

## Global Aging 2010: An Irreversible Truth

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### Table Of Contents

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A Long-Observed Phenomenon

Key Findings: A Heavy Burden, Unequally Shared

Future Trends In Age-Related Public Spending

Assumptions In Our Simulations

Base-Case Scenario: Unsustainable Without Policy Change

Alternative Scenarios

The Policy Implications Of Closing The Gap

From Bad To Worse: Comparison With Previous Standard & Poor's Reports On Population Aging

A Global Challenge

Related Research

# Global Aging 2010: An Irreversible Truth

No other force is likely to shape the future of national economic health, public finances, and policymaking as the irreversible rate at which the world's population is aging. The problem has been long observed and is well understood: U.N. figures show the proportion of the world's population aged over 65 is set to more than double by 2050, to 16.2% from 7.6% currently. By the middle of the century, about 1 billion over 65s will join the ranks of those classed as of non-working age. Standard & Poor's Ratings Services believes that the cost of caring for these people will profoundly affect growth prospects and dominate public finance policy debates worldwide.

Since September 2007, when we published our last update on what we view to be the potential implications of this shift in demographics on sovereign ratings, the onset of the financial crisis has interrupted government efforts to manage the burden of aging-related spending. Before the crisis, many governments' structural primary deficits were improving, albeit not as quickly as our projections had indicated would be needed. However, the rapid build-up of government debt over the past three years has, in our view, heightened the need to do more to frontload reforms aimed at containing the risks to sovereign budgets, especially in countries with high expected future increases in age-related spending. Currently, relatively high general government deficits are complicating efforts to rapidly improve public finances, particularly among advanced economies. This will, in our view, likely lead to further debt accumulation over the medium term.

The 2010s had been considered by previous Standard & Poor's reports the window of opportunity to address the challenges posed by aging to the sustainability of public finances. Through the next decade, governments likely have some breathing space as we expect pressure from age-related spending will remain relatively moderate over this period. Nevertheless, while this window to implement fiscal sustainability strategies remains open, it will not be for long with the expected acceleration in spending starting in 2020. Against the backdrop of large deficits in some countries, we expect undertaking budgetary consolidation and pension or health-care system reforms simultaneously will prove politically challenging, and could lead to delays in policy implementation. In our view, the maneuvering room has shrunk and delays in policy implementations may generate additional political, economic, and budgetary costs.

## A Long-Observed Phenomenon

Standard & Poor's commenced its regular analysis of the implications of the shifting demographics for sovereign ratings across the advanced world in 2002. In May 2006, we published simulations that projected an almost universal deterioration of sovereign creditworthiness in a sample of 32 advanced economies (see "Global Graying: Aging Societies And Sovereign Ratings," published June 27, 2006). This study was updated in 2007 (see "What A Change A Year Makes: Standard & Poor's 2007 Global Graying Progress Report," published Sept. 19, 2007).

This year's report includes the 32 EU and the non-EU OECD sovereigns covered previously and introduces analysis for a further 17--mainly emerging market--sovereigns across the world. This significant expansion in scope means our study now covers more than two-thirds of the world's population, incorporating Argentina, Brazil, Bulgaria, China, Iceland, India, Indonesia, Malaysia, Mexico, Philippines, Romania, Russia, South Africa, Saudi Arabia, Switzerland, Turkey, and Ukraine (for credit ratings on these sovereigns see table 1 below).

Over the coming weeks, Standard & Poor's will also publish individual country reports for the sovereigns covered in

this study, containing more detailed data as well as country-specific results for the various scenarios described below. Information on our data sources and methodology used, and extensive data for demographic and economic assumptions and results of scenario analysis, can be found in a separate supplement: "Global Aging 2010: An Irreversible Truth--Methodological and Data Supplement," published Oct. 7, 2010.

## **Key Findings: A Heavy Burden, Unequally Shared**

In our view, population aging will lead to profound changes in economic growth prospects for countries around the world, alongside heightened budgetary pressures from greater age-related spending needs. In the absence of appropriate budgetary adjustment, additional reforms to pension and health-care systems, or structural measures to improve sovereigns' growth potential, our projections show the future fiscal burden will increase significantly across the board.

We do not expect this burden to fall equally, though. The projected deterioration in public finances over the period 2010-2050 is particularly significant in advanced economies and emerging market economies in Europe. The relevant characteristics of this group of countries, in our view, are a relatively high level of existing social security coverage and a rapid worsening in demographic profile. In other emerging market sovereigns, the projected change in demographics is likely to be similar, although the proportion of elderly in the population will be lower. As these sovereigns also tend to have relatively smaller welfare networks, we expect the projected fiscal burden will be lower than in advanced economies. Nevertheless, as these economies develop, the likely demand for better and expanded social security systems will put pressure on their budgets.

An increasing number of sovereigns, particularly in the advanced and European emerging economies, has been undertaking reforms of pension or health-care systems to contain related budgetary risks. However, we believe the results of our study show the projected magnitude of the future fiscal burden will require additional measures.

Under our hypothetical base-case scenario of unchanged policies, incorporating the dynamics of aging-dependent public expenditure programs and interest payments, the financial burden is projected to gradually increase, leading to deteriorating fiscal indicators from the middle of this decade. These estimates include:

- A typical country's deficits may rise from 5.3% (advanced sovereigns median, 5.7% of GDP; emerging market sovereigns median, 4.7%) of GDP to more than 6% (7.4%; 3.1%) of GDP by the mid-2020s, assuming no policy change.
- The interest cost of the growing debt burden may exacerbate the budgetary impact of demographic spending pressure, and deficits will rise inexorably to 7.6% (10.1%; 4.2%) of GDP in 2030 and to 17.6% (24.5%; 11.2%) by the middle of the century.
- While the median general government net debt burden may increase to 48% (78%; 38%) of GDP through to 2020, its growth is likely to accelerate thereafter. By 2030, the net debt burden is projected to be at almost 90% of GDP (115%; 58%), and will be on explosive path to almost 245% (329%; 126%) of GDP by 2050.
- As a result, the economic size of the state may increase significantly. Government spending may rise to almost 60% (68%; 46.4%) of GDP in 2050, from 44.2% (46.7%; 38.3%) today.

Standard & Poor's utilizes sustainability gap indicators that translate these debt ratios into projections of the permanent budgetary adjustment that we believe is likely to ensure the sustainability of public finances. The gap represents the difference between the constant revenue ratio as a share of GDP, which equals the actualized flow of

revenues and expenses over an infinite horizon, and the current revenue ratio. The median sustainability gap for the whole sample is 6.8% of GDP. However, the difference between the advanced and emerging market economies is significant--8.5% of GDP for the former and 5.2% of GDP for the latter. Within the whole sample, the disparities are large, with Russia, Luxembourg, Japan, and Ukraine posting sustainability gaps of more than 14% of GDP. On the other side of the spectrum China, Switzerland, Indonesia, Saudi Arabia, Philippines, and India have gaps of between 0.5%-3.5% of GDP. We have concluded that the main driver of the gaps is the long-term increase in age-related spending, as the component related to the adjustment required due to long-term changes in government structural primary balances is higher than that required due to the government's initial budgetary position. This underlines the importance of addressing the projected increases in aging costs. If the sovereigns balance their budget by 2016, the sustainability gap of the entire sample, by our calculations, is suggested to be brought down to 4% of GDP, that of the advanced countries would halve to 4.4% of GDP and of emerging economies to 1.9% of GDP. Budgetary consolidation can, in our view, thus contribute significantly to reducing the overall future budgetary burden.

Taking into account expected future budgetary imbalances and projected economic growth dynamics, the derived hypothetical future ratings for the whole sample are generally expected to be below their present rating levels. Under our first scenario, which assumes no policy actions to counter demographic fiscal pressures, a general downward slide in sovereign ratings is expected to start in 2020, accelerating through 2030 and thereafter. On the whole, the median emerging market sovereign would hypothetically retain investment-grade ratings throughout the projection period, due to relatively high potential economic growth, moderate projected increase in age-related costs, and consequently relatively smaller current budgetary imbalances. In contrast, the median advanced sovereign is projected to be less likely to retain investment-grade ratings as we expect growth prospects will be relatively lower, while age-related spending will be comparably much higher on the back of relatively wider budget imbalances.

We emphasize that this hypothetical scenario does not represent a Standard & Poor's prediction that the sovereign ratings of many governments will inevitably fall because of demographically related fiscal pressures. In our view, it is inconceivable that governments will allow debt and deficit burdens to spiral out of control in the manner outlined above, even if creditors would be willing to underwrite such a huge amount of debt. Nevertheless, the scenario does reveal the dimension of the task that governments face in pruning benefits granted by unfunded state-run social security systems and achieving further fiscal belt-tightening. In fact, most European governments have embarked on the path of budgetary consolidation or have initiated structural reforms to social security. Recent examples include France and Greece, likely to be followed by Slovenia and Spain. Nevertheless, the magnitude of the challenge, as indicated by our sustainability gap indicators, will in our view require further decisive steps by almost all governments in the sample.

## **Future Trends In Age-Related Public Spending**

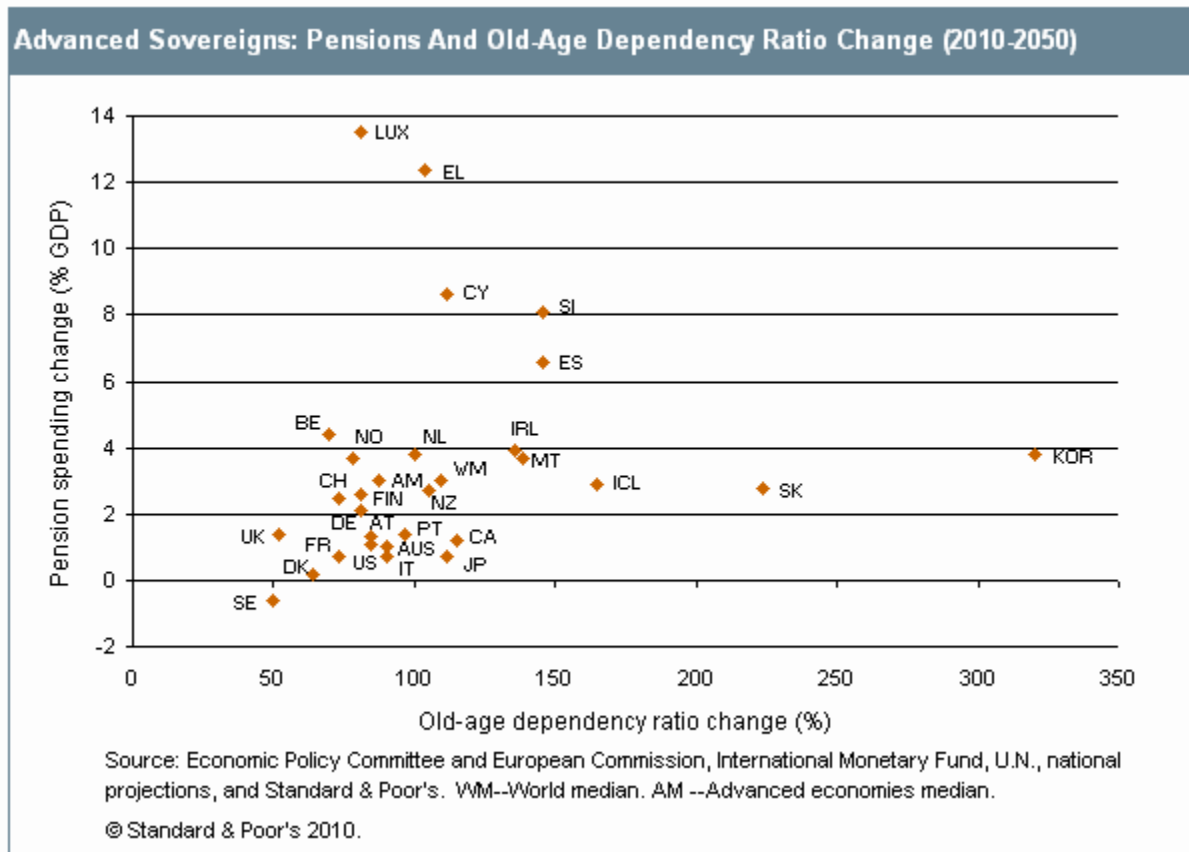
In the absence of further policy measures, we generally expect population aging will lead to increases in overall budgetary expenditures that are sensitive to demographic change, although according to our estimates the impact will differ significantly among the countries in our sample (see tables 1 and 2). The categories considered in this study are old-age pensions, health care, and, where data is available, long-term care for the frail and unemployment benefits. Education was not included as an age-related spending category. Although the number of pupils and students likely will decline in most countries, it is also likely that spending per student will rise to help ensure satisfactory productivity growth, given that the countries in this sample tend to be knowledge-based societies and

economies. Child benefits were also excluded due to the lack of data. Although shrinking child-age cohorts could have a dampening effect on public spending through lower benefit outlays, comparable data is unavailable. Moreover, the cohort effect may be offset by more generous benefits to encourage the dual objectives of boosting labor market participation and fertility, as witnessed in several countries already. Overall, pensions remain the biggest spending item, followed by health-care and long-term care. The expected decline in unemployment benefits is typically very small (see table 2) and, we believe, will not produce significant relief for government spending.

Pensions (including early retirement, surviving relative, and disability pensions) are expected to remain the largest expenditure item in the future, rising on average by around 3% of GDP by 2050 from current levels. However, this average does not fully illustrate the expected large differences among the countries. Charts 1 and 2 show the countries' expected increases in pension spending compared to changes in their demographic profiles, with old-age dependency ratios projected to increase. Intuitively, the more the demographic profile worsens, the higher the expected increase in age-related spending. This is, however, not always the case, as reforms can significantly cushion the expected budgetary impact of aging.

For most sovereigns, the old-age dependency ratio (the number of over 65s relative to the population aged 15-64) is expected to double. In Eastern Europe, Asia, and Latin America, the demographic dynamics appear to be particularly affected in terms of changes in the old-age dependency ratio. However, the overall projected dynamics do not fully illustrate the variations in the level of the ratio, which for Eastern European sovereigns by 2050 is projected to be substantially higher than in other regions. In general, the strongest pressure on government budgets is expected in those sovereigns where reforms to pay-as-you-go (PAYG) pension systems are still pending. In Luxembourg, pensions are expected to rise by more than 13% of GDP by 2050 as the country's old-age dependency ratio doubles. For Greece, the projected increase in pensions as shown here does not take into account the expected savings due to the implementation of recent pension reforms, which, according to the IMF/EU program, are expected to lead to savings of around 10% of GDP by 2060, likely bringing the Greek pension spending profile below the current median for advanced economies. In the face of rapid shifts to their demographic profiles, governments in Spain and Slovenia are currently preparing reforms to their PAYG pension systems, which are likely to include raising the statutory retirement age, changes to pension indexation formulas, and other measures. In the case of Korea and Slovakia, where demographic profiles appear to be the most unfavorable, future increases in pensions have been cushioned by systemic reforms in the past.

Chart 1



On average, the emerging market sovereigns appear in our view to be in a relatively better position because of their current stage of economic development and relatively lower pension system coverage. With a few exceptions, these sovereigns are characterized by significantly lower median pension spending to GDP (6.4%) than advanced economies (9.2%). Nevertheless, in our view there are a number of risks for future pension spending. The long-term pension projections for the emerging sovereigns, apart from those in the EU, are based on constant coverage ratios of pensioners to population aged above 65 years and constant replacement rate--taking into account employment and old-age dependency ratios. Given these countries' generally young populations currently, the old-age dependency ratio is likely to deteriorate even faster than for a typical advanced economy, albeit in 2050 they are still projected to have relatively lower old-age dependency ratios than the advanced economies. It is important to note, however, that the long-term pension projections are based on the assumption that the policy coverage and adequacy don't change through the period. Eventual broadening of the coverage of the pension system in the future is thus not incorporated in the current projections. As these economies develop, with associated widespread changes to the social fabric, government welfare spending may grow faster than GDP as has been the trend in advanced economies during the last half of the 20th century. If this occurs, we believe the current projections are likely to be optimistic.

In Estonia, India, and Poland, the projections of a fall in future pension costs may also appear to be optimistic and even possibly politically unsustainable if based on significant reductions in replacement rates, which would in turn increase the risk of poverty among the older population. On the other side of the spectrum, Ukraine, Russia, Romania, and Brazil are expected to post the highest projected increases in pension costs (see chart 2), mainly due to

their unreformed pension systems. Romania is tackling the problem through pension reforms in the context of an IMF/EU program currently in place, which is not yet incorporated in the current pension projections, however.

Chart 2

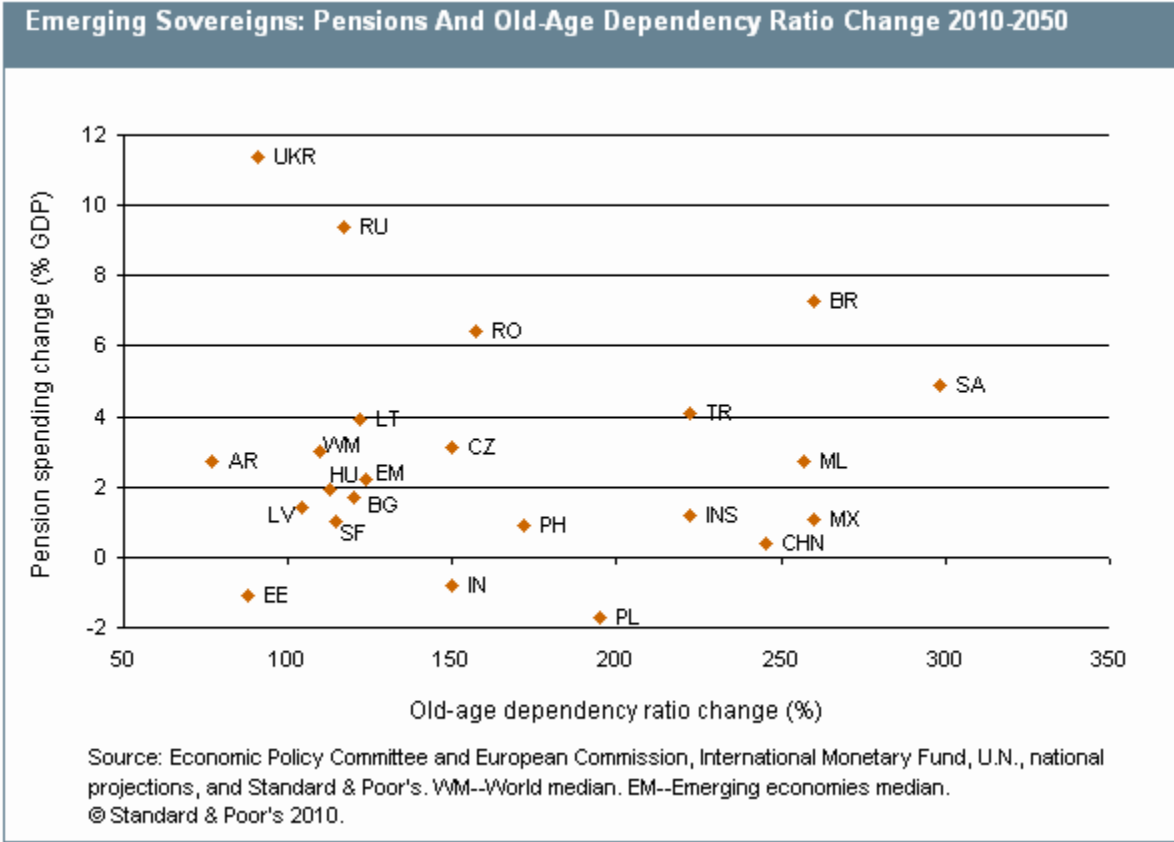
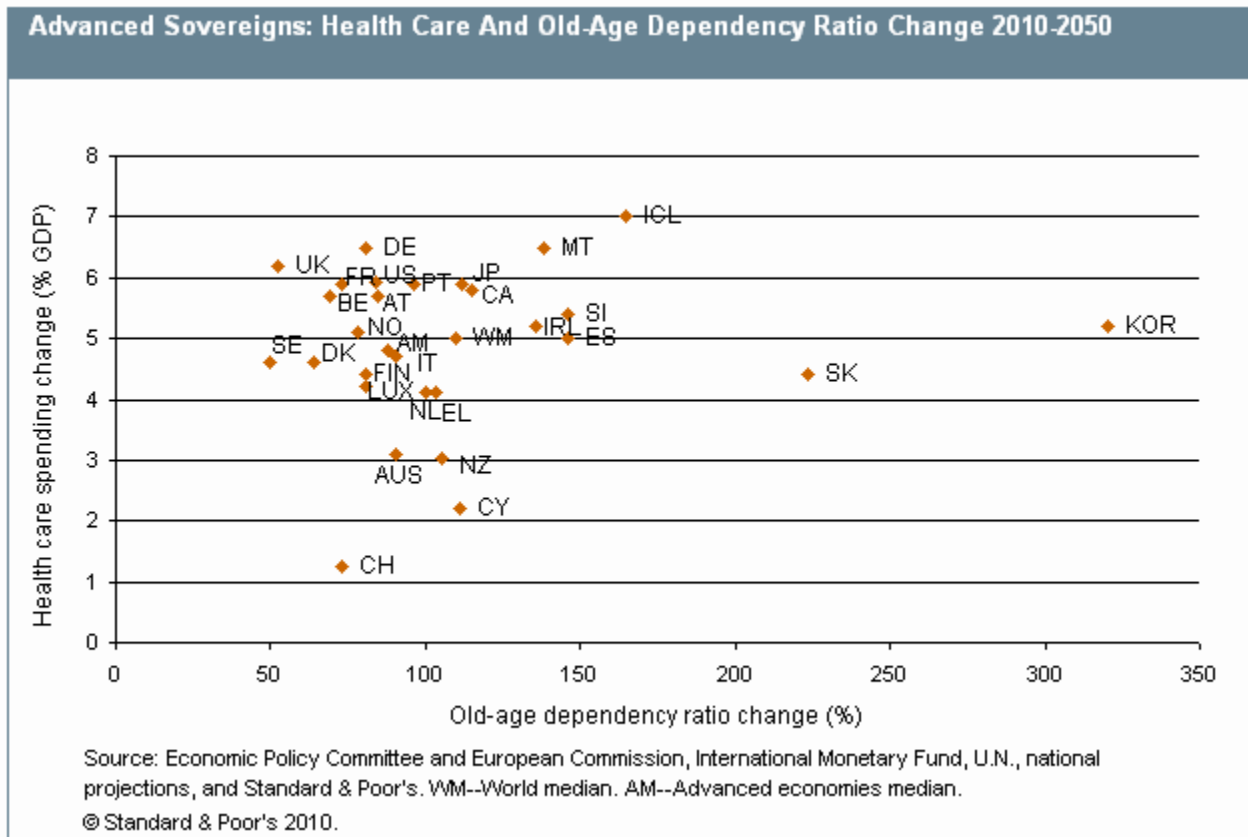


Chart 3

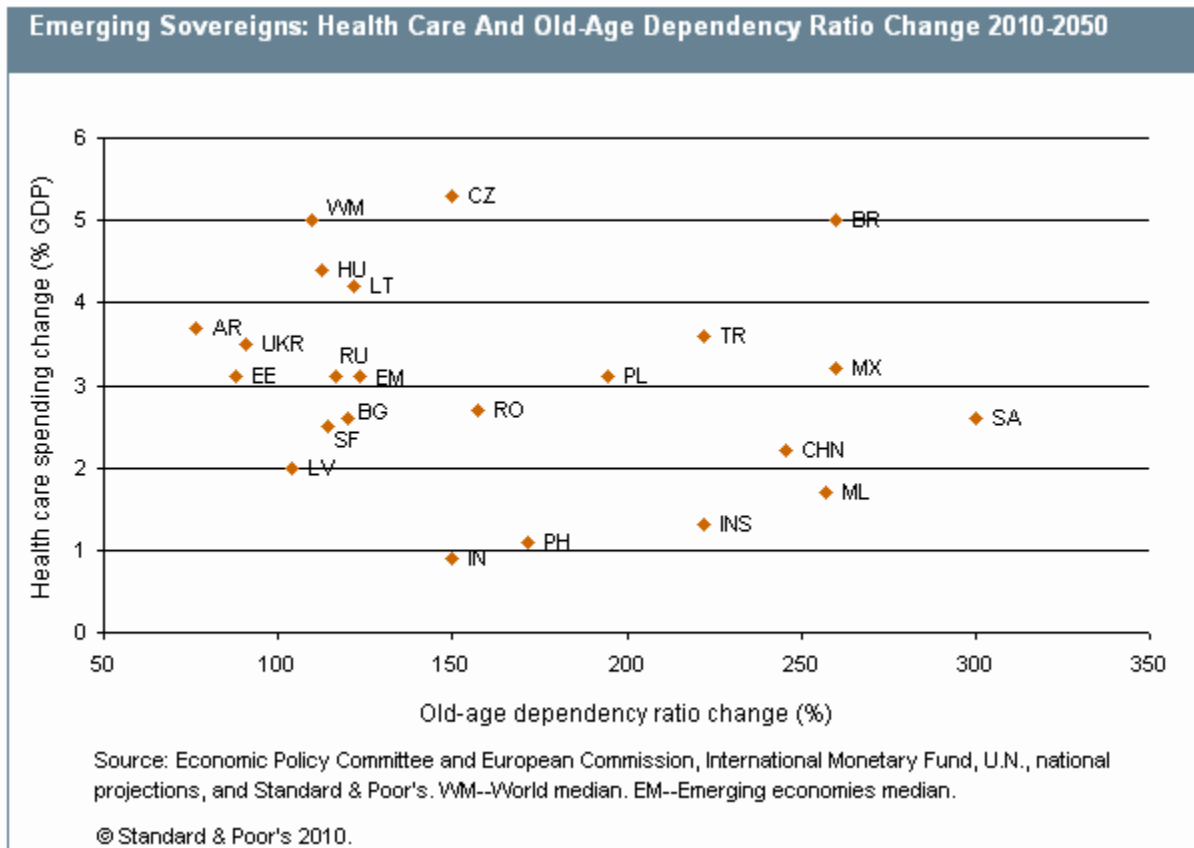


We expect age-related health-care spending to see the highest growth by 2050. The median increase of public health-care spending in the whole sample is projected to be 5% of GDP between 2010 and its peak in 2050, as elements related to technology and forms of service delivery are incorporated. To more completely capture the nondemographic factors, which for EU sovereigns had been the main driver of increases in health-care costs in the past, we apply the so-called technology scenario as opposed to the "AWG reference" (Aging Working Group) scenario, applied previously. We project that a typical advanced economy likely will increase its health-care costs by 4.8% of GDP by 2050. This is also one of the main factors in explaining the deterioration in budgetary results as the projected health-care costs to GDP for the EU countries in the "AWG reference" scenario is around 1.5%, while the increase in the technology scenario is around 5.5%.

Chart 3 shows that apart from Cyprus and Switzerland on the lower end and Iceland on the upper end of projections, the differences among countries covered are relatively small compared to those related to pension spending. Overall, in our view the sovereigns have been more active so far in tackling anticipated future pension deficits than in ensuring the sustainability of health-care systems currently in place.



Chart 4



Similarly, we project that emerging market sovereigns likely will grow their health-care spending faster than pensions, typically by 3.1% of GDP, compared to 2.2% of GDP in the case of pensions. Overall, this trend suggests that while there is sustained ongoing progress in terms of pension system reforms, the challenge of containing future health-care costs is likely to have been underestimated and, in our opinion, needs to be addressed sooner rather than later. This challenge is compounded by the likely expansion of health-care coverage to a wider section of the population.

During the same period, we project that the median cost of long-term care for the frail and elderly will increase by another 1.3% of GDP by 2050 for a typical advanced country. Projections of long-term care dynamics are not available for emerging market sovereigns, apart for those that are part of the EU. In many emerging market sovereigns, long-term care depends on informal family based networks, rather than formal assistance through social security frameworks. Still, in view of the future development of these economies, the increase in median long-term care costs for advanced countries constitutes an upside risk for their budgetary positions as demand for state-financed support will grow. Finally, potential savings on the shrinking younger end of the population pyramid are likely to be negligible, as argued above. The expected median fall in unemployment benefits in advanced economies as a consequence of tightening labor markets is projected to be only 0.1% of GDP by 2050, and we do not expect it to exceed 0.5% of GDP in any country over this period.

Chart 5

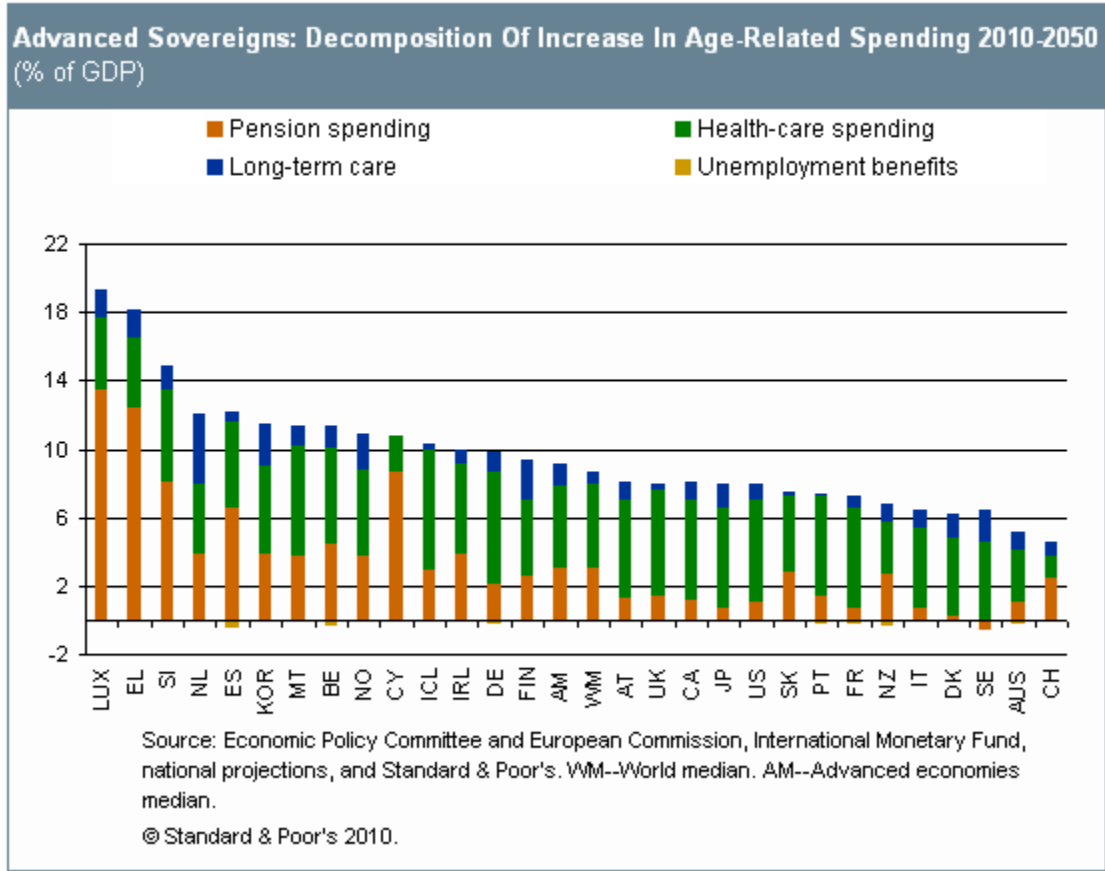
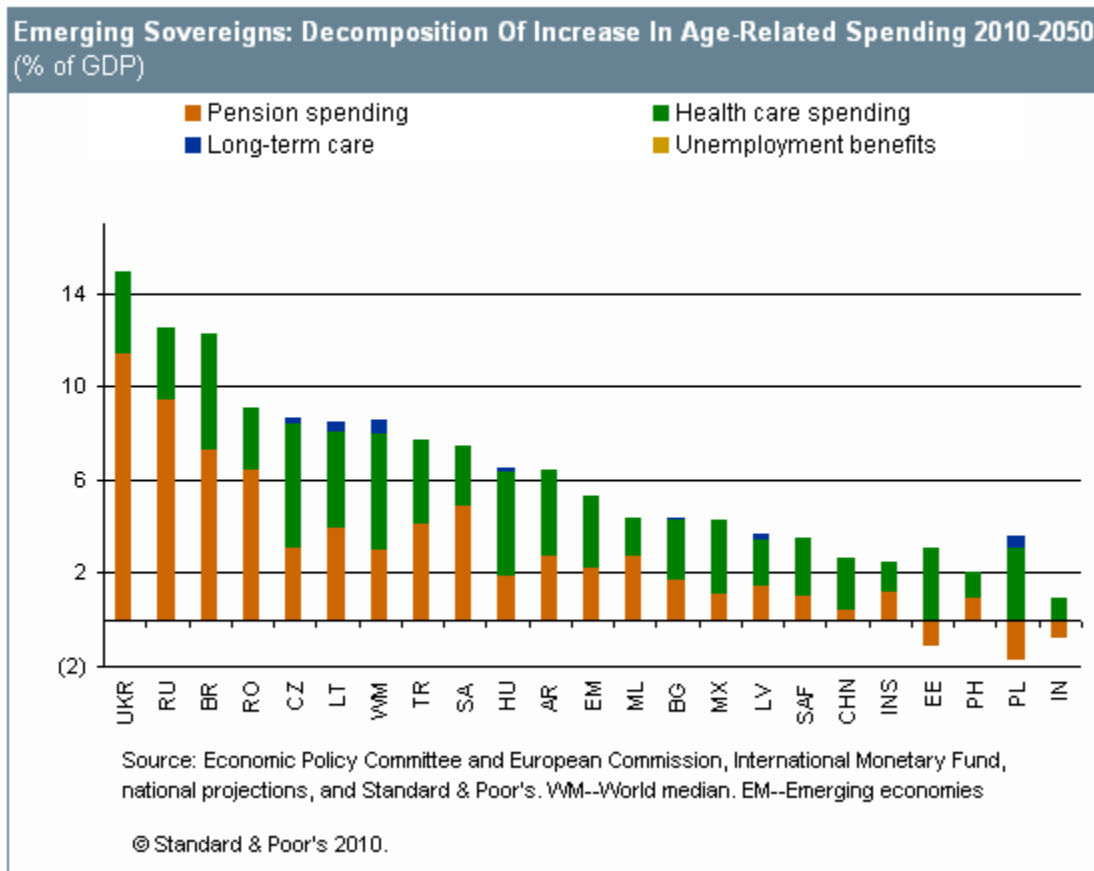


Chart 6



Our spending projections for this study are based on national estimates, made available mostly through multilateral research projects conducted by the European Commission, the OECD, or the IMF. When interpreting the data and the fiscal consequences simulated below, the limitations of their comparability must be kept in mind. Although these international organizations and Standard & Poor's aim to correct for undue optimism or pessimism in nationally compiled figures, the success of these harmonization attempts can only be partial (see "Methodological And Data Supplement" for further details). Thus, the quality of these official estimates may influence the projected fiscal and ratings trajectories. Nevertheless, we believe the methodologies underpinning the national and multilateral projections are sufficiently comparable for our analytical purposes, especially over longer timeframes.

### Assumptions In Our Simulations

Based on the 2010-2050 country-specific profiles of age-related government spending (see table 1), including all the intermediate years not presented, we calculated various scenarios to assess the importance of demography on government budgets, debt burdens, and sovereign credit ratings.

The simulations share two assumptions, unless stated otherwise:

### **The "fiscal autopilot"**

In this scenario, we assume government primary balance positions in 2012, as currently forecast by Standard & Poor's, are maintained every year throughout the simulation period, excluding the effect of incremental future age-related expenditures after 2012 and changes to interest payments originating from fluctuating government debt levels relative to 2012. In other words, the primary balance of 2012 sets the level of total revenues and non-age-related expenditure as constant throughout the projection period. This assumption incorporates a hypothesis that output gaps are closed in 2012, equalizing the primary balance in 2012 with the structural primary balance, thus assuming the elimination of cyclical components in the primary balance. The 2012 cut-off was selected as we believe it provides a more appropriate starting point for simulations of long-term budgetary trends, considering the budgetary consolidation underway among most sovereigns currently.

### **The "surplus ceiling"**

We base this assumption on the expectation that, at least for the majority of governments, maintaining a large budget surplus (defined as more than 2% of GDP) on a sustained basis would be politically infeasible in the countries covered in the sample. If a higher surplus appeared likely, we assume that taxes would be cut to bring the budget back toward the 2% ceiling. The adjusted primary surplus, defined above, is therefore taken to be the lower of either the 2010 estimate, or the level that is required to generate a headline surplus of no more than 2% of GDP. An exception to this rule of politically unsustainable surpluses has been made for Norway and Saudi Arabia, where we believe that more substantial surpluses, driven by revenues from oil and gas, will continue to be realistic policy options.

Unless adjusted specifically for a scenario analysis, the sovereigns converge to real interest rates that are set at 3% as of 2020 and apply to all sovereign debtors uniformly. Similarly, inflation is assumed to be 2%.

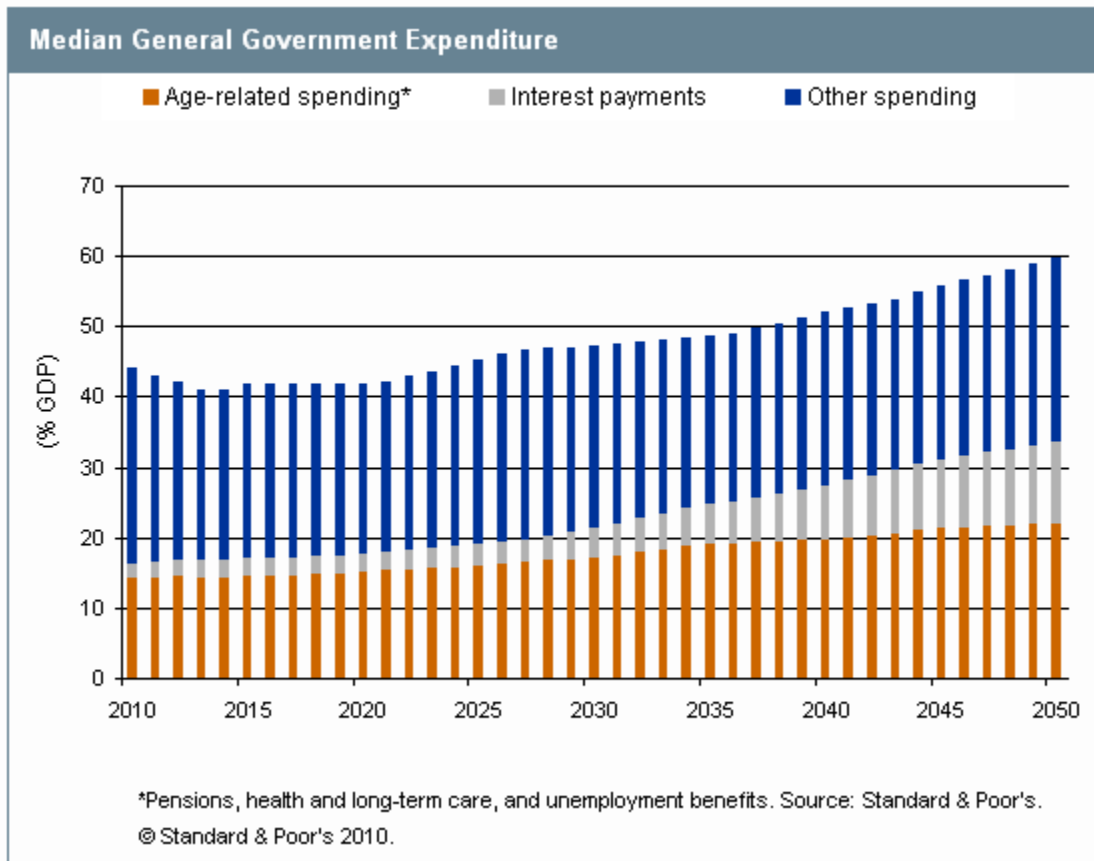
From these assumptions, we then simulate debt and deficit trajectories for all sovereigns under a variety of scenarios. Based on the fiscal outcomes, we derive a "hypothetical sovereign rating". In practice, Standard & Poor's takes a large number of factors into consideration when deriving our actual sovereign credit ratings (see "Sovereign Credit Ratings: A Primer," published on May 29, 2008). Over the very long term, however, prolonged fiscal imbalances, together with economic growth trends, tend to become dominant factors. This year, as we expanded the scope of the study to include more rated sovereigns, which makes the sample more heterogeneous, GDP per capita is included as a variable in the hypothetical sovereign rating simulations. To arrive at the expected direction of sovereign ratings, we believe it is appropriate to consider each country's simulated general government balance alongside the median budget balance for each rating category, averaged over the 2000-2008 period, together with the level of outstanding debt and the GDP per capita on an annual basis (see "Methodological And Data Supplement " for details).

## **Base-Case Scenario: Unsustainable Without Policy Change**

Under our base-case scenario, the government refrains from adjusting either its fiscal stance as described above or any policies governing age-related spending categories. In other words, the government takes no additional steps after 2012, which is our cut-off year, except borrowing for any budget shortfall that may materialize. We selected 2012 as we believe that the size of current budget deficits in many countries will gradually improve and 2010 could in many cases imply a deficit bottom, which would overstate the magnitude of the long-term challenge. As age-related outlays creep upward, followed by the additional interest costs of rising national debt, total government expenditure gradually increases. Currently, the median of the sample for general government spending to GDP

exceeds 44%. Following the fiscal consolidation we expect, spending to GDP will remain fairly stable at just above 40% of GDP until the early-2020s, as age-related spending increases are relatively small and generally expected to be offset by marginally lower interest rate outlays. This delicate balance will, by our projections, break down in the early 2020s, however, as age-related spending starts to accelerate, leading to higher deficits and interest payments. By the late 2030s, government spending is anticipated to account for 50% of GDP, climbing to 60% in 2050 (see chart 7).

**Chart 7**

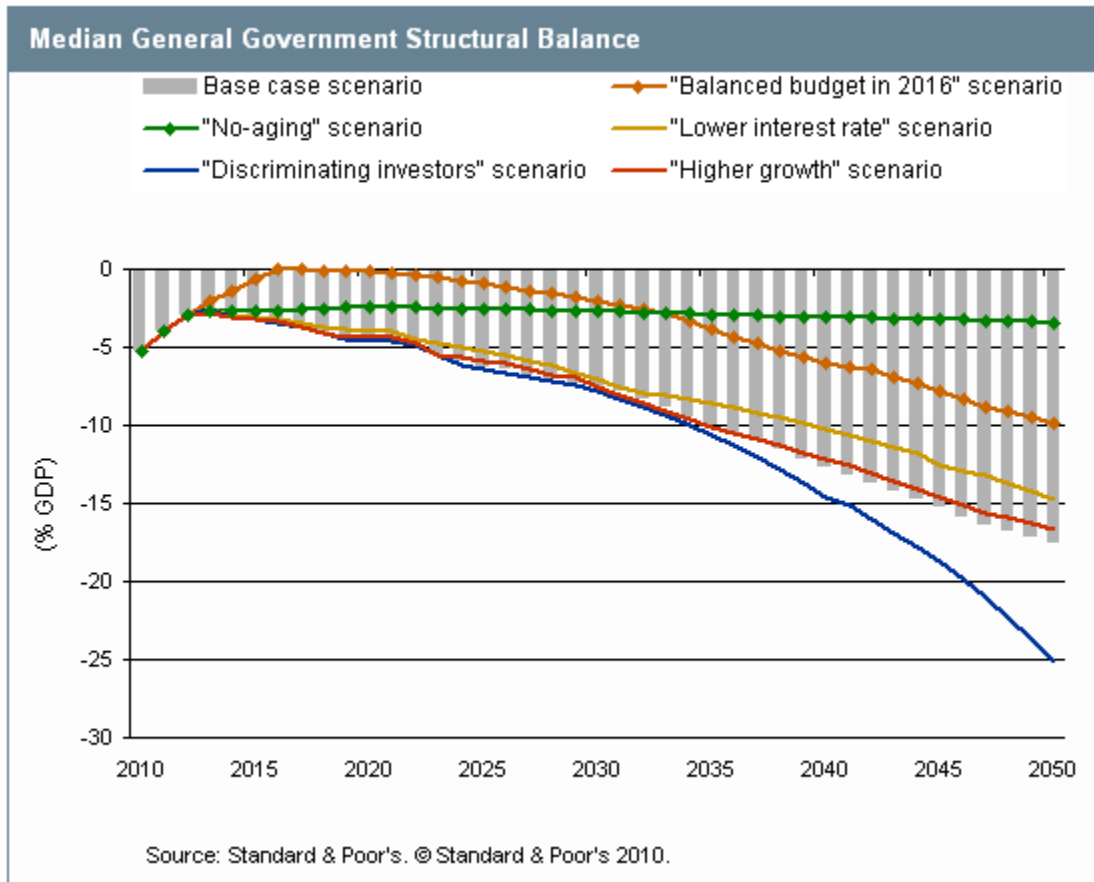


As a result of the higher costs in age-related spending by advanced sovereigns compared with emerging market sovereigns, on the basis of our current projections and assumptions, the difference in government spending profiles between the two groups is significant. The government spending-to-GDP ratio for the advanced sovereigns breaches 50% about 10 years earlier--in the late 2020s--hitting almost 70% by 2050. For emerging market sovereigns, this ratio is stable until the 2030s, at which point it starts rising, but remains below 50% of GDP throughout the projection period. In a number of advanced economies, under our "no-policy-change" scenario, we project the state sector to consume more than 70% of GDP, with the spending in Netherlands and Japan in particular, reaching an implausible 80% or more of GDP.

Based on the assumptions of unchanged revenues and the dynamics in age-related spending above, a typical advanced sovereign likely would maintain stable annual deficits until 2020. After 2020, deficits are projected to start rising gradually at first, and then, as interest payments increase due to higher debt levels, accelerate above 20% of

GDP from 2045 onward. For emerging market sovereigns, we expect deficits to stay stable until 2030, partly due to our future interest rate assumption, which for some governments is lower than their current borrowing costs, thus offsetting the growing budgetary burden of population aging. From 2030, the projected deficit widens rapidly from 4% to 11% of GDP in 2050.

**Chart 8**

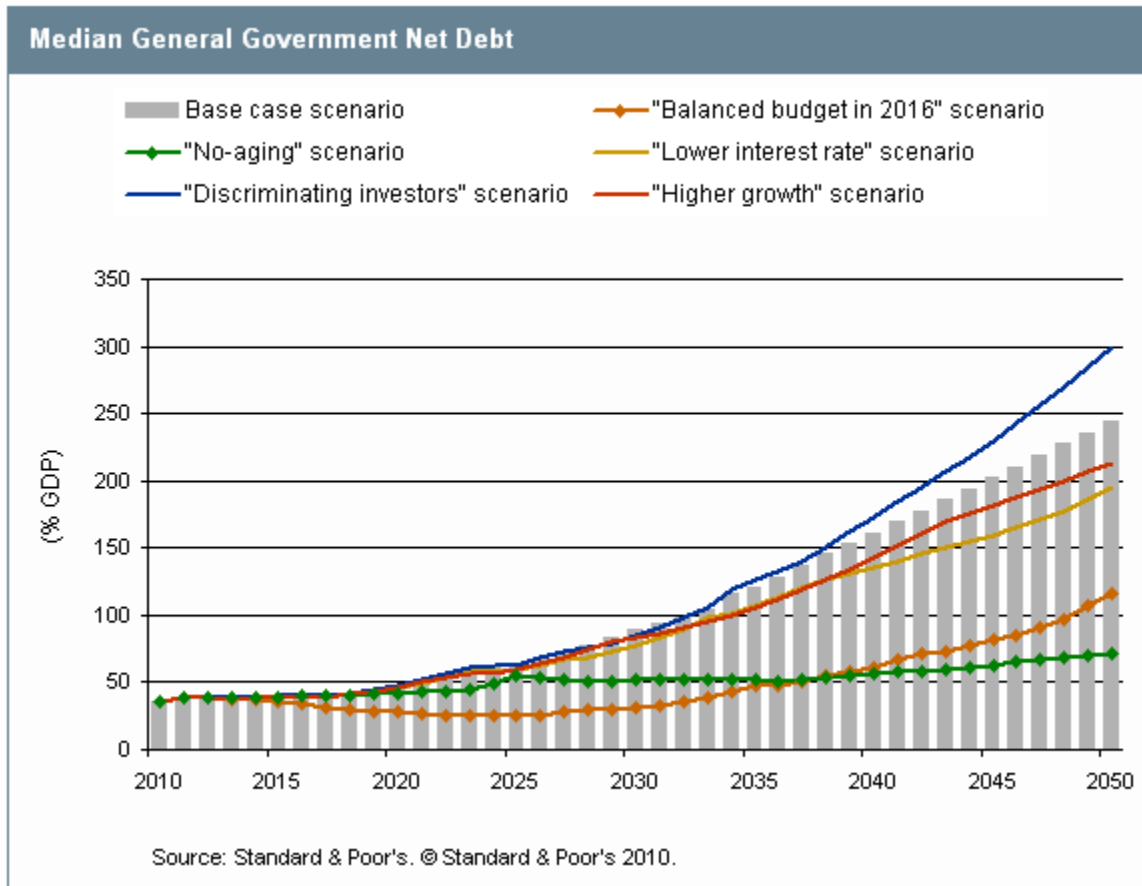


For all sovereigns in the study, burgeoning deficit ratios are expected to push the median net debt ratio to around 245% of GDP in 2050, from below 40% of GDP currently, as the snowball effect of rising interest payments accelerates the negative budgetary impact. During the same period, the median debt for advanced sovereigns under the "no-policy change" scenario grows almost five-fold to more than 300% of GDP, while the emerging market sovereign median debt grows more than three-fold to 126% of GDP. Saudi Arabia and Norway are projected to be the only net general government creditors in 2050, while net debt in the Philippines would be about 10% of GDP. In 2050, there are eight more sovereigns with net debt levels projected at below 100% of GDP. On the other side, 20 sovereigns are projected to see their net debt levels rise above 300%, most of them advanced sovereigns, with Japan having more than twice that level in 2050 (see table 3).

Putting these high debt ratios into perspective, both New Zealand and Australia had government debt burdens in excess of 150% of GDP on the brink of World War II, while the U.K.'s debt reached a staggering 252% in 1946, up from 30% in 1913. Of course these were isolated historical instances of high debt related to war and the Great Depression. The current projections are based on the potential for widespread and sustained fiscal deterioration due

to a well-understood and predictable phenomenon: population aging.

**Chart 9**

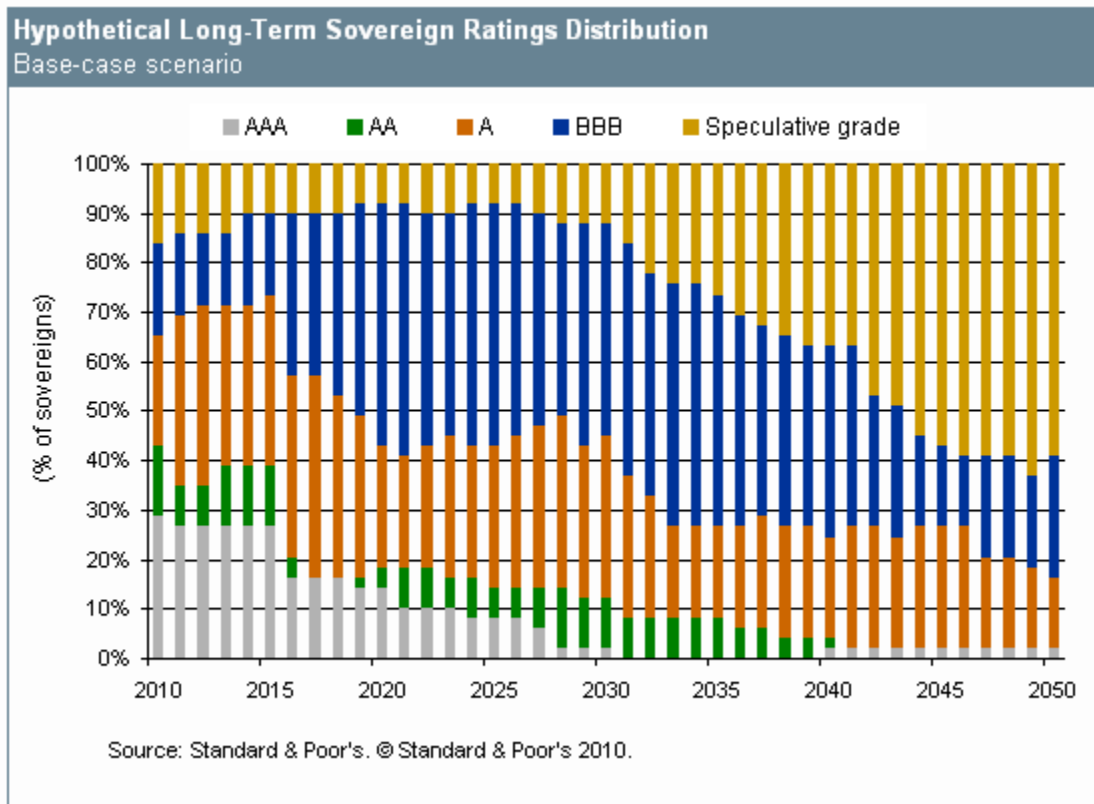


As described in the previous section, rising deficits likely would lead to downward pressure on our hypothetical sovereign ratings. This would be the case even if debt ratios remained at relatively low levels because of the sharp upward trajectory of fiscal deficits. When presented graphically, the collective deterioration in the hypothetical ratings on the 49 sovereigns in our sample becomes clearly evident (see chart 10). The erosion in sovereign ratings would start in 2015, when hypothetical ratings on a number of highly rated sovereigns come under pressure (see "Methodological And Data Supplement" for explanations of the model). Although the downward drift is impressive by any standards, equally noteworthy is the nonlinearity of the change in theoretical ratings over time. Ratings would weaken somewhat in the second part of this decade, especially at the upper end of the rating scale, while the number of sovereigns with speculative grade ratings would fall until 2020. From that moment onward, as the full budgetary impact of population aging kicks in, the projected downward transition in sovereign ratings becomes predominant. Before then, in the real world beyond "fiscal autopilot," there could well be the risk of a mistaken sense of security taking hold that works against the changes necessary to manage the rising fiscal pressures in future years.

The hypothetical ratings evolution shown here is derived by taking into account GDP per capita, general government balances, and net debt levels, and are not intended to serve as a prediction of actual outcomes (see chart 10). In practice, the hypothetical ratings may overstate the decline in creditworthiness. They are benchmarked

against budget balances, net debt, and GDP per capita levels today, whereas it is of course possible that the medians themselves could worsen as an ever-larger number of rated sovereigns is squeezed by the costs of their aging populations. Moreover, Standard & Poor's may give more credence to mitigating credit strengths than assumed in the model. The hypothetical ratings should therefore be regarded more appropriately as an illustration of the credit dimension and profile of the demographic challenge that governments face and not as an indication of expected credit performance.

Chart 10



## Alternative Scenarios

Analysis of variations from our base-case scenario will help assess the relative power of the multiple forces at work that determine future fiscal performance and hypothetical rating trends. The first two scenarios deviate from our "fiscal autopilot" assumption and illustrate the importance of policy strategies, resulting either from budgetary consolidation or implementation of structural reforms, in dealing with the budgetary impact of population aging. The other scenarios gauge the impact of external influences.

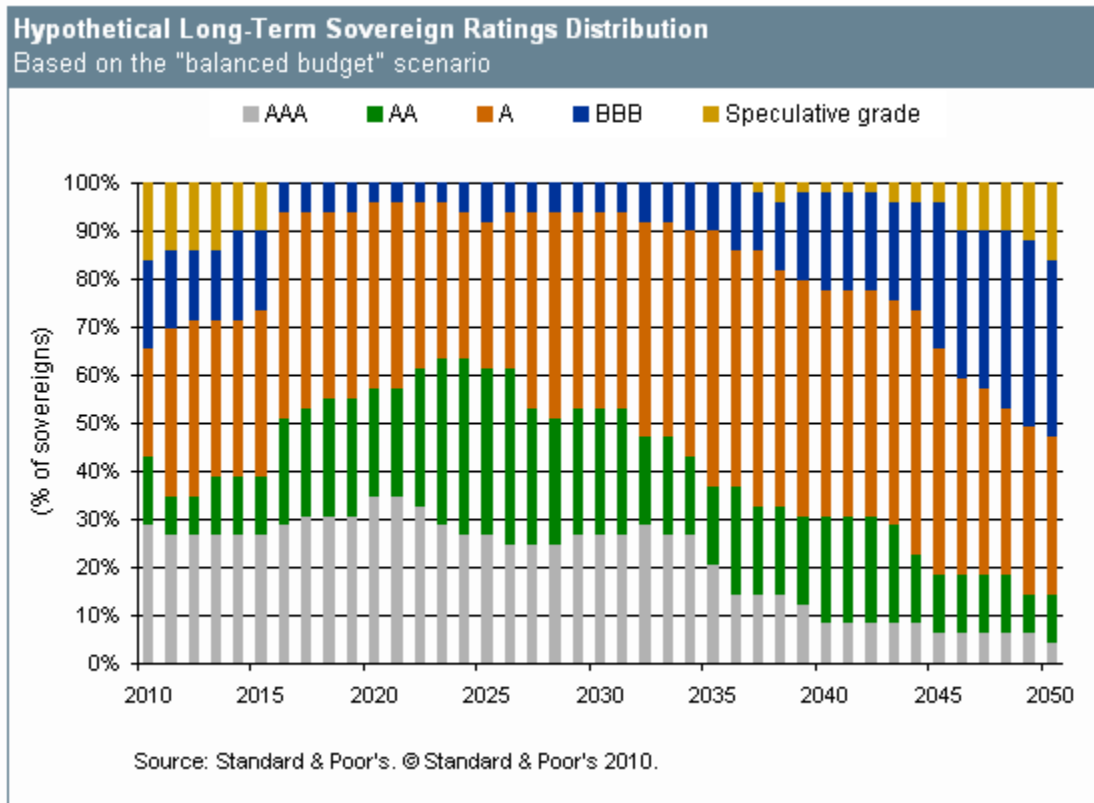
### The "balanced budget" scenario

In this scenario we assume that budgetary adjustments lead to a balanced budget in 2016 for all sovereigns. Once this is achieved, the government reverts to "fiscal autopilot" and takes no further additional action, except for borrowing to pay for the incremental age-related (and interest) expenditures as they occur. Deficits and debt will be somewhat contained, but, in the majority of sovereigns, the containment is not sufficient to prevent unsustainable



results later on. The improvement compared to the base-case scenario is particularly marked in those countries that currently have large general government imbalances, as the main assumption requires these sovereigns to take relatively larger budgetary steps by 2016. Overall, the scenario is illustrative of the power that budgetary consolidation has in offsetting the projected adverse dynamics in age-related spending.

**Chart 11**



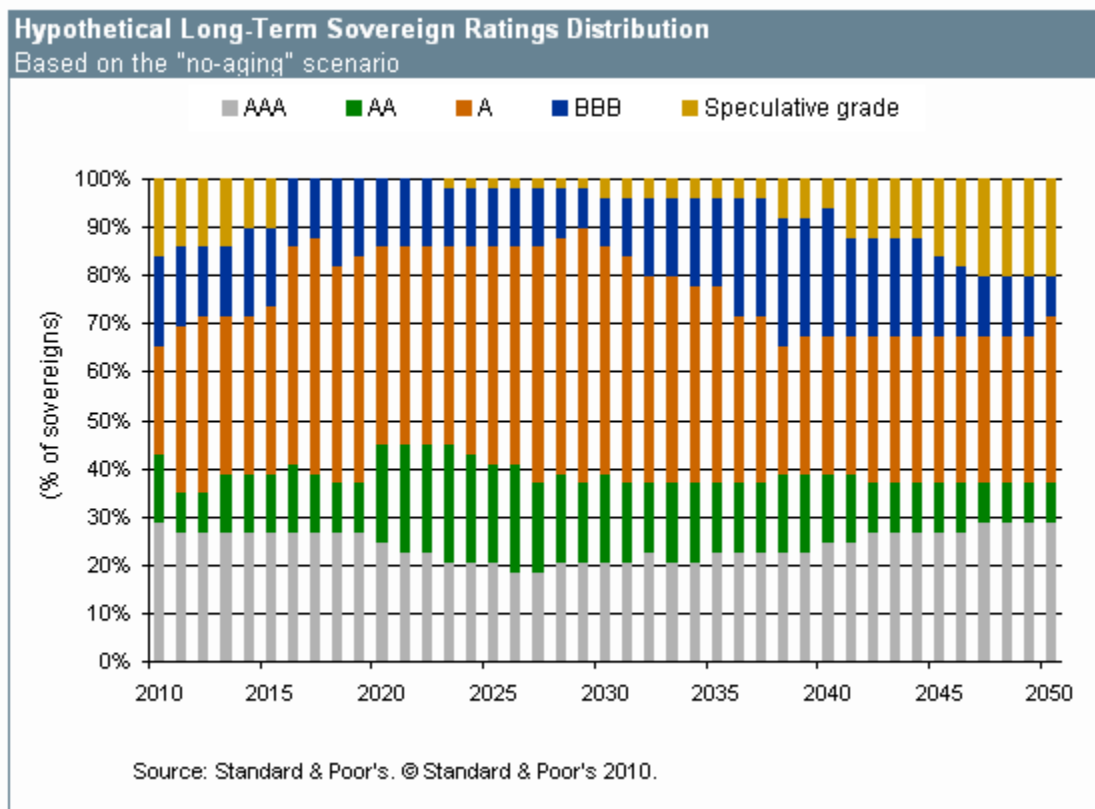
For the governments generating surpluses in 2010 (Norway and Saudi Arabia), this scenario is equivalent to a loosening of fiscal policy and therefore has a negative budgetary impact. For those running deficits up to 1% of GDP, the difference in results from the base-case scenario is relatively small. Although hypothetical creditworthiness initially holds up better than in the base case, the overwhelming age-related spending pressures kicking in after 2015 eventually lead to a similar distribution of hypothetical ratings by 2050. The results show that, despite balancing their budgets by 2016, governments with significant increases in age-related costs would still end up with very high net debt levels.

This scenario likely overestimates budgetary actions in some cases. India and South Africa, for example, are currently set for relatively mild increases in pension and health-care spending. However, India displays a relatively high debt level while South Africa has a relatively high government deficit. The assumed balanced budget in 2016 would therefore lead to sustained surpluses, as the assumed decline in interest payments overcompensates for the fairly small increase in age-related outlays, and results in the sovereigns becoming net creditors at the end of the projection period.

### "No aging" scenario

In this scenario we assume that governments enact legislation to fully contain future increases in age-related spending over the projection period, illustrating the benefits of related reform measures. As such, the scenario captures in isolation the effect of the sovereigns' starting budgetary positions. Besides the impact of the current outstanding stock of government net debt on future budgetary evolution, the government balance is of particular relevance as it is assumed unchanged as of 2012 onward. Thus, while overall debt at the end of this scenario will be lower, sovereigns with relatively high expected government deficits in 2012 will see their debt burden grow faster than their peers with more balanced budget positions, despite having eliminated future increases in age-related spending.

**Chart 12**



Unsurprisingly, given the magnitude of the projected increase in age-related spending over the next 40 years, the median in the "no-aging" scenario compares favorably with that in the base-case scenario. Deficits and debt would remain well contained under such a robust policy approach, despite budget deficits at the beginning of the projection period, and would in most cases effectively underpin the maintenance of the sovereigns' hypothetical ratings or even lead to hypothetical upgrades. Given the much larger projected increase in age-related spending by advanced sovereigns compared to the emerging markets group, the scenario implies a more substantial and positive impact for their future debt burden than for that of emerging market sovereigns.

### "Lower interest rate" scenario

Instead of assuming a 3% real interest rate, we substitute a lower rate of 2%, which is more in line with that observed during the period of ample global liquidity in the first decade of this century. This benign interest rate

environment likely would by 2050 lead to lower median net debt for the whole sample--195% of GDP (advanced economies 272%; emerging market economies 111%) compared with 245% (329%, 126%) in the base case. The ratings distribution (not shown) at the end of the simulation is somewhat more favorable than in the base-case scenario, although not by a significant margin.

### **"Discriminating investor" scenario**

Here we assume that investors begin to demand compensation for lending to riskier, more leveraged borrowers. In our example, investors charge one basis point extra over the 3% real rate for every percentage point that the net debt ratio exceeds 60% of GDP. This is broadly in line with the yield spreads observed among eurozone sovereigns in the period before the global economic and financial crisis, when spreads became particularly volatile. While it is practically inconceivable that a sovereign would be able to sustain such high increases in borrowing costs over a prolonged period of time, this example illustrates how highly leveraged governments become extraordinarily vulnerable to sentiment shifts among investors. By 2050, the median net debt ratio increases to around 300% of GDP from 36% in 2010, compared with 245% in the base-case. The respective medians of advanced and emerging market economies increase from 64% and 33% of GDP in 2010 to 440% and 128% of GDP in 2050. The explosive rise in debt starts in 2030 and by 2050 13 countries in the sample end the period with net debt above 500% of GDP, with Japan a particular outlier. Obviously, even greater risk aversion would lead to an even faster ballooning debt burden.

### **"Higher GDP growth" scenario**

In this scenario, the projected GDP growth is increased by one percentage point across the projection period. A more buoyant growth environment would by 2050 lead to slightly lower median net debt for the whole sample—213% of GDP (advanced sovereigns, 297%; emerging market sovereigns, 110%) compared with 245% (329%, 126%) in the base case. The ratings distribution (not shown) is somewhat better than in the base-case scenario, although not by a significant margin.

## **The Policy Implications Of Closing The Gap**

To better illustrate the budgetary adjustments that we believe are likely to keep public finances on sustainable footings, we analyzed what we term as sovereigns' "sustainability gap" indicators. More specifically, based on methodology published by the European Commission (2009; see "Methodological And Data Supplement" for details), the sustainability gap reveals the difference between the current structural primary balance and that which would lead to fulfilling intertemporal budgetary constraints over an infinite time horizon. In other words, it indicates the permanent budgetary adjustment required to make public finances sustainable. The gap thus represents the difference between the constant revenue ratio as a share of GDP that equates the actualized flow of revenues and expenses over an infinite horizon, and the current revenue ratio. The indicator can be decomposed into two components--the gap due to the initial budgetary position (debt-stabilizing primary balance) and due to long-term changes in primary balance. Charts 13 and 14 illustrate the wide divergences in sustainability gaps across the sovereigns, and their composition.

Overall, the resulting sustainability gaps appear significant. In the absence of reform measures and budgetary consolidation, a considerable gap of about 8% of GDP emerges for the median of advanced countries. Overall, in countries with a positive sustainability gap, the budgetary position already appears unsustainable even without considering future increases in age-related spending. Among these economies, the initial budgetary component is

particularly large in the case of Japan, although Ireland, France, Spain, The Netherlands, the U.K., and the U.S. display substantial gaps in this component. Elsewhere, the sustainability gap arises in our opinion mainly due to the large increase in age-related changes. In Australia, Italy, Sweden, Canada, Korea, Iceland, Belgium, and Greece, the contribution of the initial budgetary position to the sustainability gap is negative, as a result of structural primary balances being above the debt-stabilizing level in 2012. In the emerging market sovereigns, the sustainability gap is somewhat lower, at 5.2% of GDP, but divergences are also large. Russia, Ukraine, and Brazil stand out due to the long-term change component of the gap. The initial budgetary position appears to be favorable for reducing the overall gap in Brazil, Turkey, Argentina, Hungary, Indonesia, Philippines, and South Africa.

Chart 13

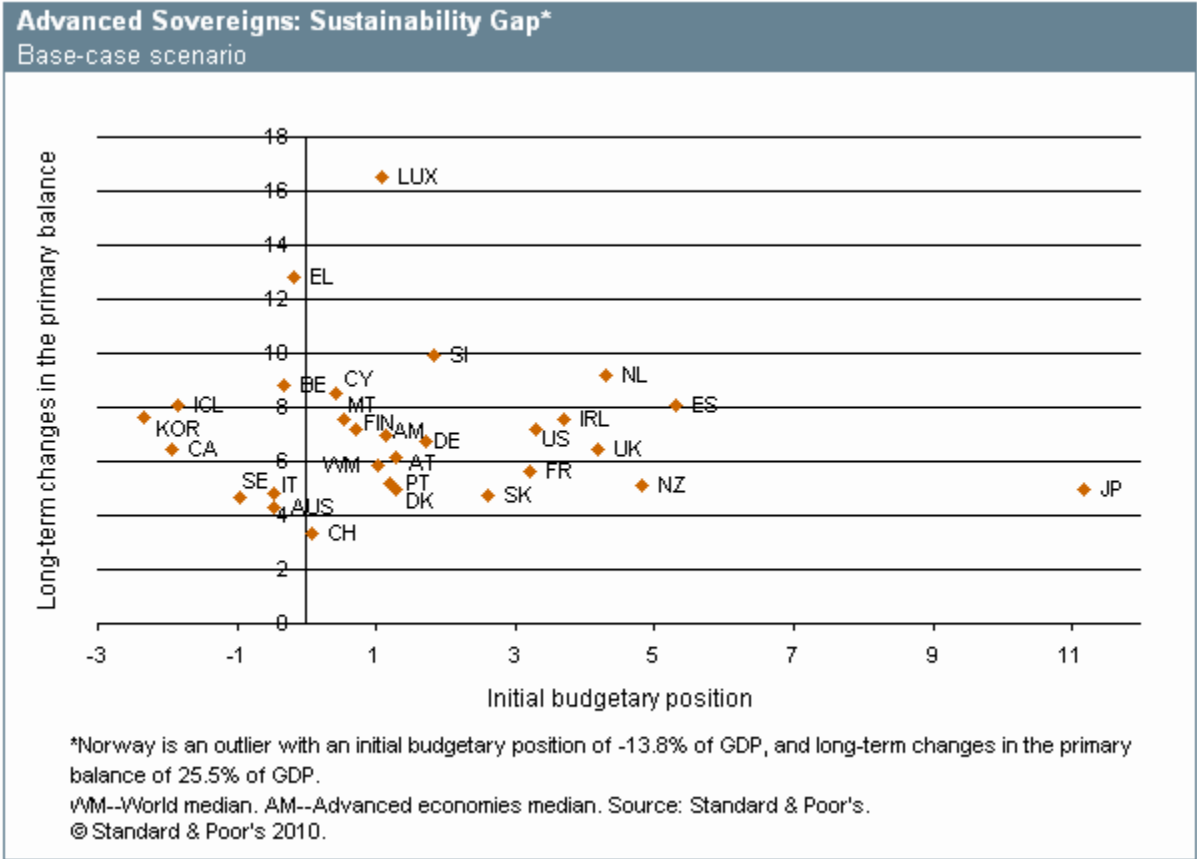
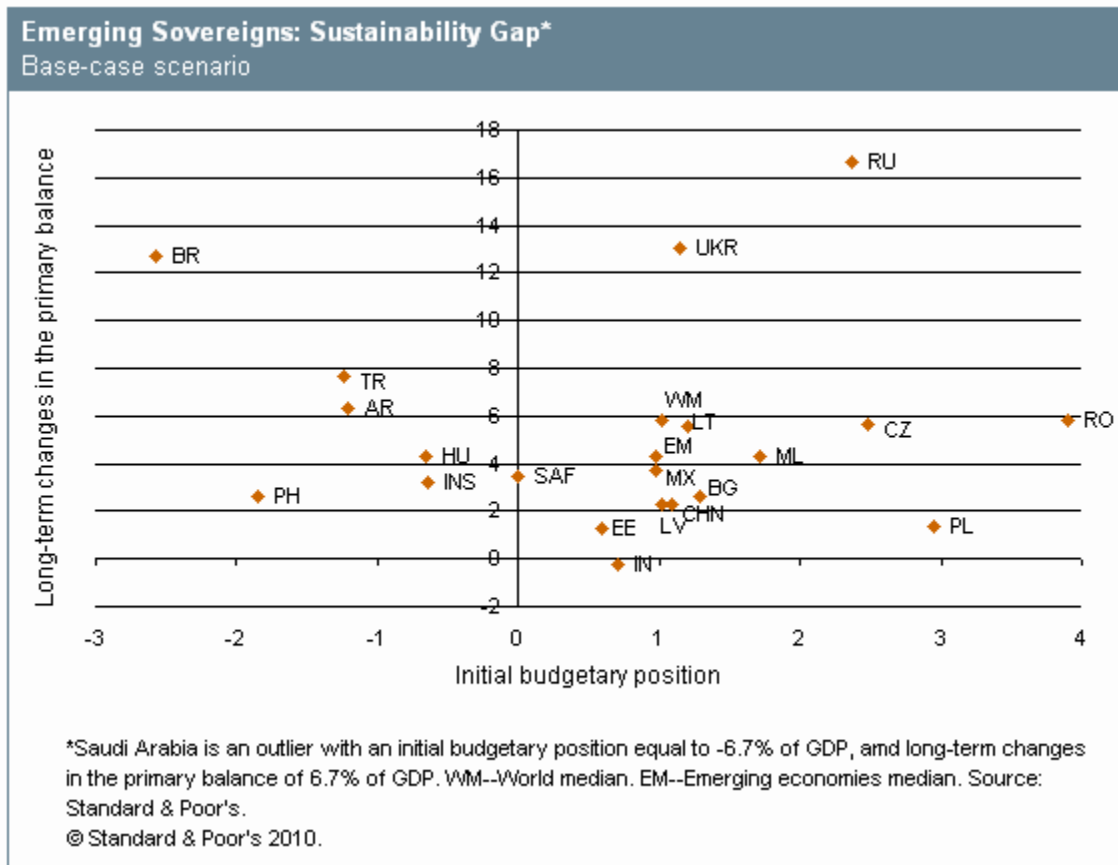


Chart 14



To assess the potential impact of policy action on the future budgetary burden, we examined sustainability gaps assuming sovereigns balanced their budgets by 2016. Unsurprisingly, the results show a massive decline in sustainability gaps as the median for advanced economies halves to 4.5% of GDP, while for emerging markets it falls to 1.9% of GDP. The shrinkage of the gap affects sovereigns across the sample, as the initial budgetary position contributes favorably to this reduction. Thus, the narrowing of the gap is most significant in those sovereigns where this component contributes relatively more to the gap in the base-case scenario. Conversely, the balanced budget scenario affects least the sovereigns with large sustainability gaps due to the long-term change component. The only exceptions are Saudi Arabia and to a much lesser extent Korea, where a gap emerges as the budgetary consolidation implies fiscal loosening.

Chart 15

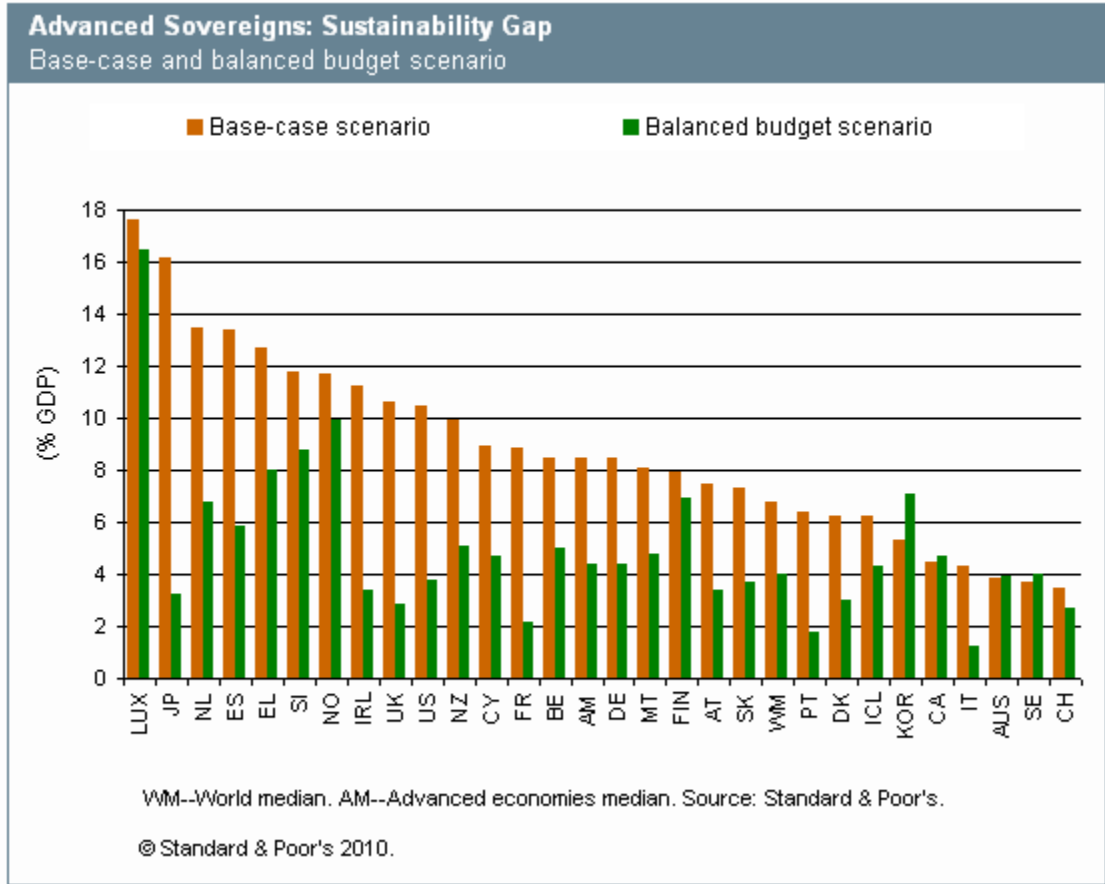
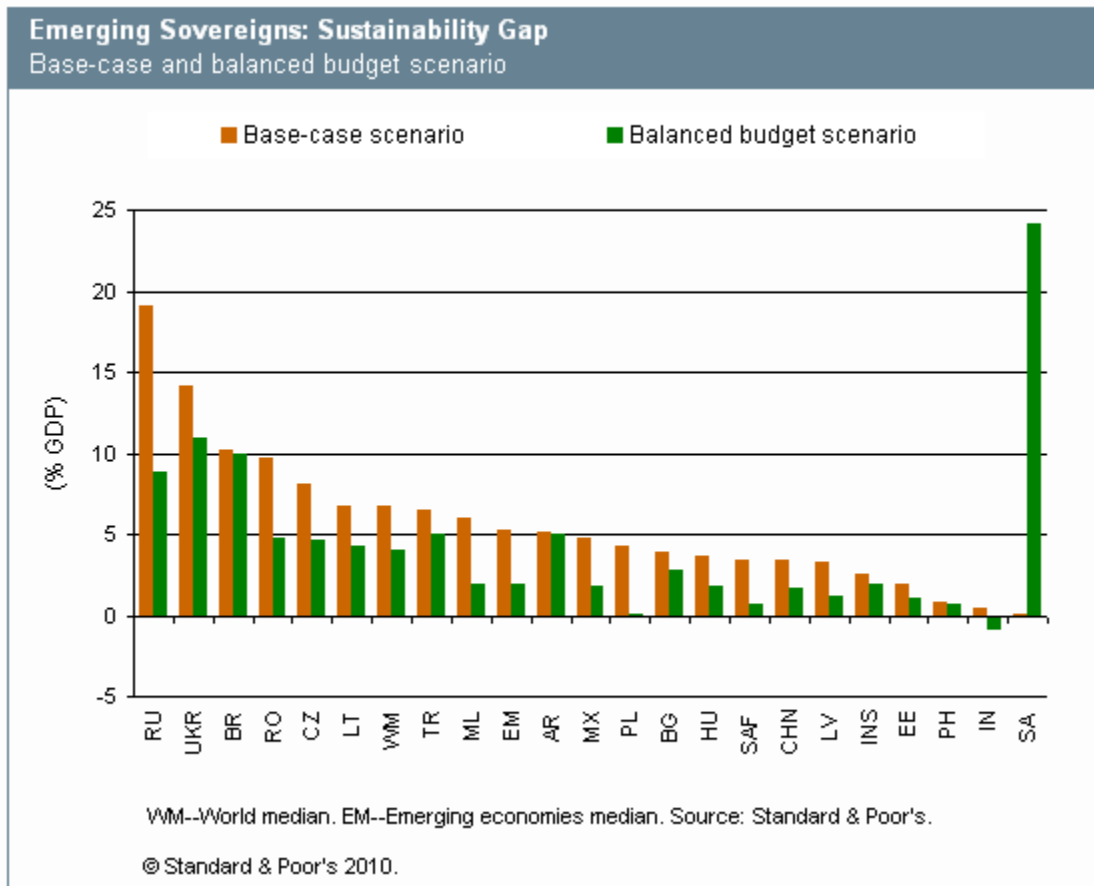
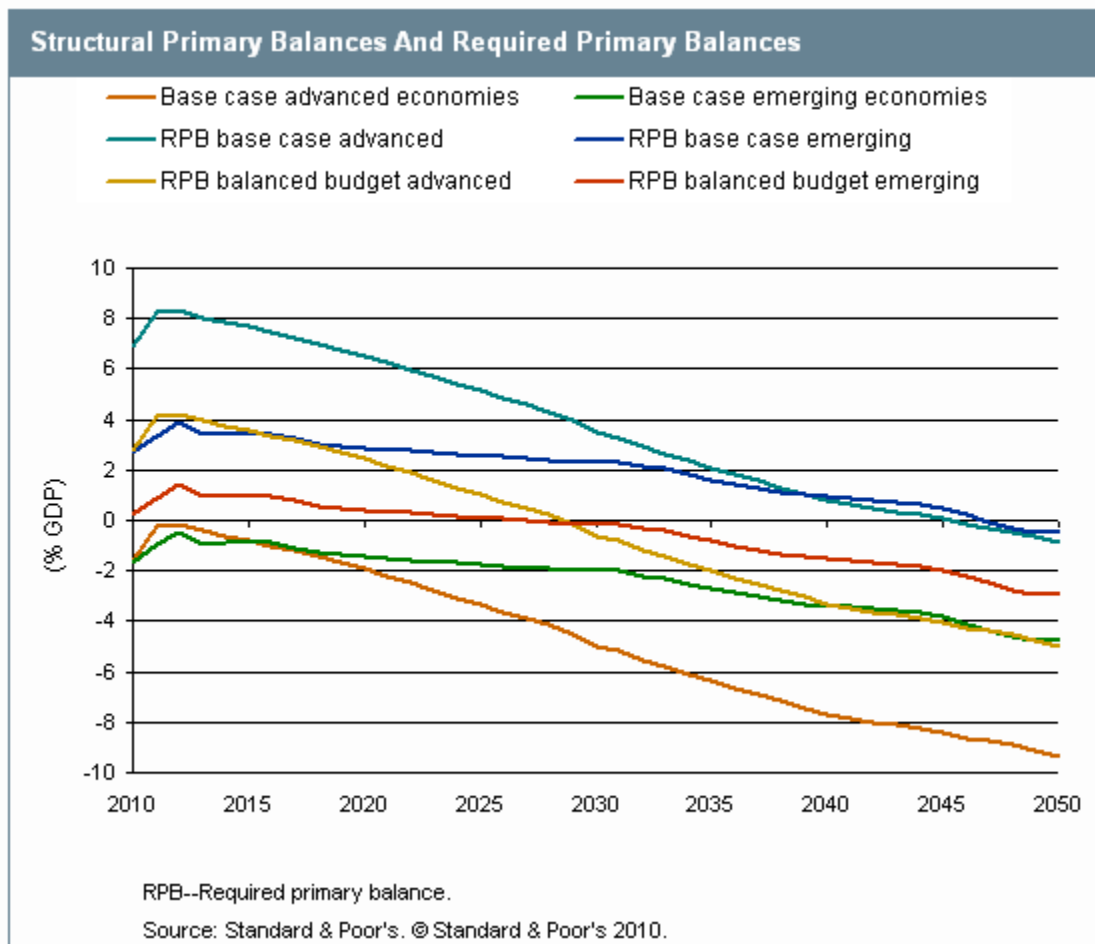


Chart 16



Based on the above analysis of the general government structural balance under the base-case scenario and the sustainability gap, Standard & Poor's derived the structural primary balance that we believe is likely to ensure the long-term sustainability of public finances (based on the assumption of zero output gap and therefore the absence of cyclical budgetary component, a primary balance beyond 2012 equals a structural primary balance). The structural primary balance, in our opinion, is a figure to be considered by any sovereign that aims to fully close the sustainability gap, i.e., it involves the full budgetary effort that we believe may stabilize debt and contain future increases in age-related spending. The primary balance thus implies the budgetary target (in our study an average structural primary balance), which, if reached, is likely to ensure sustainability in a no-policy change scenario. Chart 17 shows the median structural primary balances under this scenario for advanced and emerging market sovereigns compared to the Standard & Poor's derived structural primary balances, as well as the structural primary balances in the "balanced budget" scenario. It graphically displays the magnitude of the challenge if sovereigns aim to set their budgetary trajectory onto what we consider to be a fully sustainable path.

Chart 17



Having identified a range of potential gaps and what we believe to be their causes, we can consider the possible policy implications. Based on our framework, we believe that governments can deal with the future imbalances in three main ways:

- Through structural reforms aimed at raising employment levels for older workers and raising potential economic growth;
- By frontloading a sustained consolidation in budgetary positions; or
- Through substantial reforms to social security and publicly-funded health care systems that go well beyond most governments' initiatives so far.

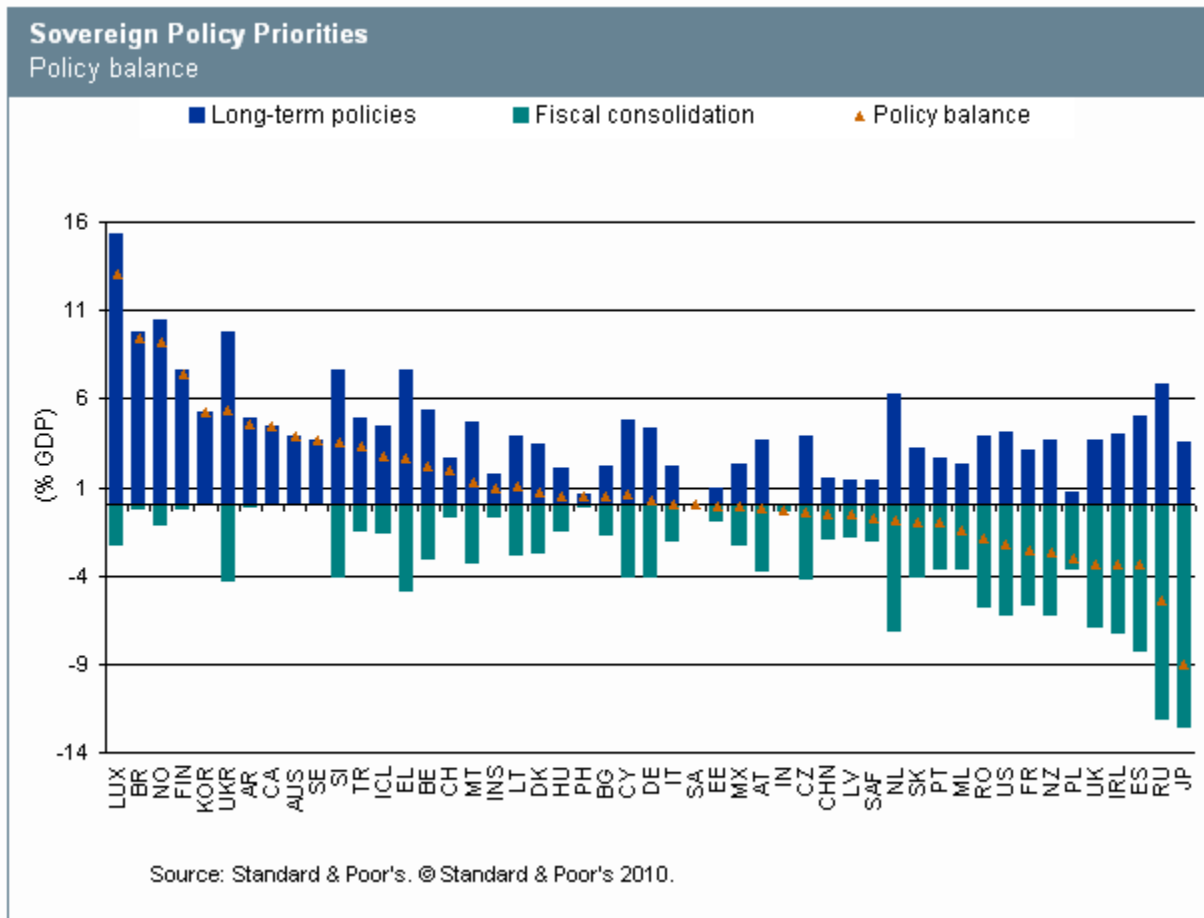
Given the growing urgency of tackling the budgetary implications of population aging and the capacity of governments to influence the outcomes of policy, the latter two options appear most realistic. However, which of these two reform approaches, if any, governments decide to invest their political capital in to maximize the beneficial impact on fiscal solvency depends on the specific circumstances in each country.

To assess the implied policy priorities, we relied on the scenario analyses presented above, including the base-case, "balanced budget," and "no-aging" scenarios. We estimated what percentage of the 2050 base-case net debt ratio is likely to be eradicated if the age-related spending-to-GDP ratio were to remain at 2012 levels; that is, if the radical



structural measures of the "no-aging" scenario were to be implemented. At the same time, we ran the same model for the "balanced budget" scenario to assess what share of the 2050 base-case debt may disappear if the sovereign balances the structural budget by 2016. The ratio between the two suggests the balance of policy priorities. To show more clearly how the ratio indicates the permanent structural budgetary adjustment we believe is likely to ensure sustainability of public finances, we converted the obtained ratios into the sovereign-specific base-case sustainability gap indicators as reflected in chart 18 below.

Chart 18



At one end of the spectrum, for sovereigns which are expected in 2012 to be relatively close to structural fiscal balance, such as Luxembourg, Brazil, Norway, Finland, Argentina, Canada, Australia, and Sweden, the marginal extra consolidation to reach balance would have a very limited effect on the future trajectory of the debt burden. On the other hand, if they were successful in preventing age-related spending from rising in the future they would effectively reduce their sustainability gaps. Conversely, Japan, Russia, Spain, Ireland, the U.K., Poland, France, and the U.S. have more to gain for fiscal sustainability from consolidating their budgets quickly, given their relatively high structural primary balances. For most countries, a combination of the two reform directions is likely to be an effective approach, but the relative mix is likely to differ. The absolute length of the bars in the chart is also important--it indicates both the magnitude of the problem and suggests the extent to which a sovereign likely can deal with the reduction in the sustainability gap through either policy option. For example, even if France fully

contained the projected increase in its aging costs, it is projected to still face a sustainability gap without further consolidation. A combination of the two policy options could of course unleash a much more powerful effect. Finally, the length of the bars indicates the relative debt reduction potential.

## **From Bad To Worse: Comparison With Previous Standard & Poor's Reports On Population Aging**

For the sovereigns covered in our previous reports, the difference between this year's results and those published in 2006 and 2007 appear significant (see charts 19 and 20). First and foremost, the difference in our view appears to be a consequence of a significant deterioration in their general government balances and net debt levels since 2007 due to the onset of the economic and financial crisis. While the initial budgetary situation actually improved between 2006 and 2007, since then, the widening of fiscal gaps and rises in debt outstanding has been substantial. This puts the sovereigns in a relatively more unfavorable position in our long-term simulations of public finance indicators.

The report also includes updated long-term projections on real GDP and individual age-related spending items. In this context, there is a significant change as far as the long-term projection of health-care spending in the EU is concerned. To more completely capture nondemographic factors, which had been the main driver of increases in health-care costs in the past for EU sovereigns, we apply the so-called "technology" scenario as opposed to the "AWG reference" scenario, applied previously. The "AWG reference" scenario is in our view tilted toward the optimistic side as it does not fully recognize the past drivers of growth in health-care spending (see table 9 below).

Chart 19

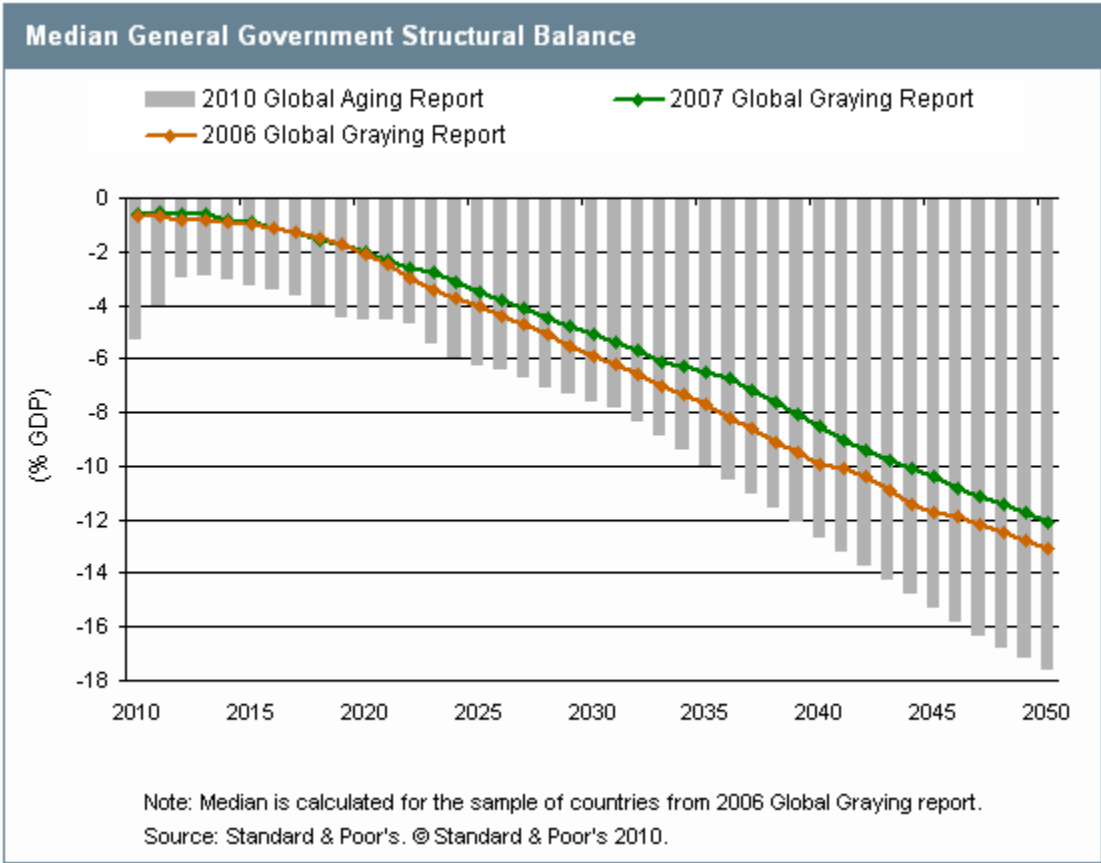
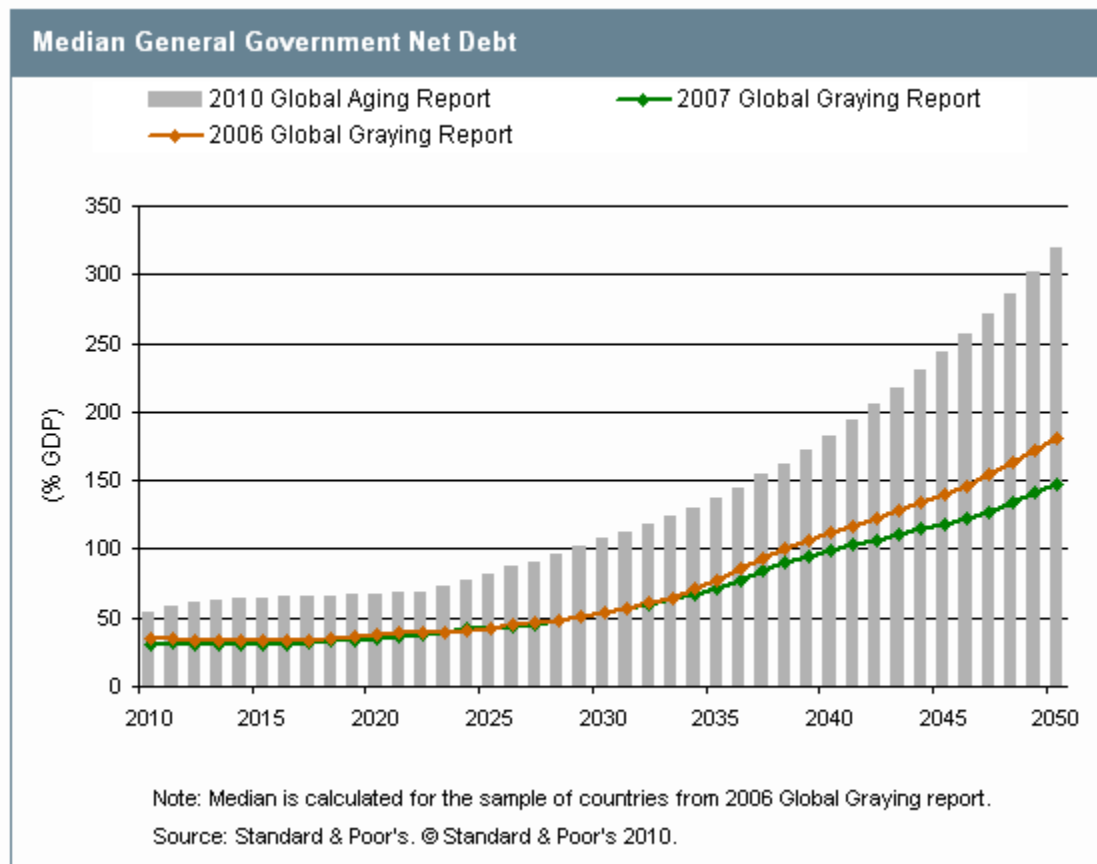


Chart 20



## A Global Challenge

Since 2007, the global economic and financial crisis has by our reckoning substantially affected many sovereigns' budgetary positions. Governments are beginning to respond with medium-term plans for fiscal consolidation. The results of our analysis highlight the potential benefits of this strategy for the long-term sustainability of public finances. At the same time, a number of governments across the globe, and particularly in Europe, have recently accelerated preparation for, and implementation of, structural reforms linked to age-related spending items--particularly pension systems--thus continuing the positive momentum built up since the start of the past decade. At the same time, however, we expect the upward risk of higher health-care costs will be an increased drag on governments' already burdened budget positions.

The challenges ahead are daunting for the vast majority of sovereigns covered in this survey, particularly in cases where market pressures are pushing policy makers to embrace budgetary consolidation simultaneously with structural reforms of pension and health-care systems. For some sovereigns, this may put the relationship between the state and electorate under strain and severely test social cohesion.

Nevertheless, our study suggests that unless advanced sovereigns embrace reforms at a faster pace, the fiscal pressures will become increasingly unsustainable. At the same time, the aging demographic profile of their electorates could well make the political climate for reforming pension and health-care programs even more difficult

than it is currently.

Against this background, we believe that growing age-related fiscal pressures call for decisive policy responses by governments in many countries quite soon — and certainly over the coming decade. As we outline in this report, we do not believe that higher economic growth, if it can be generated, alone will suffice to tame future fiscal pressures. That said, we expect that a crucial growth-friendly policy that many governments will have to embrace is to find ways to encourage their people to remain active members of the labor force for many more years than is the norm today.

At the same time, for a growing number of sovereigns, the need to tackle fiscal deficits and implement pension and health-care reforms over the coming decade is a pressing policy issue, given the rapid growth in government debt burdens. This is an important policy issue not just from the standpoint of maintaining the creditworthiness of sovereigns and the sustainability of their public finances. At least as important, in our view, is that it may be vital to maintaining social stability. After all, changing the scope of public pension and health-care provision can, if embraced soon enough, help spread the impact over an extended period, with the burden of adjustment shared across generations of taxpayers and voters.

For emerging market sovereigns, the policy issues are more complex. In these countries, population aging is projected to take place against the background of still relatively high rates of economic growth. So economic growth and greater economic convergence with today's more prosperous sovereigns should make the social and fiscal challenges of population aging relatively more manageable.

However, if the experience of Europe and North America over the past century is any guide, rising prosperity is also likely to increase domestic pressures on emerging market sovereigns to fund more generous social security safety nets in the future. These governments may have more time to consider their policy options than today's more economically advanced sovereigns, but they will still need to design programs that are fiscally sustainable as their populations continue to age. Already, our analysis suggests that some emerging market sovereigns will need to tackle demographically-driven budgetary challenges hardly less pressing than those now faced by the sovereigns in advanced economies.

**Table 1**

| Total Age-Related Spending |                         |       |       |       |       |       |
|----------------------------|-------------------------|-------|-------|-------|-------|-------|
| (% GDP)                    | Foreign currency rating | 2010e | 2020f | 2030f | 2040f | 2050f |
| Argentina                  | B/Stable/B              | 10.7  | 11.1  | 12.6  | 14.5  | 17.1  |
| Australia                  | AAA/Stable/A-1+         | 9.6   | 9.6   | 11.1  | 12.8  | 14.4  |
| Austria                    | AAA/Stable/A-1+         | 21.5  | 23.5  | 26.2  | 28.1  | 29.6  |
| Belgium                    | AA+/Stable/A-1+         | 21.8  | 24.7  | 28.8  | 31.5  | 32.8  |
| Brazil                     | BBB-/Stable/A-3         | 13.6  | 14.4  | 17.0  | 21.3  | 25.9  |
| Bulgaria                   | BBB/Stable/A-3          | 14.2  | 14.1  | 15.0  | 16.7  | 18.6  |
| Canada                     | AAA/Stable/A-1+         | 14.1  | 16.6  | 19.1  | 20.6  | 22.0  |
| China                      | A+/Stable/A-1+          | 4.4   | 4.9   | 5.5   | 6.3   | 7.0   |
| Cyprus                     | A+/Watch Neg/A-1        | 10.1  | 12.6  | 15.0  | 17.6  | 20.8  |
| Czech Republic             | A/Positive/A-1          | 13.9  | 15.0  | 16.9  | 19.7  | 22.6  |
| Denmark                    | AAA/Stable/A-1+         | 18.3  | 21.3  | 23.2  | 24.4  | 24.5  |
| Estonia                    | A/Stable/A-1            | 11.5  | 11.7  | 12.2  | 12.9  | 13.5  |
| Finland                    | AAA/Stable/A-1+         | 19.5  | 23.2  | 26.6  | 28.2  | 28.8  |

**Table 1**

| <b>Total Age-Related Spending (cont.)</b> |                   |      |      |      |      |      |
|---|-------------------|------|------|------|------|------|
| France                                    | AAA/Stable/A-1+   | 24.9 | 26.5 | 29.1 | 31.0 | 31.9 |
| Germany                                   | AAA/Stable/A-1+   | 20.0 | 22.0 | 25.1 | 27.8 | 29.5 |
| Greece                                    | BB+/Negative/B    | 18.6 | 21.4 | 26.6 | 32.6 | 36.6 |
| Hungary                                   | BBB-/Negative/A-3 | 17.9 | 18.5 | 19.9 | 22.3 | 24.3 |
| Iceland                                   | BBB-/Negative/A-3 | 15.7 | 18.1 | 21.0 | 23.7 | 26.0 |
| India                                     | BBB-/Stable/A-3   | 2.6  | 3.2  | 3.4  | 3.2  | 2.7  |
| Indonesia                                 | BB/Positive/B     | 2.2  | 2.7  | 3.2  | 3.9  | 4.7  |
| Ireland                                   | AA-/Negative/A-1+ | 12.1 | 13.8 | 16.2 | 18.8 | 22.0 |
| Italy                                     | A+/Stable/A-1+    | 22.4 | 23.7 | 26.0 | 28.4 | 28.8 |
| Japan                                     | AA/Negative/A-1+  | 18.8 | 20.8 | 22.1 | 24.4 | 26.7 |
| Korea                                     | A/Stable/A-1      | 5.8  | 7.9  | 10.8 | 14.1 | 17.2 |
| Latvia                                    | BB/Stable/B       | 9.2  | 9.6  | 10.8 | 11.8 | 12.9 |
| Lithuania                                 | BBB/Stable/A-3    | 13.1 | 14.5 | 17.2 | 19.4 | 21.6 |
| Luxembourg                                | AAA/Stable/A-1+   | 16.5 | 18.9 | 24.8 | 30.8 | 35.8 |
| Malaysia                                  | A-/Stable/A-2     | 5.0  | 6.1  | 7.4  | 8.5  | 9.4  |
| Malta                                     | A/Stable/A-1      | 14.9 | 17.5 | 19.8 | 23.2 | 26.2 |
| Mexico                                    | BBB/Stable/A-3    | 5.6  | 7.2  | 9.0  | 10.0 | 9.9  |
| Netherlands                               | AAA/Stable/A-1+   | 16.1 | 19.3 | 23.3 | 26.7 | 28.2 |
| New Zealand                               | AA+/Stable/A-1+   | 14.4 | 14.6 | 17.2 | 19.5 | 20.9 |
| Norway                                    | AAA/Stable/A-1+   | 18.2 | 21.6 | 25.0 | 27.9 | 29.1 |
| Philippines                               | BB-/Stable/B      | 2.5  | 2.9  | 3.4  | 4.0  | 4.5  |
| Poland                                    | A-/Stable/A-2     | 15.5 | 15.2 | 15.9 | 16.6 | 17.4 |
| Portugal                                  | A-/Negative/A-2   | 20.8 | 22.7 | 24.4 | 25.8 | 27.9 |
| Romania                                   | BB+/Stable/B      | 12.2 | 13.1 | 15.4 | 18.4 | 21.3 |
| Russia                                    | BBB/Stable/A-3    | 13.0 | 15.0 | 19.0 | 21.2 | 25.5 |
| Saudi Arabia                              | AA-/Stable/A-1    | 5.1  | 6.0  | 7.5  | 9.5  | 12.6 |
| Slovakia                                  | A+/Stable/A-1     | 12.0 | 12.5 | 14.8 | 17.2 | 19.5 |
| Slovenia                                  | AA/Stable/A-1+    | 18.4 | 20.9 | 25.1 | 29.8 | 33.3 |
| South Africa                              | BBB+/Negative/A-2 | 4.5  | 5.3  | 6.2  | 7.1  | 8.0  |
| Spain                                     | AA/Negative/A-1+  | 16.9 | 18.3 | 21.0 | 25.0 | 28.6 |
| Sweden                                    | AAA/Stable/A-1+   | 21.6 | 23.0 | 25.2 | 26.8 | 27.4 |
| Switzerland                               | AAA/Stable/A-1+   | 16.3 | 17.4 | 18.5 | 19.6 | 20.8 |
| Turkey                                    | BB/Positive/B     | 10.9 | 12.6 | 15.5 | 16.4 | 18.6 |
| Ukraine                                   | B+/Stable/B       | 16.9 | 19.9 | 24.3 | 27.4 | 31.8 |
| U.K.                                      | AAA/Negative/A-1+ | 15.7 | 17.5 | 20.1 | 22.3 | 23.7 |
| U.S.                                      | AAA/Stable/A-1+   | 10.8 | 12.5 | 15.1 | 17.1 | 18.5 |
| <b>Medians</b>                            |                   |      |      |      |      |      |
| Whole sample                              |                   | 14.2 | 15.0 | 17.2 | 19.7 | 22.0 |
| Advanced economies                        |                   | 16.7 | 19.1 | 22.7 | 24.7 | 27.0 |
| Emerging economies                        |                   | 10.9 | 11.7 | 12.6 | 14.5 | 17.1 |
| BRICs                                     |                   | 8.7  | 9.7  | 11.3 | 13.8 | 16.3 |
| Europe                                    |                   | 16.3 | 18.3 | 21.0 | 23.7 | 26.0 |

Table 1

| Total Age-Related Spending (cont.) |      |      |      |      |      |
|------------------------------------|------|------|------|------|------|
| Asia                               | 4.7  | 5.5  | 6.5  | 7.4  | 8.2  |
| Latin America                      | 10.7 | 11.1 | 12.6 | 14.5 | 17.1 |
| G-7                                | 18.8 | 20.8 | 22.1 | 24.4 | 26.7 |
| AAA                                | 17.4 | 20.3 | 24.1 | 26.8 | 27.8 |
| AA                                 | 16.9 | 18.3 | 21.0 | 24.4 | 26.7 |
| A/BBB                              | 13.1 | 14.3 | 15.5 | 17.4 | 20.2 |
| Speculative-grade                  | 10.8 | 11.9 | 14.0 | 15.5 | 17.9 |

e--Estimate. f--Forecast.

Table 2

| Age-Related Spending By Component | --2010e-- |      |     |      |      | --2050f-- |      |      |      |      | --Change 2010e-2050f-- |       |     |      |       |
|-----------------------------------|-----------|------|-----|------|------|-----------|------|------|------|------|------------------------|-------|-----|------|-------|
|                                   | Total     | PEN  | HCA | LTC  | UNE  | Total     | PEN  | HCA  | LTC  | UNE  | Total                  | PEN   | HCA | LTC  | UNE   |
| (% GDP)                           |           |      |     |      |      |           |      |      |      |      |                        |       |     |      |       |
| Argentina                         | 10.7      | 5.9  | 4.8 | N.A. | N.A. | 17.1      | 8.6  | 8.5  | N.A. | N.A. | 6.4                    | 2.7   | 3.7 | N.A. | N.A.  |
| Australia                         | 9.6       | 4.1  | 4.0 | 0.8  | 0.7  | 14.4      | 5.1  | 7.1  | 1.8  | 0.4  | 4.8                    | 1.0   | 3.1 | 1.0  | (0.3) |
| Austria                           | 21.5      | 12.7 | 6.9 | 1.3  | 0.6  | 29.6      | 14.0 | 12.6 | 2.4  | 0.6  | 8.1                    | 1.3   | 5.7 | 1.1  | 0.0   |
| Belgium                           | 21.8      | 10.3 | 8.1 | 1.5  | 1.9  | 32.8      | 14.7 | 13.8 | 2.8  | 1.5  | 11.0                   | 4.4   | 5.7 | 1.3  | (0.4) |
| Brazil                            | 13.6      | 8.5  | 5.1 | N.A. | N.A. | 25.9      | 15.8 | 10.1 | N.A. | N.A. | 12.3                   | 7.3   | 5.0 | N.A. | N.A.  |
| Bulgaria                          | 14.2      | 9.1  | 4.8 | 0.2  | 0.1  | 18.6      | 10.8 | 7.4  | 0.3  | 0.1  | 4.4                    | 1.7   | 2.6 | 0.1  | 0.0   |
| Canada                            | 14.1      | 4.7  | 7.6 | 1.3  | 0.5  | 22.0      | 5.9  | 13.4 | 2.4  | 0.3  | 7.9                    | 1.2   | 5.8 | 1.1  | (0.2) |
| China                             | 4.4       | 2.2  | 2.2 | N.A. | N.A. | 7.0       | 2.6  | 4.4  | 0.0  | 0.0  | 2.6                    | 0.4   | 2.2 | N.A. | N.A.  |
| Cyprus                            | 10.1      | 6.9  | 2.9 | 0.0  | 0.3  | 20.8      | 15.5 | 5.1  | 0.0  | 0.2  | 10.7                   | 8.6   | 2.2 | 0.0  | (0.1) |
| Czech Republic                    | 13.9      | 7.1  | 6.5 | 0.2  | 0.1  | 22.6      | 10.2 | 11.8 | 0.5  | 0.1  | 8.7                    | 3.1   | 5.3 | 0.3  | 0.0   |
| Denmark                           | 18.3      | 9.4  | 6.3 | 1.8  | 0.8  | 24.5      | 9.6  | 10.9 | 3.2  | 0.8  | 6.2                    | 0.2   | 4.6 | 1.4  | 0.0   |
| Estonia                           | 11.5      | 6.4  | 5.0 | 0.1  | 0.0  | 13.5      | 5.3  | 8.1  | 0.1  | 0.0  | 2.0                    | (1.1) | 3.1 | 0.0  | 0.0   |
| Finland                           | 19.5      | 10.7 | 5.9 | 1.9  | 1.0  | 28.8      | 13.3 | 10.3 | 4.2  | 1.0  | 9.3                    | 2.6   | 4.4 | 2.3  | 0.0   |
| France                            | 24.9      | 13.5 | 8.7 | 1.5  | 1.2  | 31.9      | 14.2 | 14.6 | 2.2  | 0.9  | 7.0                    | 0.7   | 5.9 | 0.7  | (0.3) |
| Germany                           | 20.0      | 10.2 | 7.9 | 1.0  | 0.9  | 29.5      | 12.3 | 14.4 | 2.2  | 0.6  | 9.5                    | 2.1   | 6.5 | 1.2  | (0.3) |
| Greece                            | 18.6      | 11.6 | 5.2 | 1.5  | 0.3  | 36.6      | 24.0 | 9.3  | 3.1  | 0.2  | 18.0                   | 12.4  | 4.1 | 1.6  | (0.1) |
| Hungary                           | 17.9      | 11.3 | 6.0 | 0.3  | 0.3  | 24.3      | 13.2 | 10.4 | 0.5  | 0.2  | 6.4                    | 1.9   | 4.4 | 0.2  | (0.1) |
| Iceland                           | 15.7      | 4.0  | 8.2 | 3.0  | 0.5  | 26.0      | 6.9  | 15.2 | 3.4  | 0.5  | 10.3                   | 2.9   | 7.0 | 0.4  | (0.1) |
| India                             | 2.6       | 1.7  | 0.9 | N.A. | N.A. | 2.7       | 0.9  | 1.8  | N.A. | N.A. | 0.1                    | (0.8) | 0.9 | N.A. | N.A.  |
| Indonesia                         | 2.2       | 0.9  | 1.3 | N.A. | N.A. | 4.7       | 2.1  | 2.6  | N.A. | N.A. | 2.5                    | 1.2   | 1.3 | N.A. | N.A.  |
| Ireland                           | 12.1      | 4.1  | 6.2 | 0.9  | 0.9  | 22.0      | 8.0  | 11.4 | 1.8  | 0.8  | 9.9                    | 3.9   | 5.2 | 0.9  | (0.1) |
| Italy                             | 22.4      | 14.0 | 6.3 | 1.8  | 0.3  | 28.8      | 14.7 | 11.0 | 2.8  | 0.3  | 6.4                    | 0.7   | 4.7 | 1.0  | 0.0   |
| Japan                             | 18.8      | 10.3 | 6.9 | 1.1  | 0.5  | 26.7      | 11.0 | 12.8 | 2.4  | 0.5  | 7.9                    | 0.7   | 5.9 | 1.3  | (0.1) |
| Korea                             | 5.8       | 0.6  | 4.0 | 0.6  | 0.5  | 17.2      | 4.4  | 9.2  | 3.1  | 0.5  | 11.4                   | 3.8   | 5.2 | 2.5  | (0.1) |
| Latvia                            | 9.2       | 5.1  | 3.5 | 0.4  | 0.2  | 12.9      | 6.5  | 5.5  | 0.7  | 0.2  | 3.7                    | 1.4   | 2.0 | 0.3  | 0.0   |
| Lithuania                         | 13.1      | 6.5  | 6.1 | 0.5  | 0.0  | 21.6      | 10.4 | 10.3 | 0.9  | 0.0  | 8.5                    | 3.9   | 4.2 | 0.4  | 0.0   |
| Luxembourg                        | 16.5      | 8.6  | 6.1 | 1.4  | 0.4  | 35.8      | 22.1 | 10.3 | 3.0  | 0.4  | 19.3                   | 13.5  | 4.2 | 1.6  | 0.0   |
| Malaysia                          | 5.0       | 2.9  | 2.1 | N.A. | N.A. | 9.4       | 5.6  | 3.8  | N.A. | N.A. | 4.4                    | 2.7   | 1.7 | N.A. | N.A.  |
| Malta                             | 14.9      | 8.3  | 5.2 | 1.0  | 0.4  | 26.2      | 12.0 | 11.7 | 2.2  | 0.3  | 11.3                   | 3.7   | 6.5 | 1.2  | (0.1) |
| Mexico                            | 5.6       | 2.4  | 3.2 | N.A. | N.A. | 9.9       | 3.5  | 6.4  | N.A. | N.A. | 4.3                    | 1.1   | 3.2 | N.A. | N.A.  |

Table 2

| Age-Related Spending By Component (cont.) |      |      |     |      |      |      |      |      |      |      |      |       |     |      |       |
|---|------|------|-----|------|------|------|------|------|------|------|------|-------|-----|------|-------|
| Netherlands                               | 16.1 | 6.5  | 5.1 | 3.5  | 1.0  | 28.2 | 10.3 | 9.2  | 7.7  | 1.0  | 12.1 | 3.8   | 4.1 | 4.2  | 0.0   |
| New Zealand                               | 14.4 | 5.4  | 7.7 | 0.6  | 0.6  | 20.9 | 8.2  | 10.7 | 1.7  | 0.3  | 6.5  | 2.7   | 3.0 | 1.1  | (0.3) |
| Norway                                    | 18.2 | 9.6  | 6.0 | 2.2  | 0.4  | 29.1 | 13.3 | 11.1 | 4.3  | 0.4  | 10.9 | 3.7   | 5.1 | 2.1  | 0.0   |
| Philippines                               | 2.5  | 1.1  | 1.4 | N.A. | N.A. | 4.5  | 2.0  | 2.5  | N.A. | N.A. | 2.0  | 0.9   | 1.1 | N.A. | N.A.  |
| Poland                                    | 15.5 | 10.8 | 4.2 | 0.4  | 0.1  | 17.4 | 9.1  | 7.3  | 0.9  | 0.1  | 1.9  | (1.7) | 3.1 | 0.5  | 0.0   |
| Portugal                                  | 20.8 | 11.9 | 7.7 | 0.1  | 1.1  | 27.9 | 13.3 | 13.6 | 0.2  | 0.8  | 7.1  | 1.4   | 5.9 | 0.1  | (0.3) |
| Romania                                   | 12.2 | 8.4  | 3.6 | 0.0  | 0.2  | 21.3 | 14.8 | 6.3  | 0.0  | 0.2  | 9.1  | 6.4   | 2.7 | 0.0  | 0.0   |
| Russia                                    | 13.0 | 9.4  | 3.6 | N.A. | N.A. | 25.5 | 18.8 | 6.7  | N.A. | N.A. | 12.5 | 9.4   | 3.1 | N.A. | N.A.  |
| Saudi Arabia                              | 5.1  | 2.2  | 2.9 | N.A. | N.A. | 12.6 | 7.1  | 5.5  | N.A. | N.A. | 7.5  | 4.9   | 2.6 | N.A. | N.A.  |
| Slovakia                                  | 12.0 | 6.6  | 5.1 | 0.2  | 0.1  | 19.5 | 9.4  | 9.5  | 0.5  | 0.1  | 7.5  | 2.8   | 4.4 | 0.3  | 0.0   |
| Slovenia                                  | 18.4 | 10.1 | 6.9 | 1.2  | 0.2  | 33.3 | 18.2 | 12.3 | 2.6  | 0.2  | 14.9 | 8.1   | 5.4 | 1.4  | 0.0   |
| South Africa                              | 4.5  | 1.3  | 3.2 | N.A. | N.A. | 8.0  | 2.3  | 5.7  | N.A. | N.A. | 3.5  | 1.0   | 2.5 | N.A. | N.A.  |
| Spain                                     | 16.9 | 8.9  | 5.9 | 0.7  | 1.4  | 28.6 | 15.5 | 10.9 | 1.3  | 0.9  | 11.7 | 6.6   | 5.0 | 0.6  | (0.5) |
| Sweden                                    | 21.6 | 9.6  | 7.6 | 3.5  | 0.9  | 27.4 | 9.0  | 12.2 | 5.3  | 0.9  | 5.8  | (0.6) | 4.6 | 1.8  | 0.0   |
| Switzerland                               | 16.3 | 10.6 | 4.6 | 0.6  | 0.5  | 20.8 | 13.1 | 5.8  | 1.4  | 0.5  | 4.5  | 2.5   | 1.2 | 0.8  | (0.1) |
| Turkey                                    | 10.9 | 7.3  | 3.6 | N.A. | N.A. | 18.6 | 11.4 | 7.2  | N.A. | N.A. | 7.7  | 4.1   | 3.6 | N.A. | N.A.  |
| Ukraine                                   | 16.9 | 12.8 | 4.1 | N.A. | N.A. | 31.8 | 24.2 | 7.6  | N.A. | N.A. | 14.9 | 11.4  | 3.5 | N.A. | N.A.  |
| U.K.                                      | 15.7 | 6.7  | 8.0 | 0.8  | 0.2  | 23.7 | 8.1  | 14.2 | 1.2  | 0.2  | 8.0  | 1.4   | 6.2 | 0.4  | 0.0   |
| U.S.                                      | 10.8 | 4.8  | 4.5 | 1.0  | 0.5  | 18.5 | 5.9  | 10.4 | 1.9  | 0.3  | 7.8  | 1.1   | 5.9 | 0.9  | (0.2) |
| <b>Medians</b>                            |      |      |     |      |      |      |      |      |      |      |      |       |     |      |       |
| Whole sample                              | 14.2 | 7.3  | 5.1 | 0.9  | 0.5  | 22.0 | 10.3 | 10.1 | 1.9  | 0.4  | 7.8  | 3.0   | 5.0 | 1.1  | (0.1) |
| Advanced economies                        | 16.7 | 9.2  | 6.3 | 1.1  | 0.5  | 27.0 | 12.2 | 11.1 | 2.4  | 0.5  | 10.3 | 3.0   | 4.8 | 1.3  | (0.1) |
| Emerging economies                        | 10.9 | 6.4  | 3.6 | N.A. | N.A. | 17.1 | 8.6  | 6.7  | N.A. | N.A. | 6.2  | 2.2   | 3.1 | N.A. | N.A.  |
| BRICs                                     | 8.7  | 5.4  | 2.9 | N.A. | N.A. | 16.3 | 9.2  | 5.6  | N.A. | N.A. | 7.6  | 3.9   | 2.7 | N.A. | N.A.  |
| Europe                                    | 16.3 | 9.4  | 6.0 | 1.0  | 0.4  | 26.0 | 13.1 | 10.4 | 2.0  | 0.4  | 9.7  | 3.7   | 4.4 | 1.1  | (0.1) |
| Asia                                      | 4.7  | 2.0  | 2.2 | N.A. | N.A. | 8.2  | 3.5  | 4.1  | N.A. | N.A. | 3.5  | 1.6   | 2.0 | N.A. | N.A.  |
| Latin America                             | 10.7 | 5.9  | 4.8 | N.A. | N.A. | 17.1 | 8.6  | 8.5  | N.A. | N.A. | 6.4  | 2.7   | 3.7 | N.A. | N.A.  |
| G-7                                       | 18.8 | 10.2 | 7.6 | 1.1  | 0.5  | 26.7 | 11.0 | 13.4 | 2.2  | 0.3  | 7.9  | 0.8   | 5.8 | 1.1  | (0.2) |
| AAA                                       | 17.4 | 9.5  | 6.2 | 1.4  | 0.7  | 27.8 | 11.3 | 11.0 | 2.4  | 0.5  | 10.5 | 1.8   | 4.8 | 1.0  | (0.1) |
| AA  | 16.9 | 8.9  | 6.9 | 1.0  | 0.8  | 26.7 | 11.0 | 11.4 | 2.1  | 0.6  | 9.8  | 2.1   | 4.5 | 1.1  | (0.1) |
| A/BBB                                     | 13.1 | 6.8  | 4.9 | 0.3  | 0.3  | 20.2 | 9.8  | 8.7  | 0.5  | 0.2  | 7.1  | 3.1   | 3.8 | 0.2  | (0.1) |
| Speculative-grade                         | 10.8 | 6.6  | 3.6 | N.A. | N.A. | 17.9 | 10.0 | 6.8  | N.A. | N.A. | 7.1  | 3.4   | 3.2 | N.A. | N.A.  |

e--Estimate. f--Forecast. PEN--Pensions. HCA--Health care. LTC--Long-term care. UNE--Unemployment benefits.

Table 3

| Long-Term Scenario: Base Case |   |       |       |       |       |   |       |        |        |        |
|-------------------------------|---|-------|-------|-------|-------|---|-------|--------|--------|--------|
|                               | --Net general government debt (% GDP)-- |       |       |       |       | --General government structural balance (% GDP)-- |       |        |        |        |
|                               | 2010e                                   | 2020f | 2030f | 2040f | 2050f | 2010e*  | 2020f | 2030f  | 2040f  | 2050f  |
| Argentina                     | 43.9                                    | 19.7  | 18.4  | 34.3  | 73.5  | (0.5)   | (0.1) | (1.5)  | (4.1)  | (8.4)  |
| Australia                     | 10.8                                    | 7.3   | 11.4  | 32.1  | 71.1  | (3.2)   | 0.1   | (1.5)  | (4.2)  | (7.5)  |
| Austria                       | 71.8                                    | 88.5  | 136.3 | 217.4 | 328.7 | (5.5)   | (6.0) | (10.9) | (16.6) | (23.3) |
| Belgium                       | 94.3                                    | 101.2 | 147.7 | 234.6 | 353.0 | (4.8)   | (5.6) | (11.7) | (18.4) | (25.3) |
| Brazil                        | 45.1                                    | 25.8  | 19.2  | 48.2  | 121.6 | (4.0)   | 0.5   | (1.7)  | (7.1)  | (15.0) |



Table 3

| Long-Term Scenario: Base Case (cont.) |         |         |         |         |        |        |        |        |        |        |
|---------------------------------------|---------|---------|---------|---------|--------|--------|--------|--------|--------|--------|
| Bulgaria                              | 4.6     | 11.7    | 27.2    | 60.7    | 126.0  | (5.9)  | (1.4)  | (3.0)  | (6.3)  | (11.2) |
| Canada                                | 33.3    | 20.3    | 28.7    | 59.0    | 108.4  | (4.7)  | (0.2)  | (3.1)  | (6.0)  | (9.7)  |
| China                                 | 17.1    | 21.1    | 35.5    | 58.3    | 93.0   | (3.0)  | (2.4)  | (3.6)  | (5.5)  | (7.8)  |
| Cyprus                                | 70.2    | 77.9    | 107.8   | 170.3   | 276.4  | (5.9)  | (5.5)  | (9.2)  | (14.7) | (22.8) |
| Czech Republic                        | 32.0    | 53.5    | 98.9    | 183.2   | 323.4  | (4.7)  | (5.0)  | (9.0)  | (15.7) | (25.1) |
| Denmark                               | 15.7    | 41.6    | 89.5    | 161.5   | 244.7  | (4.1)  | (4.9)  | (9.0)  | (13.6) | (17.6) |
| Estonia                               | 1.9     | 8.7     | 17.8    | 35.4    | 66.6   | (2.0)  | (0.9)  | (1.8)  | (3.3)  | (5.4)  |
| Finland                               | (40.1)  | (20.2)  | 27.6    | 108.4   | 211.6  | (4.2)  | (1.8)  | (7.3)  | (12.7) | (18.2) |
| France                                | 77.9    | 119.2   | 184.4   | 281.4   | 403.8  | (7.7)  | (9.0)  | (14.6) | (21.0) | (27.7) |
| Germany                               | 75.2    | 97.1    | 154.6   | 254.4   | 400.4  | (5.5)  | (6.4)  | (12.1) | (19.5) | (28.0) |
| Greece                                | 122.2   | 142.1   | 184.4   | 310.4   | 513.8  | (8.9)  | (6.6)  | (13.6) | (25.3) | (38.8) |
| Hungary                               | 75.9    | 64.6    | 62.8    | 87.1    | 144.7  | (5.5)  | (1.8)  | (3.0)  | (6.5)  | (11.1) |
| Iceland                               | 96.1    | 78.1    | 90.9    | 135.3   | 211.3  | (10.5) | (2.7)  | (6.1)  | (10.7) | (16.5) |
| India                                 | 76.5    | 64.4    | 59.9    | 60.2    | 63.1   | (8.3)  | (4.6)  | (4.6)  | (4.4)  | (4.0)  |
| Indonesia                             | 24.5    | 15.4    | 15.5    | 21.3    | 34.0   | (1.8)  | (0.8)  | (1.3)  | (2.2)  | (3.6)  |
| Ireland                               | 100.2   | 137.6   | 194.5   | 290.3   | 441.9  | (34.5) | (10.1) | (15.1) | (22.2) | (32.5) |
| Italy                                 | 114.6   | 108.8   | 123.3   | 173.4   | 245.3  | (5.3)  | (4.1)  | (6.9)  | (11.6) | (15.4) |
| Japan                                 | 105.5   | 183.2   | 308.0   | 487.8   | 753.1  | (10.1) | (16.6) | (23.9) | (34.7) | (49.5) |
| Korea                                 | 18.0    | (1.8)   | 5.5     | 48.0    | 137.2  | (0.5)  | 0.9    | (2.2)  | (7.4)  | (14.5) |
| Latvia                                | 36.1    | 42.6    | 57.6    | 91.6    | 156.0  | (7.4)  | (2.3)  | (4.2)  | (6.8)  | (10.9) |
| Lithuania                             | 33.4    | 46.8    | 85.3    | 165.2   | 298.6  | (8.0)  | (3.8)  | (8.2)  | (14.1) | (22.6) |
| Luxembourg                            | (13.6)  | 7.0     | 71.7    | 202.7   | 400.0  | (3.5)  | (3.2)  | (11.9) | (23.9) | (38.0) |
| Malaysia                              | 48.1    | 56.0    | 80.7    | 118.0   | 169.4  | (4.9)  | (5.2)  | (7.6)  | (10.4) | (13.7) |
| Malta                                 | 65.5    | 74.0    | 106.9   | 182.2   | 314.9  | (4.3)  | (4.7)  | (8.5)  | (15.3) | (24.5) |
| Mexico                                | 35.6    | 41.5    | 68.2    | 110.0   | 161.9  | (3.3)  | (3.9)  | (6.9)  | (9.9)  | (12.2) |
| Netherlands                           | 63.5    | 112.7   | 217.2   | 379.2   | 586.7  | (5.8)  | (11.0) | (19.8) | (30.7) | (42.0) |
| New Zealand                           | 5.2     | 50.6    | 117.5   | 220.7   | 357.6  | (6.4)  | (6.8)  | (12.4) | (19.6) | (27.4) |
| Norway                                | (114.5) | (201.1) | (236.1) | (167.2) | (33.0) | 11.4   | 16.1   | 7.7    | (5.2)  | (12.7) |
| Philippines                           | 36.1    | 18.7    | 9.3     | 7.1     | 10.6   | (3.4)  | (0.1)  | (0.1)  | (0.6)  | (1.2)  |
| Poland                                | 51.5    | 69.7    | 98.7    | 152.1   | 239.0  | (6.9)  | (5.2)  | (7.2)  | (10.5) | (15.4) |
| Portugal                              | 80.3    | 101.6   | 133.1   | 182.8   | 270.7  | (7.5)  | (6.2)  | (9.3)  | (13.0) | (19.2) |
| Romania                               | 28.7    | 63.4    | 123.5   | 227.5   | 408.6  | (7.2)  | (6.9)  | (12.0) | (19.8) | (31.2) |
| Russia                                | (3.4)   | 35.7    | 136.7   | 310.9   | 569.9  | (4.8)  | (7.6)  | (19.0) | (32.2) | (48.7) |
| Saudi Arabia                          | (230.4) | (125.5) | (76.3)  | (54.8)  | (46.2) | 6.6    | 2.0    | 2.0    | 2.0    | 1.6    |
| Slovakia                              | 40.3    | 58.3    | 98.2    | 183.6   | 329.5  | (6.0)  | (4.9)  | (9.0)  | (15.4) | (24.5) |
| Slovenia                              | 27.9    | 48.0    | 112.2   | 247.8   | 461.7  | (6.0)  | (5.2)  | (12.3) | (23.2) | (36.7) |
| South Africa                          | 27.7    | 38.2    | 47.0    | 65.2    | 93.0   | (6.2)  | (2.5)  | (3.8)  | (5.5)  | (7.7)  |
| Spain                                 | 55.3    | 105.8   | 179.9   | 320.7   | 544.7  | (9.6)  | (10.0) | (16.2) | (26.7) | (40.8) |
| Sweden                                | 18.7    | 7.3     | 16.9    | 48.8    | 94.3   | 0.0    | (0.1)  | (2.6)  | (5.7)  | (8.4)  |
| Switzerland                           | 16.7    | 17.8    | 30.9    | 57.7    | 100.5  | (0.9)  | (1.2)  | (2.9)  | (5.3)  | (8.4)  |
| Turkey                                | 42.2    | 27.2    | 38.6    | 68.9    | 119.0  | (4.5)  | (1.6)  | (4.9)  | (7.2)  | (11.7) |
| Ukraine                               | 24.9    | 39.2    | 93.3    | 185.7   | 331.7  | (5.5)  | (5.3)  | (12.1) | (19.4) | (30.6) |
| U.K.                                  | 71.6    | 117.1   | 192.0   | 297.3   | 431.5  | (10.4) | (10.1) | (16.1) | (23.2) | (31.0) |

Table 3

| Long-Term Scenario: Base Case (cont.) |      |       |       |       |       |        |       |        |        |        |
|---------------------------------------|------|-------|-------|-------|-------|--------|-------|--------|--------|--------|
| U.S.                                  | 68.9 | 104.6 | 180.4 | 284.7 | 415.1 | (10.4) | (9.5) | (15.6) | (22.5) | (30.0) |
| <b>Medians</b>                        |      |       |       |       |       |        |       |        |        |        |
| Whole sample                          | 36.1 | 48.0  | 89.5  | 161.5 | 244.7 | (5.3)  | (4.6) | (7.6)  | (12.7) | (17.6) |
| Advanced economies                    | 64.5 | 78.0  | 114.9 | 193.1 | 329.1 | (5.7)  | (5.4) | (10.1) | (16.0) | (24.5) |
| Emerging economies                    | 33.4 | 38.2  | 57.6  | 68.9  | 126.0 | (4.7)  | (2.4) | (4.2)  | (6.8)  | (11.2) |
| BRICs                                 | 31.1 | 30.8  | 47.7  | 59.3  | 107.3 | (3.9)  | (3.5) | (4.1)  | (6.3)  | (11.4) |
| Europe                                | 42.2 | 63.4  | 98.9  | 182.8 | 314.9 | (5.5)  | (5.0) | (9.0)  | (15.3) | (23.3) |
| Asia                                  | 30.3 | 19.9  | 25.5  | 53.1  | 78.0  | (3.2)  | (1.6) | (2.9)  | (4.9)  | (5.9)  |
| Latin America                         | 43.9 | 25.8  | 19.2  | 48.2  | 121.6 | (2.1)  | (0.1) | (1.7)  | (7.1)  | (12.2) |
| G-7                                   | 75.2 | 108.8 | 180.4 | 281.4 | 403.8 | (8.0)  | (9.0) | (14.6) | (21.0) | (28.0) |
| AAA                                   | 26.0 | 30.9  | 80.6  | 182.1 | 286.7 | (4.4)  | (4.0) | (9.9)  | (15.1) | (20.7) |
| AA                                    | 55.3 | 101.2 | 147.7 | 247.8 | 441.9 | (6.4)  | (6.8) | (12.4) | (22.2) | (32.5) |
| A/BBB                                 | 42.7 | 54.8  | 83.0  | 126.6 | 190.4 | (5.1)  | (4.0) | (6.9)  | (10.4) | (15.2) |
| Speculative-grade                     | 36.1 | 33.2  | 48.1  | 80.2  | 137.5 | (5.0)  | (2.0) | (4.5)  | (7.0)  | (11.3) |

\*For 2010, this figure is the headline general government balance. e--Estimate. f--Forecast.

Table 4

| Sustainability Gap |                            |  |                 |                              |  |                 |
|--------------------|----------------------------|--|-----------------|------------------------------|--|-----------------|
| (% GDP)            | --Base-case scenario--     |  |                 | --Balanced budget scenario-- |  |                 |
|                    | Initial budgetary position | Long-term changes in the primary balance | RPB 2013f-2017f | Initial budgetary position   | Long-term changes in the primary balance | RPB 2017f-2021f |
| Argentina          | (1.2)                      | 6.3                                      | 6.2             | (1.2)                        | 6.2                                      | 5.9             |
| Australia          | (0.5)                      | 4.3                                      | 4.4             | (0.5)                        | 4.4                                      | 4.4             |
| Austria            | 1.3                        | 6.2                                      | 6.6             | (2.5)                        | 5.7                                      | 1.5             |
| Belgium            | (0.3)                      | 8.8                                      | 9.3             | (3.3)                        | 8.1                                      | 4.3             |
| Brazil             | (2.6)                      | 12.7                                     | 12.4            | (2.4)                        | 12.4                                     | 11.8            |
| Bulgaria           | 1.3                        | 2.7                                      | 3.1             | (0.2)                        | 3.0                                      | 1.8             |
| Canada             | (2.0)                      | 6.4                                      | 6.5             | (1.0)                        | 5.7                                      | 5.6             |
| China              | 1.1                        | 2.3                                      | 2.2             | (0.6)                        | 2.2                                      | 0.2             |
| Cyprus             | 0.4                        | 8.5                                      | 8.3             | (3.4)                        | 7.8                                      | 2.8             |
| Czech Republic     | 2.5                        | 5.6                                      | 6.1             | (1.1)                        | 5.6                                      | 1.9             |
| Denmark            | 1.3                        | 4.9                                      | 4.6             | (1.1)                        | 3.9                                      | 0.0             |
| Estonia            | 0.6                        | 1.3                                      | 1.4             | (0.2)                        | 1.2                                      | 0.5             |
| Finland            | 0.7                        | 7.2                                      | 6.7             | 0.9                          | 6.0                                      | 4.3             |
| France             | 3.2                        | 5.6                                      | 6.2             | (3.5)                        | 5.3                                      | (1.6)           |
| Germany            | 1.7                        | 6.7                                      | 7.7             | (2.3)                        | 6.5                                      | 2.6             |
| Greece             | (0.2)                      | 12.8                                     | 14.3            | (4.8)                        | 12.5                                     | 8.1             |
| Hungary            | (0.7)                      | 4.3                                      | 5.5             | (2.7)                        | 4.5                                      | 3.2             |
| Iceland            | (1.8)                      | 8.1                                      | 8.5             | (3.2)                        | 7.4                                      | 5.5             |
| India              | 0.7                        | (0.3)                                    | (0.9)           | (4.5)                        | 3.5                                      | (2.6)           |
| Indonesia          | (0.6)                      | 3.2                                      | 2.8             | (1.1)                        | 2.9                                      | 1.8             |
| Ireland            | 3.7                        | 7.6                                      | 8.4             | (4.3)                        | 7.3                                      | (0.6)           |
| Italy              | (0.5)                      | 4.8                                      | 6.2             | (3.5)                        | 4.6                                      | 2.4             |

Table 4

| <b>Sustainability Gap (cont.)</b> |        |      |        |        |      |       |
|-----------------------------------|--------|------|--------|--------|------|-------|
| Japan                             | 11.2   | 5.0  | 8.3    | (1.3)  | 4.4  | (5.3) |
| Korea                             | (2.3)  | 7.6  | 7.3    | (0.1)  | 7.3  | 8.2   |
| Latvia                            | 1.0    | 2.3  | 3.2    | (1.3)  | 2.4  | 0.7   |
| Lithuania                         | 1.2    | 5.5  | 6.0    | (1.5)  | 5.5  | 2.6   |
| Luxembourg                        | 1.1    | 16.5 | 16.2   | 0.2    | 16.2 | 13.6  |
| Malaysia                          | 1.7    | 4.3  | 3.9    | (2.2)  | 3.8  | (1.0) |
| Malta                             | 0.5    | 7.6  | 7.9    | (2.3)  | 6.9  | 3.5   |
| Mexico                            | 1.0    | 3.7  | 3.3    | (1.5)  | 3.1  | (0.4) |
| Netherlands                       | 4.3    | 9.2  | 9.2    | (1.8)  | 8.4  | 1.0   |
| New Zealand                       | 4.8    | 5.1  | 5.9    | (1.0)  | 5.8  | 0.3   |
| Norway                            | (13.8) | 25.5 | 23.4   | (13.0) | 22.9 | 17.5  |
| Philippines                       | (1.8)  | 2.6  | 1.8    | (1.7)  | 2.3  | 1.5   |
| Poland                            | 2.9    | 1.4  | 2.8    | (2.0)  | 1.9  | (2.0) |
| Portugal                          | 1.2    | 5.2  | 5.9    | (3.1)  | 4.7  | 0.4   |
| Romania                           | 4.0    | 5.8  | 6.2    | (1.4)  | 5.9  | 0.5   |
| Russia                            | 2.4    | 16.7 | 15.8   | (7.7)  | 15.9 | 2.5   |
| Saudi Arabia                      | (6.7)  | 6.7  | (19.7) | 15.7   | 7.7  | 16.1  |
| Slovakia                          | 2.6    | 4.7  | 5.4    | (1.4)  | 5.0  | 1.3   |
| Slovenia                          | 1.8    | 9.9  | 9.9    | (1.0)  | 9.6  | 5.8   |
| South Africa                      | (0.0)  | 3.5  | 3.1    | (2.8)  | 3.1  | (0.3) |
| Spain                             | 5.3    | 8.1  | 8.7    | (2.4)  | 7.9  | 0.3   |
| Sweden                            | (1.0)  | 4.6  | 4.7    | (0.3)  | 4.3  | 4.4   |
| Switzerland                       | 0.1    | 3.4  | 3.5    | (0.4)  | 3.1  | 2.4   |
| Turkey                            | (1.2)  | 7.7  | 7.3    | (2.3)  | 7.2  | 4.7   |
| Ukraine                           | 1.1    | 13.0 | 12.3   | (1.6)  | 12.2 | 7.4   |
| U.K.                              | 4.2    | 6.4  | 6.7    | (3.5)  | 5.9  | (2.2) |
| U.S.                              | 3.3    | 7.2  | 7.2    | (3.0)  | 6.4  | (1.1) |
| <b>Medians</b>                    |        |      |        |        |      |       |
| Whole sample                      | 1.0    | 5.8  | 6.2    | (1.7)  | 5.7  | 1.9   |
| Advanced economies                | 1.1    | 7.0  | 7.2    | (2.3)  | 6.2  | 2.5   |
| Emerging economies                | 1.0    | 4.3  | 3.3    | (1.5)  | 3.8  | 1.8   |
| BRICs                             | 0.9    | 7.5  | 7.3    | (3.5)  | 7.9  | 1.4   |
| Europe                            | 1.2    | 6.4  | 6.7    | (2.3)  | 5.9  | 2.4   |
| Asia                              | 0.0    | 3.7  | 2.5    | (1.2)  | 3.7  | 0.9   |
| Latin America                     | (1.2)  | 6.3  | 6.5    | (1.5)  | 6.2  | 5.6   |
| G-7                               | 3.2    | 6.4  | 6.6    | (3.0)  | 5.7  | (0.2) |

f--Forecast. RPB--Required primary balance.

Table 5

| Base Case Scenario: Net General Government Debt |                              |        |                       |                                |        |                       |                                |        |                       |
|---|------------------------------|--------|-----------------------|--------------------------------|--------|-----------------------|--------------------------------|--------|-----------------------|
| (% GDP)   | --2010 Global Aging Report-- |        |                       | --2007 Global Graying Report-- |        |                       | --2006 Global Graying Report-- |        |                       |
|   | 2010e                        | 2050f  | Change<br>2010e-2050f | 2010e                          | 2050f  | Change<br>2010e-2050f | 2010e                          | 2050f  | Change<br>2010e-2050f |
| Argentina                                       | 43.9                         | 73.5   | 29.6                  | N.A.                           | N.A.   | N.A.                  | N.A.                           | N.A.   | N.A.                  |
| Australia                                       | 10.8                         | 71.1   | 60.3                  | (4.0)                          | 78.0   | 82.0                  | (5.0)                          | 105.0  | 110.0                 |
| Austria   | 71.8                         | 328.7  | 256.9                 | 47.0                           | 105.0  | 58.0                  | 48.0                           | 91.0   | 43.0                  |
| Belgium   | 94.3                         | 353.0  | 258.7                 | 66.0                           | 134.0  | 68.0                  | 71.0                           | 130.0  | 59.0                  |
| Brazil  | 45.1                         | 121.6  | 76.6                  | N.A.                           | N.A.   | N.A.                  | N.A.                           | N.A.   | N.A.                  |
| Bulgaria  | 4.6                          | 126.0  | 121.4                 | N.A.                           | N.A.   | N.A.                  | N.A.                           | N.A.   | N.A.                  |
| Canada  | 33.3                         | 108.4  | 75.0                  | 18.0                           | 48.0   | 30.0                  | 19.0                           | (11.0) | (30.0)                |
| China   | 17.1                         | 93.0   | 75.8                  | N.A.                           | N.A.   | N.A.                  | N.A.                           | N.A.   | N.A.                  |
| Cyprus  | 70.2                         | 276.4  | 206.3                 | 44.0                           | 290.0  | 246.0                 | 47.0                           | 327.0  | 280.0                 |
| Czech Republic                                  | 32.0                         | 323.4  | 291.5                 | 32.0                           | 388.0  | 356.0                 | 38.0                           | 413.0  | 375.0                 |
| Denmark   | 15.7                         | 244.7  | 229.0                 | 12.0                           | (39.0) | (51.0)                | 8.0                            | (40.0) | (48.0)                |
| Estonia   | 1.9                          | 66.6   | 64.6                  | (13.0)                         | (45.0) | (32.0)                | (4.0)                          | 65.0   | 69.0                  |
| Finland   | (40.1)                       | 211.6  | 251.7                 | (16.0)                         | 39.0   | 55.0                  | (33.0)                         | 92.0   | 125.0                 |
| France  | 77.9                         | 403.8  | 325.1                 | 56.0                           | 167.0  | 111.0                 | 60.0                           | 223.0  | 163.0                 |
| Germany   | 75.2                         | 400.4  | 325.2                 | 56.0                           | 99.0   | 43.0                  | 63.0                           | 180.0  | 117.0                 |
| Greece  | 122.2                        | 513.8  | 391.6                 | 92.0                           | 436.0  | 344.0                 | 99.0                           | 450.0  | 351.0                 |
| Hungary   | 75.9                         | 144.7  | 68.8                  | 62.0                           | 306.0  | 244.0                 | 72.0                           | 469.0  | 397.0                 |
| Iceland   | 96.1                         | 211.3  | 115.2                 | N.A.                           | N.A.   | N.A.                  | N.A.                           | N.A.   | N.A.                  |
| India   | 76.5                         | 63.1   | (13.4)                | N.A.                           | N.A.   | N.A.                  | N.A.                           | N.A.   | N.A.                  |
| Indonesia                                       | 24.5                         | 34.0   | 9.5                   | N.A.                           | N.A.   | N.A.                  | N.A.                           | N.A.   | N.A.                  |
| Ireland   | 100.2                        | 441.9  | 341.7                 | 1.0                            | 132.0  | 131.0                 | 9.0                            | 170.0  | 161.0                 |
| Italy   | 114.6                        | 245.3  | 130.8                 | 98.0                           | 118.0  | 20.0                  | 101.0                          | 220.0  | 119.0                 |
| Japan   | 105.5                        | 753.1  | 647.6                 | 92.0                           | 397.0  | 305.0                 | 108.0                          | 530.0  | 422.0                 |
| Korea   | 18.0                         | 137.2  | 119.2                 | 31.0                           | 311.0  | 280.0                 | 23.0                           | 262.0  | 239.0                 |
| Latvia  | 36.1                         | 156.0  | 119.9                 | 2.0                            | 41.0   | 39.0                  | 12.0                           | 128.0  | 116.0                 |
| Lithuania                                       | 33.4                         | 298.6  | 265.2                 | 8.0                            | 139.0  | 131.0                 | 14.0                           | 151.0  | 137.0                 |
| Luxembourg                                      | (13.6)                       | 400.0  | 413.6                 | (28.0)                         | 197.0  | 225.0                 | (23.0)                         | 276.0  | 299.0                 |
| Malaysia  | 48.1                         | 169.4  | 121.3                 | N.A.                           | N.A.   | N.A.                  | N.A.                           | N.A.   | N.A.                  |
| Malta   | 65.5                         | 314.9  | 249.4                 | 56.0                           | 145.0  | 89.0                  | 70.0                           | 188.0  | 118.0                 |
| Mexico  | 35.6                         | 161.9  | 126.3                 | N.A.                           | N.A.   | N.A.                  | N.A.                           | N.A.   | N.A.                  |
| Netherlands                                     | 63.5                         | 586.7  | 523.3                 | 36.0                           | 161.0  | 125.0                 | 40.0                           | 162.0  | 122.0                 |
| New Zealand                                     | 5.2                          | 357.6  | 352.4                 | (3.0)                          | 93.0   | 96.0                  | (1.0)                          | 84.0   | 85.0                  |
| Norway  | (114.5)                      | (33.0) | 81.4                  | (171.0)                        | (97.0) | 74.0                  | (166.0)                        | (2.0)  | 164.0                 |
| Philippines                                     | 36.1                         | 10.6   | (25.5)                | N.A.                           | N.A.   | N.A.                  | N.A.                           | N.A.   | N.A.                  |
| Poland  | 51.5                         | 239.0  | 187.6                 | 39.0                           | 189.0  | 150.0                 | 45.0                           | 262.0  | 217.0                 |
| Portugal  | 80.3                         | 270.7  | 190.4                 | 62.0                           | 355.0  | 293.0                 | 66.0                           | 437.0  | 371.0                 |
| Romania   | 28.7                         | 408.6  | 379.9                 | N.A.                           | N.A.   | N.A.                  | N.A.                           | N.A.   | N.A.                  |
| Russia  | (3.4)                        | 569.9  | 573.3                 | N.A.                           | N.A.   | N.A.                  | N.A.                           | N.A.   | N.A.                  |
| Saudi Arabia                                    | (230.4)                      | (46.2) | 184.3                 | N.A.                           | N.A.   | N.A.                  | N.A.                           | N.A.   | N.A.                  |
| Slovakia  | 40.3                         | 329.5  | 289.3                 | 27.0                           | 230.0  | 203.0                 | 31.0                           | 171.0  | 140.0                 |

Table 5

| Base Case Scenario: Net General Government Debt (cont.) |      |       |       |        |       |       |        |       |       |
|---|------|-------|-------|--------|-------|-------|--------|-------|-------|
| Slovenia  | 27.9 | 461.7 | 433.8 | 23.0   | 326.0 | 303.0 | 27.0   | 308.0 | 281.0 |
| South Africa  | 27.7 | 93.0  | 65.2  | N.A.   | N.A.  | N.A.  | N.A.   | N.A.  | N.A.  |
| Spain   | 55.3 | 544.7 | 489.4 | 16.0   | 151.0 | 135.0 | 21.0   | 184.0 | 163.0 |
| Sweden  | 18.7 | 94.3  | 75.6  | (17.0) | 51.0  | 68.0  | (25.0) | 34.0  | 59.0  |
| Switzerland   | 16.7 | 100.5 | 83.8  | N.A.   | N.A.  | N.A.  | N.A.   | N.A.  | N.A.  |
| Turkey  | 42.2 | 119.0 | 76.8  | N.A.   | N.A.  | N.A.  | N.A.   | N.A.  | N.A.  |
| Ukraine   | 24.9 | 331.7 | 306.9 | N.A.   | N.A.  | N.A.  | N.A.   | N.A.  | N.A.  |
| U.K.  | 71.6 | 431.5 | 359.9 | 40.0   | 162.0 | 122.0 | 42.0   | 182.0 | 140.0 |
| U.S.  | 68.9 | 415.1 | 346.2 | 55.0   | 242.0 | 187.0 | 53.0   | 350.0 | 297.0 |
| <b>Medians</b>  |      |       |       |        |       |       |        |       |       |
| Whole sample  | 36.1 | 244.7 | 208.5 | 31.5   | 148.0 | 116.5 | 38.0   | 182.0 | 144.0 |
| G-7   | 75.2 | 403.8 | 328.6 | 56.0   | 162.0 | 106.0 | 60.0   | 220.0 | 160.0 |

e--Estimate. f--Forecast. N.A.--Not available.

Table 6

| (% GDP)        | --2010 Global Aging Report-- |        |                     | --2007 Global Graying Report-- |        |                     | --2006 Global Graying Report-- |        |                     |
|----------------|------------------------------|--------|---------------------|--------------------------------|--------|---------------------|--------------------------------|--------|---------------------|
|                | 2010e*                       | 2050f  | Average 2010e-2050f | 2010e                          | 2050f  | Average 2010e-2050f | 2010e                          | 2050f  | Average 2010e-2050f |
| Argentina      | (0.5)                        | (8.4)  | (7.9)               | N.A.                           | N.A.   | N.A.                | N.A.                           | N.A.   | N.A.                |
| Australia      | (3.2)                        | (7.5)  | (4.4)               | 1.2                            | (8.0)  | (9.2)               | 0.6                            | (10.0) | (10.6)              |
| Austria        | (5.5)                        | (23.3) | (17.8)              | (1.3)                          | (5.8)  | (4.5)               | (1.1)                          | (4.8)  | (3.7)               |
| Belgium        | (4.8)                        | (25.3) | (20.5)              | 0.3                            | (10.2) | (10.5)              | 0.2                            | (9.8)  | (10.0)              |
| Brazil         | (4.0)                        | (15.0) | (11.0)              | N.A.                           | N.A.   | N.A.                | N.A.                           | N.A.   | N.A.                |
| Bulgaria       | (5.9)                        | (11.2) | (5.3)               | N.A.                           | N.A.   | N.A.                | N.A.                           | N.A.   | N.A.                |
| Canada         | (4.7)                        | (9.7)  | (5.0)               | 1.2                            | (4.1)  | (5.3)               | 2.0                            | 0.1    | (1.9)               |
| China          | (3.0)                        | (7.8)  | (4.8)               | N.A.                           | N.A.   | N.A.                | N.A.                           | N.A.   | N.A.                |
| Cyprus         | (5.9)                        | (22.8) | (16.9)              | (2.1)                          | (28.4) | (26.3)              | (2.9)                          | (31.0) | (28.1)              |
| Czech Republic | (4.7)                        | (25.1) | (20.4)              | (4.1)                          | (31.2) | (27.1)              | (4.6)                          | (32.7) | (28.1)              |
| Denmark        | (4.1)                        | (17.6) | (13.5)              | 2.0                            | 2.0    | 0.0                 | 2.0                            | 2.0    | 0.0                 |
| Estonia        | (2.0)                        | (5.4)  | (3.4)               | 2.0                            | 1.7    | (0.3)               | 0.5                            | (6.7)  | (7.2)               |
| Finland        | (4.2)                        | (18.2) | (14.0)              | 2.0                            | (5.1)  | (7.1)               | 2.0                            | (9.5)  | (11.5)              |
| France         | (7.7)                        | (27.7) | (20.0)              | (1.8)                          | (11.8) | (10.0)              | (3.0)                          | (15.6) | (12.6)              |
| Germany        | (5.5)                        | (28.0) | (22.5)              | (0.6)                          | (7.2)  | (6.6)               | (2.2)                          | (12.5) | (10.3)              |
| Greece         | (8.9)                        | (38.8) | (29.9)              | (3.5)                          | (34.2) | (30.7)              | (4.1)                          | (34.9) | (30.8)              |
| Hungary        | (5.5)                        | (11.1) | (5.6)               | (3.0)                          | (24.3) | (21.3)              | (7.3)                          | (34.6) | (27.3)              |
| Iceland        | (10.5)                       | (16.5) | (6.0)               | N.A.                           | N.A.   | N.A.                | N.A.                           | N.A.   | N.A.                |
| India          | (8.3)                        | (4.0)  | 4.3                 | N.A.                           | N.A.   | N.A.                | N.A.                           | N.A.   | N.A.                |
| Indonesia      | (1.8)                        | (3.6)  | (1.8)               | N.A.                           | N.A.   | N.A.                | N.A.                           | N.A.   | N.A.                |
| Ireland        | (34.5)                       | (32.5) | 2.0                 | 1.3                            | (14.2) | (15.5)              | 0.3                            | (16.7) | (17.0)              |
| Italy          | (5.3)                        | (15.4) | (10.1)              | (2.0)                          | (5.6)  | (3.6)               | (4.0)                          | (12.4) | (8.4)               |
| Japan          | (10.1)                       | (49.5) | (39.4)              | (3.6)                          | (28.1) | (24.5)              | (6.4)                          | (37.0) | (30.6)              |
| Korea          | (0.5)                        | (14.5) | (14.0)              | (0.5)                          | (27.1) | (26.6)              | 0.6                            | (23.8) | (24.4)              |

Table 6

| Base Case Scenario: General Government Structural Balance (cont.) |        |        |        |       |        |        |       |        |        |
|---|--------|--------|--------|-------|--------|--------|-------|--------|--------|
| Latvia  | (7.4)  | (10.9) | (3.5)  | 1.9   | (5.5)  | (7.4)  | (0.7) | (10.8) | (10.1) |
| Lithuania   | (8.0)  | (22.6) | (14.6) | (0.3) | (11.7) | (11.4) | (1.2) | (12.0) | (10.8) |
| Luxembourg  | (3.5)  | (38.0) | (34.5) | 0.8   | (19.6) | (20.4) | (1.4) | (25.5) | (24.1) |
| Malaysia  | (4.9)  | (13.7) | (8.9)  | N.A.  | N.A.   | N.A.   | N.A.  | N.A.   | N.A.   |
| Malta   | (4.3)  | (24.5) | (20.2) | (2.6) | (8.9)  | (6.3)  | (3.9) | (11.6) | (7.7)  |
| Mexico  | (3.3)  | (12.2) | (8.9)  | N.A.  | N.A.   | N.A.   | N.A.  | N.A.   | N.A.   |
| Netherlands   | (5.8)  | (42.0) | (36.2) | 0.0   | (12.6) | (12.6) | (0.1) | (12.5) | (12.4) |
| New Zealand   | (6.4)  | (27.4) | (21.1) | 2.0   | (10.2) | (12.2) | 2.0   | (9.4)  | (11.4) |
| Norway  | 11.4   | (12.7) | (24.2) | 19.2  | (10.7) | (29.9) | 17.3  | (17.9) | (35.2) |
| Philippines   | (3.4)  | (1.2)  | 2.1    | N.A.  | N.A.   | N.A.   | N.A.  | N.A.   | N.A.   |
| Poland  | (6.9)  | (15.4) | (8.5)  | (0.9) | (14.2) | (13.3) | (3.8) | (18.5) | (14.7) |
| Portugal  | (7.5)  | (19.2) | (11.7) | (2.9) | (28.6) | (25.7) | (4.5) | (34.0) | (29.5) |
| Romania   | (7.2)  | (31.2) | (24.0) | N.A.  | N.A.   | N.A.   | N.A.  | N.A.   | N.A.   |
| Russia  | (4.8)  | (48.7) | (43.9) | N.A.  | N.A.   | N.A.   | N.A.  | N.A.   | N.A.   |
| Saudi Arabia  | 6.6    | 1.6    | (5.0)  | N.A.  | N.A.   | N.A.   | N.A.  | N.A.   | N.A.   |
| Slovakia  | (6.0)  | (24.5) | (18.5) | (1.8) | (18.2) | (16.4) | (1.7) | (13.5) | (11.8) |
| Slovenia  | (6.0)  | (36.7) | (30.7) | (2.1) | (27.8) | (25.7) | (1.9) | (26.5) | (24.6) |
| South Africa  | (6.2)  | (7.7)  | (1.5)  | N.A.  | N.A.   | N.A.   | N.A.  | N.A.   | N.A.   |
| Spain   | (9.6)  | (40.8) | (31.2) | 1.6   | (15.9) | (17.5) | 0.9   | (17.9) | (18.8) |
| Sweden  | 0.0    | (8.4)  | (8.4)  | 1.9   | (6.0)  | (7.9)  | 2.0   | (5.0)  | (7.0)  |
| Switzerland   | (0.9)  | (8.4)  | (7.5)  | N.A.  | N.A.   | N.A.   | N.A.  | N.A.   | N.A.   |
| Turkey  | (4.5)  | (11.7) | (7.2)  | N.A.  | N.A.   | N.A.   | N.A.  | N.A.   | N.A.   |
| Ukraine   | (5.5)  | (30.6) | (25.1) | N.A.  | N.A.   | N.A.   | N.A.  | N.A.   | N.A.   |
| U.K.  | (10.4) | (31.0) | (20.6) | (2.2) | (12.4) | (10.2) | (2.7) | (13.7) | (11.0) |
| U.S.  | (10.4) | (30.0) | (19.6) | (2.1) | (20.7) | (18.6) | (4.5) | (28.8) | (24.3) |
| <b>Medians</b>  |        |        |        |       |        |        |       |        |        |
| Whole sample  | (5.4)  | (17.1) | (12.6) | (0.6) | (12.1) | (11.6) | (1.3) | (13.6) | (12.3) |
| G-7   | (5.9)  | (27.7) | (14.0) | (2.0) | (11.8) | (9.8)  | (3.0) | (13.7) | (10.7) |

\*For 2010, this figure is the headline general government balance. e--Estimate. f--Forecast. N.A.--Not available.

Table 7

| Real GDP Growth | --2010 Global Aging Report-- |       |                     | --2006 Global Graying Report-- |       |                     |
|-----------------|------------------------------|-------|---------------------|--------------------------------|-------|---------------------|
|                 | 2010e                        | 2050f | Average 2010e-2050f | 2010e                          | 2050f | Average 2010e-2050f |
| (%)             |                              |       |                     |                                |       |                     |
| Argentina       | 4.5                          | 2.9   | 3.3                 | N.A.                           | N.A.  | N.A.                |
| Australia       | 3.0                          | 2.3   | 2.7                 | 3.0                            | 1.9   | 2.3                 |
| Austria         | 1.5                          | 1.5   | 1.6                 | 2.6                            | 1.2   | 1.5                 |
| Belgium         | 1.3                          | 1.7   | 1.8                 | 2.7                            | 1.5   | 1.7                 |
| Brazil          | 7.5                          | 3.2   | 4.0                 | N.A.                           | N.A.  | N.A.                |
| Bulgaria        | (1.0)                        | 0.3   | 1.6                 | N.A.                           | N.A.  | N.A.                |
| Canada          | 3.0                          | 1.9   | 2.3                 | 2.8                            | 1.8   | 2.1                 |
| China           | 9.8                          | 2.4   | 4.4                 | N.A.                           | N.A.  | N.A.                |
| Cyprus          | (0.2)                        | 1.8   | 2.7                 | 4.5                            | 1.2   | 2.8                 |

Table 7

| Real GDP Growth (cont.) |       |       |     |      |      |      |
|-------------------------|-------|-------|-----|------|------|------|
| Czech Republic          | 1.7   | 0.7   | 1.7 | 3.6  | 0.8  | 1.9  |
| Denmark                 | 1.8   | 1.9   | 1.7 | 2.1  | 1.8  | 1.7  |
| Estonia                 | 1.0   | 0.6   | 1.9 | 5.6  | 0.6  | 2.7  |
| Finland                 | 1.0   | 1.5   | 1.6 | 2.2  | 1.4  | 1.8  |
| France                  | 1.6   | 1.8   | 1.8 | 2.4  | 1.6  | 1.8  |
| Germany                 | 2.5   | 1.0   | 1.2 | 2.3  | 1.2  | 1.4  |
| Greece                  | (4.0) | 1.2   | 1.4 | 2.2  | 1.1  | 1.5  |
| Hungary                 | 0.0   | 0.8   | 1.8 | 3.3  | 1.1  | 2.1  |
| Iceland                 | (1.5) | 1.7   | 1.9 | N.A. | N.A. | N.A. |
| India                   | 8.0   | 4.2   | 6.2 | N.A. | N.A. | N.A. |
| Indonesia               | 6.0   | 4.4   | 4.9 | N.A. | N.A. | N.A. |
| Ireland                 | (0.8) | 1.6   | 2.2 | 5.2  | 1.6  | 2.9  |
| Italy                   | 0.7   | 1.3   | 1.4 | 1.9  | 1.2  | 1.3  |
| Japan                   | 1.1   | 0.6   | 1.2 | 2.3  | 0.9  | 1.2  |
| Korea                   | 5.0   | 0.5   | 2.0 | 3.1  | 0.7  | 1.4  |
| Latvia                  | 1.1   | (0.1) | 1.6 | 7.4  | 0.4  | 3.1  |
| Lithuania               | 1.7   | 0.2   | 1.7 | 6.1  | 0.4  | 2.8  |
| Luxembourg              | 1.8   | 2.2   | 2.4 | 3.9  | 3.0  | 3.2  |
| Malaysia                | 6.0   | 3.0   | 4.1 | N.A. | N.A. | N.A. |
| Malta                   | 0.8   | 0.8   | 1.7 | 2.5  | 1.7  | 2.4  |
| Mexico                  | 4.2   | 2.4   | 3.3 | N.A. | N.A. | N.A. |
| Netherlands             | 1.3   | 1.5   | 1.5 | 2.1  | 1.7  | 1.7  |
| New Zealand             | 0.7   | 1.7   | 2.1 | 3.0  | 1.8  | 2.0  |
| Norway                  | 1.5   | 1.9   | 1.9 | 2.4  | 2.1  | 2.3  |
| Philippines             | 3.7   | 4.8   | 5.1 | N.A. | N.A. | N.A. |
| Poland                  | 3.0   | 0.3   | 1.8 | 5.0  | 0.4  | 2.3  |
| Portugal                | 0.0   | 1.2   | 1.8 | 2.4  | 1.0  | 1.5  |
| Romania                 | 0.8   | 0.3   | 1.9 | N.A. | N.A. | N.A. |
| Russia                  | 4.5   | 1.5   | 2.4 | N.A. | N.A. | N.A. |
| Saudi Arabia            | 3.8   | 3.6   | 4.6 | N.A. | N.A. | N.A. |
| Slovakia                | 2.5   | 0.2   | 1.9 | 5.3  | 0.3  | 2.3  |
| Slovenia                | 1.3   | 0.8   | 1.5 | 3.6  | 1.1  | 2.1  |
| South Africa            | 2.3   | 3.1   | 3.5 | N.A. | N.A. | N.A. |
| Spain                   | (0.6) | 1.1   | 1.7 | 2.8  | 1.0  | 1.6  |
| Sweden                  | 1.5   | 1.7   | 2.0 | 2.9  | 1.8  | 2.2  |
| Switzerland             | 1.2   | 1.6   | 1.7 | N.A. | N.A. | N.A. |
| Turkey                  | 3.7   | 3.1   | 4.6 | N.A. | N.A. | N.A. |
| Ukraine                 | 4.0   | 2.2   | 3.4 | N.A. | N.A. | N.A. |
| U.K.                    | 1.4   | 1.9   | 2.1 | 3.0  | 1.3  | 1.9  |
| U.S.                    | 3.0   | 2.0   | 2.3 | 3.0  | 2.7  | 2.7  |
| <b>Medians</b>          |       |       |     |      |      |      |
| Whole sample            | 1.6   | 1.7   | 1.9 | 3.0  | 1.2  | 2.0  |

**Table 7**

| Real GDP Growth (cont.) |     |     |     |     |     |     |
|-------------------------|-----|-----|-----|-----|-----|-----|
| G-7                     | 1.6 | 1.8 | 1.8 | 2.4 | 1.3 | 1.8 |

e--Estimate. f--Forecast. N.A.--Not available.

**Table 8**

| Pension Spending | --2010 Global Aging Report-- |       |       | --2006 Global Graying Report-- |       |       |                    |
|------------------|------------------------------|-------|-------|--------------------------------|-------|-------|--------------------|
|                  | (% GDP)                      | 2010e | 2050f | Change 2010e-2050f             | 2010e | 2050f | Change 2010e-2050f |
| Argentina        |                              | 5.9   | 8.6   | 2.7                            | N.A.  | N.A.  | N.A.               |
| Australia        |                              | 4.1   | 5.1   | 1.0                            | 4.7   | 7.0   | 2.3                |
| Austria          |                              | 12.7  | 14.0  | 1.3                            | 12.8  | 12.2  | (0.6)              |
| Belgium          |                              | 10.3  | 14.7  | 4.4                            | 10.4  | 15.5  | 5.1                |
| Brazil           |                              | 8.5   | 15.8  | 7.3                            | N.A.  | N.A.  | N.A.               |
| Bulgaria         |                              | 9.1   | 10.8  | 1.7                            | N.A.  | N.A.  | N.A.               |
| Canada           |                              | 4.7   | 5.9   | 1.2                            | 5.3   | 6.3   | 1.0                |
| China            |                              | 2.2   | 2.6   | 0.4                            | N.A.  | N.A.  | N.A.               |
| Cyprus           |                              | 6.9   | 15.5  | 8.6                            | 8.0   | 19.8  | 11.8               |
| Czech Republic   |                              | 7.1   | 10.2  | 3.1                            | 8.2   | 14.0  | 5.8                |
| Denmark          |                              | 9.4   | 9.6   | 0.2                            | 9.8   | 10.2  | 0.4                |
| Estonia          |                              | 6.4   | 5.3   | (1.1)                          | 6.7   | 8.9   | 2.2                |
| Finland          |                              | 10.7  | 13.3  | 2.6                            | 11.2  | 13.7  | 2.5                |
| France           |                              | 13.5  | 14.2  | 0.7                            | 12.9  | 14.8  | 1.9                |
| Germany          |                              | 10.2  | 12.3  | 2.1                            | 10.5  | 13.1  | 2.6                |
| Greece           |                              | 11.6  | 24.0  | 12.4                           | 12.2  | 22.6  | 10.4               |
| Hungary          |                              | 11.3  | 13.2  | 1.9                            | 11.1  | 17.1  | 6.0                |
| Iceland          |                              | 4.0   | 6.9   | 2.9                            | N.A.  | N.A.  | N.A.               |
| India            |                              | 1.7   | 0.9   | (0.8)                          | N.A.  | N.A.  | N.A.               |
| Indonesia        |                              | 0.9   | 2.1   | 1.2                            | N.A.  | N.A.  | N.A.               |
| Ireland          |                              | 4.1   | 8.0   | 3.9                            | 5.2   | 11.1  | 5.9                |
| Italy            |                              | 14.0  | 14.7  | 0.7                            | 14.0  | 14.7  | 0.7                |
| Japan            |                              | 10.3  | 11.0  | 0.7                            | 8.6   | 8.5   | (0.1)              |
| Korea            |                              | 0.6   | 4.4   | 3.8                            | 2.9   | 10.4  | 7.5                |
| Latvia           |                              | 5.1   | 6.5   | 1.4                            | 6.0   | 8.2   | 2.2                |
| Lithuania        |                              | 6.5   | 10.4  | 3.9                            | 6.6   | 8.6   | 2.0                |
| Luxembourg       |                              | 8.6   | 22.1  | 13.5                           | 9.8   | 17.4  | 7.6                |
| Malaysia         |                              | 2.9   | 5.6   | 2.7                            | N.A.  | N.A.  | N.A.               |
| Malta            |                              | 8.3   | 12.0  | 3.7                            | 9.0   | 9.2   | 0.2                |
| Mexico           |                              | 2.4   | 3.5   | 1.1                            | N.A.  | N.A.  | N.A.               |
| Netherlands      |                              | 6.5   | 10.3  | 3.8                            | 7.6   | 11.2  | 3.6                |
| New Zealand      |                              | 5.4   | 8.2   | 2.7                            | 5.1   | 10.6  | 5.5                |
| Norway           |                              | 9.6   | 13.3  | 3.7                            | 9.0   | 16.9  | 7.9                |
| Philippines      |                              | 1.1   | 2.0   | 0.9                            | N.A.  | N.A.  | N.A.               |
| Poland           |                              | 10.8  | 9.1   | (1.7)                          | 13.5  | 14.7  | 1.2                |
| Portugal         |                              | 11.9  | 13.3  | 1.4                            | 11.9  | 20.8  | 8.9                |



**Table 8**

| <b>Pension Spending (cont.)</b> |      |      |       |      |      |      |
|---------------------------------|------|------|-------|------|------|------|
| Romania                         | 8.4  | 14.8 | 6.4   | N.A. | N.A. | N.A. |
| Russia                          | 9.4  | 18.8 | 9.4   | N.A. | N.A. | N.A. |
| Saudi Arabia                    | 2.2  | 7.1  | 4.9   | N.A. | N.A. | N.A. |
| Slovakia                        | 6.6  | 9.4  | 2.8   | 6.7  | 9.0  | 2.3  |
| Slovenia                        | 10.1 | 18.2 | 8.1   | 11.1 | 19.3 | 8.2  |
| South Africa                    | 1.3  | 2.3  | 1.0   | N.A. | N.A. | N.A. |
| Spain                           | 8.9  | 15.5 | 6.6   | 8.9  | 15.7 | 6.8  |
| Sweden                          | 9.6  | 9.0  | (0.6) | 12.4 | 13.9 | 1.5  |
| Switzerland                     | 10.6 | 13.1 | 2.5   | N.A. | N.A. | N.A. |
| Turkey                          | 7.3  | 11.4 | 4.1   | N.A. | N.A. | N.A. |
| Ukraine                         | 12.8 | 24.2 | 11.4  | N.A. | N.A. | N.A. |
| U.K.                            | 6.7  | 8.1  | 1.4   | 6.3  | 7.8  | 1.5  |
| U.S.                            | 4.8  | 5.9  | 1.1   | 4.2  | 6.4  | 2.2  |
| <b>Medians</b>                  |      |      |       |      |      |      |
| Whole sample                    | 7.3  | 10.3 | 3.0   | 9.0  | 12.7 | 3.7  |
| G-7                             | 10.3 | 12.3 | 2.0   | 9.6  | 10.8 | 1.3  |

e--Estimate. f--Forecast. N.A.--Not available.

**Table 9**

| <b>(% GDP)</b> | <b>--2010 Global Aging Report--</b> |              |                           | <b>--2006 Global Graying Report--</b> |              |                           |
|----------------|-------------------------------------|--------------|---------------------------|---------------------------------------|--------------|---------------------------|
|                | <b>2010e</b>                        | <b>2050f</b> | <b>Change 2010e-2050f</b> | <b>2010e</b>                          | <b>2050f</b> | <b>Change 2010e-2050f</b> |
| Argentina      | 4.8                                 | 8.5          | 3.7                       | N.A.                                  | N.A.         | N.A.                      |
| Australia      | 4.0                                 | 7.1          | 3.1                       | 6.0                                   | 7.9          | 1.9                       |
| Austria        | 6.9                                 | 12.6         | 5.7                       | 5.5                                   | 6.8          | 1.3                       |
| Belgium        | 8.1                                 | 13.8         | 5.7                       | 6.4                                   | 7.6          | 1.2                       |
| Brazil         | 5.1                                 | 10.1         | 5.0                       | N.A.                                  | N.A.         | N.A.                      |
| Bulgaria       | 4.8                                 | 7.4          | 2.6                       | N.A.                                  | N.A.         | N.A.                      |
| Canada         | 7.6                                 | 13.4         | 5.8                       | 6.6                                   | 8.4          | 1.8                       |
| China          | 2.2                                 | 4.4          | 2.2                       | N.A.                                  | N.A.         | N.A.                      |
| Cyprus         | 2.9                                 | 5.1          | 2.2                       | 3.1                                   | 4.0          | 0.9                       |
| Czech Republic | 6.5                                 | 11.8         | 5.3                       | 6.8                                   | 8.4          | 1.6                       |
| Denmark        | 6.3                                 | 10.9         | 4.6                       | 7.0                                   | 7.8          | 0.8                       |
| Estonia        | 5.0                                 | 8.1          | 3.1                       | 5.8                                   | 6.5          | 0.7                       |
| Finland        | 5.9                                 | 10.3         | 4.4                       | 5.8                                   | 7.0          | 1.2                       |
| France         | 8.7                                 | 14.6         | 5.9                       | 8.0                                   | 9.5          | 1.5                       |
| Germany        | 7.9                                 | 14.4         | 6.5                       | 6.3                                   | 7.2          | 0.9                       |
| Greece         | 5.2                                 | 9.3          | 4.1                       | 5.4                                   | 6.8          | 1.4                       |
| Hungary        | 6.0                                 | 10.4         | 4.4                       | 5.7                                   | 6.5          | 0.8                       |
| Iceland        | 8.2                                 | 15.2         | 7.0                       | N.A.                                  | N.A.         | N.A.                      |
| India          | 0.9                                 | 1.8          | 0.9                       | N.A.                                  | N.A.         | N.A.                      |
| Indonesia      | 1.3                                 | 2.6          | 1.3                       | N.A.                                  | N.A.         | N.A.                      |
| Ireland        | 6.2                                 | 11.4         | 5.2                       | 5.5                                   | 7.3          | 1.8                       |

Table 9

| Health Care Spending (cont.) |     |      |     |      |      |      |
|------------------------------|-----|------|-----|------|------|------|
| Italy                        | 6.3 | 11.0 | 4.7 | 6.0  | 7.1  | 1.1  |
| Japan                        | 6.9 | 12.8 | 5.9 | 6.4  | 8.5  | 2.1  |
| Korea                        | 4.0 | 9.2  | 5.2 | 3.2  | 6.0  | 2.8  |
| Latvia                       | 3.5 | 5.5  | 2.0 | 5.5  | 6.2  | 0.7  |
| Lithuania                    | 6.1 | 10.3 | 4.2 | 4.0  | 4.6  | 0.6  |
| Luxembourg                   | 6.1 | 10.3 | 4.2 | 5.3  | 6.3  | 1.0  |
| Malaysia                     | 2.1 | 3.8  | 1.7 | N.A. | N.A. | N.A. |
| Malta                        | 5.2 | 11.7 | 6.5 | 4.5  | 6.1  | 1.6  |
| Mexico                       | 3.2 | 6.4  | 3.2 | N.A. | N.A. | N.A. |
| Netherlands                  | 5.1 | 9.2  | 4.1 | 6.3  | 7.4  | 1.1  |
| New Zealand                  | 7.7 | 10.7 | 3.0 | 6.3  | 8.3  | 2.0  |
| Norway                       | 6.0 | 11.1 | 5.1 | 7.4  | 8.9  | 1.5  |
| Philippines                  | 1.4 | 2.5  | 1.1 | N.A. | N.A. | N.A. |
| Poland                       | 4.2 | 7.3  | 3.1 | 4.4  | 5.5  | 1.1  |
| Portugal                     | 7.7 | 13.6 | 5.9 | 6.8  | 7.2  | 0.4  |
| Romania                      | 3.6 | 6.3  | 2.7 | N.A. | N.A. | N.A. |
| Russia                       | 3.6 | 6.7  | 3.1 | N.A. | N.A. | N.A. |
| Saudi Arabia                 | 2.9 | 5.5  | 2.6 | N.A. | N.A. | N.A. |
| Slovakia                     | 5.1 | 9.5  | 4.4 | 4.7  | 6.3  | 1.6  |
| Slovenia                     | 6.9 | 12.3 | 5.4 | 6.7  | 8.0  | 1.3  |
| South Africa                 | 3.2 | 5.7  | 2.5 | N.A. | N.A. | N.A. |
| Spain                        | 5.9 | 10.9 | 5.0 | 6.3  | 8.3  | 2.0  |
| Sweden                       | 7.6 | 12.2 | 4.6 | 6.8  | 7.7  | 0.9  |
| Switzerland                  | 4.6 | 5.8  | 1.2 | N.A. | N.A. | N.A. |
| Turkey                       | 3.6 | 7.2  | 3.6 | N.A. | N.A. | N.A. |
| Ukraine                      | 4.1 | 7.6  | 3.5 | N.A. | N.A. | N.A. |
| U.K.                         | 8.0 | 14.2 | 6.2 | 7.2  | 8.9  | 1.7  |
| U.S.                         | 4.5 | 10.4 | 5.9 | 4.9  | 9.8  | 4.9  |
| <b>Medians</b>               |     |      |     |      |      |      |
| Whole sample                 | 5.1 | 10.1 | 5.0 | 6.0  | 7.3  | 1.3  |
| G-7                          | 6.9 | 12.8 | 5.9 | 6.4  | 8.5  | 2.1  |

e--Estimate. f--Forecast. N.A.--Not available.

Table 9

| Health Care Spending |                              |       |                    |                                |       |                    |
|----------------------|------------------------------|-------|--------------------|--------------------------------|-------|--------------------|
| (% GDP)              | --2010 Global Aging Report-- |       |                    | --2006 Global Graying Report-- |       |                    |
|                      | 2010e                        | 2050f | Change 2010e-2050f | 2010e                          | 2050f | Change 2010e-2050f |
| Argentina            | 4.8                          | 8.5   | 3.7                | N.A.                           | N.A.  | N.A.               |
| Australia            | 4.0                          | 7.1   | 3.1                | 6.0                            | 7.9   | 1.9                |
| Austria              | 6.9                          | 12.6  | 5.7                | 5.5                            | 6.8   | 1.3                |
| Belgium              | 8.1                          | 13.8  | 5.7                | 6.4                            | 7.6   | 1.2                |
| Brazil               | 5.1                          | 10.1  | 5.0                | N.A.                           | N.A.  | N.A.               |
| Bulgaria             | 4.8                          | 7.4   | 2.6                | N.A.                           | N.A.  | N.A.               |

Table 9

| Health Care Spending (cont.) |     |      |     |      |      |      |
|------------------------------|-----|------|-----|------|------|------|
| Canada                       | 7.6 | 13.4 | 5.8 | 6.6  | 8.4  | 1.8  |
| China                        | 2.2 | 4.4  | 2.2 | N.A. | N.A. | N.A. |
| Cyprus                       | 2.9 | 5.1  | 2.2 | 3.1  | 4.0  | 0.9  |
| Czech Republic               | 6.5 | 11.8 | 5.3 | 6.8  | 8.4  | 1.6  |
| Denmark                      | 6.3 | 10.9 | 4.6 | 7.0  | 7.8  | 0.8  |
| Estonia                      | 5.0 | 8.1  | 3.1 | 5.8  | 6.5  | 0.7  |
| Finland                      | 5.9 | 10.3 | 4.4 | 5.8  | 7.0  | 1.2  |
| France                       | 8.7 | 14.6 | 5.9 | 8.0  | 9.5  | 1.5  |
| Germany                      | 7.9 | 14.4 | 6.5 | 6.3  | 7.2  | 0.9  |
| Greece                       | 5.2 | 9.3  | 4.1 | 5.4  | 6.8  | 1.4  |
| Hungary                      | 6.0 | 10.4 | 4.4 | 5.7  | 6.5  | 0.8  |
| Iceland                      | 8.2 | 15.2 | 7.0 | N.A. | N.A. | N.A. |
| India                        | 0.9 | 1.8  | 0.9 | N.A. | N.A. | N.A. |
| Indonesia                    | 1.3 | 2.6  | 1.3 | N.A. | N.A. | N.A. |
| Ireland                      | 6.2 | 11.4 | 5.2 | 5.5  | 7.3  | 1.8  |
| Italy                        | 6.3 | 11.0 | 4.7 | 6.0  | 7.1  | 1.1  |
| Japan                        | 6.9 | 12.8 | 5.9 | 6.4  | 8.5  | 2.1  |
| Korea                        | 4.0 | 9.2  | 5.2 | 3.2  | 6.0  | 2.8  |
| Latvia                       | 3.5 | 5.5  | 2.0 | 5.5  | 6.2  | 0.7  |
| Lithuania                    | 6.1 | 10.3 | 4.2 | 4.0  | 4.6  | 0.6  |
| Luxembourg                   | 6.1 | 10.3 | 4.2 | 5.3  | 6.3  | 1.0  |
| Malaysia                     | 2.1 | 3.8  | 1.7 | N.A. | N.A. | N.A. |
| Malta                        | 5.2 | 11.7 | 6.5 | 4.5  | 6.1  | 1.6  |
| Mexico                       | 3.2 | 6.4  | 3.2 | N.A. | N.A. | N.A. |
| Netherlands                  | 5.1 | 9.2  | 4.1 | 6.3  | 7.4  | 1.1  |
| New Zealand                  | 7.7 | 10.7 | 3.0 | 6.3  | 8.3  | 2.0  |
| Norway                       | 6.0 | 11.1 | 5.1 | 7.4  | 8.9  | 1.5  |
| Philippines                  | 1.4 | 2.5  | 1.1 | N.A. | N.A. | N.A. |
| Poland                       | 4.2 | 7.3  | 3.1 | 4.4  | 5.5  | 1.1  |
| Portugal                     | 7.7 | 13.6 | 5.9 | 6.8  | 7.2  | 0.4  |
| Romania                      | 3.6 | 6.3  | 2.7 | N.A. | N.A. | N.A. |
| Russia                       | 3.6 | 6.7  | 3.1 | N.A. | N.A. | N.A. |
| Saudi Arabia                 | 2.9 | 5.5  | 2.6 | N.A. | N.A. | N.A. |
| Slovakia                     | 5.1 | 9.5  | 4.4 | 4.7  | 6.3  | 1.6  |
| Slovenia                     | 6.9 | 12.3 | 5.4 | 6.7  | 8.0  | 1.3  |
| South Africa                 | 3.2 | 5.7  | 2.5 | N.A. | N.A. | N.A. |
| Spain                        | 5.9 | 10.9 | 5.0 | 6.3  | 8.3  | 2.0  |
| Sweden                       | 7.6 | 12.2 | 4.6 | 6.8  | 7.7  | 0.9  |
| Switzerland                  | 4.6 | 5.8  | 1.2 | N.A. | N.A. | N.A. |
| Turkey                       | 3.6 | 7.2  | 3.6 | N.A. | N.A. | N.A. |
| Ukraine                      | 4.1 | 7.6  | 3.5 | N.A. | N.A. | N.A. |
| U.K.                         | 8.0 | 14.2 | 6.2 | 7.2  | 8.9  | 1.7  |
| U.S.                         | 4.5 | 10.4 | 5.9 | 4.9  | 9.8  | 4.9  |

Table 9

| Health Care Spending (cont.) |     |      |     |     |     |     |
|------------------------------|-----|------|-----|-----|-----|-----|
| Medians                      |     |      |     |     |     |     |
| Whole sample                 | 5.1 | 10.1 | 5.0 | 6.0 | 7.3 | 1.3 |
| G-7                          | 6.9 | 12.8 | 5.9 | 6.4 | 8.5 | 2.1 |

e--Estimate. f--Forecast. N.A.--Not available.

Table 10

| (% GDP)        | --2010 Global Aging Report-- |       |                    | --2006 Global Graying Report-- |       |                    |
|----------------|------------------------------|-------|--------------------|--------------------------------|-------|--------------------|
|                | 2010e                        | 2050f | Change 2010e-2050f | 2010e                          | 2050f | Change 2010e-2050f |
| Argentina      | N.A.                         | N.A.  | N.A.               | N.A.                           | N.A.  | N.A.               |
| Australia      | 0.8                          | 1.8   | 1.0                | 0.8                            | 2.1   | 1.3                |
| Austria        | 1.3                          | 2.4   | 1.1                | 0.7                            | 1.5   | 0.8                |
| Belgium        | 1.5                          | 2.8   | 1.3                | 0.9                            | 1.8   | 0.9                |
| Brazil         | N.A.                         | N.A.  | N.A.               | N.A.                           | N.A.  | N.A.               |
| Bulgaria       | 0.2                          | 0.3   | 0.1                | N.A.                           | N.A.  | N.A.               |
| Canada         | 1.3                          | 2.4   | 1.1                | 1.4                            | 2.4   | 1.0                |
| China          | N.A.                         | N.A.  | N.A.               | N.A.                           | N.A.  | N.A.               |
| Cyprus         | 0.0                          | 0.0   | 0.0                | 0.8                            | 2.0   | 1.2                |
| Czech Republic | 0.2                          | 0.5   | 0.3                | 0.6                            | 2.3   | 1.7                |
| Denmark        | 1.8                          | 3.2   | 1.4                | 1.1                            | 2.2   | 1.1                |
| Estonia        | 0.1                          | 0.1   | 0.0                | 1.1                            | 2.0   | 0.9                |
| Finland        | 1.9                          | 4.2   | 2.3                | 1.9                            | 3.5   | 1.6                |
| France         | 1.5                          | 2.2   | 0.7                | 1.1                            | 2.2   | 1.1                |
| Germany        | 1.0                          | 2.2   | 1.2                | 1.0                            | 2.0   | 1.0                |
| Greece         | 1.5                          | 3.1   | 1.6                | 1.2                            | 2.8   | 1.6                |
| Hungary        | 0.3                          | 0.5   | 0.2                | 1.1                            | 2.2   | 1.1                |
| Iceland        | 3.0                          | 3.4   | 0.4                | N.A.                           | N.A.  | N.A.               |
| India          | N.A.                         | N.A.  | N.A.               | N.A.                           | N.A.  | N.A.               |
| Indonesia      | N.A.                         | N.A.  | N.A.               | N.A.                           | N.A.  | N.A.               |
| Ireland        | 0.9                          | 1.8   | 0.9                | 0.8                            | 1.9   | 1.1                |
| Italy          | 1.8                          | 2.8   | 1.0                | 1.5                            | 2.2   | 0.7                |
| Japan          | 1.1                          | 2.4   | 1.3                | 0.6                            | 2.4   | 1.8                |
| Korea          | 0.6                          | 3.1   | 2.5                | 1.0                            | 3.1   | 2.1                |
| Latvia         | 0.4                          | 0.7   | 0.3                | 0.6                            | 2.0   | 1.4                |
| Lithuania      | 0.5                          | 0.9   | 0.4                | 0.7                            | 2.1   | 1.4                |
| Luxembourg     | 1.4                          | 3.0   | 1.6                | 1.0                            | 1.5   | 0.5                |
| Malaysia       | N.A.                         | N.A.  | N.A.               | N.A.                           | N.A.  | N.A.               |
| Malta          | 1.0                          | 2.2   | 1.2                | 0.9                            | 1.1   | 0.2                |
| Mexico         | N.A.                         | N.A.  | N.A.               | N.A.                           | N.A.  | N.A.               |
| Netherlands    | 3.5                          | 7.7   | 4.2                | 0.7                            | 2.3   | 1.6                |
| New Zealand    | 0.6                          | 1.7   | 1.1                | 0.7                            | 1.7   | 1.0                |
| Norway         | 2.2                          | 4.3   | 2.1                | 2.6                            | 3.5   | 0.9                |
| Philippines    | N.A.                         | N.A.  | N.A.               | N.A.                           | N.A.  | N.A.               |

Table 10

| Long-Term Care Spending (cont.) |      |      |      |      |      |      |
|---------------------------------|------|------|------|------|------|------|
| Poland                          | 0.4  | 0.9  | 0.5  | 0.4  | 2.1  | 1.7  |
| Portugal                        | 0.1  | 0.2  | 0.1  | 1.2  | 2.7  | 1.5  |
| Romania                         | 0.0  | 0.0  | 0.0  | N.A. | N.A. | N.A. |
| Russia                          | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. |
| Saudi Arabia                    | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. |
| Slovakia                        | 0.2  | 0.5  | 0.3  | 0.9  | 2.0  | 1.1  |
| Slovenia                        | 1.2  | 2.6  | 1.4  | 1.1  | 2.2  | 1.1  |
| South Africa                    | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. |
| Spain                           | 0.7  | 1.3  | 0.6  | 0.8  | 2.8  | 2.0  |
| Sweden                          | 3.5  | 5.3  | 1.8  | 3.7  | 5.5  | 1.8  |
| Switzerland                     | 0.6  | 1.4  | 0.8  | N.A. | N.A. | N.A. |
| Turkey                          | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. |
| Ukraine                         | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. |
| U.K.                            | 0.8  | 1.2  | 0.4  | 1.0  | 1.8  | 0.8  |
| U.S.                            | 1.0  | 1.9  | 0.9  | 0.9  | 3.1  | 2.2  |
| <b>Medians</b>                  |      |      |      |      |      |      |
| Whole sample                    | 0.9  | 1.9  | 1.1  | 1.0  | 2.2  | 1.3  |
| G-7                             | 1.1  | 2.2  | 1.1  | 1.1  | 2.3  | 1.3  |

e--Estimate. f--Forecast. N.A.--Not available.

Table 11

| (% GDP)        | --2010 Global Aging Report-- |       |                    | --2006 Global Graying Report-- |       |                    |
|----------------|------------------------------|-------|--------------------|--------------------------------|-------|--------------------|
|                | 2010e                        | 2050f | Change 2010e-2050f | 2010e                          | 2050f | Change 2010e-2050f |
| Argentina      | N.A.                         | N.A.  | N.A.               | N.A.                           | N.A.  | N.A.               |
| Australia      | 0.7                          | 0.4   | (0.3)              | 0.7                            | 0.3   | (0.4)              |
| Austria        | 0.6                          | 0.6   | 0.0                | 0.6                            | 0.6   | 0.0                |
| Belgium        | 1.9                          | 1.5   | (0.4)              | 2.0                            | 1.8   | (0.2)              |
| Brazil         | N.A.                         | N.A.  | N.A.               | N.A.                           | N.A.  | N.A.               |
| Bulgaria       | 0.1                          | 0.1   | 0.0                | N.A.                           | N.A.  | N.A.               |
| Canada         | 0.5                          | 0.3   | (0.2)              | 0.5                            | 0.3   | (0.2)              |
| China          | N.A.                         | N.A.  | N.A.               | N.A.                           | N.A.  | N.A.               |
| Cyprus         | 0.3                          | 0.2   | (0.1)              | 0.4                            | 0.4   | 0.0                |
| Czech Republic | 0.1                          | 0.1   | 0.0                | 0.2                            | 0.2   | 0.0                |
| Denmark        | 0.8                          | 0.8   | 0.0                | 1.2                            | 1.2   | 0.0                |
| Estonia        | 0.0                          | 0.0   | 0.0                | 0.1                            | 0.1   | 0.0                |
| Finland        | 1.0                          | 1.0   | 0.0                | 1.2                            | 1.1   | (0.1)              |
| France         | 1.2                          | 0.9   | (0.3)              | 1.1                            | 0.9   | (0.2)              |
| Germany        | 0.9                          | 0.6   | (0.3)              | 1.1                            | 0.9   | (0.2)              |
| Greece         | 0.3                          | 0.2   | (0.1)              | 0.3                            | 0.2   | (0.1)              |
| Hungary        | 0.3                          | 0.2   | (0.1)              | 0.2                            | 0.2   | 0.0                |
| Iceland        | 0.5                          | 0.5   | (0.1)              | N.A.                           | N.A.  | N.A.               |
| India          | N.A.                         | N.A.  | N.A.               | N.A.                           | N.A.  | N.A.               |

Table 11

| Unemployment Benefits Spending (cont.) |      |      |       |      |      |       |
|--|------|------|-------|------|------|-------|
| Indonesia                              | N.A. | N.A. | N.A.  | N.A. | N.A. | N.A.  |
| Ireland                                | 0.9  | 0.8  | (0.1) | 0.6  | 0.6  | 0.0   |
| Italy                                  | 0.3  | 0.3  | 0.0   | 0.4  | 0.3  | (0.1) |
| Japan                                  | 0.5  | 0.5  | (0.1) | 0.7  | 0.6  | (0.1) |
| Korea                                  | 0.5  | 0.5  | (0.1) | 0.7  | 0.6  | (0.1) |
| Latvia                                 | 0.2  | 0.2  | 0.0   | 0.2  | 0.2  | 0.0   |
| Lithuania                              | 0.0  | 0.0  | 0.0   | 0.1  | 0.1  | 0.0   |
| Luxembourg                             | 0.4  | 0.4  | 0.0   | 0.3  | 0.2  | (0.1) |
| Malaysia                               | N.A. | N.A. | N.A.  | N.A. | N.A. | N.A.  |
| Malta                                  | 0.4  | 0.3  | (0.1) | 1.2  | 1.0  | (0.2) |
| Mexico                                 | N.A. | N.A. | N.A.  | N.A. | N.A. | N.A.  |
| Netherlands                            | 1.0  | 1.0  | 0.0   | 1.5  | 1.5  | 0.0   |
| New Zealand                            | 0.6  | 0.3  | (0.3) | 0.5  | 0.3  | (0.2) |
| Norway                                 | 0.4  | 0.4  | 0.0   | 1.1  | 1.1  | 0.0   |
| Philippines                            | N.A. | N.A. | N.A.  | N.A. | N.A. | N.A.  |
| Poland                                 | 0.1  | 0.1  | 0.0   | 0.4  | 0.2  | (0.2) |
| Portugal                               | 1.1  | 0.8  | (0.3) | 0.8  | 0.8  | 0.0   |
| Romania                                | 0.2  | 0.2  | 0.0   | N.A. | N.A. | N.A.  |
| Russia                                 | N.A. | N.A. | N.A.  | N.A. | N.A. | N.A.  |
| Saudi Arabia                           | N.A. | N.A. | N.A.  | N.A. | N.A. | N.A.  |
| Slovakia                               | 0.1  | 0.1  | 0.0   | 0.2  | 0.1  | (0.1) |
| Slovenia                               | 0.2  | 0.2  | 0.0   | 0.4  | 0.4  | 0.0   |
| South Africa                           | N.A. | N.A. | N.A.  | N.A. | N.A. | N.A.  |
| Spain                                  | 1.4  | 0.9  | (0.5) | 0.9  | 0.7  | (0.2) |
| Sweden                                 | 0.9  | 0.9  | 0.0   | 0.9  | 0.9  | 0.0   |
| Switzerland                            | 0.5  | 0.5  | (0.1) | N.A. | N.A. | N.A.  |
| Turkey                                 | N.A. | N.A. | N.A.  | N.A. | N.A. | N.A.  |
| Ukraine                                | N.A. | N.A. | N.A.  | N.A. | N.A. | N.A.  |
| U.K.                                   | 0.2  | 0.2  | 0.0   | 0.3  | 0.3  | 0.0   |
| U.S.                                   | 0.5  | 0.3  | (0.2) | 0.5  | 0.3  | (0.2) |
| <b>Medians</b>                         |      |      |       |      |      |       |
| Whole sample                           | 0.5  | 0.4  | (0.1) | 0.6  | 0.4  | (0.2) |
| G-7                                    | 0.5  | 0.3  | (0.2) | 0.6  | 0.5  | (0.2) |

e--Estimate. f--Forecast. N.A.--Not available.

Table 12

| Country Names  |            |
|----------------|------------|
| Country Name   | Short name |
| Argentina      | AR         |
| Brazil         | BR         |
| Bulgaria       | BG         |
| China          | CHN        |
| Czech Republic | CZ         |

**Table 12**

| Country Names (cont.) |     |
|-----------------------|-----|
| Estonia               | EE  |
| Hungary               | HU  |
| India                 | IN  |
| Indonesia             | INS |
| Latvia                | LV  |
| Lithuania             | LT  |
| Malaysia              | ML  |
| Mexico                | MX  |
| Philippines           | PH  |
| Poland                | PL  |
| Romania               | RO  |
| Russia                | RU  |
| Saudi Arabia          | SA  |
| South Africa          | SAF |
| Turkey                | TR  |
| Ukraine               | UKR |
| Australia             | AUS |
| Austria               | AT  |
| Belgium               | BE  |
| Canada                | CA  |
| Cyprus                | CY  |
| Denmark               | DK  |
| Finland               | FIN |
| France                | FR  |
| Germany               | DE  |
| Greece                | EL  |
| Iceland               | ICL |
| Ireland               | IRL |
| Italy                 | IT  |
| Japan                 | JP  |
| Korea                 | KOR |
| Luxembourg            | LUX |
| Malta                 | MT  |
| Netherlands           | NL  |
| Norway                | NO  |
| New Zealand           | NZ  |
| Portugal              | PT  |
| Slovakia              | SK  |
| Slovenia              | SI  |
| Spain                 | ES  |
| Sweden                | SE  |
| Switzerland           | CH  |
| United Kingdom        | UK  |

**Table 12**

| <b>Country Names (cont.)</b>     |    |
|----------------------------------|----|
| United States                    | US |
| World median                     | WM |
| Advanced economies median        | AM |
| Emerging market economies median | EM |

## Related Research

CreditMatters video titled, "Global Aging 2010: An Inescapable Truth," dated Oct. 8, 2010

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