

RESEARCH

# Global Graying: Aging Societies And Sovereign Ratings

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**Primary Credit Analyst:** Moritz Kraemer, London (44) 20-7176-7114;  
[moritz\\_kraemer@standardandpoors.com](mailto:moritz_kraemer@standardandpoors.com)  
**Secondary Credit Analyst:** Ana Mates, London (44) 20-7176-7109;  
[ana\\_mates@standardandpoors.com](mailto:ana_mates@standardandpoors.com)

**(Editor's Note:** This article, originally published on May 31, 2006, has been republished to amend misstated fiscal data in chart 7 and table 3, which did not accurately reflect the transitional cost of second-pillar pension reform in six Central European countries: Estonia, Latvia, Lithuania, Hungary, Poland, and Slovakia. A corrected version follows.)

Population aging is a global phenomenon. By 2050, the median age of the world's people will be 38 years, 10 years older than in 2005. While the world's population will continue to grow to reach 9 billion by the middle of the century from 6.5 billion in 2005, it will also turn older. Much older. The worldwide old-age dependency ratio (the proportion of the population aged 60 years or older to the working-age population) is estimated to surge to 45% in 2050, from 19% in 2005. The U.N. estimates that 14 countries will have a median population age of 50 years or more by the middle of the current century, one-half of them in Eastern Europe. Standard & Poor's Ratings Services has investigated the repercussions of this aging mega-trend on public finances and sovereign credit ratings in thirty-two of the world's leading industrialized countries: all EU-25 members plus the U.S., Canada, Australia, New Zealand, Japan, Korea and Norway (for official names and sovereign credit ratings see table 1 at the end of this article).

The reverberations of demographic change go well beyond this group of countries, however: China's old-age dependency ratio is forecast to grow four-fold during the first half of this century, while the ratio will triple in Latin America. At current trends Russia's, population will have shrunk by almost one-quarter by 2050 and even in countries with rapidly growing populations, such as Saudi Arabia, the share of elderly citizens will rise fourfold, to reach similar levels in 2050 as those that are currently typical for North America. The selection of countries covered does not therefore imply that aging populations are not a concern for the countries excluded. Rather, the lack of global coverage is due to limitations with respect to comparable data.

Over the coming weeks, Standard & Poor's will also release individual country reports for the sovereigns covered in this study, containing more detailed data as well as the country-specific results for the various scenarios described below. These articles will be available on RatingsDirect, Standard & Poor's Web-based credit analysis system. The naming convention will be "Global Graying Country Report: Country name." In addition, details regarding data sources and methodology used, and extensive data for demographic and economic assumptions and for scenario outputs can be found in a supplement published separately (see "Global Graying: Aging Societies And Sovereign Ratings--Methodological And Data Supplement," published on RatingsDirect on May 31, 2006).

## The Key Findings: Global Deterioration

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Although quantifiable reform efforts affecting age-related spending have been made in recent years, these are still far from being sufficient to keep public finances on an even keel over a long time horizon. Almost all countries will face a very significant deterioration in public finances over the next half-century as a result of demographic change, unless a countervailing fiscal adjustment is put in place or social security and other age-related spending programs are reformed.

Initially, the pressure from age-related spending will remain very moderate. Starting early in the next decade, however, the burden will gradually increase, leading to deteriorating fiscal indicators. A typical country's deficits would rise to more than 4% of GDP by the mid-2020s, assuming no policy change. The interest cost of the additional borrowing required will exacerbate the demographic spending pressure, and deficits would rise inexorably to almost 6% in 2030 and to 14% by the middle of the current century. Although the median general government net debt burden will remain relatively steady at about 32%-33% of GDP through to 2015, it will start to rise slowly thereafter, accelerating sharply from the late 2020s. By the mid-2030s the net debt burden will surpass a still manageable 80% of GDP, but will reach an overpowering 180% of GDP by 2050. Higher debt-service costs and age-related spending will significantly increase the economic weight of the state. Government spending will rise to 56% of GDP in 2050, from 44% today.

A wide variation of country experiences hides underneath those aggregate numbers. Certain countries, especially the Scandinavian and Baltic group of sovereigns, but also Austria, Canada, Australia, and New Zealand, would perform considerably better than the sample average, and will be able to keep their debt burden at or below 100% of GDP even by 2050. On the other hand, certain continental European countries including France and Italy would post debt burdens well above 200% of GDP by 2050. By that time, the new EU members will be significantly more indebted than "old Europe", as demographics in Eastern Europe are even more precarious than in Western Europe. The Czech Republic and Hungary could face net debt equivalent to more than 400% of their output by 2050, similar to levels in Portugal and Greece, with whom they share the low fertility, large budget deficits, and largely unreformed systems of health care provision and social security. Predictably, Japan will continue to have the highest net debt burden, which, at current trends, would surpass an implausible 400% of GDP in the mid-2040s.

The consequences of this hypothetical fiscal outcome would be inconsistent with the current high level of ratings on sovereigns covered in this study. Using budget balance trends as empirical long-term proxies for sovereign creditworthiness, a collective slide down the ratings scale would commence early in the next decade. Its initial gentle decline would accelerate by 2015 and continue until the mid-2030s, by which time the vast majority of countries would display fiscal characteristics that today are associated with speculative-grade sovereigns.

This scenario is not a prediction by Standard & Poor's. It is inconceivable that governments will allow debt and deficit burdens to spiral out of control in the manner outlined above. 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/or achieving further fiscal belt-tightening. In fact, several governments, such as France, Austria, Germany, and Italy have embarked on structural reform likely to mitigate the pressure described here. Nevertheless, the magnitude of the challenge, as indicated by the fiscal development described above, will require further decisive steps in almost all countries in the sample.

## Elements Of Age-Related Public Spending

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All sovereigns in the sample will experience varying degrees of upward public expenditure pressure related to budgetary items that are sensitive to demographic change (see table 1). The age-related spending categories considered in this study are old-age pensions (including early retirement schemes), health care, long-term care for the frail, and unemployment benefits. Pensions exert by far the most spending pressure, while the expected relief from lower unemployment benefits is typically very small (see table 2 at the end of this article). Education was not included as an age-related spending category. Although the number of pupils and students will decline in most countries, often dramatically, it is likely that spending per student will rise to 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.

Pensions (including early retirement, surviving relative, and disability pensions) are the most important source of expenditure pressure in the sample, rising by more than 4 percentage points of GDP from current levels by 2050. However, other spending categories also play an important role. The median demographically driven increase of public health care spending is projected to be 1.6 percentage points of GDP between 2005 and its peak in 2050, although changes in technology and forms of service delivery make health care cost projections much fuzzier than is the case for pensions. During the same period, the median cost of long-term care for the frail and elderly will increase by another 1.3 percentage points of GDP. Potential savings on the shrinking, younger end of the population pyramid are likely to be minuscule, as argued in the preceding paragraph. The expected median fall in unemployment benefits as a consequence of tightening labor markets will be only 0.3% of GDP by 2050, and will not exceed 0.5% of GDP in any country.

All our spending projections are based on national estimates, mostly in the context of multilateral research projects conducted at the OECD and the European Commission. When interpreting the numbers and the fiscal consequences simulated below, the limited comparability must be kept in mind. Although the aforementioned international organizations, as well as Standard & Poor's itself (please consult the "Methodological And Data Supplement" for details), do their best to correct for undue optimism or pessimism in the nationally compiled figures, the success of these harmonization attempts will always be only partial. Thus, overoptimistic official estimates may lead to too rosy a fiscal and ratings trajectory, and vice-versa. Nevertheless, broad orders of magnitudes should be sufficiently precise for analytical purposes, especially over longer timeframes. A second important caveat concerns projected health care expenditures, which are to a significant extent determined by the penetration of technological progress, which by definition is as yet unknown.

## Basic Assumptions For The Simulations

Based on the 2005-2050 country-specific profiles of age-related government spending of table 1 (including all intermediate years not presented) various scenarios are calculated 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". This behavioral assumption states that in every country, the current fiscal stance will be maintained every year in the simulation period. "Fiscal stance" is defined as the cyclically adjusted primary surplus in 2007, based on IMF and European Commission estimates. It is identical to the primary surplus in all future years excluding the effect of incremental future (post-2007) age-related expenditures and changes to the debt-service bill originating from declining or rising government debt levels relative to 2007. This means that all citizens receive exactly the same average mix of taxes and non-age-related public services as in 2007. The 2007 cut-off was chosen as major fiscal policy changes that are not yet known as of today, are unlikely to be implemented before 2008.
- The "surplus ceiling" (from 2008 onward). This assumption is based on the expectation that, in the countries

covered in the sample, a large budget surplus (defined as more than 2% of GDP) on a sustained basis is politically infeasible. If a higher surplus were to loom, we assume that taxes will be cut to bring the budget back toward the 2% ceiling. The adjusted primary surplus as defined in the previous paragraph is therefore taken to be whichever is the lower of either the 2007 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, where revenue-raising is relatively painless as a consequence of the exploitation of North Sea oil and gas fields.

Unless specifically changed in the scenario analysis, real interest rates are set at 3% and apply to all sovereign debtors uniformly. Similarly, inflation is assumed to be 2%.

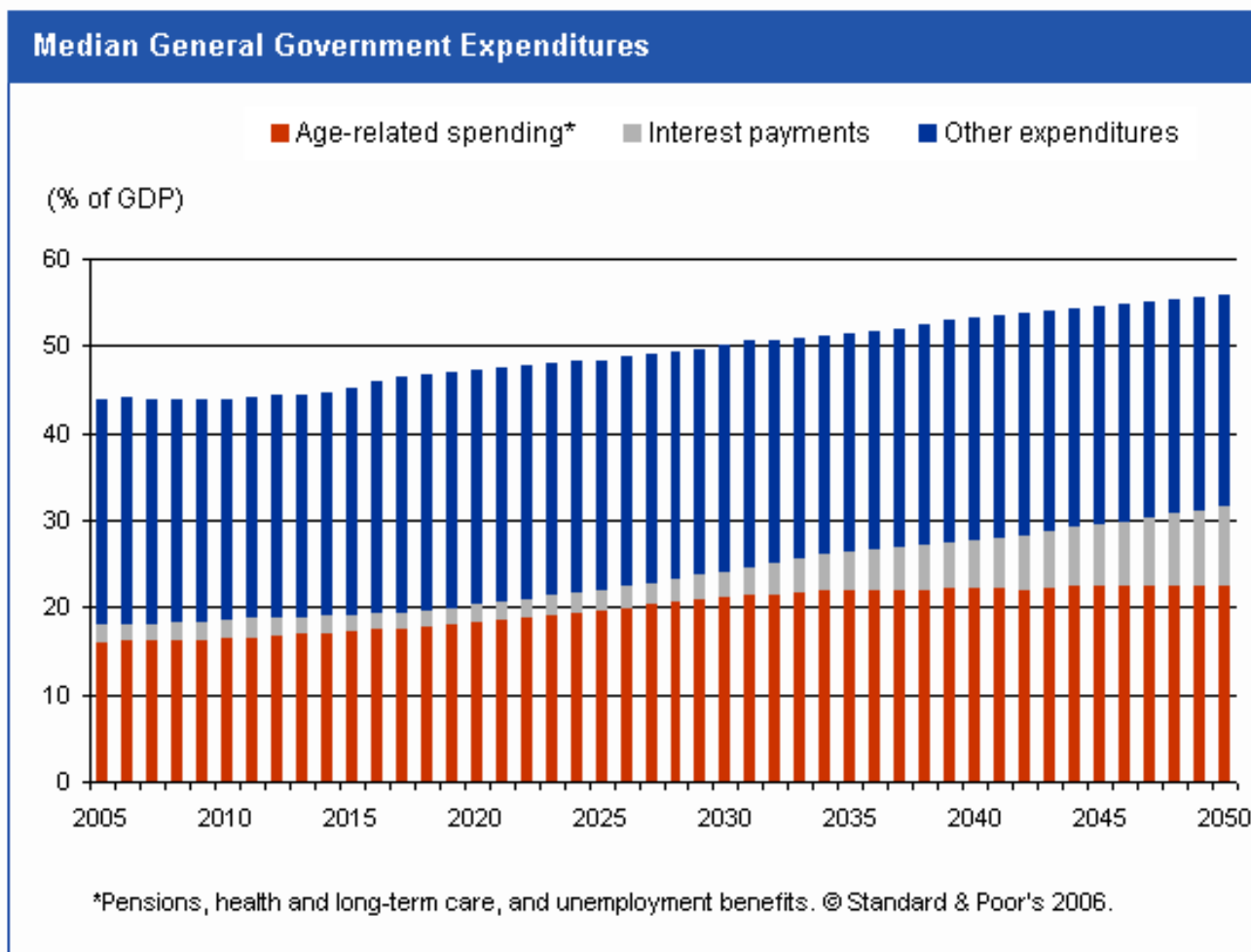
Simulations of debt and deficit trajectories for all sovereigns are then undertaken, considering a variety of scenarios. Based on the fiscal outcomes, a simplistic "hypothetical sovereign rating" is derived. In practice, Standard & Poor's takes a large number of factors into consideration when deriving sovereign credit ratings (see criteria report "Sovereign Credit Ratings: A Primer," published on RatingsDirect on Sept. 27, 2005). In the very long-term, however, prolonged fiscal imbalances tend to become a dominant factor. To obtain an indication of the direction of sovereign ratings, it is therefore useful to compare each country's simulated general government balance with the median budget balance for each rating category, averaged over the 2000-2008 period, which comprises both boom and bust episodes of the global business cycle (see the separately published "Methodological And Data Supplement" for details).

## **Base-Case Scenario: Deep in Debt**

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Under the base-case scenario, the government refrains from adjusting either the fiscal stance as described above or the schemes governing age-related spending categories. In other words, the government does absolutely nothing except for borrowing for any budget shortfall that may materialize. This will lead to a gradual increase of total government expenditure as age-related outlays creep upward, followed by the additional interest costs of the rising national debt. Currently, general government spending accounts for about 44% of GDP for the median country, and will remain fairly stable until the mid-2010s, as age-related spending increases are minor and offset by marginally lower reduced interest rate outlays. This delicate balance will break down after 2015, however, as age-related spending starts to accelerate, leading to higher deficits and interest payments. By 2030, government spending will account for 50% of GDP, climbing to 56% in 2050 (see chart 1).

### **Chart 1**



The increase in the economic weight of government is only slightly smaller than during the 1960-1980 period, when most developed countries saw a massive increase in state spending as entitlement programs were aggressively expanded. Obviously, diverting an additional 12 percentage points of national product toward the state sector will change the nature of many societies, even if it occurs over a long period of time. Only a handful of countries (the Baltics, Slovakia, New Zealand, Australia, and Canada) would maintain a state sector that accounted for less than one-half of GDP, while at the other end of the range, the state would become a true leviathan swallowing more than 70% of GDP in Slovenia, Hungary, the Czech Republic, Portugal, and Greece, which tops the list with an implausible 78% of GDP.

In the base-case (or "no policy action") scenario, it becomes evident that the fiscal imbalances would only embark on a truly unsustainable trend in the 2020s (see the gray bars in charts 2 and 3). By 2020, the median deficit is still only 2.7% of GDP, not much higher than the 1.3% of GDP in 2005. Thereafter, however, red ink floods the picture. By 2030, the deficit will have surged to just shy of 6% of GDP and the net debt ratio will have begun to rise by 20 percentage points to 54% of GDP. After that, burgeoning deficit ratios will reach double digits in 2040 and pull the net debt ratio into lofty heights, to more than 110% in 2040. By that time, the snowball effect of a rising debt interest burden will have established a powerful, self-propelling feedback loop and net debt will be spiraling out of control, surpassing 180% of GDP by mid-century. The country-specific results differ widely: the Danish, Canadian, and Norwegian governments (the latter narrowly) would remain net creditors in 2050, while Estonia, New Zealand, Austria, Finland, and Sweden keep their net debt ratios below 100% of GDP. Australia is narrowly above that limit. On the high-debt end of the spectrum, Japan stands out with an enormous 530% of GDP, followed by Greece, Portugal, Hungary, and the Czech Republic, with between 400% and 470% of GDP. Apart from Japan, the U.S. would be the most highly indebted G7 sovereign in 2050, with a 350% ratio, driven almost entirely by exploding Medicare outlays (see table 3 at the end of this article for the base-case scenario outcomes for all sovereigns in the sample).

Chart 2

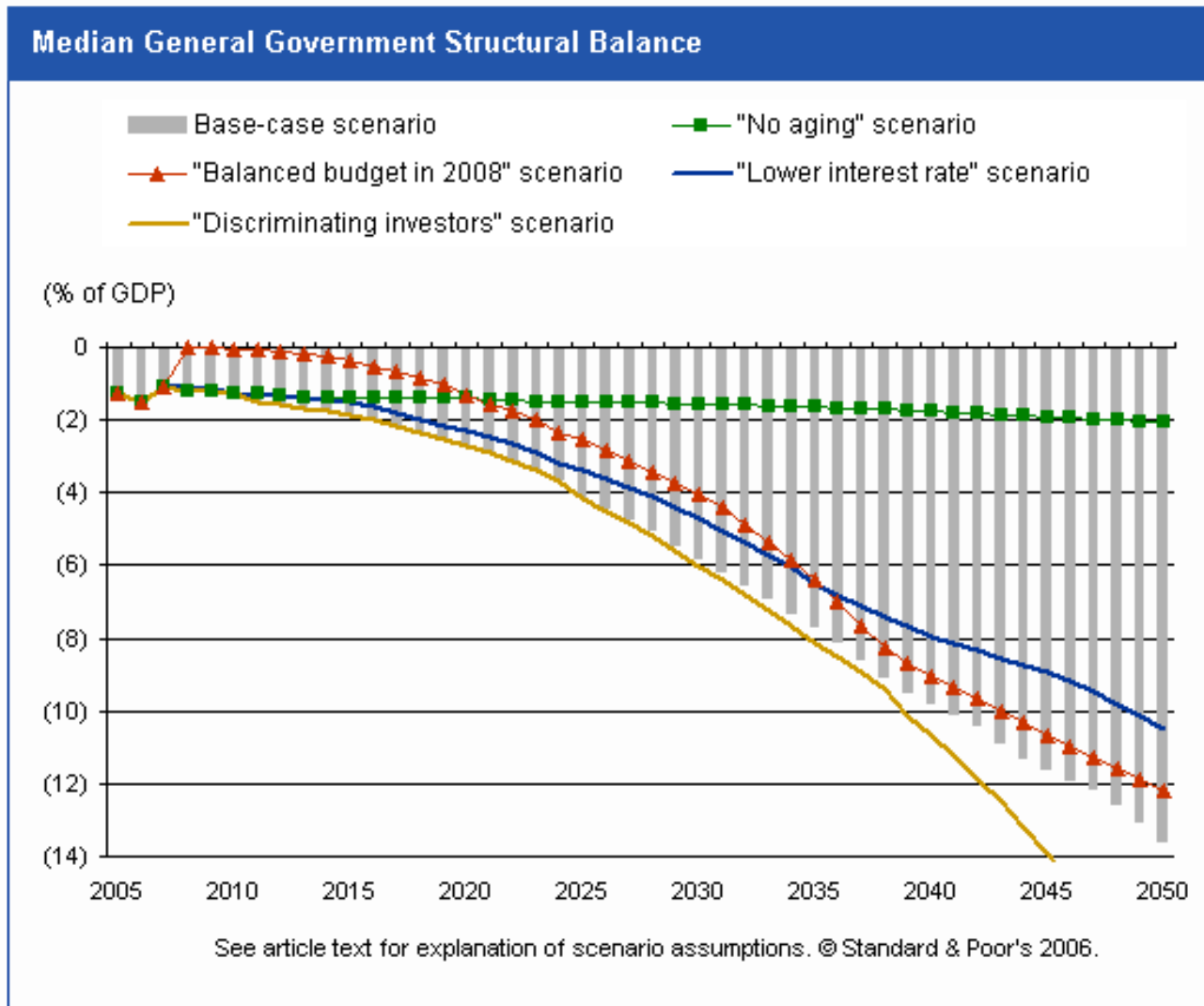
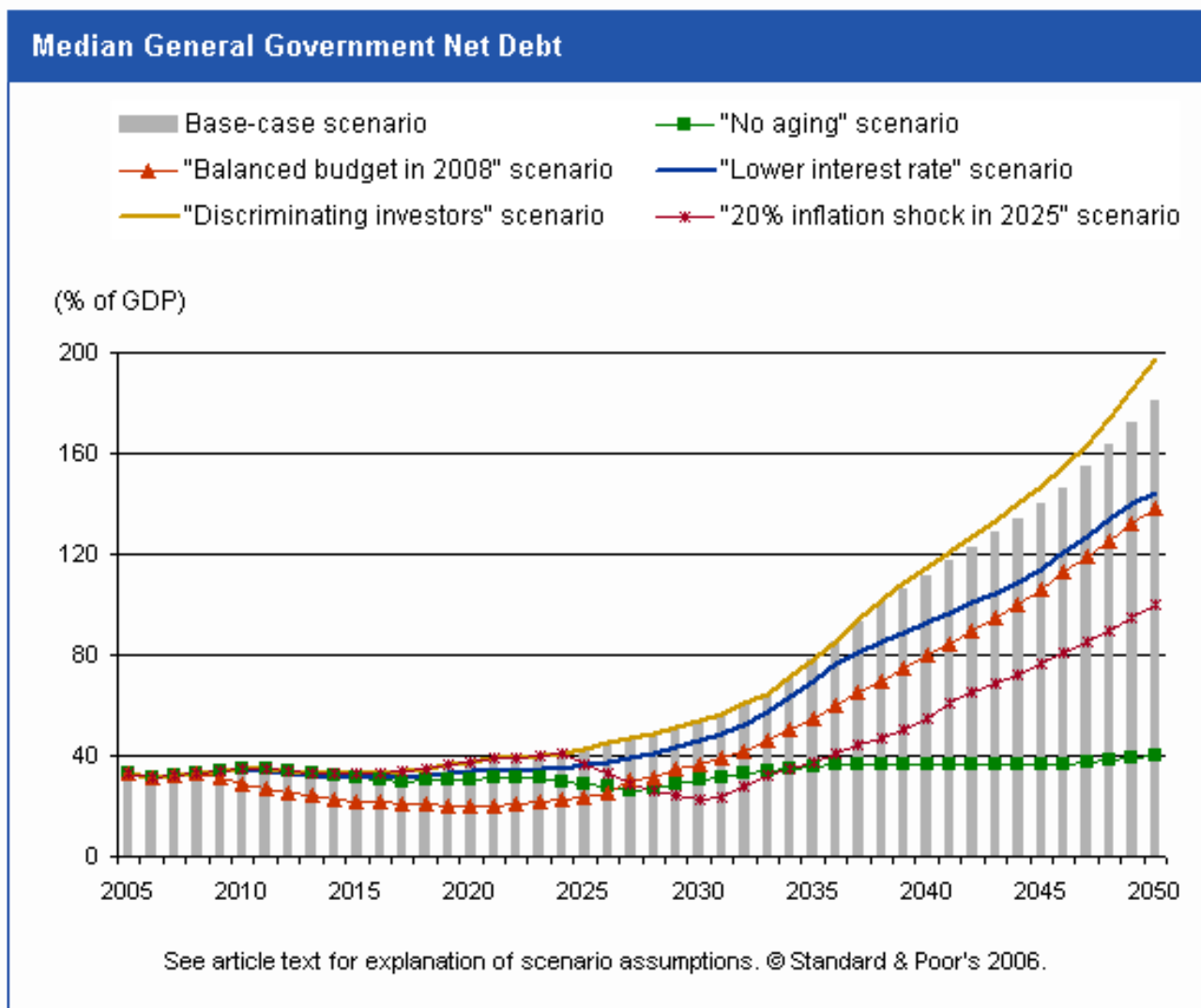


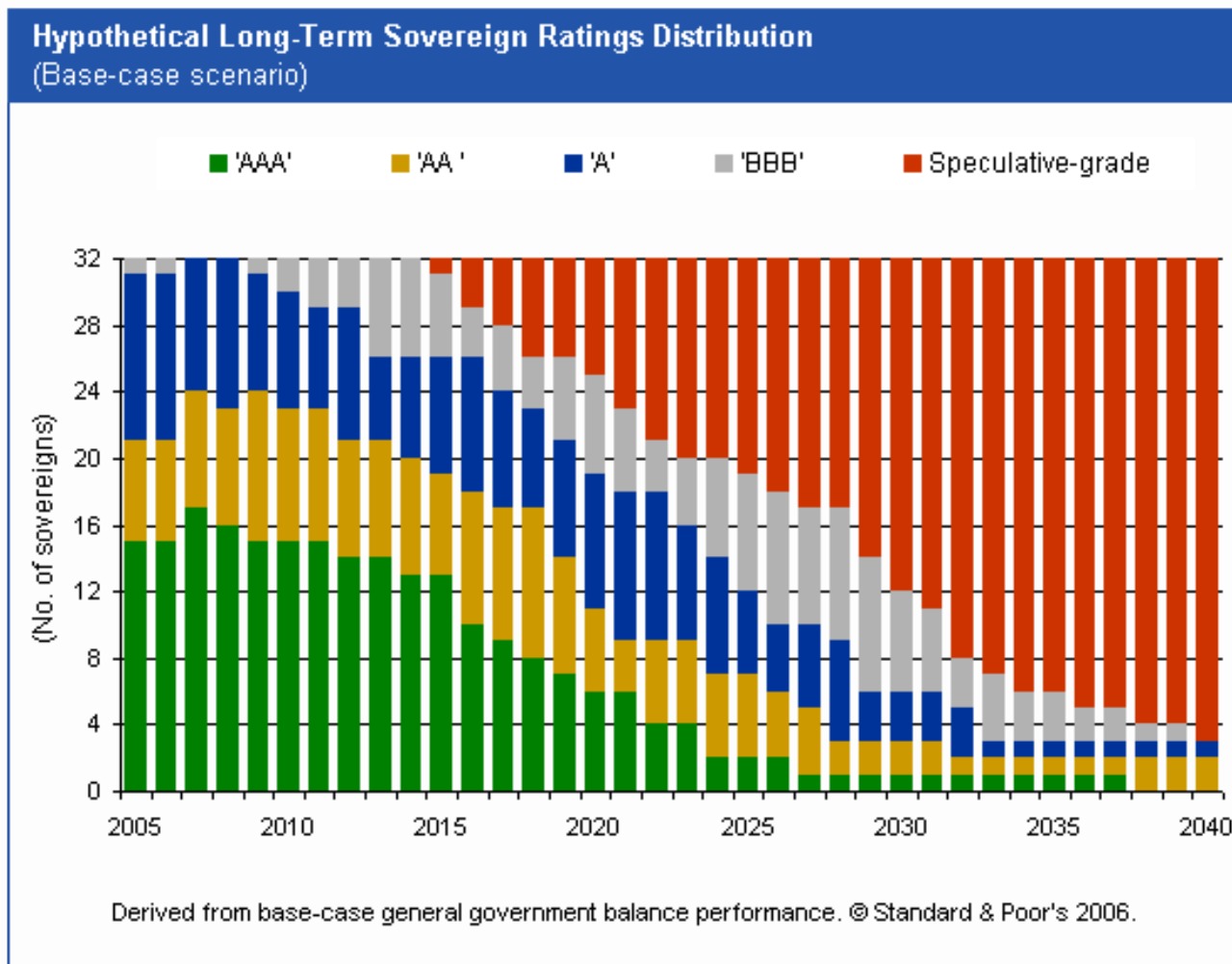
Chart 3



These projected debt burdens are on a massive scale, but not without precedent. Both New Zealand and Australia had debt burdens in excess of 150% of GDP on the brink of the Second World War, while the U.K.'s debt reached a staggering 252% in 1946, up from 30% in 1913. All three countries currently have debt levels well below the average of the sample. What is different here, however, is the broad-based nature of the fiscal deterioration. Almost all countries would be affected by a well-understood and predictable force (demography), whereas war and the Great Depression caused the isolated historical episodes of high debts.

As described in the previous section, the rising deficits would lead to downward pressure on the hypothetical sovereign ratings (even if the debt ratio is still at low levels). When presented graphically, the collective slide in the hypothetical ratings on the 32 sovereigns in our sample becomes evident at a first glance (see chart 4). Whereas the lowest ratings in our sample at present are in the 'BBB' category (Poland and Hungary), one sovereign would display deficits typical of speculative-grade sovereigns as early as 2015 (Japan, even after correcting for offsetting factors, see "Methodological And Data Supplement" for explanations). Three more sovereigns would join a year later (Czech Republic, Hungary, and Malta) and by 2040 all sovereigns except for Canada ('AA'), Denmark ('AA'), and Austria ('A') would have also dropped into speculative-grade territory.

#### Chart 4



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 coming decade but then fall precipitously, as the full brunt of age-related expenditure hits government budgets. In the real world outside the "fiscal autopilot," this may lead to a mistaken sense of security conspiring against necessary change in the early part of the forecast period.

The hypothetical ratings shown here are mechanically derived, and are not a prediction by Standard & Poor's (see chart 4 and table 3). In practice, the hypothetical ratings may overstate the decline in creditworthiness. They are benchmarked against budget balance medians today, whereas it is of course possible that the medians themselves could worsen as an ever-larger number of rated sovereigns feels the fiscal pinch of aging populations. Moreover, Standard & Poor's may give more weight to mitigating credit strengths than assumed in the model. The hypothetical ratings should therefore be regarded more appropriately as an illustration of the dimension and profile of the demographic challenge that governments must face.

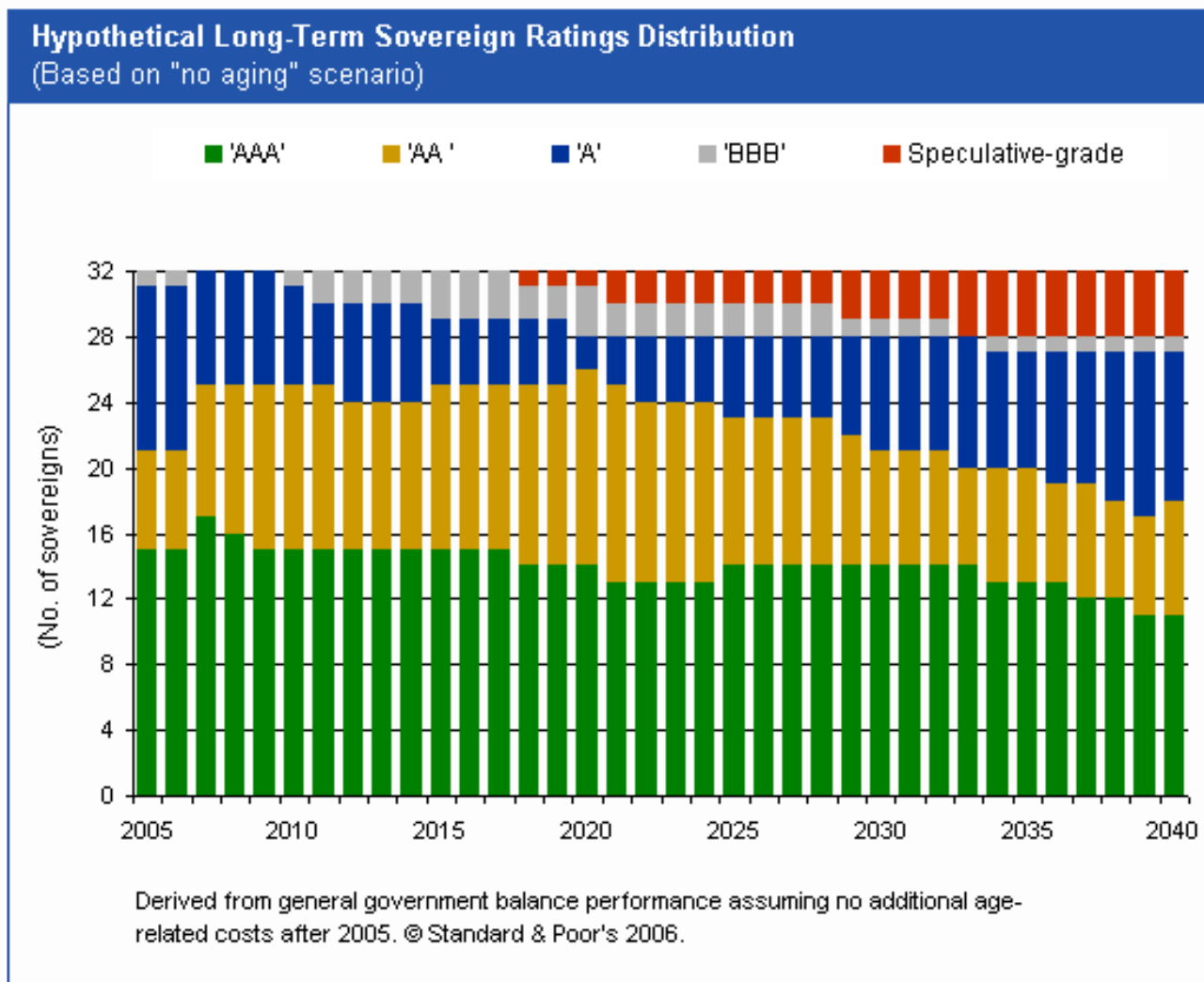
## Alternative Scenarios

Reviewing some variations from the base case may be useful to assess relative power of the multiple forces at work that determine future fiscal and hypothetical rating trends. The first two scenarios are a deviation from the "fiscal autopilot" assumption, whereas the other scenarios gauge the impact of external influences.

### "No aging" scenario

This assumes that all governments enact radical legislation that would have the effect that no additional age-related spending pressures would build up beyond current levels. This scenario captures in isolation the effect of the sovereigns' fiscal starting-positions. Unsurprisingly, for the median sovereign the fiscal consequences (ignoring likely behavioral changes and other secondary effects) are very different. Deficits and debt would remain well contained (see charts 2 and 3) under such a robust policy approach, whatever its other problems might be, and would in most cases effectively ensure the maintenance of high hypothetical ratings (see chart 5). Once again, however, the experience is far from universal. Portugal, Hungary, Japan, the Czech Republic, and Poland would still end up with a hypothetical rating below 'BBB' as a consequence of the weak budgets these governments already display.

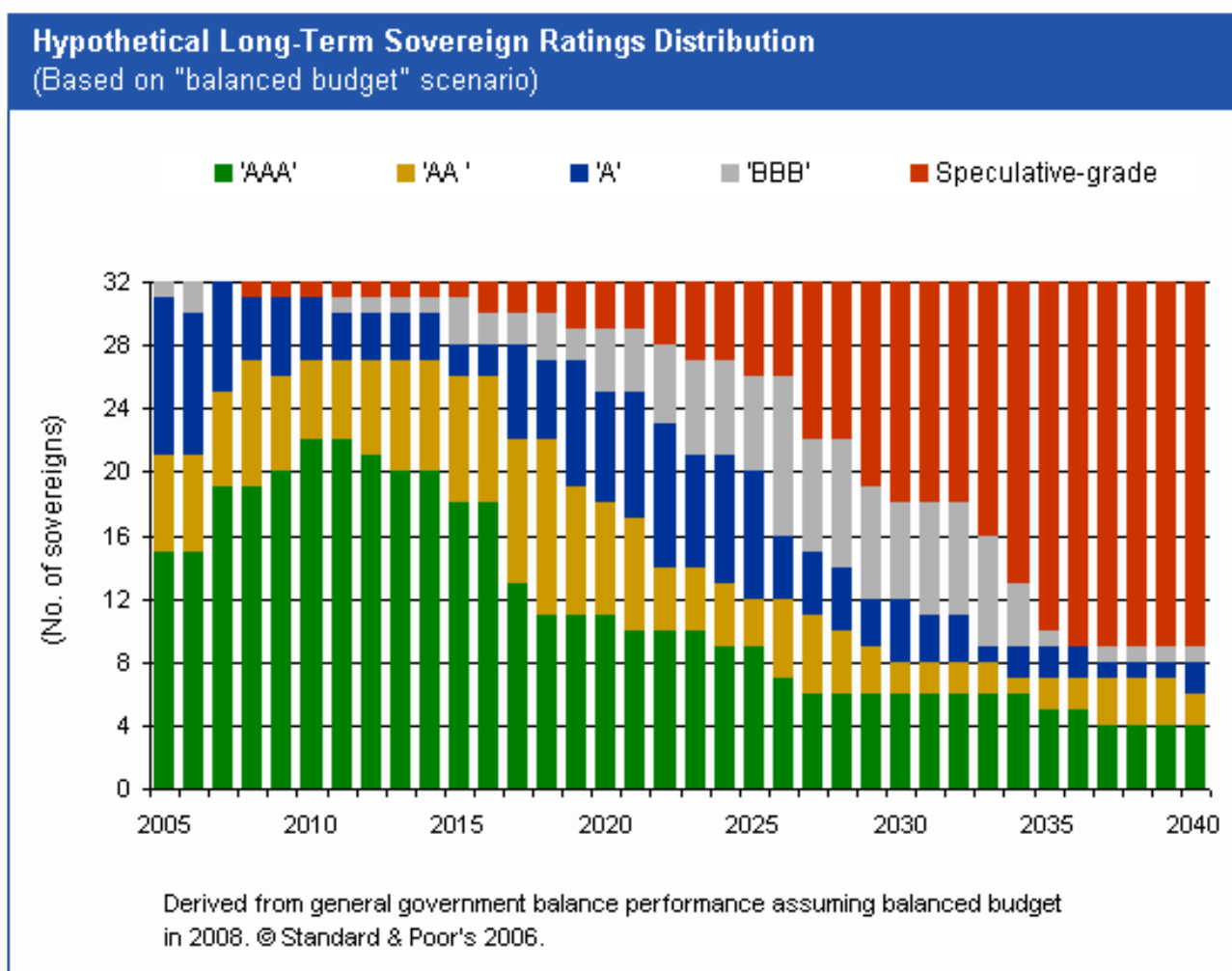
Chart 5



### "Balanced budget" scenario

This assumes that adjustment measures are taken that would lead to a balanced budget in 2008. Once this is achieved, the government reverts to the "fiscal autopilot" and does nothing, 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 insufficient to arrest unsustainable tendencies. For the governments generating surpluses in 2007 (especially the Scandinavian sovereigns and New Zealand) this scenario is equivalent to a loosening of fiscal policy and therefore a credit negative. Under this scenario, although credit quality is initially holding up better than in the base-case, the overwhelming age-related spending pressure kicking in after 2015 eventually leads to a similar distribution by 2040 (see chart 6). As in the previous simulations, the general picture does not display the divergences that exist in reality. Italy, for example, is currently set for relatively mild increases in pension and health care spending, but displays a very weak budgetary position. The assumed balanced budget in 2008 would therefore lead to sustained surpluses, as the decline in interest payments overcompensates for the fairly small increase in age-related outlays and leads to a hypothetical rating of 'AAA' by 2010, which Italy would maintain until the end of the forecast period, by which time the sovereign would have become a net creditor!

Chart 6



**"Lower interest rate" scenario**

Instead of assuming the base-case 3% real rates, this scenario is rerun with a lower rate of 2%, more akin to what has been observed in the recent years of ample global liquidity. This benign interest rate environment would by 2050 lead to lower median net debt--145% of GDP compared with 181% in the base case--and a median government sector of 54% of GDP, more than two percentage points of GDP smaller than in the base-case. The ratings distribution (not shown) is again somewhat better than in the base-case, but not by much.

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

This scenario assumes that investors begin to demand compensation for lending to riskier, (more leveraged) borrowers (see charts 2 and 3). In our example, investors charge one basis point (bp) 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 spreads currently observed among Eurozone sovereigns. The median net debt ratio increases to almost 200% of GDP by 2050, compared with 181% in the base-case. Discerning investors would drive Japan's debt to more than 1,100% of GDP and even the U.S.'s general government debt would reach 500% of GDP in 2050. Obviously, even greater risk aversion would lead to an even faster ballooning debt burden. If 2 bps extra were charged, the median debt ratio would reach 217% of GDP, with a 3 bps premium pushing this to 242%. This example illustrates how highly leveraged governments become extraordinarily vulnerable to sentiment shifts among investors. In these circumstances, what looks sustainable one day may be a slippery slope the following morning.

### **"Inflation shock" scenario**

Finally, the last scenario assumes that the central banks will in a surprise move allow inflation to rise to 20% in 2025 and thereafter. The reasons for this do not really matter, but it may well be that the "inflation tax" is levied with the desire to erode the real value of government debt. It is assumed that nominal interest rates will adjust to restore the 3% real rate six years later (2031), reflecting the approximate average maturity of most sovereigns' debt. Will this gambit succeed? Our simulation suggests that the median net debt ratio will indeed turn out significantly lower, at 98% in 2050, just above one-half the base-case value (see chart 3).

In reality, however, after such a policy shock, investors would likely charge an extra risk premium to purchase government debt, to protect themselves against new inflation hikes eating away at the real value of their assets. If the real interest rate were to rise to 5% in 2026, the year following the monetary regime change, from 3% up to 2025, the net debt ratio in 2050 would be fairly similar to the base-case by mid-century (175%). This behavioral assumption of investors appears reasonable and the benefits of an inflation surprise may therefore be transitory at best, all the more so given that inflation may lead to a reduction of the potential growth rate, which in turn raises the burden of public debt.

## **Policy Implications: Fiscal Consolidation Or Benefits Reform?**

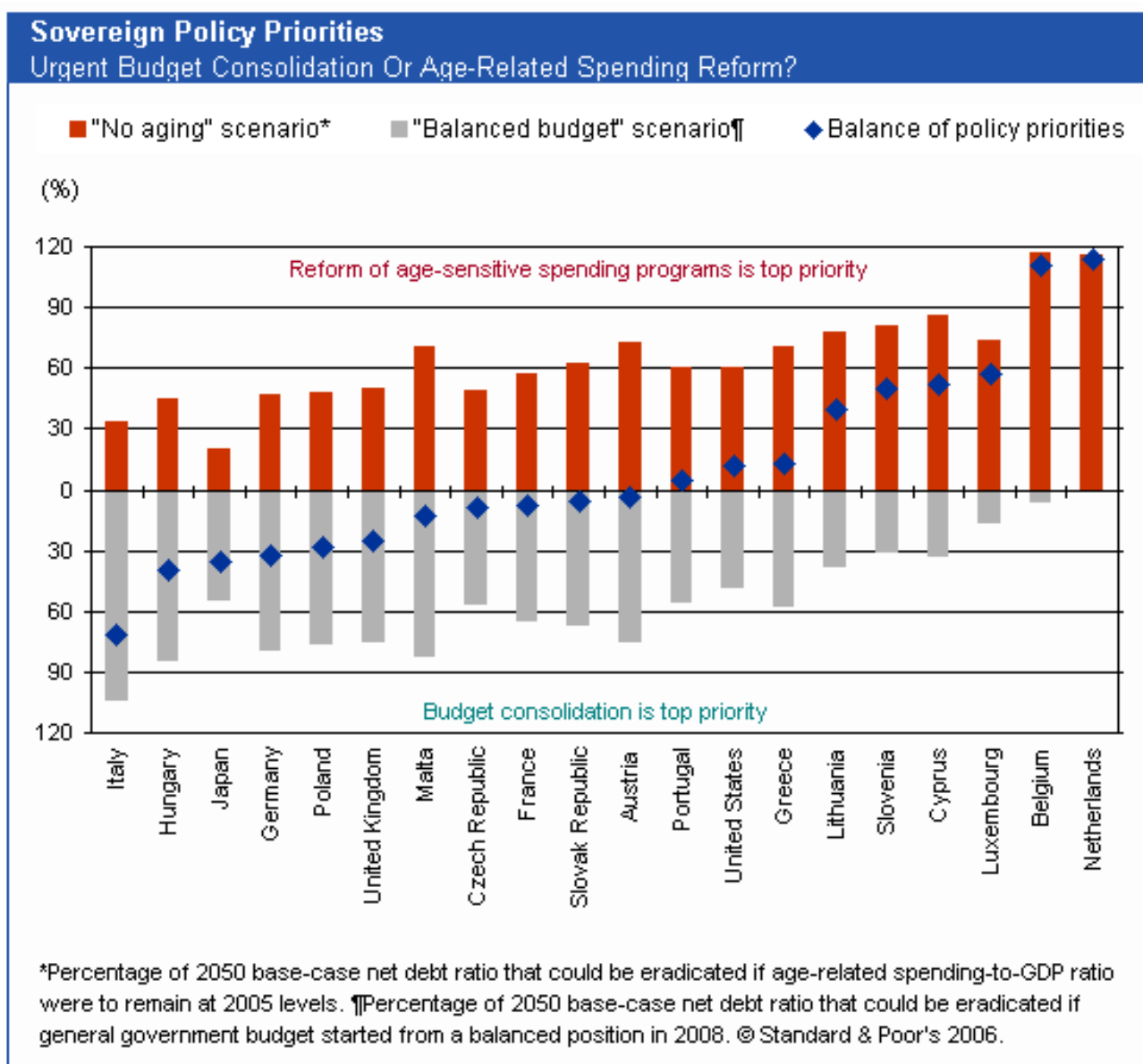
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The challenges ahead are daunting for the vast majority of sovereigns covered in this survey. The financial linkages between social security and fiscal policy call for decisive defensive steps now. Policy drift that relies on an economic miracle to take away the pain of aging populations will be totally insufficient. If political leadership does not resolutely correct the looming intergenerational imbalances, the dramatic fiscal turmoil laid out in certain of the scenarios discussed above might materialize. If no fiscal or structural reforms occur, the resulting social inequities and tensions would have the potential to undermine the very foundations of solidarity and cohesion on which most societies are based. A "muddling through" approach, however, would also be likely to lead to a deterioration in economic prospects, as rising tax levels could cause the accelerated outward migration of ever more mobile factors of production (especially capital and skilled labor), endangering the very sources of growth and fiscal revenue.

To prevent this from happening, governments need to safeguard the sustainability of their public finances and general economic prospects by consistently generating budget surpluses--as large as possible, as soon as possible. The alternative is thorough reforms of the social security systems going well beyond most countries'

recent reform initiatives. In which of these two reform approaches should governments invest their political capital to maximize their beneficial impact on fiscal solvency? The answer depends on the specific circumstances in each country (see chart 7). The upward-pointing bars in chart 7 show what percentage of the 2050 base-case net debt ratio could be eradicated if the age-related spending-to-GDP ratio were to remain at 2005 levels, that is, if the radical structural measures of the "no aging" scenario were to be implemented. If the bar reaches a value of 100, all net debt would be eliminated in 2050 in this scenario. Values larger than 100 would make the sovereign a net creditor. The bars pointing downward repeat the exercise for the "balanced budget" scenario: what share of the 2050 base-case debt would have disappeared had the sovereign begun with a structural balance in 2008? As this procedure is inapplicable for governments running a surplus in 2008, those sovereigns are omitted in the chart. Finally, the diamond-shaped markers simply measure the difference in length of the two bars, giving an indication of the balance of policy priorities. Diamonds above the zero-line thus suggest that reforming age-sensitive spending programs is a priority. Diamonds below the line, on the other hand, would argue for a more front-loaded, immediate budget consolidation.

Chart 7

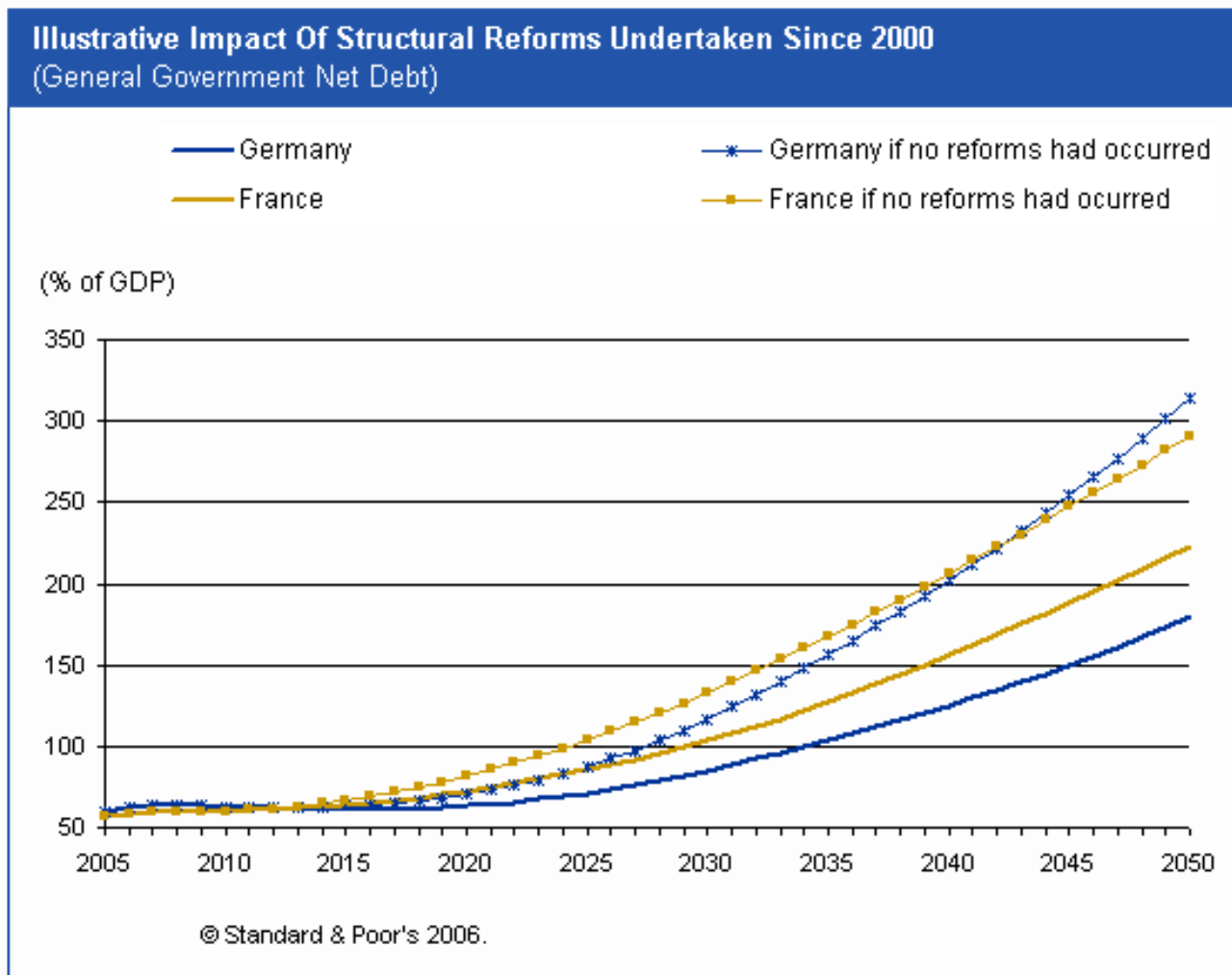


At one end of the spectrum, the Netherlands and Belgium are both very close to structural balance in 2008 in any

case, so 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, both sovereigns would become net creditors in 2050 (as the bars are higher than 100%). Conversely, Italy, Hungary, Japan, and Germany have more to gain for fiscal sustainability from consolidating the budget immediately. For most countries, a mix of the two reform directions is likely to be a sensible approach, but the relative weights are likely to differ. The absolute length of the bars in chart 7 is also important: Japan, for example, can reduce its base-case debt burden only by between 20% (relying on completely containing age-related spending) and 50% (by balancing the budget in 2008). Although a combination of the two could of course unleash a much more powerful effect, Japan's policy options are very limited if compared, for example, with Austria or Malta, which display much longer bars and therefore have more relative debt reduction potential.

Any delay to reform is costly, as time is lost during which a financial cushion could be generated or future entitlements harnessed. Moreover, from a political viewpoint, the number of elderly as a proportion of the electorate will increase steadily. As this group will understandably oppose parametric adjustments to pension systems, the longer reforms are postponed the more difficult they will become to push through. It is heartening that governments across the globe, but particularly in Europe, have become much more aware of the challenges recently, and some promising reform momentum has built up. Certain of the reforms already enacted have had a very strong positive effect on future general government net debt trajectories (see chart 8). The base-case net debt trajectories of France and Germany as they are estimated today compare very favorably with what they would have been had no reforms in the health care and pension systems occurred. The policy actions undertaken have reduced the simulated 2050 net debt ratio of France by about 70% of GDP. In Germany, the effect was almost twice as large. These are only rough estimates as the data for the counterfactual case is based on an earlier (2001) study of the EU's Economic Policy Committee, which has used a somewhat different methodological approach to estimate future pension and health care spending pressures. Notwithstanding this caveat, there is ample evidence that structural reforms have reduced the intertemporal imbalances in an important way. Even so, much more will have to be done to avoid the negative outcomes outlined here.

## Chart 8



## Time Is Running Out For Reform

The preceding analysis in no way constitutes a forecast of ratings trajectories by Standard & Poor's. It merely states that, if no countervailing structural and fiscal reforms were to be taken, deficits would increase to levels that, sooner or later, would become incommensurate with today's ratings--and by a large margin. The simulation illustrates underlying tendencies of what could happen in the unlikely event of complete government complacency. The message is unambiguous: without strong and sustained reforms, the high credit ratings on these governments could be lost due to demographic spending pressures, starting in the 2010s.

There is nothing inevitable about the future evolution of fiscal indicators and the concomitant trend of sovereign ratings. Clearly, governments can influence ratings strongly through the adoption or rejection of specific policy initiatives. The example of a high debt country like Belgium is instructive: once governments are confronted with unsustainably rising debt burdens they do react, however reluctantly, by tightening the fiscal stance. Nevertheless, the simulated fiscal paths illustrate that governments will have much work to do to escape the fiscal headwind and the attendant lowering of their sovereign ratings.

The ongoing reform debate is therefore mildly encouraging. Most of the action seems to be focused on reforming the pensions systems. This focus is politically appealing, as the sacrifices are often in the distant future and are not easily understood by the electorate. Technically, tackling social security is also relatively "easy," compared with health care reform, which has to address more immediately felt and ethically charged issues. Finally, the value of government surpluses today for the long-term sustainability of public finances is still not widely appreciated. Instead, governments often tend to downplay the relevance of today's deficits, which they allege are needed to

stimulate growth, although high deficits and high growth hardly ever go hand in hand.

**Table 1**

<b>Total Age-Related Spending</b>							
<b>(% of GDP)</b>	<b>Foreign currency ratings*</b>	<b>2005</b>	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>
Australia (Commonwealth of)	AAA/Stable/A-1+	12.0	12.2	13.8	15.5	16.6	17.3
Austria (Republic of)	AAA/Stable/A-1+	19.8	19.6	20.1	21.9	21.9	21.1
Belgium (Kingdom of)	AA+/Stable/A-1+	19.7	19.7	21.8	24.9	26.5	26.7
Canada	AAA/Stable/A-1+	13.3	13.8	15.3	16.9	17.5	17.4
Cyprus (Republic of)	A/Stable/A-1	10.9	12.3	14.8	17.7	21.0	26.2
Czech Republic	A-/Positive/A-2	15.5	15.8	17.1	19.2	22.6	24.9
Denmark (Kingdom of)	AAA/Stable/A-1+	18.8	19.1	20.5	21.9	21.8	21.4
Estonia (Republic of)	A/Positive/A-1	13.7	13.7	14.5	15.7	16.4	17.5
Finland (Republic of)	AAA/Stable/A-1+	19.1	20.1	22.3	24.7	25.3	25.3
France (Republic of)	AAA/Stable/A-1+	22.8	23.1	24.4	25.9	27.3	27.4
Germany (Federal Republic of)	AAA/Stable/A-1+	19.5	18.9	19.8	21.5	22.4	23.2
Hellenic Republic (Greece)	A/Stable/A-1	18.9	19.1	22.0	25.2	29.0	32.4
Hungary (Republic of)	BBB+/Negative/A-2	17.4	18.1	20.1	21.6	24.5	26.0
Ireland (Republic of)	AAA/Stable/A-1+	11.2	12.1	14.1	16.3	18.7	20.9
Italy (Republic of)	AA-/Negative/A-1+	22.0	21.9	22.2	23.7	25.1	24.3
Japan	AA-/Positive/A-1+	15.4	16.3	17.8	17.2	18.6	20.0
Korea (Republic of)	A/Stable/A-1	7.3	7.8	10.5	15.8	19.3	20.1
Latvia (Republic of)	A-/Stable/A-2	12.3	12.3	13.3	14.6	15.6	16.5
Lithuania (Republic of)	A/Stable/A-1	11.0	11.4	12.5	13.9	14.7	15.4
Luxembourg (Grand Duchy of)	AAA/Stable/A-1+	16.3	16.4	18.8	22.3	24.7	25.4
Malta (Republic of)	A/Stable/A-1	13.9	15.6	17.8	17.9	17.6	17.4
Netherlands (State of The)	AAA/Stable/A-1+	15.7	16.1	18.4	20.9	22.6	22.4
New Zealand	AA+/Stable/A-1+	11.8	12.6	15.2	18.4	20.4	20.9
Norway (Kingdom of)	AAA/Stable/A-1+	19.4	20.1	23.4	27.1	29.9	30.4
Poland (Republic of)	BBB+/Stable/A-2	18.4	18.7	19.9	21.4	22.3	22.5
Portugal (Republic of)	AA-/Stable/A-1+	20.2	20.7	23.0	25.2	28.8	31.5
Slovak Republic	A/Stable/A-1	12.9	12.5	13.5	15.0	16.1	17.4
Slovenia (Republic of)	AA/Stable/A-1+	19.0	19.3	21.3	24.2	27.7	29.9
Spain (Kingdom of)	AAA/Stable/A-1+	16.4	16.9	18.0	21.7	26.3	27.5
Sweden (Kingdom of)	AAA/Stable/A-1+	24.2	23.8	24.7	27.2	28.3	28.0
United Kingdom	AAA/Stable/A-1+	14.7	14.8	15.5	16.7	18.1	18.8
United States of America	AAA/Stable/A-1+	9.7	10.5	13.1	16.1	18.2	19.6
<b>Medians</b>							
Whole sample		16.0	16.3	18.2	21.2	22.1	22.5
"Old" EU-15 members		19.1	19.1	20.5	22.3	25.1	25.3
"New" EU-10 members		13.8	14.7	15.9	17.8	19.3	20.0

"Anglo-Saxons"	11.9	12.4	14.6	16.5	18.1	19.2
'AAA'	16.4	16.9	18.8	21.7	22.4	22.4
'AA'	19.4	19.5	21.6	24.0	25.8	25.5
'A/BBB'	13.3	13.1	14.7	16.7	18.5	18.8

\*At June 27, 2006.

**Table 2**

Age-Related Spending By Component															
(% of GDP)	2005					2050					Change 2005-2050				
	Total	PEN	HCA	LTC	UNE	Total	PEN	HCA	LTC	UNE	Total	PEN	HCA	LTC	UNE
Australia	12.0	4.8	5.6	0.8	0.8	17.3	7.0	7.9	2.1	0.3	5.3	2.2	2.3	1.3	(0.5)
Austria	19.8	13.2	5.3	0.6	0.7	21.1	12.2	6.8	1.5	0.6	1.3	(1.0)	1.5	0.9	(0.1)
Belgium	19.7	10.4	6.2	0.9	2.2	26.7	15.5	7.6	1.8	1.8	7.0	5.1	1.4	0.9	(0.4)
Canada	13.3	5.3	6.2	1.2	0.6	17.4	6.3	8.4	2.4	0.3	4.1	1.0	2.2	1.2	(0.3)
Cyprus	10.9	7.0	2.9	0.7	0.3	26.2	19.8	4.0	2.0	0.4	15.3	12.8	1.1	1.3	0.1
Czech Republic	15.5	8.5	6.5	0.3	0.2	24.9	14.0	8.4	2.3	0.2	9.4	5.5	1.9	2.0	0.0
Denmark	18.8	9.4	6.9	1.1	1.4	21.4	10.2	7.8	2.2	1.2	2.6	0.8	0.9	1.1	(0.2)
Estonia	13.7	7.1	5.5	1.0	0.1	17.5	8.9	6.5	2.0	0.1	3.7	1.8	1.0	1.0	0.0
Finland	19.1	10.4	5.6	1.7	1.4	25.3	13.7	7.0	3.5	1.1	6.2	3.3	1.4	1.8	(0.3)
France	22.8	12.8	7.7	1.1	1.2	27.4	14.8	9.5	2.2	0.9	4.6	2.0	1.8	1.1	(0.3)
Germany	19.5	11.1	6.1	1.0	1.3	23.2	13.1	7.2	2.0	0.9	3.7	2.0	1.1	1.0	(0.4)
Greece	18.9	12.4	5.1	1.1	0.3	32.4	22.6	6.8	2.8	0.2	13.5	10.2	1.7	1.7	(0.1)
Hungary	17.4	10.7	5.5	1.0	0.2	26.0	17.1	6.5	2.2	0.2	8.7	6.4	1.0	1.3	0.0
Ireland	11.2	4.6	5.3	0.6	0.7	20.9	11.1	7.3	1.9	0.6	9.7	6.5	2.0	1.3	(0.1)
Italy	22.0	14.3	5.8	1.5	0.4	24.3	14.7	7.1	2.2	0.3	2.3	0.4	1.3	0.7	(0.1)
Japan	15.4	8.3	6.0	0.3	0.8	20.0	8.5	8.5	2.4	0.6	4.6	0.2	2.5	2.1	(0.2)
Korea	7.3	2.6	3.0	0.9	0.8	20.1	10.4	6.0	3.1	0.6	12.8	7.8	3.0	2.2	(0.2)
Latvia	12.3	6.4	5.2	0.4	0.3	16.5	8.2	6.2	2.0	0.2	4.2	1.8	1.0	1.6	(0.1)
Lithuania	11.0	6.7	3.7	0.5	0.1	15.4	8.6	4.6	2.1	0.1	4.4	1.9	0.9	1.6	0.0
Luxembourg	16.3	10.0	5.1	0.9	0.3	25.4	17.4	6.3	1.5	0.2	9.1	7.4	1.2	0.6	(0.1)
Malta	13.9	7.5	4.3	0.9	1.2	17.4	9.2	6.1	1.1	1.0	3.5	1.7	1.8	0.2	(0.2)
Netherlands	15.7	7.4	6.1	0.5	1.7	22.4	11.2	7.4	2.3	1.5	6.7	3.8	1.3	1.8	(0.2)
New Zealand	11.8	4.7	6.0	0.5	0.6	20.9	10.6	8.3	1.7	0.3	9.1	5.9	2.3	1.2	(0.3)
Norway	19.4	8.2	7.3	2.6	1.3	30.4	16.9	8.9	3.5	1.1	11.0	8.7	1.6	0.9	(0.2)
Poland	18.4	13.7	4.1	0.1	0.5	22.5	14.7	5.5	2.1	0.2	4.1	1.0	1.4	2.0	(0.3)
Portugal	20.2	11.5	6.7	1.1	0.9	31.5	20.8	7.2	2.7	0.8	11.4	9.3	0.5	1.7	(0.1)
Slovakia	12.9	7.4	4.4	0.8	0.3	17.4	9.0	6.3	2.0	0.1	4.5	1.6	1.9	1.2	(0.2)
Slovenia	19.0	11.0	6.5	1.0	0.5	29.9	19.3	8.0	2.2	0.4	10.9	8.3	1.5	1.2	(0.1)
Spain	16.4	8.7	6.1	0.5	1.1	27.5	15.7	8.3	2.8	0.7	11.1	7.0	2.2	2.3	(0.4)
Sweden	24.2	12.6	6.7	3.8	1.1	28.0	13.9	7.7	5.5	0.9	3.8	1.3	1.0	1.7	(0.2)
U.K.	14.7	6.3	7.0	1.0	0.4	18.8	7.8	8.9	1.8	0.3	4.2	1.6	1.9	0.8	(0.1)
U.S.	9.7	4.2	4.2	0.7	0.6	19.6	6.4	9.8	3.1	0.3	9.9	2.2	5.6	2.4	(0.3)

**Medians**

Whole sample	16.0	8.4	5.7	0.9	0.7	22.4	12.7	7.3	2.2	0.4	6.4	4.3	1.6	1.3	(0.3)
"Old" EU-15 members	19.1	10.4	6.1	1.0	1.1	25.3	13.9	7.3	2.2	0.8	6.2	3.5	1.2	1.2	(0.3)
"New" EU-10 members	13.8	7.5	4.8	0.8	0.3	20.0	11.6	6.3	2.0	0.2	6.2	4.2	1.5	1.3	(0.1)
"Anglo-Saxons"	11.9	4.8	5.8	0.7	0.6	19.2	7.4	8.4	2.0	0.3	7.3	2.7	2.6	1.2	(0.3)
'AAA'	16.4	8.7	6.1	1.0	1.1	22.4	12.2	7.8	2.2	0.7	6.0	3.5	1.7	1.2	(0.4)
'AA'	19.4	10.7	6.1	1.0	0.7	25.5	15.1	7.8	2.2	0.5	6.2	4.4	1.7	1.3	(0.2)
'A/BBB'	13.3	7.3	4.4	0.8	0.3	18.8	9.8	6.2	2.0	0.2	5.5	2.6	1.8	1.3	(0.1)

PEN--Pensions. HCA--Health care. LTC--Long-term care. UNE--Uemployment benefits.

**Table 3****Long-Term Scenarios (Base-Case)**

	Net general government debt (% of GDP)						General government balance* (% of GDP)						Hypothetical long-term sovereign ratings				
	2005	2010	2020	2030	2040	2050	2005	2010	2020	2030	2040	2050	2005	2010	2020	2030	2040
Australia	(2)	(5)	(2)	17	55	105	1	1	(1)	(4)	(7)	(10)	AAA	AAA	AA	BBB	Spec.
Austria	52	48	41	50	71	91	(1)	(1)	(1)	(4)	(5)	(5)	AAA	AAA	AAA	AA	A
Belgium	86	71	47	51	83	130	1	0	(1)	(4)	(7)	(10)	AA	AAA	AA	BBB	Spec.
Canada	30	19	(4)	(15)	(14)	(11)	2	2	2	1	0	0	AAA	AAA	AAA	AAA	AA
Cyprus	51	47	58	100	182	327	(2)	(3)	(6)	(11)	(18)	(31)	A	A	Spec.	Spec.	Spec.
Czech Republic	27	38	71	127	236	413	(3)	(5)	(8)	(13)	(22)	(33)	A	BBB	Spec.	Spec.	Spec.
Denmark	22	8	(11)	(25)	(34)	(40)	5	2	2	2	2	2	AAA	AA	AA	AA	AA
Estonia	(7)	(4)	(4)	6	28	65	2	1	(0)	(2)	(4)	(7)	A	A	A	BBB	Spec.
Finland	(29)	(33)	(33)	(11)	36	92	3	2	0	(4)	(7)	(9)	AAA	AAA	A	Spec.	Spec.
France	57	60	73	103	156	223	(3)	(3)	(5)	(8)	(12)	(16)	AAA	AAA	A	Spec.	Spec.
Germany	59	63	63	85	125	180	(3)	(2)	(3)	(6)	(9)	(12)	AAA	AAA	AAA	A	Spec.
Greece	103	99	110	165	276	450	(5)	(4)	(7)	(13)	(23)	(35)	A	AA	BBB	Spec.	Spec.
Hungary	54	72	112	178	295	469	(6)	(7)	(11)	(16)	(24)	(35)	A	A	Spec.	Spec.	Spec.
Ireland	15	9	10	33	85	170	2	0	(2)	(5)	(10)	(17)	AAA	AAA	A	Spec.	Spec.
Italy	103	101	102	121	166	220	(3)	(4)	(4)	(7)	(11)	(12)	AA	AA	A	BBB	Spec.
Japan	101	108	135	216	340	530	(5)	(6)	(13)	(18)	(26)	(37)	AA	A	Spec.	Spec.	Spec.
Korea	31	23	2	38	132	262	1	(0)	(2)	(8)	(17)	(24)	A	AA	A	Spec.	Spec.
Latvia	13	12	15	34	69	128	(0)	(1)	(2)	(4)	(7)	(11)	A	A	BBB	Spec.	Spec.
Lithuania	15	15	21	45	87	151	(1)	(1)	(3)	(5)	(8)	(12)	A	A	BBB	Spec.	Spec.
Luxembourg	(34)	(23)	12	75	168	276	(1)	(1)	(6)	(12)	(19)	(26)	AAA	AAA	BBB	Spec.	Spec.
Malta	75	70	85	112	145	188	(2)	(4)	(7)	(8)	(10)	(12)	A	A	Spec.	Spec.	Spec.
Netherlands	45	40	36	56	103	162	1	(0)	(2)	(6)	(10)	(13)	AAA	AAA	AA	Spec.	Spec.
New Zealand	7	(1)	(16)	(8)	30	84	4	2	1	(2)	(6)	(9)	AA	AA	A	Spec.	Spec.
Norway	(109)	(166)	(241)	(243)	(156)	(2)	16	17	14	5	(8)	(18)	AAA	AAA	AA	Spec.	Spec.
Poland	37	45	60	94	161	262	(3)	(4)	(6)	(9)	(13)	(19)	BBB	BBB	Spec.	Spec.	Spec.
Portugal	59	66	91	148	261	437	(5)	(5)	(8)	(13)	(22)	(34)	AA	AA	Spec.	Spec.	Spec.

Slovakia	31	32	33	51	95	171	(2)	(2)	(3)	(5)	(9)	(14)	A	AA	A	BBB	Spec.
Slovenia	26	27	40	81	167	308	(1)	(2)	(4)	(9)	(17)	(27)	AA	AA	BBB	Spec.	Spec.
Spain	34	21	7	16	74	184	1	1	0	(4)	(11)	(18)	AAA	AAA	AAA	BBB	Spec.
Sweden	(24)	(25)	(32)	(26)	0	34	3	2	2	(1)	(4)	(5)	AAA	AAA	AAA	A	Spec.
U.K.	38	42	52	76	120	182	(3)	(3)	(4)	(6)	(10)	(14)	AAA	AAA	AAA	A	Spec.
U.S.	49	53	86	149	241	350	(4)	(5)	(9)	(15)	(22)	(29)	AAA	AAA	BBB	Spec.	Spec.

**Medians**

Whole sample	33	35	38	54	112	181	(1)	(1)	(3)	(6)	(10)	(14)					
"Old" EU-15 members	45	42	41	56	103	180	(1)	(1)	(2)	(6)	(10)	(13)					
"New" EU-10 members	29	35	49	87	153	225	(2)	(2)	(5)	(9)	(11)	(16)					
"Anglo-Saxons"	23	14	4	25	70	138	1	0	(1)	(5)	(8)	(12)					
'AAA'	30	19	10	33	74	162	1	0	(1)	(4)	(9)	(13)					
'AA'	73	69	69	101	167	264	(2)	(3)	(4)	(8)	(14)	(19)					
'A/BBB'	37	40	42	68	145	218	(2)	(3)	(6)	(8)	(13)	(19)					

\*Cyclically adjusted excluding transfers to second-pillar pension systems. Spec.--Speculative-grade.

**Additional Contact:**

Sovereign Ratings;  
SovereignLondon@standardandpoors.com

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