

## The Western World Past Its Prime--Sovereign Rating Perspectives in the Context of Aging Populations

Credit Analysts: Moritz Kraemer, London (44) 20-7176-7114; Timothy Reid, London (44) 20-7176-7116

---

### Background and Summary

In January 2002, Standard & Poor's Ratings Services presented a report that investigated the potential long-term sovereign rating implications of demographic change (see "Western Europe Past its Prime--Sovereign Rating Perspectives in the Context of Aging Populations," published on Jan. 9, 2002, on RatingsDirect, Standard & Poor's Web-based credit analysis system.) The study concluded that the sovereign ratings of highly rated European Union (EU-15) members could begin to come under downward pressure by the end of this decade if no progress is made in further fiscal consolidation and structural reform to counter the financial challenges of aging societies. Debt and deficits in most EU-15 member states would soar as public spending on health, pensions, and long-term care escalate, while a shrinking workforce would lead to an erosion of government revenue. Notwithstanding this disheartening long-term perspective, the 2002 report concluded that the high ratings of EU-15 sovereigns are not inconsistent with the challenges ahead. They reflect Standard & Poor's expectation that governments will step up their efforts to more effectively confront the fiscal ramifications of aging and the fact that in most cases age-related fiscal pressures will rapidly accelerate only after 2020.

The current report builds on the methodology developed in "Western Europe Past It's Prime", but is more ambitious in that it widens the scope by including an additional 10 highly industrialized, high-income nations from around the globe. Apart from the EU-15 members already covered in 2002, this report also includes three acceding countries (Poland, the Czech Republic, and Hungary), as well as Australia, New Zealand, the U.S., Canada, Japan, Korea, and Norway (see the ratings list at the end of the article). The estimates for the EU-15 sample have been updated to take into account new demographic and fiscal data.

Almost all countries will face a very significant deterioration of public finances over the next half-century as a result of demographic change if no countervailing fiscal adjustment is put into place or if social security systems are not reformed. Initially, the pressure from age-related spending will remain very moderate. But starting around 2015 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. The interest cost of the additional borrowing will exacerbate the spending pressure, and deficits would rise inexorably to close to 8% in 2040 and to more than 10% by the middle of the century. While the general government debt burden will initially decline moderately until the late 2010s, it will start to rise slowly thereafter, accelerating sharply from the late 2020s. By 2035 the debt burden will still be a manageable 73% of GDP, but will reach 139% 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 58% of GDP in 2050, from 48% in 2005. In other words, the typical country would have a larger public sector than the sovereign with the biggest economic weight of the state in the sample today (Sweden, at 56% of GDP in 2004).

Although the fiscal indicators of the "typical" country are a useful yardstick to measure the fiscal challenge ahead, there would be a wide variation of country experiences. Some countries, including Australia, Ireland, Sweden and the U.K., would do considerably better than the sample average, and will be able to keep their debt burden below 70% of GDP even by 2050. On the other hand, some continental European countries such as France, Germany, Portugal, Greece, Poland, and the Czech Republic would post debt burdens well above 200% of GDP by 2050, as would New Zealand. Predictably, Japan will continue to have the highest debt burden, which, at current trends, would reach an implausible 400% of GDP as early as 2030.

Compared with the simulations made two years ago in "Western Europe Past its Prime," the average European country does slightly worse in this round of simulations, reflecting the weakening fiscal stance that has occurred since. The EU-15 sovereigns' debt would now rise to 164% of GDP in 2050 (GDP-weighted), from 147% of GDP in the 2002 simulations. This deterioration is relatively benign if compared with the revision to the U.S. debt ratio in 2050, which reveals significant fiscal loosening in the U.S. The U.S. debt

ratio is now projected to reach 158% of GDP, almost double the 83% projected two years ago.

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

This scenario is not a prediction by Standard & Poor's. It is unlikely 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 problem 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 in 2003, have embarked on structural reform likely to mitigate the pressure described here. Reforms in Austria (2003) and Germany (2004) have not yet been taken into account by the current calculations. Important reforms have also been tabled by, among others, Italy and Norway, and are expected to be passed during 2004. As the reform momentum broadens and fiscal consolidation progresses in most countries in the sample, future revisions can be expected to show a slightly improving picture on average. However, the magnitude of the challenge, as indicated by the fiscal development described, will require further decisive steps in almost all countries in the sample.

Details regarding data sources and methodology used, as well as caveats regarding the international comparability of data, can be found in a methodological supplement published separately (The Western World Past Its Prime--Sovereign Rating Perspectives in the Context of Aging Populations: Methodological and Data Supplement, published on April 1, 2004, on RatingsDirect). All projections use the technical assumptions that the current design of social security systems will remain in place throughout the projection period.

## Components of Age-Related Spending

Table 1 summarizes, for each expenditure category, the changes in spending as a percentage of GDP that governments are likely to encounter over different time horizons. Pensions (including early retirement of individuals aged 55 or older) are the most important source of expenditure pressure in the sample, rising by 3.9 percentage points of GDP from current levels by 2040, when their costs will peak. Other spending categories also play an important role, however. The demographically driven increase of public health care spending is projected to be 2.1 percentage points of GDP between 2000 and its peak, which is at the end of the forecasting period (2050). During the same period, the median cost of long-term care for the frail and elderly will increase by 1.0 percentage point of GDP. Potential savings on the shrinking, young end of the population pyramid tend to be minuscule. The expected fall in the fiscal cost of child benefits and education typically finances less than one-tenth of additional spending on the elderly.

Pensions will probably remain at the center of the reform debate, not only due to the sheer size of the problem, but also because public health care provision is not associated with entitlements earned by the beneficiary and can therefore be curtailed with more immediate effect through legislation, although the political capital that would need to be invested could be substantial. In most countries, a similar level of discretion applies with regard to early retirement programs. By contrast, in the short term, old-age pensions can typically only be dealt with at the margin. Any pension reform becomes effective only after considerable lags, as constitutional and political realities make the wholesale "expropriation" of existing accumulated entitlements an unappealing choice.

(% of GDP)	2010	2015	2020	2030	2040	2050
Total additional age-related spending	0.2	0.8	1.9	4.4	5.9	6.1
Of which pensions	0.5	0.9	1.7	3.1	3.9	3.9
Of which health	0.1	0.4	0.7	1.4	1.9	2.1
Of which long-term care	0.1	0.1	0.2	0.5	0.8	1.0
Of which education	(0.3)	(0.4)	(0.5)	(0.5)	(0.4)	(0.6)
Of which child benefits	(0.1)	(0.2)	(0.2)	(0.2)	(0.2)	(0.3)

### **The "Fiscal Autopilot" Generates Worrying Long-Term Results**

To calculate for each country the fiscal trajectory resulting from mounting aging-related spending pressures, the behavioral assumption of the "fiscal autopilot" is applied. This assumes that, in every country, the average recent (1999-2003) fiscal stance will be maintained every year going forward. "Fiscal stance" is defined as the adjusted primary surplus, which is identical to the primary surplus excluding the effect of incremental future age-related expenditures and changes in the debt-service bill originating from declining or rising government debt levels relative to 2003.

Under this scenario, all revenue and noninterest expenditure levels are frozen at the average 1999-2003 levels (measured as a share of GDP). This means that citizens continue to face the same average mix of taxes and non-age-related public services as in the period 1999-2003. If age-related spending goes up, taxes are not increased and non-age-related spending is not cut to offset the rise. If debt levels and related interest expenditures fall, the savings are not passed on through lower taxes or higher public spending. As a result, sustained surpluses emerge. But only up to a point: in most societies, extended large surpluses simply appear to be politically unsustainable. Sooner rather than later, the pressure to return taxpayer money to the electorate via tax cuts and/or to step up public spending becomes irresistible. The adjusted primary surplus (as a percentage of GDP) is thus the lower of two figures: the average actual level observed in 1999-2003, or the level that would have been required in order to generate a mild average overall budget surplus (1% of GDP) in the three years immediately preceding the forecast period. In other words, whenever the budget surpluses look like becoming entrenched, the government will cut taxes, thereby returning to a smaller, more politically acceptable surplus. Although a ceiling is introduced for fiscal surpluses, there continues to be no floor that would limit deficits.

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 nonrenewable resources. For Norway, a progressive decline of the politically feasible surplus is assumed from their current two-digit levels from the end of the 2010s onward to the standard 1% by 2025, broadly mirroring the maturing North-Sea oil fields.

Using the assumptions of the fiscal autopilot and a ceiling for politically feasible surpluses, a country-by-country trajectory of key fiscal indicators can be calculated. Tables 2a and 2b summarize the key results for each country as well as for subgroups in the sample. Table 3 complements this information by presenting the development of the share of age related spending, including all components listed in Table 1, and the projected change of the old-age dependency ratio.

**Table 2a Surplus Ceiling: Evolution of Fiscal Indicators in the Absence of Further Adjustment**

*(% of GDP, 2000-2050)*

	General government debt						Fiscal balance					
	2000	2010	2020	2030	2040	2050	2000	2010	2020	2030	2040	2050
Australia	17	0	(5)	6	30	68	1	1	(0)	(2)	(4)	(7)
Austria	67	56	44	50	74	104	(1)	(0)	(1)	(4)	(6)	(6)
Belgium	110	70	44	50	73	92	0	2	(0)	(4)	(5)	(4)
Canada	82	45	36	60	102	136	4	0	(2)	(6)	(8)	(8)
Czech Republic	19	70	122	201	321	490	(4)	(7)	(11)	(17)	(25)	(36)
Denmark	47	29	40	69	104	125	3	(1)	(3)	(6)	(6)	(5)
Finland	45	28	24	48	91	144	7	1	(2)	(5)	(8)	(10)
France	57	70	89	131	190	260	(1)	(3)	(6)	(10)	(13)	(16)
Germany	60	70	85	128	203	307	(1)	(3)	(5)	(10)	(15)	(22)
Greece	103	66	41	68	145	275	(2)	2	(2)	(8)	(15)	(23)
Hungary	57	56	53	59	73	101	(4)	(2)	(2)	(3)	(5)	(8)
Ireland	39	19	13	23	42	65	5	1	(1)	(2)	(4)	(5)
Italy	110	91	73	69	80	89	(2)	(1)	(1)	(2)	(4)	(2)
Japan	144	204	287	399	536	718	(8)	(13)	(18)	(22)	(30)	(39)
Korea	36	17	(9)	22	85	171	1	1	(1)	(6)	(11)	(15)
Luxembourg	5	(3)	(8)	4	25	35	6	1	0	(3)	(3)	(2)
Netherlands	57	48	46	76	144	232	2	(0)	(3)	(8)	(13)	(17)
New Zealand	37	19	15	44	116	216	(1)	1	(2)	(7)	(13)	(18)
Norway	34	(41)	(136)	(83)	31	139	15	13	12	(9)	(13)	(12)
Poland	40	59	81	131	212	325	(3)	(4)	(7)	(12)	(19)	(26)
Portugal	53	69	87	125	192	278	(3)	(4)	(6)	(9)	(13)	(17)
Spain	61	31	6	1	21	60	(1)	2	2	(1)	(4)	(7)
Sweden	55	32	14	21	43	59	4	2	0	(3)	(4)	(3)
U.K.	41	32	17	17	32	55	2	1	0	(2)	(3)	(4)
U.S.	51	47	40	57	95	158	2	(1)	(3)	(6)	(8)	(12)
<b>GDP-weighted averages</b>												
Sample*	56	48	41	59	100	160	1	(1)	(2)	(6)	(8)	(12)
AAA	52	47	41	60	101	161	2	(1)	(3)	(6)	(8)	(12)
AA*	92	67	48	47	68	95	(1)	0	(0)	(3)	(5)	(5)
A	47	32	13	44	109	201	(0)	0	(2)	(7)	(12)	(17)
EU-15	64	58	54	71	111	164	(0)	(1)	(2)	(5)	(8)	(11)
<b>Median</b>												
Sample	53	47	40	57	91	139	0	0	(2)	(6)	(8)	(10)
AAA	49	32	30	49	82	130	2	1	(1)	(6)	(7)	(7)
AA	85	69	59	60	98	154	(1)	0	(1)	(5)	(9)	(12)
A	47	61	47	64	115	223	(3)	(0)	(2)	(7)	(13)	(19)
EU-15	57	48	41	50	80	104	0	1	(1)	(4)	(6)	(6)

\*Excluding Japan.

**Table 2b Surplus Ceiling: Evolution of Fiscal Indicators in the Absence of Further Adjustment**

*(% of GDP, 2000-2050)*

	Expenditure						Interest expenditure					
	2000	2010	2020	2030	2040	2050	2000	2010	2020	2030	2040	2050
Australia	36	34	36	38	41	44	1	0	(0)	0	2	3
Austria	52	52	52	55	57	58	3	3	2	2	4	5
Belgium	49	47	47	51	53	53	7	4	2	3	4	5
Canada	40	37	39	44	47	49	7	2	2	3	5	7
Czech Republic	44	51	54	60	68	79	1	4	6	10	16	24
Denmark	53	52	55	59	61	60	4	1	2	3	5	6
Finland	48	51	53	58	62	64	1	1	1	2	5	7
France	53	55	58	62	65	68	3	4	4	7	9	13
Germany	49	49	51	56	61	67	3	4	4	6	10	15
Greece	50	43	46	52	61	69	7	3	2	3	7	14
Hungary	47	48	48	49	51	53	6	3	3	3	4	5
Ireland	33	35	36	38	40	42	2	1	1	1	2	3
Italy	46	47	47	49	50	49	6	5	4	3	4	4
Japan	49	69	74	78	86	95	3	10	14	20	27	36
Korea	36	34	35	41	46	50	3	1	(0)	1	4	9
Luxembourg	39	47	48	51	53	52	0	(0)	(0)	0	1	2
Netherlands	45	49	51	56	62	66	4	2	2	4	7	12
New Zealand	42	40	42	48	54	59	2	1	1	2	6	11
Norway	40	44	44	51	59	64	2	(2)	(5)	(3)	2	7
Poland	41	45	48	53	59	66	3	3	4	7	11	16
Portugal	45	48	50	53	56	61	3	3	4	6	10	14
Spain	40	38	37	39	43	46	3	2	0	0	1	3
Sweden	53	52	52	55	57	58	4	2	1	1	2	3
U.K.	39	41	42	43	45	47	3	2	1	1	2	3
U.S.	28	31	33	36	38	42	3	2	2	3	5	8
<b>GDP-weighted averages</b>												
Sample*	37	38	38	41	44	47	3	2	2	3	5	8
AAA	36	37	38	40	43	47	3	2	2	3	5	8
AA*	45	44	44	46	48	49	5	3	2	2	3	5
A	40	38	39	44	50	55	3	2	1	2	5	10
EU-15	47	47	48	51	54	57	4	3	3	4	6	8
<b>Median</b>												
Sample	45	47	48	51	56	58	3	2	2	3	5	7
AAA	43	48	50	53	57	58	3	2	2	2	4	7
AA	46	47	47	50	53	56	3	3	3	3	5	8
A	46	45	47	51	56	61	4	3	2	3	6	11
EU-15	48	48	50	53	57	58	3	2	2	3	4	5
*Excluding Japan.												

Table 3 Age-Related Public Spending (% of GDP) and Old-Age Dependency Ratios (2000-2050)														
	Age-related spending						Change 2050/2000	Old-age dependency ratio						Change 2050/2000
	2000	2010	2020	2030	2040	2050		2000	2010	2020	2030	2040	2050	
Australia	17	16	18	20	21	22	6	20	25	30	37	43	47	27
Austria	28	28	29	31	32	31	4	25	29	32	44	55	55	30
Belgium	23	22	24	27	28	28	4	28	29	36	46	51	50	22
Canada	19	20	22	26	27	28	8	20	25	29	37	43	46	26
Czech Republic	23	23	23	25	28	30	7	22	28	36	40	47	58	36
Denmark	29	32	34	36	36	35	6	24	27	34	39	45	42	18
Finland	25	25	27	31	33	32	7	24	28	39	47	47	48	24
France	27	27	29	31	31	30	3	27	28	36	44	50	51	24
Germany	23	23	25	27	29	30	7	26	33	36	47	55	53	27
Greece	24	23	27	32	37	38	14	28	32	36	42	51	59	30
Hungary	20	19	19	20	21	22	2	24	27	30	33	39	47	24
Ireland	17	17	19	21	21	22	5	19	19	25	30	36	44	25
Italy	25	25	26	28	28	27	2	29	34	40	49	64	67	38
Japan	23	24	25	24	24	25	2	28	37	49	52	57	65	37
Korea	11	11	13	17	20	20	9	11	15	21	32	41	45	34
Luxembourg	21	20	21	24	25	23	3	23	26	31	40	45	42	18
Netherlands	21	23	25	29	31	30	9	22	25	33	42	48	45	23
New Zealand	20	20	22	26	29	29	9	20	25	31	41	47	48	28
Norway	18	20	24	28	32	31	13	26	29	32	38	41	41	16
Poland	25	23	25	27	30	32	7	20	24	29	35	43	55	35
Portugal	27	28	29	30	30	30	3	25	27	30	35	43	49	24
Spain	21	20	20	22	25	27	6	27	29	33	42	56	66	39
Sweden	29	29	30	33	33	33	4	30	31	38	43	47	46	17
U.K.	18	17	18	20	21	21	3	26	27	32	40	47	46	20
U.S.	11	11	13	16	16	17	6	22	25	29	35	38	38	16
<b>GDP-weighted averages</b>														
Sample*	17	16	18	20	20	21								
AAA	16	15	17	19	20	20								
AA*	24	23	24	26	27	27								
A	15	14	16	20	23	23								
EU-15	23	23	24	27	27	28								
<b>Median</b>														
Sample	23	23	24	27	28	29	6	24	27	32	40	47	48	25
AAA	21	21	24	28	30	30	5	25	28	35	42	48	48	24
AA	23	23	25	27	28	27	6	21	26	32	39	45	53	31
A	22	21	21	23	24	26	9	23	26	31	38	43	47	25
EU-15	24	23	26	29	30	30	6	24	28	36	42	47	50	27
*Excluding Japan.														

Three key results stand out and are discussed in more detail below.

- The vast majority of the countries in the sample will face severe fiscal pressures going forward.
- Very wide differences exist in the projected experiences of individual countries.
- The results confirm the simulations generated in the 2002 report ("Western Europe Past its Prime") for the EU-15 member states.

### Magnitude of the global challenge ahead.

Charts 1 to 3 depict on an aggregate level the profile and the magnitude of the challenge. The charts display the developments for a representative (median) country. Age-related spending would increase slowly at first for the countries in the sample. Comprising the categories defined in Table 1, the median country's age related public spending would remain constant as a share of GDP until 2010. However, at first it will start to grow only gradually (1.6 percentage points of GDP in the 2010s), after which it will shoot up, gaining 3.2 percentage points of GDP during the 2020s. Afterwards, the growth continues more subdued (at 1.1 percentage points of GDP in the 2030s) and eventually fizzles out in the 2040s (0.4 percentage points of GDP). By the middle of the century the median country will have to confront age-related spending equivalent to 28.8% of GDP, up sharply from 22.3% of GDP in 2005, with most of the increase happening before 2035.

The financial weight of this additional public spending requirement is very significant and dwarfs, for example, the fiscal implications of German unification, which is estimated to be about 3%-4% of German GDP per year more than a decade after the event. However, the demographic spending pressures are predictable, and will be phased in over a longer period, giving governments more time to react than the German authorities could count on when they had to make difficult choices after unification. But the model's behavioral assumption, the "Fiscal Autopilot", explicitly assumes that this time is not being used to alter prevailing policies. Rather, social security systems and other spending programs (as a share of national output) remain unchanged relative to the 1999-2003 reference period.

Chart 1

### General Government Expenditures (% of GDP, Median)

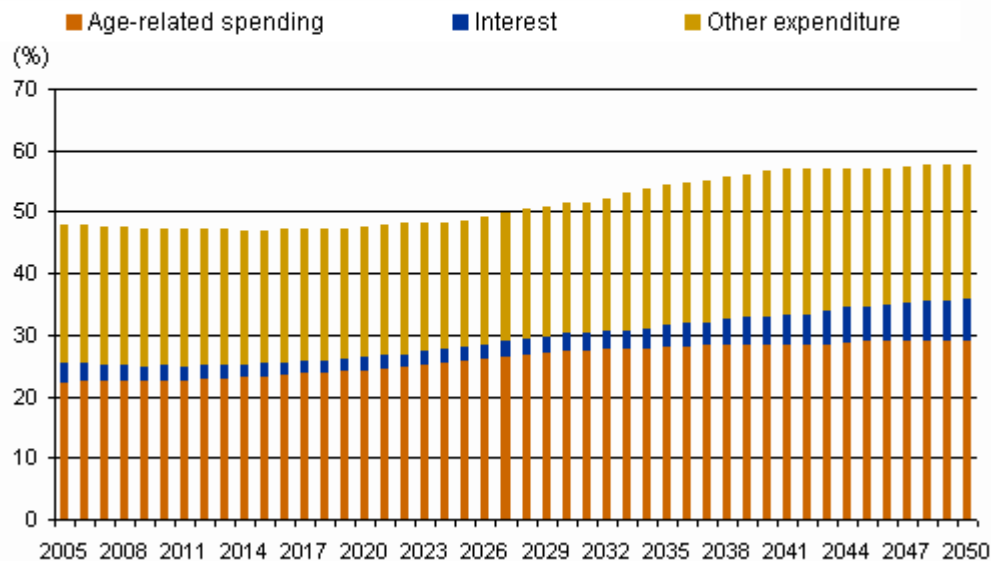


Chart 2  
**General Government Balance (% of GDP, Median)**

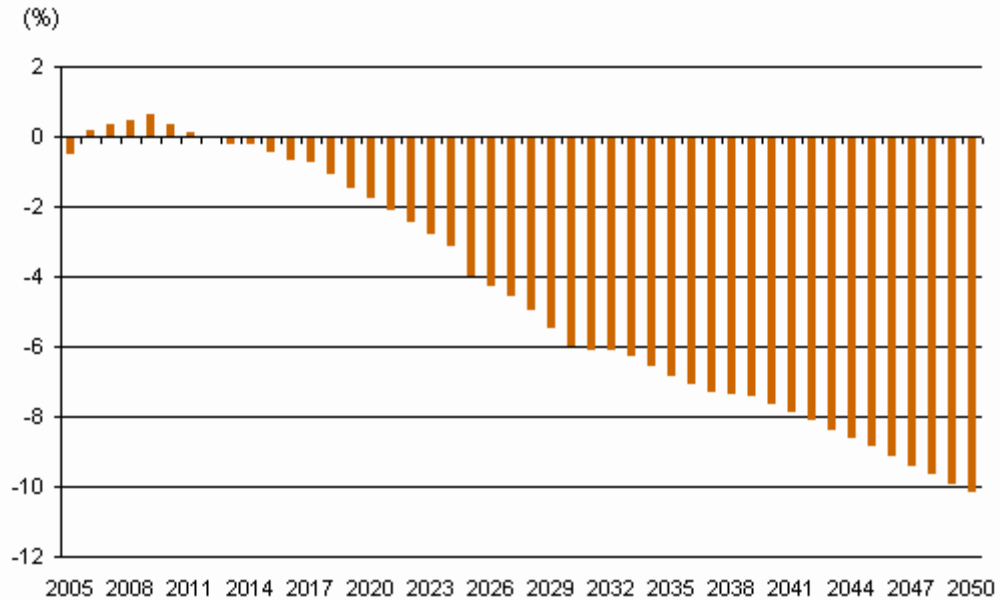
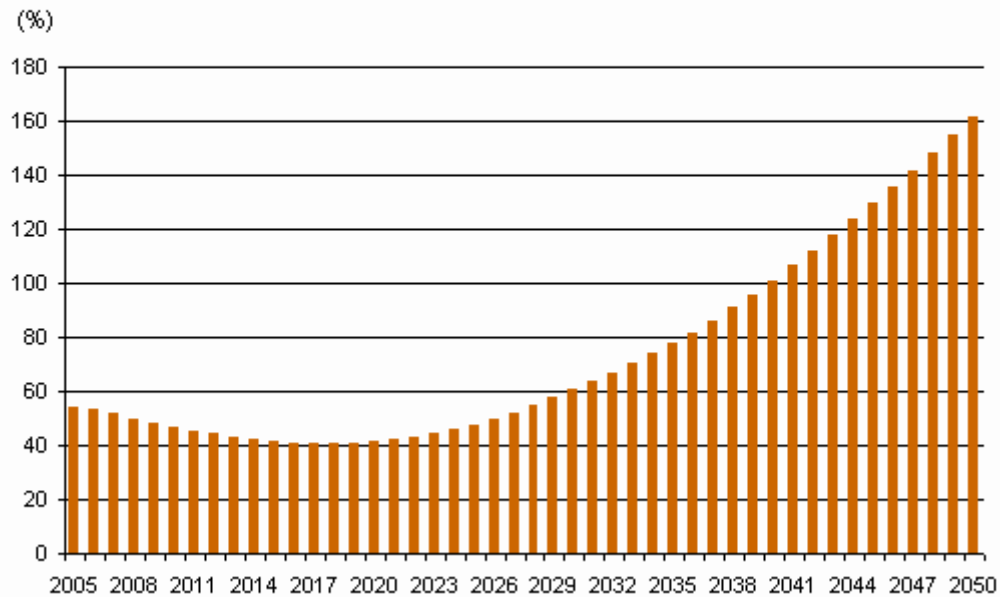


Chart 3  
**General Government Debt Ratio (% of GDP, Median)**



The increase in age-related spending will gradually start to undermine public finances. Deficits will begin to rise early in the next decade, leading to additional borrowing and the concomitant incremental interest outlays. Reinforcing each other, the rise in interest payments and age-related spending will weaken public finances at an ever-faster pace. The median country will be able to sustain broadly balanced budgets until the first half of the 2010s, when deficits begin to mount. Coinciding with the strongest demographic



pressure, the deficit will grow fastest during the 2020s. By 2030, the median deficit will have reached 6% of GDP. This trend has a predictable impact on the general government debt ratio, exacerbated by a slowly growing denominator as labor force expansion shrinks and eventually turns negative, dragging down economic growth potential. The median's debt-ratio of the sample countries will moderately decline until the late 2010s when a low of 40% of GDP will have been reached (from 55% of GDP in 2005). Thereafter the trend is quickly turned around. The 55% reached in 2005 will be surpassed in 2030 and by 2042 public debt will be larger than national income, reaching 140% by the middle of the decade.

These projected debt burdens are on a massive scale, but not without precedent. Japan already has a debt burden in excess of what the median's debt ratio will be in 2050, and both New Zealand and Australia had debt burdens in excess of 150% on the brink of World War II, when the U.K.'s reached a staggering 188%, up from 30% in 1913. All three countries currently have debt levels well below the average of the sample (see following section). What is different in the fiscal autopilot scenario of demographic change compared with the early 20th century, however, would be the widespread deterioration of fiscal performance. Virtually all countries would be affected by a well-understood and predictable force (demography), whereas the previous episode of high debts were caused by war and the Great Depression.

In tandem with the rise in debt and demography-related spending will come a very significant increase in the size of the public sector in relation to GDP. Currently, general government spending accounts for around 47% of GDP for the median country, and will remain fairly stable until the late 2010s as increasing age-related spending is offset by reduced interest rate outlays. However, this delicate balance will break down during the 2020s as age-related spending starts to accelerate, leading to higher deficits and interest payments. By 2030, government spending will account for 51% of GDP, climbing to 57% in 2040, from where it will grow only minimally as age-related spending starts to nudge down, partly compensating growing interest costs. 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 10 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.

### **Significant differences across countries.**

The trajectory of the typical (median) country described above is useful to assess the aggregate magnitude and profile of the challenge. But at current trends, country experiences will be far from uniform, both in terms of the profile and the size of the burden, as demonstrated by the country-specific data presented in Tables 2a and 2b. Table 4 ranks the countries according to their gross general government debt ratio by decades. This makes it possible to broadly follow each country and see how it compares with the sample over time. The higher the rank order, the higher the country's debt burden compared with the rest. A number of countries will be able to contain their debt burdens very effectively throughout the forecast period, keeping the ratio well below 100% of GDP and appearing in the "top ten" of relatively low debt countries throughout 2010-2050. This group comprises Luxembourg, Australia, Ireland, Sweden, the U.K. and Spain. At the other end, a handful of countries will not be able to move out of the "bottom ten" during 2010-2050: Japan, the Czech Republic, Poland, Portugal, France, Germany, Greece, and the Netherlands. Japan will remain fixed to the bottom of the debt ranking, followed for most of the period by the Czech Republic. In the latter's case, the rapid deterioration is largely related to the very weak starting position of the fiscal stance, which is second only to Japan's. The fiscal autopilot extends this weak fiscal stance indefinitely into the future.

But while some countries seem stuck to the bottom end of the ranking as others perform well throughout the forecast period, there are also countries moving along the ranking in both directions. The Netherlands, Denmark, and Canada first experience an early deterioration of their debtor position relative to peers, but catch up again in the later decades, due largely to a relatively developed prefunded pension system. Conversely, the fiscal profile in Germany and Spain, but especially in Greece, is more backloaded, meaning a relative improvement in debt ratios between 2010 and 2030, followed by a even faster decline than is typical for the sample. The backloaded profile arguably poses a greater threat from the political economy standpoint because incentives to maintain an austere fiscal course are largely absent in the run-up to the 2020s, when fiscal flexibility starts to evaporate. The temptation will always be to postpone necessary adjustment until the political environment is more conducive to change. The danger is, of course, that this day may not come until it is too late to fix the system without breaking implicit or explicit promises in some major way.

**Table 4 Country Ranking by General Government Debt Ratio\***

*(1=lowest debt, 25=highest debt)*

	2000	2010	2020	2030	2040	2050
Luxembourg	1	2	3	3	2	1
Australia	2	3	4	4	3	6
Czech Republic	3	22	24	24	24	24
Norway	4	1	1	1	4	13
Korea	5	4	2	7	12	16
New Zealand	6	6	8	9	17	17
Ireland	7	5	6	8	6	5
Poland	8	17	20	23	23	23
U.K.	9	11	9	5	5	2
Finland	10	7	10	10	13	14
Denmark	11	8	13	17	16	11
U.S.	12	13	12	13	14	15
Portugal	13	19	22	20	21	21
Sweden	14	10	7	6	7	3
Netherlands	15	14	17	19	18	18
Hungary	16	15	18	14	8	9
France	17	21	23	22	20	19
Germany	18	23	21	21	22	22
Spain	19	9	5	2	1	4
Austria	20	16	16	11	10	10
Canada	21	12	11	15	15	12
Greece	22	18	14	16	19	20
Belgium	23	20	15	12	9	8
Italy	24	24	19	18	11	7
Japan	25	25	25	25	25	25

\*Countries are ranked according to their debt ratio in 2000.

### **Comparison with the results of the 2002 study.**

The figures reported in Tables 2a and 2b confirm the findings for the EU-15 sovereigns of the 2002 simulations (see the article *Western Europe Past its Prime*). Given that the fiscal stance has weakened since then across EU sovereigns, it comes as no surprise that the aggregate scenario has also deteriorated. For example, in 2002 the GDP-weighted debt burden in 2050 was 147% of GDP, better than the revised corresponding figure of this report (164% of GDP). This is despite a marginal reduction of age related spending items due to some reforms undertaken since then, such as in France (2003) and Germany (2001). The most important changes are for Austria and Spain, both of which show significantly better fiscal profiles compared with 2002. In both cases, the improvement is due to revised demographic projections. In the case of Spain, in particular, the new national demographic estimates lead to a very sizeable fall in the estimated age-related spending pressures and, thus, better fiscal indicators. The figures for the U.K. were adjusted to eliminate some anomalies, as explained in the methodological supplement to this publication. Nevertheless, the U.K.'s performance remains one of the best in Europe.

The fiscal trajectory for the U.S., which was reported in 2002 for comparative purposes, has also deteriorated sharply in line with the turnaround of public finances in recent years. In a no-change scenario, the debt burden is now expected to reach 158% of GDP in 2050, above the median of both the total sample and the EU-15 subgroup. The 2002 simulations had generated a much lower debt level of 83% for 2050.

## **Possibility of Severe Pressure on Sovereign Ratings Over the Next Decade**

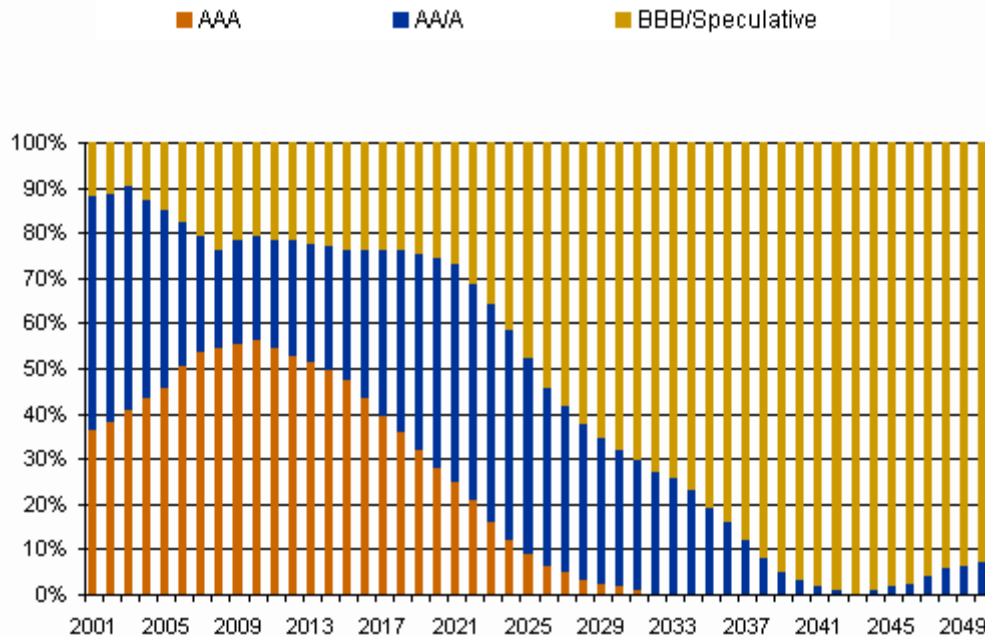
In practice, Standard & Poor's takes a large number of factors into consideration when deriving sovereign credit ratings. In the very long-term, however, prolonged fiscal imbalances tend to become a dominant factor. To obtain an indication of the direction of sovereign ratings, it is therefore useful to compare each country's simulated general government balance with the median budget balance for each rating category, averaged over the 1999-2003 period, which comprises both boom and bust episodes of the global business cycle. Using sovereign ratings at March 24, 2004, the 'AAA' median displays a fiscal surplus of around 0.4% of GDP over this period. The 'AA' median is fiscally broadly in balance (minus 0.1% of GDP), while the 'A' median has a deficit of 2.0% of GDP. The median balance for the 'BBB' category is weaker still, at minus 2.9% of GDP. Balances in non-investment grade countries are weaker yet again (median of minus 3.2% of GDP).

Future theoretical ratings are derived by simply comparing the forecast fiscal balance under the fiscal autopilot scenario with the balance characteristic for the different rating categories. For example, a surplus of 0.4% of GDP or higher generates a "theoretical" rating of 'AAA', a balance falling between a surplus of 0.4% of GDP and a deficit of 0.1% of GDP would result in a theoretical rating in the 'AA' category, and so on. A deficit of more than 2.9% would lead to a theoretical rating falling into the 'BBB' category or lower.

Chart 4 displays the results of theoretical ratings under the "fiscal autopilot" assumptions. Although Poland is the only country in the sample falling into the 'BBB' category, the "theoretical" share of 'BBB' rated countries is between 10% and 20% from the outset. This reflects the simplistic approach chosen when deriving the theoretical rating by focusing exclusively on the fiscal balance. The recent fiscal weakening of some higher-rated sovereigns, including in the 'AAA' category, can lead to a theoretical rating of 'BBB', although in practice Standard & Poor's considers that other strengths warrant an actual rating that is sometimes significantly higher. What is more important, however, is the nonlinearity of the aggregate theoretical rating distribution. To the extent that the current weakness in some countries' fiscal performance gives way to medium-term consolidation and a declining interest burden, ratings should remain robust at their current levels until 2010, with some further convergence even possible. Starting from the early 2010s, however, centrifugal forces would quickly gain strength. The incremental age-related spending and the associated increase in interest outlays leads to a weakening of the budget balance as described above, dragging the theoretical ratings down in the process. The weakening of the theoretical ratings accelerates in the 2020s, when more and more sovereigns will display a fiscal balance currently more characteristic for 'BBB' (or lower) rated sovereigns. By the early 2040s, all sovereigns will display deficits of 2.9% or more, leading to a theoretical 'BBB' rating or lower. A moderate rebound would occur in the latter half of the 2040s and beyond, as the aging-related expenditure pressure begins to reverse.

Chart 4

### Theoretical Sovereign Rating Distribution (Five-Year Average, 2001-2050)



Theoretical ratings are derived using a simple proxy of projected fiscal balances, which are compared with the median balances for each rating category during 1999-2003. See main text for details.

The preceding analysis in no way constitutes a forecast of ratings by Standard & Poor's. It merely states that if no adequate countervailing structural or fiscal reforms were to be taken, deficits would increase to levels that are today typical of much lower-rated sovereigns. Nevertheless, even if this specific exercise serves only as an illustration of underlying tendencies of what could happen in the unlikely event of total government complacency, the basic message is unambiguous: without strong and sustained reform, the high sovereign ratings could come under intense pressure as soon as the mid-2010s. The potential for temporary rating improvements will eventually be swept aside in the aggregate by longer-term pressures on fiscal indicators.

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. Nevertheless, the simulated fiscal paths illustrate that several sovereigns will have a long way to go to escape the fiscal maelstrom and the attendant lowering of their sovereign ratings.

### Policy Implications

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. Drifting along and hoping for some economic miracle to take away the pain will be utterly insufficient. If political leadership does not resolutely correct the looming intergenerational imbalances, the dramatic fiscal turmoil laid out in the surplus ceiling scenario might materialize. If this were to happen, Standard & Poor's would certainly react with corresponding rating actions in a forward-looking fashion, however unimaginable these might appear from today's standpoint. 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. (See Flexibility in Taxing Times--A New Index of Governments' Revenue-Raising Potential, published on March 8, 2004, on RatingsDirect).

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 only alternatives are thorough reforms of the social security systems going well beyond most countries' recent reform initiatives.

Any delay in 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 very much aware of the challenges. In 2003 and 2004, there have been promising partial reforms in a growing number of countries. Even so, much more will have to be done to avoid the negative outcomes outlined here.

One risk that is hard to estimate is the development of health care costs. Health spending is far more unpredictable than pensions as it depends crucially on supply-side factors, most notably progress in medical technology. Although this should make treatment much more efficient, it is likely to raise the cost, and will increase longevity. As it is, of course, impossible to estimate accurately the cost implication of technological change several decades ahead, the margin of error in forecasting the cost of providing health services could be far larger than in the predictable area of pensions.

Several countries have moved toward giving privately funded pensions a larger role, complementing basic state pensions. Private pillars, however, will only alleviate public spending pressures if the state-run regimes are adjusted in a way that reduces public spending obligations in the future. Nevertheless, privately funded pensions are helpful for two reasons. First, the tax system in most European countries exempts contributions to and asset accumulation in funded pension systems, whereas the pension payments themselves are taxed. As a result of this taxation lag, the revenue stream from tax payments will conveniently start to increase just as the public expenditures pick up. Second, reducing the generosity of benefits under the public schemes is politically more feasible if the public pension payments do not represent the near-totality of pensioners' income. In other words, the public sector can more easily disappoint citizens' expectations regarding state old-age benefits if the risk of old-age poverty is mitigated by significant private pension income.

<b>Table 5 Ratings List</b>	
<b><i>(Long-Term Foreign Currency Ratings at March 24, 2004)</i></b>	
Australia (Commonwealth of)	AAA/Stable/A-1+
Austria (Republic of)	AAA/Stable/A-1+
Belgium (Kingdom of)	AA+/Stable/A-1+
Canada	AAA/Stable/A-1+
Czech Republic	A-/Stable/A-2
Denmark (Kingdom of)	AAA/Stable/A-1+
Finland (Republic of)	AAA/Stable/A-1+
France (Republic of)	AAA/Stable/A-1+
Germany (Federal Republic of)	AAA/Stable/A-1+
Greece (Hellenic Republic)	A+/Stable/A-1
Hungary (Republic of)	A-/Stable/A-2
Ireland (Republic of)	AAA/Stable/A-1+
Italy (Republic of)	AA/Negative/A-1+
Japan	AA-/Stable/A-1+
Korea (Republic of)	A-/Stable/A-2
Luxembourg (Grand Duchy of)	AAA/Stable/A-1+
Netherlands (State of The)	AAA/Stable/A-1+
New Zealand	AA+/Stable/A-1+
Norway (Kingdom of)	AAA/Stable/A-1+
Poland (Republic of)	BBB+/Negative/A-2
Portugal (Republic of)	AA/Stable/A-1+
Spain (Kingdom of)	AA+/Positive/A-1+
Sweden (Kingdom of)	AAA/Stable/A-1+
United Kingdom	AAA/Stable/A-1+
United States	AAA/Stable/A-1+

## **Analyst E-mail Addresses**

moritz\_kraemer@standardandpoors.com

reidt@standardandpoors.com

SovereignLondon@standardandpoors.com

This report was reproduced from Standard & Poor's RatingsDirect, the premier source of real-time, Web-based credit ratings and research from an organization that has been a leader in objective credit analysis for more than 140 years. To preview this dynamic on-line product, visit our RatingsDirect Web site at [www.standardandpoors.com/ratingsdirect](http://www.standardandpoors.com/ratingsdirect).

Published by Standard & Poor's, a Division of The McGraw-Hill Companies, Inc. Executive offices: 1221 Avenue of the Americas, New York, NY 10020. Editorial offices: 55 Water Street, New York, NY 10041. Subscriber services: (1) 212-438-7280. Copyright 2003 by The McGraw-Hill Companies, Inc. Reproduction in whole or in part prohibited except by permission. All rights reserved. Information has been obtained by Standard & Poor's from sources believed to be reliable. However, because of the possibility of human or mechanical error by our sources, Standard & Poor's or others, Standard & Poor's does not guarantee the accuracy, adequacy, or completeness of any information and is not responsible for any errors or omissions or the result obtained from the use of such information. Ratings are statements of opinion, not statements of fact or recommendations to buy, hold, or sell any securities.