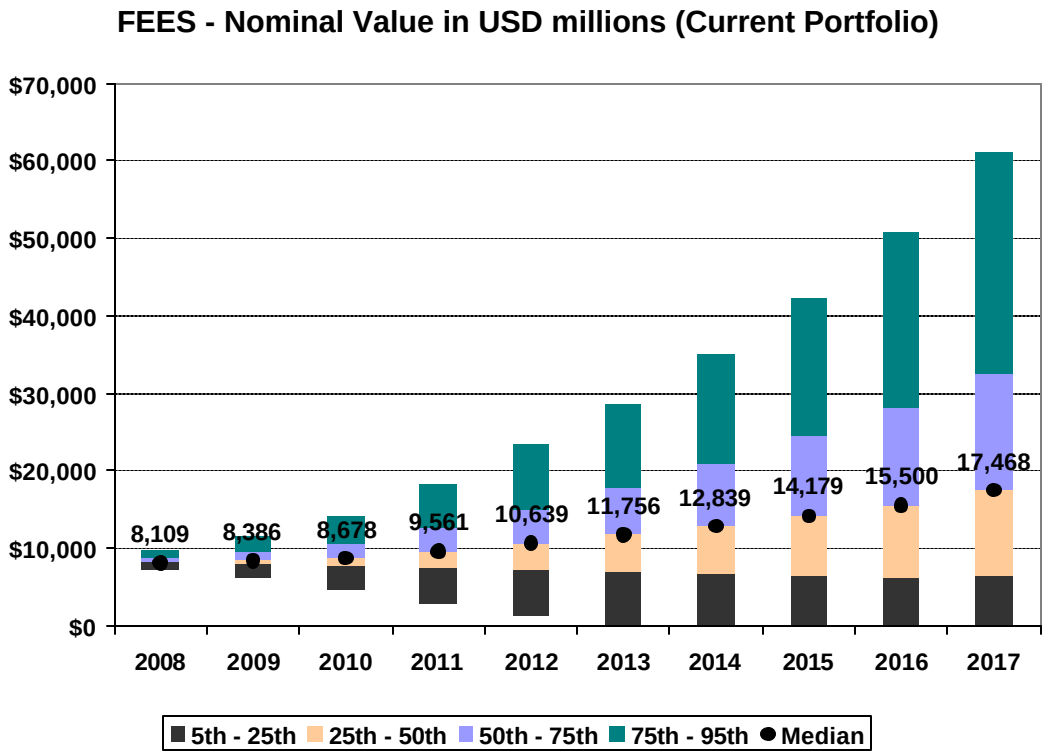
Current Portfolio
Return Projections



Observations

- The distribution of returns shown above consists of annualized or geometric average results of prior years.
- The assumption about the nominal annualized return of the current portfolio is based on the 4.7% annualized median return over the 10-year period. Considering that currently the FEES and FRP Funds' asset allocation is identical, the results for the nominal returns – in both cases – are also very similar.

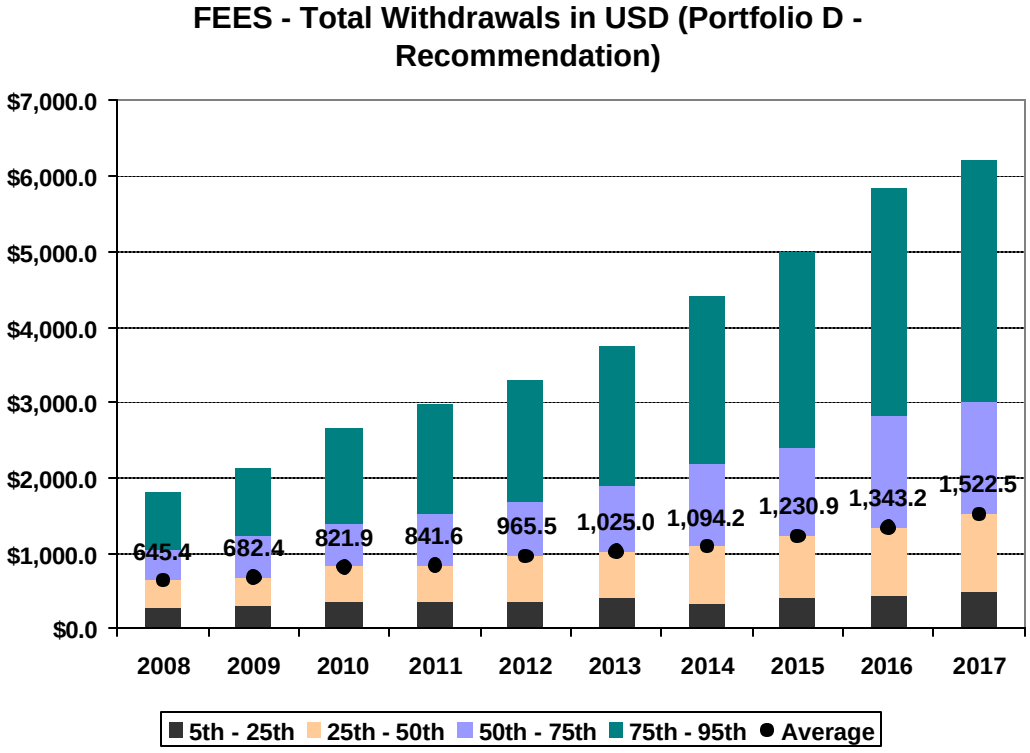
Current Portfolio
Terminal Value Projections



Observations

- Based on these projections, at the end of year 2017 we expect the Fund's nominal value to be $17.5 billion. The expected value is defined by the median results.
- The best-case scenario (95th percentile) reflects an asset value of $61.2 billion in nominal terms.
- The worst-case scenario (5th percentile) would be an asset value of $0.0 billion for the year 2017. This reflects a situation where we observe weak GDP growth rates, declines in copper prices and poor investment returns from the FEES Fund.
- These results take into account the potential outflows (investments returns and part of the principal during declining economic conditions) to meet fiscal expenditures as determined by the Government's current Fiscal Policy.

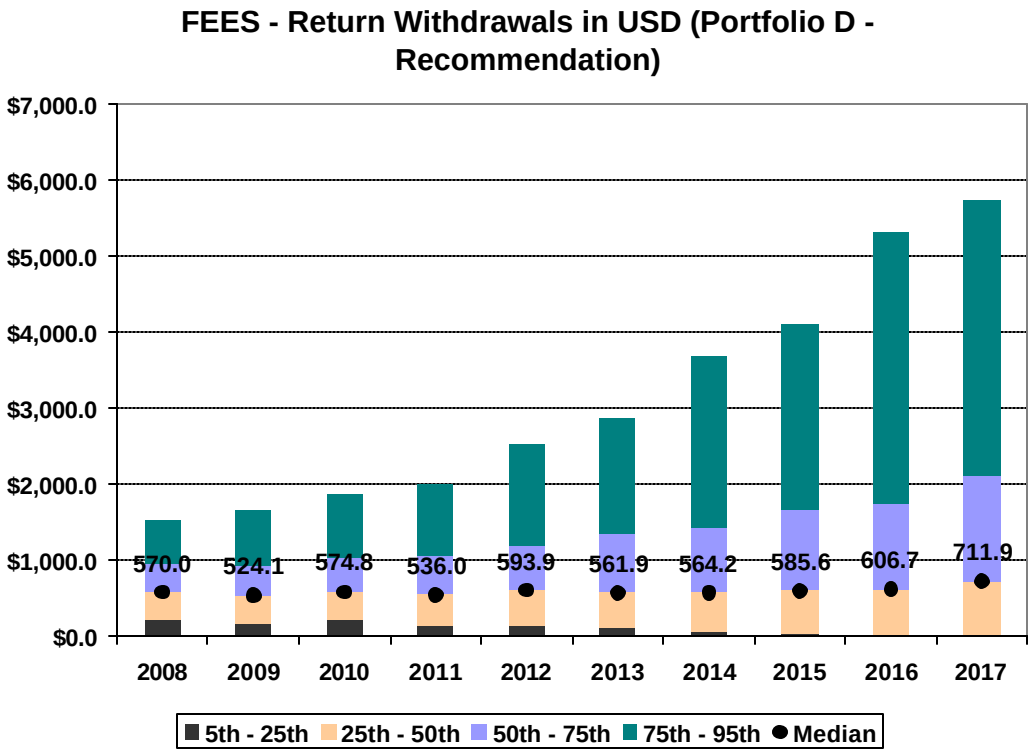
Portfolio D (Recommendation)
Total Cash Outflow Projections



Observations

- The chart above presents the expected withdrawals from the Fund. Since all the returns generated by the Fund will be withdrawn each year, we see a close relationship between the expected return and withdrawal rate for each year.
- In comparison to the current portfolio's results, we have higher expected withdrawal (due to the higher expected returns for Portfolio D).
- The "worst" cases (the ones that require higher withdrawal levels and are represented by the green portion of the bars) (95th percentile) indicate a withdrawal of $6.2 billion.
- Since the expected investment return for Portfolio D is higher than the current portfolio, we would expect a lower portion of the principal value of the Fund to be withdrawn on any one-year period in the case of Portfolio D if there is a need to withdraw the principal during times of weak GDP growth and falling copper prices.
- The "best" case scenario (5th percentile) is represented by the grey bars in the chart above, signifying lower levels of withdrawals.

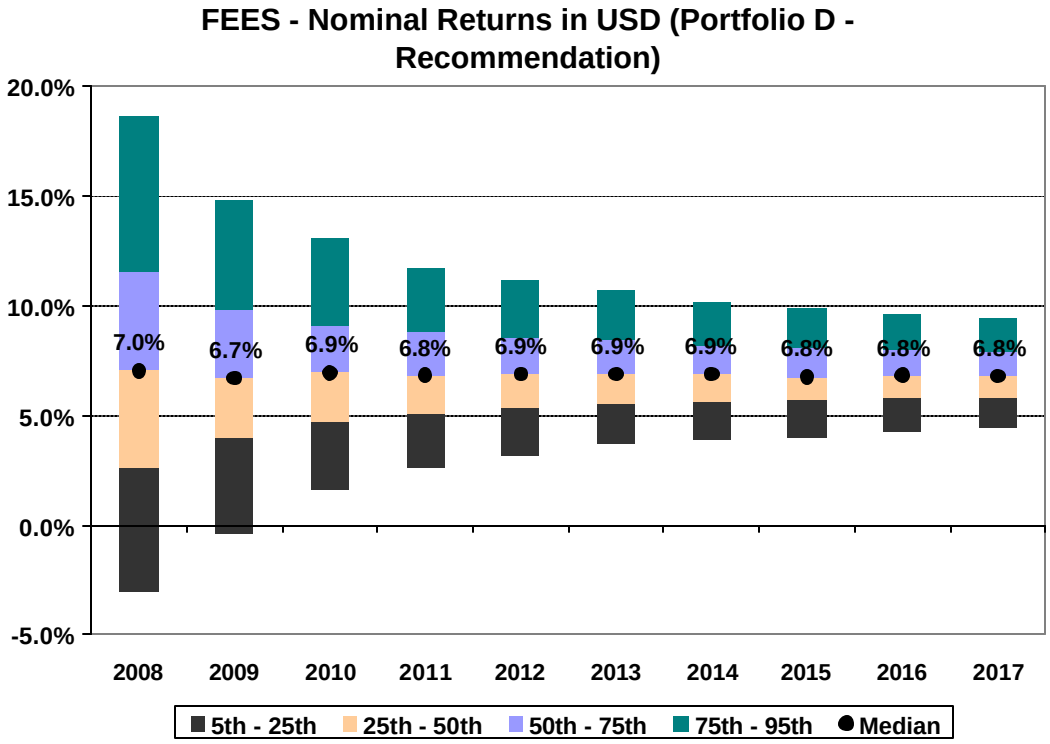
Portfolio D (Recommendation)
Return Withdrawals



Observations

- The exhibit above shows the expected level of outflows from return.
- Since these values are driven by the return potential of the portfolio, their expected values are higher for Portfolio D than the current portfolio.

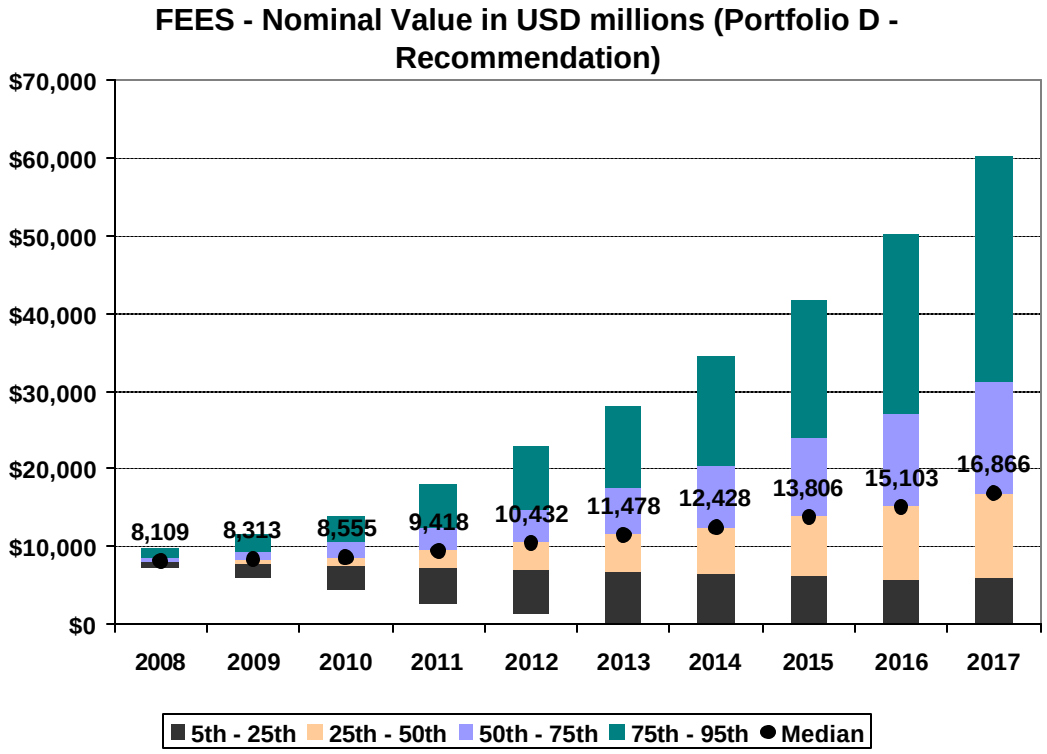
Portfolio D (Recommendation)
Return Projections



Observations

- The chart above depicts the nominal return for the portfolio over the next ten years. The two most relevant observations are: the expected median return and the worst case (5th percentile) expected return for the ten year period (lowest portion of the grey bars).
- The expected return of Portfolio D is 6.8%. The current portfolio provides an expected return of 4.7% (2.1% below the expected return for Portfolio D).
- The worst-case (5th percentile) expected return for Portfolio D is 4.5%, which is 0.8% higher than the current portfolio.
- The best-case (95th percentile) expected return for Portfolio D is 9.5%, which is 3.3% higher than the current portfolio's projected return.

Portfolio D (Recommendation)
Terminal Value Projections



Observations

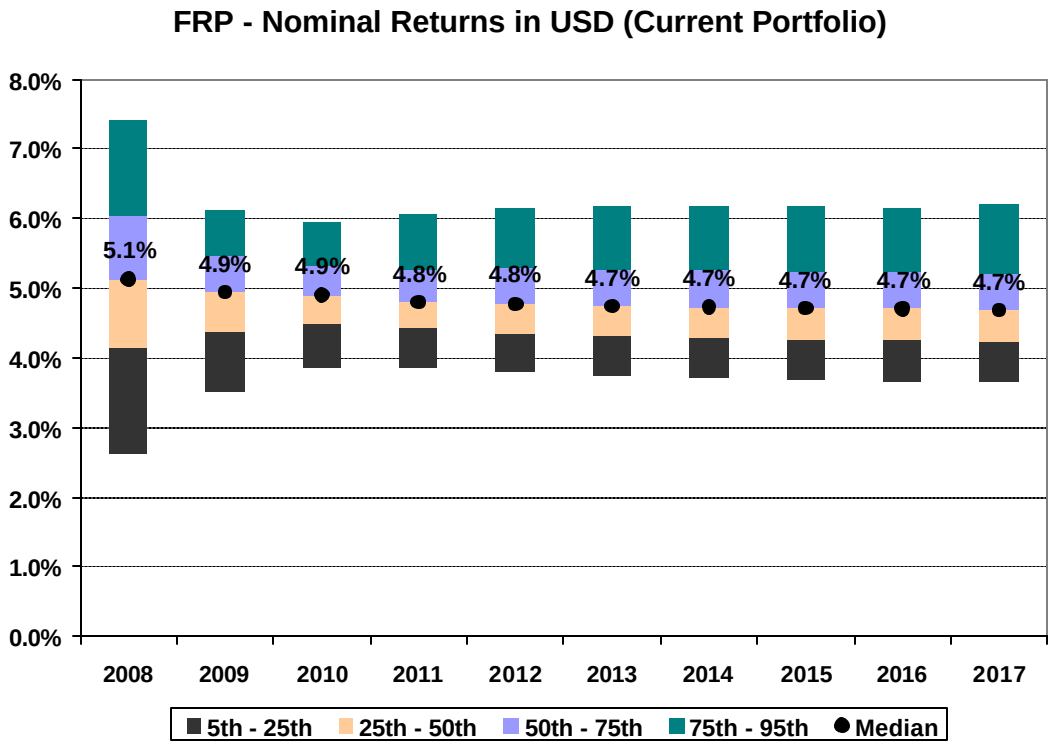
- The chart above shows the median terminal value of $16.9 billion for Portfolio D at the end of 2017. The current policy, which allows the withdrawal of the investment returns of this Fund, limits its growth potential over time.
- However, if the current policy is maintained (the withdrawal of investment returns out of the Fund), Portfolio D should provide a larger contribution to cover fiscal spending, allowing the Ministry to withdraw larger amounts of assets mainly as a function of realizing higher investment returns over time.
- If the Ministry were to adopt a more conservative withdrawal policy, this Fund should be able to generate a higher terminal value than the current portfolio at the expense of providing less coverage of fiscal spending than under the current withdrawal policy.
- In the best-case scenario (95th percentile), represented by the highest portion of the green bar in the chart above, the terminal value of this portfolio (year 2017) is $60.4 billion.
- In the worst-case (5th percentile) scenario (lowest portion of the grey bar) the value is expected to be $0.0 billion.

Fondo de Reserva de Pensiones (FRP)

Asset Allocation and Summary Statistical Output

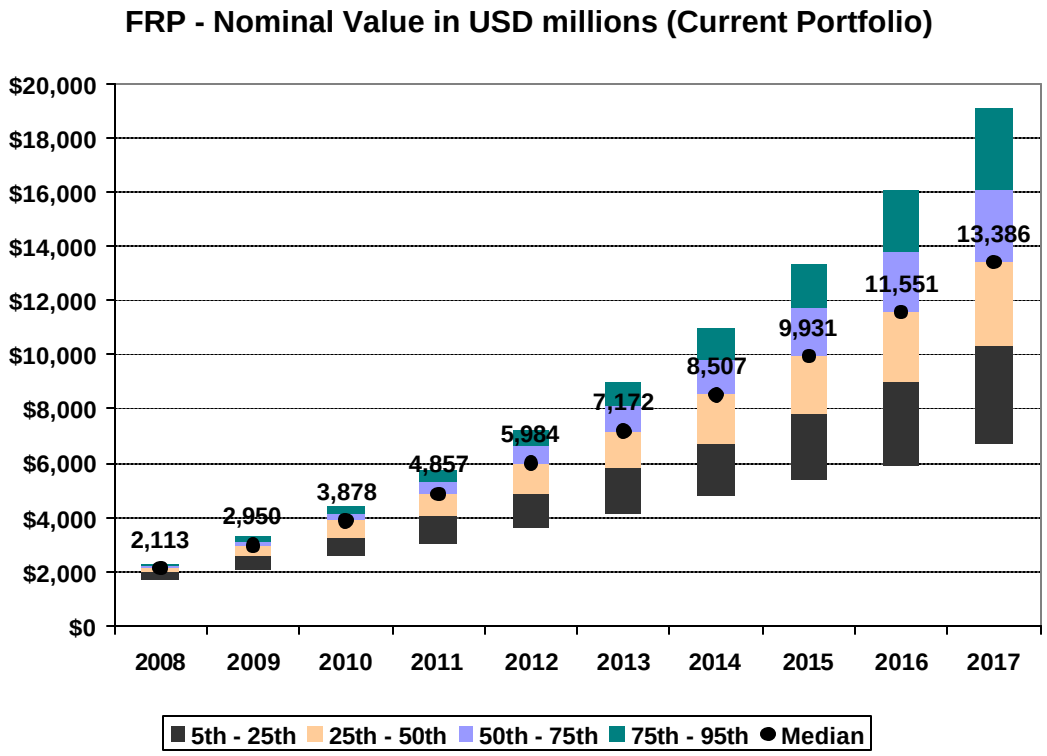
		Current	A Recommendation 1(Maintains Policy)	B	C	D Recommendation 2(Relaxes Policy)	E
Asset Allocation	Global Equity	0%	25%	25%	45%	50%	60%
	Global Fixed Income - Gov - Short/Intermd	66%	0%	0%	0%	0%	0%
	Global Fixed Income - Gov - Long	0%	30%	0%	0%	0%	0%
	Global Fixed Income - Corp Short/Intermd	0%	0%	60%	40%	35%	25%
	Global Fixed Income - Corp Long	0%	0%	0%	0%	0%	0%
	Global TIPS	3%	30%	0%	0%	0%	0%
	Global Cash	31%	0%	0%	0%	0%	0%
	Global Private Equities	0%	5%	5%	5%	5%	5%
	Global Real Estate	0%	5%	5%	5%	5%	5%
	Global Infrastruture	0%	2%	0%	0%	0%	0%
	Global Absolute Return/Opportunistic	0%	3%	5%	5%	5%	5%
Statistics	Correlation (Nominal Portforlio Returns; Nominal Chile GDP Growth)	0.05	0.13	0.12	0.13	0.13	0.13
	Correlation (Nominal Portfolio Returns; Real Chile GDP Growth)	-0.03	0.09	0.10	0.10	0.10	0.10
	Correlation (Nominal Portfolio Return; Nominal Copper Price)	-0.03	0.22	0.23	0.26	0.27	0.28
	Correlation (Real Portfolio Return; Nominal Copper Price)	-0.05	0.22	0.22	0.26	0.26	0.27
	Portfolio Expected Nominal Returns (USD)	4.69%	6.80%	6.76%	7.39%	7.55%	7.80%
	Portfolio Nominal Returns Volatility (USD)	2.14%	7.70%	6.83%	9.87%	10.67%	12.30%
	Lowest Annual Return Observed from 2008 to 2017 (95th Percentile)	1.01%	-5.37%	-4.10%	-7.97%	-8.97%	-11.15%
	Change in Nominal Return From Current Allocation	-	2.12%	2.08%	2.71%	2.86%	3.11%
	Change in Nominal Risk From Current Allocation	-	5.56%	4.69%	7.73%	8.53%	10.16%
	Portfolio Expected Nominal Returns (CLP)	5.97%	8.17%	8.08%	8.80%	8.92%	9.14%
	Portfolio Nominal Returns Volatility (CLP)	12.23%	14.61%	14.19%	16.07%	16.59%	17.78%
	Duration	1.34	2.55	1.08	0.72	0.63	0.45
	Liquidity Ratio	9.90	8.26	7.78	7.88	7.90	7.95

Current Portfolio
Return Projections



- The chart above depicts the nominal return of the portfolio over the next ten years. The distribution of returns shown here are geometric average results of prior years.
- Under the worst-case, which is defined as a 5th percentile event in this report, we would expect this portfolio to generate an annualized return of 3.6%, in nominal terms, for the next ten years.
- The best-case scenario, 95th percentile, is a return of 6.2%, represented by the grey portion of the return distribution for the year 2017.

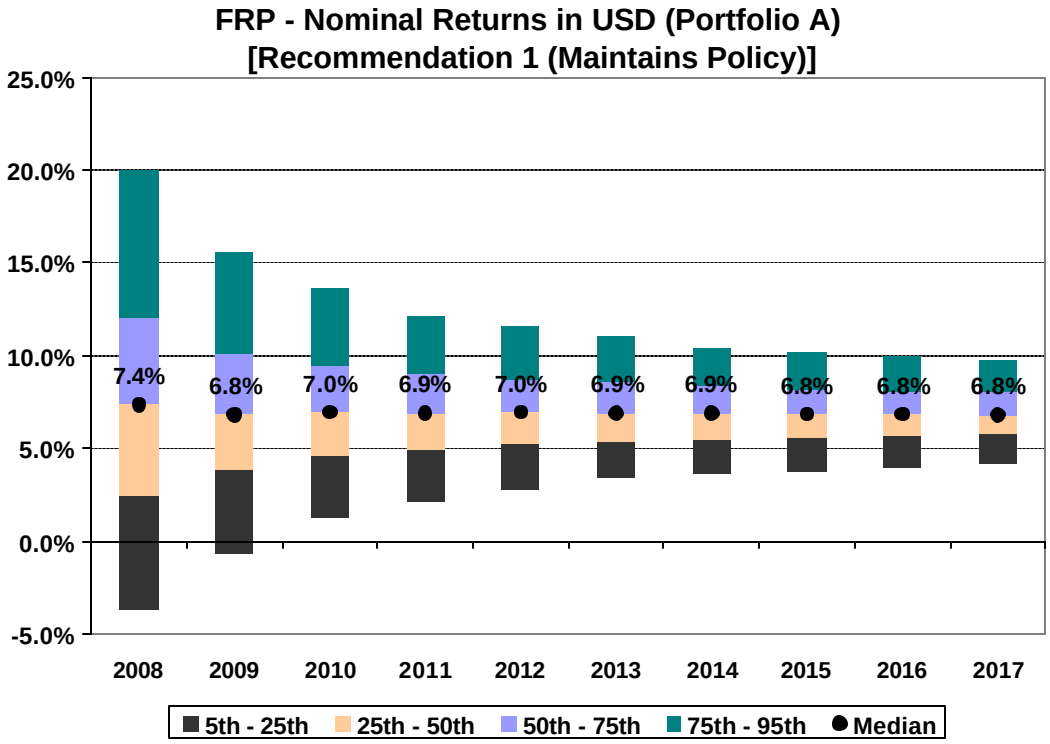
Current Portfolio
Terminal Value Projections



Observations

- At the end of year 2017 we expect the value of the Fund to reach $13.4 billion, based on the median value of the stochastic results.
- The results already take into account a guaranteed inflow of 0.2% of GDP into the Fund every year, consistent with current policy. The model assumes that the real GDP of Chile will grow approximately 5% year-over-year, bolstering the asset size with continuously increasing cash inflows into the Fund every year.
- The worst-case scenario (5th percentile) would be an asset value of $6.7 billion, illustrated by the lowest point of the grey bar for the year 2017. The likelihood of that happening is approximately 5%.
- On the other hand, the best-case value this fund can reach (at the 95th percentile) is $19.1 billion and the likelihood of that happening is also 5%.

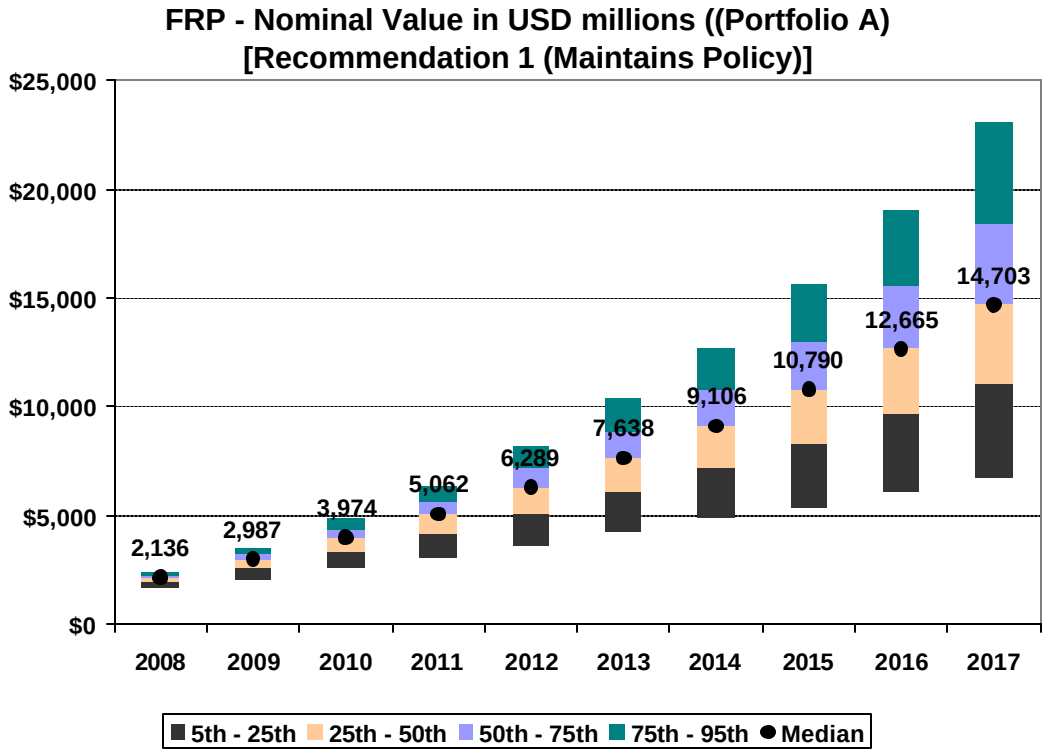
Portfolio A (Recommendation 1)
Return Projections



Observations

- The returns of this portfolio will be slightly higher than the current portfolio, as shown by the chart above. The median annualized ten-year return of the FRP Fund may increase by 2.1% if the asset allocation were moved to Portfolio A.
- Under the worst-case scenario (5th percentile), Portfolio A is expected to generate 0.6% higher ten-year annualized return than the current portfolio.
- The best-case scenario (95th percentile) for Portfolio A is a return of 9.8%, an increase of 3.5% relative to the return projected for the current portfolio.
- We believe taking on the additional risk on the FRP Fund to realize higher potential return is in-line with the goal of maximizing the value of this Fund given that it does not have any outflows for the next ten years.

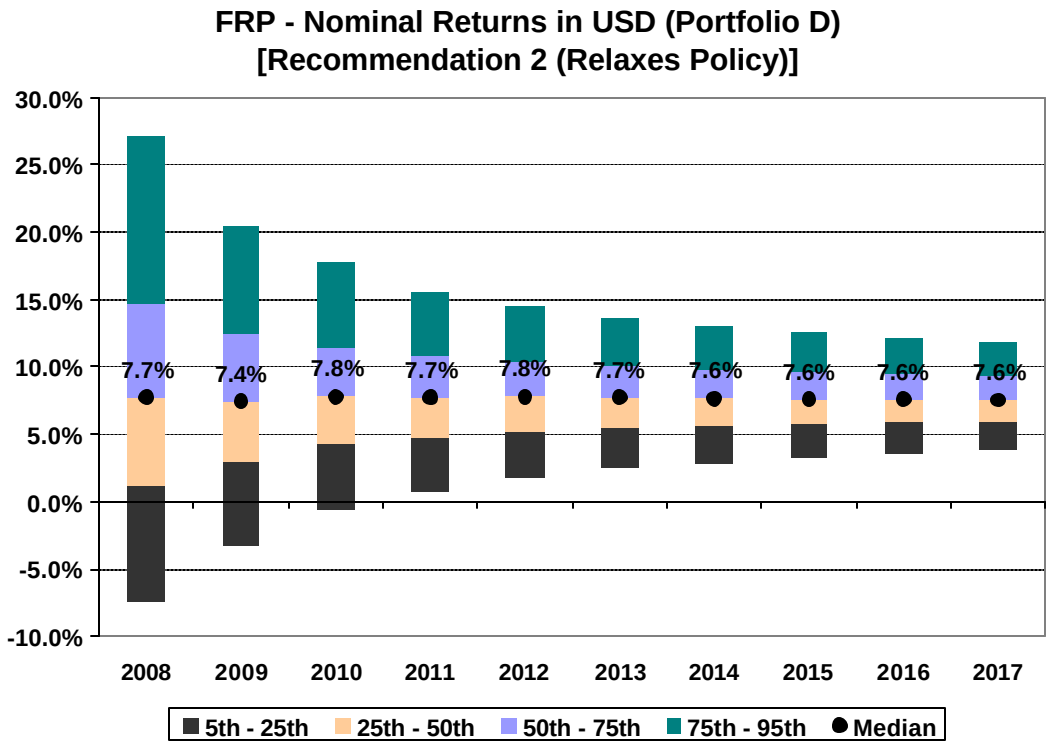
Portfolio A (Recommendation 1)
Terminal Value Projections



Observations

- The chart above shows the median terminal value of $14.7 billion for Portfolio A at the end of 2017, which is an increase of $1.3 billion from the current portfolio.
- Under the worst-case (5th percentile) scenario, represented by the lowest portion of the grey bars in the chart above, the terminal value of this portfolio (year 2017) will be $74 million higher if the current portfolio's asset allocation were changed to Portfolio A.
- Portfolio A can potentially achieve a terminal value of $23.1 billion, under the best-case (95th percentile) scenario, resulting in a $4.0 billion increase in terminal value relative to the current portfolio.
- Therefore, we recommend adopting Portfolio A as the Fund's asset allocation if the Ministry decides to maintain its current restriction of no more than 25% allocation to Global Equity and Corporate Bonds.

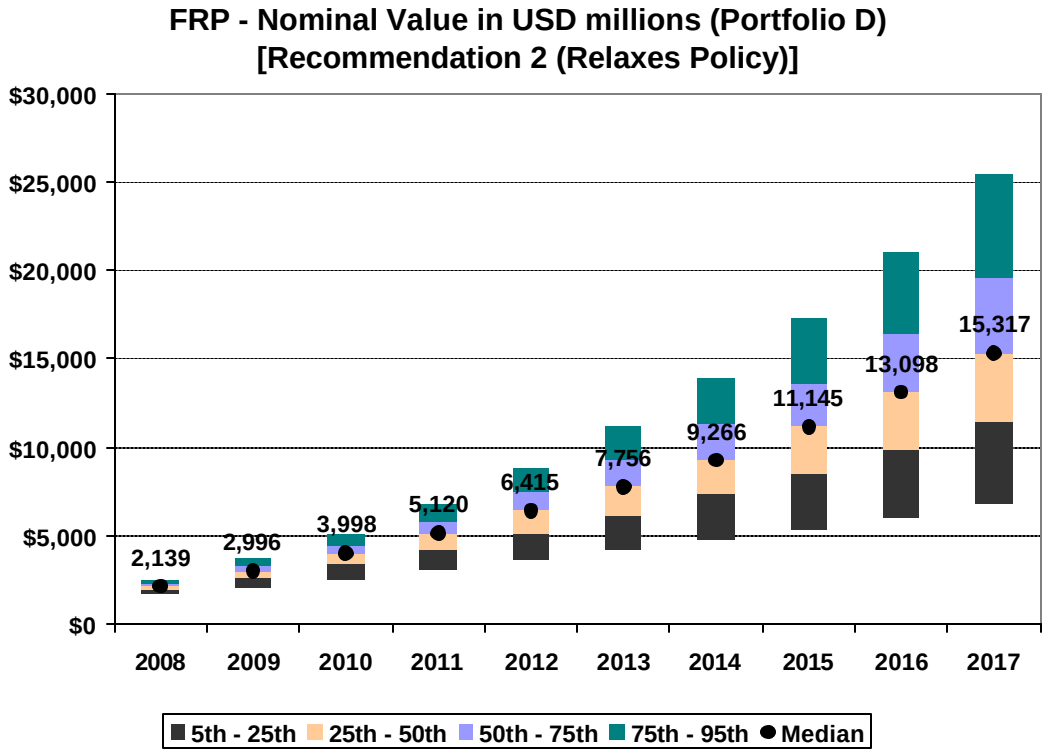
Portfolio D (Recommendation 2)
Return Projections



Observations

- We expect the annualized return of Portfolio D to reach 7.6% for the ten year projected period shown in the chart above, which is an increase of 2.9% from the current allocation.
- Even under the worst-case (5th percentile) scenario we expect to see a 0.2% increase in annualized returns for the ten-year period from Portfolio D relative to the current portfolio.
- Under the best-case (95th percentile) scenario, Portfolio D is projected to achieve a return of 11.9%, an increase in return of 5.7% relative to the current portfolio.
- Given that this portfolio has no outflow over the next ten years, we believe adopting Portfolio D's higher risk asset allocation to maximize the value of the FRP Fund is prudent.

Portfolio D (Recommendation 2)
Terminal Value Projections



Observations

- Portfolio D's asset value projection at the end of year 2017 is expected to be $15.3 billion, as shown by the chart above. By moving the asset allocation from where it is now to that of Portfolio D, the Fund is expected to increase in value by $1.9 billion at the end of year 2017.
- Under the worst-case (5th percentile) scenario, Portfolio D may be able to achieve a market value of $6.7 billion, an increase of approximately $60 million from the projection for the current portfolio.
- If the FRP were to adopt Portfolio D's asset allocation, it is expected to achieve a terminal value of $25.5 billion, under the best-case (95th percentile) scenario, compared to a value of $19.1 billion for the current portfolio.

6

Quantitative Analysis

Summary Monte-Carlo Simulation Results – All Variables

Five-Year Historical Results – Representative Market Indices

Fifteen-Year Historical Results – Representative Market Indices

Quantitative Analysis

Summary Monte-Carlo Simulation Results – Individual Variables

The medians in the actual Monte-Carlo simulations were as follows:

Variables	Absolute Return	Standard Deviation
Global Equity	9.6%	17.1%
Global Government Bonds - Short/Intermediate	4.7%	3.0%
Global Government Bonds - Long	5.2%	6.5%
Global Corporate Bonds - Short/Intermediate	5.1%	3.1%
Global Corporate Bonds - Long	5.7%	6.6%
Global TIPS	5.0%	3.7%
Global Cash/Enhanced Cash	4.0%	0.9%
Global Private Equity	12.2%	22.9%
Global Real Estate	8.0%	11.3%
Global Infrastructure	9.7%	17.0%
Global Absolute Return/ Opportunistic	7.0%	5.2%
U.S. Inflation	2.5%	1.2%
U.S. Nominal 10-Year	5.0%	0.8%
FX Chile	1.8%	11.5%
Chilean Inflation	3.1%	1.3%
Chilean Nominal GDP Growth	8.2%	3.0%
Chilean Nominal 10-Year	6.5%	1.1%
ROR Copper - U.S. Dollar	7.3%	26.2%
ROR Copper - Chilean Peso	8.8%	29.2%

The highlighted portion of the correlation matrix below shows that Mercer expects all of the recommended asset classes will have little to no correlation to the Chilean Government's sources of revenue, i.e. local GDP growth and copper price. Therefore, adopting a set of investment strategies from these asset classes should help the Ministerio de Hacienda reduce the cyclicality of Government expenditures.

Median Correlations – Ten-Year Results (forward looking)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Global Equity	1	1																		
Global Government Bonds - Short/Intermediate	2	0.07	1																	
Global Government Bonds - Long	3	0.08	0.98	1																
Global Corporate Bonds - Short/Intermediate	4	0.23	0.99	0.97	1															
Global Corporate Bonds - Long	5	0.30	0.95	0.97	0.98	1														
Global TIPS	6	0.14	0.20	0.18	0.19	0.16	1													
Global Cash/Enhanced Cash	7	0.01	0.46	0.27	0.43	0.26	0.16	1												
Global Private Equity	8	0.82	0.06	0.07	0.18	0.24	0.12	0.01	1											
Global Real Estate	9	0.63	0.03	0.03	0.12	0.16	0.09	0.03	0.50	1										
Global Infrastructure	10	0.80	0.04	0.05	0.17	0.22	0.12	0.03	0.65	0.49	1									
Global Absolute Return/Opportunistic	11	0.27	0.03	0.03	0.08	0.09	0.07	0.07	0.20	0.18	0.22	1								
U.S. Inflation	12	0.04	0.11	0.09	0.11	0.09	0.30	0.12	0.05	0.03	0.06	0.04	1							
U.S. Nominal 10-Year	13	-0.04	-0.31	-0.45	-0.30	-0.43	-0.04	0.60	-0.04	0.00	-0.02	0.01	0.04	1						
FX Chile	14	-0.02	-0.02	-0.02	-0.03	-0.01	-0.03	-0.05	-0.01	-0.01	-0.02	0.01	-0.02	-0.02	1					
Chilean Inflation	15	0.00	0.08	0.08	0.08	0.07	0.15	0.07	0.01	0.01	0.00	0.00	0.54	0.02	0.00	1				
Chilean GDP Growth	16	0.06	0.03	0.03	0.04	0.03	0.04	-0.02	0.09	0.05	0.09	0.06	0.17	-0.03	-0.01	0.37	1			
Chilean Nominal 10-Year	17	0.00	-0.20	-0.28	-0.20	-0.27	-0.02	0.32	-0.01	0.00	-0.01	0.00	0.02	0.55	0.04	0.00	-0.03	1		
ROR Copper - U.S. Dollar	18	0.12	0.01	0.01	0.02	0.03	0.01	0.02	0.11	0.08	0.09	0.03	0.03	0.01	-0.02	0.09	0.25	-0.02	1	
ROR Copper - Chilean Peso	19	0.09	-0.01	-0.01	0.01	0.02	0.01	0.00	0.10	0.06	0.09	0.04	0.02	-0.01	0.43	0.07	0.22	0.00	0.91	1

Five-Year Historical Results – Representative Market Indices

Risk-Return Results (as of June 30, 2007)

	MSCI AC World	Lehman Global Government 1-3 Years	Lehman Global Government 3+ Years	Lehman Global Corporate 1-3 Years	Lehman Global Corporate 3+ Years	Global Inflation Linked Bond	FTSE Global ERPA/NAREIT Index	Dow Jones Copper Index	Chilean GDP
1 Year - Return	16.42%	5.13%	5.37%	5.43%	5.88%	4.02%	32.66%	36.67%	5.84%
3 Year - Return	15.97%	3.22%	4.24%	3.37%	3.85%	4.07%	28.47%	43.83%	5.70%
5 Year - Return	11.68%	3.44%	5.42%	4.04%	6.16%	6.80%	27.00%	38.59%	5.00%
10 Year - Return	8.37%	N/A	N/A	N/A	N/A	N/A	13.67%	14.05%	4.01%
15 Year - Return	9.93%	N/A	N/A	N/A	N/A	N/A	14.57%	13.86%	5.06%
5 Year - Risk	16.19%	1.14%	3.69%	1.24%	3.98%	4.07%	15.10%	29.79%	6.01%
5 Year - Reward to Risk	0.72	3.03	1.47	3.25	1.55	1.67	1.79	1.30	0.83

Historical results vary depending on the time-period observed, which is driven by what part of the economic cycle that specific time period covers. For example, if we were to look at the five-year results, the time period which has data for all the indices presented, the equity returns are stronger than Mercer's assumptions while the fixed income results are weaker. This is primarily driven by the fact that this period covers the recovery part of the economic cycle when we would expect this type of result. However, we believe the assumptions should lie close to the midpoint of the uncertain distribution of actual outcomes for the return and risk characteristics of each asset class over the long-run in the future.

Trailing Correlation Analysis (as of June 30, 2007)*

		1	2	3	4	5	6	7	8	9
MSCI AC World	1	1								
Lehman Global Government 1-3 Years	2	-0.46	1							
Lehman Global Government 3+ Years	3	-0.42	0.84	1						
Lehman Global Corporate 1-3 Years	4	-0.24	0.90	0.81	1					
Lehman Global Corporate 3+ Years	5	-0.12	0.73	0.90	0.88	1				
Global Inflation Linked Bond	6	-0.37	0.70	0.91	0.72	0.85	1			
FTSE Global ERPA/NAREIT Index	7	0.75	-0.04	-0.06	0.10	0.16	0.02	1		
Dow Jones Copper Index	8	0.28	-0.18	-0.27	-0.16	-0.19	-0.11	0.26	1	
Chilean GDP	9	0.40	-0.22	-0.22	-0.20	-0.14	-0.27	0.24	0.05	1

*Calculated based on quarterly data.

The five-year correlation matrix shown above is also reflective of the time period of the analysis and corresponding market conditions. One example of this is the strong negative correlation between fixed income and equity, highlighted in blue. This is to be expected from this portion of the economic cycle since yields of fixed income securities have risen over this period leading to a decline in the price of bonds while strong GDP growth has propelled equity prices.

We provide longer-term historical returns, risk, and correlation analysis on the following page. This analysis covers a period of 15 years and includes representative asset classes, consistent with the broad asset classes considered in the model.

Fifteen-Year Historical Results – Representative Market Indices

Risk-Return Results (as of June 30, 2007)

	Global Equity	Global Government Bond	Cash/Enhanced Cash Index	Cash/Enhanced Cash Index	Global Real Estate	Copper Price	Chilean GDP Growth
	MSCI AC World	**Merrill Lynch Global Government Bond**	**Citrigroup U.S. 3-Month T-Bill**	**LIBOR 3-Month**	**FTSE Global ERPA/NAREIT Index**	**Dow Jones Copper Index**	**Chilean GDP Growth**
1 Year - Return	16.42%	6.60%	4.98%	5.33%	32.66%	36.67%	5.84%
3 Year - Return	15.97%	1.79%	3.33%	3.74%	28.47%	43.83%	5.70%
5 Year - Return	11.68%	7.40%	2.51%	2.81%	27.00%	38.59%	5.00%
10 Year - Return	8.37%	5.48%	3.67%	4.03%	13.67%	14.05%	4.01%
15 Year - Return	9.93%	6.46%	3.92%	4.27%	14.57%	13.86%	5.06%
15 Year - Risk	14.86%	6.66%	0.79%	0.84%	16.33%	25.83%	6.31%
15 Year - Reward to Risk Ratio	0.67	0.97	4.97	5.09	0.89	0.54	0.80

Trailing Correlation Analysis (as of June 30, 2007)*

		Global Equity	Global Government Bond	Cash/Enhanced Cash Index	Cash/Enhanced Cash Index	Global Real Estate	Copper Price	Chilean GDP Growth
		1	2	3	4	5	6	7
MSCI AC World	1	1						
Merrill Lynch Global Government Bond	2	-0.08	1					
Citrigroup U.S. 3-Month T-Bill	3	-0.07	-0.10	1				
LIBOR 3-Month	4	-0.04	-0.09	0.99	1			
FTSE Global ERPA/NAREIT Index	5	0.60	0.05	-0.18	-0.18	1		
Dow Jones Copper Index	6	0.15	-0.09	-0.15	-0.12	0.23	1	
Chilean GDP Growth	7	0.32	0.00	0.03	0.04	0.14	0.08	1

*Calculated based on quarterly data as of March 31, 2007

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Testing

Back Testing

Deterministic Economic Scenarios – Favorable and Unfavorable Environments

Sensitivity Analysis – Varying Correlation Analysis for Copper Price, Chilean GDP Growth, and Global Equity

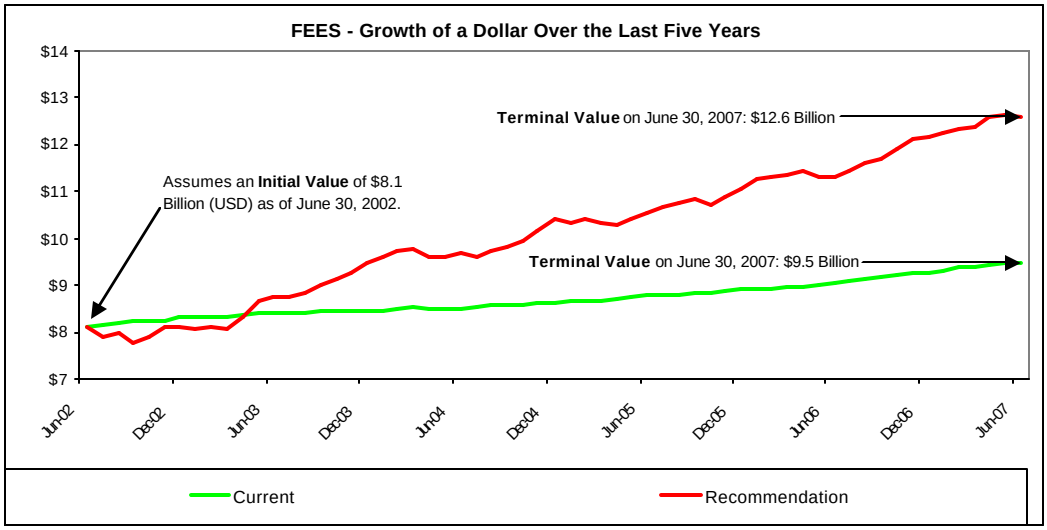
Testing

Back Testing

Summary 5-Year Results – Returns and Standard Deviation

FEES

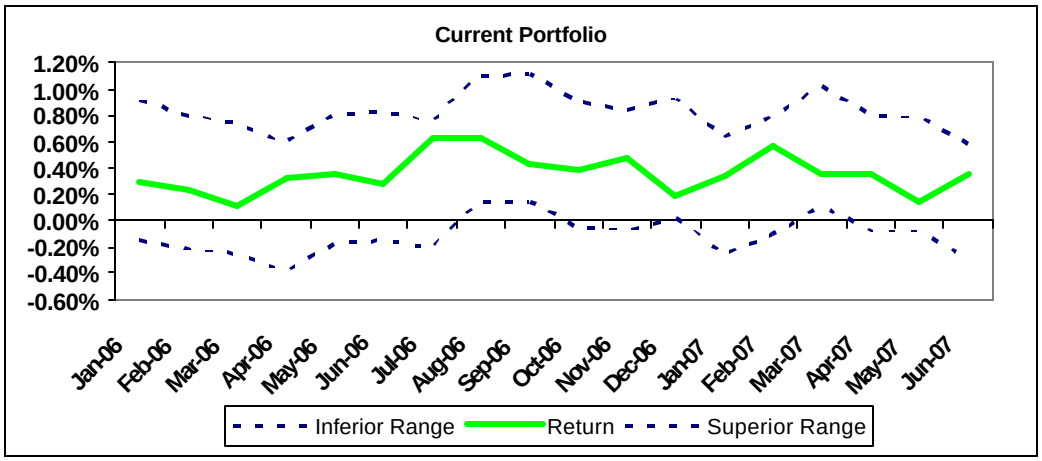
Growth of a Dollar – 2002 to 2007

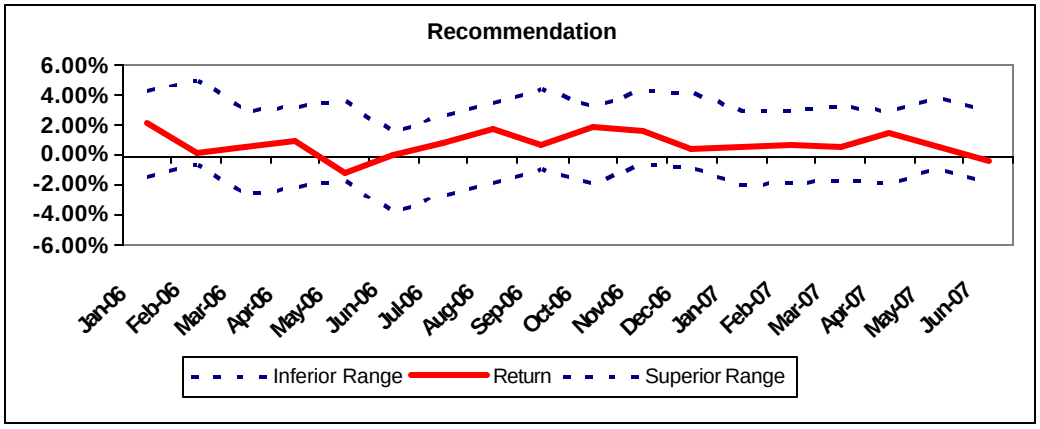


Descriptions/Observations

- This analysis represents the growth of assets over five years based on the historical returns of representative indices for each of the portfolios. It assumes an initial value of $8.1 billion (USD) as of June 30, 2002, and no contributions or distributions.
- The recommended mix for this Fund yielded an excess of $3.1 billion relative to the Current portfolio over the last five years.
- While we do not believe historical performance is a good indication of future results, this analysis helps illustrate the opportunity set afforded by the recommendations.

Back-Testing



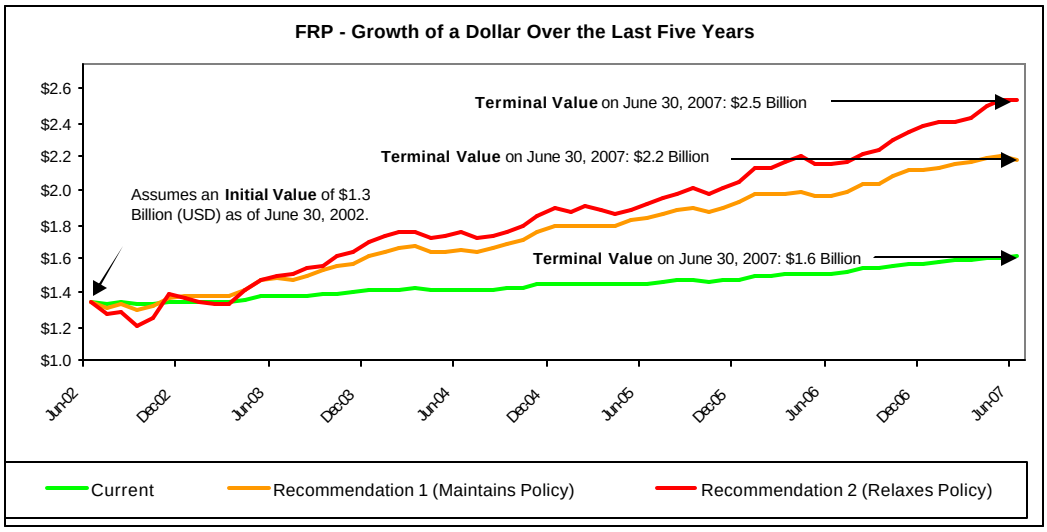


Descriptions/Observations

- This analysis includes a statistical representation of the portfolio's range of possible investment returns, assuming a normal distribution of returns. This analysis can be completed in many different ways, but for purposes of the illustration above, we used monthly return data and rolling five-year standard deviations. While these exhibits show a range of returns of one and one-half years, we actually covered a period of five years to calculate the rolling five-year standard deviations.
- The red line represents monthly returns ranging from January 2006 to June 2007. The dotted blue lines above and below the red line exhibit rolling 5-year standard deviation of returns over the prior month (also calculated using monthly frequency), which represent two standard deviations away from the mean and theoretically accounts for approximately 95% of possible return outcomes.
- If a return falls outside the dotted lines, it would constitute a two standard deviation event, which would represent higher than expected risk based on the historical experience.
- The historical return patterns above are in-line with expectations on a historical basis.

FRP

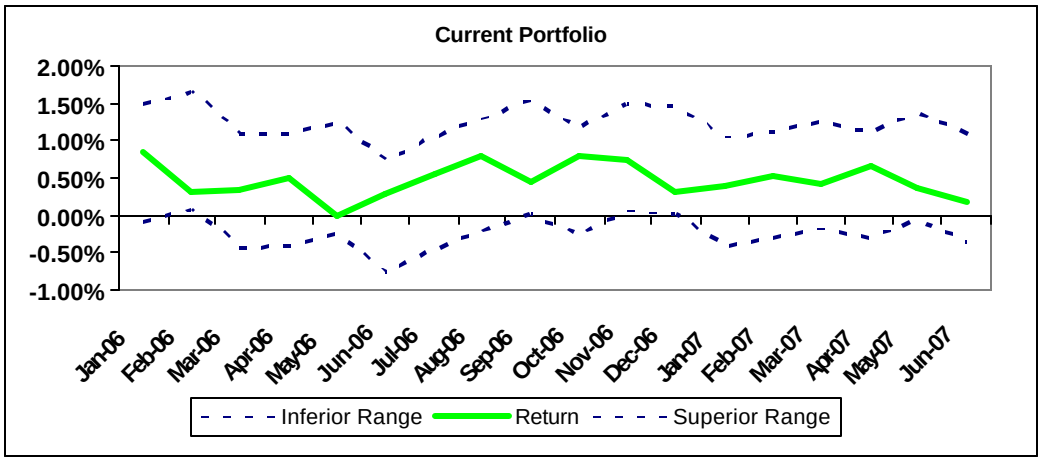
Growth of a Dollar – 2002 to 2007



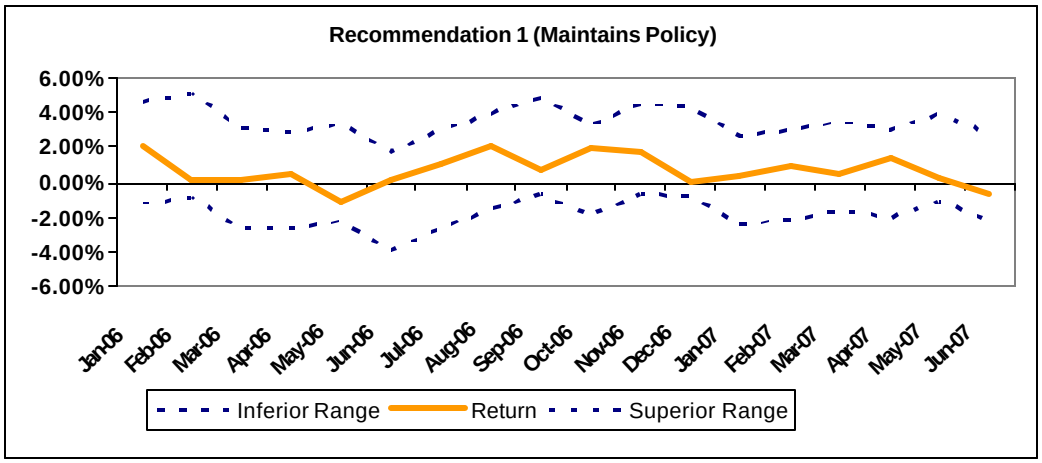
Descriptions/Observations

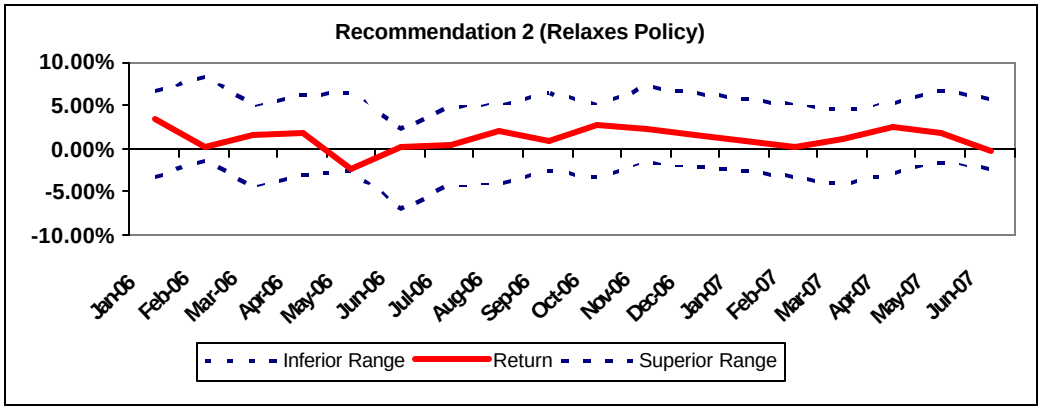
- This analysis represents the growth of assets over five years based on the historical returns of representative indices for each of the portfolios. It assumes an initial value of $1.3 billion (USD) as of June 30, 2002, and no contributions or distributions.
- If the investment restrictions were relaxed over this time period to reflect the recommendation for this program (Recommendation 2), the Fund would have realized an excess of $300 million over the last five years.
- As was mentioned in the FEES portfolio analysis, we do not believe historical performance is a good indication of future results; however, we think this analysis helps illustrate the opportunity set afforded by considering the introduction of riskier asset classes in the portfolio.

Back-Testing



Back-Testing





Descriptions/Observations

- This analysis includes a statistical representation of the portfolio's range of possible investment returns, assuming a normal distribution of returns. This analysis can be completed in many different ways, but for purposes of the illustration above, we used monthly return data frequency and rolling five-year standard deviations. While these exhibits show a range of returns of one and one-half years, we actually covered a period of five years to calculate the rolling five-year standard deviations.
- The red line represents monthly returns ranging from January 2006 to June 2007. The dotted blue lines above and below the red line exhibit rolling 5-year standard deviation of returns over the prior month (also calculated using monthly frequency), which represent two standard deviations away from the mean and theoretically accounts for approximately 95% of possible return outcomes.
- If a return falls outside the dotted lines, it would constitute a two standard deviation event, which would represent higher than expected risk based on the historical experience.
- The historical return patterns above are in-line with expectations on a historical basis.

Deterministic Economic Scenarios

Favorable and Unfavorable Environments

The exhibits that follow below summarize the nominal returns and market values of the current and recommended portfolios for both Funds. We provide commentary on the results on the following page.

FEES

	Returns and Terminal Values	Portfolios - FEES	
		Current	Recommendation
Expected Results	***Ideal Growth***		
	Average Nominal Return (USD)	4.0%	7.6%
	Terminal Value (USD) in Billions	$34.8	$34.8
	Average Nominal Return (CLP)	5.1%	8.7%
	Terminal Value (CLP) in Trillions	$ 20.0	$ 20.0
	Base Case		
	Average Nominal Return (USD)	4.6%	6.5%
	Terminal Value (USD) in Billions	$15.0	$15.0
	Average Nominal Return (CLP)	5.9%	7.8%
	Terminal Value (CLP) in Trillions	$ 8.8	$ 8.8
	Stagflation		
	Average Nominal Return (USD)	5.9%	5.5%
	Terminal Value (USD) in Billions	$2.3	$2.3
	Average Nominal Return (CLP)	9.0%	8.5%
	Terminal Value (CLP) in Trillions	$ 1.6	$ 1.6

FRP

	Returns and Terminal Values	Portfolios - FRP		
		Current	Recommendation 1 (Maintains Policy)	Recommendation 2 (Relaxes Policy)
Expected Results	***Ideal Growth***			
	Average Nominal Return (USD)	4.0%	7.4%	9.1%
	Terminal Value (USD) in Billions	$15.5	$17.6	$18.6
	Average Nominal Return (CLP)	5.0%	8.5%	10.2%
	Terminal Value (CLP) in Trillions	$ 9	$ 10	$ 11
	Base Case			
	Average Nominal Return (USD)	4.6%	6.3%	7.2%
	Terminal Value (USD) in Billions	$14.2	$15.5	$16.1
	Average Nominal Return (CLP)	5.9%	7.6%	8.5%
	Terminal Value (CLP) in Trillions	$ 8	$ 9	$ 9
	Stagflation			
	Average Nominal Return (USD)	5.9%	5.5%	5.0%
	Terminal Value (USD) in Billions	$6.3	$6.3	$6.2
	Average Nominal Return (CLP)	9.0%	8.5%	8.0%
	Terminal Value (CLP) in Trillions	$ 4	$ 4	$ 4

Favorable and Unfavorable Economic Environments

The exhibits on the previous page present the behavior of each of the portfolios under three economic scenarios, considering expected average returns in each environment and the resulting terminal value of each Fund. The results of this analysis are shown in nominal terms and are expressed in both USD and CLP terms. This analysis includes three different economic scenarios, as follows:

- Base Case – The base case assumes nominal GDP growth of 8% (5% real), inflation of 3% and copper price appreciation of 4% for each year.
- Ideal Growth – The ideal growth scenario assumes 11-12% nominal GDP growth, inflation of 2% and copper price appreciation of 4-10% for each year.
- Stagflation – The stagflation scenario assumes 0.5% to 5% nominal GDP growth, inflation of 4-5% and a decline in copper price of up to 15% in the first year to a price appreciation of 3% in the latter years.

The terminal value of each of the Funds is higher in the ideal growth environment, as we expected, given strong GDP growth and rising copper price expectations, leading to larger contributions to each of the Funds and stronger returns, which further bolster the ending value in the year 2017. Results for the recommended portfolios show more attractive results in terms of returns and terminal values.

The expected annual returns are initially high in the ideal growth scenario and then decrease in later years as the effects of strong GDP growth and lower interest rates get priced into various asset classes. The opposite effect is true in the stagflation environment.

Sensitivity Analysis

We conducted stress test analysis considering high, medium (base case), and low correlation assumptions between copper price, Chilean real GDP growth, and global equities. Here are the correlation assumptions tested in relation to copper price:

Asset Class Variables	**Correlation Assumptions**		
	Low	Medium	High
Chilean GDP Growth (Real)	0.03	0.21	0.27
Global Equity	0.05	0.29	0.47

We found there was no impact to the expected returns and volatility comparing the base case (medium) to the high and low correlation assumptions. However, we did notice an impact to contribution levels for FEES and FRP. Hence, we focused the analysis on the behavior of contribution patterns (cash inflows) for each for the Funds. The results are summarized below for the assumed high, medium, and low correlation sets tested in this analysis.

FEES

FEES - Total Contributions in USD millions (Correlation - High)

Iteration #	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
95th perc.	1,574.9	2,343.8	2,949.9	4,615.3	5,466.6	6,509.6	7,628.6	8,904.3	9,983.2	11,632.4
75th perc.	549.7	872.6	1,121.0	2,321.9	2,656.2	3,010.7	3,285.3	3,804.9	4,255.8	4,896.1
50th perc.*	0.0	0.0	0.0	796.4	978.9	970.8	954.6	1,148.5	1,263.6	1,602.3
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*median

FEES - Total Contributions in USD millions (Correlation - Base)

Iteration #	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
95th perc.	1,570.2	2,335.8	2,909.0	4,592.3	5,406.8	6,366.4	7,525.6	8,634.4	9,575.6	11,309.8
75th perc.	548.3	868.8	1,111.0	2,306.2	2,639.5	3,027.0	3,288.7	3,792.7	4,177.6	4,839.2
50th perc.*	0.0	0.0	0.0	794.9	977.2	974.8	955.3	1,151.4	1,285.5	1,603.9
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

FEES - Total Contributions in USD millions (Correlation - Low)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,555.9	2,282.9	2,798.6	4,461.2	5,218.2	6,021.0	7,070.2	8,273.4	9,125.6	11,042.0
75th perc.	534.0	847.3	1,098.7	2,243.9	2,568.8	2,950.2	3,221.9	3,714.0	4,160.0	4,802.4
50th perc.*	0.0	0.0	0.0	801.5	997.2	1,008.2	1,011.5	1,238.8	1,381.5	1,703.8
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*median

Observations:

- The difference in contributions between the *high* and *medium* correlations are small from the 25th to 75th percentiles. Only in the 75th to 95th percentiles do we begin to see more noticeable differences.
- By comparison, the expected contributions between *medium* and *low* correlation results is noticeable across a larger portion of the data range, from the 50th to 95th percentiles.
- The contribution levels for the *low* correlation set are the highest while contribution levels for the *high* correlation set of results are the lowest.
- As expected, the higher the correlation, the greater the range of contributions. As in portfolio theory, high correlation produces a higher variability of outcomes. When copper is more highly correlated with economic growth and equity returns, the investments globally do not offer as strong a diversification benefit. Under the high correlation scenarios, as copper prices increase rapidly, so does economic growth and global equity returns. Conversely, when copper prices decline, there is a higher probability of low economic growth (hence, low contributions) and lower equity returns.

FRP

FRP - Total Contributions in USD millions (Correlation - High)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	895.9	963.2	1,068.7	1,176.3	1,322.0	1,492.3	1,694.0	1,916.3	2,190.1	2,489.9
75th perc.	772.6	833.8	909.8	995.5	1,110.6	1,215.3	1,338.1	1,478.1	1,630.2	1,812.6
50th perc.*	699.6	747.7	806.9	878.0	952.8	1,011.6	1,081.5	1,187.7	1,265.7	1,386.3
25th perc.	577.0	416.2	410.0	404.2	441.5	462.8	501.5	542.2	571.3	656.5
5th perc.	276.8	280.9	295.3	306.7	317.3	328.9	342.7	347.2	364.3	370.6

*median

FRP - Total Contributions in USD millions (Correlation - Base)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	895.4	963.2	1,068.7	1,176.0	1,320.6	1,492.3	1,694.0	1,916.2	2,190.1	2,489.9
75th perc.	772.6	833.9	909.6	995.7	1,110.6	1,215.3	1,335.2	1,475.5	1,630.2	1,813.7
50th perc.*	699.9	746.8	806.9	878.0	953.7	1,012.6	1,081.8	1,187.7	1,267.9	1,386.0
25th perc.	578.0	410.1	414.3	409.6	444.2	468.5	509.8	544.2	577.0	659.8
5th perc.	277.0	280.9	295.3	307.4	317.3	329.0	344.4	347.8	364.5	371.3

*Median

FRP- Total Contributions in USD millions (Correlation - Low)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	895.4	964.1	1,068.7	1,175.8	1,320.6	1,492.2	1,693.6	1,916.2	2,190.1	2,480.4
75th perc.	772.7	834.2	909.4	996.4	1,109.5	1,214.3	1,333.6	1,474.5	1,624.2	1,806.9
50th perc.*	700.3	747.7	808.5	878.6	954.2	1,012.8	1,084.0	1,185.9	1,269.1	1,388.1
25th perc.	581.4	428.7	420.0	415.9	458.8	487.2	526.8	571.5	610.0	706.8
5th perc.	277.0	281.0	296.9	308.2	319.1	331.0	349.0	351.7	370.6	380.2

*median

Observations:

- The difference in contributions between the high, medium, and low correlation sets are less noticeable across the data range for the FRP.
- The pattern observed above is due to the fact that the contributions for the FRP are less sensitive to copper price and Chilean GDP growth, since this Fund is guaranteed at least 0.2% of the Chilean GDP in contributions each year regardless of economic circumstances in Chile.
- We see a similar pattern for FRP: as correlation of copper with economic growth and equity returns increases, the range of outcomes increases. Again this is consistent with standard portfolio theory that low correlation is desirable because it reduced portfolio volatility.

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Appendix

I. Broad Asset Allocation of Other National Pension Funds
II. Quantitative Methodology
III. Capital Markets Assumptions (CLP)
IV. Mean Variance Analysis (CLP)
V. Mean Variance Analysis (USD) Excluding Alternatives
VI. Mean Variance Analysis (CLP) Excluding Alternatives
VII. Monte-Carlo Simulation Results (USD)
VIII. Monte-Carlo Simulation Results (CLP)
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X. Discount Rate and Duration Calculations
XI. Proposed Implementation Strategy

I. Broad Asset Allocation of Other National Funds (based on most recent available public disclosures by each Fund)

	Fund Size (USD bn)	Equities (%)	Fixed Income (%)	Alternatives (%)	Cash/Other (%)
Aus Gov PF	7	70	18	10	2
Norwegian PF	300	40	60	-	-
New Zealand PF	10	50	15	35	-
Ireland PF	25	70	12	16	2
Japan PF	100	56	44	-	-

II. Quantitative Methodology – Historical Data and General Descriptions

Lagged Correlation Analysis - Summary Results

	T	T+1	T+2	T+3	T+4	T+5
Average Correlation	0.07	0.12	0.07	0.10	0.08	0.11
Std. Dev. Of Correlation	0.12	0.11	0.13	0.11	0.17	0.09

	T-1	T-2	T-3	T-4	T-5
Average Correlation	-0.01	-0.20	0.01	0.05	0.04
Std. Dev. Of Correlation	0.11	0.07	0.12	0.14	0.11

Range of Correlation (covering 95% of the data)*	-0.12 to 0.27

*Assuming a normal distribution.

This analysis shows rolling five-year correlations between the Dow Jones Copper Index and Chilean GDP growth. This analysis demonstrates that the correlation between these two factors has been weak historically, even when we lag one of the variables relative to the other. For example, T represents correlation calculations that used the same time period for the Dow Jones Copper Index and Chilean GDP growth (we also describe this as coincident correlation analysis). T+1 represents time periods where we lagged the Dow Jones Copper Index relative to Chilean GDP growth by one quarter, T+2 represents a lag of two quarters, and T+3 through T+5 follow the same pattern. Similarly, T-1 represents time periods where we lagged Chilean GDP growth relative to the Dow Jones Copper Index by one quarter, T-2 represents a lag of two quarters, and T-3 through T-5 follow a corresponding pattern.

Lagged Correlation Analysis (Dow Jones Copper Index$_t$ and Chilean GDP$_{t+y;\,t-y}$)

T	T+1	T+2	T+3	T+4	T+5
0.24	0.06	0.06	-0.08	0.32	-0.04
0.24	0.08	0.05	-0.09	0.32	-0.03
0.27	0.03	0.09	-0.09	0.36	0.01
0.15	0.09	0.07	0.04	0.38	0.07
0.16	0.10	0.03	0.06	0.40	0.08
0.16	0.10	0.06	0.12	0.44	0.02
0.11	0.14	0.12	0.15	0.37	0.08
0.11	0.15	0.11	0.25	0.25	0.06
0.12	0.15	0.18	0.17	0.25	0.05
0.08	0.29	0.18	0.00	0.17	0.15
0.09	0.31	0.16	-0.02	0.17	0.17
-0.01	0.17	0.08	0.18	0.02	0.10
-0.01	0.17	0.14	0.12	0.02	0.10
-0.03	0.22	0.11	0.10	0.01	0.12
-0.09	0.29	0.10	0.10	-0.08	0.18
-0.13	0.30	0.10	0.15	-0.12	0.19
-0.12	0.29	0.15	0.10	-0.11	0.19
-0.10	0.25	0.22	0.11	-0.04	0.17
0.00	0.17	0.23	0.10	0.03	0.07
-0.11	0.18	0.17	0.17	-0.11	0.11
-0.14	0.10	0.15	0.15	-0.08	0.08
-0.17	0.12	0.11	0.17	-0.10	0.13
-0.12	0.08	0.09	0.17	-0.09	0.05
0.10	0.05	0.18	-0.02	-0.08	0.01
0.10	0.04	0.20	-0.01	-0.07	0.02
0.14	-0.06	0.21	-0.02	-0.06	-0.04
0.08	-0.01	0.22	0.00	-0.09	0.02
0.19	0.00	0.25	-0.13	0.16	-0.03
0.17	0.05	0.10	0.10	0.10	0.05
0.15	0.15	-0.10	0.14	0.07	0.22
0.12	0.19	-0.11	0.19	0.00	0.24
0.13	0.19	-0.10	0.17	0.01	0.24
0.12	0.19	-0.16	0.25	0.00	0.25
0.12	0.17	-0.14	0.25	0.00	0.23
0.07	0.17	-0.13	0.27	-0.05	0.26
0.21	0.16	-0.10	0.03	0.13	0.26
0.20	0.19	-0.33	0.20	0.13	
0.23	-0.15	-0.05	0.21		
0.14	-0.09	-0.10			
0.04	-0.14				
0.05					

Lagged Correlation Analysis (Dow Jones Copper Index$_t$ and Chilean GDP$_{t+y;\,t-y}$) (Continued)

T-1	T-2	T-3	T-4	T-5
-0.27	-0.11	0.00	0.14	-0.10
-0.29	-0.15	0.01	0.13	-0.10
-0.18	-0.19	0.00	0.08	0.00
-0.15	-0.19	0.04	-0.01	-0.06
-0.11	-0.18	0.07	0.01	-0.13
-0.11	-0.19	0.06	0.01	-0.13
0.02	-0.10	0.04	-0.02	-0.02
0.03	-0.17	0.03	-0.07	-0.01
-0.08	-0.19	-0.05	-0.05	-0.03
-0.09	-0.27	-0.04	-0.07	-0.04
0.12	-0.24	0.00	-0.11	-0.02
0.05	-0.25	0.07	-0.15	-0.07
0.01	-0.29	0.11	-0.13	0.06
0.00	-0.27	0.12	-0.07	0.05
0.02	-0.24	0.04	0.00	0.20
-0.03	-0.19	-0.05	-0.12	0.17
0.03	-0.19	-0.11	-0.21	0.15
0.02	-0.24	-0.15	-0.22	0.16
0.13	-0.24	-0.11	-0.16	-0.02
0.11	-0.29	-0.13	0.01	-0.03
0.11	-0.26	-0.16	0.00	-0.04
0.14	-0.19	-0.17	0.05	-0.03
0.02	-0.19	-0.24	-0.01	-0.23
0.01	-0.07	-0.16	0.29	0.07
-0.01	-0.07	-0.17	0.23	0.11
0.01	0.01	-0.08	0.16	0.11
-0.24	-0.21	0.12	0.12	0.11
-0.09	-0.26	0.17	0.13	0.11
-0.07	-0.22	0.18	0.11	0.11
-0.04	-0.22	0.18	0.11	0.14
-0.04	-0.26	0.17	0.10	0.04
0.04	-0.25	0.18	0.28	0.23
0.04	-0.25	0.14	0.24	0.16
0.09	-0.19	0.18	0.29	0.13
-0.07	-0.35	-0.07	0.24	0.21
0.07	-0.14	0.02	0.20	0.19
0.05	-0.16	0.01	0.20	
0.05	-0.19	0.01		
0.16	-0.16			
0.14				

About Mercer's Capital Market Simulator

Mercer's Capital Markets Simulator (CMS) is used to generate economic and capital market variables to be used in simulation work in asset/liability and asset allocation assignments.

The model has two parts to the generation of data:
1. Part 1 generates all of the "basic" variables: inflation, yields, economic/earnings growth, for each country or region being modeled.
2. Part 2 takes these basic results and recasts them into the final variables needed for analysis.

Mercer Global Economic & Capital Market Model

Basic Description

Mercer's global economic model is used to analyze and simulate the capital markets.

Important Features

Some of the important features of the Mercer model are the following:

1. By generating bond yields directly, these yields can be used to calculate bond returns and liability discount rates. This ensures consistency between calculation of asset classes and valuation of liabilities when necessary.

2. It is a global model. By specifying several countries and/or regions, inflation, economic growth, and inflation are generated simultaneously across all regions. This allows for consistency in determination of exchange rates as well as correlation between regions.

3. Equity returns are determined by earnings growth, dividend yields, and changes in P/E ratios. This approach is consistent with the prevailing economic theory of equity valuation: the dividend discount model.

4. The model relies upon both *growth* functions and *yield* functions. These equations are very similar, but they have one huge difference: growth functions can have negative values, while yield functions can never generate a negative value. Thus, yield functions are ideal for modeling interest rates since they never allow interest rates to become negative; and growth functions are ideal for inflation, earnings growth, and real wages.

By adjusting the parameters of the model, scenario analysis permits a better understanding of what can cause adverse events in the capital markets.

In general, the model follows the following broad steps.

Step 1. Generate Inflation
Inflation is calculated simultaneously across countries and regions being modeled. The proper correlation is taken into account between the regions. Inflation can be modeled several ways and a full discussion of the different techniques is presented later.

Step 2. Generate Economic/Earnings Growth
This is real (net of inflation) economic growth, which is determined by inflation variables, expected long run growth, and lagged growth. Growth across countries and regions is determined simultaneously with the proper correlation taken into account between the regions.

Earnings growth for the different equity asset classes is determined directly from economic growth. It is normally set up as linear function of economic growth and the error terms can be handled by a correlated random variable.

Step 3. Generate Real Wage Growth
Real wage growth is determined as a function of inflation and real economic growth. This can be correlated across regions.

Step 4. Generate Real, Nominal, and Equity Yields
One key yield for each of real, nominal, and equity yields are generated simultaneously across all regions, which means that correlation between the three within a region as well as across regions is taken into account. For the U.S., these key yields are the 30-year Treasury bond yield, the 30-year inflation-indexed bond yield (TIPS), and the S&P 500 equity yield.

Note that the equity yield is the inverse of the P/E. Hence, we are modeling an important component of the equity market. As a side calculation, the dividend yield is calculated based upon the errors terms used for the equity yields.

Step 5. Construct Yield Curves
The nominal and real yield curves are constructed. The long-term values for each point on the yield curve as well as the relative volatilities are used. Using this approach, it is possible to generate inverted yield curves.

Step 6. Calculate government bond returns
The returns for government bonds can be calculated precisely given the beginning-of-year yields and end-of-year yields.

Step 7. Calculate Equity Returns
Equity returns are exactly determined by earnings growth, changes in equity yields, and the dividend yield.

As a side calculation, corporate bond yields can be set as a function of equity returns. As equity returns rise above average, corporate spreads over treasuries decline; when equity returns are below average, corporate spreads rise. Once corporate bond yields have been determined, returns for corporate bonds can be calculated.

Step 8. Determine Exchange Rates
The default setting we recommend for determination of exchange rates is interest rate parity theory. This means that exchange rates are expected to change to equalize expected returns across regions. A random variable is added to this change. Another method of modeling exchange rates is purchasing power parity, in which exchange rates change around a predefined amount. An extreme case of this is purely random exchange rates.

Step 9. Compute international returns
Given the local returns of equity and fixed income in each region and the changes in exchange rates, we can compute the returns of international investing for each region.

Modeling Inflation

There are several ways to model inflation. Each has features that are appealing, but each also has features that are not satisfactory. The three specific models of inflation are:

1. *Mean-reverting, serially correlated growth function.* In this process, this year's inflation is determined by last year's inflation and the long run expected value (mean) of inflation. Inflation generated by this process produces very symmetric inflation series with correct serially correlated values. Since inflation typically exhibits high serial correlation, this process is attractive for modeling stable inflation environments. However, this process never produces huge jumps in inflation or hyperinflation.

2. *Actual inflation* is a random variable around expected inflation, and expected inflation is measured by the difference between nominal and real interest rates at the beginning of the year. Theoretically, this process has a great deal of economic appeal, as it stipulates that investors use the capital markets to reveal expected inflation. In practice, this process can easily produce hyperinflation. However, the problems of using such an approach are that inflation typically loses any serial correlation and when a hyperinflation occurs, it never stops. I.e., there is no mean-reverting process to inflation.

3. A *modified mean-reverting, serially correlated yield function.* By modifying the general yield functions, we can bring back serial correlation and set an upper bound to hyperinflations. However, this process still has some faults. It has the reverse property of the second method: once an economy falls into a low inflation environment, it never comes out of it and continues to experience year and after year of negligible inflation.

Each of these methods for modeling inflation has its advantages and disadvantages. The growth function process produces very predictable ranges of inflation, but fails to ever simulate a hyperinflation. The second method listed above can produce episodes of hyperinflation, but these hyperinflations never revert back to normal inflation levels. This method also produces too little serial correlation. The third method listed above produces too little changes in inflation from year-to-year, but possess appealing serial correlation characteristics. In practice, we used scenario analysis to evaluate the sensitivity of each strategy to various types of inflation environments.

Mean-Reverting, Serially Correlated Functions

Many of the variables generated in Mercer's model are mean-reverting, serially correlated, lognormally distributed random variables. What this means is that a random variable is determined by the following factors:

- Long-term mean: This is the long-term trend towards which the variable reverts when it starts to deviate from the long-term mean. For example, the 30-year treasury yield may be set to have a long-term mean of 5.50%. If interest rates go up to 7.0%, then the equation is designed to pull yields back towards 5.50% over time by a certain amount.

- Lagged value: Last year's value partially determines this year's value.

Listed below is a general "yield function"

$$\ln(Y_t) = b1_Y \cdot \ln\left(\frac{1+AI_t}{1+m_{AI}}\right) + b2_Y \cdot \ln\left(\frac{1+AI_t}{1+AI_{t-1}}\right) + b3_y \cdot \ln\left(\frac{1+EG_t}{1+m_{EG}}\right) + b4_y \cdot \ln\left(\frac{1+EG_t}{1+EG_{t-1}}\right)$$

$$+ (1-\mathrm{r_Y}) \cdot \ln \mathrm{Y_{t-1}} + \mathrm{r_Y} \cdot \ln m_{\mathrm{Y}} + e_{\mathrm{Y,t}}$$

The mean-reversion, serial correlation component is shown in the second line of the equation.

The term $\mathrm{r_Y}$ is the mean-reversion factor. For example if $\mathrm{r_Y}$ is set at 0.7, then 70% of the new value of the variable is determine by the logarithm of its mean (m_{Y}) and 30% by the logarithm of its lagged value.

The first line of the equation specifies how sensitive the variable is to mean-inflation, lagged inflation, the actual inflation (AI), and economic growth factors (EG). By setting the b1, b2, b3, and b4 coefficients to zero, inflation and economic growth could have no effect on the variable.

The above equation is called a yield equation because in its particular form, no negative values can result. This is perfect for modeling interest rates, as it sets a lower bound for interest rates at zero. A slightly different form of this equation is called a "growth function" and it allows for negative values of the variable. This form of the equation is suited to modeling actual inflation, economic growth, earnings growth, and wage growth, since these could all be negative.

Summary

The Mercer global economic model of the capital markets goes beyond the typical mean-variance modeling of asset classes. By explicitly modeling interest rates, earnings yields, and earnings growth, as well as doing this simultaneously across several countries or regions, we derive a more realistic model of the capital markets.

Mathematical Formulation

This portion of the appendix covers the mathematical formulation of all calculations of CMS.

General Description

The general process for generating the economic and capital market inputs for the Mercer Global Asset/Liability Model is:

- Generate the actual inflation for an economy based on beginning of year real and nominal interest rates and cross-correlation with other countries. (An option is available to model actual inflation as a mean-reverting, serially correlated process instead.)
- Generate real equity/earnings growth for the year based on inflation factors, mean-reversion and serial correlation factors, and cross-correlation with other countries.
- Generate real wage growth for the year based on actual inflation factors, real equity/earnings growth factors, mean-reversion and serial correlation factors.
- Generate the 30-year nominal yield, the 30-year real yield and the equity/earnings yield based on inflation and real earnings/economic growth factors, mean-reversion and serial correlation factors, and cross-country correlation factors.
- Compute the rest of the yield curve. The current model uses the Bader-Finney process for generating the rest of the real and nominal yields.
- Compute actual returns for nominal and real par bonds on each point modeled on the yield curves.
- Generate changes in exchange rates based on interest rate parity or inflation parity conditions.

  These outputs should be sufficient for modeling of multiple countries or multiple regions for asset liability work.

Model Generalities

In general, the model relies upon two types of equations:

- Growth rate equations that determine actual inflation (optional), real earnings/economic growth, and real wage growth. These equations are constructed so that growth rates can become negative.

- Yield equations that determine real yields, nominal yields, and equity yields.

The general form of the growth rate for variable X in year t is:

$$\ln(1+X_t) = b1_x \cdot \ln\left(\frac{1+AI_t}{1+m_{AI}}\right) + b2_x \cdot \ln\left(\frac{1+AI_t}{1+AI_{t-1}}\right) + b3_x \cdot \ln\left(\frac{1+EG_t}{1+m_{EG}}\right) +$$

$$b4_x \cdot \ln\left(\frac{1+EG_t}{1+EG_{t-1}}\right) + (1-r_x) \cdot \ln(1+X_{t-1}) + r_x \cdot \ln(1+m_x) + e_{x,t} \quad (1)$$

where AI_t is actual inflation in year t,

m_{AI} is the long run value (mean) of actual inflation,

m_{EG} is the long run value (mean) of real earnings/economic growth,

r_x is the mean reverting rate for X,

$b1_x$ and $b2_x$ are coefficients defining the direction and speed of adjustment of X to actual inflation, long run inflation, and lagged inflation,

$b3_x$ and $b4_x$ are coefficients defining the direction and speed of adjustment of X to real earnings growth, long run earnings/economic growth, and lagged earnings/economic growth,

m_X is the long run value (mean) of X, and

$e_{x,t}$ is the appropriate error term.

Growth rate functions have the following properties:

- They are mean-reverting, serially correlated, logarithmically distributed.
- Because the logarithm is based on the "wealth relative" value $(1+X_t)$, the variable can be negative.

Yield functions follow a similar form:

$$\ln(Y_t) = b1_Y \cdot \ln\left(\frac{1+AI_t}{1+m_{AI}}\right) + b2_Y \cdot \ln\left(\frac{1+AI_t}{1+AI_{t-1}}\right) + b3_y \cdot \ln\left(\frac{1+EG_t}{1+m_{EG}}\right) + b4_y \cdot \ln\left(\frac{1+EG_t}{1+EG_{t-1}}\right)$$

$$+ (1-r_Y) \cdot \ln Y_{t-1} + r_Y \cdot \ln m_Y + e_{Y,t} \qquad (2)$$

Yield functions are similar to growth functions in that they are mean-reverting, serially correlated and logarithmically distributed, but because of their form, they can never be negative.

Model Specifics

Inflation is modeled off expected inflation as revealed by the difference between the 3-month nominal yield and 3-month real yield:

$$AI_t = \frac{1+I_{3m,t-1}}{1+RY_{3m,t-1}} + e_{AI,t} \qquad (3)$$

Earnings/economic growth is similarly simplified to:

$$\ln(1+EG_t) = b1_{EG} \cdot \ln\left(\frac{1+AI_t}{1+m_{AI}}\right) + b2_{EG} \cdot \ln\left(\frac{1+AI_t}{1+AI_{t-1}}\right) +$$

$$(1-r_{EG}) \cdot \ln(1+EG_{t-1}) + r_{EG} \cdot \ln(1+m_{EG}) + e_{EG,t} \qquad (4)$$

Inflation is mean reverting, serially correlated, and lognormally distributed.

The following variables and their functional form are modeled:

AI_t = actual inflation	Deterministic or growth function
EG_t = real earnings/economic growth	Growth function
RW_t = real wage growth	Growth function
$RY_{30,t}$ = real yield on 30-year inflation indexed bond	Yield function
$RY_{10,t}$ = real yield on 10-year inflation indexed bond	Deterministic
$RY_{5,t}$ = real yield on 5-year inflation indexed bond	Deterministic
$RY_{3m,t}$ = real yield on 3-month inflation indexed bond	Deterministic
$I_{30,t}$ = nominal yield on the 30-year government bond	Yield function
$I_{10,t}$ = nominal yield on the 10-year government bond	Deterministic
$I_{5,t}$ = nominal yield on the 5-year government bond	Deterministic
$I_{3m,t}$ = nominal yield on the 3-month government bond	Deterministic
EY_t = equity (earnings) yield	Yield function
ED_t = equity dividend yield	Yield function

These variables may have error terms that are correlated. The cholesky decomposition of the correlation matrix is used in stochastic simulation.

Nominal bond returns are determined by the same method as identified in Bader and Finney (1997).

The returns for inflation index bonds are determined by substituting real yields for nominal yields and multiplying the result by $(1+AI_t)$.
Equity returns are determined by the following equation:

$$R_{EQ,t} = (1+AI_t)\cdot(1+EG_t)\cdot(1+ED_t)\cdot\frac{EY_{t-1}}{EY_t} - 1 \qquad (5)$$

Alternative Formation of Inflation:

Actual inflation is a simplified form of the general growth equation:

$$\ln(1+AI_t) = (1-r_{AI})\cdot\ln(1+AI_{t-1}) + r_{AI}\cdot\ln(1+m_{AI}) + e_{AI,t} \qquad (6)$$

Exchange Rates. We can model exchange rates using interest rate parity or inflation parity between two countries. Let the 3-month yield in Country A at the end of year t be designated as $I_{a,3m,t}$ and the inflation rate in year t be designated as $AI_{a,t}$. Using interest parity, the change in the exchange rate between Country A and Country B is defined as:

$$FX_{ab,t} = \frac{1 + I_{a,3m,t-1}}{1 + I_{b,3mt-1}} - 1 + e_{FXab,t} \quad (7)$$

Under the inflation parity assumption:

$$FX_{ab,t} = \frac{1 + AI_{a,3m,t}}{1 + AI_{b,3m,t}} - 1 + e_{FXab,t} \quad (8)$$

Intercountry Correlation. Correlation between two countries is modeled through correlation of the error terms. This is done in stages as follows:

- Determine actual inflation as implied in Equation 3, but with $e_{a,AI,t}$ now correlated now correlated with $e_{b,AI,t}$.
- Determine real economic/earnings growth as implied in Equation 4, but with $e_{a,PG,t}$ now correlated now correlated with $e_{b,PG,t}$. [Note the correlation between inflation errors terms and productivity error terms need not be the same.]
- Determine real and nominal bond yields and equity yields as implied in Equation 5, but now with a cross-correlation matrix.

III. Capital Markets Assumptions in Chilean Peso Terms

The information below refers to the mean variance analysis in CLP

Asset Class		Absolute Return	Standard Deviation
Global Equity	1	10.4%	15.0%
Global Government Bonds - Short/Intermediate	2	6.4%	11.0%
Global Government Bonds - Long	3	6.8%	12.0%
Global Corporate Bonds - Short/Intermediate	4	6.9%	11.0%
Global Corporate Bonds - Long	5	7.7%	12.0%
Global TIPS	6	6.7%	11.5%
Global Cash/Enhanced Cash	7	5.5%	10.5%
Global Private Equity	8	13.2%	25.9%
Global Real Estate	9	8.9%	12.5%
Global Infrastructure	10	10.4%	17.7%
Global Absolute Return/Opportunistic	11	8.4%	11.5%

		1	2	3	4	5	6	7	8	9	10	11
Global Equity	1	1										
Global Government Bonds - Short/Intermediate	2	0.00	1									
Global Government Bonds - Long	3	0.00	0.96	1								
Global Corporate Bonds - Short/Intermediate	4	0.00	0.98	0.95	1							
Global Corporate Bonds - Long	5	0.00	0.95	0.97	0.94	1						
Global TIPS	6	0.00	0.95	0.97	0.94	0.96	1					
Global Cash/Enhanced Cash	7	0.00	0.97	0.93	0.97	0.91	0.90	1				
Global Private Equity	8	0.75	0.00	0.00	0.00	0.00	0.00	0.00	1			
Global Real Estate	9	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.55	1		
Global Infrastructure	10	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.30	1	
Global Absolute Return/Opportunistic	11	0.30	0.10	0.10	0.10	0.10	0.10	0.10	0.20	0.20	0.20	1

IV. Expected Return and Risk Characteristics of Candidate Portfolios in Chilean Peso Terms (Mean Variance Analysis)

Candidate Portfolios in CLP Terms - Shown for Illustrative Purposes Only (The recommendations appear in the Executive Summary)

FEES – Asset Only

	Current	Potential Portfolio Considering Model in CLP
Global Equity	0.00%	33.00%
Gbl Gov't Bonds - Short/Intermediate	66.30%	0.00%
Gbl Gov't Bonds - Long	0.00%	0.00%
Gbl Corp Bonds - Short/Intermediate	0.00%	30.00%
Gbl Corp Bonds - Long	0.00%	25.00%
Gbl Inflation Indexed Bonds	3.50%	0.00%
Gbl Cash/Enhanced Cash	30.20%	0.00%
Gbl Private Equity	0.00%	0.00%
Gbl Real Estate	0.00%	5.00%
Gbl Infrastructure	0.00%	2.00%
Gbl Absolute Return/Opportunistic	0.00%	5.00%
Expected Return (Arithmetic)	6.10%	8.49%
Standard Deviation	10.78%	8.51%
Expected Return (Geometric)	5.55%	8.16%
Max Annual Loss @ 95% Confidence Interval	**-11.63%**	**-5.51%**
Probability of Less Than 0% Return - One Year	**30.32%**	**16.60%**
Probability of Less Than 0% Return - Three Years	**18.61%**	**4.65%**
Probability of Less Than 0% Return - Five Years	**12.46%**	**1.50%**
Probability of Less Than 0% Return - Ten Years	**5.16%**	**0.11%**

FRP – Asset Only

	Current	Potential Portfolio Considering Model in CLP (1)	Potential Portfolio Considering Model in CLP (2)
Global Equity	0.00%	25.00%	70.00%
Gbl Gov't Bonds - Short/Intermediate	65.60%	0.00%	0.00%
Gbl Gov't Bonds - Long	0.00%	60.00%	0.00%
Gbl Corp Bonds - Short/Intermediate	0.00%	0.00%	0.00%
Gbl Corp Bonds - Long	0.00%	0.00%	15.00%
Gbl Inflation Indexed Bonds	3.40%	0.00%	0.00%
Gbl Cash/Enhanced Cash	31.00%	0.00%	0.00%
Gbl Private Equity	0.00%	5.00%	5.00%
Gbl Real Estate	0.00%	5.00%	3.00%
Gbl Infrastructure	0.00%	2.00%	2.00%
Gbl Absolute Return/Opportunistic	0.00%	3.00%	5.00%
Expected Return (Arithmetic)	6.09%	8.25%	9.97%
Standard Deviation	10.77%	9.11%	12.28%
Expected Return (Geometric)	5.55%	7.86%	9.29%
Max Annual Loss @ 95% Confidence Interval	**-11.63%**	**-6.74%**	**-10.22%**
Probability of Less Than 0% Return - One Year	**30.01%**	**19.10%**	**22.21%**
Probability of Less Than 0% Return - Three Years	**18.20%**	**6.50%**	**9.26%**
Probability of Less Than 0% Return - Five Years	**12.06%**	**2.53%**	**4.36%**
Probability of Less Than 0% Return - Ten Years	**4.87%**	**0.29%**	**0.78%**

FRP – Asset/Liability

	Current	Potential Portfolio Considering Model in CLP (1)	Potential Portfolio Considering Model in CLP (2)
Global Equity	0.00%	25.00%	70.00%
Gbl Gov't Bonds - Short/Intermediate	65.60%	0.00%	0.00%
Gbl Gov't Bonds - Long	0.00%	60.00%	0.00%
Gbl Corp Bonds - Short/Intermediate	0.00%	0.00%	0.00%
Gbl Corp Bonds - Long	0.00%	0.00%	15.00%
Gbl Inflation Indexed Bonds	3.40%	0.00%	0.00%
Gbl Cash/Enhanced Cash	31.00%	0.00%	0.00%
Gbl Private Equity	0.00%	5.00%	5.00%
Gbl Real Estate	0.00%	5.00%	3.00%
Gbl Infrastructure	0.00%	2.00%	2.00%
Gbl Absolute Return/Opportunistic	0.00%	3.00%	5.00%
Expected Surplus Return (Arithmetic)	-4.64%	-2.49%	-0.76%
Surplus Standard Deviation	48.44%	49.55%	51.36%
Expected Surplus Return (Geometric)	-14.99%	-13.07%	-11.86%

Behavior of Strategic Allocations Identified in USD Terms in CLP Mean Variance Space – Shown for Illustrative Purposes Only

FEES – Asset Only

	Current	Eff Same	A	B	C	D (Recommendation)	E
Global Equity	0.00%	0.15%	10.00%	15.00%	20.00%	25.00%	30.00%
Gbl Gov't Bonds - Short/Intermediate	66.30%	3.07%	0.00%	0.00%	0.00%	0.00%	0.00%
Gbl Gov't Bonds - Long	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Gbl Corp Bonds - Short/Intermediate	0.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%
Gbl Corp Bonds - Long	0.00%	0.00%	6.00%	10.00%	13.00%	17.00%	20.00%
Gbl Inflation Indexed Bonds	3.50%	10.92%	39.00%	30.00%	22.00%	13.00%	5.00%
Gbl Cash/Enhanced Cash	30.20%	43.94%	0.00%	0.00%	0.00%	0.00%	0.00%
Gbl Private Equity	0.00%	1.51%	4.00%	5.00%	5.00%	5.00%	5.00%
Gbl Real Estate	0.00%	3.41%	4.00%	3.00%	3.00%	3.00%	3.00%
Gbl Infrastructure	0.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Gbl Absolute Return/Opportunistic	0.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Expected Return (Arithmetic)	6.10%	6.54%	7.68%	7.95%	8.16%	8.39%	8.61%
Standard Deviation	10.78%	9.50%	9.00%	8.83%	8.71%	8.70%	8.78%
Expected Return (Geometric)	5.55%	6.11%	7.31%	7.59%	7.81%	8.04%	8.25%
Max Annual Loss @ 95% Confidence Interval	**-11.63%**	**-9.09%**	**-7.11%**	**-6.57%**	**-6.16%**	**-5.91%**	**-5.84%**
Probability of Less Than 0% Return - One Year	**30.32%**	**25.99%**	**20.83%**	**19.50%**	**18.48%**	**17.75%**	**17.37%**
Probability of Less Than 0% Return - Three Years	**18.61%**	**13.25%**	**7.97%**	**6.83%**	**6.01%**	**5.46%**	**5.18%**
Probability of Less Than 0% Return - Five Years	**12.46%**	**7.51%**	**3.46%**	**2.73%**	**2.24%**	**1.93%**	**1.78%**
Probability of Less Than 0% Return - Ten Years	**5.16%**	**2.09%**	**0.51%**	**0.33%**	**0.23%**	**0.17%**	**0.15%**

FRP – Asset Only

	Current	A Recommendation 1 (Maintains Policy)	B	C	D Recommendation 2 (Relaxes Policy)	E
Global Equity	0.0%	25.0%	25.0%	45.0%	50.0%	60.0%
Gbl Gov't Bonds - Short/Intermediate	65.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Gbl Gov't Bonds - Long	0.0%	30.0%	0.0%	0.0%	0.0%	0.0%
Gbl Corp Bonds - Short/Intermediate	0.0%	0.0%	60.0%	40.0%	35.0%	25.0%
Gbl Corp Bonds - Long	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Gbl Inflation Indexed Bonds	3.4%	30.0%	0.0%	0.0%	0.0%	0.0%
Gbl Cash/Enhanced Cash	31.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Gbl Private Equity	0.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Gbl Real Estate	0.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Gbl Infrastructure	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%
Gbl Absolute Return/Opportunistic	0.0%	3.0%	5.0%	5.0%	5.0%	5.0%
Expected Return (Arithmetic)	6.09%	8.20%	8.26%	8.96%	9.13%	9.48%
Standard Deviation	10.77%	8.95%	8.57%	9.47%	9.90%	10.95%
Expected Return (Geometric)	5.55%	7.84%	7.92%	8.55%	8.68%	8.93%
Max Annual Loss @ 95% Confidence Interval	**-11.63%**	**-6.52%**	**-5.84%**	**-6.62%**	**-7.16%**	**-8.54%**
Probability of Less Than 0% Return - One Year	**30.01%**	**18.77%**	**17.47%**	**18.06%**	**18.75%**	**20.47%**
Probability of Less Than 0% Return - Three Years	**18.20%**	**6.23%**	**5.26%**	**5.69%**	**6.22%**	**7.65%**
Probability of Less Than 0% Return - Five Years	**12.06%**	**2.37%**	**1.82%**	**2.06%**	**2.36%**	**3.26%**
Probability of Less Than 0% Return - Ten Years	**4.87%**	**0.25%**	**0.15%**	**0.19%**	**0.25%**	**0.45%**

FRP – Asset/Liability

	Current	A Recommendation 1 (Maintains Policy)	B	C	D Recommendation 2 (Relaxes Policy)	E
Global Equity	0.00%	25.00%	25.00%	45.00%	50.00%	60.00%
Gbl Gov't Bonds - Short/Intermediate	65.60%	0.00%	0.00%	0.00%	0.00%	0.00%
Gbl Gov't Bonds - Long	0.00%	30.00%	0.00%	0.00%	0.00%	0.00%
Gbl Corp Bonds - Short/Intermediate	0.00%	0.00%	60.00%	40.00%	35.00%	25.00%
Gbl Corp Bonds - Long	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Gbl Inflation Indexed Bonds	3.40%	30.00%	0.00%	0.00%	0.00%	0.00%
Gbl Cash/Enhanced Cash	31.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Gbl Private Equity	0.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Gbl Real Estate	0.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Gbl Infrastructure	0.00%	2.00%	0.00%	0.00%	0.00%	0.00%
Gbl Absolute Return/Opportunistic	0.00%	3.00%	5.00%	5.00%	5.00%	5.00%
Expected Surplus Return (Arithmetic)	-4.64%	-2.53%	-2.47%	-1.78%	-1.60%	-1.26%
Surplus Standard Deviation (Tracking Error)	48.44%	49.50%	49.09%	49.86%	50.09%	50.61%
Expected Surplus Return (Geometric)	-14.99%	-13.10%	-12.89%	-12.42%	-12.31%	-12.12%

V. Expected Return and Risk Characteristics of Candidate Portfolios in US Dollar Terms (Mean Variance Analysis) – Excluding Alternative Investments

Candidate Portfolios in USD Terms Excluding Exposure to Alternative Investments – Shown for Illustrative Purposes Only (The recommendations appear in the Executive Summary)

FEES – Asset Only

	Current	Potential Portfolio Excluding Alternatives (modeled in USD)
Global Equity	0.00%	33.00%
Gbl Gov't Bonds - Short/Intermediate	66.30%	0.00%
Gbl Gov't Bonds - Long	0.00%	0.00%
Gbl Corp Bonds - Short/Intermediate	0.00%	30.00%
Gbl Corp Bonds - Long	0.00%	15.00%
Gbl Inflation Indexed Bonds	3.50%	22.00%
Gbl Cash/Enhanced Cash	30.20%	0.00%
Gbl Private Equity	0.00%	0.00%
Gbl Real Estate	0.00%	0.00%
Gbl Infrastructure	0.00%	0.00%
Gbl Absolute Return/Opportunistic	0.00%	0.00%
Expected Return (Arithmetic)	4.64%	6.97%
Standard Deviation	2.20%	7.22%
Expected Return (Geometric)	4.62%	6.73%
Max Annual Loss @ 95% Confidence Interval	**1.02%**	**-4.90%**
Probability of Less Than 0% Return - One Year	**1.79%**	**17.20%**
Probability of Less Than 0% Return - Three Years	**0.01%**	**5.06%**
Probability of Less Than 0% Return - Five Years	**0.00%**	**1.72%**
Probability of Less Than 0% Return - Ten Years	**0.00%**	**0.14%**

FRP – Asset Only

	Current	Potential Portfolio Excluding Alternatives (modeled in USD) (1)	Potential Portfolio Excluding Alternatives (modeled in USD) (2)
Global Equity	0.00%	25.00%	50.00%
Gbl Gov't Bonds - Short/Intermediate	65.60%	0.00%	0.00%
Gbl Gov't Bonds - Long	0.00%	75.00%	0.00%
Gbl Corp Bonds - Short/Intermediate	0.00%	0.00%	15.00%
Gbl Corp Bonds - Long	0.00%	0.00%	35.00%
Gbl Inflation Indexed Bonds	3.40%	0.00%	0.00%
Gbl Cash/Enhanced Cash	31.00%	0.00%	0.00%
Gbl Private Equity	0.00%	0.00%	0.00%
Gbl Real Estate	0.00%	0.00%	0.00%
Gbl Infrastructure	0.00%	0.00%	0.00%
Gbl Absolute Return/Opportunistic	0.00%	0.00%	0.00%
Expected Return (Arithmetic)	4.63%	6.57%	7.96%
Standard Deviation	2.18%	8.57%	10.52%
Expected Return (Geometric)	4.61%	6.23%	7.45%
Max Annual Loss @ 95% Confidence Interval	**1.04%**	**-7.53%**	**-9.35%**
Probability of Less Than 0% Return - One Year	**1.55%**	**23.01%**	**23.65%**
Probability of Less Than 0% Return - Three Years	**0.01%**	**10.04%**	**10.70%**
Probability of Less Than 0% Return - Five Years	**0.00%**	**4.93%**	**5.43%**
Probability of Less Than 0% Return - Ten Years	**0.00%**	**0.98%**	**1.16%**

FRP – Asset/Liability

	Current	Potential Portfolio Excluding Alternatives (modeled in USD) (1)	Potential Portfolio Excluding Alternatives (modeled in USD) (2)
Global Equity	0.00%	25.00%	50.00%
Gbl Gov't Bonds - Short/Intermediate	65.60%	0.00%	0.00%
Gbl Gov't Bonds - Long	0.00%	75.00%	0.00%
Gbl Corp Bonds - Short/Intermediate	0.00%	0.00%	15.00%
Gbl Corp Bonds - Long	0.00%	0.00%	35.00%
Gbl Inflation Indexed Bonds	3.40%	0.00%	0.00%
Gbl Cash/Enhanced Cash	31.00%	0.00%	0.00%
Gbl Private Equity	0.00%	0.00%	0.00%
Gbl Real Estate	0.00%	0.00%	0.00%
Gbl Infrastructure	0.00%	0.00%	0.00%
Gbl Absolute Return/Opportunistic	0.00%	0.00%	0.00%
Expected Surplus Return (Arithmetic)	-5.81%	-3.87%	-2.49%
Surplus Standard Deviation	50.70%	52.47%	51.91%
Expected Surplus Return (Geometric)	-17.07%	-15.62%	-13.92%

VI. Expected Return and Risk Characteristics of Candidate Portfolios in Chilean Peso Terms (Mean Variance Analysis) – Excluding Alternative Investments

Candidate Portfolios in CLP Terms Excluding Exposure to Alternative Investments – Shown for Illustrative Purposes Only (The recommendations appear in the Executive Summary)

FEES – Asset Only

	Current	Potential Portfolio Excluding Alternatives (modeled in CLP)
Global Equity	0.00%	40.00%
Gbl Gov't Bonds - Short/Intermediate	66.30%	0.00%
Gbl Gov't Bonds - Long	0.00%	0.00%
Gbl Corp Bonds - Short/Intermediate	0.00%	30.00%
Gbl Corp Bonds - Long	0.00%	25.00%
Gbl Inflation Indexed Bonds	3.50%	0.00%
Gbl Cash/Enhanced Cash	30.20%	5.00%
Gbl Private Equity	0.00%	0.00%
Gbl Real Estate	0.00%	0.00%
Gbl Infrastructure	0.00%	0.00%
Gbl Absolute Return/Opportunistic	0.00%	0.00%
Expected Return (Arithmetic)	6.10%	8.41%
Standard Deviation	10.78%	9.00%
Expected Return (Geometric)	5.55%	8.04%
Max Annual Loss @ 95% Confidence Interval	**-11.63%**	**-6.39%**
Probability of Less Than 0% Return - One Year	**30.32%**	**18.28%**
Probability of Less Than 0% Return - Three Years	**18.61%**	**5.86%**
Probability of Less Than 0% Return - Five Years	**12.46%**	**2.15%**
Probability of Less Than 0% Return - Ten Years	**5.16%**	**0.21%**

FRP – Asset Only

	Current	Potential Portfolio Excluding Alternatives (modeled in CLP) (1)	Potential Portfolio Excluding Alternatives (modeled in CLP) (2)
Global Equity	0.00%	25.00%	80.00%
Gbl Gov't Bonds - Short/Intermediate	65.60%	0.00%	0.00%
Gbl Gov't Bonds - Long	0.00%	75.00%	0.00%
Gbl Corp Bonds - Short/Intermediate	0.00%	0.00%	0.00%
Gbl Corp Bonds - Long	0.00%	0.00%	20.00%
Gbl Inflation Indexed Bonds	3.40%	0.00%	0.00%
Gbl Cash/Enhanced Cash	31.00%	0.00%	0.00%
Gbl Private Equity	0.00%	0.00%	0.00%
Gbl Real Estate	0.00%	0.00%	0.00%
Gbl Infrastructure	0.00%	0.00%	0.00%
Gbl Absolute Return/Opportunistic	0.00%	0.00%	0.00%
Expected Return (Arithmetic)	6.09%	7.70%	9.84%
Standard Deviation	10.77%	9.75%	12.24%
Expected Return (Geometric)	5.55%	7.26%	9.16%
Max Annual Loss @ 95% Confidence Interval	**-11.63%**	**-8.33%**	**-10.29%**
Probability of Less Than 0% Return - One Year	**30.01%**	**22.50%**	**22.45%**
Probability of Less Than 0% Return - Three Years	**18.20%**	**9.54%**	**9.49%**
Probability of Less Than 0% Return - Five Years	**12.06%**	**4.56%**	**4.52%**
Probability of Less Than 0% Return - Ten Years	**4.87%**	**0.85%**	**0.83%**

FRP – Asset/Liability

	Current	Potential Portfolio Excluding Alternatives (modeled in CLP) (1)	Potential Portfolio Excluding Alternatives (modeled in CLP) (2)
Global Equity	0.00%	25.00%	80.00%
Gbl Gov't Bonds - Short/Intermediate	65.60%	0.00%	0.00%
Gbl Gov't Bonds - Long	0.00%	75.00%	0.00%
Gbl Corp Bonds - Short/Intermediate	0.00%	0.00%	0.00%
Gbl Corp Bonds - Long	0.00%	0.00%	20.00%
Gbl Inflation Indexed Bonds	3.40%	0.00%	0.00%
Gbl Cash/Enhanced Cash	31.00%	0.00%	0.00%
Gbl Private Equity	0.00%	0.00%	0.00%
Gbl Real Estate	0.00%	0.00%	0.00%
Gbl Infrastructure	0.00%	0.00%	0.00%
Gbl Absolute Return/Opportunistic	0.00%	0.00%	0.00%
Expected Surplus Return (Arithmetic)	-4.64%	-3.03%	-0.89%
Surplus Standard Deviation	48.44%	49.44%	51.39%
Expected Surplus Return (Geometric)	-14.99%	-13.61%	-12.02%

VII. Monte-Carlo Simulation Results in US Dollar Terms

FEES

Current Portfolio

Nominal Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	9,679.2	11,663.8	14,122.9	18,306.2	23,316.7	28,618.8	34,968.0	42,183.4	50,821.1	61,175.9
75th perc.	8,657.3	9,440.9	10,539.5	12,566.6	14,968.4	17,840.5	20,794.6	24,377.7	28,010.9	32,361.8
50th perc.*	8,109.0	8,385.8	8,677.9	9,560.7	10,639.0	11,755.9	12,839.3	14,178.9	15,499.7	17,467.6
25th perc.	8,109.0	7,986.8	7,674.5	7,406.3	7,163.2	7,043.7	6,644.2	6,461.5	6,175.0	6,370.8
5th perc.	7,310.9	6,134.6	4,636.5	2,812.7	1,335.8	0.0	0.0	0.0	0.0	0.0

*Median

Real Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	9,386.4	10,954.2	12,976.6	15,711.2	19,630.5	23,516.8	28,219.3	33,642.7	39,016.8	44,812.9
75th perc.	8,420.2	8,999.2	9,750.3	10,914.5	12,797.5	15,017.3	17,000.7	19,538.9	22,069.1	24,627.4
50th perc.*	7,998.7	8,011.3	8,087.5	8,442.6	9,140.9	9,885.9	10,528.2	11,356.4	12,361.3	13,428.8
25th perc.	7,876.6	7,583.4	7,180.3	6,717.9	6,412.5	6,038.2	5,494.5	5,340.6	4,897.8	4,868.6
5th perc.	7,178.6	5,966.3	4,371.5	2,587.1	1,226.1	0.0	0.0	0.0	0.0	0.0

*Median

Nominal Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	7.4%	6.2%	6.0%	6.1%	6.2%	6.2%	6.2%	6.2%	6.2%	6.2%
75th perc.	6.0%	5.5%	5.3%	5.3%	5.3%	5.3%	5.3%	5.2%	5.2%	5.2%
50th perc.*	5.1%	4.9%	4.9%	4.8%	4.8%	4.8%	4.7%	4.7%	4.7%	4.7%
25th perc.	4.1%	4.4%	4.5%	4.4%	4.4%	4.3%	4.3%	4.3%	4.3%	4.2%
5th perc.	2.6%	3.5%	3.8%	3.9%	3.8%	3.8%	3.7%	3.7%	3.7%	3.7%

*Median

Real Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	5.6%	4.7%	4.5%	4.5%	4.4%	4.2%	4.2%	4.1%	3.9%	3.9%
75th perc.	3.9%	3.4%	3.3%	3.2%	3.2%	3.1%	3.1%	3.0%	2.9%	2.9%
50th perc.*	2.6%	2.4%	2.5%	2.4%	2.3%	2.4%	2.3%	2.3%	2.3%	2.3%
25th perc.	1.4%	1.5%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
5th perc.	-0.6%	0.1%	0.3%	0.4%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%

*Median

Withdrawals from returns in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	603.9	717.8	859.7	930.0	1,157.0	1,477.4	1,784.7	2,048.8	2,522.1	2,821.1
75th perc.	490.3	506.4	546.2	573.5	648.7	742.8	845.8	962.1	1,141.7	1,226.5
50th perc.*	416.4	384.4	399.7	385.5	424.0	437.0	477.5	510.6	561.3	577.5
25th perc.	336.1	274.0	274.8	242.9	245.1	223.8	221.8	196.2	199.5	181.2
5th perc.	211.2	126.6	113.7	92.2	46.9	19.7	0.0	0.0	0.0	0.0

*Median

Additional Withdrawals in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	798.0	1,486.7	1,950.4	2,311.7	2,454.2	2,640.3	2,893.1	3,086.0	3,518.0	3,787.4
75th perc.	0.0	0.0	0.0	138.0	66.0	169.1	201.1	302.1	399.8	345.3
50th perc.*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Withdrawals in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,206.8	1,854.8	2,286.5	2,651.8	2,739.1	2,915.5	3,192.9	3,669.9	4,053.9	4,361.9
75th perc.	544.5	661.4	800.0	896.2	1,028.0	1,205.3	1,451.5	1,583.9	1,880.1	2,091.8
50th perc.*	441.4	443.2	504.1	531.1	590.2	675.4	758.7	858.7	1,016.0	1,053.0
25th perc.	350.7	317.5	329.4	332.9	371.2	365.1	401.6	444.4	489.4	488.1
5th perc.	220.3	149.5	155.5	136.4	130.4	117.4	96.8	87.8	86.5	50.8

*Median

Total Contributions in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,570.2	2,335.8	2,909.0	4,592.3	5,406.8	6,366.4	7,525.6	8,634.4	9,575.6	11,309.8
75th perc.	548.3	868.8	1,111.0	2,306.2	2,639.5	3,027.0	3,288.7	3,792.7	4,177.6	4,839.2
50th perc.*	0.0	0.0	0.0	794.9	977.2	974.8	955.3	1,151.4	1,285.5	1,603.9
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Efficient Mix Portfolio (Same Risk as Current Portfolio)

Nominal Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	9,677.7	11,663.1	14,121.9	18,290.6	23,285.1	28,603.3	34,904.1	42,168.0	50,769.4	61,169.8
75th perc.	8,650.4	9,439.3	10,532.5	12,566.6	14,968.4	17,822.9	20,784.2	24,347.3	28,006.1	32,296.4
50th perc.*	8,109.0	8,385.3	8,677.5	9,563.0	10,628.4	11,752.7	12,835.6	14,180.9	15,505.6	17,461.3
25th perc.	8,109.0	7,981.3	7,674.5	7,398.4	7,160.5	7,031.4	6,613.0	6,429.1	6,159.8	6,366.3
5th perc.	7,310.2	6,129.0	4,618.4	2,808.5	1,319.4	0.0	0.0	0.0	0.0	0.0

*Median

Real Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	9,379.7	10,954.1	12,968.8	15,701.5	19,646.2	23,491.1	28,194.3	33,610.6	38,922.2	44,745.3
75th perc.	8,419.1	8,996.8	9,743.6	10,905.8	12,797.5	14,988.9	16,991.4	19,505.2	22,036.1	24,622.3
50th perc.*	7,998.8	8,011.0	8,080.8	8,441.2	9,139.7	9,883.2	10,522.7	11,347.1	12,364.0	13,436.4
25th perc.	7,876.6	7,582.6	7,180.3	6,715.0	6,405.3	6,036.9	5,504.9	5,315.6	4,884.0	4,866.4
5th perc.	7,177.6	5,965.6	4,369.8	2,581.8	1,213.7	0.0	0.0	0.0	0.0	0.0

*Median

Nominal Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	8.8%	7.6%	7.1%	7.0%	6.9%	6.9%	6.8%	6.7%	6.6%	6.6%
75th perc.	6.7%	6.2%	6.1%	5.9%	5.8%	5.8%	5.8%	5.7%	5.7%	5.7%
50th perc.*	5.5%	5.4%	5.4%	5.3%	5.3%	5.2%	5.2%	5.1%	5.2%	5.1%
25th perc.	4.3%	4.6%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%
5th perc.	2.8%	3.5%	3.8%	3.9%	4.0%	4.0%	4.0%	4.0%	4.0%	4.1%

*Median

Real Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	6.6%	5.4%	5.1%	5.0%	4.7%	4.7%	4.5%	4.4%	4.3%	4.2%
75th perc.	4.5%	4.0%	3.8%	3.7%	3.6%	3.5%	3.5%	3.4%	3.3%	3.3%
50th perc.*	3.0%	2.9%	2.9%	2.9%	2.8%	2.8%	2.7%	2.7%	2.7%	2.7%
25th perc.	1.7%	1.9%	2.0%	2.0%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%
5th perc.	-0.3%	0.5%	0.8%	0.9%	0.9%	1.0%	1.1%	1.0%	1.1%	1.2%

*Median

Withdrawals from returns in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	714.3	785.7	923.7	1,015.7	1,294.0	1,521.4	1,931.6	2,212.7	2,776.0	3,029.0
75th perc.	546.8	554.7	610.2	624.2	715.9	827.4	932.4	1,089.3	1,206.2	1,412.7
50th perc.*	449.3	422.2	437.8	433.6	469.0	481.7	518.1	570.7	625.1	659.9
25th perc.	347.2	303.0	304.3	276.2	275.9	250.9	232.9	229.8	221.0	224.6
5th perc.	225.9	156.5	131.0	100.8	60.8	23.1	0.0	0.0	0.0	0.0

*Median

Additional Withdrawals in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	798.0	1,486.7	1,950.4	2,311.7	2,454.2	2,640.3	2,893.1	3,086.0	3,518.0	3,787.4
75th perc.	0.0	0.0	0.0	138.0	66.0	169.1	201.1	302.1	399.8	345.3
50th perc.*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Withdrawals in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,212.0	1,839.5	2,323.7	2,644.7	2,697.7	2,922.3	3,211.2	3,659.1	4,001.5	4,524.9
75th perc.	617.7	723.3	866.4	960.7	1,124.6	1,292.9	1,547.7	1,696.2	2,043.7	2,304.8
50th perc.*	481.3	498.4	561.7	581.1	658.9	751.4	837.5	960.6	1,045.9	1,193.1
25th perc.	370.5	358.2	368.2	384.5	414.3	429.5	444.4	484.8	554.0	565.6
5th perc.	237.4	199.9	186.1	167.4	155.2	156.0	114.8	108.9	105.4	64.4

*Median

Total Contributions in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,570.2	2,335.8	2,909.0	4,592.3	5,406.8	6,366.4	7,525.6	8,634.4	9,575.6	11,309.8
75th perc.	548.3	868.8	1,111.0	2,306.2	2,639.5	3,027.0	3,288.7	3,792.7	4,177.6	4,839.2
50th perc.*	0.0	0.0	0.0	794.9	977.2	974.8	955.3	1,151.4	1,285.5	1,603.9
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Portfolio A

Nominal Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	9,673.5	11,663.1	14,113.8	18,268.1	23,269.9	28,590.5	34,705.2	41,979.8	50,763.7	60,972.9
75th perc.	8,645.3	9,437.4	10,519.3	12,564.3	14,871.6	17,673.5	20,698.1	24,213.6	27,733.7	32,009.7
50th perc.*	8,109.0	8,370.7	8,646.5	9,525.3	10,567.7	11,713.7	12,764.3	14,040.9	15,419.2	17,251.7
25th perc.	8,109.0	7,931.0	7,630.6	7,361.0	7,072.0	6,943.5	6,583.3	6,291.6	6,065.0	6,259.6
5th perc.	7,308.4	6,106.4	4,578.5	2,790.3	1,311.1	0.0	0.0	0.0	0.0	0.0

*Median

Real Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	9,370.6	10,954.1	12,943.4	15,686.2	19,565.1	23,491.1	28,022.1	33,438.1	38,804.7	44,565.1
75th perc.	8,417.9	8,980.8	9,718.5	10,895.0	12,749.2	14,858.2	16,844.7	19,505.2	21,772.4	24,537.9
50th perc.*	7,994.6	7,996.0	8,045.7	8,389.1	9,084.9	9,810.3	10,458.3	11,222.2	12,198.6	13,350.7
25th perc.	7,871.9	7,557.6	7,132.2	6,688.4	6,361.4	6,007.4	5,468.7	5,206.9	4,732.8	4,743.6
5th perc.	7,151.3	5,936.7	4,359.4	2,577.6	1,190.3	0.0	0.0	0.0	0.0	0.0

*Median

Nominal Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	14.2%	11.6%	10.2%	9.4%	9.2%	8.8%	8.5%	8.3%	8.2%	8.1%
75th perc.	9.5%	8.2%	7.9%	7.6%	7.3%	7.2%	7.1%	7.0%	7.0%	7.0%
50th perc.*	6.6%	6.4%	6.4%	6.3%	6.3%	6.3%	6.3%	6.2%	6.2%	6.1%
25th perc.	3.7%	4.5%	5.0%	5.1%	5.3%	5.3%	5.4%	5.4%	5.4%	5.4%
5th perc.	0.0%	1.8%	2.9%	3.5%	3.8%	4.1%	4.2%	4.3%	4.4%	4.4%

*Median

Real Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	11.4%	8.7%	7.6%	6.8%	6.4%	6.1%	5.9%	5.7%	5.5%	5.4%
75th perc.	6.8%	5.7%	5.4%	5.0%	4.9%	4.8%	4.6%	4.5%	4.4%	4.3%
50th perc.*	4.1%	3.9%	3.9%	3.8%	3.8%	3.8%	3.8%	3.7%	3.7%	3.6%
25th perc.	1.2%	2.0%	2.5%	2.6%	2.8%	2.9%	2.9%	2.9%	2.9%	2.9%
5th perc.	-2.4%	-0.7%	0.5%	1.0%	1.4%	1.6%	1.8%	1.8%	1.9%	2.0%

*Median

Withdrawals from returns in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,149.3	1,216.6	1,412.1	1,507.8	1,961.9	2,221.5	2,842.8	3,196.3	4,096.4	4,490.9
75th perc.	772.2	773.7	845.2	843.2	956.8	1,090.4	1,229.3	1,403.0	1,483.2	1,831.4
50th perc.*	532.7	493.4	521.3	496.4	551.8	554.2	551.6	578.9	630.5	697.6
25th perc.	301.4	251.1	275.1	224.8	221.3	197.7	158.4	137.8	112.9	85.7
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Additional Withdrawals in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	798.0	1,486.7	1,950.4	2,311.7	2,454.2	2,640.3	2,893.1	3,086.0	3,518.0	3,787.4
75th perc.	0.0	0.0	0.0	138.0	66.0	169.1	201.1	302.1	399.8	345.3
50th perc.*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Withdrawals in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,496.1	1,955.0	2,456.2	2,731.7	2,897.6	3,358.3	3,751.4	4,290.2	4,829.9	5,342.8
75th perc.	864.6	993.2	1,160.1	1,260.1	1,421.4	1,641.9	1,896.1	2,094.8	2,464.7	2,652.4
50th perc.*	598.3	614.1	709.3	725.2	834.5	897.0	999.6	1,116.2	1,211.8	1,388.3
25th perc.	345.8	352.0	387.7	385.8	413.0	407.3	413.5	458.1	498.0	525.0
5th perc.	46.5	20.9	7.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Contributions in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,570.2	2,335.8	2,909.0	4,592.3	5,406.8	6,366.4	7,525.6	8,634.4	9,575.6	11,309.8
75th perc.	548.3	868.8	1,111.0	2,306.2	2,639.5	3,027.0	3,288.7	3,792.7	4,177.6	4,839.2
50th perc.*	0.0	0.0	0.0	794.9	977.2	974.8	955.3	1,151.4	1,285.5	1,603.9
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Portfolio B

Nominal Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	9,673.5	11,663.1	14,064.2	18,212.3	23,218.7	28,478.8	34,705.2	41,932.1	50,700.5	60,923.2
75th perc.	8,639.9	9,435.0	10,517.0	12,531.5	14,871.6	17,641.7	20,614.4	24,166.7	27,577.0	31,891.2
50th perc.*	8,109.0	8,358.6	8,642.5	9,519.5	10,541.9	11,680.5	12,678.1	13,943.1	15,360.1	17,158.9
25th perc.	8,109.0	7,894.9	7,605.7	7,353.5	7,031.4	6,900.8	6,534.4	6,251.4	5,994.4	6,192.8
5th perc.	7,282.2	6,071.2	4,578.5	2,773.3	1,265.2	0.0	0.0	0.0	0.0	0.0

*Median

Real Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	9,367.2	10,954.1	12,902.1	15,686.2	19,520.8	23,459.1	28,007.6	33,376.0	38,756.0	44,496.3
75th perc.	8,412.7	8,973.1	9,710.9	10,869.8	12,686.4	14,813.3	16,796.7	19,420.2	21,702.7	24,458.8
50th perc.*	7,993.6	7,990.7	8,039.3	8,371.0	9,036.7	9,765.7	10,424.1	11,134.1	12,128.1	13,259.3
25th perc.	7,865.6	7,531.8	7,111.1	6,668.0	6,319.3	5,934.4	5,457.0	5,181.4	4,714.0	4,669.0
5th perc.	7,142.1	5,895.1	4,320.3	2,538.0	1,165.0	0.0	0.0	0.0	0.0	0.0

*Median

Nominal Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	15.4%	12.6%	11.1%	10.0%	9.7%	9.3%	9.0%	8.8%	8.6%	8.5%
75th perc.	10.1%	8.7%	8.2%	7.9%	7.7%	7.6%	7.4%	7.3%	7.3%	7.2%
50th perc.*	6.8%	6.5%	6.5%	6.5%	6.5%	6.4%	6.4%	6.4%	6.4%	6.4%
25th perc.	3.4%	4.4%	4.9%	5.1%	5.3%	5.4%	5.5%	5.5%	5.6%	5.6%
5th perc.	-0.8%	1.2%	2.6%	3.3%	3.7%	4.1%	4.1%	4.3%	4.4%	4.5%

*Median

Real Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	12.6%	9.7%	8.4%	7.5%	7.0%	6.7%	6.4%	6.2%	6.1%	5.9%
75th perc.	7.4%	6.1%	5.7%	5.4%	5.2%	5.1%	4.9%	4.8%	4.7%	4.6%
50th perc.*	4.2%	4.1%	4.0%	4.0%	4.0%	4.0%	3.9%	3.9%	3.9%	3.8%
25th perc.	0.9%	1.8%	2.5%	2.6%	2.8%	2.9%	3.0%	3.0%	3.0%	3.0%
5th perc.	-3.4%	-1.2%	0.2%	0.7%	1.1%	1.4%	1.6%	1.7%	1.9%	2.0%

*Median

Withdrawals from returns in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,249.4	1,347.9	1,545.9	1,661.1	2,146.4	2,406.9	3,095.1	3,520.1	4,489.8	4,799.6
75th perc.	821.8	821.4	903.1	903.6	1,019.3	1,157.8	1,287.4	1,468.5	1,560.1	1,907.4
50th perc.*	548.6	504.7	535.6	503.5	561.3	556.8	546.9	581.7	625.5	710.7
25th perc.	273.7	227.1	251.5	199.6	187.3	175.4	114.8	106.9	82.0	57.8
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Additional Withdrawals in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	798.0	1,486.7	1,950.4	2,311.7	2,454.2	2,640.3	2,893.1	3,086.0	3,518.0	3,787.4
75th perc.	0.0	0.0	0.0	138.0	66.0	169.1	201.1	302.1	399.8	345.3
50th perc.*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Withdrawals in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,596.4	2,013.1	2,506.6	2,793.0	2,977.5	3,475.6	3,966.2	4,416.2	5,139.5	5,553.1
75th perc.	918.4	1,057.5	1,231.0	1,339.8	1,502.9	1,735.7	2,004.9	2,202.9	2,590.5	2,772.9
50th perc.*	611.3	636.1	742.7	757.9	865.0	943.2	1,035.2	1,154.5	1,268.6	1,428.9
25th perc.	330.2	337.7	380.7	381.9	401.9	413.9	382.5	448.2	474.8	515.1
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Contributions in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,570.2	2,335.8	2,909.0	4,592.3	5,406.8	6,366.4	7,525.6	8,634.4	9,575.6	11,309.8
75th perc.	548.3	868.8	1,111.0	2,306.2	2,639.5	3,027.0	3,288.7	3,792.7	4,177.6	4,839.2
50th perc.*	0.0	0.0	0.0	794.9	977.2	974.8	955.3	1,151.4	1,285.5	1,603.9
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Portfolio C

Nominal Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	9,662.4	11,661.4	14,051.3	18,151.2	23,188.5	28,319.6	34,628.2	41,884.8	50,524.0	60,676.7
75th perc.	8,638.3	9,412.0	10,502.0	12,475.7	14,845.4	17,607.3	20,520.2	24,053.4	27,384.5	31,655.3
50th perc.*	8,109.0	8,349.0	8,610.1	9,498.5	10,507.6	11,591.5	12,574.5	13,905.6	15,256.8	17,040.9
25th perc.	8,109.0	7,847.9	7,550.3	7,309.1	6,985.9	6,838.3	6,457.6	6,157.9	5,863.5	6,039.7
5th perc.	7,282.2	6,039.8	4,531.5	2,763.5	1,215.6	0.0	0.0	0.0	0.0	0.0

*Median

Real Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	9,367.2	10,954.1	12,855.7	15,653.2	19,478.8	23,311.3	27,981.5	33,302.6	38,601.8	44,435.2
75th perc.	8,404.2	8,966.0	9,680.7	10,839.7	12,608.8	14,761.4	16,660.3	19,342.6	21,540.5	24,352.2
50th perc.*	7,990.0	7,974.7	8,020.4	8,312.5	8,968.4	9,733.4	10,312.0	11,086.2	12,067.0	13,116.9
25th perc.	7,858.4	7,489.2	7,063.6	6,618.5	6,256.8	5,851.9	5,411.3	5,149.4	4,633.2	4,608.5
5th perc.	7,113.0	5,835.4	4,298.1	2,489.8	1,154.2	0.0	0.0	0.0	0.0	0.0

*Median

Nominal Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	17.1%	13.7%	12.1%	10.8%	10.4%	10.0%	9.5%	9.3%	9.1%	9.0%
75th perc.	10.8%	9.2%	8.7%	8.3%	8.1%	8.0%	7.8%	7.7%	7.6%	7.5%
50th perc.*	6.9%	6.6%	6.7%	6.6%	6.7%	6.6%	6.7%	6.6%	6.6%	6.5%
25th perc.	3.0%	4.1%	4.8%	5.1%	5.4%	5.4%	5.6%	5.6%	5.7%	5.7%
5th perc.	-1.9%	0.4%	2.1%	3.0%	3.4%	3.9%	4.0%	4.1%	4.3%	4.5%

*Median

Real Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	14.2%	10.9%	9.4%	8.3%	7.8%	7.3%	7.0%	6.8%	6.6%	6.5%
75th perc.	8.1%	6.7%	6.2%	5.8%	5.6%	5.5%	5.2%	5.2%	5.0%	4.9%
50th perc.*	4.3%	4.1%	4.2%	4.2%	4.2%	4.2%	4.1%	4.0%	4.1%	4.1%
25th perc.	0.6%	1.6%	2.4%	2.5%	2.8%	3.0%	3.0%	3.0%	3.1%	3.1%
5th perc.	-4.3%	-1.9%	-0.3%	0.4%	0.8%	1.2%	1.5%	1.6%	1.8%	1.9%

*Median

Withdrawals from returns in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,385.5	1,512.1	1,702.2	1,854.5	2,341.8	2,661.4	3,381.3	3,773.8	4,888.0	5,244.4
75th perc.	874.4	877.9	959.9	954.5	1,094.8	1,245.2	1,349.5	1,559.5	1,645.6	1,991.2
50th perc.*	559.9	514.0	554.3	520.9	575.0	568.6	561.5	583.6	612.2	705.2
25th perc.	242.5	192.8	231.1	164.7	161.6	135.2	74.4	67.4	41.2	17.5
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Additional Withdrawals in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	798.0	1,486.7	1,950.4	2,311.7	2,454.2	2,640.3	2,893.1	3,086.0	3,518.0	3,787.4
75th perc.	0.0	0.0	0.0	138.0	66.0	169.1	201.1	302.1	399.8	345.3
50th perc.*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Withdrawals in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,703.1	2,073.1	2,592.1	2,870.7	3,119.1	3,630.2	4,160.8	4,669.9	5,499.4	5,907.2
75th perc.	973.4	1,137.5	1,320.9	1,435.6	1,599.2	1,827.5	2,110.2	2,282.2	2,723.4	2,908.7
50th perc.*	625.9	660.5	779.9	809.5	916.0	975.6	1,061.2	1,196.5	1,312.0	1,454.7
25th perc.	310.6	318.0	368.4	361.9	375.4	408.5	362.0	433.4	451.5	505.5
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Contributions in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,570.2	2,335.8	2,909.0	4,592.3	5,406.8	6,366.4	7,525.6	8,634.4	9,575.6	11,309.8
75th perc.	548.3	868.8	1,111.0	2,306.2	2,639.5	3,027.0	3,288.7	3,792.7	4,177.6	4,839.2
50th perc.*	0.0	0.0	0.0	794.9	977.2	974.8	955.3	1,151.4	1,285.5	1,603.9
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Portfolio D (Recommendation)

Nominal Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	9,662.4	11,640.2	14,029.4	18,080.0	23,054.5	28,114.9	34,547.0	41,814.1	50,369.0	60,402.6
75th perc.	8,633.3	9,392.9	10,454.8	12,407.5	14,788.5	17,556.1	20,424.3	23,905.5	27,156.0	31,215.9
50th perc.*	8,109.0	8,313.5	8,555.5	9,417.7	10,431.7	11,477.6	12,428.2	13,806.4	15,102.6	16,865.8
25th perc.	8,109.0	7,794.9	7,499.7	7,251.1	6,911.6	6,759.0	6,367.6	6,078.8	5,754.3	5,859.5
5th perc.	7,224.2	6,022.7	4,448.2	2,660.9	1,184.9	0.0	0.0	0.0	0.0	0.0

*Median

Real Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	9,363.7	10,939.6	12,802.9	15,636.0	19,403.9	23,275.6	27,950.3	33,030.3	38,235.8	44,291.4
75th perc.	8,400.9	8,951.1	9,641.3	10,787.3	12,575.2	14,702.6	16,524.0	19,244.5	21,409.7	24,012.7
50th perc.*	7,986.8	7,957.6	7,989.0	8,275.3	8,917.5	9,627.8	10,222.7	11,053.7	11,950.0	13,000.0
25th perc.	7,848.0	7,447.0	6,997.2	6,566.8	6,185.6	5,795.7	5,340.4	5,079.1	4,545.2	4,519.4
5th perc.	7,089.5	5,794.9	4,206.1	2,453.8	1,112.6	0.0	0.0	0.0	0.0	0.0

*Median

Nominal Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	18.7%	14.8%	13.1%	11.7%	11.2%	10.7%	10.2%	9.9%	9.7%	9.5%
75th perc.	11.5%	9.8%	9.1%	8.8%	8.5%	8.4%	8.2%	8.1%	7.9%	7.9%
50th perc.*	7.0%	6.7%	6.9%	6.8%	6.9%	6.9%	6.9%	6.8%	6.8%	6.8%
25th perc.	2.7%	3.9%	4.7%	5.0%	5.4%	5.5%	5.6%	5.7%	5.8%	5.8%
5th perc.	-3.1%	-0.4%	1.6%	2.6%	3.1%	3.7%	3.9%	4.0%	4.2%	4.5%

*Median

Real Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	16.0%	12.3%	10.4%	9.2%	8.5%	8.0%	7.6%	7.4%	7.2%	7.0%
75th perc.	8.8%	7.1%	6.6%	6.3%	6.0%	5.9%	5.6%	5.6%	5.4%	5.3%
50th perc.*	4.5%	4.3%	4.4%	4.4%	4.4%	4.4%	4.3%	4.2%	4.3%	4.3%
25th perc.	0.1%	1.3%	2.2%	2.4%	2.8%	3.0%	3.1%	3.1%	3.1%	3.2%
5th perc.	-5.5%	-2.7%	-0.8%	-0.1%	0.5%	1.0%	1.3%	1.4%	1.7%	1.9%

*Median

Withdrawals from returns in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,515.1	1,643.9	1,865.9	2,008.4	2,520.9	2,874.2	3,675.8	4,115.2	5,318.1	5,729.4
75th perc.	935.6	928.7	1,031.9	1,033.3	1,174.9	1,325.3	1,424.4	1,645.3	1,735.7	2,100.2
50th perc.*	570.0	524.1	574.8	536.0	593.9	561.9	564.2	585.6	606.7	711.9
25th perc.	215.1	154.8	209.5	131.8	129.6	110.8	41.5	29.5	4.9	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Additional Withdrawals in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	798.0	1,486.7	1,950.4	2,311.7	2,454.2	2,640.3	2,893.1	3,086.0	3,518.0	3,787.4
75th perc.	0.0	0.0	0.0	138.0	66.0	169.1	201.1	302.1	399.8	345.3
50th perc.*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Withdrawals in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,811.8	2,139.6	2,656.5	2,969.3	3,291.2	3,755.2	4,414.1	4,995.4	5,842.6	6,229.4
75th perc.	1,034.7	1,218.0	1,402.2	1,524.3	1,673.4	1,907.7	2,184.1	2,391.0	2,827.4	3,018.0
50th perc.*	645.4	682.4	821.9	841.6	965.5	1,025.0	1,094.2	1,230.9	1,343.2	1,522.5
25th perc.	284.0	294.9	352.9	345.7	359.1	408.0	339.0	415.5	427.8	488.5
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Contributions in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,570.2	2,335.8	2,909.0	4,592.3	5,406.8	6,366.4	7,525.6	8,634.4	9,575.6	11,309.8
75th perc.	548.3	868.8	1,111.0	2,306.2	2,639.5	3,027.0	3,288.7	3,792.7	4,177.6	4,839.2
50th perc.*	0.0	0.0	0.0	794.9	977.2	974.8	955.3	1,151.4	1,285.5	1,603.9
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Portfolio E

Nominal Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	9,646.4	11,625.0	14,008.0	17,993.4	22,875.6	27,973.0	34,446.5	41,708.4	50,132.0	60,062.0
75th perc.	8,624.5	9,370.3	10,422.8	12,346.9	14,711.7	17,451.7	20,352.5	23,757.7	26,971.0	30,962.4
50th perc.*	8,109.0	8,269.4	8,521.5	9,372.5	10,346.3	11,403.4	12,259.8	13,669.6	14,946.2	16,643.7
25th perc.	8,109.0	7,746.6	7,444.6	7,182.0	6,828.0	6,677.4	6,287.8	5,946.9	5,625.7	5,723.5
5th perc.	7,170.1	6,016.3	4,367.6	2,593.6	1,114.8	0.0	0.0	0.0	0.0	0.0

*Median

Real Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	9,339.1	10,902.7	12,783.4	15,586.6	19,276.4	23,141.9	27,828.4	32,890.0	38,075.2	44,087.6
75th perc.	8,384.7	8,923.4	9,603.0	10,750.2	12,536.6	14,609.0	16,482.1	19,078.3	21,214.0	23,798.2
50th perc.*	7,982.7	7,935.2	7,937.2	8,231.5	8,845.6	9,530.5	10,128.9	10,911.0	11,824.4	12,868.9
25th perc.	7,836.9	7,400.5	6,909.2	6,488.4	6,066.7	5,693.7	5,261.6	4,969.2	4,481.8	4,372.3
5th perc.	7,053.8	5,747.5	4,126.3	2,410.7	1,009.7	0.0	0.0	0.0	0.0	0.0

*Median

Nominal Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	20.6%	16.1%	14.0%	12.6%	11.8%	11.3%	10.8%	10.5%	10.2%	10.0%
75th perc.	12.2%	10.4%	9.6%	9.2%	8.9%	8.8%	8.6%	8.4%	8.3%	8.2%
50th perc.*	7.1%	6.9%	7.1%	7.0%	7.1%	7.1%	7.1%	7.0%	7.0%	7.0%
25th perc.	2.3%	3.7%	4.6%	5.0%	5.3%	5.5%	5.6%	5.7%	5.8%	5.9%
5th perc.	-4.2%	-1.2%	1.1%	2.1%	2.9%	3.5%	3.7%	3.9%	4.1%	4.4%

*Median

Real Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	17.7%	13.5%	11.3%	9.9%	9.3%	8.7%	8.3%	8.0%	7.7%	7.5%
75th perc.	9.6%	7.7%	7.1%	6.7%	6.4%	6.2%	6.0%	5.9%	5.7%	5.6%
50th perc.*	4.6%	4.4%	4.5%	4.6%	4.6%	4.6%	4.5%	4.5%	4.5%	4.5%
25th perc.	-0.3%	1.1%	2.2%	2.4%	2.8%	3.0%	3.1%	3.1%	3.2%	3.3%
5th perc.	-6.7%	-3.4%	-1.4%	-0.4%	0.3%	0.7%	1.1%	1.3%	1.6%	1.8%

*Median

Withdrawals from returns in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,666.7	1,790.2	2,011.0	2,179.2	2,703.0	3,095.5	3,913.6	4,478.1	5,762.1	6,178.1
75th perc.	988.9	987.8	1,095.6	1,102.6	1,244.6	1,384.1	1,508.2	1,739.9	1,832.5	2,169.5
50th perc.*	575.6	535.7	591.3	552.0	585.0	575.0	566.4	588.5	618.1	712.4
25th perc.	183.2	119.5	182.4	102.5	100.5	81.0	6.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Additional Withdrawals in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	798.0	1,486.7	1,950.4	2,311.7	2,454.2	2,640.3	2,893.1	3,086.0	3,518.0	3,787.4
75th perc.	0.0	0.0	0.0	138.0	66.0	169.1	201.1	302.1	399.8	345.3
50th perc.*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Withdrawals in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,940.6	2,243.8	2,810.4	3,065.5	3,443.7	3,875.2	4,623.2	5,220.1	6,095.4	6,718.5
75th perc.	1,112.7	1,295.5	1,477.3	1,599.9	1,782.8	2,004.9	2,270.2	2,491.9	2,875.2	3,150.2
50th perc.*	661.1	716.4	860.3	882.5	999.3	1,052.2	1,123.7	1,250.4	1,378.4	1,547.8
25th perc.	262.7	277.2	341.8	330.8	341.1	385.5	318.8	395.0	403.0	464.1
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Contributions in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1,570.2	2,335.8	2,909.0	4,592.3	5,406.8	6,366.4	7,525.6	8,634.4	9,575.6	11,309.8
75th perc.	548.3	868.8	1,111.0	2,306.2	2,639.5	3,027.0	3,288.7	3,792.7	4,177.6	4,839.2
50th perc.*	0.0	0.0	0.0	794.9	977.2	974.8	955.3	1,151.4	1,285.5	1,603.9
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

FRP

Current Portfolio

Nominal Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	2,309.3	3,295.5	4,427.1	5,709.4	7,233.6	8,981.5	11,000.2	13,350.7	16,082.8	19,086.6
75th perc.	2,188.2	3,099.5	4,142.9	5,302.7	6,631.8	8,109.0	9,795.6	11,679.5	13,781.8	16,087.0
50th perc.*	2,113.1	2,950.1	3,878.4	4,856.8	5,984.3	7,172.1	8,506.9	9,930.8	11,550.7	13,385.9
25th perc.	1,988.9	2,577.9	3,268.9	4,028.3	4,865.5	5,776.7	6,722.5	7,802.1	8,972.4	10,324.0
5th perc.	1,686.1	2,084.8	2,534.8	3,036.0	3,581.3	4,153.2	4,782.4	5,343.6	5,892.2	6,674.3

*Median

Real Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	2,254.4	3,149.4	4,117.6	5,177.4	6,395.3	7,786.7	9,250.6	11,029.9	12,803.1	15,004.7
75th perc.	2,136.7	2,943.2	3,827.6	4,776.2	5,817.4	6,952.3	8,151.7	9,514.0	10,960.8	12,570.1
50th perc.*	2,058.9	2,789.6	3,583.7	4,398.8	5,260.1	6,168.6	7,127.8	8,162.9	9,213.7	10,399.6
25th perc.	1,938.4	2,469.5	3,039.0	3,683.8	4,335.0	5,016.8	5,751.1	6,545.0	7,298.1	8,180.0
5th perc.	1,657.3	2,017.1	2,403.7	2,841.5	3,260.1	3,703.2	4,123.7	4,538.7	4,938.8	5,366.6

*Median

Nominal Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	7.4%	6.1%	6.0%	6.1%	6.1%	6.2%	6.2%	6.2%	6.1%	6.2%
75th perc.	6.0%	5.5%	5.3%	5.3%	5.3%	5.3%	5.3%	5.2%	5.2%	5.2%
50th perc.*	5.1%	4.9%	4.9%	4.8%	4.8%	4.7%	4.7%	4.7%	4.7%	4.7%
25th perc.	4.2%	4.4%	4.5%	4.4%	4.4%	4.3%	4.3%	4.2%	4.3%	4.2%
5th perc.	2.6%	3.5%	3.9%	3.9%	3.8%	3.7%	3.7%	3.7%	3.7%	3.6%

*Median

Real Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	5.6%	4.7%	4.5%	4.5%	4.4%	4.2%	4.2%	4.1%	3.9%	3.9%
75th perc.	3.9%	3.4%	3.3%	3.2%	3.1%	3.1%	3.1%	3.0%	2.9%	2.9%
50th perc.*	2.6%	2.4%	2.5%	2.4%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
25th perc.	1.4%	1.5%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
5th perc.	-0.5%	0.1%	0.3%	0.4%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%

*Median

Total Contributions in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	895.9	963.2	1,068.7	1,176.3	1,322.0	1,492.3	1,694.0	1,916.3	2,190.1	2,489.9
75th perc.	772.6	833.8	909.8	995.5	1,110.6	1,215.3	1,338.1	1,478.1	1,630.2	1,812.6
50th perc.*	699.6	747.7	806.9	878.0	952.8	1,011.6	1,081.5	1,187.7	1,265.7	1,386.3
25th perc.	577.0	416.2	410.0	404.2	441.5	462.8	501.5	542.2	571.3	656.5
5th perc.	276.8	280.9	295.3	306.7	317.3	328.9	342.7	347.2	364.3	370.6

*Median

Portfolio A [Recommendation 1 (Maintains Policy)]

Nominal Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	2,405.4	3,529.1	4,842.5	6,366.0	8,202.1	10,380.5	12,735.2	15,692.6	19,068.0	23,103.9
75th perc.	2,250.4	3,222.4	4,362.5	5,640.3	7,149.8	8,880.5	10,801.9	13,012.8	15,572.3	18,381.4
50th perc.*	2,136.2	2,987.2	3,973.8	5,062.4	6,288.7	7,638.0	9,106.3	10,789.7	12,664.5	14,702.9
25th perc.	1,969.4	2,610.1	3,350.8	4,161.7	5,088.1	6,064.6	7,186.5	8,240.7	9,688.9	11,060.4
5th perc.	1,658.5	2,068.1	2,568.1	3,073.3	3,629.4	4,215.9	4,826.9	5,375.8	6,077.8	6,748.2

*Median

Real Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	2,340.4	3,350.9	4,476.3	5,740.9	7,197.6	8,860.1	10,718.4	12,921.6	15,106.0	17,920.9
75th perc.	2,194.4	3,061.1	4,047.2	5,081.2	6,287.1	7,595.8	9,087.0	10,656.7	12,343.5	14,254.4
50th perc.*	2,078.9	2,843.6	3,693.0	4,564.1	5,548.2	6,586.6	7,670.7	8,869.6	10,178.1	11,571.9
25th perc.	1,928.1	2,499.0	3,149.5	3,794.9	4,538.0	5,286.4	6,127.2	6,932.9	7,839.4	8,914.0
5th perc.	1,628.6	2,004.0	2,426.2	2,868.6	3,321.6	3,740.9	4,193.0	4,566.4	5,028.1	5,579.9

*Median

Nominal Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	20.0%	15.5%	13.7%	12.2%	11.6%	11.0%	10.4%	10.2%	10.0%	9.8%
75th perc.	12.1%	10.1%	9.5%	9.0%	8.7%	8.6%	8.3%	8.2%	8.1%	8.0%
50th perc.*	7.4%	6.8%	7.0%	6.9%	7.0%	6.9%	6.9%	6.8%	6.8%	6.8%
25th perc.	2.4%	3.8%	4.6%	4.9%	5.3%	5.4%	5.5%	5.5%	5.7%	5.7%
5th perc.	-3.7%	-0.7%	1.2%	2.2%	2.8%	3.4%	3.6%	3.8%	4.0%	4.2%

*Median

Real Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	17.0%	12.9%	10.9%	9.6%	8.8%	8.4%	7.9%	7.6%	7.4%	7.1%
75th perc.	9.4%	7.5%	6.9%	6.5%	6.2%	6.0%	5.7%	5.7%	5.5%	5.4%
50th perc.*	4.7%	4.4%	4.5%	4.5%	4.5%	4.5%	4.4%	4.3%	4.4%	4.3%
25th perc.	0.0%	1.2%	2.2%	2.5%	2.8%	2.9%	3.1%	3.0%	3.1%	3.2%
5th perc.	-6.2%	-3.0%	-1.1%	-0.3%	0.3%	0.8%	1.1%	1.4%	1.5%	1.8%

*Median

Total Contributions in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	895.9	963.2	1,068.7	1,176.3	1,322.0	1,492.3	1,694.0	1,916.3	2,190.1	2,489.9
75th perc.	772.6	833.8	909.8	995.5	1,110.6	1,215.3	1,338.1	1,478.1	1,630.2	1,812.6
50th perc.*	699.6	747.7	806.9	878.0	952.8	1,011.6	1,081.5	1,187.7	1,265.7	1,386.3
25th perc.	577.0	416.2	410.0	404.2	441.5	462.8	501.5	542.2	571.3	656.5
5th perc.	276.8	280.9	295.3	306.7	317.3	328.9	342.7	347.2	364.3	370.6

*Median

Portfolio B

Nominal Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	2,388.1	3,498.3	4,788.0	6,285.8	8,120.2	10,244.1	12,579.5	15,471.6	18,786.6	22,636.5
75th perc.	2,242.7	3,209.8	4,347.0	5,608.5	7,125.4	8,829.8	10,729.9	12,937.1	15,475.5	18,251.6
50th perc.*	2,135.0	2,989.4	3,978.9	5,065.0	6,294.4	7,634.5	9,093.2	10,808.2	12,681.7	14,797.4
25th perc.	1,976.7	2,607.7	3,355.3	4,190.6	5,082.1	6,075.3	7,188.7	8,250.3	9,655.7	11,205.4
5th perc.	1,666.0	2,077.4	2,584.7	3,099.5	3,650.5	4,233.6	4,867.8	5,452.3	6,160.4	6,817.0

*Median

Real Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	2,331.6	3,324.8	4,451.5	5,699.0	7,154.0	8,773.3	10,641.3	12,741.1	15,142.2	17,825.8
75th perc.	2,188.1	3,052.1	4,029.8	5,071.9	6,273.7	7,568.5	8,995.0	10,552.5	12,290.6	14,169.3
50th perc.*	2,078.2	2,841.0	3,685.9	4,556.0	5,539.2	6,561.6	7,647.4	8,855.7	10,178.1	11,535.3
25th perc.	1,930.8	2,496.1	3,159.3	3,794.6	4,532.1	5,285.0	6,122.6	6,910.7	7,892.0	8,838.1
5th perc.	1,641.1	2,009.5	2,446.0	2,874.3	3,306.4	3,755.9	4,237.9	4,627.2	5,112.1	5,637.8

*Median

Nominal Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	18.4%	14.7%	13.0%	11.6%	11.1%	10.6%	10.1%	9.9%	9.6%	9.4%
75th perc.	11.3%	9.7%	9.0%	8.8%	8.5%	8.4%	8.1%	8.0%	7.9%	7.9%
50th perc.*	6.9%	6.7%	7.0%	6.9%	6.9%	6.9%	6.8%	6.8%	6.8%	6.8%
25th perc.	2.8%	3.9%	4.7%	5.0%	5.4%	5.5%	5.6%	5.6%	5.7%	5.8%
5th perc.	-2.6%	-0.1%	1.8%	2.7%	3.2%	3.8%	4.0%	4.0%	4.2%	4.5%

*Median

Real Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	15.7%	12.0%	10.2%	9.2%	8.5%	7.9%	7.7%	7.4%	7.3%	7.0%
75th perc.	8.6%	7.0%	6.6%	6.2%	6.0%	5.8%	5.6%	5.6%	5.4%	5.3%
50th perc.*	4.4%	4.2%	4.3%	4.4%	4.4%	4.4%	4.3%	4.3%	4.3%	4.3%
25th perc.	0.2%	1.4%	2.2%	2.5%	2.8%	3.0%	3.1%	3.0%	3.1%	3.2%
5th perc.	-5.2%	-2.4%	-0.7%	0.0%	0.6%	1.0%	1.2%	1.4%	1.6%	1.8%

*Median

Total Contributions in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	895.9	963.2	1,068.7	1,176.3	1,322.0	1,492.3	1,694.0	1,916.3	2,190.1	2,489.9
75th perc.	772.6	833.8	909.8	995.5	1,110.6	1,215.3	1,338.1	1,478.1	1,630.2	1,812.6
50th perc.*	699.6	747.7	806.9	878.0	952.8	1,011.6	1,081.5	1,187.7	1,265.7	1,386.3
25th perc.	577.0	416.2	410.0	404.2	441.5	462.8	501.5	542.2	571.3	656.5
5th perc.	276.8	280.9	295.3	306.7	317.3	328.9	342.7	347.2	364.3	370.6

*Median

Portfolio C

Nominal Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	2,459.2	3,661.6	5,047.2	6,636.5	8,631.2	10,997.4	13,628.6	16,933.2	20,507.3	24,845.9
75th perc.	2,269.3	3,270.7	4,438.0	5,761.0	7,354.9	9,160.3	11,157.7	13,509.2	16,231.1	19,333.5
50th perc.*	2,137.1	2,996.1	3,990.4	5,113.8	6,391.3	7,733.9	9,260.0	11,099.8	13,030.0	15,203.2
25th perc.	1,955.4	2,604.7	3,388.5	4,187.6	5,103.3	6,127.0	7,288.7	8,436.6	9,784.1	11,307.8
5th perc.	1,648.8	2,043.2	2,552.2	3,062.6	3,621.0	4,193.1	4,776.6	5,332.4	6,061.0	6,769.7

*Median

Real Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	2,388.4	3,474.0	4,680.0	6,050.7	7,566.9	9,392.7	11,454.4	13,864.2	16,391.9	19,291.9
75th perc.	2,214.3	3,112.6	4,128.4	5,199.2	6,503.3	7,852.8	9,390.0	11,063.2	12,916.0	14,873.0
50th perc.*	2,082.0	2,847.8	3,705.3	4,598.5	5,615.4	6,680.5	7,815.3	9,092.9	10,385.0	11,891.0
25th perc.	1,909.8	2,489.6	3,173.0	3,811.8	4,580.7	5,313.3	6,180.1	6,946.2	7,965.6	9,022.0
5th perc.	1,617.4	1,975.4	2,417.3	2,822.4	3,281.4	3,712.7	4,134.7	4,482.3	4,965.7	5,444.9

*Median

Nominal Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	25.7%	19.3%	16.9%	14.8%	13.8%	13.1%	12.5%	12.1%	11.7%	11.4%
75th perc.	14.0%	11.9%	10.9%	10.4%	10.0%	9.8%	9.5%	9.3%	9.2%	9.1%
50th perc.*	7.5%	7.3%	7.6%	7.6%	7.6%	7.6%	7.5%	7.4%	7.4%	7.4%
25th perc.	1.6%	3.2%	4.3%	4.8%	5.3%	5.4%	5.6%	5.7%	5.8%	5.9%
5th perc.	-6.6%	-2.6%	-0.1%	1.1%	2.0%	2.7%	3.1%	3.4%	3.7%	4.0%

*Median

Real Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	22.5%	16.4%	14.1%	12.2%	11.1%	10.4%	9.9%	9.5%	9.1%	8.9%
75th perc.	11.3%	9.2%	8.3%	7.8%	7.4%	7.2%	6.9%	6.8%	6.6%	6.4%
50th perc.*	5.0%	4.8%	5.0%	5.0%	5.0%	5.1%	5.0%	4.9%	4.9%	4.9%
25th perc.	-0.9%	0.5%	1.9%	2.3%	2.7%	3.0%	3.1%	3.1%	3.3%	3.3%
5th perc.	-8.8%	-4.7%	-2.6%	-1.3%	-0.5%	0.1%	0.6%	0.9%	1.2%	1.5%

*Median

Total Contributions in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	895.9	963.2	1,068.7	1,176.3	1,322.0	1,492.3	1,694.0	1,916.3	2,190.1	2,489.9
75th perc.	772.6	833.8	909.8	995.5	1,110.6	1,215.3	1,338.1	1,478.1	1,630.2	1,812.6
50th perc.*	699.6	747.7	806.9	878.0	952.8	1,011.6	1,081.5	1,187.7	1,265.7	1,386.3
25th perc.	577.0	416.2	410.0	404.2	441.5	462.8	501.5	542.2	571.3	656.5
5th perc.	276.8	280.9	295.3	306.7	317.3	328.9	342.7	347.2	364.3	370.6

*Median

Portfolio D [Recommendation 2 (Relaxes Policy)]

Nominal Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	2,479.9	3,701.1	5,116.2	6,752.1	8,809.5	11,181.5	13,892.3	17,287.8	21,017.2	25,515.1
75th perc.	2,276.3	3,286.3	4,466.8	5,811.4	7,425.2	9,247.3	11,286.5	13,629.3	16,405.6	19,547.8
50th perc.*	2,138.8	2,996.0	3,998.2	5,119.7	6,415.4	7,756.0	9,265.6	11,145.3	13,097.8	15,317.5
25th perc.	1,950.9	2,606.9	3,388.3	4,192.3	5,109.3	6,124.5	7,296.5	8,457.9	9,827.3	11,383.7
5th perc.	1,642.7	2,031.6	2,534.9	3,042.6	3,613.8	4,182.1	4,738.0	5,305.3	6,043.9	6,733.7

*Median

Real Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	2,409.2	3,514.9	4,740.4	6,132.6	7,706.1	9,574.5	11,628.4	14,096.6	16,744.4	19,722.8
75th perc.	2,221.1	3,128.3	4,153.0	5,232.5	6,546.3	7,932.3	9,499.9	11,215.6	13,071.3	15,113.9
50th perc.*	2,081.0	2,853.3	3,714.4	4,607.6	5,626.6	6,704.9	7,841.0	9,170.5	10,441.7	11,987.5
25th perc.	1,904.5	2,494.9	3,172.8	3,826.9	4,582.3	5,317.9	6,167.1	6,976.7	7,976.2	9,061.5
5th perc.	1,610.8	1,967.6	2,410.2	2,819.9	3,249.2	3,691.1	4,115.3	4,465.9	4,945.3	5,411.3

*Median

Nominal Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	27.1%	20.4%	17.8%	15.6%	14.5%	13.7%	13.1%	12.6%	12.2%	11.9%
75th perc.	14.6%	12.5%	11.4%	10.8%	10.4%	10.1%	9.8%	9.6%	9.5%	9.4%
50th perc.*	7.7%	7.4%	7.8%	7.7%	7.8%	7.7%	7.6%	7.6%	7.6%	7.6%
25th perc.	1.2%	3.0%	4.2%	4.7%	5.2%	5.4%	5.6%	5.7%	5.9%	5.9%
5th perc.	-7.5%	-3.3%	-0.6%	0.7%	1.7%	2.5%	2.8%	3.2%	3.5%	3.8%

*Median

Real Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	24.0%	17.7%	15.0%	13.0%	11.7%	11.0%	10.5%	10.0%	9.6%	9.4%
75th perc.	11.9%	9.8%	8.8%	8.2%	7.7%	7.5%	7.2%	7.1%	6.9%	6.7%
50th perc.*	5.2%	4.9%	5.2%	5.1%	5.1%	5.2%	5.1%	5.0%	5.1%	5.0%
25th perc.	-1.1%	0.3%	1.8%	2.2%	2.6%	2.9%	3.1%	3.1%	3.3%	3.4%
5th perc.	-9.9%	-5.4%	-3.0%	-1.8%	-0.9%	-0.1%	0.4%	0.7%	1.0%	1.3%

*Median

Total Contributions in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	895.9	963.2	1,068.7	1,176.3	1,322.0	1,492.3	1,694.0	1,916.3	2,190.1	2,489.9
75th perc.	772.6	833.8	909.8	995.5	1,110.6	1,215.3	1,338.1	1,478.1	1,630.2	1,812.6
50th perc.*	699.6	747.7	806.9	878.0	952.8	1,011.6	1,081.5	1,187.7	1,265.7	1,386.3
25th perc.	577.0	416.2	410.0	404.2	441.5	462.8	501.5	542.2	571.3	656.5
5th perc.	276.8	280.9	295.3	306.7	317.3	328.9	342.7	347.2	364.3	370.6

*Median

Portfolio E

Nominal Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	2,522.2	3,786.0	5,249.8	6,941.6	9,149.2	11,581.8	14,393.7	18,096.3	21,909.4	26,902.0
75th perc.	2,293.5	3,319.7	4,524.0	5,901.1	7,533.8	9,393.9	11,538.5	13,886.6	16,743.2	20,164.1
50th perc.*	2,138.9	2,998.9	4,012.1	5,134.5	6,452.7	7,843.7	9,358.5	11,246.1	13,203.4	15,567.4
25th perc.	1,944.2	2,599.2	3,387.1	4,190.0	5,102.9	6,141.7	7,269.1	8,478.4	9,790.1	11,411.2
5th perc.	1,623.4	2,024.4	2,511.4	3,016.4	3,555.8	4,130.2	4,691.8	5,214.6	5,938.3	6,652.8

*Median

Real Value in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	2,454.6	3,601.7	4,864.5	6,346.5	7,971.3	9,933.7	12,081.9	14,602.8	17,515.6	20,588.4
75th perc.	2,237.3	3,158.2	4,199.6	5,312.2	6,649.2	8,086.9	9,706.4	11,473.3	13,393.4	15,501.1
50th perc.*	2,083.0	2,854.9	3,734.1	4,632.7	5,686.3	6,746.7	7,889.3	9,249.6	10,574.1	12,152.9
25th perc.	1,901.7	2,489.3	3,173.3	3,823.9	4,570.7	5,352.2	6,186.1	6,975.7	7,952.7	9,082.4
5th perc.	1,600.0	1,952.6	2,379.6	2,792.9	3,208.5	3,658.5	4,080.7	4,422.5	4,862.1	5,289.2

*Median

Nominal Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	30.6%	22.7%	19.8%	17.2%	15.8%	14.9%	14.2%	13.7%	13.2%	12.8%
75th perc.	16.0%	13.5%	12.3%	11.6%	11.1%	10.8%	10.4%	10.2%	10.0%	9.9%
50th perc.*	8.0%	7.7%	8.1%	8.0%	8.1%	8.0%	7.9%	7.9%	7.9%	7.8%
25th perc.	0.6%	2.5%	4.0%	4.5%	5.1%	5.4%	5.5%	5.6%	5.8%	5.9%
5th perc.	-9.4%	-4.7%	-1.7%	-0.1%	1.0%	1.8%	2.3%	2.7%	3.1%	3.5%

*Median

Real Returns in USD

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	27.4%	19.8%	16.8%	14.5%	13.0%	12.4%	11.6%	11.1%	10.5%	10.3%
75th perc.	13.2%	10.8%	9.6%	9.1%	8.5%	8.2%	7.9%	7.7%	7.4%	7.2%
50th perc.*	5.5%	5.2%	5.4%	5.4%	5.5%	5.5%	5.4%	5.3%	5.3%	5.3%
25th perc.	-1.7%	0.0%	1.5%	2.0%	2.5%	2.9%	3.1%	3.0%	3.2%	3.3%
5th perc.	-11.8%	-6.8%	-3.9%	-2.6%	-1.4%	-0.6%	0.0%	0.3%	0.8%	1.0%

*Median

Total Contributions in USD (millions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	895.9	963.2	1,068.7	1,176.3	1,322.0	1,492.3	1,694.0	1,916.3	2,190.1	2,489.9
75th perc.	772.6	833.8	909.8	995.5	1,110.6	1,215.3	1,338.1	1,478.1	1,630.2	1,812.6
50th perc.*	699.6	747.7	806.9	878.0	952.8	1,011.6	1,081.5	1,187.7	1,265.7	1,386.3
25th perc.	577.0	416.2	410.0	404.2	441.5	462.8	501.5	542.2	571.3	656.5
5th perc.	276.8	280.9	295.3	306.7	317.3	328.9	342.7	347.2	364.3	370.6

*Median

VIII. Monte-Carlo Simulation Results in Chilean Peso Terms

FEES

Current Portfolio

Nominal Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	5.5	6.3	7.6	9.9	12.3	15.0	18.6	22.8	27.3	31.6
75th perc.	4.8	5.1	5.6	6.7	8.0	9.4	11.0	12.6	14.8	16.9
50th perc.*	4.4	4.5	4.7	5.1	5.5	6.2	6.8	7.5	8.2	9.1
25th perc.	4.0	4.0	3.8	3.8	3.7	3.7	3.5	3.4	3.3	3.3
5th perc.	3.4	3.0	2.3	1.4	0.7	0.0	0.0	0.0	0.0	0.0

*Median

Real Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	5.3	5.9	6.8	8.3	10.1	12.1	14.3	16.8	19.9	22.5
75th perc.	4.6	4.8	5.1	5.7	6.5	7.6	8.7	9.7	10.9	12.3
50th perc.*	4.2	4.2	4.2	4.4	4.6	5.0	5.3	5.6	6.0	6.7
25th perc.	3.9	3.8	3.5	3.3	3.2	3.1	2.8	2.6	2.5	2.3
5th perc.	3.3	2.9	2.2	1.3	0.7	0.0	0.0	0.0	0.0	0.0

*Median

Nominal Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	27.1%	20.6%	18.2%	16.6%	15.4%	14.9%	14.2%	13.5%	13.1%	13.0%
75th perc.	14.5%	11.9%	10.9%	10.3%	9.8%	9.6%	9.2%	9.0%	8.9%	8.7%
50th perc.*	6.4%	6.1%	6.2%	6.1%	6.0%	5.9%	6.0%	6.0%	6.0%	6.0%
25th perc.	-1.7%	0.1%	1.2%	1.7%	2.0%	2.6%	2.9%	2.9%	3.0%	3.1%
5th perc.	-15.4%	-8.8%	-6.7%	-4.7%	-3.7%	-3.2%	-2.3%	-1.7%	-1.4%	-1.2%

*Median

Real Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	23.6%	17.1%	14.7%	13.2%	12.3%	11.6%	10.9%	10.1%	9.8%	9.7%
75th perc.	11.2%	8.7%	7.8%	7.1%	6.7%	6.4%	6.1%	5.8%	5.7%	5.5%
50th perc.*	3.2%	3.0%	3.1%	3.0%	2.8%	2.8%	2.9%	2.9%	2.8%	2.7%
25th perc.	-4.8%	-3.0%	-2.0%	-1.3%	-1.1%	-0.7%	-0.4%	-0.3%	-0.1%	-0.1%
5th perc.	-18.0%	-12.1%	-9.6%	-7.5%	-6.6%	-6.1%	-5.2%	-4.7%	-4.3%	-4.0%

*Median

Withdrawals from returns in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.3	0.4	0.4	0.5	0.6	0.8	1.0	1.1	1.3	1.5
75th perc.	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.6	0.6
50th perc.*	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
25th perc.	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
5th perc.	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Additional Withdrawals in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.4	0.8	1.0	1.2	1.3	1.4	1.5	1.6	1.9	2.1
75th perc.	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.2	0.2	0.2
50th perc.*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Withdrawals in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.6	1.0	1.2	1.4	1.5	1.5	1.7	1.9	2.2	2.4
75th perc.	0.3	0.4	0.4	0.5	0.6	0.6	0.8	0.9	1.0	1.1
50th perc.*	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.6
25th perc.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
5th perc.	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0

*Median

Total Contributions in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.8	1.2	1.5	2.4	2.8	3.2	3.8	4.5	5.0	5.9
75th perc.	0.3	0.5	0.6	1.2	1.4	1.6	1.8	2.0	2.2	2.6
50th perc.*	0.0	0.0	0.0	0.4	0.5	0.5	0.5	0.6	0.7	0.9
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Efficient Mix Portfolio (Same Risk as Current Portfolio)

Nominal Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	5.5	6.3	7.6	9.8	12.3	15.0	18.6	22.8	27.3	31.6
75th perc.	4.8	5.1	5.6	6.7	8.0	9.4	11.0	12.6	14.8	16.9
50th perc.*	4.4	4.5	4.7	5.1	5.5	6.2	6.8	7.4	8.1	9.1
25th perc.	4.0	4.0	3.8	3.8	3.7	3.7	3.5	3.4	3.3	3.2
5th perc.	3.4	3.0	2.3	1.4	0.7	0.0	0.0	0.0	0.0	0.0

*Median

Real Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	5.3	5.9	6.8	8.3	10.1	12.1	14.3	16.8	19.8	22.5
75th perc.	4.6	4.8	5.1	5.7	6.5	7.6	8.7	9.7	10.9	12.3
50th perc.*	4.2	4.2	4.2	4.4	4.6	5.0	5.3	5.6	6.0	6.7
25th perc.	3.9	3.8	3.5	3.3	3.2	3.1	2.8	2.6	2.5	2.3
5th perc.	3.3	2.9	2.2	1.3	0.7	0.0	0.0	0.0	0.0	0.0

*Median

Nominal Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	27.8%	21.2%	18.8%	17.2%	16.0%	15.3%	14.6%	14.0%	13.5%	13.3%
75th perc.	15.1%	12.4%	11.4%	10.8%	10.3%	10.0%	9.7%	9.4%	9.4%	9.2%
50th perc.*	6.9%	6.7%	6.6%	6.6%	6.5%	6.4%	6.4%	6.5%	6.4%	6.5%
25th perc.	-1.4%	0.5%	1.6%	2.2%	2.4%	3.1%	3.3%	3.4%	3.5%	3.6%
5th perc.	-15.1%	-8.6%	-6.1%	-4.4%	-3.4%	-2.6%	-1.9%	-1.3%	-0.9%	-0.7%

*Median

Real Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	24.2%	17.7%	15.2%	13.6%	12.7%	12.0%	11.2%	10.6%	10.1%	10.2%
75th perc.	11.7%	9.2%	8.2%	7.5%	7.2%	6.8%	6.5%	6.2%	6.2%	6.0%
50th perc.*	3.8%	3.6%	3.5%	3.4%	3.3%	3.2%	3.3%	3.3%	3.2%	3.2%
25th perc.	-4.3%	-2.6%	-1.6%	-0.9%	-0.7%	-0.2%	0.1%	0.2%	0.3%	0.3%
5th perc.	-17.8%	-11.5%	-9.1%	-7.2%	-6.3%	-5.7%	-4.8%	-4.2%	-3.9%	-3.7%

*Median

Withdrawals from returns in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.4	0.4	0.5	0.5	0.7	0.8	1.0	1.1	1.5	1.6
75th perc.	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.7
50th perc.*	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
25th perc.	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
5th perc.	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Additional Withdrawals in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.4	0.8	1.0	1.2	1.3	1.4	1.5	1.6	1.9	2.1
75th perc.	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.2	0.2	0.2
50th perc.*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Withdrawals in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.6	1.0	1.2	1.4	1.4	1.6	1.7	1.9	2.2	2.4
75th perc.	0.3	0.4	0.5	0.5	0.6	0.7	0.8	0.9	1.1	1.2
50th perc.*	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.6	0.6
25th perc.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
5th perc.	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0

*Median

Total Contributions in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.8	1.2	1.5	2.4	2.8	3.2	3.8	4.5	5.0	5.9
75th perc.	0.3	0.5	0.6	1.2	1.4	1.6	1.8	2.0	2.2	2.6
50th perc.*	0.0	0.0	0.0	0.4	0.5	0.5	0.5	0.6	0.7	0.9
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Portfolio A

Nominal Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	5.5	6.3	7.6	9.8	12.2	15.0	18.5	22.7	27.1	31.3
75th perc.	4.8	5.1	5.6	6.7	8.0	9.4	11.0	12.6	14.7	16.7
50th perc.*	4.4	4.5	4.6	5.1	5.5	6.1	6.7	7.4	8.1	9.0
25th perc.	4.0	4.0	3.8	3.8	3.6	3.6	3.4	3.3	3.2	3.2
5th perc.	3.4	3.0	2.3	1.4	0.7	0.0	0.0	0.0	0.0	0.0

*Median

Real Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	5.3	5.9	6.8	8.3	10.0	12.1	14.3	16.7	19.7	22.4
75th perc.	4.6	4.8	5.1	5.7	6.5	7.5	8.6	9.6	10.9	12.2
50th perc.*	4.2	4.2	4.2	4.4	4.6	5.0	5.3	5.5	6.0	6.6
25th perc.	3.9	3.7	3.5	3.3	3.1	3.0	2.8	2.6	2.4	2.3
5th perc.	3.3	2.9	2.2	1.3	0.6	0.0	0.0	0.0	0.0	0.0

*Median

Nominal Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	30.4%	22.8%	20.2%	18.5%	17.5%	16.8%	15.8%	15.3%	14.6%	14.2%
75th perc.	16.7%	13.7%	12.6%	11.9%	11.4%	11.3%	10.9%	10.5%	10.5%	10.3%
50th perc.*	8.1%	7.7%	7.6%	7.6%	7.4%	7.4%	7.4%	7.4%	7.5%	7.4%
25th perc.	-0.6%	1.3%	2.3%	2.9%	3.3%	3.9%	4.2%	4.2%	4.4%	4.5%
5th perc.	-14.6%	-8.2%	-5.2%	-3.6%	-2.6%	-1.8%	-1.0%	-0.6%	-0.1%	0.2%

*Median

Real Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	26.9%	19.3%	16.7%	15.2%	13.8%	13.3%	12.2%	11.7%	11.1%	11.0%
75th perc.	13.4%	10.4%	9.4%	8.7%	8.4%	7.9%	7.6%	7.3%	7.2%	7.0%
50th perc.*	4.8%	4.4%	4.5%	4.4%	4.1%	4.2%	4.4%	4.3%	4.2%	4.1%
25th perc.	-3.6%	-1.8%	-0.7%	-0.1%	0.3%	0.8%	1.0%	1.1%	1.2%	1.3%
5th perc.	-17.4%	-11.3%	-8.2%	-6.6%	-5.5%	-4.7%	-3.9%	-3.4%	-3.2%	-2.8%

*Median

Withdrawals from returns in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.6	0.7	0.8	0.8	1.0	1.1	1.5	1.7	2.2	2.4
75th perc.	0.4	0.4	0.4	0.4	0.5	0.6	0.7	0.7	0.8	0.9
50th perc.*	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4
25th perc.	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Additional Withdrawals in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.4	0.8	1.0	1.2	1.3	1.4	1.5	1.6	1.9	2.1
75th perc.	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.2	0.2	0.2
50th perc.*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Withdrawals in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.8	1.0	1.3	1.4	1.5	1.7	2.0	2.3	2.6	2.8
75th perc.	0.5	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.3	1.4
50th perc.*	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.7
25th perc.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Contributions in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.8	1.2	1.5	2.4	2.8	3.2	3.8	4.5	5.0	5.9
75th perc.	0.3	0.5	0.6	1.2	1.4	1.6	1.8	2.0	2.2	2.6
50th perc.*	0.0	0.0	0.0	0.4	0.5	0.5	0.5	0.6	0.7	0.9
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Portfolio B

Nominal Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	5.5	6.3	7.6	9.8	12.2	15.0	18.5	22.7	27.1	31.3
75th perc.	4.8	5.1	5.6	6.7	7.9	9.3	10.9	12.5	14.6	16.7
50th perc.*	4.4	4.5	4.6	5.0	5.5	6.1	6.7	7.3	8.0	9.0
25th perc.	4.0	4.0	3.8	3.8	3.6	3.6	3.4	3.2	3.2	3.1
5th perc.	3.4	3.0	2.3	1.4	0.7	0.0	0.0	0.0	0.0	0.0

*Median

Real Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	5.3	5.9	6.8	8.3	10.0	12.1	14.3	16.7	19.6	22.4
75th perc.	4.6	4.8	5.1	5.7	6.5	7.5	8.6	9.6	10.8	12.1
50th perc.*	4.2	4.2	4.2	4.3	4.6	5.0	5.2	5.5	6.0	6.5
25th perc.	3.9	3.7	3.5	3.3	3.1	3.0	2.7	2.6	2.4	2.2
5th perc.	3.3	2.9	2.1	1.3	0.6	0.0	0.0	0.0	0.0	0.0

*Median

Nominal Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	31.0%	23.2%	20.8%	18.9%	18.0%	17.0%	16.0%	15.6%	14.9%	14.5%
75th perc.	16.8%	14.0%	12.9%	12.2%	11.7%	11.4%	11.3%	10.7%	10.7%	10.5%
50th perc.*	8.3%	7.8%	7.8%	7.7%	7.7%	7.5%	7.6%	7.6%	7.7%	7.7%
25th perc.	-0.6%	1.3%	2.4%	3.0%	3.5%	4.1%	4.3%	4.4%	4.5%	4.8%
5th perc.	-15.1%	-8.3%	-5.3%	-3.6%	-2.5%	-1.8%	-0.8%	-0.3%	0.0%	0.4%

*Median

Real Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	27.3%	19.7%	17.1%	15.6%	14.2%	13.5%	12.6%	12.0%	11.3%	11.2%
75th perc.	13.6%	10.7%	9.6%	8.9%	8.6%	8.1%	7.9%	7.6%	7.5%	7.2%
50th perc.*	5.0%	4.5%	4.6%	4.6%	4.3%	4.4%	4.5%	4.4%	4.4%	4.4%
25th perc.	-3.7%	-1.8%	-0.6%	0.0%	0.5%	0.9%	1.1%	1.3%	1.4%	1.5%
5th perc.	-17.6%	-11.5%	-8.2%	-6.4%	-5.6%	-4.6%	-3.8%	-3.3%	-2.9%	-2.8%

*Median

Withdrawals from returns in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.7	0.7	0.8	0.9	1.1	1.3	1.7	1.9	2.4	2.6
75th perc.	0.4	0.4	0.5	0.5	0.5	0.6	0.7	0.8	0.8	1.0
50th perc.*	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4
25th perc.	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Additional Withdrawals in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.4	0.8	1.0	1.2	1.3	1.4	1.5	1.6	1.9	2.1
75th perc.	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.2	0.2	0.2
50th perc.*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Withdrawals in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.8	1.1	1.3	1.5	1.6	1.8	2.1	2.4	2.7	2.9
75th perc.	0.5	0.6	0.7	0.7	0.8	0.9	1.1	1.2	1.4	1.5
50th perc.*	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7
25th perc.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Contributions in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.8	1.2	1.5	2.4	2.8	3.2	3.8	4.5	5.0	5.9
75th perc.	0.3	0.5	0.6	1.2	1.4	1.6	1.8	2.0	2.2	2.6
50th perc.*	0.0	0.0	0.0	0.4	0.5	0.5	0.5	0.6	0.7	0.9
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Portfolio C

Nominal Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	5.5	6.3	7.6	9.8	12.2	14.9	18.4	22.7	27.1	31.2
75th perc.	4.8	5.1	5.6	6.7	7.9	9.3	10.9	12.4	14.5	16.6
50th perc.*	4.3	4.5	4.6	5.0	5.4	6.1	6.6	7.3	8.0	8.9
25th perc.	4.0	3.9	3.8	3.7	3.6	3.6	3.4	3.2	3.1	3.1
5th perc.	3.4	3.0	2.3	1.4	0.6	0.0	0.0	0.0	0.0	0.0

*Median

Real Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	5.3	5.9	6.8	8.3	10.0	12.1	14.2	16.6	19.6	22.3
75th perc.	4.6	4.8	5.1	5.7	6.5	7.5	8.5	9.6	10.7	12.0
50th perc.*	4.2	4.2	4.2	4.3	4.6	5.0	5.2	5.5	5.9	6.4
25th perc.	3.9	3.7	3.5	3.3	3.1	3.0	2.7	2.5	2.3	2.2
5th perc.	3.3	2.8	2.1	1.3	0.6	0.0	0.0	0.0	0.0	0.0

*Median

Nominal Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	31.9%	23.9%	21.5%	19.6%	18.3%	17.3%	16.3%	15.8%	15.3%	14.8%
75th perc.	17.2%	14.3%	13.3%	12.5%	12.0%	11.8%	11.5%	11.0%	10.9%	10.8%
50th perc.*	8.4%	7.9%	7.9%	7.9%	7.8%	7.7%	7.8%	7.8%	7.9%	7.9%
25th perc.	-0.7%	1.3%	2.5%	3.2%	3.6%	4.2%	4.5%	4.7%	4.7%	4.9%
5th perc.	-15.3%	-8.6%	-5.4%	-3.5%	-2.5%	-1.8%	-0.8%	-0.2%	0.2%	0.5%

*Median

Real Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	28.4%	20.4%	17.5%	16.1%	14.6%	13.8%	12.9%	12.3%	11.6%	11.4%
75th perc.	13.8%	11.0%	9.8%	9.2%	8.9%	8.3%	8.1%	7.9%	7.7%	7.5%
50th perc.*	5.1%	4.6%	4.8%	4.7%	4.5%	4.6%	4.7%	4.6%	4.7%	4.6%
25th perc.	-3.7%	-1.8%	-0.6%	0.1%	0.6%	1.1%	1.3%	1.4%	1.7%	1.7%
5th perc.	-17.8%	-11.5%	-8.2%	-6.3%	-5.5%	-4.6%	-3.8%	-3.2%	-2.9%	-2.6%

*Median

Withdrawals from returns in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.7	0.8	0.9	1.0	1.2	1.4	1.8	2.0	2.6	2.8
75th perc.	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.8	0.9	1.0
50th perc.*	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4
25th perc.	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Additional Withdrawals in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.4	0.8	1.0	1.2	1.3	1.4	1.5	1.6	1.9	2.1
75th perc.	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.2	0.2	0.2
50th perc.*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Withdrawals in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.9	1.1	1.4	1.5	1.7	1.9	2.2	2.5	2.9	3.1
75th perc.	0.5	0.6	0.7	0.8	0.8	1.0	1.1	1.2	1.4	1.5
50th perc.*	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.8
25th perc.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Contributions in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.8	1.2	1.5	2.4	2.8	3.2	3.8	4.5	5.0	5.9
75th perc.	0.3	0.5	0.6	1.2	1.4	1.6	1.8	2.0	2.2	2.6
50th perc.*	0.0	0.0	0.0	0.4	0.5	0.5	0.5	0.6	0.7	0.9
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Portfolio D (Recommendation)

Nominal Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	5.4	6.3	7.6	9.8	12.2	14.9	18.2	22.6	27.0	31.0
75th perc.	4.8	5.1	5.6	6.6	7.9	9.3	10.8	12.4	14.4	16.4
50th perc.*	4.3	4.5	4.6	5.0	5.4	6.0	6.6	7.3	7.9	8.8
25th perc.	4.0	3.9	3.8	3.7	3.6	3.6	3.3	3.2	3.0	3.0
5th perc.	3.4	3.0	2.3	1.4	0.6	0.0	0.0	0.0	0.0	0.0

*Median

Real Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	5.3	5.9	6.8	8.3	10.0	12.0	14.2	16.5	19.5	22.1
75th perc.	4.6	4.8	5.1	5.6	6.5	7.4	8.5	9.5	10.6	11.9
50th perc.*	4.2	4.2	4.2	4.3	4.5	4.9	5.2	5.4	5.9	6.4
25th perc.	3.9	3.7	3.5	3.2	3.0	3.0	2.7	2.5	2.3	2.2
5th perc.	3.3	2.8	2.1	1.2	0.6	0.0	0.0	0.0	0.0	0.0

*Median

Nominal Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	32.5%	24.5%	22.1%	20.1%	18.6%	17.8%	16.7%	16.2%	15.6%	15.1%
75th perc.	17.6%	14.7%	13.6%	12.9%	12.4%	12.0%	11.7%	11.3%	11.2%	11.1%
50th perc.*	8.5%	7.9%	8.2%	8.2%	8.0%	8.0%	8.0%	8.0%	8.1%	8.1%
25th perc.	-1.0%	1.2%	2.6%	3.2%	3.8%	4.4%	4.7%	4.8%	4.9%	5.1%
5th perc.	-15.4%	-8.8%	-5.4%	-3.5%	-2.5%	-1.7%	-0.7%	0.0%	0.3%	0.6%

*Median

Real Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	29.2%	20.8%	18.3%	16.4%	15.0%	14.1%	13.3%	12.6%	12.0%	11.7%
75th perc.	14.4%	11.4%	10.1%	9.5%	9.1%	8.6%	8.4%	8.1%	7.9%	7.8%
50th perc.*	5.1%	4.7%	4.9%	5.0%	4.7%	4.8%	4.9%	4.8%	4.9%	4.8%
25th perc.	-3.9%	-2.0%	-0.6%	0.1%	0.7%	1.2%	1.4%	1.6%	1.8%	1.9%
5th perc.	-17.9%	-11.3%	-8.4%	-6.3%	-5.4%	-4.6%	-3.7%	-3.1%	-2.8%	-2.4%

*Median

Withdrawals from returns in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.8	0.9	1.0	1.1	1.3	1.5	2.0	2.2	2.9	3.0
75th perc.	0.5	0.5	0.5	0.5	0.6	0.7	0.8	0.9	0.9	1.1
50th perc.*	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4
25th perc.	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Additional Withdrawals in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.4	0.8	1.0	1.2	1.3	1.4	1.5	1.6	1.9	2.1
75th perc.	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.2	0.2	0.2
50th perc.*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Withdrawals in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1.0	1.1	1.4	1.6	1.7	2.0	2.4	2.6	3.1	3.3
75th perc.	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.3	1.5	1.6
50th perc.*	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.8
25th perc.	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Contributions in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.8	1.2	1.5	2.4	2.8	3.2	3.8	4.5	5.0	5.9
75th perc.	0.3	0.5	0.6	1.2	1.4	1.6	1.8	2.0	2.2	2.6
50th perc.*	0.0	0.0	0.0	0.4	0.5	0.5	0.5	0.6	0.7	0.9
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Portfolio E

Nominal Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	5.4	6.3	7.6	9.8	12.1	14.8	18.1	22.6	27.0	30.8
75th perc.	4.8	5.1	5.6	6.6	7.8	9.2	10.7	12.3	14.3	16.3
50th perc.*	4.3	4.4	4.5	4.9	5.3	6.0	6.6	7.2	7.8	8.8
25th perc.	4.0	3.9	3.8	3.7	3.5	3.5	3.3	3.1	2.9	2.9
5th perc.	3.4	3.0	2.3	1.3	0.6	0.0	0.0	0.0	0.0	0.0

*Median

Real Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	5.3	5.9	6.8	8.3	9.9	11.9	14.1	16.4	19.5	22.1
75th perc.	4.6	4.8	5.1	5.6	6.4	7.4	8.5	9.5	10.6	11.8
50th perc.*	4.2	4.2	4.2	4.3	4.5	4.9	5.1	5.4	5.8	6.3
25th perc.	3.9	3.7	3.4	3.2	3.0	2.9	2.6	2.4	2.2	2.1
5th perc.	3.3	2.8	2.1	1.2	0.5	0.0	0.0	0.0	0.0	0.0

*Median

Nominal Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	33.7%	25.4%	22.4%	20.6%	19.1%	18.3%	17.1%	16.6%	15.9%	15.4%
75th perc.	18.3%	15.1%	13.7%	13.1%	12.6%	12.3%	12.0%	11.6%	11.5%	11.4%
50th perc.*	8.5%	8.0%	8.4%	8.3%	8.2%	8.1%	8.2%	8.2%	8.4%	8.3%
25th perc.	-1.0%	1.1%	2.6%	3.3%	4.0%	4.5%	4.8%	4.9%	5.0%	5.3%
5th perc.	-15.8%	-9.0%	-5.5%	-3.5%	-2.5%	-1.6%	-0.6%	0.1%	0.3%	0.7%

*Median

Real Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	29.8%	21.6%	18.8%	17.1%	15.6%	14.5%	13.5%	13.1%	12.3%	12.1%
75th perc.	15.0%	11.8%	10.3%	9.8%	9.3%	9.0%	8.6%	8.4%	8.2%	8.0%
50th perc.*	5.2%	4.8%	5.1%	5.0%	4.9%	5.0%	5.1%	4.9%	5.2%	5.0%
25th perc.	-3.8%	-1.9%	-0.6%	0.2%	0.7%	1.4%	1.5%	1.7%	1.9%	2.0%
5th perc.	-18.3%	-11.7%	-8.6%	-6.4%	-5.3%	-4.6%	-3.6%	-3.1%	-2.7%	-2.3%

*Median

Withdrawals from returns in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.9	0.9	1.1	1.2	1.5	1.7	2.1	2.4	3.1	3.3
75th perc.	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.9	1.0	1.1
50th perc.*	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4
25th perc.	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Additional Withdrawals in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.4	0.8	1.0	1.2	1.3	1.4	1.5	1.6	1.9	2.1
75th perc.	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.2	0.2	0.2
50th perc.*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Withdrawals in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1.0	1.2	1.5	1.6	1.8	2.1	2.5	2.7	3.3	3.5
75th perc.	0.6	0.7	0.8	0.9	0.9	1.1	1.2	1.3	1.5	1.7
50th perc.*	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.7	0.7	0.8
25th perc.	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

Total Contributions in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.8	1.2	1.5	2.4	2.8	3.2	3.8	4.5	5.0	5.9
75th perc.	0.3	0.5	0.6	1.2	1.4	1.6	1.8	2.0	2.2	2.6
50th perc.*	0.0	0.0	0.0	0.4	0.5	0.5	0.5	0.6	0.7	0.9
25th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5th perc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Median

FRP

Current Portfolio

Nominal Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1.3	1.8	2.5	3.2	4.1	5.0	6.1	7.3	9.0	10.5
75th perc.	1.2	1.6	2.2	2.8	3.5	4.3	5.2	6.1	7.3	8.5
50th perc.*	1.1	1.5	2.0	2.5	3.1	3.7	4.4	5.2	6.0	7.0
25th perc.	1.0	1.3	1.7	2.1	2.5	3.0	3.5	4.1	4.7	5.3
5th perc.	0.8	1.1	1.3	1.6	1.9	2.1	2.4	2.7	3.0	3.5

*Median

Real Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1.2	1.7	2.3	2.8	3.4	4.2	4.9	5.7	6.8	7.6
75th perc.	1.1	1.5	2.0	2.5	3.0	3.6	4.2	4.8	5.5	6.2
50th perc.*	1.1	1.4	1.8	2.2	2.6	3.1	3.6	4.0	4.6	5.1
25th perc.	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.2	3.6	3.9
5th perc.	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.7

*Median

Nominal Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	27.1%	20.5%	18.2%	16.6%	15.4%	14.9%	14.1%	13.5%	13.1%	13.0%
75th perc.	14.5%	11.9%	10.9%	10.3%	9.8%	9.6%	9.2%	9.0%	8.9%	8.7%
50th perc.*	6.4%	6.1%	6.2%	6.1%	6.0%	5.9%	6.0%	6.0%	5.9%	6.0%
25th perc.	-1.7%	0.1%	1.2%	1.7%	2.0%	2.6%	2.9%	2.9%	3.0%	3.1%
5th perc.	-15.4%	-8.9%	-6.7%	-4.7%	-3.7%	-3.2%	-2.3%	-1.7%	-1.4%	-1.2%

*Median

Real Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	23.6%	17.1%	14.7%	13.2%	12.3%	11.6%	10.9%	10.1%	9.7%	9.6%
75th perc.	11.2%	8.7%	7.7%	7.1%	6.7%	6.4%	6.1%	5.8%	5.6%	5.5%
50th perc.*	3.2%	3.0%	3.1%	3.0%	2.8%	2.8%	2.9%	2.9%	2.8%	2.7%
25th perc.	-4.8%	-3.0%	-2.0%	-1.4%	-1.1%	-0.7%	-0.4%	-0.3%	-0.1%	-0.1%
5th perc.	-18.0%	-12.2%	-9.6%	-7.5%	-6.6%	-6.1%	-5.3%	-4.7%	-4.3%	-4.1%

*Median

Total Contributions in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.4	0.4	0.5	0.6	0.6	0.7	0.8	1.0	1.1	1.3
75th perc.	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.8	0.9
50th perc.*	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7
25th perc.	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
5th perc.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

*Median

Portfolio A [Recommendation 1 (Maintains Policy)]

Nominal Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1.3	1.9	2.7	3.5	4.5	5.7	7.0	8.6	10.5	12.5
75th perc.	1.2	1.7	2.3	3.0	3.8	4.7	5.7	6.8	8.2	9.7
50th perc.*	1.1	1.6	2.1	2.6	3.2	4.0	4.8	5.7	6.7	7.8
25th perc.	1.0	1.4	1.7	2.2	2.6	3.2	3.7	4.3	5.0	5.7
5th perc.	0.8	1.1	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.6

*Median

Real Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1.3	1.8	2.4	3.1	3.8	4.7	5.6	6.6	7.8	9.0
75th perc.	1.2	1.6	2.1	2.6	3.2	3.9	4.6	5.3	6.2	7.0
50th perc.*	1.1	1.5	1.9	2.3	2.8	3.3	3.8	4.4	5.0	5.7
25th perc.	1.0	1.3	1.6	1.9	2.3	2.7	3.0	3.4	3.8	4.3
5th perc.	0.8	1.0	1.2	1.4	1.6	1.8	2.1	2.2	2.5	2.8

*Median

Nominal Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	33.6%	25.2%	22.5%	20.4%	18.9%	18.0%	17.0%	16.3%	15.7%	15.2%
75th perc.	17.9%	15.0%	13.8%	12.9%	12.5%	12.1%	11.9%	11.5%	11.3%	11.2%
50th perc.*	8.6%	8.1%	8.2%	8.2%	8.1%	8.0%	8.1%	8.0%	8.2%	8.2%
25th perc.	-0.8%	1.2%	2.6%	3.3%	3.9%	4.4%	4.6%	4.8%	4.8%	5.1%
5th perc.	-15.8%	-9.0%	-5.6%	-3.6%	-2.6%	-1.7%	-0.6%	-0.1%	0.3%	0.6%

*Median

Real Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	29.6%	21.1%	18.7%	16.7%	15.3%	14.2%	13.5%	12.7%	12.0%	11.8%
75th perc.	14.7%	11.6%	10.2%	9.6%	9.2%	8.8%	8.5%	8.2%	7.9%	7.8%
50th perc.*	5.3%	4.9%	5.0%	5.0%	4.8%	4.8%	5.0%	4.8%	4.9%	4.8%
25th perc.	-3.8%	-1.8%	-0.6%	0.2%	0.7%	1.3%	1.4%	1.5%	1.7%	1.9%
5th perc.	-18.2%	-11.6%	-8.5%	-6.4%	-5.5%	-4.6%	-3.6%	-3.0%	-2.9%	-2.4%

*Median

Total Contributions in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.4	0.4	0.5	0.6	0.6	0.7	0.8	1.0	1.1	1.3
75th perc.	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.8	0.9
50th perc.*	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7
25th perc.	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
5th perc.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

*Median

Portfolio B

Nominal Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1.3	1.9	2.7	3.5	4.5	5.6	6.9	8.4	10.4	12.3
75th perc.	1.2	1.7	2.3	3.0	3.8	4.7	5.7	6.8	8.2	9.6
50th perc.*	1.1	1.6	2.1	2.6	3.2	4.0	4.8	5.6	6.6	7.8
25th perc.	1.0	1.4	1.7	2.2	2.6	3.2	3.7	4.3	5.0	5.8
5th perc.	0.9	1.1	1.3	1.6	1.9	2.2	2.5	2.8	3.2	3.7

*Median

Real Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1.3	1.8	2.4	3.1	3.8	4.6	5.6	6.6	7.8	9.0
75th perc.	1.2	1.6	2.1	2.6	3.2	3.9	4.6	5.3	6.2	7.0
50th perc.*	1.1	1.5	1.9	2.3	2.8	3.3	3.8	4.4	5.0	5.7
25th perc.	1.0	1.3	1.6	1.9	2.3	2.6	3.0	3.4	3.8	4.2
5th perc.	0.8	1.0	1.2	1.4	1.6	1.9	2.1	2.2	2.5	2.8

*Median

Nominal Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	32.7%	24.4%	21.8%	19.9%	18.5%	17.7%	16.6%	16.1%	15.4%	15.0%
75th perc.	17.7%	14.6%	13.5%	12.8%	12.3%	12.0%	11.7%	11.3%	11.2%	11.1%
50th perc.*	8.4%	7.8%	8.1%	8.1%	8.0%	7.9%	8.0%	8.0%	8.2%	8.1%
25th perc.	-0.8%	1.3%	2.7%	3.2%	3.8%	4.4%	4.7%	4.7%	4.9%	5.1%
5th perc.	-15.2%	-8.7%	-5.3%	-3.4%	-2.5%	-1.8%	-0.8%	0.0%	0.4%	0.7%

*Median

Real Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	28.8%	20.9%	18.1%	16.5%	15.0%	14.1%	13.2%	12.6%	12.0%	11.8%
75th perc.	14.3%	11.3%	10.1%	9.6%	9.1%	8.6%	8.3%	8.1%	7.9%	7.8%
50th perc.*	4.9%	4.7%	4.9%	4.9%	4.7%	4.8%	4.9%	4.8%	4.9%	4.8%
25th perc.	-4.0%	-1.9%	-0.6%	0.1%	0.7%	1.2%	1.4%	1.5%	1.7%	1.9%
5th perc.	-17.7%	-11.5%	-8.2%	-6.4%	-5.4%	-4.5%	-3.7%	-3.2%	-2.8%	-2.4%

*Median

Total Contributions in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.4	0.4	0.5	0.6	0.6	0.7	0.8	1.0	1.1	1.3
75th perc.	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.8	0.9
50th perc.*	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7
25th perc.	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
5th perc.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

*Median

Portfolio C

Nominal Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1.3	2.0	2.8	3.7	4.7	6.0	7.4	9.2	11.3	13.5
75th perc.	1.2	1.7	2.4	3.1	3.9	4.9	5.9	7.1	8.6	10.1
50th perc.*	1.1	1.6	2.1	2.7	3.3	4.1	4.9	5.7	6.8	8.0
25th perc.	1.0	1.4	1.7	2.2	2.7	3.2	3.8	4.4	5.1	5.9
5th perc.	0.8	1.1	1.3	1.6	1.9	2.2	2.4	2.7	3.1	3.6

*Median

Real Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1.3	1.9	2.5	3.2	4.0	5.0	6.0	7.0	8.3	9.8
75th perc.	1.2	1.6	2.1	2.7	3.3	4.0	4.8	5.5	6.5	7.4
50th perc.*	1.1	1.5	1.9	2.4	2.8	3.4	3.9	4.5	5.2	5.9
25th perc.	1.0	1.3	1.6	1.9	2.3	2.7	3.1	3.5	3.9	4.3
5th perc.	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.7

*Median

Nominal Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	37.1%	27.7%	24.5%	22.0%	20.2%	19.5%	18.3%	17.5%	16.7%	16.2%
75th perc.	19.5%	16.1%	14.5%	14.0%	13.4%	13.0%	12.7%	12.4%	12.1%	12.0%
50th perc.*	8.9%	8.6%	8.8%	8.7%	8.7%	8.6%	8.7%	8.7%	8.8%	8.8%
25th perc.	-1.2%	1.1%	2.7%	3.6%	4.1%	4.8%	5.0%	5.0%	5.2%	5.6%
5th perc.	-16.4%	-9.6%	-5.9%	-3.6%	-2.7%	-1.6%	-0.5%	0.1%	0.5%	1.0%

*Median

Real Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	33.1%	23.9%	20.6%	18.5%	16.9%	15.7%	14.5%	14.0%	13.2%	12.8%
75th perc.	16.0%	12.6%	11.3%	10.7%	10.1%	9.8%	9.4%	9.1%	8.8%	8.8%
50th perc.*	5.4%	5.1%	5.4%	5.4%	5.3%	5.4%	5.5%	5.5%	5.6%	5.5%
25th perc.	-4.1%	-2.0%	-0.6%	0.4%	1.0%	1.6%	1.7%	1.8%	2.0%	2.3%
5th perc.	-18.9%	-12.3%	-8.7%	-6.7%	-5.5%	-4.5%	-3.5%	-3.1%	-2.7%	-2.2%

*Median

Total Contributions in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.4	0.4	0.5	0.6	0.6	0.7	0.8	1.0	1.1	1.3
75th perc.	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.8	0.9
50th perc.*	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7
25th perc.	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
5th perc.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

*Median

Portfolio D [Recommendation 2 (Relaxes Policy)]

Nominal Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1.3	2.0	2.8	3.7	4.8	6.1	7.6	9.4	11.6	13.8
75th perc.	1.2	1.7	2.4	3.1	3.9	4.9	6.0	7.2	8.7	10.2
50th perc.*	1.1	1.6	2.1	2.7	3.3	4.1	4.9	5.8	6.9	8.1
25th perc.	1.0	1.4	1.8	2.2	2.7	3.2	3.8	4.4	5.1	5.9
5th perc.	0.8	1.1	1.3	1.5	1.9	2.1	2.4	2.7	3.1	3.6

*Median

Real Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1.3	1.9	2.6	3.3	4.1	5.1	6.1	7.2	8.6	10.0
75th perc.	1.2	1.6	2.2	2.7	3.4	4.1	4.8	5.6	6.6	7.5
50th perc.*	1.1	1.5	1.9	2.4	2.8	3.4	3.9	4.5	5.2	5.9
25th perc.	1.0	1.3	1.6	1.9	2.3	2.7	3.1	3.5	3.9	4.3
5th perc.	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.7

*Median

Nominal Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	38.2%	28.6%	25.3%	22.5%	20.7%	20.0%	18.6%	17.9%	17.1%	16.5%
75th perc.	19.9%	16.6%	14.8%	14.4%	13.7%	13.2%	12.9%	12.7%	12.3%	12.2%
50th perc.*	9.0%	8.7%	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%	8.9%	8.9%
25th perc.	-1.4%	0.9%	2.7%	3.6%	4.2%	4.9%	5.0%	5.1%	5.3%	5.7%
5th perc.	-16.9%	-9.9%	-6.0%	-3.8%	-2.8%	-1.6%	-0.5%	0.0%	0.5%	0.9%

*Median

Real Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	34.1%	25.0%	21.5%	19.0%	17.2%	16.2%	14.9%	14.4%	13.6%	13.1%
75th perc.	16.2%	13.0%	11.6%	11.0%	10.3%	10.0%	9.6%	9.3%	9.0%	8.9%
50th perc.*	5.5%	5.3%	5.7%	5.6%	5.5%	5.6%	5.6%	5.6%	5.8%	5.6%
25th perc.	-4.4%	-2.1%	-0.6%	0.5%	1.1%	1.6%	1.8%	1.8%	2.1%	2.4%
5th perc.	-19.1%	-12.4%	-8.8%	-6.7%	-5.5%	-4.5%	-3.5%	-3.2%	-2.7%	-2.3%

*Median

Total Contributions in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.4	0.4	0.5	0.6	0.6	0.7	0.8	1.0	1.1	1.3
75th perc.	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.8	0.9
50th perc.*	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7
25th perc.	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
5th perc.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

*Median

Portfolio E

Nominal Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1.4	2.0	2.9	3.8	4.9	6.3	7.9	9.9	12.1	14.4
75th perc.	1.2	1.8	2.4	3.1	4.0	5.0	6.1	7.3	8.9	10.4
50th perc.*	1.1	1.6	2.1	2.7	3.3	4.1	4.9	5.8	7.0	8.2
25th perc.	1.0	1.4	1.7	2.2	2.7	3.2	3.8	4.4	5.1	5.9
5th perc.	0.8	1.0	1.3	1.5	1.8	2.1	2.4	2.7	3.1	3.6

*Median

Real Value in Chilean Pesos (trillions)

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1.3	1.9	2.6	3.4	4.2	5.3	6.3	7.5	8.9	10.6
75th perc.	1.2	1.6	2.2	2.8	3.4	4.1	4.9	5.7	6.7	7.7
50th perc.*	1.1	1.5	1.9	2.4	2.8	3.4	4.0	4.6	5.3	6.0
25th perc.	1.0	1.3	1.6	2.0	2.3	2.7	3.1	3.5	3.9	4.4
5th perc.	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.1	2.4	2.7

*Median

Nominal Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	40.4%	30.4%	26.9%	23.9%	22.0%	20.8%	19.5%	18.9%	17.9%	17.3%
75th perc.	21.0%	17.2%	15.7%	14.8%	14.2%	13.8%	13.3%	13.1%	12.9%	12.6%
50th perc.*	9.2%	8.9%	9.1%	9.1%	9.1%	9.1%	9.1%	9.0%	9.1%	9.1%
25th perc.	-1.6%	0.8%	2.6%	3.6%	4.3%	5.0%	5.1%	5.1%	5.4%	5.8%
5th perc.	-17.5%	-10.3%	-6.5%	-3.9%	-3.1%	-1.4%	-0.7%	-0.1%	0.4%	1.0%

*Median

Real Returns in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	36.4%	26.5%	23.2%	20.2%	18.3%	17.0%	15.9%	15.2%	14.4%	14.0%
75th perc.	17.4%	13.8%	12.4%	11.6%	10.8%	10.5%	10.1%	9.7%	9.5%	9.3%
50th perc.*	5.7%	5.7%	5.9%	5.8%	5.8%	5.8%	5.8%	5.8%	6.0%	5.9%
25th perc.	-4.6%	-2.1%	-0.6%	0.4%	1.1%	1.7%	1.8%	2.0%	2.2%	2.5%
5th perc.	-19.8%	-12.9%	-9.3%	-6.9%	-5.9%	-4.4%	-3.7%	-3.2%	-2.7%	-2.3%

*Median

Total Contributions in Chilean Pesos

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.4	0.4	0.5	0.6	0.6	0.7	0.8	1.0	1.1	1.3
75th perc.	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.8	0.9
50th perc.*	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7
25th perc.	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
5th perc.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

*Median

Contributions as a Percentage of Chilean GDP

FEES

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	1.0%	1.4%	1.5%	2.2%	2.3%	2.4%	2.4%	2.5%	2.5%	2.6%
75th perc.	0.4%	0.5%	0.6%	1.2%	1.2%	1.3%	1.3%	1.3%	1.4%	1.4%
50th perc.*	0.0%	0.0%	0.0%	0.4%	0.5%	0.5%	0.4%	0.4%	0.5%	0.5%
25th perc.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5th perc.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

*Median

FRP

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
75th perc.	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
50th perc.*	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
25th perc.	0.4%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
5th perc.	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%

*Median

Withdrawals as a Percentage of Chilean GDP

FEES

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	0.5%	1.0%	1.2%	1.4%	1.4%	1.4%	1.4%	1.5%	1.6%	1.7%
75th perc.	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.2%	0.1%
50th perc.*	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
25th perc.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5th perc.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

*Median

Economic Variables

Expected Chilean Real GDP Variations

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	9.4%	11.1%	11.7%	12.3%	12.6%	12.8%	12.8%	13.1%	13.4%	13.7%
75th perc.	6.6%	7.3%	7.6%	7.8%	8.1%	8.2%	8.3%	8.1%	8.2%	8.5%
50th perc.*	4.9%	5.0%	5.0%	5.0%	5.0%	5.0%	4.9%	5.0%	4.9%	5.1%
25th perc.	3.2%	2.8%	2.2%	2.0%	2.1%	1.9%	1.8%	1.8%	1.6%	1.7%
5th perc.	0.7%	-0.7%	-1.5%	-1.9%	-2.0%	-2.7%	-2.9%	-2.6%	-2.9%	-3.1%

*Median

Expected Copper Price Returns

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	54.8%	58.0%	53.7%	56.0%	59.2%	58.0%	55.7%	57.5%	57.0%	61.7%
75th perc.	23.6%	24.0%	22.3%	23.8%	24.9%	23.8%	22.2%	21.7%	23.0%	25.0%
50th perc.*	5.9%	5.1%	5.0%	4.6%	4.9%	4.5%	4.7%	3.8%	4.7%	5.3%
25th perc.	-11.5%	-11.1%	-11.8%	-12.8%	-11.3%	-12.4%	-11.3%	-12.1%	-12.8%	-11.8%
5th perc.	-31.7%	-31.3%	-31.6%	-33.1%	-32.1%	-32.0%	-32.7%	-33.4%	-34.0%	-33.0%

*Median

Chilean Inflation

Iteration #	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
95th perc.	5.3%	5.5%	5.8%	5.9%	5.8%	5.8%	5.9%	6.0%	6.0%	6.0%
75th perc.	3.9%	4.1%	4.2%	4.1%	4.2%	4.2%	4.3%	4.2%	4.3%	4.3%
50th perc.*	3.1%	3.1%	3.0%	3.0%	3.0%	3.0%	3.1%	3.1%	3.1%	3.1%
25th perc.	2.3%	2.1%	2.0%	2.0%	2.0%	1.9%	1.9%	2.0%	2.0%	1.9%
5th perc.	1.0%	0.6%	0.4%	0.4%	0.4%	0.2%	0.4%	0.4%	0.4%	0.3%

*Median

IX. Index Descriptions

MSCI All Country World Index (ACWI) – Global Equity Index

The MSCI All Country World Index is a global index, which measures the performance of stock markets in the United States, Europe, Canada, Australia, New Zealand, the Far East and the Emerging Markets. In effect, this index combines the EAFE Index and the Emerging Markets Free Index in addition to Canada and the United States. As of 30 June, 2007, the index was comprised of the following 49 countries:

Developed Markets (89% of the MSCI ACWI Index as of June 30, 2007)

Australia	Denmark	Greece	Japan	Portugal	Switzerland
Austria	Finland	Hong Kong	Netherlands	Singapore	United Kingdom
Belgium	France	Ireland	New Zealand	Spain	United States
Canada	Germany	Italy	Norway	Sweden	

Emerging Markets (11% of the MSCI ACWI Index as of June 30, 2007)

Argentina	Colombia	India	Korea	Pakistan	Russia	Turkey
Brazil	Czech Republic	Indonesia	Malaysia	Peru	South Africa	Venezuela
Chile	Egypt	Israel	Mexico	Philippines	Taiwan	
China	Hungary	Jordan	Morocco	Poland	Thailand	

An independent group of country specialists employed by Capital International Perspectives S.A. in Geneva is responsible for the composition. This group regularly monitors the index constituents and adds or deletes companies to maintain a representative sample. The index attempts to provide a representation of the industry compositions of the local markets covered and includes a representative sampling of large, medium and small capitalization companies. The index is market-value-weighted and calculated both with net and gross dividends reinvested.

Lehman Global Treasury and other Government Related Securities Index – Short and Intermediate/Long Term Government Bond Index

This index is a combination of Lehman Global Treasury and Lehman Government Related Securities Indices and tracks local and foreign currency sovereign debt and other government-related securities such as supranational and agency bonds. This composite index was created to better reflect the opportunity set in this space beyond that of Global Treasuries. It includes U.S., Pan-European, Asia-Pacific and investment grade emerging market debt. The maturity ranges of these indices are broad and customizable, but for purposes of this particular case, this index is broken down into the following maturity ranges: 1-3 years, which represent the short portion of the index; and 3+ years, which represent securities with intermediate/long maturities.

Lehman Global Aggregate Corporate Securities Index – Short and Intermediate/Long Term Corporate Bond Index

This index tracks the local and foreign currency investment grade corporate debt of more than 15 countries denominated in 6 currencies. It includes U.S., Pan-European, Asia-Pacific and emerging market corporate debt. The maturity ranges of these indices are broad and customizable, but for purposes of this particular case, this index is broken down into the following maturity ranges: 1-3 years, which represent the short portion of the index; and 3+ years, which represent securities with intermediate/long maturities.

Lehman Global Inflation-Linked Index

The Global Inflation-Linked Index includes securities whose principal and income components are linked to an underlying inflation index. All the securities included in this index are issued by an investment grade sovereign in its local currency. Unlike most other fixed income indices that have a large number of constituents, this index is made up of only 78 securities spanning the maturity range. The small number of index constituents is due to the fact that it is a relatively new asset class.

FTSE Global ERPA/NAREIT Index – REIT Index (Used as a proxy for this asset class)

The FTSE Global EPRA/NAREIT Real Estate Index is designed to track the performance of publicly listed Real Estate Investment Trusts (REITS) and related securities worldwide. Since an index for privately held real estate investments is not available, we are using this benchmark as a proxy for global real estate to illustrate the corresponding characteristics of this segment of the market. It is important to note that this index generally tends to have higher volatility compared to a strategy consisting of privately-held real estate investments.

Merrill Lynch Global Government Bond Index –Global Government Bond Index

This index is shown in this report to show an alternative Global Government Bond index that has longer than 10 years of track record. This index's constituents are government issued fixed interest bonds denominated in the issuer's local currency. The bonds are rated investment grade or above with at least one year maturity.

Citigroup Three-Month U.S. Treasury Bills –Cash and Enhanced Cash Index

The Citigroup 3-Month Treasury Bill Index is a monthly return equivalent of yield averages which are not marked to market. The calculation methodology is as follows:

1. Obtain discount yields for current month-end and two previous month-end dates. For example the January return requires the rates at the end of January, December and November.
2. Convert the discount rates to bond-equivalent yields.
3. Compute the simple average of the bond-equivalent yields.
4. Decompound to a monthly frequency using the actual number of days in the month in a 365-day year.

LIBOR Three-Month–Cash and Enhanced Cash Index

LIBOR (London Inter-Bank Offered Rate) is based on rates that contributor banks in London offer each other for inter-bank deposits. This index is LIBOR for a 3 month deposit in U.S. Dollars during a given month.

X. Discount Rate and Duration Calculation

Discount Rate Calculation

An exercise is performed considering a benefit cash flow is due in a particular year and is assumed to be settled by investing in the zero coupon bond that matures in the same year. The amount invested equals the present value of benefit cash flow, discounted at the corresponding spot rate from a AA corporate yield curve. The basis for the discount rate is the equivalent level rate that discounts the benefit cash flow to the same present value.

Example of the discounting exercise where the equivalent level rate equaled 5.65%

Mid-Point of Measurement Year	Discount Curve Spot Rates	Discounted Cash Flows	Single Rate Discounted Cash Flows
3/31/05	2.33%	8,773,569	8,634,346
3/31/06	2.77%	8,638,771	8,287,544
3/31/07	3.16%	8,326,716	7,844,189
3/31/08	3.50%	8,312,539	7,733,909
3/31/09	3.84%	8,335,893	7,710,580
3/31/10	4.11%	8,311,896	7,667,615
3/31/11	4.34%	8,248,766	7,607,180
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
3/31/30	6.02%	3,973,528	4,337,561
3/31/31	5.99%	3,667,724	3,989,048
3/31/32	5.96%	3,458,500	3,748,089
3/31/33	5.94%	3,212,136	3,469,324
3/31/34	5.92%	24,811,883	26,714,853
	Total	220,002,578	220,002,578

Duration Calculation

The duration calculation is a direct application of the Macauley formula.

The Macaulay duration is the average time it takes to pay benefits, weighting each payment by the discounted value of the benefit paid at that time. The formula used in the exercise is as follows:

$$D_{Macaulay} = \frac{\sum (t - .5) C_t (1+i)^{-t}}{\sum C_t (1+i)^{-t}}$$

C_t = cash flow in year t
i = interest rate

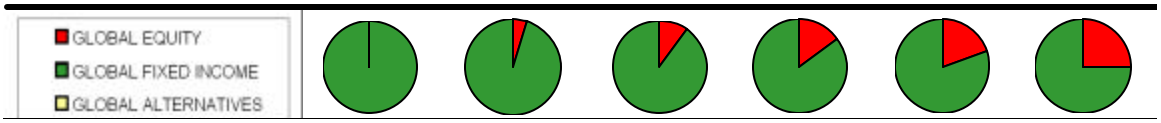
The **modified** duration is the Macaulay duration divided by (1+i). It measures the percentage change in the liability in response to a change in interest rates of 1 percentage point.

The equivalent single discount rate was selected for the calculation of duration. All other things being equal, the duration will increase as interest rates decline.

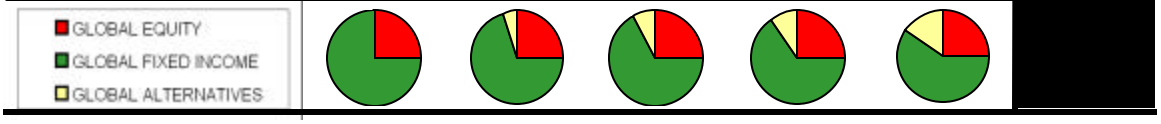
XI. Proposed Implementation Strategy

FEES

	Current	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 5
Global Equity	0%	5%	10%	15%	20%	25%
Gbl Gov't Bonds - Short/Intermediate	66%	66%	57%	42%	30%	20%
Gbl Gov't Bonds - Long	0%	0%	0%	0%	0%	0%
Gbl Corp Bonds - Short/Intermediate	0%	5%	10%	15%	20%	25%
Gbl Corp Bonds - Long	0%	5%	10%	15%	17%	17%
Gbl Inflation Indexed Bonds	4%	9%	13%	13%	13%	13%
Gbl Cash/Enhanced Cash	30%	10%	0%	0%	0%	0%
Gbl Private Equity	0%	0%	0%	0%	0%	0%
Gbl Real Estate	0%	0%	0%	0%	0%	0%
Gbl Infrastructure	0%	0%	0%	0%	0%	0%
Gbl Absolute Return/Opportunistic	0%	0%	0%	0%	0%	0%
	100%	100%	100%	100%	100%	100%
EXPOURE DESIRED						
Global Equity	0%	5%	5%	5%	5%	5%
Gbl Gov't Bonds - Short/Intermediate	0%	0%	0%	0%	0%	0%
Gbl Gov't Bonds - Long	0%	0%	0%	0%	0%	0%
Gbl Corp Bonds - Short/Intermediate	0%	5%	5%	5%	5%	5%
Gbl Corp Bonds - Long	0%	5%	5%	5%	2%	0%
Gbl Inflation Indexed Bonds	0%	5%	4%	0%	0%	0%
Gbl Cash/Enhanced Cash	0%	0%	0%	0%	0%	0%
Gbl Private Equity	0%	0%	0%	0%	0%	0%
Gbl Real Estate	0%	0%	0%	0%	0%	0%
Gbl Infrastructure	0%	0%	0%	0%	0%	0%
Gbl Absolute Return/Opportunistic	0%	0%	0%	0%	0%	0%
Out of Cash	0%	20%	10%	0%	0%	0%
Out of Gbl Gov't Bonds - Short/Intermediate	0%	0%	9%	15%	12%	10%
GLOBAL EQUITY	0%	5%	10%	15%	20%	25%
GLOBAL FIXED INCOME	100%	95%	90%	85%	80%	75%
GLOBAL ALTERNATIVES	0%	0%	0%	0%	0%	0%

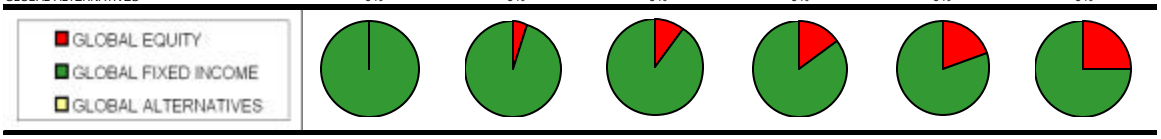


	Quarter 6 - Stage 1	Quarter 7 - Stage 2 Starts	Quarter 8	Quarter 9	Quarter 10 - Transition Completed	OBJECTIVE Recommendation
Global Equity	25%	25%	25%	25%	25%	**25%**
Gbl Gov't Bonds - Short/Intermediate	15%	10%	7%	5%	0%	**0%**
Gbl Gov't Bonds - Long	0%	0%	0%	0%	0%	**0%**
Gbl Corp Bonds - Short/Intermediate	30%	30%	30%	30%	30%	**30%**
Gbl Corp Bonds - Long	17%	17%	17%	17%	17%	**17%**
Gbl Inflation Indexed Bonds	13%	13%	13%	13%	13%	**13%**
Gbl Cash/Enhanced Cash	0%	0%	0%	0%	0%	**0%**
Gbl Private Equity	0%	0%	0%	0%	5%	**5%**
Gbl Real Estate	0%	0%	3%	3%	3%	**3%**
Gbl Infrastructure	0%	0%	0%	2%	2%	**2%**
Gbl Absolute Return/Opportunistic	0%	5%	5%	5%	5%	**5%**
	100%	100%	100%	100%	100%	**100%**
EXPOURE DESIRED						
Global Equity	0%	0%	0%	0%	0%	**0%**
Gbl Gov't Bonds - Short/Intermediate	0%	0%	0%	0%	0%	**0%**
Gbl Gov't Bonds - Long	0%	0%	0%	0%	0%	**0%**
Gbl Corp Bonds - Short/Intermediate	5%	0%	0%	0%	0%	**0%**
Gbl Corp Bonds - Long	0%	0%	0%	0%	0%	**0%**
Gbl Inflation Indexed Bonds	0%	0%	0%	0%	0%	**0%**
Gbl Cash/Enhanced Cash	0%	0%	0%	0%	0%	**0%**
Gbl Private Equity	0%	0%	0%	0%	5%	**0%**
Gbl Real Estate	0%	0%	3%	0%	0%	**0%**
Gbl Infrastructure	0%	0%	0%	2%	0%	**0%**
Gbl Absolute Return/Opportunistic	0%	5%	0%	0%	0%	**0%**
Out of Cash	0%	0%	0%	0%	0%	**0%**
Out of Gbl Gov't Bonds - Short/Intermediate	5%	5%	3%	2%	5%	**0%**
GLOBAL EQUITY	25%	25%	25%	25%	25%	**25%**
GLOBAL FIXED INCOME	75%	70%	67%	65%	60%	**60%**
GLOBAL ALTERNATIVES	0%	5%	8%	10%	15%	**15%**

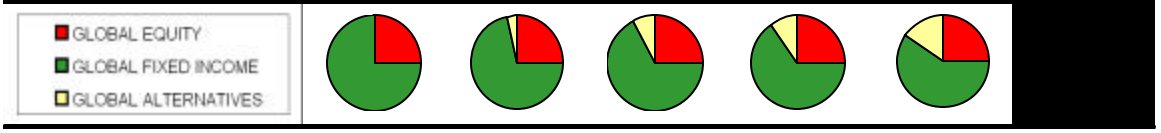


FRP (Maintains Current Policy)

	Current	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 5
Global Equity	0%	5%	10%	15%	20%	25%
Gbl Gov't Bonds - Short/Intermediate	66%	66%	66%	52%	37%	22%
Gbl Gov't Bonds - Long	0%	5%	10%	15%	20%	25%
Gbl Corp Bonds - Short/Intermediate	0%	0%	0%	0%	0%	0%
Gbl Corp Bonds - Long	0%	0%	0%	0%	0%	0%
Gbl Inflation Indexed Bonds	3%	8%	13%	18%	23%	28%
Gbl Cash/Enhanced Cash	31%	16%	1%	0%	0%	0%
Gbl Private Equity	0%	0%	0%	0%	0%	0%
Gbl Real Estate	0%	0%	0%	0%	0%	0%
Gbl Infrastructure	0%	0%	0%	0%	0%	0%
Gbl Absolute Return/Opportunistic	0%	0%	0%	0%	0%	0%
	100%	100%	100%	100%	100%	100%
EXPOURE DESIRED						
Global Equity	0%	5%	5%	5%	5%	5%
Gbl Gov't Bonds - Short/Intermediate	0%	0%	0%	0%	0%	0%
Gbl Gov't Bonds - Long	0%	5%	5%	5%	5%	5%
Gbl Corp Bonds - Short/Intermediate	0%	0%	0%	0%	0%	0%
Gbl Corp Bonds - Long	0%	0%	0%	0%	0%	0%
Gbl Inflation Indexed Bonds	0%	5%	5%	5%	5%	5%
Gbl Cash/Enhanced Cash	0%	0%	0%	0%	0%	0%
Gbl Private Equity	0%	0%	0%	0%	0%	0%
Gbl Real Estate	0%	0%	0%	0%	0%	0%
Gbl Infrastructure	0%	0%	0%	0%	0%	0%
Gbl Absolute Return/Opportunistic	0%	0%	0%	0%	0%	0%
Out of Cash	0%	15%	15%	1%	0%	0%
Out of Gbl Gov't Bonds - Short/Intermediate	0%	0%	0%	15%	15%	15%
GLOBAL EQUITY	0%	5%	10%	15%	20%	25%
GLOBAL FIXED INCOME	100%	95%	90%	85%	80%	75%
GLOBAL ALTERNATIVES	0%	0%	0%	0%	0%	0%

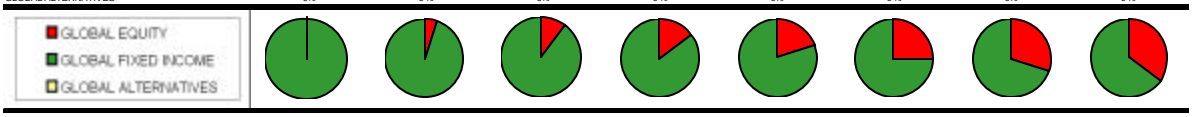


	Quarter 6 - Stage 1	Quarter 7 - Stage 2 Starts	Quarter 8	Quarter 9	Quarter 10 - Transition Completed	OBJECTIVE Recommendation
Global Equity	25%	25%	25%	25%	25%	**25%**
Gbl Gov't Bonds - Short/Intermediate	15%	12%	7%	5%	0%	**0%**
Gbl Gov't Bonds - Long	30%	30%	30%	30%	30%	**30%**
Gbl Corp Bonds - Short/Intermediate	0%	0%	0%	0%	0%	**0%**
Gbl Corp Bonds - Long	0%	0%	0%	0%	0%	**0%**
Gbl Inflation Indexed Bonds	30%	30%	30%	30%	30%	**30%**
Gbl Cash/Enhanced Cash	0%	0%	0%	0%	0%	**0%**
Gbl Private Equity	0%	0%	0%	0%	5%	**5%**
Gbl Real Estate	0%	0%	5%	5%	5%	**5%**
Gbl Infrastructure	0%	0%	0%	2%	2%	**2%**
Gbl Absolute Return/Opportunistic	0%	3%	3%	3%	3%	**3%**
	100%	100%	100%	100%	100%	**100%**
EXPOURE DESIRED						
Global Equity	0%	0%	0%	0%	0%	**0%**
Gbl Gov't Bonds - Short/Intermediate	0%	0%	0%	0%	0%	**0%**
Gbl Gov't Bonds - Long	5%	0%	0%	0%	0%	**0%**
Gbl Corp Bonds - Short/Intermediate	0%	0%	0%	0%	0%	**0%**
Gbl Corp Bonds - Long	0%	0%	0%	0%	0%	**0%**
Gbl Inflation Indexed Bonds	2%	0%	0%	0%	0%	**0%**
Gbl Cash/Enhanced Cash	0%	0%	0%	0%	0%	**0%**
Gbl Private Equity	0%	0%	0%	0%	5%	**0%**
Gbl Real Estate	0%	0%	5%	0%	0%	**0%**
Gbl Infrastructure	0%	0%	0%	2%	0%	**0%**
Gbl Absolute Return/Opportunistic	0%	3%	0%	0%	0%	**0%**
Out of Cash	0%	0%	0%	0%	0%	**0%**
Out of Gbl Gov't Bonds - Short/Intermediate	7%	3%	5%	2%	5%	**0%**
GLOBAL EQUITY	25%	25%	25%	25%	25%	**25%**
GLOBAL FIXED INCOME	75%	72%	67%	65%	60%	**60%**
GLOBAL ALTERNATIVES	0%	3%	8%	10%	15%	**15%**

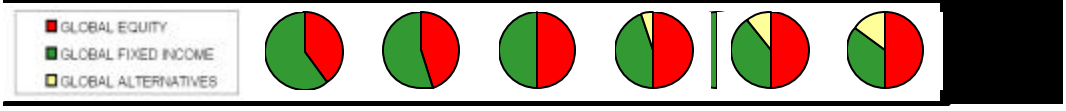


FRP (Relaxes Current Policy)

	Current	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 5	Quarter 6 - Stage 1	Quarter 7
Global Equity	0%	5%	10%	15%	20%	25%	30%	35%
Gbl Gov't Bonds - Short/Intermediate	66%	66%	66%	66%	57%	50%	40%	30%
Gbl Gov't Bonds - Long	0%	0%	0%	0%	0%	0%	0%	0%
Gbl Corp Bonds - Short/Intermediate	0%	5%	10%	15%	20%	25%	30%	35%
Gbl Corp Bonds - Long	0%	0%	0%	0%	0%	0%	0%	0%
Gbl Inflation Indexed Bonds	3%	3%	3%	3%	3%	0%	0%	0%
Gbl Cash/Enhanced Cash	31%	21%	11%	1%	0%	0%	0%	0%
Gbl Private Equity	0%	0%	0%	0%	0%	0%	0%	0%
Gbl Real Estate	0%	0%	0%	0%	0%	0%	0%	0%
Gbl Infrastructure	0%	0%	0%	0%	0%	0%	0%	0%
Gbl Absolute Return/Opportunistic	0%	0%	0%	0%	0%	0%	0%	0%
	100%	100%	100%	100%	100%	100%	100%	100%
EXPOURE DESIRED								
Global Equity	0%	5%	5%	5%	5%	5%	5%	5%
Gbl Gov't Bonds - Short/Intermediate	0%	0%	0%	0%	0%	0%	0%	0%
Gbl Gov't Bonds - Long	0%	0%	0%	0%	0%	0%	0%	0%
Gbl Corp Bonds - Short/Intermediate	0%	5%	5%	5%	5%	5%	5%	5%
Gbl Corp Bonds - Long	0%	0%	0%	0%	0%	0%	0%	0%
Gbl Inflation Indexed Bonds	0%	0%	0%	0%	0%	0%	0%	0%
Gbl Cash/Enhanced Cash	0%	0%	0%	0%	0%	0%	0%	0%
Gbl Private Equity	0%	0%	0%	0%	0%	0%	0%	0%
Gbl Real Estate	0%	0%	0%	0%	0%	0%	0%	0%
Gbl Infrastructure	0%	0%	0%	0%	0%	0%	0%	0%
Gbl Absolute Return/Opportunistic	0%	0%	0%	0%	0%	0%	0%	0%
Out of Cash	0%	10%	10%	10%	1%	0%	0%	0%
Out of Gbl Gov't Bonds - Short/Intermediate	0%	0%	0%	0%	9%	7%	10%	10%
Out of Inflation Indexed Bonds	0%	0%	0%	0%	3%	3%	0%	0%
GLOBAL EQUITY	0%	5%	10%	15%	20%	25%	30%	35%
GLOBAL FIXED INCOME	100%	95%	90%	85%	80%	75%	70%	65%
GLOBAL ALTERNATIVES	0%	0%	0%	0%	0%	0%	0%	0%



	Quarter 8	Quarter 9	Quarter 10 -Stage 1	Quarter 11 - Stage 2 Starts	Quarter 12	Quarter 13 - Transition Completed	OBJECTIVE Recommendation
Global Equity	40%	45%	50%	50%	50%	50%	**50%**
Gbl Gov't Bonds - Short/Intermediate	25%	20%	15%	10%	5%	0%	**0%**
Gbl Gov't Bonds - Long	0%	0%	0%	0%	0%	0%	**0%**
Gbl Corp Bonds - Short/Intermediate	35%	35%	35%	35%	35%	35%	**35%**
Gbl Corp Bonds - Long	0%	0%	0%	0%	0%	0%	**0%**
Gbl Inflation Indexed Bonds	0%	0%	0%	0%	0%	0%	**0%**
Gbl Cash/Enhanced Cash	0%	0%	0%	0%	0%	0%	**0%**
Gbl Private Equity	0%	0%	0%	0%	0%	5%	**5%**
Gbl Real Estate	0%	0%	0%	0%	5%	5%	**5%**
Gbl Infrastructure	0%	0%	0%	0%	0%	0%	**0%**
Gbl Absolute Return/Opportunistic	0%	0%	0%	5%	5%	5%	**5%**
	100%	100%	100%	100%	100%	100%	**100%**
EXPOURE DESIRED							
Global Equity	5%	5%	5%	0%	0%	0%	**0%**
Gbl Gov't Bonds - Short/Intermediate	0%	0%	0%	0%	0%	0%	**0%**
Gbl Gov't Bonds - Long	0%	0%	0%	0%	0%	0%	**0%**
Gbl Corp Bonds - Short/Intermediate	0%	0%	0%	0%	0%	0%	**0%**
Gbl Corp Bonds - Long	0%	0%	0%	0%	0%	0%	**0%**
Gbl Inflation Indexed Bonds	0%	0%	0%	0%	0%	0%	**0%**
Gbl Cash/Enhanced Cash	0%	0%	0%	0%	0%	0%	**0%**
Gbl Private Equity	0%	0%	0%	0%	0%	5%	**0%**
Gbl Real Estate	0%	0%	0%	0%	5%	0%	**0%**
Gbl Infrastructure	0%	0%	0%	0%	0%	0%	**0%**
Gbl Absolute Return/Opportunistic	0%	0%	0%	5%	0%	0%	**0%**
Out of Cash	0%	0%	0%	0%	0%	0%	**0%**
Out of Gbl Gov't Bonds - Short/Intermediate	5%	5%	5%	5%	5%	5%	**100%**
Out of Inflation Indexed Bonds	0%	0%	0%	0%	0%	0%	
GLOBAL EQUITY	40%	45%	50%	50%	50%	50%	**50%**
GLOBAL FIXED INCOME	60%	55%	50%	45%	40%	35%	**35%**
GLOBAL ALTERNATIVES	0%	0%	0%	5%	10%	15%	**15%**



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MARSH MERCER KROLL
GUY CARPENTER OLIVER WYMAN

Mercer Investment Consulting, Inc.
1166 Avenue of the Americas
New York, NY 10036
212 345 7000