HEALTH WEALTH CAREER

GROWTH MARKETS ASSET ALLOCATION TRENDS: EVOLVING LANDSCAPE 2019

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CONTENTS

EXECUTIVE SUMMARY

As economic growth is shifting toward the economies within the growth markets,[1] Mercer's inaugural *Growth Markets Asset Allocation Trends: Evolving Landscape* takes the pulse of retirement plans in 14 markets across the globe, looking at current positioning and trends relative to allocations approximately five years ago.

Our key findings include the following:

- Overall, exposure to equities has been increasing — in aggregate, equity allocations rose approximately 8%, from 32% to 40%, over the measurement period.
- Exposure to foreign assets is rising at the expense of domestic assets, but significant home biases remain.
- Alternatives gained slightly greater traction as part of investors' portfolios.
- There is great variation among jurisdictions with regard to broad asset allocation, driven primarily by local regulations. This is expected to change as more markets extend the ability to invest more internationally.

The results of our survey show that investors across the globe are responding to demographic, market and regulatory changes by continuing to evolve their asset allocations. We look forward to partnering with many of these investors now and in future years, striving for better investment outcomes as we support high-quality investment decisions and the establishment of robust retirement systems.

[1] Mercer defines growth markets to include countries/regions across Latin America, the Middle East, Africa and Asia (including Japan). Jurisdictions were included based upon data availability.

INTRODUCTION

Welcome to the inaugural issue of *Mercer's Growth Markets Asset Allocation Trends: Evolving Landscape*. This report provides information on the asset allocation and investment trends impacting pension fund assets of almost US$5 trillion[2] across Latin America, the Middle East, Africa and Asia.

These markets are among the most exciting in the world for asset owners, asset managers and, ultimately, individual investors. Global economic leadership is passing from Western economies to the growth market regions in the Southern and Eastern hemispheres:

- Twenty-five of the top 50 global institutional investors are located in growth markets.[3]
- Almost 70% of global growth now comes from these economies.[4]
- In 2018, for the first time, more than 50% of the world's population — 3.8 billion people — is considered middle class or rich; this segment is expected to grow to 5.3 billion people by 2030.[5]
- Fifty-four percent of the world's middle class resides in Asia.[6]

These markets are large and increasingly available to foreign investors and, at the same time, are opening up to allow domestic investors to invest more broadly and outside their home markets.

This survey provides a snapshot of how investors across these jurisdictions are responding by focusing on pension fund asset allocation as one of the largest pools of institutional assets. The survey results supplement the data in our longstanding *European Asset Allocation Survey*.[7]

The pensions and savings systems in these regions are also reforming and developing to meet the future needs of their economies and populations, with the same trend toward increasing individual responsibility for retirement savings as we see in Western countries. We provide a brief summary of the retirement savings environment in each country/region and the implications for underlying investment policy. More detailed information on many of these countries' pension systems is available in the *Melbourne Mercer Global Pension Index Report*.[8]

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[2] Data as of the most recent date available for each jurisdiction; please consult the full report for details.
[3] Investment & Pensions Europe. *Top 1000 Global Institutional Investors*, 2016.
[4] Data from the World Bank.
[5] Kharas H and Hamel K. "A Global Tipping Point: Half the World Is Now Middle Class or Wealthier," September 27, 2018, available at https://www.brookings.edu/blog/future-development/2018/09/27/a-global-tipping-point-half-the-world-is-now-middle-class-or-wealthier/.
[6] Brookings. *The Unprecedented Expansion of the Middle Class: An Update,* 2017.
[7] Mercer's 2019 *European Asset Allocation Survey* is available on mercer.com
[8] Mercer. *Melbourne Mercer Global Pension Index Report*, 2018, available at https://www.mercer.com.au/our-thinking/mmgpi.html.

INVESTMENT ENVIRONMENT: THEMES AND OPPORTUNITIES

As investors navigate these broader macroeconomic and market changes, we believe a number of key themes will be important for them to consider as they make changes to their portfolios. Some of these themes are focused on the next one to three years, whereas others may play out over the course of a decade or longer. Although we present them as discrete themes, in reality, they are highly interdependent.

WHITE WATERS OF THE LATE CYCLE

We see mounting evidence of overextension of credit. At the same time, we expect the continuing positive macroeconomic backdrop, probusiness policies and levels of business optimism to continue to assist the equity market in the near term. When these contrasting equity and bond market currents meet, there is potential for turbulence. Investors should examine and waterproof their fixed income portfolios amid this environment. The return of inflation, long thought to be banished from some major economies, is an additional threat investors cannot afford to ignore.

WINDS OF CHANGE IN MARKET PARTICIPATION

After the global financial crisis, central banks stepped in for traditional banks as the primary providers of liquidity. As they now try to rein in their market involvement, it is far from clear what the implications for liquidity will be — investors should be on alert for signs of stress. The increased involvement of institutional investors in private markets affects both public and private investors, and a rise in the number of investment strategies that sit somewhere between traditional active management and traditional passive management is likely to benefit many investors not suited to either extreme.

TECTONIC FRICTIONS IN THE GLOBAL WORLD ORDER

Our 2018 theme of political fragmentation continues to be relevant in 2019 (and beyond). It is now considered a credible possibility that the pace of globalization could slow, pause or even go into reverse. Perhaps the most obvious example of the influence of politics on international trade is the state of trade relations between the United States and China. China's growth and, perhaps more important, its efforts to open up capital markets, raise some practical questions for investors about how to manage their exposure to the world's second-largest economy. Although more turbulence in global politics is likely to continue to weigh on markets, it may present a more favorable investment environment for certain types of opportunistic strategies.

SUSTAINABILITY GATHERING MOMENTUM

Governments, regulators and beneficiaries are increasingly expecting those with responsibility for allocating capital to take a broader perspective of risk and return — although expectations vary greatly across different regions. We recognize that the incorporation of sustainability considerations into portfolios requires a longer timeframe than that typically employed for investment decision-making, but investors that do take a longer-term view may uncover opportunities that are not currently priced in. We foresee a world where asset owners and investment managers incorporate sustainability as a standard action, moving on from optical responses to a place where sustainability is integral to idea generation and risk management.

Mercer's full report, *Investing in a Time of Climate Change — The Sequel*,[9] builds upon our 2015 report to look at the economic impact of rising temperatures, including the impact on portfolios and the key risks and opportunities investors can consider.

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[9] Mercer. *Investing in a Time of Climate Change — The Sequel*, 2019, available at https://www.mercer.com/our-thinking/wealth/climate-change-the-sequel.html.

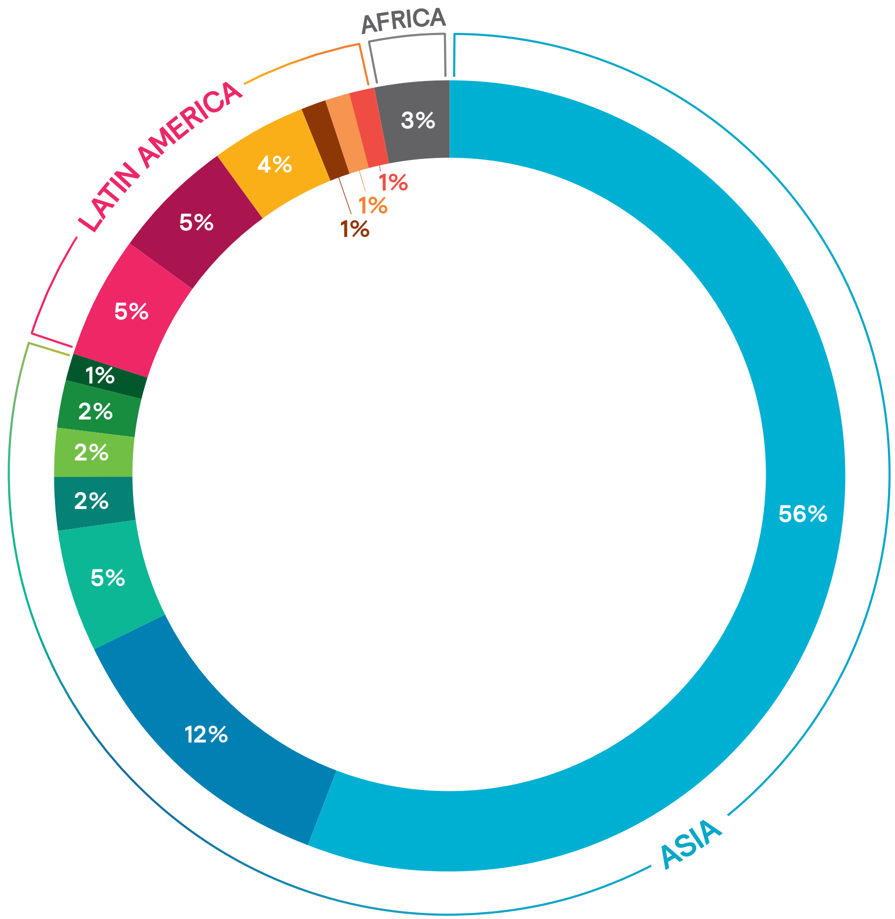
SURVEY PARTICIPANTS

Our 2019 survey gathered information on nearly US$5 trillion in assets under management (AUM) from corporate and government pension schemes in 14 jurisdictions across Latin America, Africa and Asia. Although survey data was unavailable for the Middle East, we provide some relevant commentary based on Mercer's interaction with investors in that region.

We acknowledge that several key countries within the growth markets are not included in our data set. For example, in Singapore, although the Central Provident Fund (CPF) invests its asset portfolio in Singapore government bonds, this positioning underlies a risk transfer mechanism to move CPF's obligations for guaranteed minimum returns to the government. Therefore, an asset allocation snapshot of a portfolio invested fully in domestic fixed income securities does not accurately portray the risk exposures within the fund. For many other countries, the lack of transparent, publicly available data is currently a challenge to their inclusion. We will look to expand our survey when more information becomes available.[10]

Detailed source information for each jurisdiction can be found on pages 45-48.

Figure 1. Split of Total Survey Assets by Country/Region (US$ Billions)



ASIA	
Japan	$2,738,80
South Korea	$595,200
Malaysia	$229,950
Taiwan	$113,106
Hong Kong	$109,230
Thailand	$92,038
Indonesia	$39,091
LATIN AMERICA	
Mexico	$250,743
Brazil	$236,707
Chile	$191,000
Colombia	$73,000
Peru	$49,000
Argentina	$47,844
AFRICA	
South Africa	$145,737

[10] Numbers in this report may show some variances due to rounding.

Survey data is included for corporate, mandatory savings and governmental plan sponsors, where available. The funded government pension system in Japan is the largest in the world, with the Government Pension Investment Fund (GPIF) having assets of US$1.5 trillion. Many other growth market jurisidictions have significant government-sponsored pension schemes, including Malaysia, South Korea, Taiwan and others.

In many places, we are seeing a shift to defined contribution (DC) plans at the expense of defined benefit (DB) plans, mirroring trends in many Western countries. This shift is happening across both corporate and government-sponsored schemes. For example, Mexico has seen an increase in the number of corporate DC hybrid plans in recent years (more than 300 new plans) as the prevalence of DB plans has decreased. In Chile, the DB scheme is closed, and members participate in a DC scheme. DB schemes in Taiwan are generally closed to new participants in favor of DC schemes, and Japan is seeing a small but growing DC industry.

Figure 2. Countries/Regions With Plan Types[11]

[11] Breakdowns for plan types are categorized by country/region. For example, defined contribution (DC) pension plan information in Brazil is shown as one plan in the above charts. The underlying data comprises many separate plans.

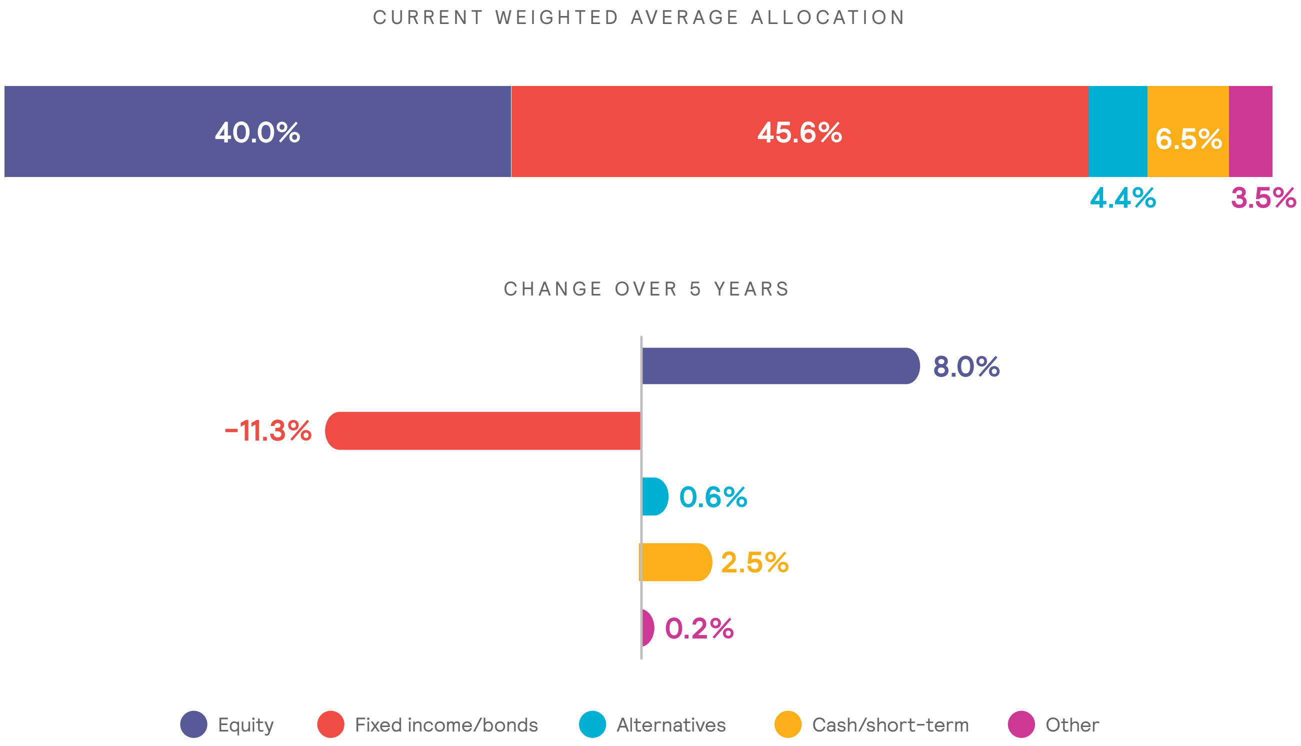
KEY FINDINGS

Overall, a trend toward more open markets is enabling investors to better diversify their portfolios — across various dimensions of exposure, such as geography, industry sector, asset class and currency. This is important given the narrow and concentrated investment universe in some investors' home markets. Although public equities present some of the first and most straightforward ways to diversify into foreign markets, investors are also seeking diversification through other exposures, such as private markets, real assets, hedge funds and growth-oriented fixed income.

When combined on an asset-weighted basis, average allocations were 46% to fixed income, 40% to equities, 4% to alternatives, 6% to cash and 4% to other.[12] Compared to the European DB schemes represented in our *European Asset Allocation Survey*, DB and DC schemes across Asia, the Middle East, Africa and Latin America are more heavily invested in equities and less exposed to alternatives. The average allocation for European DB plans was 53% to fixed income, 25% to equities, 19% to property and alternatives, and 3% to cash.

On average, exposure to equities has been increasing. In aggregate, average allocations rose approximately 8% over the five-year measurement period, funded by reductions in fixed income. Notably, Japan and South Korea both posted material increases in their equity portfolios as they sought opportunities to increase expected returns.

Figure 3. Weighted Average Allocation for All Countries/Regions, Current Versus Change Over Five Years



[12] "Other" varies by data source, and in many instances, detailed descriptions of "other" were not available.

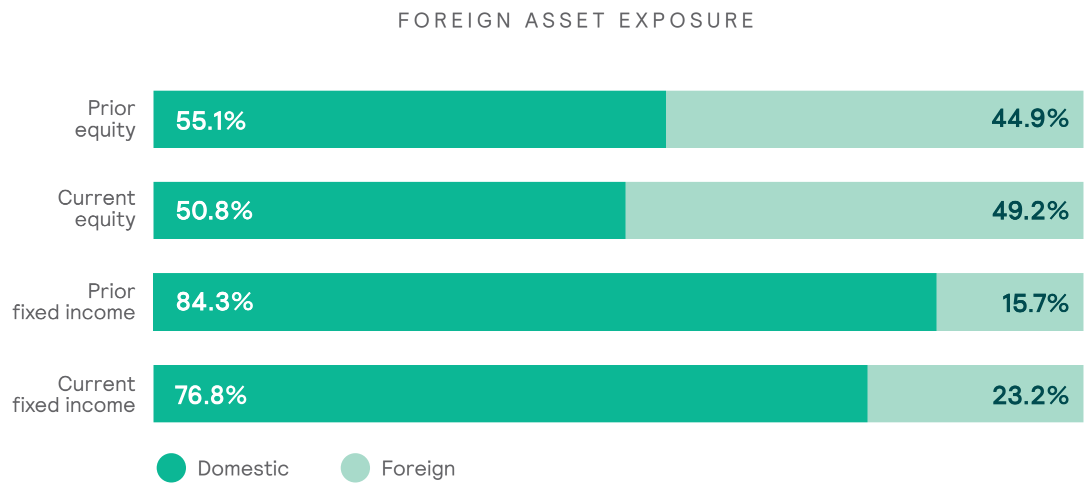
Exposure to foreign assets is rising at the expense of domestic assets. As a portion of the overall equity portfolio, average foreign exposure increased from 45% to 49%, with even more pronounced movements in fixed income, where foreign exposure moved from 16% to 23%. This shift was notable in Colombia, Japan, South Korea, Malaysia and Taiwan, as investors sought greater geographic diversification. In some cases, such as in Brazil, Colombia, Peru and South Africa, this was facilitated by recent changes in legislation to allow increased foreign asset exposure.

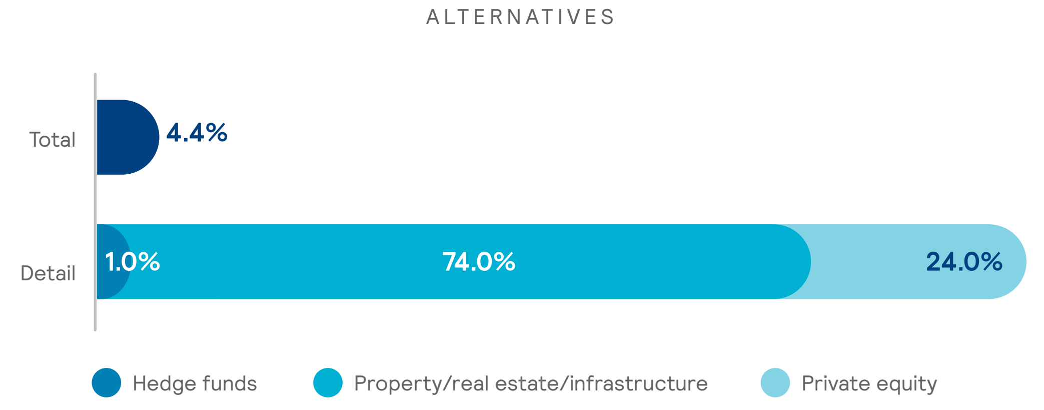
Alternatives gained slightly greater traction as part of investors' portfolios, though we believe the trend will become more pronounced in the future as many investors continue their education and decision-making processes to move into these asset classes. Of those investors who provided details on their alternatives asset allocations, more than 70% of the average allocations went to property and infrastructure and over 20% to private equity.

Significant variation exists among jurisdictions with regard to broad asset allocation. Brazil, Thailand, Argentina and Mexico hold the largest average percentages of fixed income. This is driven in part by regulatory restrictions supporting local fixed income securities as well as high local interest rates in some cases. Indonesia's large cash exposures are also reflective of high local rates. Conversely, Hong Kong and South Africa maintain the largest equity exposure; for Hong Kong, this is driven largely by Mandatory Provident Fund elections to lifestyle and standalone equity funds. From the perspective of alternatives, South Korea and Taiwan have the largest exposures, followed closely by Argentina and Mexico.

The use of passively managed and actively managed vehicles is mixed. Although there was insufficient data available to cover this topic in detail at an aggregate level, we heard from a number of markets — including Colombia, Peru, the Gulf Cooperation Council (GCC)[13] and Thailand — that a focus on fees and efficient implementation has increased interest in passive strategies. Actively managed strategies, however, represent a significant component of portfolios across the region.

Figure 4. Current Weighted Average Asset Allocation Detail for All Countries/Regions





[13] Data was not available, but commentary is included based on Mercer's experience with investors in the GCC region.

Figure 5a. Broad Asset Allocation by Country/Region: Current (%)

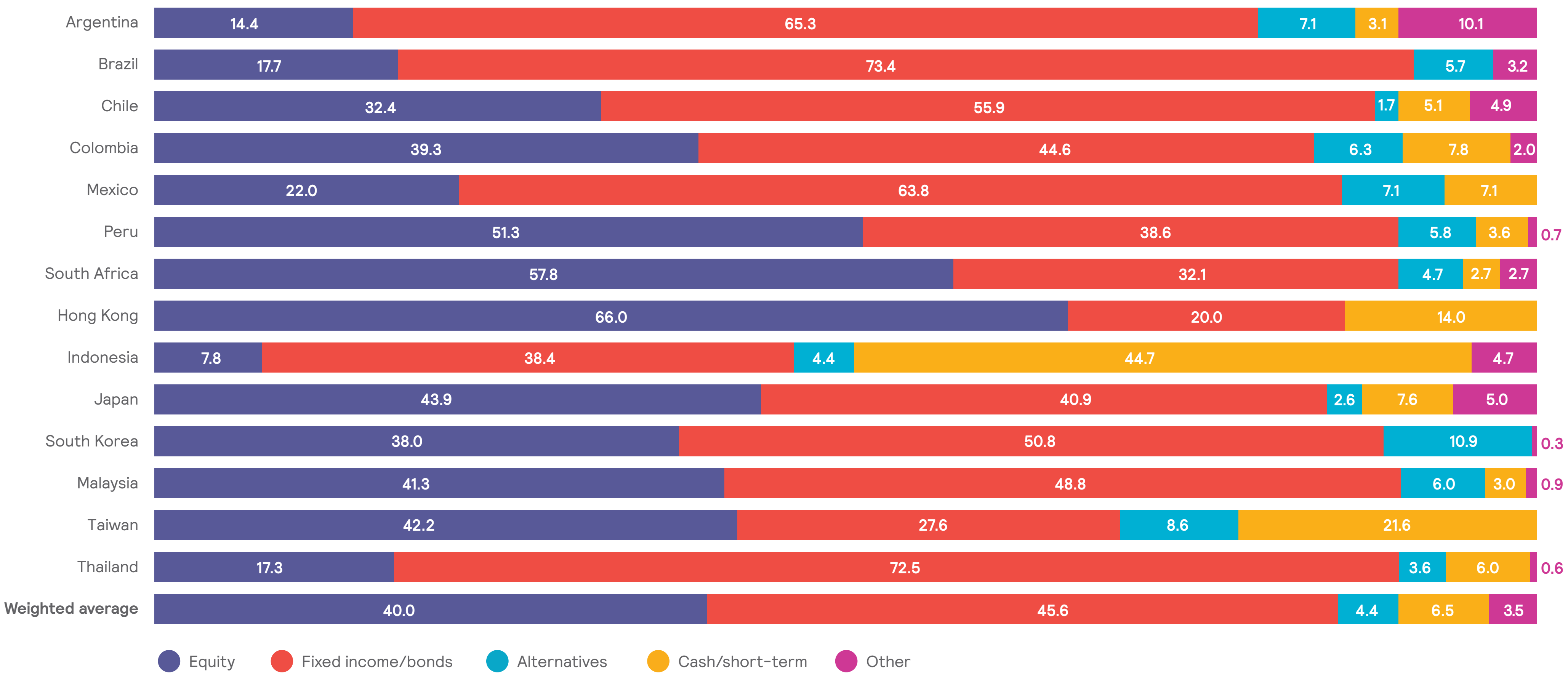
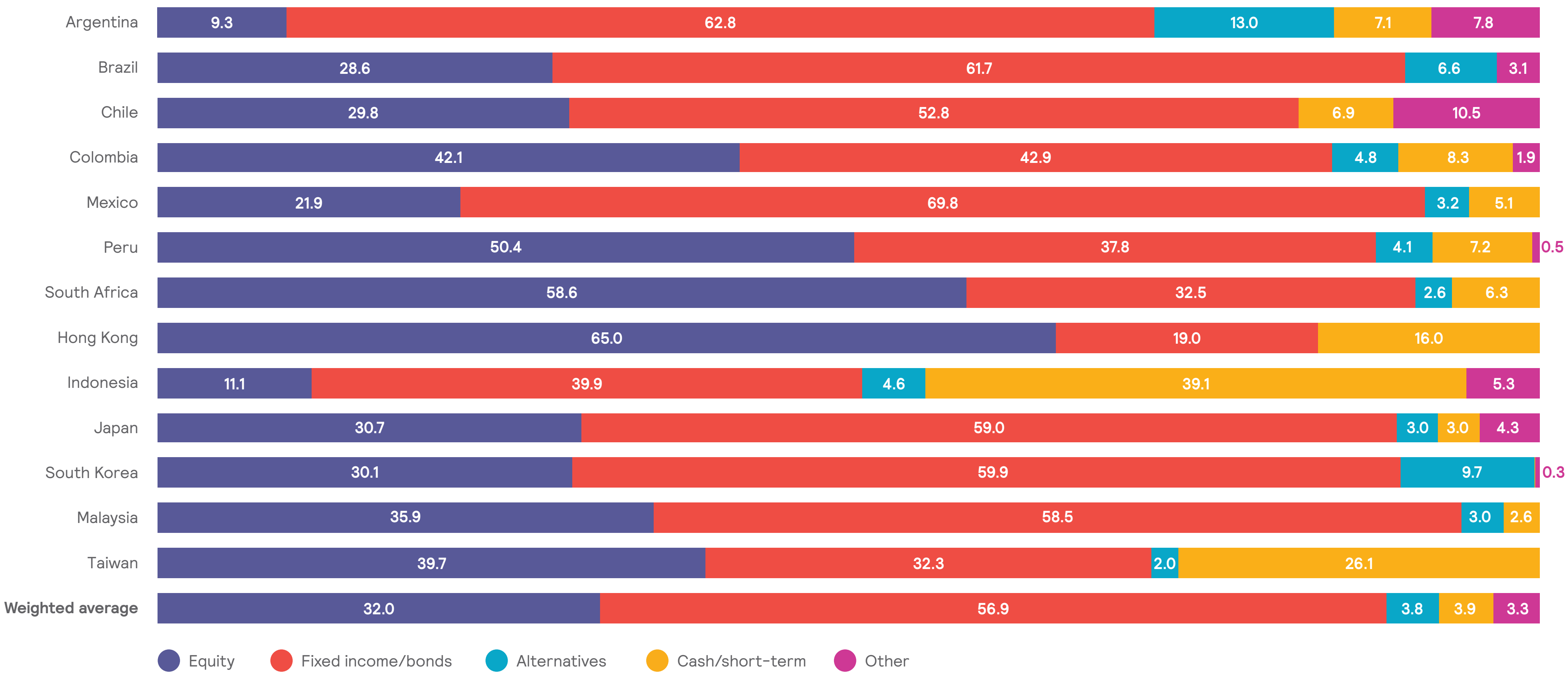


Figure 5b. Broad Asset Allocation by Country/Region: Prior (%)



ARGENTINA

Argentina's retirement income system comprises a pay-as-you-go social security system together with voluntary occupational corporate and individual pension plans, which may be offered through employer book reserves (DB), insurance companies or pension trusts (DC).

Both employees and employers contribute to the pay-as-you-go Fondo de Garantía de Sustentabilidad (FGS) fund. Employees contribute 11% of base salary up to a salary ceiling. Employers currently contribute 21% or 17% (according to type of industry, headcount and company turnover) of payroll, without limit. These percentages will converge to an employer contribution of 19.5% beginning in January 2022.

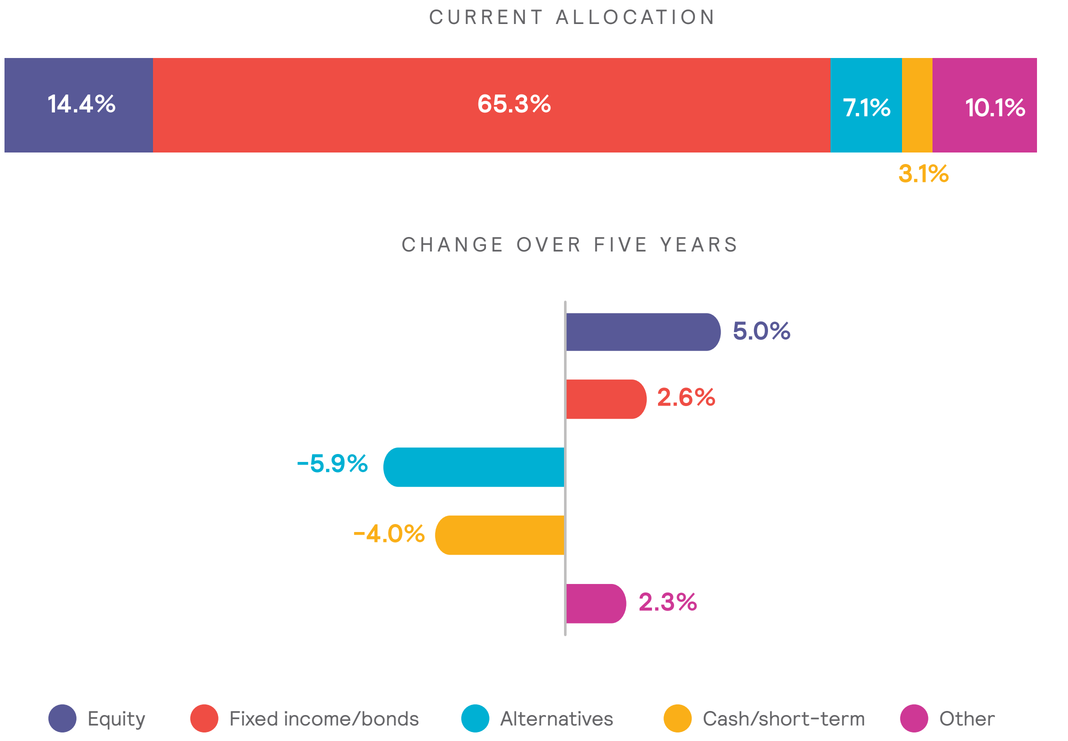
In addition, many companies have shown interest in providing a supplemental DC retirement plan, particularly for those employees affected by the benefit cap; to date, however, action has been limited. Although in some cases, companies have been adding new DC plans, we expect it will take additional incentives, such as tax benefits, to grow on a large scale. In cases where companies are adding new pension plans, they are doing so especially for retention purposes and HR branding. Typically, only management is eligible, though some plans are offered to all employees. Nearly three-quarters (66%) of companies offer their plans for key positions. Payment is lump sum, although annuities are available in the market.

The FGS comprises the vast majority of assets represented for Argentina (more than 97% as of 2018 data). The FGS invests in projects and financial instruments that promote growth in the Argentine economy and support the development of local capital markets, so it only invests in domestic securities. Although detailed allocation information is not available for insurance or pension trust assets, in Mercer's experience, these plans do invest in foreign securities to some extent.

Data includes:

PLAN NAME(S)	SPONSOR AND PLAN TYPE	CURRENT ASSET SIZE (US$ MILLIONS)
Fondo de Garantía de Sustentabilidad (FGS)	Government DB	46,886
Insurance retirement plans (under social security)	Corporate and government DC	743
Supplemental DC plans	Corporate DC	216
Total		**47,844**

Figure 6. Argentina Asset Allocation, Current Versus Change Over Five Years



BRAZIL

Brazil's retirement income system comprises a pay-as-you-go social security system with higher replacement rates for lower-income earners and voluntary occupational corporate and individual pension plans, which may be offered through insurance companies or pension trusts.

The pension fund industry in Brazil has evolved in recent years, incorporating international standards and investment and risk controls, and has recently lifted restrictions to allow more international investments. Today, it is an industry with more than 3.3 million participants, 300 pension funds and US$237 billion in assets. Supplementary plans are a live issue due to lack of confidence in future levels of social security benefits and proposed pension reforms. The prevalence of supplementary plans is already high among midsize and large companies, but the need to supplement is growing among smaller companies.

Brazilian pension funds have to review their investment policies at least once a year. DB plans, although most of them are closed, have more assets than the DC plans, but there are more DC plans in the industry.

The historical high level of yields in Brazil has influenced local pension funds' asset allocations in recent years. Traditionally, pension funds in Brazil have high allocations in fixed income regardless of the type of plan (DB or DC). Given the current decrease in yields and the local economic environment, lower expected yields are causing Brazilian pension funds to review this traditional allocation and consider a move to higher-return, higher-risk strategies.

DB plans allocate a large portion of their assets to government inflation-linked bonds (ILBs) and hold them to maturity to match their liabilities, managing their cash flow to adjust liquidity. Considering their reinvestment needs in the next five years and the decreasing yields on ILBs, it is expected that many plans will start to include some allocation to equities and alternatives.

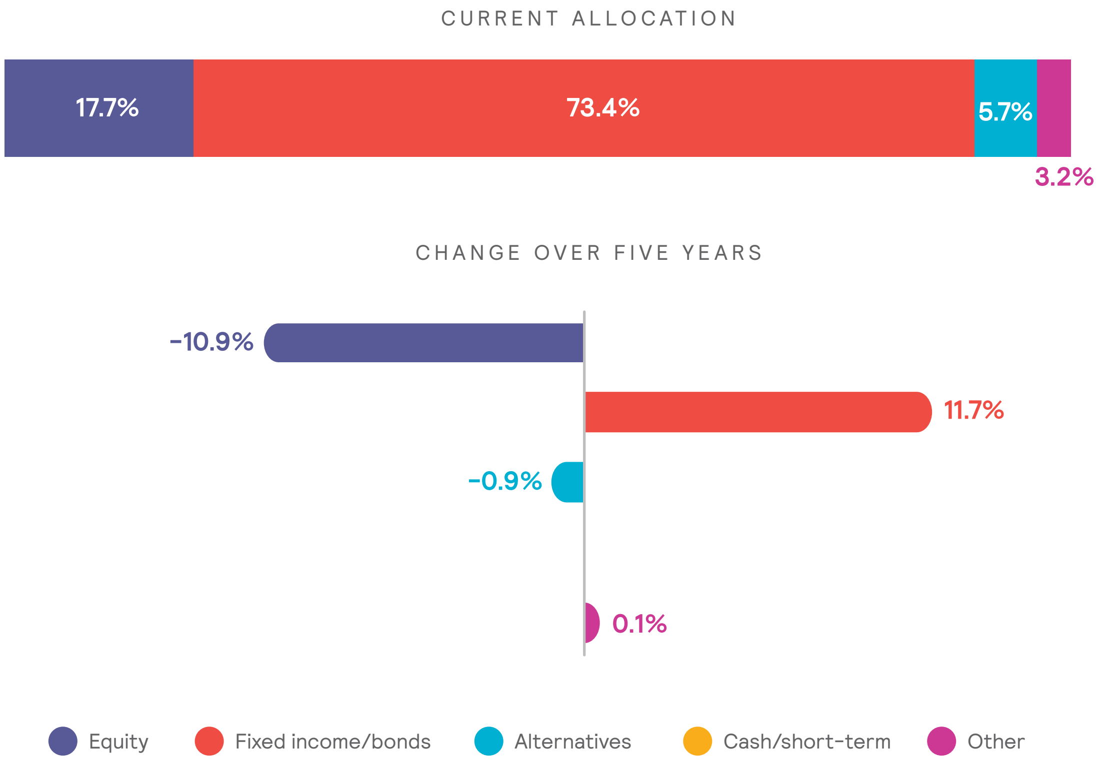
A considerable number of DC plans offer target risk investment options. In the past three years, when Brazil faced huge turmoil and high volatility in yields, participants that had these options in their pension plans changed their savings to more conservative strategies. However, plan sponsors have signaled their intention to review their allocations in the same direction as DB plans (more equities and alternatives). Companies are increasingly offering three to four investment funds to their employees, categorized as conservative funds (100% fixed income), moderate (up to 25% in equities) and aggressive (above 25% in equities).

The low allocation to alternatives and foreign assets is driven by the historic Brazilian bond yield levels (which have typically been more than 6% in real terms) as well as regulatory restrictions that mandate a limit of 10% to foreign assets, which must be accessed through a locally domiciled feeder fund. The recent decline in yields to below 5% (real rates) and changes in legislation to facilitate greater investment in foreign assets are triggers that will drive current pension fund asset allocation to include more equities, alternatives and foreign exposure. Although Associação Brasileira das Entidades Fechadas de Previdência Complementar (ABRAPP) data does not track the split among domestic and foreign assets, Mercer has identified anecdotal evidence from our client base of greater interest in foreign assets, though allocations are limited, as investors remain concerned about the global economic environment.

Data includes:

PLAN NAME(S)	SPONSOR AND PLAN TYPE	CURRENT ASSET SIZE (US$ MILLIONS)
Multiple plans within the pension association ABRAPP	Corporate DC and DB	236,707

Figure 7. Brazil Asset Allocation, Current Versus Change Over Five Years



CHILE

Chile's retirement income system comprises means-tested social assistance; a mandatory, privately managed DC scheme based on employee contributions, with individual accounts managed by a small number of *administradoras de fondos de pensiones* (private master trusts, or AFPs); and a framework for supplementary plans sponsored by employers (the APVC schemes).

The Chilean Pension Security system was introduced in 1981 and is mandatory for every individual who has a formal job. Monthly contributions total 10% of salary and are sent directly to one of the six AFPs that oversee administration and investment management for the assets. Changes in system structure and asset allocation limits have been discussed in recent years. Reforms to introduce a solidarity pillar (a pillar within the DC pension scheme used to finance the pensions of those who were not able to accumulate enough savings to finance a minimum pension) have been discussed but not yet implemented. Mercer is noticing increasing interest from companies to implement supplementary pension plans, although they are not yet common.

In 2017, a reform to the investment regime was undertaken to allow AFPs to invest in alternatives, generally up to 10%, though specific limits vary by portfolio. The main objective of this enhancement to the regime is to boost returns so replacement rates can increase. The AFPs offer individuals the ability to select from among a number of risk-based funds; each has set ranges of allowable investments, including overall equity/fixed income exposure and the level of foreign assets permissible.

Over the period, Chile has increased its strategic allocation to equities, bonds and alternatives overall, and it has increased its exposure to foreign equity as part of this change. The allocation trend among AFPs has been to pursue return-seeking strategies by moving toward active managers for their greater alpha potential as well as increasing allocations to higher-returning equity segments, such as emerging markets — Asian equities in particular.

Data includes:

PLAN NAME(S)	SPONSOR AND PLAN TYPE	CURRENT ASSET SIZE (US$ MILLIONS)
Administradoras de fondos de pensiones	Mandatory DC	191,000

Figure 8. Chile Asset Allocation, Current Versus Change Over Five Years

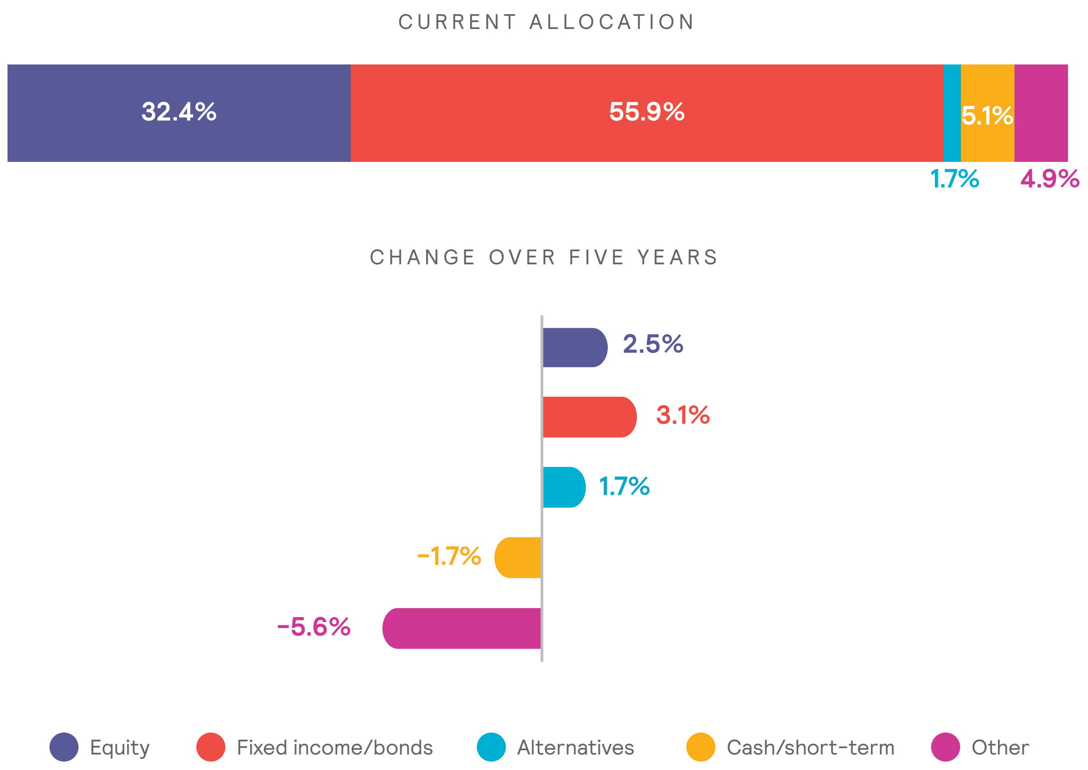
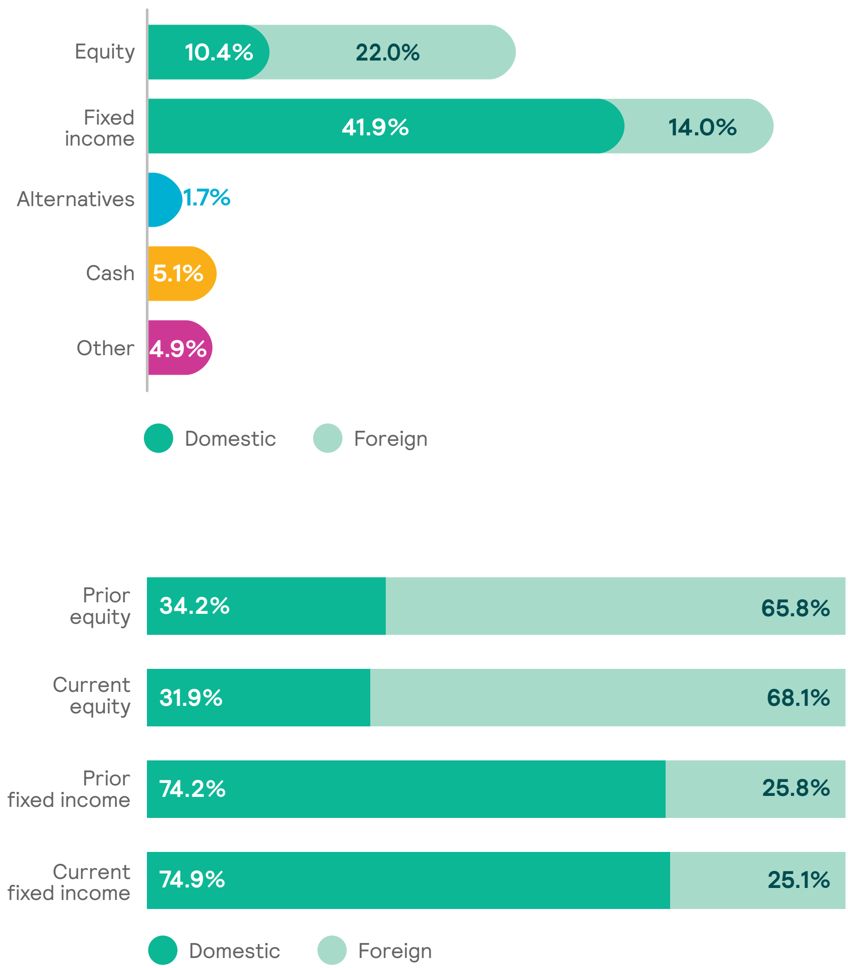


Figure 9. Chile Asset Allocation Detail



COLOMBIA

Colombia's retirement income system comprises a means-tested pension and two parallel and mutually exclusive pension systems. The first of these two systems is a pay-as-you-go DB plan, and the second is a system of funded individual accounts offered through qualified financial institutions (AFPs). An employee elects to join one system, with the option to change later, within certain restrictions. The employer and employee contribution rates are the same for both systems. Some companies also offer a supplemental plan, typically DC, designed for higher earners whose benefits under the mandatory system are limited by the contribution ceiling, allowing them to benefit from favorable tax treatment.

The government has recently implemented reforms to the DC investment regime allowing for more exposure to alternatives and foreign investments. Reforms are intended to promote Colombia's infrastructure, reduce local investment risk and allow greater diversification. Investments are typically managed internally by AFP staff and include regulations precluding the delegation of asset management to other parties, with the exception of fund-of-fund structures.

Our survey indicates that Colombia modestly reduced equity exposure over the period but increased the amount of foreign equity exposure within the equity allocation. Allocations to fixed income and alternatives increased slightly over this time.

The AFPs offer individuals the ability to select from among a number of risk-based funds; each has set ranges of allowable investments, including overall equity/fixed income exposure and the level of foreign assets permissible. Five years ago, a more aggressively positioned fund was added to the suite of AFP investment options, which incorporated higher equity and alternatives exposure, including foreign allocations; however, this more aggressive option constitutes less than 10% of total AUM.

AFPs have been looking for more passively managed options in order to lower fees. At the same time, there has been increasing interest in higher-returning equity segments, such as emerging markets, including Asian exposure.

Data includes:

PLAN NAME(S)	SPONSOR AND PLAN TYPE	CURRENT ASSET SIZE (US$ MILLIONS)
Administradoras de fondos de pensiones	Mandatory DC	73,000

Figure 10. Colombia Asset Allocation, Current Versus Change Over Five Years

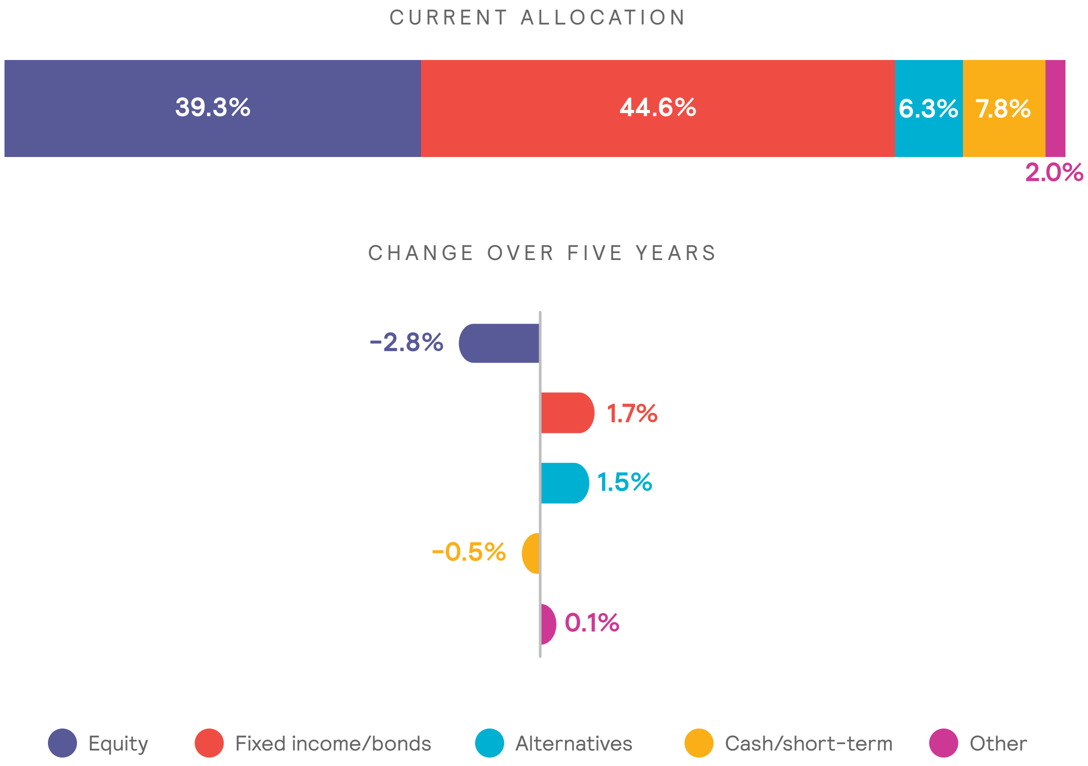
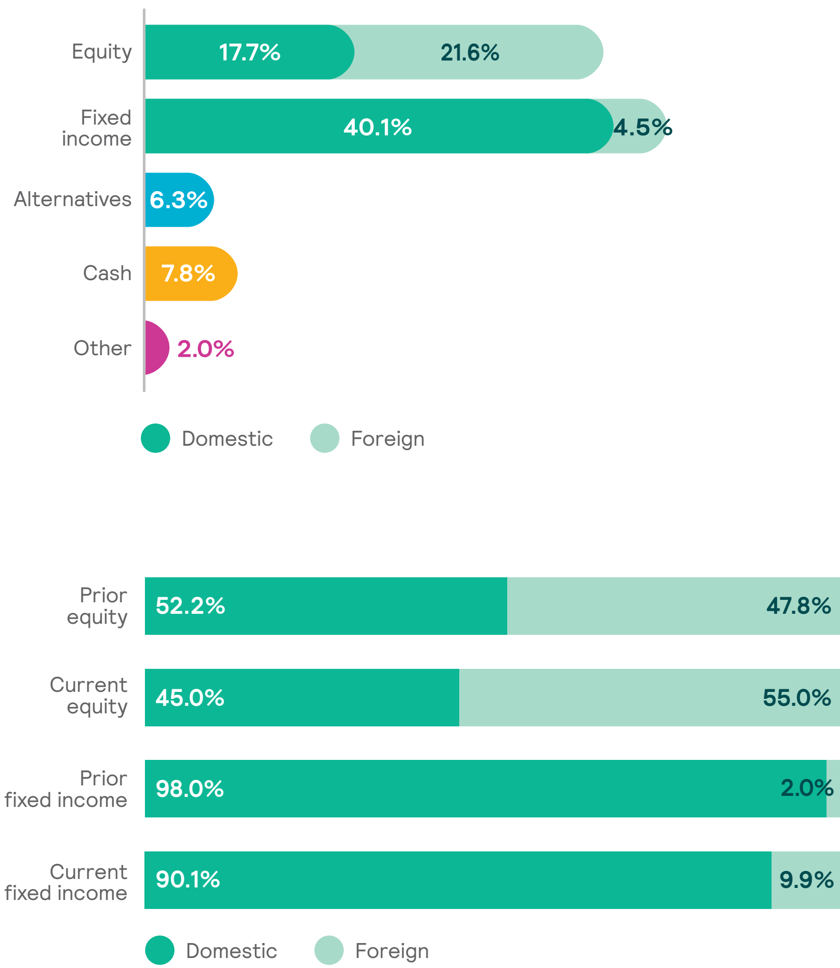


Figure 11. Colombia Asset Allocation Detail



MEXICO

Mexico's retirement income system comprises a mandatory and funded DC scheme for private companies and government employees. In 1997, the private company scheme transitioned from DB to DC, and the government employees' scheme made the same transition in 2007. These schemes include a minimum public pension and, in some cases, supplemental private-sector plans. The Administradoras de Fondos Para el Retiro (Afores) are the retirement fund administrators for these plans. Tax incentives encourage companies to provide their workers with private pension plans in addition to the mandatory social security scheme.

For private pension plans, investment restrictions include:

- Thirty percent must be invested in government instruments or fixed income mutual funds.
- The remaining 70% can be invested in any type of asset as long as the instrument is registered with the Comisión Nacional Bancaria y de Valores (CNBV).
- A maximum of 10% can be invested in the company's own securities.

As of the end of December 2017, there were more than 2,000 private plans representing US$26 billion (2.3% of Mexico's GDP) registered in the Comisión Nacional del Sistema de Ahorro Para el Retiro (CONSAR), which represents a 3.8% increase from the previous year and a 10% increase over the past five years. Forty-four percent of the plans were DB, which has been decreasing over the past four years, mainly due to tax regulation changes and costs associated with administering these plans. At the same time, we observed an increase in the creation of DC plans — more than 300 in the same period — particularly with a trend toward creating hybrid schemes, which include DC components with a guaranteed minimum benefit.

For DB plans, the investment strategy is migrating to a more conservative allocation by decreasing the equity exposure. However, for DC plans, the strategy has migrated from a single investment option to a lifecycle or lifestyle option. Within private pension funds, asset allocations did not move significantly over the period, but a modest increase in equities was noted along with a small increase in foreign assets as a segment of the equity portfolio (though these remained less than 5%). Most private pension plans seek actively managed strategies through mutual funds, though more sophisticated plans will make direct investments.

There are 10 Afores in Mexico, representing US$224 billion, that are mandatory schemes for individuals with formal jobs. Afores are restricted to a maximum of 20% foreign assets, which, until recently, could only be accessed through exchange-traded funds (ETFs) or segregated account vehicles. Regulatory changes in March 2019 now allow the use of mutual fund vehicles. Although additional change may be forthcoming as Afores take advantage of the new vehicle permissions, we have already begun to observe investment strategy changes over the past five years, including allowable asset classes, such as real estate investment trusts (REITs), real estate, commodities, private equity and currencies.

Regulatory change to increase the foreign maximum to 30% is under consideration and would further support the plans' ability to invest offshore and increase the exposure in equity and alternatives.

Overall, the Afores' investments dominate our analysis, which is particularly notable with the exposure to foreign equity, as private pension plans have minimal foreign exposure.

Data includes:

PLAN NAME(S)	SPONSOR AND PLAN TYPE	CURRENT ASSET SIZE (US$ MILLIONS)
Private pension plan	Corporate DB	11,680
Private pension plan	Corporate DC	14,685
Afores	Mandatory DC	224,378
Total		**250,743**

Figure 12. Mexico Asset Allocation, Current Versus Change Over Five Years

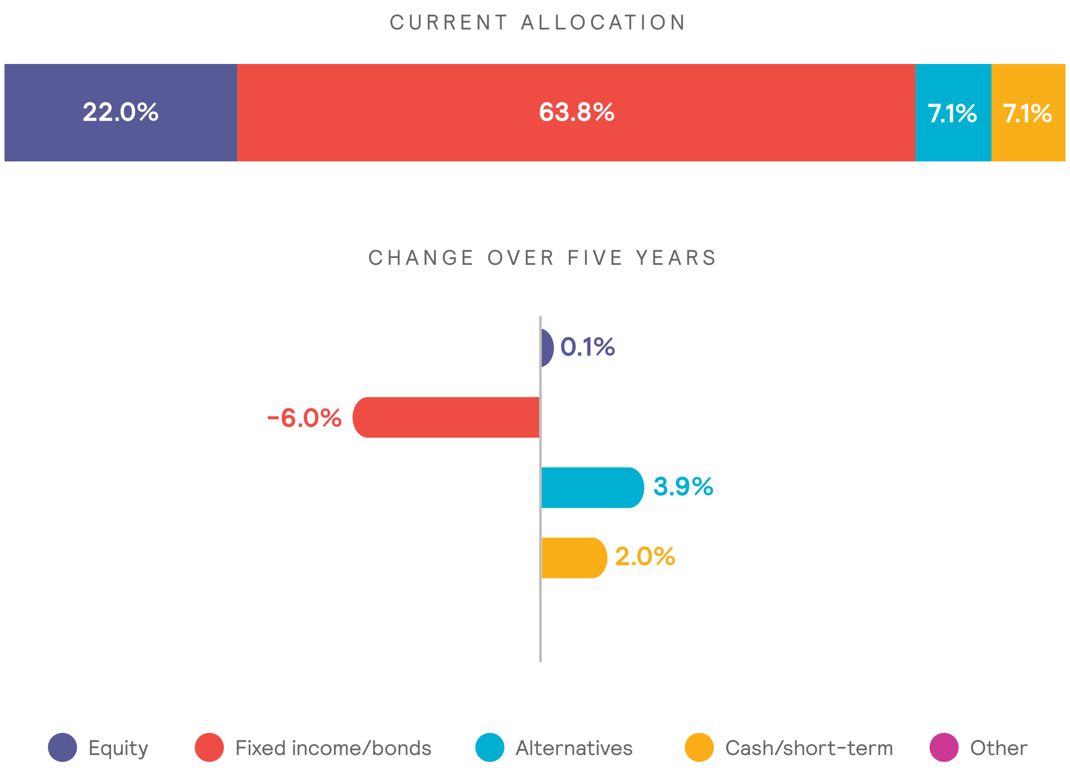
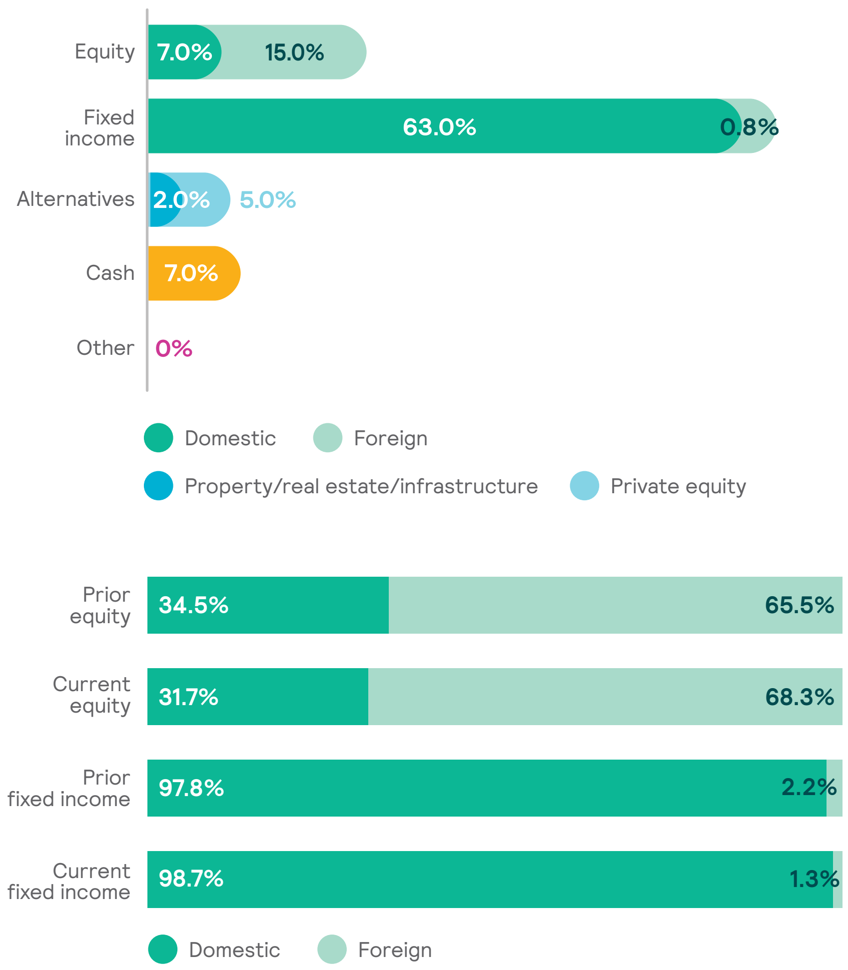


Figure 13. Mexico Asset Allocation Detail



PERU

Peru's retirement income system comprises a means-tested pension and two parallel and mutually exclusive pension systems. People are able to choose between a pay-as-you-go DB public system and a fully funded DC system managed by four AFPs within the private sector. Once an individual makes a choice between the DB and DC schemes, there are strict rules in place to limit the ability to switch from one to another; for example, only participants who began contributing to the DC scheme prior to 1995 may switch into the DB scheme. Supplemental plans are not common.

The average international limit among AFP investment options was recently increased to 50%, in line with a regional trend to expand the exposure to foreign investments. The AFPs offer individuals the ability to select from among a number of risk-based funds; each has set ranges of allowable investments, including overall equity/fixed income exposure and the level of foreign assets.

Peru reduced its cash exposure in favor of equities, fixed income and alternatives over the past five years. The allocation to foreign equities increased within the equity portfolio, and the limit on foreign asset exposure was recently widened; however, the percentage allocated to foreign fixed income declined over the same period.

Peru's AFPs have been moving significantly toward passively managed strategies in order to lower fees. At the same time, there has been an increasing interest in higher-returning equity segments, such as emerging markets, including Asian exposure.

Data includes:

PLAN NAME(S)	SPONSOR AND PLAN TYPE	CURRENT ASSET SIZE (US$ MILLIONS)
Administradoras de fondos de pensiones	Mandatory DC	49,000

Figure 14. Peru Asset Allocation, Current Versus Change Over Five Years

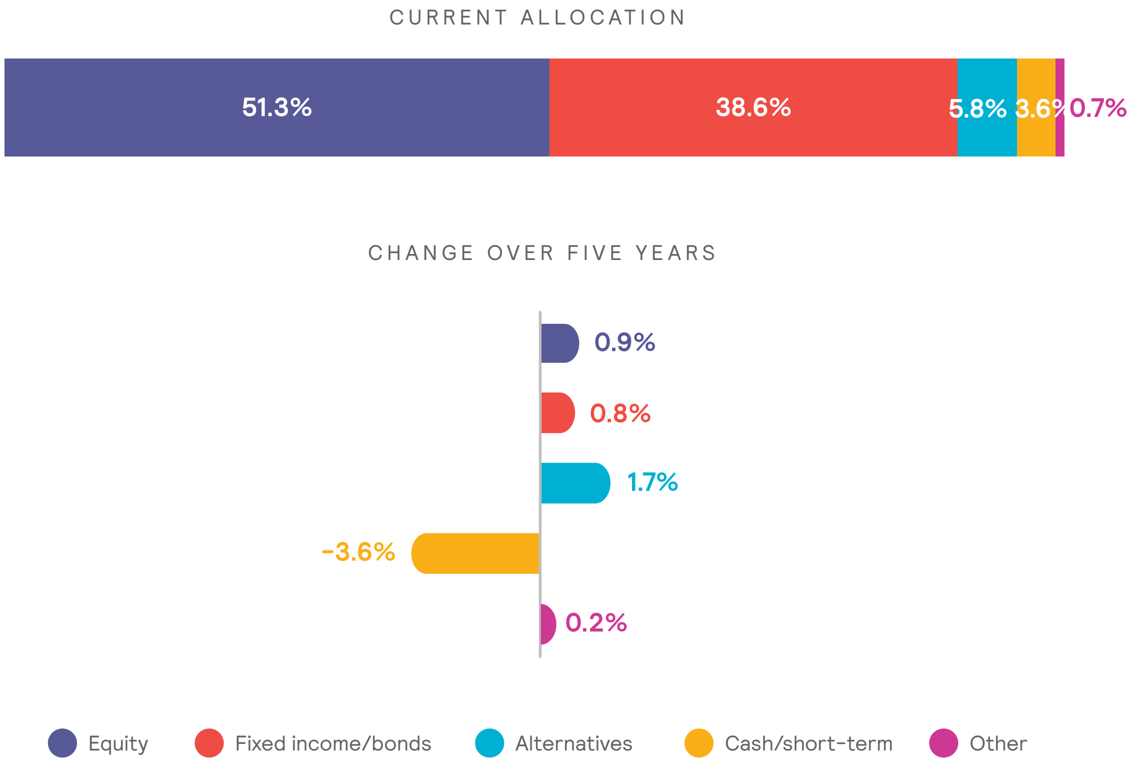
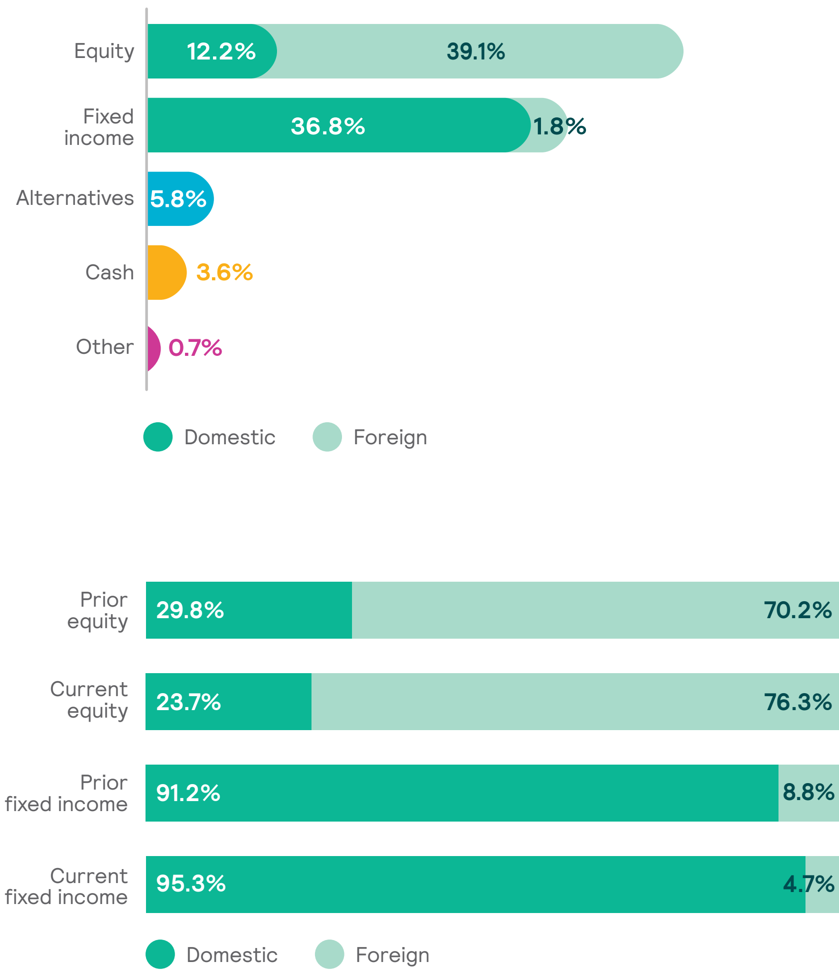


Figure 15. Peru Asset Allocation Detail



GULF COOPERATION COUNCIL (GCC)

Pension systems across the GCC can vary; however, in general, pension systems that cover nationals fall within two main categories:

- **Government- or state-sponsored plans:** These plans comprise the majority of assets and have embarked on an institutionalization journey as outlined below.
- **Corporate or nongovernment-sponsored plans:** These plans are relatively rare and, for the most part, are conservatively positioned and lack the sophistication and risk management of their government-sponsored peers.

Expatriates or others who do not fulfill any of the retirement conditions are typically paid an earnings-related lump-sum retirement benefit by their employers.

GCC state pension funds face sustainability challenges, and contributions may not cover benefits. With the lower oil prices seen a number of years ago, the cost of funding pensions was perceived as increasingly unaffordable and potentially deflecting from other priority spending areas. GCC pension funds therefore increasingly invested internationally as a diversifier to the local markets, which can be heavily influenced by the oil price. This also acts to diversify them from their government sponsors, which can be reliant on oil revenues.

GCC pension funds and other institutional investors in the region have historically held considerable proportions of their assets in local real estate, and there has been a desire to diversify away from this asset class, particularly following the large drop in real estate prices in the region after the global financial crisis.

There has been a shift toward increasing allocations to private markets as investment teams in the region become more familiar with a broad range of asset classes and follow trends from the large sovereign wealth funds (SWFs), whose behavior frequently influences pension investment trends in the region.

Consistent with trends we have seen around the world, much greater emphasis has recently been placed on lower fees, with increased negotiations taking place with asset managers as well as a move toward investing passively in more efficient markets.

Environmental, social and governance (ESG) factors are currently not particularly important for pension fund investors, but ESG is generating more interest with SWFs in the region and could therefore become a greater area of focus for pension funds in the future.

SOUTH AFRICA

South Africa's retirement income system comprises a means-tested public pension and tax-supported voluntary occupational schemes. The analysis includes data from South Africa's Government Employees Pension Fund (GEPF) as well as information provided by Mercer's strategic partner in Africa, Alexander Forbes Investments (AF). Allocations provided by AF are based on AF's Spectrum portfolio, an equally weighted portfolio composed of managers submitting to the Alexander Forbes *Investable Global Manager Watch*™ survey.

In February 2018, the South African Reserve Bank announced an increase in South African investors' offshore investment limits to 30% (from 25%), and the exposure to Africa (outside South Africa) was extended to 10% (from 5% previously). This has resulted in greater allocations (mainly within equities) to developed markets. Due to the typical illiquidity of African markets outside South Africa, the increased allowance to invest in other African markets has been utilized less.

GEPF's asset allocation did not change significantly over the period, although allocations showed a slight increase to foreign equity (from 4% to 5%) and to property (from 3% to 5%) at the expense of fixed income.

Within the *Manager Watch*™ survey, we observed that portfolios are, on average, positioned more toward growth assets than defensive assets compared to five years ago. In addition, investors in the survey have taken advantage of the relaxation of offshore investment limits, with an increase in foreign equity holdings from 20% to 24% over the measurement period. Cash balances are at a five-year low, as there has been a shift into local bonds in recent periods.

Although institutional investors increasingly appreciate the need to diversify their portfolios, strong equity markets both locally and internationally have yet to encourage much greater allocations to alternatives. South African pension funds are traditionally quite conservative; however, as they become more familiar with alternative assets and access to nontraditional asset classes improves, allocations to alternatives are expected to increase.

Data includes:

PLAN NAME(S)	SPONSOR AND PLAN TYPE	CURRENT ASSET SIZE (US$ MILLIONS)
Government Employees Pension Fund	Government DB	128,992
Plans represented in the Alexander Forbes *Investable Global Manager Watch*™ survey	Corporate DC	16,745
Total		**145,737**

Figure 16. South Africa Asset Allocation, Current Versus Change Over Five Years

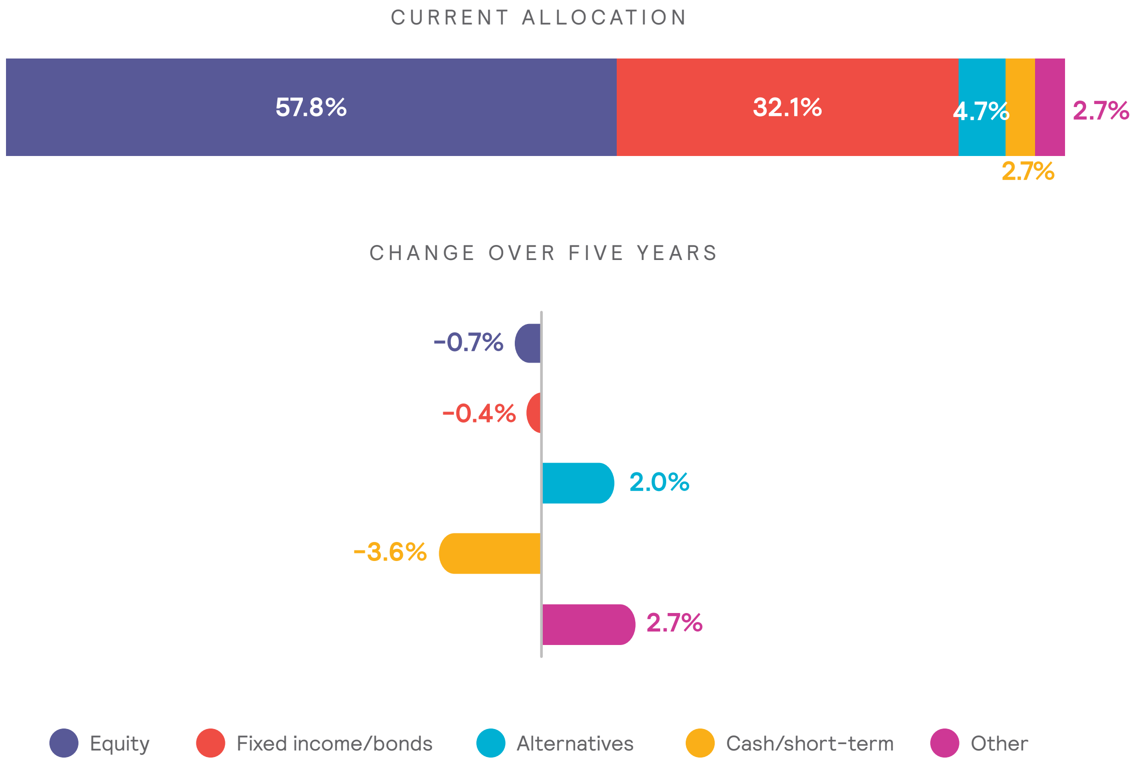
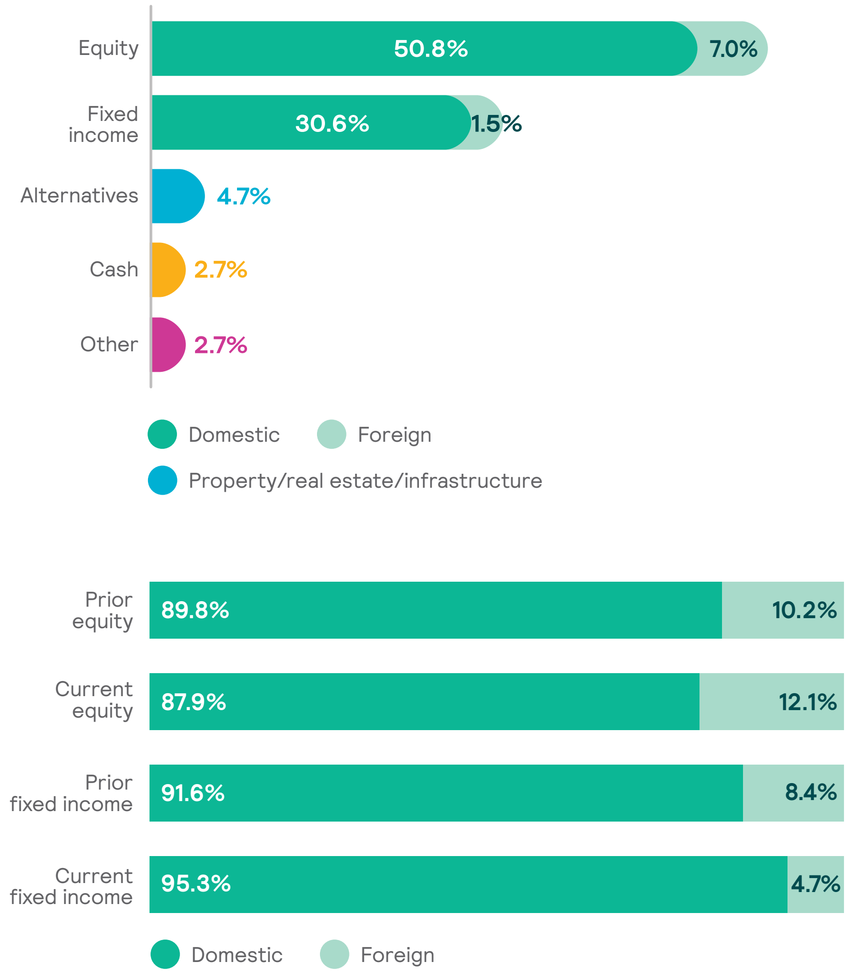


Figure 17. South Africa Asset Allocation Detail



HONG KONG

In Hong Kong, the Occupational Retirement Schemes Ordinance (ORSO) and Mandatory Provident Fund (MPF) both represent retirement protection schemes set up for employees. The former came into effect in 1993 as voluntary occupational retirement schemes. The MPF system was launched in December 2000 with the aim of establishing a mandatory, privately managed, fully funded contribution scheme. As of June 30, 2018, around 85% of the total employed population is covered under either MPF schemes, ORSO schemes or statutory pension or provident fund schemes (such as those for civil servants or public school teachers). Prior to the launch of MPF, only one-third of Hong Kong's workforce had some form of retirement protection under ORSO.

The operations of the two types of schemes are different. ORSO schemes are set up voluntarily by employers to provide retirement benefits for their employees, and, as such, the governing rules are drawn up by individual employers. Some of the ORSO schemes are quite sizable, with a long history, and are actively maintained by the employers. However, we note slowing asset growth within ORSO schemes compared to MPF schemes, largely due to the voluntary nature of ORSO schemes. As of June 30, 2018, ORSO scheme asset growth was 18% over the past five years, compared to 88% growth in MPF assets over the same period.[14]

In terms of the types of retirement plans, the DC approach adopted under both ORSO and MPF schemes dominates and accounted for more than 90% of total pension assets as of June 30, 2018. In terms of investment guidelines, the MPF schemes have stricter and more detailed investment standards (compared with ORSO schemes). MPF schemes must adhere to various guidelines, including minimum credit ratings, eligible equities securities and certain restrictions on the use of derivatives, leverage and borrowing. Each MPF fund must be approved by the regulator prior to its launch.

From an asset allocation perspective, the focus has been on diversifying investment options to enhance the risk-return profile for individual members. On April 1, 2017, the regulator introduced the default investment strategy (DIS)[15] to help employees who have limited investment knowledge and experience difficulty in diversifying into a broad variety of investment products.

Our analysis below includes only the MPF schemes given the MPF's considerable market share within Hong Kong's pension market. The majority of assets are invested in equities (including equity allocations in lifestyle funds as well as standalone equity funds), with the remainder in fixed income and cash. Alternative investment options have not yet been introduced to the MPF schemes due to the MPF's strict requirement on permissible investments. Asset allocation remained largely the same compared with that of five years ago.

The overall MPF market has a home bias in both the equities and fixed income allocations.

Data includes:

SCHEME NAME(S)	SPONSOR AND PLAN TYPE	CURRENT ASSET SIZE (US$ MILLIONS)
Mandatory Provident Fund (MPF) schemes	Mandatory DC	109,230

[14] As of June 30, 2018, asset size of ORSO DB and DC schemes stood at US$14.062 million and US$26.237 million, respectively.

[15] Each of the 32 MPF schemes must offer a DIS for MPF benefits without investment instructions. Scheme members can also proactively choose to invest through the DIS or its two mixed assets funds: the Core Accumulation Fund (CAF) and the Age 65 Plus Fund (A65F). The DIS must have three features: it automatically reduces the investment risk according to a member's age, it has fee caps and it adopts a globally diversified investment approach.

Figure 18. Hong Kong Asset Allocation, Current Versus Change Over Five Years

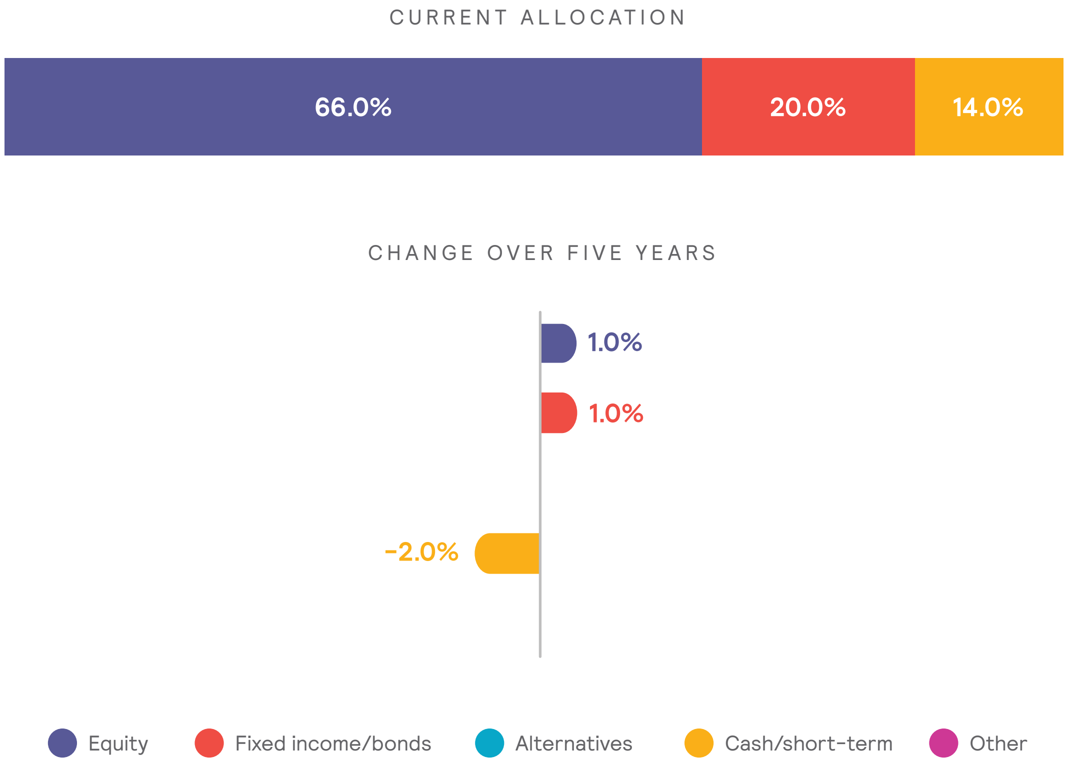
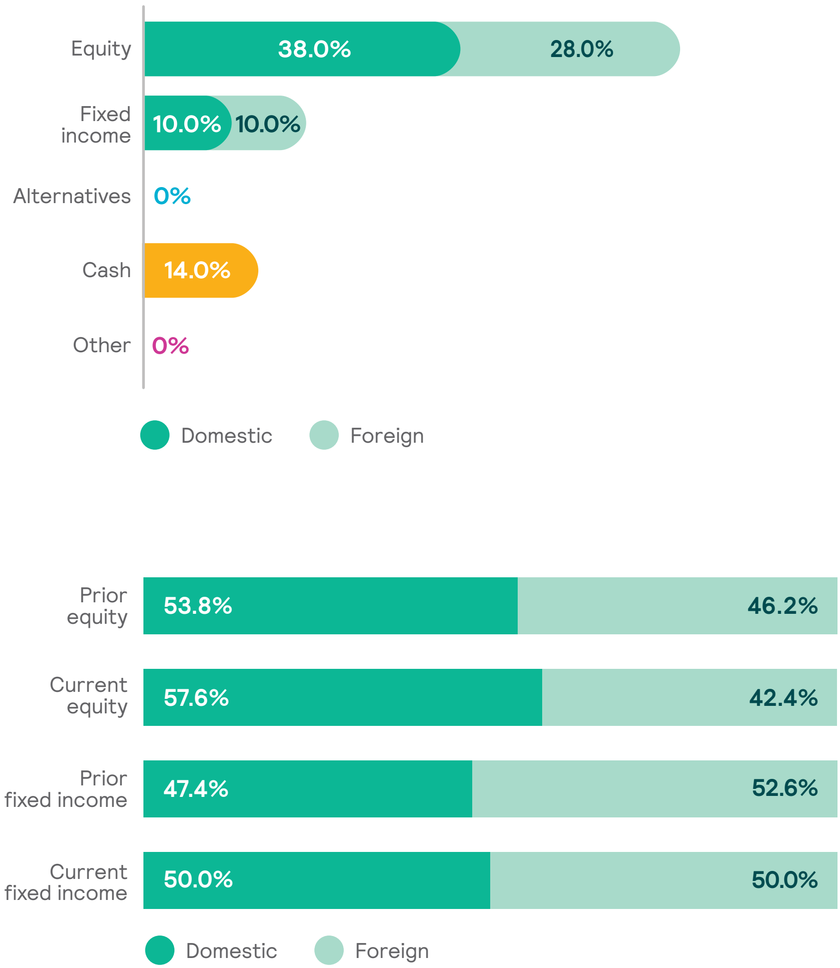


Figure 19. Hong Kong Asset Allocation Detail



INDONESIA

Indonesia's retirement income system comprises earnings-related civil service pensions, mandatory DC plans for private-sector workers and voluntary DC plans sponsored by corporates and for the self-employed. A new national pension scheme, BPJS Ketenagakerjaan,[16] launched in July 2015, provides a DB scheme funded through employer and employee contributions of a fixed percentage of the monthly salary, which we expect to improve benefits for individual employees going forward.

Within the corporate pension system, Indonesia is experiencing a shift from DB to DC plans, with an increase in employer contributions to the voluntary retirement savings program (DPLK). However, employees seldom have visibility or input into the asset allocation choices, and we see employers executing a conservative slant to fixed income and cash/short-term assets to ensure they can meet future severance-funding needs.

For other types of investors, including institutions and retail investors, we are seeing similar trends to decrease equity and increase fixed income and cash. This trend is attributable to:

- An increase in savings of the growing middle class, who, we observe, are investing conservatively due to low financial literacy
- Lack of investment choices
- Lack of access to information to help investors assess the quality of the investment strategies available
- Lack of trust in new and unproven aggregator channels
- Local currency-only transactions onshore, tax amnesty and changes in offshore transfer limits that are keeping high-net-worth assets onshore longer

From an asset allocation perspective, the corporate and mandatory pension plans invest in a similar manner, with requirements to invest in local Indonesian assets and cash and fixed income allocations, on a weighted average basis, of more than 80% of the portfolios.

The Ministry of Finance is relaxing some of its regulations, allowing banks to offer new alternative asset classes in an effort to spur the investment market and provide alternatives to repatriated tax amnesty money that is free to go back offshore in two years. At present, the plans are limited to investing 5% of assets in foreign securities, which must be in the form of a direct placement.

[16] BPJS also provides other social security programs, including life insurance and disability. Only the assets supporting retirement benefits are included here.

Data includes:

PLAN NAME(S)	SPONSOR AND PLAN TYPE	CURRENT ASSET SIZE (US$ MILLIONS)
Employer pension fund — DB	Corporate DB	10,673
Employer pension fund — DC	Corporate DC	2,303
Financial institution pension fund	Financial institution DC	5,832
BPJS Ketenagakerjaan — jaminan pensiun[17]	Mandatory DB	1,870
BPJS Ketenagakerjaan — jaminan hari tua	Mandatory DB	18,413
Total		**39,091**

[17] Past data is not available for this plan, as it was established in 2015.

Figure 20. Indonesia Asset Allocation, Current Versus Change Over Five Years

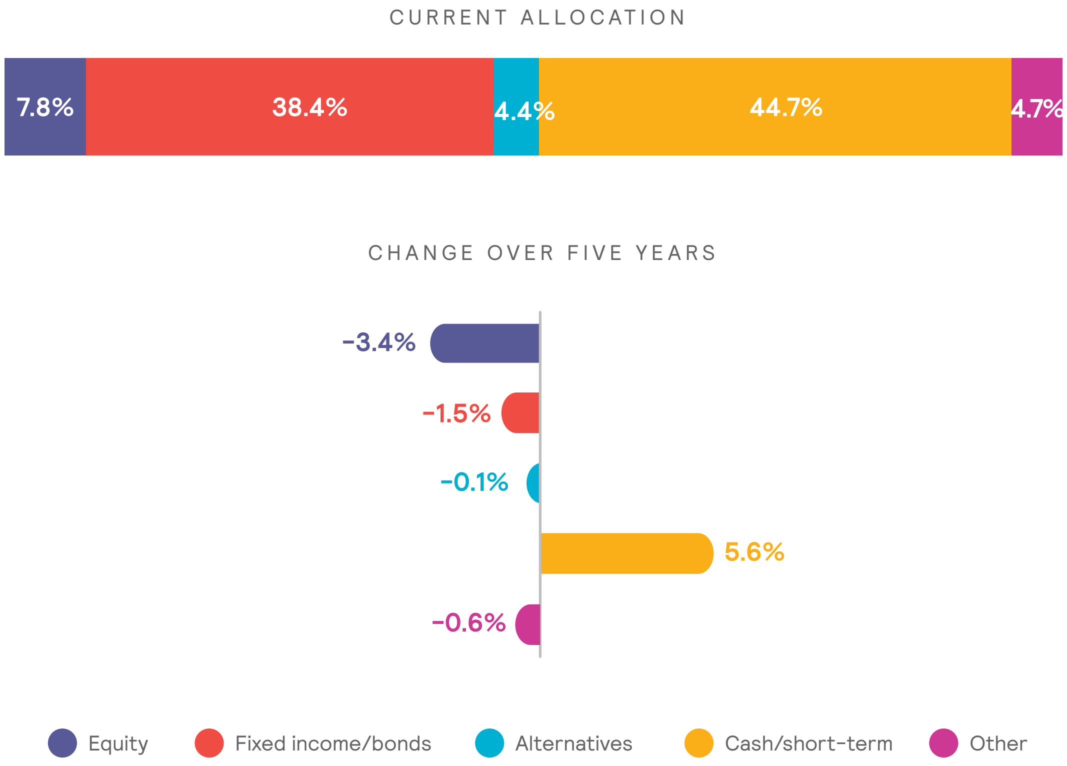
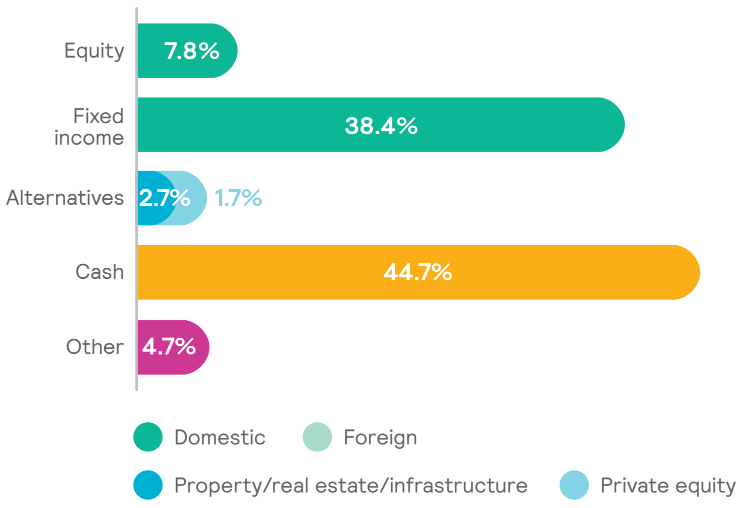


Figure 21. Indonesia Asset Allocation Detail



JAPAN

Japan's retirement income system comprises a flat-rate basic pension, an earnings-related pension and voluntary supplementary pension plans. The pension system in Japan is robust and includes both corporate and government DB schemes, including the US$1.5 trillion Government Pension Investment Fund (GPIF), as well as a growing DC system that includes both employer-sponsored corporate and individual plans.

In recent years, GPIF has seen its assets grow, primarily due to the shift away from employees' pension funds (EPFs), which were nearly all eliminated after legislation in 2013.

Over this period, GPIF has significantly increased its allocation to equities. Within GPIF's equity allocation, there has been a move to more foreign equities at the expense of domestic equities. GPIF has also demonstrated interest in ESG-related strategies and private markets.

Conversely, corporate plans have decreased equity allocations and increased the allocations to alternatives and short-term life insurance products.

Both GPIF and corporate plans have been decreasing their home-country bias in the fixed income area, though the Pension Fund Association (PFA) continues to increase its exposure to Japanese-domiciled bonds (which also includes foreign bonds hedged back to Japanese yen).

DC plans are fairly new in the market, but members have so far preferred principal-guaranteed products, such as bank deposits and insurance products.

Data includes:

PLAN NAME(S)	SPONSOR AND PLAN TYPE	CURRENT ASSET SIZE (US$ MILLIONS)
Government Pension Investment Fund (GPIF)	Government DB	1,473,000
Other public DB[18]	Government DB	464,000
Pension Fund Association	Corporate DB	105,000
Corporate DB	Corporate DB	591,000
Corporate DC	Corporate DC	94,000
Individual DC	Corporate DC	12,000
Total		**2,739,000**

[18] Includes Pension Fund Association for Local Government Officials; National Federation of Mutual Aid Associations for Municipal Personnel; Federation of National Public Service Personnel Mutual Aid Associations; Promotion and Mutual Aid Corporate for Private Schools of Japan and National Pension Fund Association.

Figure 22. Japan Asset Allocation, Current Versus Change Over Five Years

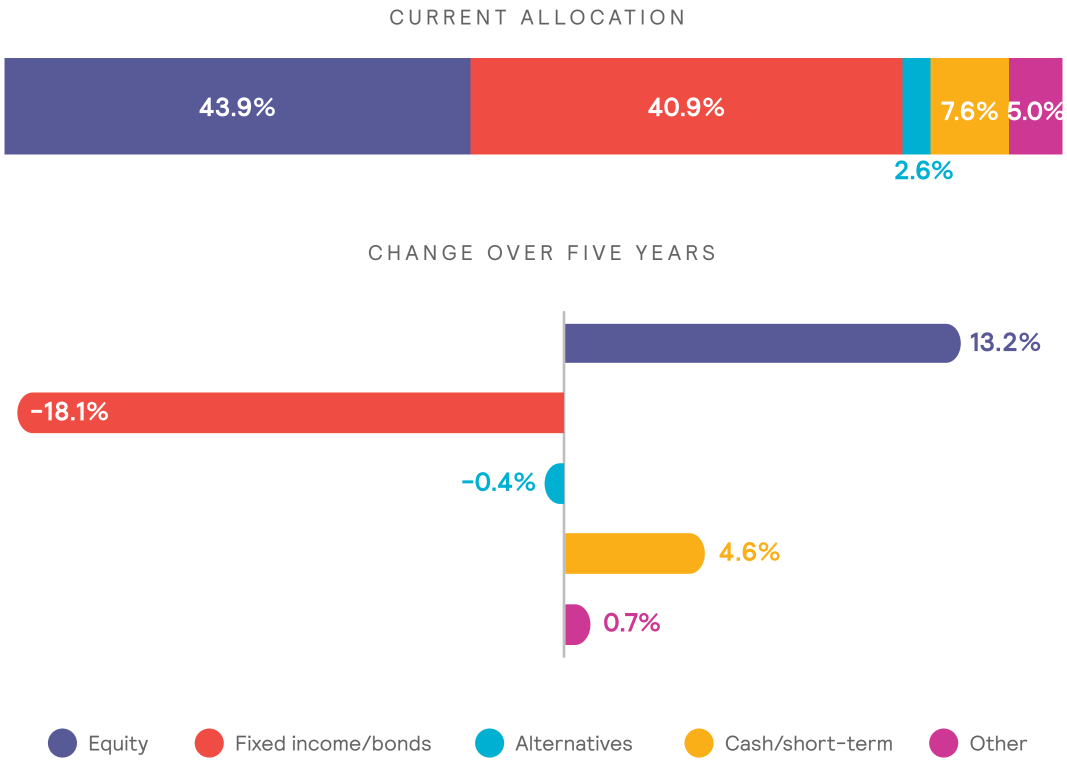
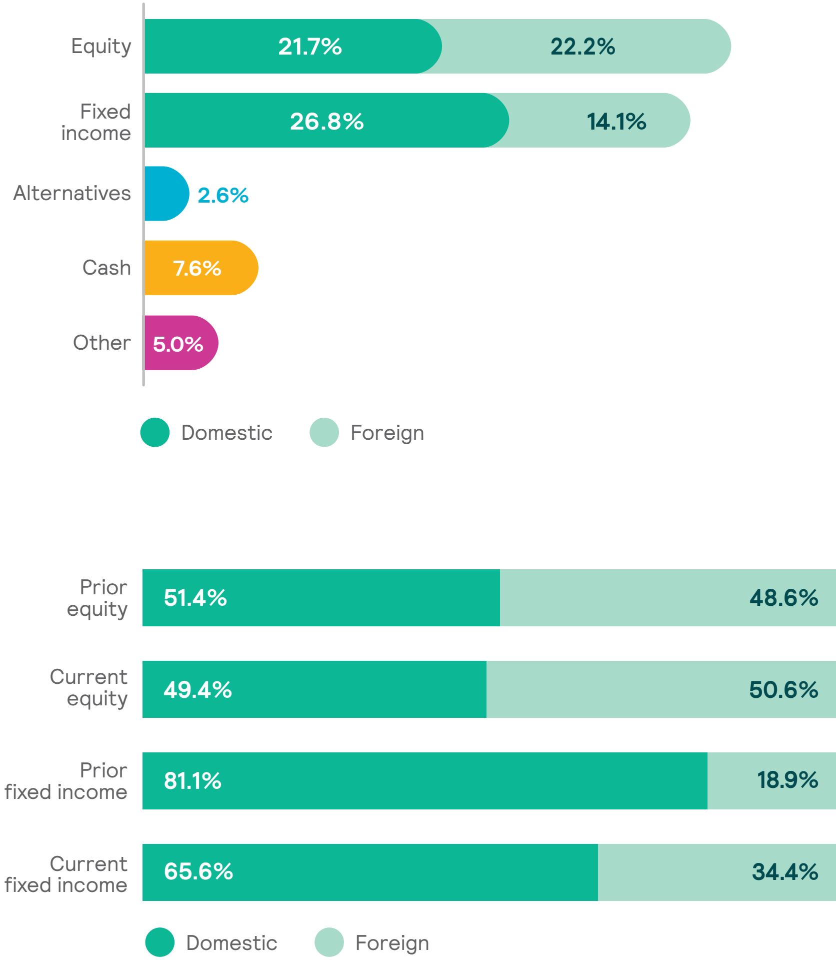


Figure 23. Japan Asset Allocation Detail



SOUTH KOREA

The South Korean pension system comprises three pillars.

The first pillar consists of two parts:

- The National Pension Fund (NPF), managed by the National Pension Service (NPS), which applies to the public, excluding government employees, private school teachers and military service personnel
- The Special Occupational Pension (SOP) Schemes, which apply to government employees, private school teachers, and military service personnel and associated civilian employees

The second pillar consists of the Severance Pay Scheme (SPS) and retirement plans governed by the Employee Retirement Benefit Security Act ("ERSA plans")[19] and totals approximately US$149 billion.

The third pillar consists of private pension plans, which are voluntary pension schemes based on contributions by individuals.

The NPF was established in 1988 to secure the retirement benefits of Korean citizens except for those entitled to the SOP. It is the world's third-largest pension fund, with total AUM amounting to ₩652 trillion (US$575 billion) as of September 30, 2018. In the past few years, it has consistently increased the allocation to overseas investments and enhanced the fund management policies for third-party managers. NPF has also been increasing its allocation to alternative investments. Today, NPF is placing greater focus on governance framework. Although each SOP scheme has its own purpose, mission and policy, we note there are significant overlaps between the investment approaches adopted by both NPF and SOP.

With regard to the asset breakdown of the second pillar, the corporate retirement plans, more than 88% of total plan assets (DB and DC) are invested in principal-secured (guaranteed) products. However, the offer rate of principal-secured products fell below the local fixed deposit rate at the end of 2017. As a result, pension participants and sponsors have been showing more interest in diversified fund vehicles with better yields and actively seeking nonprincipal-guaranteed options.

Allocation to fixed income assets dominates, accounting for more than 50% of total pension assets, which signals that there is greater emphasis on preservation of assets than on return-seeking for the pension assets. However, looking at the changes over the past five years, we note that NPF and other SOP schemes are increasing allocations to equity (+8%) and alternatives (+1%) while decreasing allocations to fixed income assets (-9%) to seize opportunities from changing market environments. We would expect this trend to continue in the future, with NPF setting its direction to focus more on improving returns. Although the allocation within domestic and foreign sectors under equities remains quite balanced, the allocation to domestic fixed income continues to reflect a heavy home bias.

[19] The Employee Retirement Benefit Security Act (ERSA) was introduced in 2005, replacing the Severance Pay Scheme (SPS) established in 1961 as the first mandatory DB type of benefit plan.

Data includes:

PENSION FUND NAME(S)	SPONSOR AND PLAN TYPE	CURRENT ASSET SIZE (US$ MILLIONS)
National Pension Fund	Partially government-funded DB	574,900
Government Employee Pension Fund	Partially government-funded DB	6,400
Teachers' Pension Fund	Partially government-funded DB	13,900
Total		**595,200**

Figure 24. South Korea Asset Allocation, Current Versus Change Over Five Years

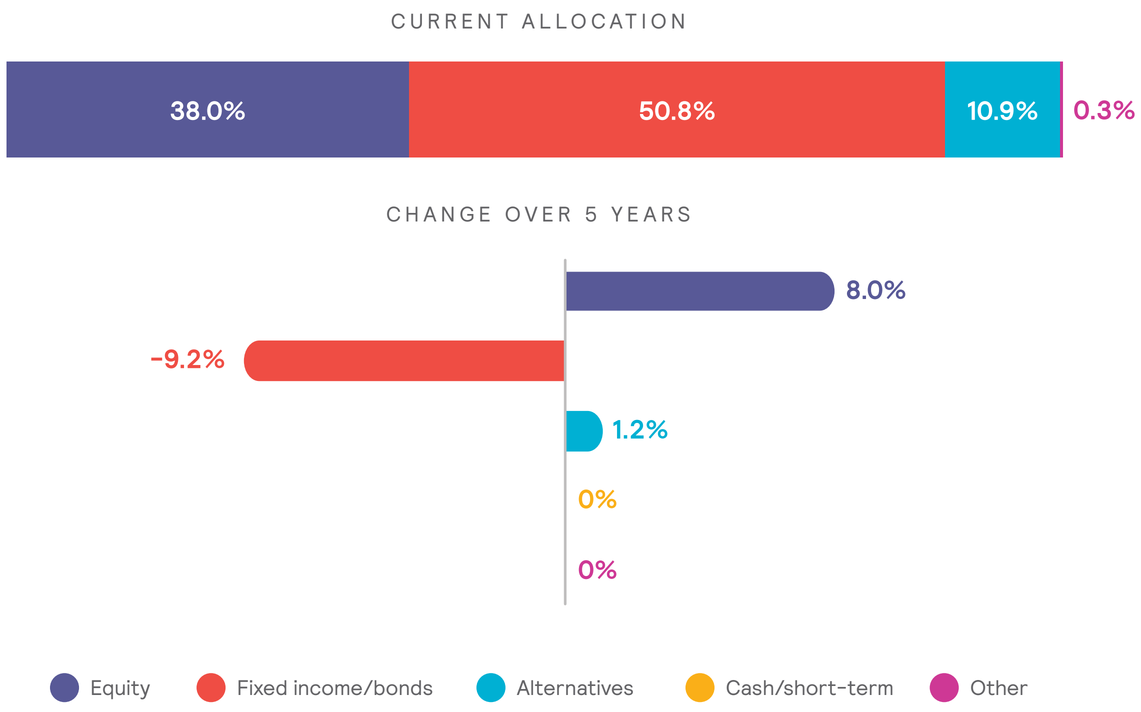
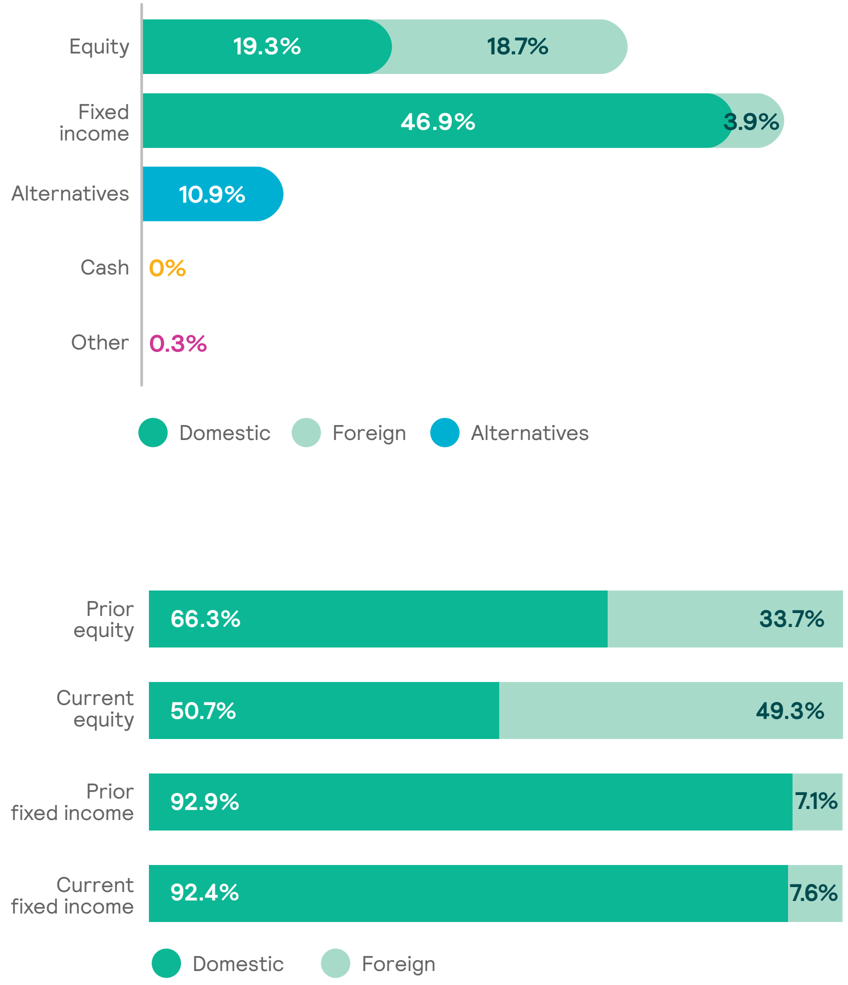


Figure 25. South Korea Asset Allocation Detail



MALAYSIA

There are two main state-run pension plans in Malaysia:

- The Employees Provident Fund (EPF) is a mandatory DC plan that covers private-sector employees and nonpensionable public-sector employees (with funds for around 14 million Malaysians). The plan includes a guaranteed 2.5% p.a. investment return, and provisions allow some benefits to be withdrawn at any time (under predefined uses, including fund education, home loans and severe ill health), with other benefits preserved for retirement.
- The government pension fund (KWAP) is a DB plan that covers public-sector employees (around two million individuals).

Both plans have typically held a domestic bias; however, over the five-year period, there have been changes in the asset allocation for the EPF, with an increase in foreign equity. There have also been increased efforts to diversify the portfolios, including allocations to alternatives, such as real assets and private equity. Overall, the plans' combined asset allocation maintains a strong bias for domestic equities and Malaysian government fixed income securities.

In 2013, the Securities Commission launched the supplementary Private Retirement Schemes (PRS), which currently covers around 350,000 Malaysians (AUM of approximately US$600 million as of December 31, 2017). These are DC funds set up on a voluntary basis by individuals or employers through private-sector providers. The aim of the PRS is to provide additional sources of retirement savings, increase the role of the private sector and aid development of Malaysia's capital markets.

In 2017, the EPF launched a Shariah-compliant option for members, with an initial allocation of around US$20 billion. KWAP also has a stated longer-term aspiration to be 100% Shariah-compliant. We therefore expect Shariah-compliant investments within the plans to increase over time. There is also interest in broader ESG issues.

Data includes:

PLAN NAME(S)	SPONSOR AND PLAN TYPE	CURRENT ASSET SIZE (US$ MILLIONS)
Kumpulan Wang Simpanan Pekerja (KWSP) (EPF)	Mandatory DC	195,821
Kumpulan Wang Persaraan (KWAP)	Government DB	34,128
Total		**229,950**

Figure 26. Malaysia Asset Allocation, Current Versus Change Over Five Years

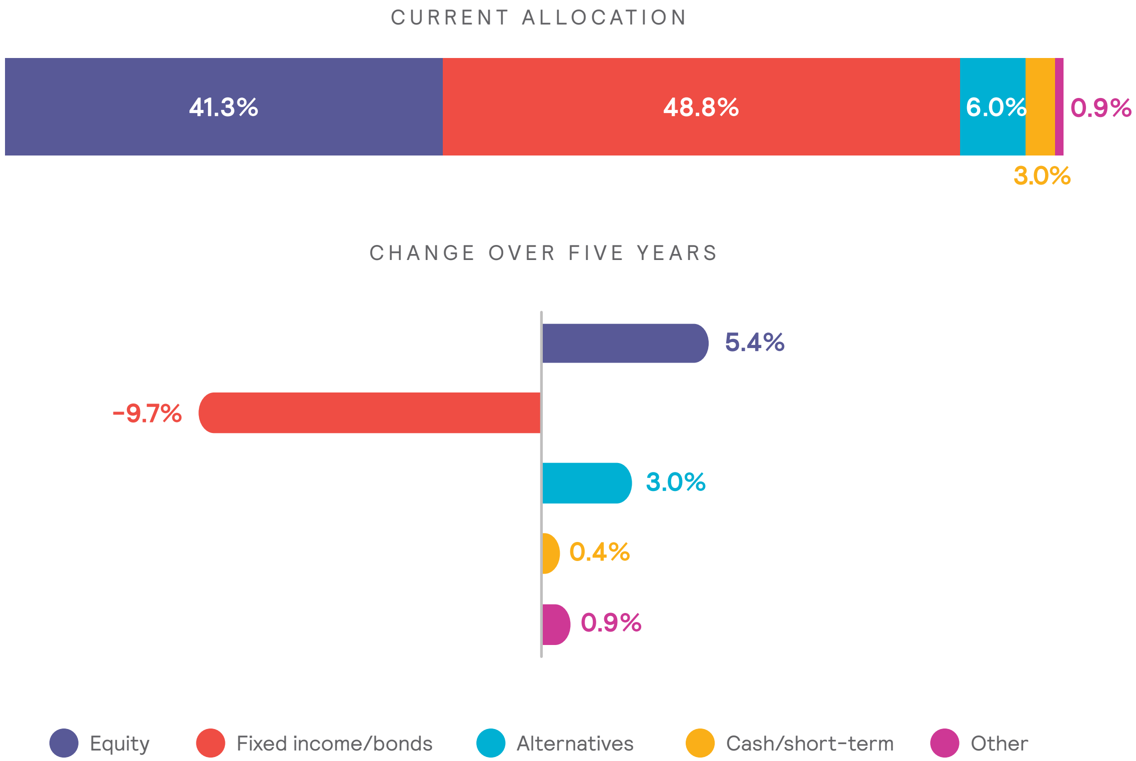
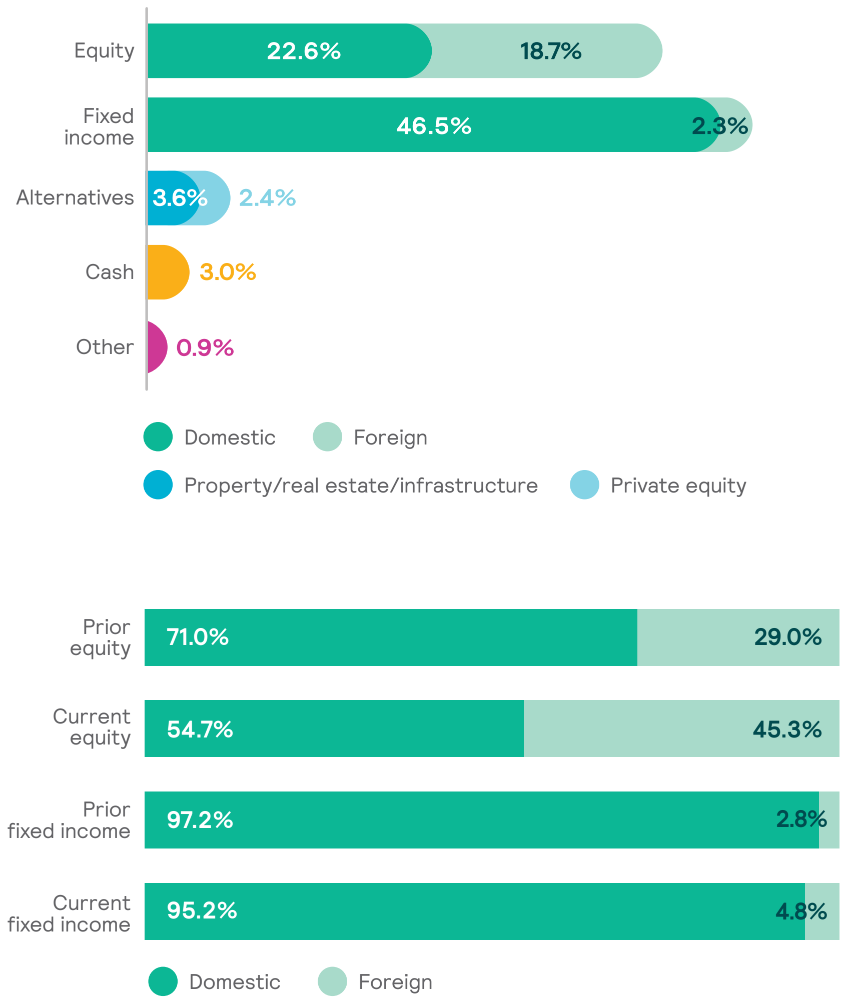


Figure 27. Malaysia Asset Allocation Detail



TAIWAN

In Taiwan, the Labor Standards Act (LSA) pension scheme and the Labor Pension Act (LPA) pension scheme are both retirement protection schemes set up for private-sector employees. LSA came into effect in 1984 in the form of a DB plan. LPA was launched in 2005, with the aim of shifting the retirement income system to a DC scheme. Effective July 1, 2005, LPA is mandatory for employees hired after that effective date and is optional for preexisting LSA participants. LSA has been closed to new participants since July 1, 2005.

The operations of the two schemes are similar. Both the LSA and LPA are set up on a mandatory basis by private employers to provide retirement benefits for their employees, but plan funds are held by the government. Investment of plan funds is also conducted and managed by the government. Since the pension system is transitioning to a DC scheme, LPA's fund size has grown at an annualized rate of 16.8% over the five-year period ended December 31, 2017 (compared to an annualized rate of 8.4% for the LSA fund).

In addition to LSA and LPA, there are two main state-run retirement schemes for public-sector employees in Taiwan:

- The Public Service Pension Fund (PSPF) is a mandatory DB plan that covers public servants.
- The private school pension system covers private school teachers. The system consists of one DB plan and one DC plan. Similar to the LSA and LPA, the DB plan is closed to new participants.

The private school DC plan is the first state-run plan that offers investment options to its participants. The focus now is to lower the participation rate in default investment options to encourage participants to actively manage their investment portfolios. Recently, the regulators have begun introducing investment options to other state-run retirement schemes.

In terms of asset allocation, over the past five years, there has been a trend toward increasing foreign investment allocations. Allocation to alternative investments has increased over the period. This is due to the increasing exposure to alternative investments for LSA and LPA plan funds. Over the same period, cash balances declined, on average, but remain high. Mercer's experience is that any poor investment performance within the statutory plans is met with significant public criticism, which contributes to the conservative investment positioning.

Data includes:

PLAN NAME(S)	SPONSOR AND PLAN TYPE	CURRENT ASSET SIZE (US$ MILLIONS)
Statutory corporate DB plans (LSA)	Mandatory DB	28,900
Statutory corporate DC plans (LPA)	Mandatory DC	63,000
Private school pension fund	Government DB	106
Private school pension DC	Government DC	1,600
Public Service Pension Fund	Government DB	19,500
Total		**113,106**

Figure 28. Taiwan Asset Allocation, Current Versus Change Over Five Years

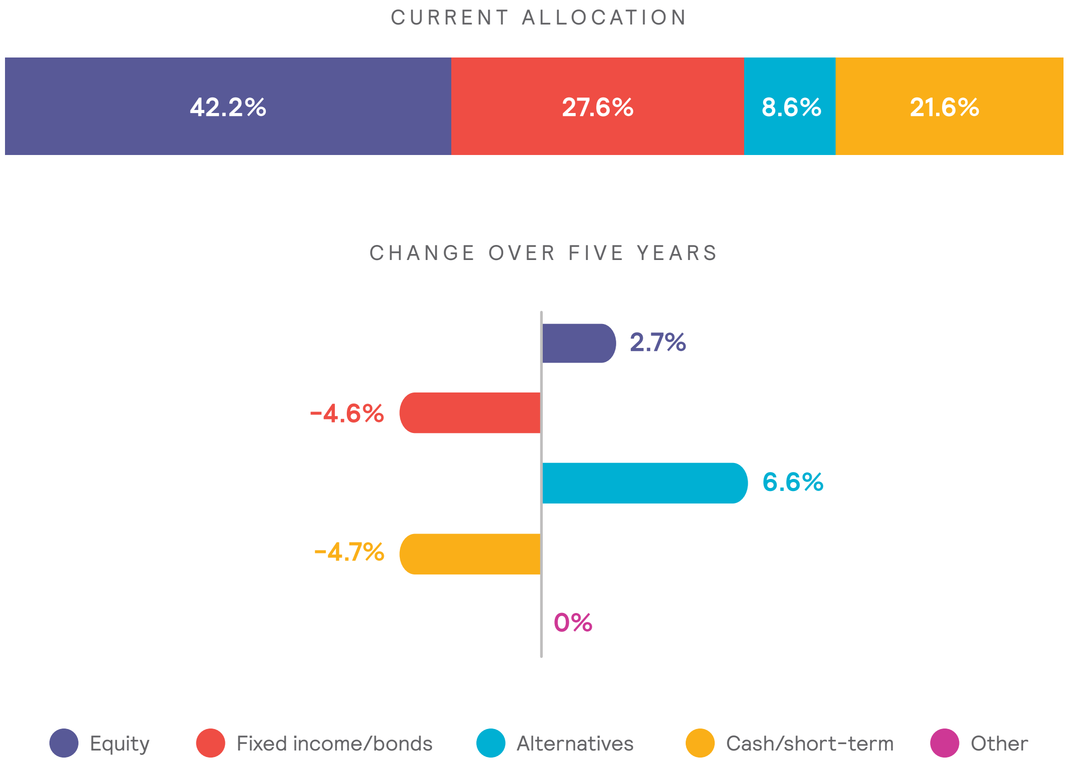
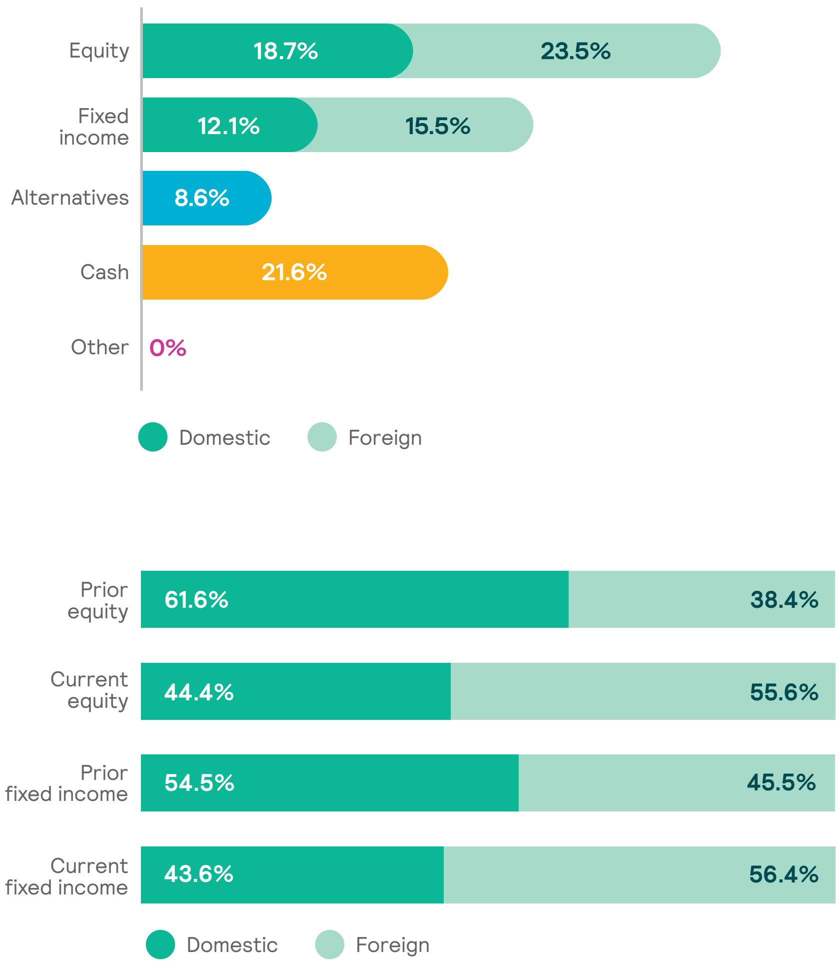


Figure 29. Taiwan Asset Allocation Detail



THAILAND

The first Thai pension system was initiated in 1902 as a pay-as-you-go DB scheme for government officials. The system continued for almost a century, but the apparent unsustainability led to a complete restructuring in the late 1990s. At a high level, the Thai system currently comprises three pillars.

The first pillar consists of two parts:

- Old civil service scheme, a DB scheme
- Social Security Fund (SSF)

The second pillar consists only of the Government Pension Fund (GPF), a DC pension system for civil servants.

The third pillar consists of provident funds set up voluntarily between employer and employees based on respective contributions. A provident fund can be set up either as a single fund, whereby the fund committee gets full control of the investment policy and objectives, or as part of a pooled fund.

Despite the difference in size across these pillars, asset allocation themes have been similar, with most allocations geared toward domestic fixed income and with GPF being the most sophisticated. Of the three funds covered, only SSF is a DB scheme and thus has an explicit liability component to consider. Nevertheless, since the fund is still in its growth phase, we expect the allocations to be comparable to its DC counterparts.

Provident funds currently have the highest allocation to equity (all domestic) and limited allocations to alternatives (especially hedge funds and private equity). This is driven by the lack of employee choice, access, availability and thorough understanding of a broader range of asset classes. A recent trend has seen more employers adopting “life-path” options as defaults for their employees, and with this adoption, we expect to see increased allocations to equity, with a continued focus on domestic equity. For SSF and provident funds, we observe that access to foreign equities is mostly achieved via ETFs/passive funds and geared toward beta capture.

It should be noted that the asset size for provident funds does not include any investments into any fund units or unit trusts, as information on the underlying asset class is not provided. Investments totaled US$4.682 million in unit trusts as of September 30, 2018.

Data includes:

PLAN NAME(S)	SPONSOR AND PLAN TYPE	CURRENT ASSET SIZE (US$ MILLIONS)
Government Pension Fund	Government DC	11,661
Voluntary provident fund	Corporate DC	30,423
SSF benefit fund (old age and child allowance)	Government DB	49,954
Total		**92,038**

Figure 30. Thailand Current Asset Allocation

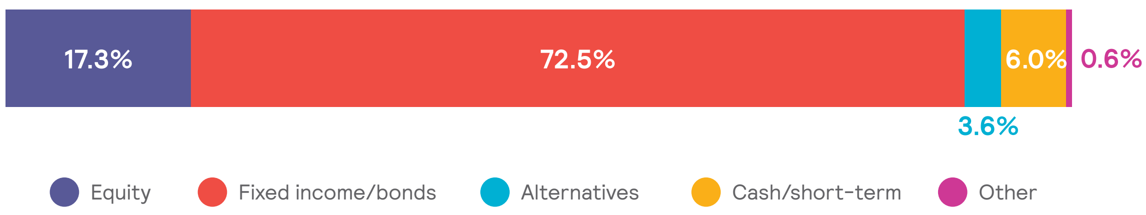
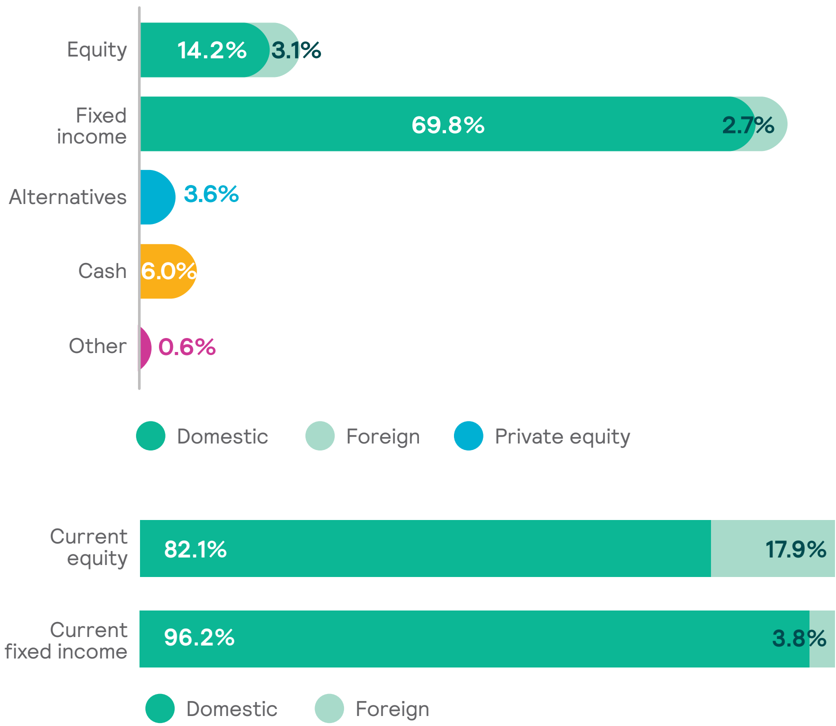


Figure 31. Thailand Asset Allocation Detail



SOURCE NOTES

	ARGENTINA	BRAZIL	CHILE	COLOMBIA
Current AUM included in survey (US$ millions)	47,844	236,707	191,000	73,000
Date	Data as of October 31, 2018; June 30, 2018; September 30, 2018	Data as of December 31, 2017	Data as of October 31, 2018	Data as of June 1, 2018
Prior AUM included in survey (US$ millions)	9,267	188,743	162,986	48,000
Date	Data as of December 31, 2013; November 30, 2013	Data as of December 31, 2012	Data as of December 31, 2014	Data as of December 31, 2014
Source	BNP Paribas; http://www.cnv.gob.ar/; Superintendencia de Seguros de la Nación (SSN); ANSES — Fondo de Garantía de Sustentabilidad (FGS)	ABRAPP (pension plans association)	Superintendencia de Valores de Chile	Superintendencia Financiera de Colombia
Plan info and other notes	Government DB, government and corporate DC, corporate DC	Corporate DC and DB	Mandatory DC	Mandatory DC
FX rate used (US$1 = X local)	0.0280	0.2941	0.0014	0.0003
Key contributors	Gustavo Aguilar, Nicolas Jasper, Cintia Pasinate	Fernando Nascimento, Raphael Santoro, Vanessa Santos	Pablo Medina, Emily Vasquez	Pablo Medina, Emily Vasquez

	MEXICO	PERU	SOUTH AFRICA	HONG KONG	INDONESIA
Current AUM included in survey (US$ millions)	250,743	49,000	145,737	109,230	39,091
Date	Data as of December 31, 2017	Data as of April 30, 2018	Data as of September 30, 2018, for AF survey; March 31, 2018, for GEPF	Data as of June 30, 2018	Data as of September 30, 2018, and December 31, 2017
Prior AUM included in survey (US$ millions)	175,375	35,494	103,456	57,958	11,650
Date	Data as of December 31, 2013	Data as of December 31, 2014	Data as of October 31, 2013; March 31, 2013, for GEPF	Data as of June 30, 2013	Data as of December 31, 2013
Source	CONSAR	Superintendencia de Valores de Peru	Alexander Forbes *Investable Global Manager Watch*™ survey; South Africa Government Employees Pension Fund (GEPF)	MPF data from MPFA website	OKJ
Plan info and other notes	Corporate DB and DC, mandatory DC	Mandatory DC	Corporate DC, government DB	Mandatory DC	Corporate DB, corporate DC, financial institution DC, mandatory DB
FX rate used (US$1 = X local)	0.0505	0.3086	0.0716	0.1280	0.00007
Key contributors	Ivette Maya, César Sánchez	Pablo Medina, Emily Vasquez	**Alexander Forbes:** Roslin Adriannse, Karin Lewis, Rob Price, Mark Smathers **Mercer:** Sasha Mussett	Danielle Chung, Adeline Tan	Michael Djumadi, Bill Johnston, Marlyn Oktavia

	JAPAN	SOUTH KOREA
Current AUM included in survey (US$ millions)	2,739,000	595,200
Date	GPIF data as of September 30, 2018; other public data as of September 30, 2018, and March 31, 2018; PFA as of January 31, 2018, and December 31, 2017; DC corporate and individual as of March 31, 2017	KNPS data as of August 30, 2018; GEPS data as of December 31, 2017; TP data as of December 31, 2017
Prior AUM included in survey (US$ millions)	1,954,902	391,100
Date	GPIF data as of March 31, 2013; other public data as of March 31, 2013; PFA as of January 31, 2016; DC corporate and individual — no data for five years prior	KNPS data as of December 31, 2013; GEPS data as of December 31, 2013; TP data as of December 31, 2013
Source	https://www.gpif.go.jp/operation/state/pdf/h30_q2.pdf https://www.gpif.go.jp/operation/state/pdf/h25_q2.pdf http://www.chikyoren.or.jp/sikin/pdf/joukyo_h30-2_b.pdf https://ssl.shichousonren.or.jp/fund/unyoujoukyou_kaku.html#h30 https://ssl.shichousonren.or.jp/pdf/fund/unyoujoukyou/20140627.pdf http://www.kkr.or.jp/shikin/investment_results.htm http://www.shigakukyosai.jp/shokai/shisan/index.html http://www.shigakukyosai.jp/shokai/shisan/unyou_120918.html https://www.npfa.or.jp/org/property.html https://www.pfa.or.jp/activity/tokei/j-chosa/files/jittaichosa_gaiyou_2016.pdf https://www.pfa.or.jp/activity/tokei/files/dc_toukei_2016.pdf	Korea National Pension Service website; Government Employees Pension website; Teachers Pension Korea website
Plan info and other notes	Government DB, corporate DB, corporate DC	Partially government-funded DC
FX rate used (US$1 = X local)	0.0089	0.0009
Key contributors	Takuya Arai, Tomoya Goto, Nobuhiro Shingyoji	Danielle Chung, Elizabeth Oh

	MALAYSIA	TAIWAN	THAILAND	OVERALL
Current AUM included in survey (US$ millions)	229,950	113,106	92,038	**4,911,426**
Date	EPF data as of December 31, 2017; KWAP data as of December 31, 2017	Data as of December 31, 2017; June 30, 2018	Data as of September 30, 2018; December 31, 2018; February 28, 2018	
Prior AUM included in survey (US$ millions)	150,090	66,259	–	**3,364,977**
Date	EPF data as of December 31, 2012; KWAP data as of December 31, 2012	Data as of December 31, 2012; March 31, 2014; March 1, 2013	Data not available five years prior	
Source	http://www.kwsp.gov.my/portal/documents/10180/741076/Financial_Statements.pdf http://www.kwsp.gov.my/portal/documents/10180/6375309/3._Funds_and_Investments.pdf KWAP Annual Report 2012 and 2017	Annual Reports, Ministry of Labour; Private School Pension Fund Committee; Annual Report, Public Service Pension Fund	Mercer, https://www.gpf.or.th/eng2012/invest_growth.asp	**OECD *Pension Markets in Focus*; Melbourne Mercer Global Pension Index; Mercer *2018 Worldwide Benefits and Employment Guidelines***
Plan info and other notes	Mandatory DC and government DB	Government DC, government DB, mandatory DB, mandatory DC	Government DC, government DB, corporate DC	
FX rate used (US$1 = X local)	0.2415	0.0333	0.0305	
Key contributors	Chin Yee Koh, Garry Hawker	Sue Cheng, Janet Li	Akekachat Lertsurapakdee, Kasin Sutuntivorakoon	**Simon Coxeter, Fiona Dunsire, Garry Hawker, Tracy Teel**

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