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International Pension Papers

Pension Sustainability Index 2009

Allianz 

Global Investors

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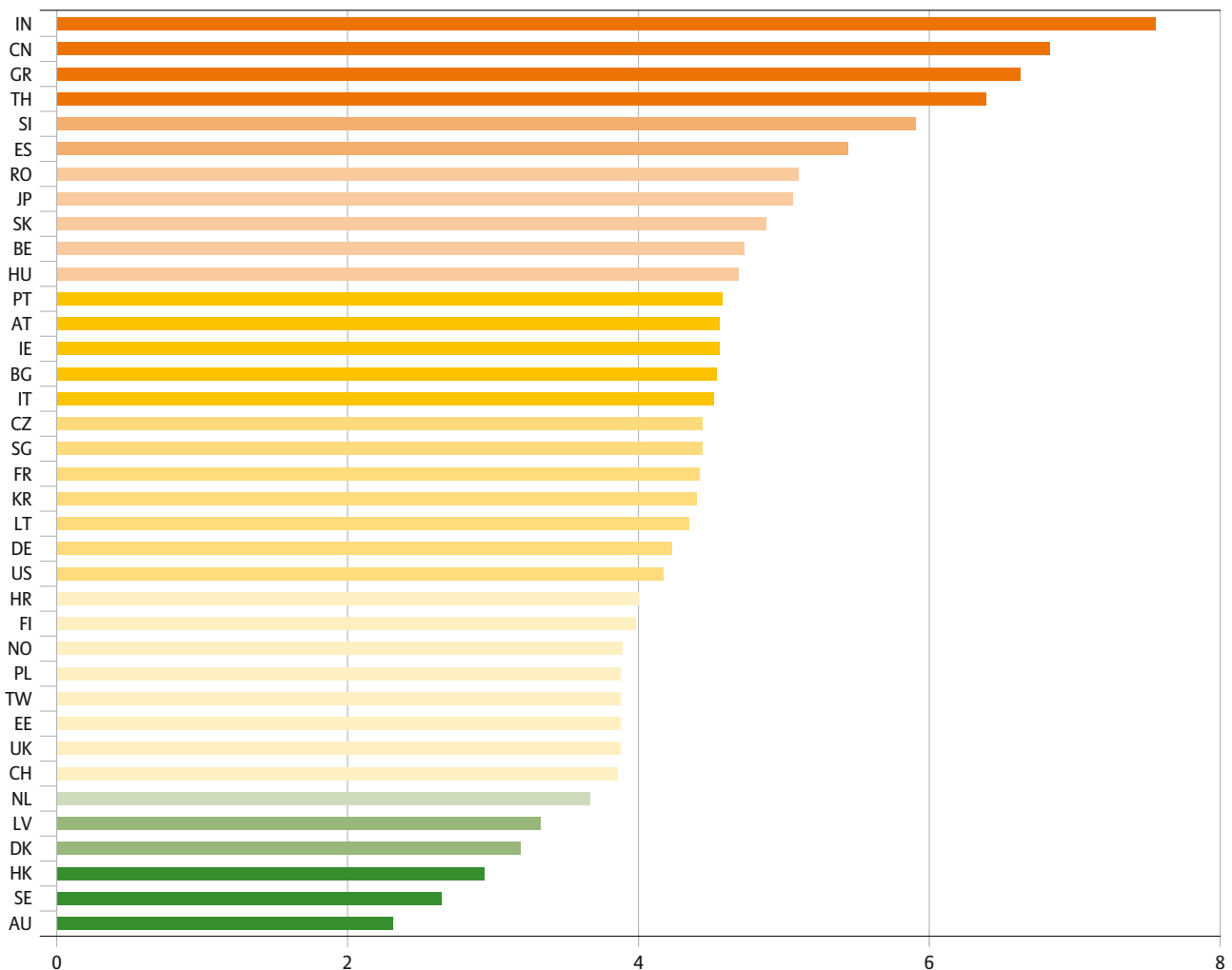
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Overview

The Pension Sustainability Index measures and illustrates the pressure on governments to reform their pension systems by consistently examining the various dimensions of pension systems.

The results of this study reveal how decidedly the pressure to reform can vary from country to country. China and India are considered to be in the greatest need for reform as overall pension coverage is still very poor and adequate reform has not yet been implemented. With its extremely low retirement age overall and sporadic coverage, Thailand is another Asian country ranking high on the list. Greece, whose economy will be unable to sustain its still generous social security system and high replacement rates, ranks third and tops the list of European countries in urgent need of reform. Even though Greece is facing high old-age dependency ratios well above the European average, it has not yet initiated adequate reform.

Pension Sustainability Index *



* Scale from 1 – 10: 1 least need for reform; 10 greatest need for reform.

Source: Allianz Global Investors, October 2009

At the other end of the spectrum is Australia, whose pension system is considered to be under the least amount of pressure to reform, followed by Sweden, Hong Kong and Denmark. All of these countries have managed to establish comprehensive pension systems based on strong funded pillars.

Compared to previous studies, most scores in western Europe improved as a result of additional changes made to their pension systems. Many European countries scrapped their early retirement incentives and some are even encouraging people to work longer, thereby closing the gap between the legal and effective retirement age.

Some countries ranked even better. For example Portugal and Poland both enacted major reforms, while other countries with strong funded systems received worse scores. Ireland was hit hard by the financial crisis and even though Australia got the best overall ranking, its score is not as good as it has been in previous evaluations. These results can largely be attributed to the effects of the economic downturn and the burden put on budgets, which in turn worsened respective sub-indicators.

Introduction

Pension reform has topped the political agendas of countries around the world for many years now. The primary driving force behind this trend has been unfavorable demographic developments coupled with unsustainable or outdated pension systems. Over the last decade, almost all western European countries have trimmed their public pension systems in order to strengthen sustainability.

The transition from communism to capitalism forced countries in central and eastern Europe (CEE) to implement fundamental reform, which has been carried out more quickly and consistently than in most of western Europe. Not only have CEE countries cut the benefits of pay-as-you-go (PAYG) pension systems back to replacement rates of just 45%, they have also initiated either mandatory or voluntary funded pension systems to help close the gap.

Strong economic growth in Asia has led to a prosperous middle class throughout the region. However, increased urbanization and a breakdown in traditional family structures have caused extreme socio-economic changes, which have altered the retirement landscape. As opposed to Europe, comprehensive pension systems are the exception and not the rule in most of emerging Asia and increasing the coverage of the public pension system is still a challenge. In many Asian countries, governments have begun implementing multi-pillar systems using various types of funded pension systems.

The progress of reform in the wide range of countries addressed by this report differs considerably from country to country, which is why Allianz Global Investors introduced¹ the Pension Sustainability Index. The Pension Sustainability Index is a tool that helps track changes made to pension systems in different countries around the world. By focusing on the sustainability of a country's public pension systems, it can give an indication of whether there is a need for pension reform. Since national pension systems tend to differ in their institutional, technical and legal details, this can be difficult to unravel. However, some of the key variables impacting the sustainability of public pension systems are mostly constant from country to country. Using these variables, the Pension Sustainability Index is able to measure and illustrate the pressure on governments to reform their pension systems by consistently examining the various dimensions of pension systems.

The 2009 Pension Sustainability Index gives new rankings to indicate how countries are progressing with reform. It is worth noting that previous results² have been influenced by new population projections and structures as well as the new economic landscape resulting from the financial crisis.

Regional Results

The Pension Sustainability Index uses a wide range of sub-indicators such as demographic developments, public finances and pension system designs* to systematically measure the need for further pension reform. Taking all these factors into account, Australia ranks highest and is considered to be the best prepared.

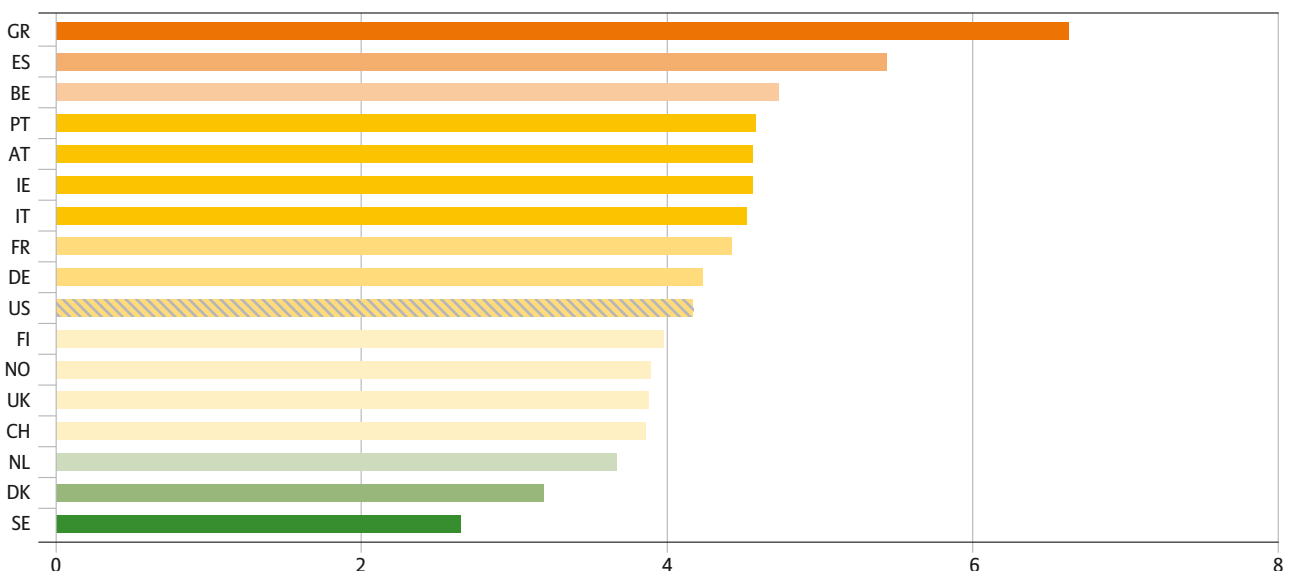
* See the box on methodology and data on page 10.

Western Europe and the United States

In a country comparison, Greece showed the greatest need for reform. This southern European country has not yet begun initiating major pension reform even though its extremely generous pension system is about to collide with a quite serious aging problem. Not only has this put a tremendous burden on future public pension expenditures, Greece's funded systems are in their infancy at best. Compared to previous studies³, Portugal received a better score this year, which can be attributed to changes made to its social security system. Now that retirement income is linked to life expectancy,

the longevity risk inherent in public PAYG systems is expected to decrease. Denmark placed well. Not only has Denmark increased its retirement age, like Portugal it has also linked its retirement income to life expectancy. Finland introduced similar reforms, which somewhat improved its score this year. Germany ranks somewhere in the middle. On the one hand, increasing the legal retirement age to 67 (to be phased in from 2012 to 2029) positively impacted pension reform. However, Germany lost ground by easing the pension adjustment procedure; instead of having pensions firmly linked to wages,

Pension Sustainability Index – Western Europe and the United States



* Scale from 1 – 10: 1 least need for reform; 10 greatest need for reform.

Source: Allianz Global Investors, October 2009

they are now adjusted according to wage development only once wages have actually been increased. Norway ranked better due to its extremely low national debt, high legal retirement age and moderate ageing demographics. On the other end of the spectrum are Ireland, the United Kingdom and the United States, which have all been hit hard by the financial crisis. This has had a very negative effect on major sub-indicators, worsening their scores as compared to previous years.

Eastern Europe

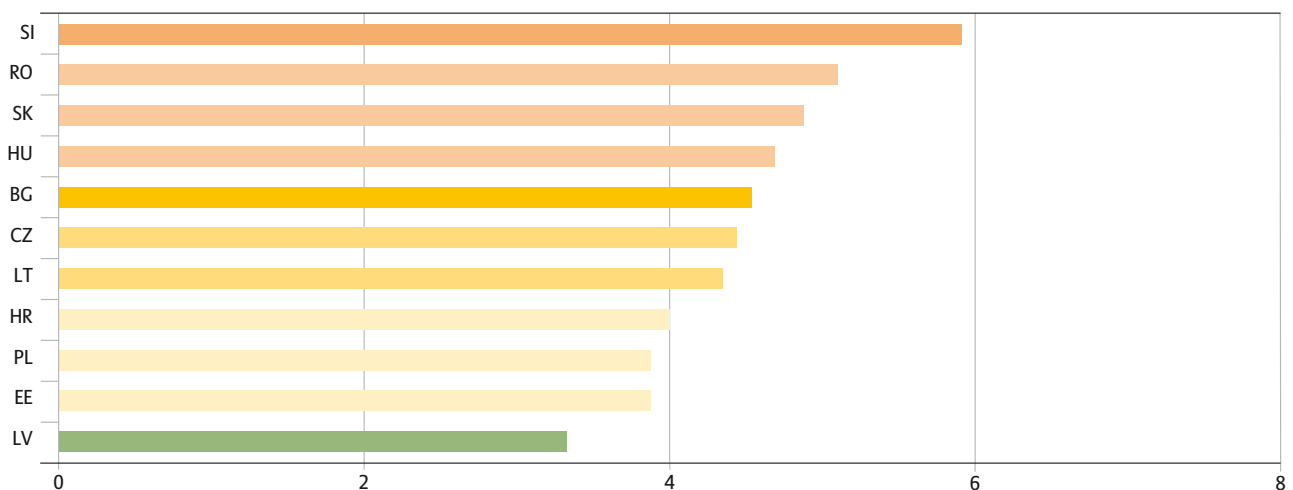
CEE countries did not score as well compared to previous results.⁴ According to EU projections, most of the CEE countries have higher expected dependency rates, which increased the 2009 projection for pension expenditures over that of 2006. In addition, the financial and economic crisis has severely impacted public finances in some countries. These changes have had a profound effect on the overall picture of the 37 countries* included in this study.

Of the eastern European countries, only the Czech Republic and Poland were able to improve their scores and, with it, their rankings. The Czech Republic did so by increasing its retirement age and introducing tougher requirements for early retirement. And with the benefit ratio in Poland expected to decrease significantly⁵ in the future, the sustainability of its public pension system improved.

Other eastern European countries did not score as well this year and so went down in their rankings. This was in large part due to the financial and economic crisis. The Slovak Republic, for example, regressed on some of the reforms it had made by allowing anxious employees enrolled in the new funded schemes to switch back to the old system. The deteriorating economic outlook in light of the new economic environment also negatively impacted the rankings of Romania and Bulgaria.

[* See the Overview on page 3.](#)

Pension Sustainability Index – Eastern Europe



* Scale from 1 – 10: 1 least need for reform; 10 greatest need for reform.

Source: Allianz Global Investors, October 2009

Asia

The need for reform in Asia and Australia is as different from country to country as are their diverse pension landscapes.*

In the overall comparison of all 37 countries studied, these countries rank among the very best and the very worst.**

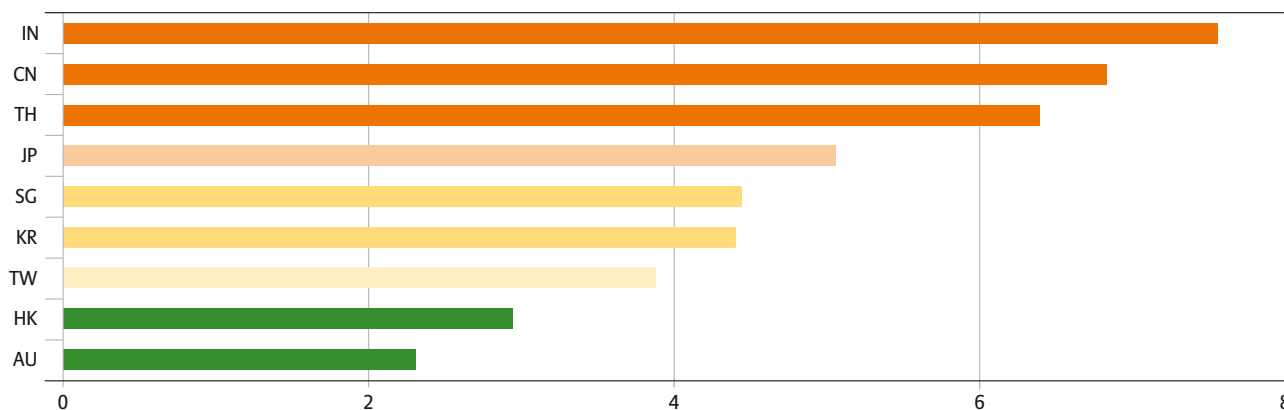
The rankings among the countries considered here have not changed compared to earlier studies.⁶ Australia and Hong Kong still rank highest because the overall structures of their old age provisioning systems are quite balanced despite setbacks to their funded systems as a result of the financial crisis. This is not the case in India, which is under the most pressure to reform. The main challenge of India’s pension policy is its still extremely low coverage. Only 12% of the population is covered by any formal pension arrangement. China and Thailand, which also scored badly, are in a similar position. An additional impediment to Thailand’s pension system is its extremely low legal retirement age (55 years). Even though these countries have already enacted pension

system reforms, there is still much work left to be done.

Japan ranked fourth among the Asian countries. Though it does not have a coverage problem, it does have a massive ageing problem. Japan already has one of the highest old-age dependency ratios in the world, which is expected to increase to unsustainable levels of almost 75% by 2050, compared to 45% in China. Another factor influencing Japan’s unfavorable ranking is its high national debt, which leaves no room for subsidizing the pension system should it become necessary.

* Conforming the emerging and extremely heterogeneous Asian economies to the Pension Sustainability Index is not always straightforward as relevant data is not necessarily available. Therefore, in order to give an easy-to-grasp impression of the state of their pension systems, definitions of some of the variables fed into the index were stretched. Coverage of the pension system was also taken into account. Better data availability would likely have changed the indicator’s value slightly for one or the other Asian countries.
** See the Overview on page 3.

Pension Sustainability Index – Asia and Australia



* Scale from 1 – 10: 1 least need for reform; 10 greatest need for reform.

Source: Allianz Global Investors, October 2009

Methodology and data

The Pension Sustainability Index combines the current and future prospects of a country's pension system into one figure, which consists of several variables such as the current and future demographic situation, the state of government finances and key features of the pension system (see the figure on page 11). It also considers the future shape of the pension system given reforms already in place. Some of the sub-indicators for reform are the current and future old-age dependency ratio, the size of government debt, the 1st pillar replacement ratio, the importance of funded pillars, pension expenditure and retirement age. However, the Pension Sustainability Index also includes indicators that capture reform in progress. For example, if radical reforms have already been put in place to address dramatic demographic change that will then lay the groundwork for a solid pension system in the future, the reform pressure is not going to be very high. In this case, even though the ageing population would normally trigger a need for reform, the reforms already in place would reduce the reform pressure. An increasing retirement age, the reduction of a previously high replacement ratio and a strengthening of the funded system are all evidence of reform progress. Each factor is given a score of 1 to 10, with 1 indicating less pressure for reform and 10 indicating more pressure for reform (e.g. high debt ratios, high replacement rates, high old-age dependency ratios or low legal retirement age).

The individual variables are then combined into one total score between 1 and 10.

A country with an overall score of 1 would indicate there is no need for reform;

10 would indicate there is a tremendous need for reform. For example, a country would receive positive weightings if

- its pension system is almost ideally suited to ageing societies, e.g.
 - It has a sustainable 1st pillar PAYG system.
 - It has funded 2nd and 3rd pillar systems that provide 40% to 60% of old-age income.
- its demographics do not put much pressure on reform, e.g.
 - The age structure is advantageous.
 - There has only been a modest change in its age structure.
- its government is in a position to cushion reform pressures, e.g.
 - Its public pension payments are low.
 - It has the means to increase its debt or increase the burden on the economy in order to finance rising pension payments.

Almost all the data used for the indicator are taken from the databases of international organizations because their datasets are basically comparable. Datasets from European Commission’s ageing report were used for almost all the variables of European countries. For all non-European countries, data was taken from the 2008 revision of the United Nation’s “World Population Prospects” (medium variant). Data from the OECD completed any information outstanding on pension coverage and funded pension systems. The International Monetary Fund’s world economy database of October 2009 (*see references*) provided missing macroeconomic data and, where necessary, national sources and statistics were added.

Pension Sustainability Index

Sub-indicators	Status	Dynamics
Demographics	Old-age dependency ratio*	Change in elderly dependency ratio* until 2050
Pension system design	Level of pension benefit form 1st pillar**	Change in level of pension benefit
	Legal retirement age	Reforms passed
	Strength of funded pillar (as % of GDP)	
Public finances	Pension payments/GDP	Change of pension payments/GDP until 2050
	Public indebtedness/GDP	
	Taxes and social security contributions/GDP	

* Ratio of ≥ 65 years of age to 15 to 64 years of age

** In Asian countries, includes coverage within the workforce

Source: Allianz Global Investors, October 2009

Sub-indicators

Apart from the total ranking of the Pension Sustainability Index, it is worth taking a look at the sub-indicators as they help explain the reasoning behind a country's ranking.

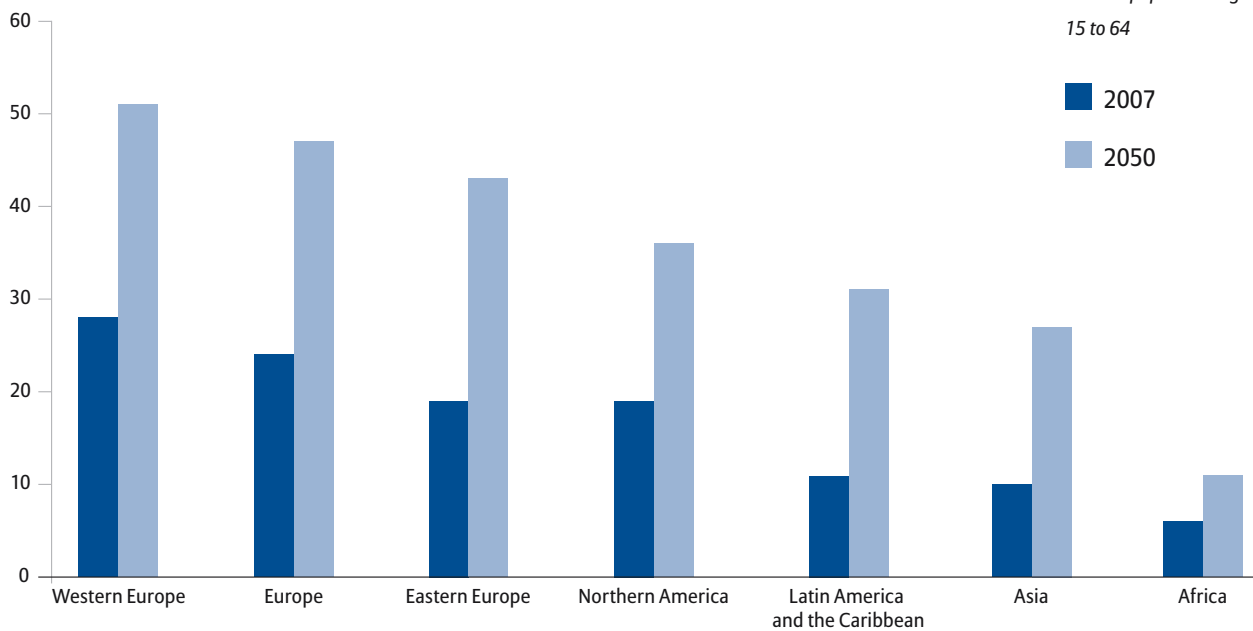
Ageing population: the old-age dependency ratio

One of the forces driving pension reform is the ageing population. The old-age dependency ratio, which compares the number of people aged 65 or older (retired population) to the number of people aged 15 to 64 (working population), gives a clear indication of a country's ageing demographics. This ratio is already quite high in 'older' Europe, which has seen a steady decline in birth rates and a steady increase in life expectancy. While this ratio in western Europe is 28%, the ratio in today's younger regions such as Asia and Latin America is around 10%. It is even lower in Africa. Though these regions may still be considered young, they are expected to see rapid change – particularly in Asia and Latin

America. Between now and 2050, the old-age dependency ratio will almost triple in Asia and Latin America, more than double in eastern Europe, and increase by some 80% in Northern America and western Europe.

The rapid change in Asia is due to a huge increase in life expectancy at birth, which since 1950 has jumped from 41 to 68 years – the biggest leap of any region in the world. This 27-year increase compares to 9 in Europe, 15 in Africa and 10 in Northern America. With its 22-year increase, only Latin America comes close. However, increased life expectancy is not the only thing causing problems. Over the last 50 years,

Old-age dependency ratios* [as %]



* Population aged 65 and older to population aged 15 to 64

■ 2007
■ 2050

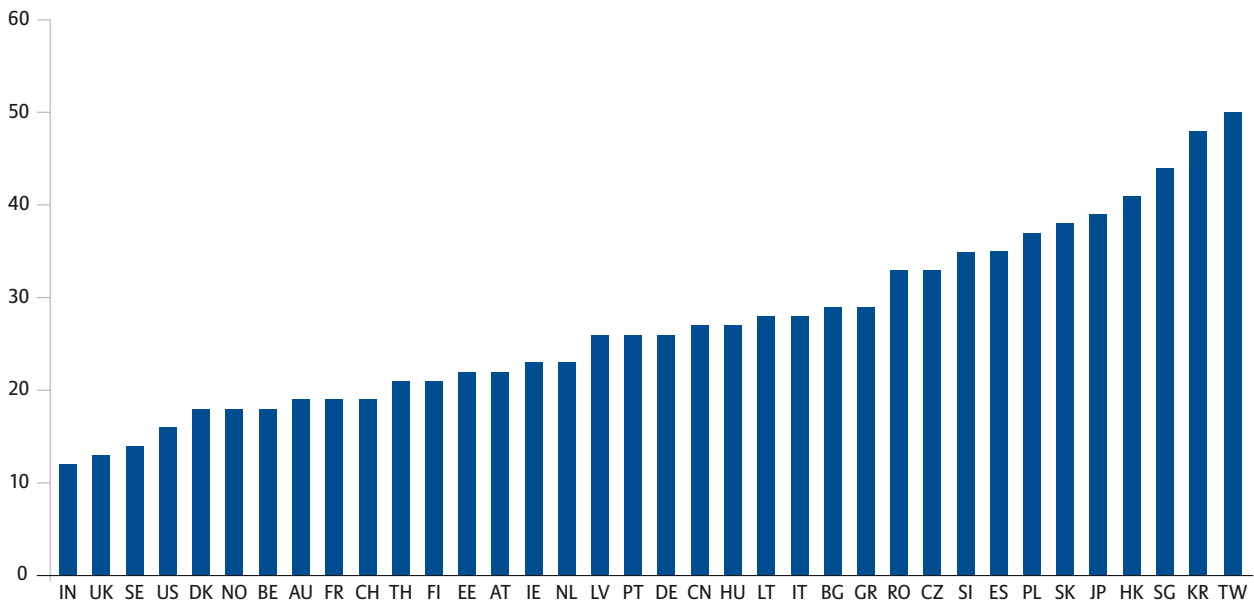
Source: UN Population Division

Asia has seen a steep decrease in its overall fertility rate. On average, every woman in Asia gives birth to 2.4 children, roughly 60% less than in 1950. Again, only Latin America is faced with such a steep decline. Europe, on the other hand, has only seen a 43% decrease since 1950.

In taking a closer look at the various regions, it becomes clear that ageing dynamics differ considerably from country to country. For example, with a 34% old-age dependency rate, Japan is already considered to be an ‘old’ country today and its old-age dependency rate is expected to more than double by 2050.

However, this change is ‘minor’ when compared to ‘young’ Asian countries like Taiwan, Korea and Singapore in which the old-age dependency ratio is expected to increase by four or five times, or Hong Kong which is expected to increase from 17% to 58%. Eastern European countries find themselves in similarly dire straights. Like Japan, most western European countries already have a large older population and their ratio will increase substantially when baby boomers finally reach retirement age. Even so, the dynamics are not as dire as they are in Asian countries.

Rapidly ageing Asia – Change in the old-age dependency ratio until 2050* [as % points]



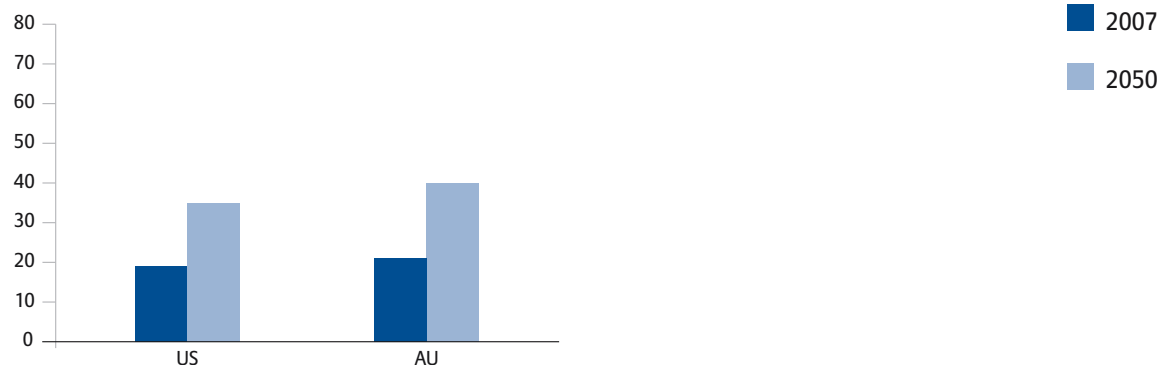
* Population aged 65 and older to population aged 15 to 64

Sources: UN Population Division, EU Commission, Allianz Global Investors

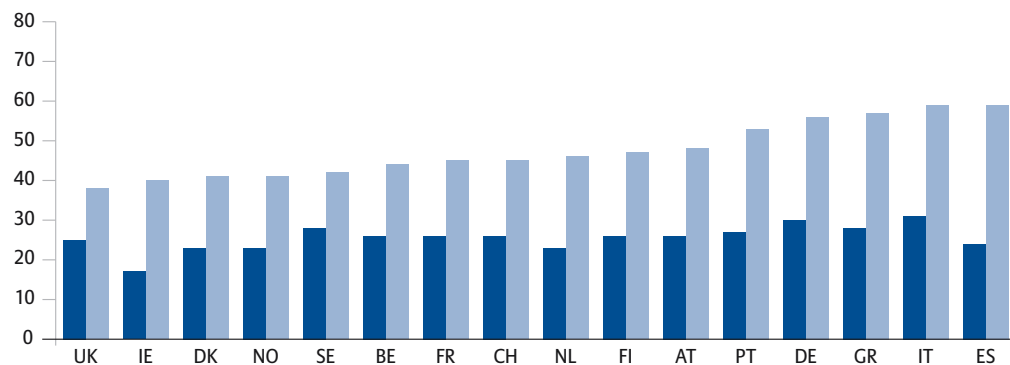
Old-age dependency ratios*

** Population aged 65 and older to population aged 15 to 64*

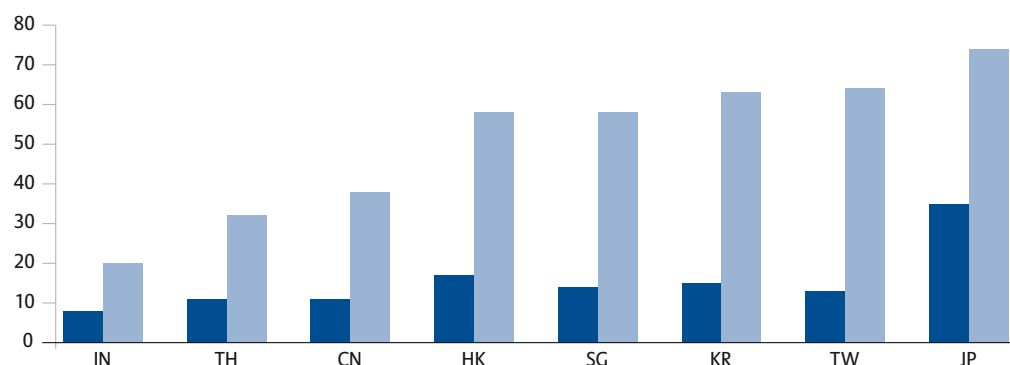
The United States and Australia



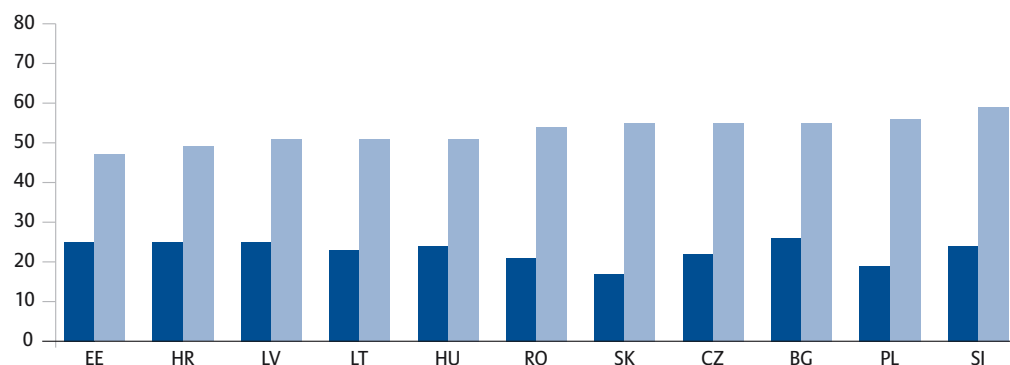
Western Europe



Asia



Eastern Europe



Sources: UN Population Division, EU Commission, Allianz Global Investors

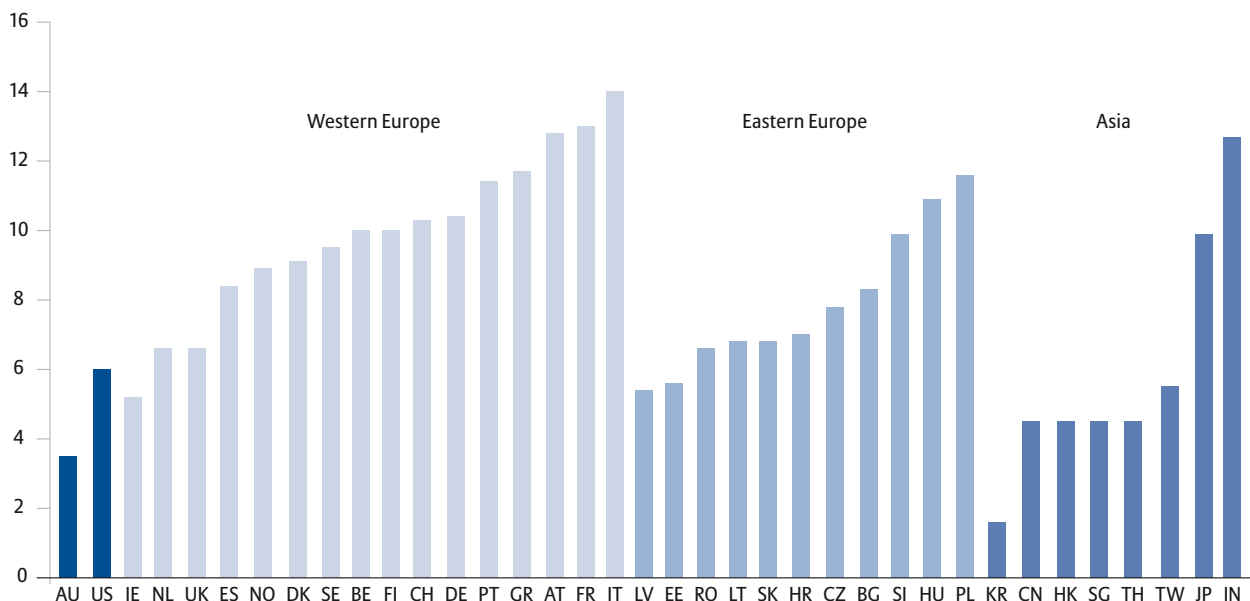
Public finances

The old-age dependency ratio is important in understanding the economic impact of a retiring workforce on public finances. In a PAYG pension system, the active workforce pays contributions into a social security system which, in turn, transfers money to retirees. In addition, governments are responsible for taking care of their retired civil servants. The ratio of the working population to pensioners is an important factor in understanding how pension systems impact pension expenditures, what these expenditures are as a percentage of GDP and what changes of this ratio can be expected until 2050. This is why public finances are one of the variables used to calculate the Pension Sustainability Index. If pension expenditures are high or if there is a major increase, it will negatively affect this overall indicator.

The current financial burden in western Europe already amounts to 10.2% of the GDP⁷; in eastern Europe it is 9.2%. Countries with smaller PAYG systems have less to finance, which is the case in Australia, Ireland, the United States and the Asian countries. The low burden in emerging Asia is due to the fact that they have not yet set up adequate old-age provisioning systems. This in turn is putting pressure on public welfare arrangements

An ageing society will cause pension expenditures to increase in the future. In western Europe, the burden is expected to amount to 12.4% of the GDP. Since many governments have already introduced reforms to lower pension levels and so decrease the overall financial burden, the percentage in most countries is a little less than previously

Public finances – pension expenditure as a % of the 2007 GDP



Sources: IMF, EU Commission, National Statistics, Allianz Global Investors

predicted by the European Commission. However, other factors have to be considered such as changes in demographic and macro-economic assumptions.

It should be noted that when the European Commission's new ageing report made its forecast in spring 2008, it did not include the financial crisis in its baseline projection. Even so, the Commission calculated the potential impact of the crisis on the budgetary position of the EU-27 and concluded that its effect and dynamics on the costs of ageing (as a percentage of GDP) would depend on the recession's duration. In the worst-case scenario (i.e. there is a 'permanent shock' or permanent deterioration in the growth potential of EU economies), it projected that pension expenditures would increase by another 1.1 percentage points over the long term.⁸ As the Commission concludes, "the budgetary impact is stronger in the case of a permanent shock than in the case of a temporary shock, even if the latter is stretched over an entire decade."⁹ This 'lost decade' scenario foresees an additional increase of 0.6 percentage points. One way or the other, the economic crisis is certain to further deepen government budget deficits and increase debt burdens, increasing the need for pension reform even more. Countries will have to plod ahead with pension reform even if the financial crisis severely impacts funded pension plans.¹⁰

Even given this baseline scenario, some of these countries will face a marked increase in pension expenditures. For example in Greece, which has seen no substantial reform, pension expenditures as a percentage of the GDP will increase from 11.7% in 2007 to 24% in 2050. On the other hand, the United Kingdom and Ireland, which only have a basic first pillar system, are marginally burdened and any increase is expected to be moderate. Though

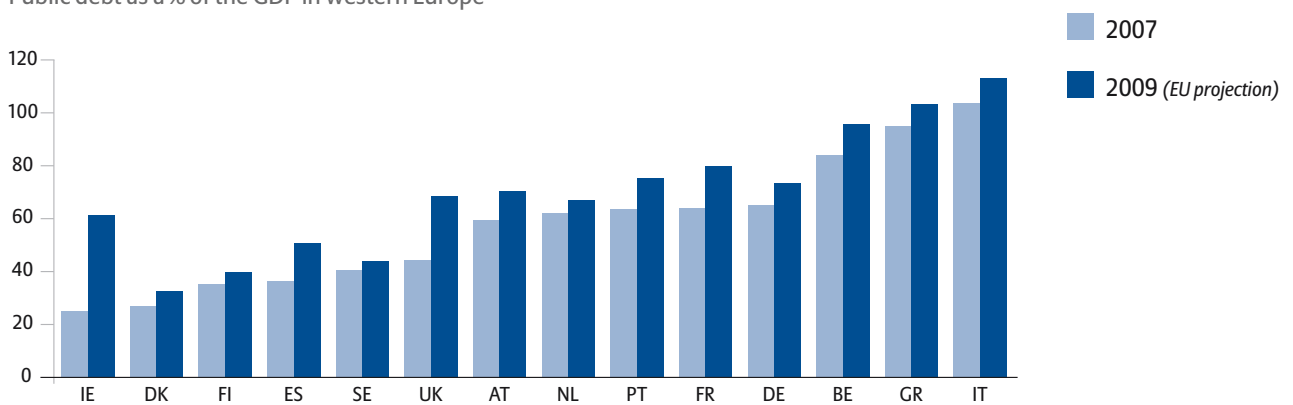
eastern Europe is in a similar demographic situation, the increase in pension expenditures is expected to be more moderate due to the old-age provisioning systems and funded elements set in place when the communist regimes collapsed.

A government's overall debt burden measured as a percentage of the GDP is factored into the Pension Sustainability Index to indicate how much public finances can be further stretched. The recent financial crisis and extensive economic stimulus packages have left little room for increasing public old-age expenditures. In just two short years – from 2007 to 2009 – the public financial burden has increased substantially (*see the figures on page 17*).

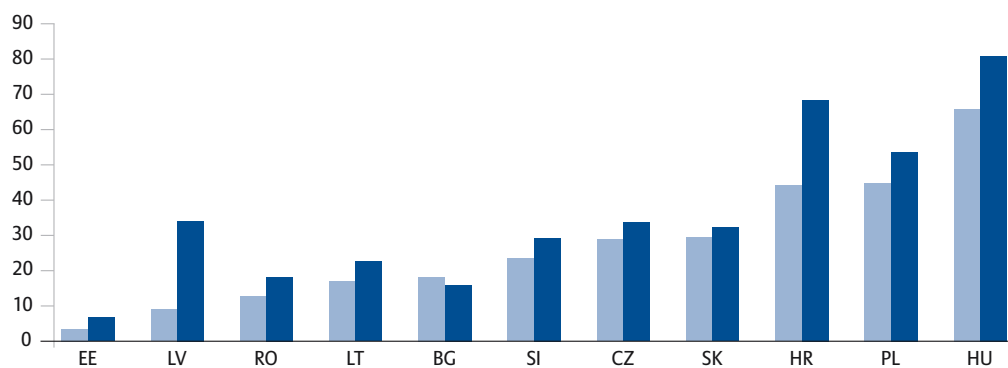
Since PAYG systems can be financed by increasing workforce contributions, another variable that could have quite an impact on holding up the system is the tax and contribution ratio. However, contributions and taxes are already high in most countries and further increases would not be tolerated, showing the limitations inherent in changing existing pension systems.

Public finances

Public debt as a % of the GDP in western Europe



Public debt as a % of the GDP in eastern Europe



Sources: EU Commission, Allianz Global Investors

Pension system designs

The third group of sub-indicators is made up of key features of the pension system and the future shape of the pension system given already enacted reforms.

Over the past decade, many countries have initiated parametric reforms such as increasing the retirement age, changing the pension calculation and broadening the assessment base.

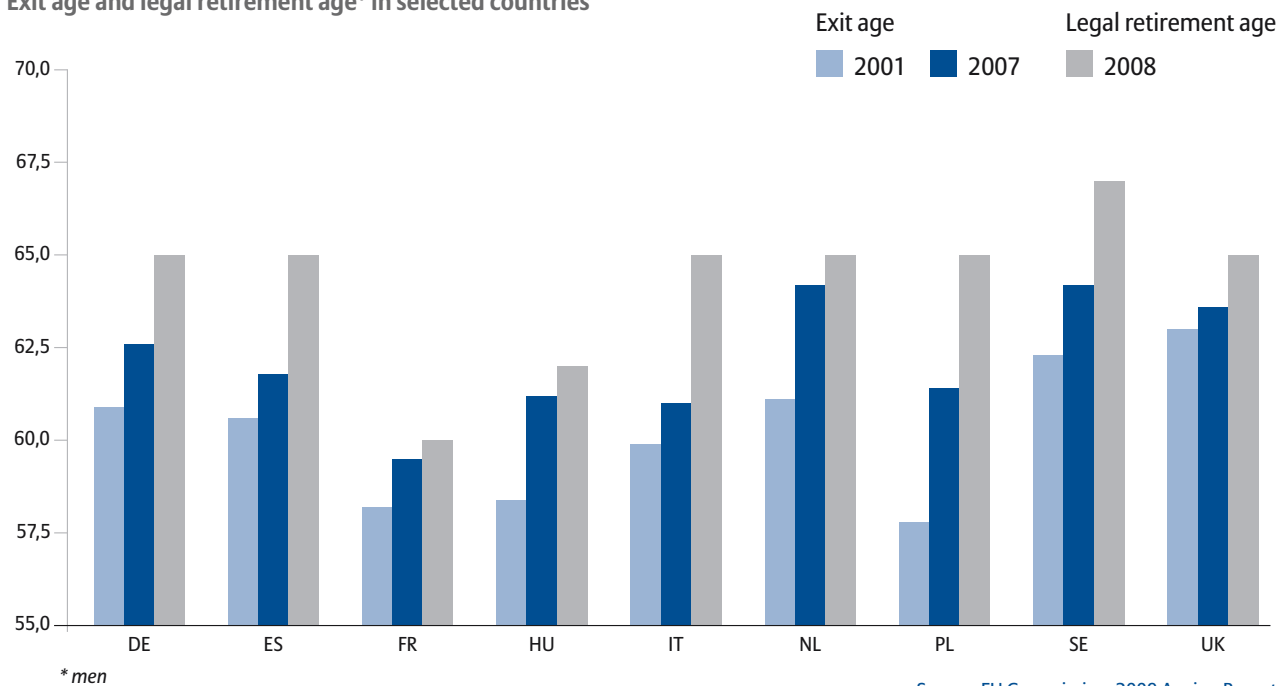
Increasing the legal retirement age is one parameter that can be altered. A similarly important parameter is giving people the opportunity to retire early. Many countries have initiated early retirement incentives in order to relieve a job market made difficult by the glut of 20th century baby boomers. This trend has resulted in an exit age well below the legal retirement

age, which has put additional pressure on public finances.

The parametric reforms initiated over the last couple of years were meant to reduce future replacement rates. However, upon closer inspection, a pattern between the various countries begins to arise. Overall, countries can be divided into two groups – those aiming to deliver basic first pillar protection and those seeking to maintain a certain standard of living.

The first group, a bottom-draw pension system, is usually designed to prevent extreme poverty among its pensioners. Any income meant to cover anything but the most basic of needs should be financed by other means such as pensions from funded sources. This type of approach can be found

Exit age and legal retirement age* in selected countries



in Australia, Ireland, the United Kingdom and the United States, where pension levels (see figure below) are low as compared to countries that take a more generous approach like continental Europe – Greece and Spain in particular.

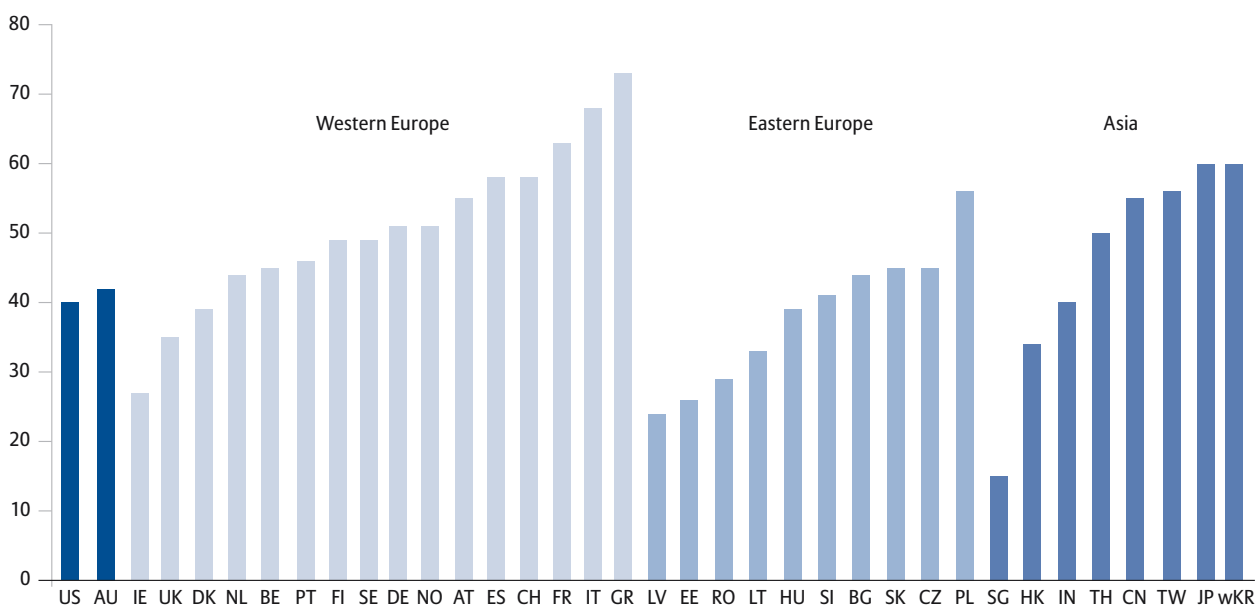
The transition from communism to capitalism has forced CEE countries to implement fundamental reforms. Not only have they cut back the benefits of their state pensions to relatively low levels of around 45% (and even more in the Baltic States), CEE countries have also initiated either mandatory or voluntary funded pension systems to help close the gap.

The heterogeneity of emerging and developed countries in Asia has caused pension system designs to differ from country to country. However, when a country does begin to initiate a formal pension system, it generally follows the World Banks' recom-

mendation of a balanced multi-pillar model. Singapore alone operates a one-pillar system with multi-purpose fund in which funds for old-age provision can be used for different purposes, making the pension level very low.

There is a flip side to reducing replacement rates. In the end, if retirement income is too low, old-age poverty will become an issue and governments will have to finance welfare programs. This, in turn, affects the Pension Sustainability Index. Countries with very low replacement rates will only receive a low score (less pressure) if additional funded systems are in place.

Gross Pension Levels [% of average income]



Sources: EU Commission, OECD

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Abbreviations

AT	Austria	IT	Italy
AU	Australia	JP	Japan
BE	Belgium	KR	South Korea
BG	Bulgaria	LT	Lithuania
CEE	Central and eastern Europe	LV	Latvia
CH	Switzerland	NL	Netherlands
CN	China	NO	Norway
CZ	Czech Republic	PAYG	Pay-as-you-go
DE	Germany	PL	Poland
DK	Denmark	PT	Portugal
EE	Estonia	RO	Romania
ES	Spain	SE	Sweden
FI	Finland	SG	Singapore
FR	France	SI	Slovenia
GR	Greece	SK	Slovak Republic
HK	Hong Kong	TH	Thailand
HR	Croatia	TW	Taiwan
HU	Hungary	UK	United Kingdom
IE	Ireland	US	United States
IN	India		

References

- 1 The basic concept of what was previously called the Reform Pressure Gauge was developed by Allianz Dresdner Economic Research and first published in Allianz Dresdner Asset Management's "Central and Eastern Europe Pensions: Reform Trends and Growth Opportunities" in 2004.
- 2 Allianz Global Investors, June 2007: Central and Eastern European Pensions 2007, Systems and Markets | Allianz Global Investors, October 2007: Asia-Pacific Pensions 2007, Systems and Markets | Allianz Global Investors, December 2008: Funded Pensions in Western Europe 2008, *International Pension Studies* | Allianz Global Investors, 2008: Retirement at Risk: The U.S. Pension System in Transition, *International Pension Papers*, No. 3
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- 6 Allianz Global Investors, October 2007: Asia-Pacific Pensions 2007, Systems and Markets
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- 9 See above, p. 201
- 10 See OECD, 2009: Private Pension Plans 2008 | Allianz Global Investors: Western Europe, Fiscal pressures – ageing costs still on the horizon, *International Pension Issues* 3/09

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Masthead

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