

Italy's fiscal position: a surmountable challenge

Italy's high public debt makes improving its public finances difficult, but it appears achievable. Relative to other economies Italy's vulnerabilities near term are considerable, but its longer-term prospects are better.

- Near term, Italy's high debt makes it vulnerable to weak growth, high interest rates, or the need to support its banking sector.
- However, the maturity structure of its debt offers capacity to weather adverse funding conditions for a while; and to restore budget balance is not very demanding, whether in absolute terms or relative to other countries.
- In the medium term, debt can be lowered significantly by sustaining primary surpluses of 4-5% of GDP – which Italy has managed before. Structural reforms to improve growth would help; and there is much scope for this.
- As regards the long term, Italy has already undertaken some of the steps needed to contain the debt burden associated with population ageing: it is better placed than many other economies.

Motivation

Fiscal turmoil has engulfed Italy

Fiscal turmoil in the euro area engulfed Italy in the second half of 2011. This provoked, *inter alia*, the end of the Berlusconi government and the appointment of a caretaker technocratic government tasked with restoring the public finances.

This paper assesses the prospects for fiscal consolidation

This paper addresses how big that task is likely to be. The issue is important. If the task is modest, then arguably markets overreacted in late 2011. If however the task is substantial, some form of public-debt restructuring, or even outright default, could become inevitable. Given Italy's size, and the magnitude of its outstanding debt (Figure 1), there would be severe systemic disruption involving not only Italy, but also the euro area, and very likely beyond.

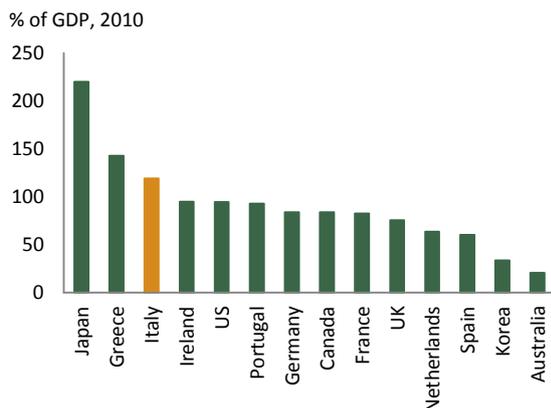
The analysis below first presents key facts on Italy's public finances, their structure, and their principal drivers. Next, it considers the sorts of measures that might be needed for a return to budget balance in the near term, illustrating the sensitivities to interest rates and growth. It then assesses the medium- and long-term outlook for Italy's public finances, including in an international comparative context.

The starting point

Italy has to deal with a legacy of high public debt

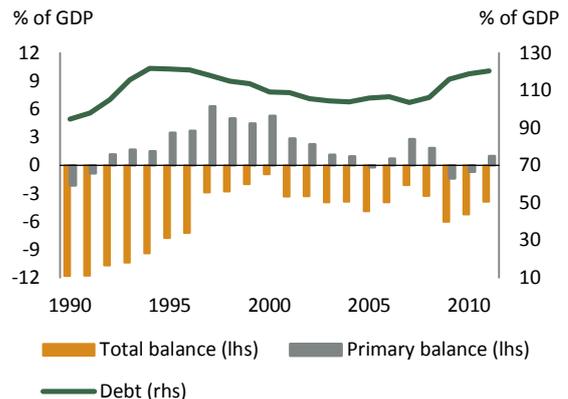
For many decades, Italy has been running general government budget deficits. These were large in the 1970s, and larger in the 1980s, resulting in a legacy government-debt-to-GDP ratio that has ranged between 95% and just over 120% of GDP since the 1990s (Figure 2). Meanwhile, the primary budget (i.e. the budget excluding interest payments) has been in surplus since the early 1990s, with the largest primary surpluses achieved in the run-up to European Monetary Union in 1999. Overall, it is probably appropriate to characterise Italy today as a highly indebted economy with chronic, but not especially high, deficits.

Figure 1. Italian general government debt in an international context



Source: IMF (2011a)

Figure 2. Italian general government budget balance and debt



Source: Eurostat and ISTAT

Higher bond yields are a worry

In light of Italy's high public-sector indebtedness, market commentary has focussed largely on the damaging implications of the spike in Italy's bond yields for its ability to service its government debt. Less commented on, however, is the relatively favourable maturity profile of that debt.

Italy's debt maturity profile gives room for manoeuvre...

Italy's yield curve spans from about 1% to 6% at the time of writing, and the duration of the outstanding government debt stock is reasonably long, at about seven years (Figure 3). The average interest rate paid on outstanding debt is currently close to 4%. This gives the government some room for manoeuvre in its interest payments: if it chooses to refinance any debt that needs to be rolled at the shorter end of maturities it can, for a while, even *reduce* the average interest burden.

...albeit for a limited period

Any such shortening of the duration of its debt stock would of course come at the cost of reduced flexibility in the future: if higher interest rates were sustained, such debt management actions could only delay the point at which the interest burden started to rise. But this would 'buy time', which could be used to implement structural policies to put the public finances on to a sounder footing.

The potentially most fruitful areas for deficit reduction can be identified by considering the composition of Italy's government expenditures and revenues.

Four key categories dominate public spending...

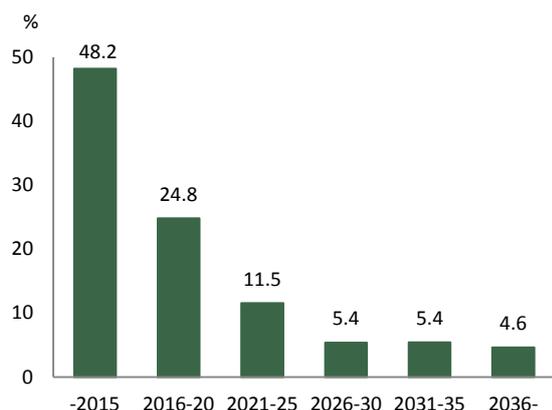
Four key categories dominate overall government spending (Figure 4):

- **Pensions** (32% of expenditure)
 - These are determined largely by the population's age structure and wages
- **Healthcare** (15% of expenditure)
 - This is influenced by inflation, and with perhaps some effect from the level of economic activity too
- **Education** (9% of expenditure)
 - This is driven largely by the number people of school- and university-age, as well as by inflation
- **Debt servicing** (9% of expenditure)
 - This varies both with interest rates and the level of the public debt.

...while three main sets of taxes dominate revenue

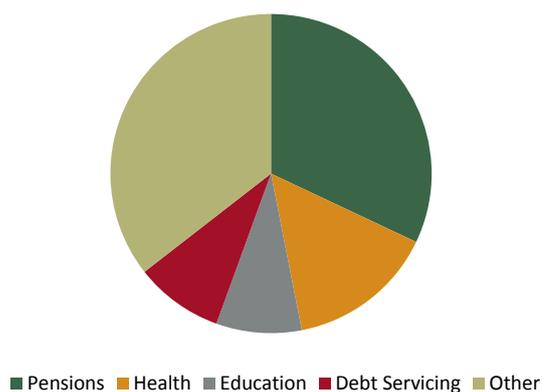
In order to make a significant difference to public expenditure, policy efforts have to be directed at these four categories. These are, in turn, determined largely by long-term factors, rather than shorter-term fluctuations in economic activity. In other words, economic growth on its own is unlikely to reduce public spending much. A similar analysis can be conducted for government revenues, where three key categories dominate (Figure 5):

Figure 3. Outstanding Italian government bonds' maturity profile



Source: Italian Tesoro

Figure 4. Breakdown of government expenditure in 2010



Source: ISTAT

- **Labour taxes** (55% of revenue)
 - These comprise income tax (28%); employers' social security contributions (21%); and employees' social security contributions (6%)
 - These three taxes evolve similarly (Figure 6): their influence on government finances can therefore be considered jointly
 - They are determined principally by employment and wages
- **VAT** (15% of revenue)
 - This is dominated by trends in consumption spending
- **Corporate tax** (5% of revenue)
 - This evolves broadly in line with nominal economic activity.

Revenues are pro-cyclical, but expenditure is not

In contrast to the main expenditure items, the main revenue items relate to the economic cycle. That is to say, the cyclicity of the budget balance is a reflection of the sensitivity of revenue to economic fluctuations: expenditure, by contrast, is affected much less by such fluctuations.

The near-term outlook

To return to budget balance, measures totalling €60bn-odd are required

Achieving overall budget balance in Italy is challenging. Official data for 2011 are not yet available, but we estimate that the full-year outturn amounted to a general government deficit of about €60bn. Given the size of Italy's public sector, achieving budget balance would require a reduction of primary expenditure of about 8% or, alternatively, an 8% increase in general government revenue (or some, smaller, combination of the two).

The challenge lies mainly in the timetable...

Just how onerous that task is depends on the time horizon over which budget balance is to be achieved. The current government target is to achieve balance by 2013, and that will be demanding. To achieve it by 2014 would be markedly less so.

...rather than in its size

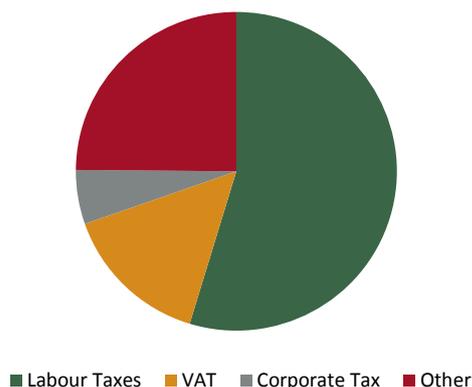
That said, such deficit reductions are relatively small compared with what would be required to achieve a similar outcome in other major countries. According to the OECD's December forecasts, to bring the US general government budget back into balance would require primary expenditure cuts of the order of 25%, or revenue-boosting measures of the order of 31%. For the UK, the equivalent numbers are 20% and 23% respectively. Thus, Italy's challenge in the near term is not so much the scale of its public sector deficit, but the time horizon over which it is to be eliminated.

In a moderately pessimistic scenario...

A scenario of how Italian government finances could evolve over the years to 2014 is presented below. The underlying assumptions, which are deliberately cautious, are that:

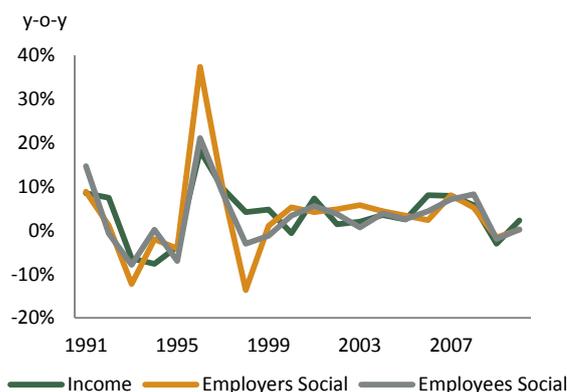
- Nominal GDP growth averages 3% per year until 2014, made up of 1% real growth and 2% inflation

Figure 5. Breakdown of government revenue in 2010



Source: Eurostat

Figure 6. The 'labour taxes'



Source: Eurostat

- Interest rates remain at current levels
- The government issues debt at an average interest rate of 5%

...budget balance is not achieved by 2013

In this case, with only little fiscal effort – aggregate primary expenditure growth of 1% per year and revenue growth of 4% – the fiscal deficit would be about ½% of GDP in 2014, and public debt would peak at around 120% of GDP in 2012 (Figure 7). Note that the government's goal of achieving fiscal balance in 2013 would not be met.

However, the assumptions underlying this scenario are somewhat pessimistic, in that the assumed underlying economic and financial backdrop is not helpful, and the fiscal consolidation measures taken are not particularly aggressive.

But much depends on growth and interest rate developments

The sensitivity of this scenario to its assumptions can be seen as follows:

- A rise/fall in funding costs of one percentage point would change debt servicing costs, and thereby the overall budget balance, by about 0.4% of GDP in 2012, 0.6% in 2013, and 0.7% in 2014.
- Were nominal growth faster/slower by one percentage point, the impact on the fiscal balance would depend on the cause for this deviation from the previous assumption:
 - If it was due to inflation alone, both revenues and expenditures would rise/fall at a similar rate, and the fiscal balance would not change significantly. However:
 - If faster/slower real growth were the cause, the fiscal balance would be higher/lower by 0.5% of GDP in 2012, 1.0% in 2013, and 1.6% in 2014.

Thus a somewhat more constructive economic or financial backdrop than assumed in Figure 7 would probably suffice to achieve budget balance by 2013, in line with the government target.

Parliament has agreed some rather substantive measures

Moreover, in December last year the Italian parliament passed rather substantive measures, relating to some of the major expenditure and revenue items identified above. Amongst others, the so-called 'Salva Italia' ('Save Italy') package includes the following¹:

- On pensions:
 - Pension payments for most have been frozen in nominal terms for two years;
 - The pension age has been raised with immediate effect for some, and will be increased further; and
 - Qualifying for pensions has been made harder.
- On healthcare spending:
 - Spending cuts of €5bn p.a. are targeted for two years.

Figure 7. A possible scenario for Italy's public finances

€m		2007	2008	2009	2010	2011	2012	2013	2014
Expenditure	Total	748,395	774,612	798,085	793,485	800,571	810,344	818,959	834,185
	% y-o-y	2.4	3.5	3.0	-0.6	0.9	1.2	1.1	1.9
	Total primary	672,380	694,350	727,531	722,723	723,167	727,121	731,129	742,986
	% y-o-y	1.6	3.3	4.8	-0.7	0.1	0.5	0.6	1.6
	Debt servicing	76,015	80,262	70,554	70,762	77,404	83,223	87,831	91,199
	% y-o-y	10.1	5.6	-12.1	0.3	9.4	7.5	5.5	3.8
Revenue	Total	715,564	723,428	706,254	712,075	738,993	767,465	797,835	827,155
	% y-o-y	6.4	1.1	-2.4	0.8	3.8	3.9	4.0	3.7
Balances	Total	-32,831	-51,184	-91,831	-81,410	-61,578	-42,879	-21,124	-7,030
	% of GDP	-2.1	-3.3	-6.0	-5.3	-3.9	-2.6	-1.3	-0.4
	Primary	43,184	29,078	-21,277	-10,648	15,826	40,344	66,706	84,169
	% of GDP	2.8	1.9	-1.4	-0.7	1.0	2.5	4.0	4.9
	Debt	1,602,100	1,666,600	1,763,600	1,842,800	1,903,171	1,964,749	2,007,628	2,028,753
	% of GDP	104	106	116	119	120	121	120	118

Source: Eurostat, ISTAT, and Penrich Capital

- On VAT:
 - The standard VAT rate, which had already been hiked by 1pp in September 2011, is being raised further, from 21% to 23%.

These could well put fiscal consolidation by 2013 within reach

It is likely that in total these measures will achieve the extra €20bn-odd in fiscal consolidation required to put the budget balance into the black relative to the scenario in Figure 7 – or, at the least, that any further measures that might be required would be only minor, unless real GDP growth were to plummet, or funding costs to surge.

Thus we regard Italy's near-term fiscal challenge as substantial, but economically achievable.

For now at least, political will appears strong

Moreover, for now at least, the political will to tackle the challenge and persevere with unpopular measures appears strong. As Mario Monti, who is both prime minister and finance minister, put it:

“The huge public debt of Italy isn't the fault of Europe; it's the fault of Italians, because in the past we didn't pay enough attention to the well-being of the young and the future adults of Italy [...] You will never hear me ask for a sacrifice because Europe asks for it, just as you will never hear me blame Europe for things that we should do and that are unpopular. I would rather be considered unpopular, rather than Europe, because you can do without me, but not without Europe.” (Mario Monti, 4 Dec. 2011)²

Medium-term debt dynamics

Debt dynamics illuminate the longer-term picture

Understanding the outlook for Italian public finances in the medium term – which we take to be to about 2030 – requires a somewhat more general framework, that of public debt dynamics.

The change in the debt ratio, $\Delta (D_t/Y_t)$, from one year to the next is a function of three terms:

$$\Delta (D_t/Y_t) = \underbrace{-\left(\frac{PB_t}{Y_t}\right)}_{\text{primary balance}} + \underbrace{\left[\frac{(i_t - y_t)}{(1 + y_t)}\right] D_{t-1}/Y_{t-1}}_{\text{snowball}} + \underbrace{\left(\frac{SF_t}{Y_t}\right)}_{\text{stock-flow adjustment}}$$

where D_t is the outstanding amount of debt in year t , Y is nominal GDP, y is the nominal growth rate of GDP, PB is the primary budget balance of the government, SF is the stock-flow adjustment, and i the implicit interest rate on the outstanding stock of debt.

There are three key determinants of public debt dynamics

Thus three factors jointly determine the dynamics of the public debt:

1. **The primary balance** – the government budget balance before payment of debt interest;
2. **The 'snowball'** – the difference between the nominal interest rate paid on debt and the nominal growth rate of the economy, 'scaled' by the outstanding stock of debt; and
3. **The stock-flow adjustment** – a term that ensures consistency between net borrowing (a flow) and the variation in the stock of gross debt.³

Any of these three elements can contribute positively or negatively: jointly they must be improving/deteriorating for the debt-to-GDP ratio to fall/rise. It is the primary balance that is most directly under the government's control – certainly in the near term – and on which strategies to reduce the debt burden must therefore focus. How onerous a task that is at any given nominal GDP growth rate depends, importantly, on the prevailing interest rate, and therefore on financial markets.

No single debt figure marks sustainability

The corollary is that there is no single interest rate at which an economy's debt dynamics become unsustainable. Nor is there a single debt-to-GDP ratio figure that marks medium-term sustainability for the public finances.

That said, the Maastricht criteria that were applied in the EU to determine eligibility for euro membership included a ceiling of 60% for the debt-to-GDP ratio (or a steady decline in the debt-to-GDP ratio). So, for the sake of exposition, this figure is taken as an illustrative medium-term aim in what follows.

To reach a 60% level, 4%-odd primary surpluses are needed

As regards the extent to which primary balance trends could help Italy to achieve this target, the picture is broadly positive. According to the IMF⁴, Italy will need to sustain primary budget surpluses of a little over 4% to lower its debt-to-GDP ratio to 60% by 2030. This is not far from what Italy has achieved on previous occasions (Figure 8). And some other advanced economies

have in the past run even larger primary surpluses. That said, a good track record is no guarantee of a similar outturn in the future, not least given that population ageing will make the task harder.

Italy's task is less daunting than that of other economies

Nonetheless, Italy's task looks less daunting than that in many other countries: starting from primary surplus already, its required consolidation is far smaller than in the US, the UK, France, and the euro-area periphery. Moreover, Japan, the UK, France and the US have not in the past run surpluses on the scale now required, whereas Italy has.

Where Italy is more challenged at present than some other countries, now that financial markets have bid up the risk premium attached to its government debt, is the second major component of debt dynamics – the so-called 'snowball' term, which is influenced importantly by the interest-rate-to-nominal-GDP growth rate differential.

Interest rate rises worsen debt dynamics

In the years following the euro's inception, the average interest rate on the outstanding stock of Italian government debt fell from 6% to around 4%, and the interest rate-growth rate differential averaged 2.0pp (Figure 9). That represented a significant improvement from the situation prior to the euro, when the differential averaged around 3pp.

Were the interest-growth rate differential to revert to this sort of average, a fiscal tightening of over six percentage points of GDP would be required to bring the debt-to-GDP ratio close to 60% by 2030, assuming a (weak) 3% p.a. nominal GDP growth rate between now and then. Even that target would not necessarily be out of reach, however: the implied primary balance would be well above what Italy has previously sustained, although it would be towards the upper end of what some other advanced economies have achieved.

But debt reductions are not impossible, even if rates flat-line

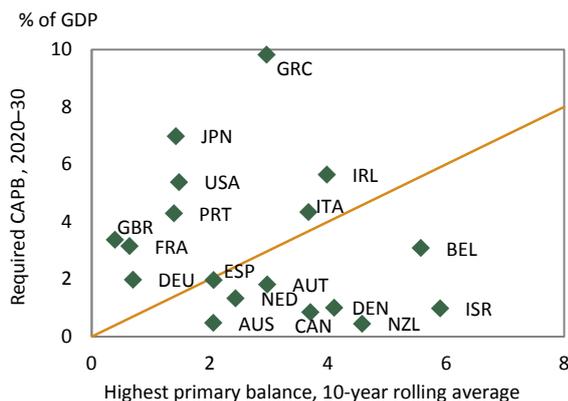
The debt-to-GDP ratios that would result from various constellations of cyclically-adjusted primary surpluses and interest-growth rate differentials are shown in Figure 10. With a 2-3% differential (e.g. an interest rate of 5-6% on its outstanding debt and nominal growth of 3% p.a.) Italy would need primary surpluses of between four and six percentage points of GDP to reduce its debt ratio significantly. Indeed, even with sustained interest rates of 6%, the debt-to-GDP ratio would not rise, unless events outside the scope of this table were to throw it off course.

Italy's poor growth record complicates the task

Moreover, to the extent that future real growth or inflation exceeded the assumptions underlying Figure 10, Italy could live with somewhat higher interest rates. But Italy's record on growth has been disappointing. The economy has for decades grown more slowly than almost all other major advanced economies, which has led many observers to conclude that potential GDP growth must be lower in Italy than in other major economies.

More recently, weakness in growth has not been due solely to population dynamics: on a *per capita* basis, real GDP has declined relative to the euro-area average since the mid-1990s, losing the ground that it had previously made up *vis-à-vis* its immediate peers since the 1970s (Figure 11).

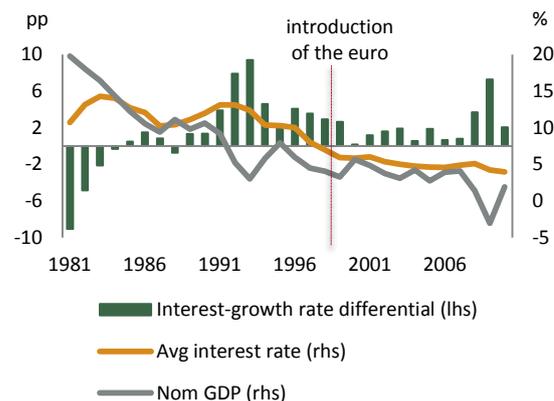
Figure 8: Required cyclically adjusted primary balance to achieve 60% debt-to-GDP ratio by 2030 versus past track record



Source: IMF (2011a)

Notes: This assumes a 0% interest-growth rate differential until 2015 and a 1pp differential thereafter for all countries.

Figure 9: The interest rate-growth rate differential, and average interest rates on government debt & nominal GDP growth



Source: AMECO and ISTAT

Boosting potential growth is a key policy priority

The basic implication of this analysis is that boosting potential growth has to be – and indeed is – a key policy priority for the medium term. Achieving this is unlikely to be straightforward. But to the extent that the crisis has galvanised political will, and inculcated a sense of urgency to work towards such an improvement, it may have opened up a window of opportunity for the structural policy reforms that are commonly regarded as a prerequisite for faster potential growth.

Structural policies can be improved

The IMF, for one, has identified a number of areas in which Italy would benefit from structural reform, as indicated in the 'heat map' below.

Figure 12. 'Heat map' of structural reform gaps: selected euro-area economies and comparators



Source: IMF (2011b)
 Note: The darker the shading the greater the weakness.

The IMF has also stressed that priorities for reforms differ significantly by region: whereas in the Centre-North, cutting bureaucracy and helping small and medium enterprises (SMEs) to grow and internationalise are among the main recommendations, for the South the IMF advises improving education and infrastructure, as well as strengthening security and the rule of law.

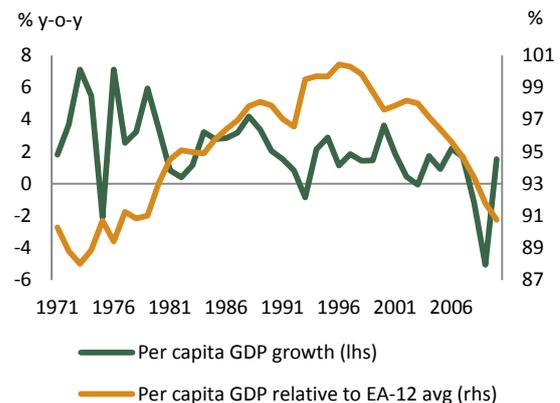
Altogether, Italy's structural policies offer much room for improvement. Although such reforms are unlikely to raise GDP growth over the next few years, over the medium term they probably will.

Figure 10. Interest-growth rate and fiscal tightening constellations

Total fiscal tightening (pp of GDP)	Cyclically-adjusted primary balance 2020-2030 (% of GDP)	Interest-growth rate differential							
		-2%	-1%	0%	1%	2%	3%	4%	
10	10.9	<0	<0	<0	<0	<0	<0	18	
8	8.9	<0	<0	<0	<0	10	31	58	
6	6.9	<0	<0	10	25	45	68	98	
4	4.9	14	26	40	58	79	106	138	
3	3.9	27	40	55	74	96	124	158	
2	2.9	40	54	70	90	114	143	178	
1	1.9	54	68	85	106	131	162	198	

Source: Llewellyn Consulting and IMF (2011a)
 Notes: Shaded boxes represent debt-to-GDP ratios in 2030
 Green = under 60%, Orange = 60-90%, Red = 90% and over

Figure 11. Italian real GDP growth and relative real GDP growth



Source: AMECO

Long-term fiscal sustainability

Long-term fiscal projections can only be indicative

A final way to consider the fiscal challenge is by means of long-run (i.e. to 2060) projections. Such projections cannot be regarded as forecasts: but by indicating probable outcomes *on the basis of present policies*, they illuminate the likely scale of the long-term fiscal challenge. For what they are worth, such projections look positive for Italy, at least in international comparison.

In an absolute sense, the outlook is not bright: the IMF projects that, on present policies, Italy's public debt-to-GDP ratio would nearly double by 2060, to over 200%⁵ (Figure 13). Such a figure can scarcely be regarded as sustainable.

In relative terms Italy's outlook is encouraging...

At the same time, however, relative to the other major euro-area economies – and Europe is by no means unique in this respect – Italy's rise is much smaller than would occur elsewhere on present policy settings. This reflects mainly the pension reforms that Italy has already undertaken, which will, *inter alia*, index the retirement age to longevity from 2015. Similarly, current policy settings point to a smaller rise in healthcare spending than in other major economies (Figure 14).

...as ageing-related adjustments have already been agreed

Thus, notwithstanding its high initial debt-to-GDP ratio, Italy is projected to require only a *relatively* small further adjustment in order to contain its ageing-related government expenditure on pensions and healthcare. This is in marked contrast to, for example, the US and the UK, where policy settings will need to change considerably.

When it comes to long-term fiscal sustainability, therefore, Italy can rightly claim to be ahead of many of its international peers.

Conclusion

Italy's fiscal challenge appears difficult, but surmountable

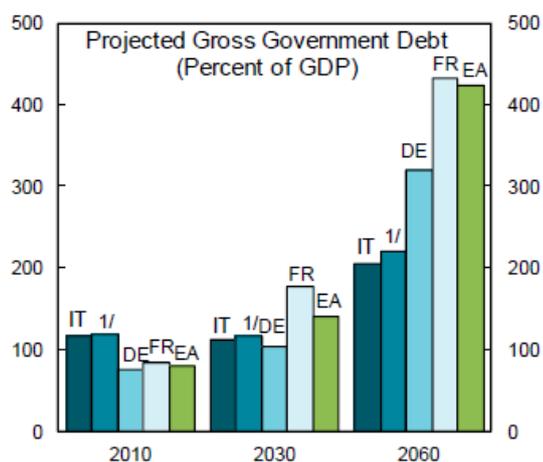
Italy's fiscal challenge appears difficult, and near-term vulnerabilities are considerable, owing to its legacy high stock of debt. So, a renewed flare-up of bond spreads, which have now retreated significantly from their levels around the turn of the year, can by no means be excluded.

That said, the task, even in the near term, appears manageable under plausible assumptions, and given sufficient political will, which currently seems in evidence.

Medium-term challenges relate primarily to Italy's weak growth trend, but there is much scope for improvement through structural reforms, and these are starting to be undertaken.

Moreover, in the long term, Italy's projected debt burden appears less challenging than in many other Western economies – albeit remaining far from sustainable. Given the fundamentals, it is conceivable that markets will come to increase the relative risk premium that they require of the government bonds of other economies. Hence renewed flare-ups in Italian bond spreads could well represent attractive entry points for long-term investors with sufficient composure. ■

Figure 13. Long-term gross government debt projections



Source: IMF (2011b)

Notes: 1/ shows updated estimates for Italy

Figure 14. Selected structural fiscal indicators

	Gross debt 2010	CAPB in 2010	Required fiscal adjustment to cut debt (rank 1 (worst) - 11 (best))	NPV of pension exp. change 2010-2050	NPV of health exp. change 2010-2050	Required fiscal adj. incl. age-related exp. (rank 1 (worst) - 11 (best))
Greece	142.8	-5.7	15.5 (1)	24.1	106.9	19 (1)
US	94.4	-5.4	10.8 (4)	23.9	164.5	17 (2)
Japan	220	-6.6	13.6 (2)	6.6	27.5	14.3 (3)
Portugal	92.9	-5.3	9.6 (5)	18.9	116.5	13.8 (4)
Ireland	94.9	-6.4	12.0 (3)	31.7	23.2	13.5 (5)
UK	75.5	-5.8	9.1 (6)	23.4	113.3	13.3 (6)
Spain	60.1	-6.3	8.3 (7)	55.1	51.5	10.4 (7)
France	82.4	-3.1	6.3 (8)	-0.7	43.8	7.9 (8)
Canada	84	-3.4	4.3 (9)	35.8	61.1	7.8 (9)
Germany	84	-0.4	2.3 (11)	34.7	28.1	4.6 (10)
Italy	119	1.2	3.1 (10)	13.1	18.8	4.1 (11)

Source: IMF (2011a)

Endnotes

¹ Italian Government (2011)

² Italian Prime Minister and Finance Minister Mario Monti, speaking at a news conference after a cabinet meeting

³ This catch-all term includes, *inter alia*, asset sales, realised losses/gains from interventions in the banking sector and valuation effects (especially important when debt is denominated in a foreign currency). These effects are highly uncertain *ex ante* but can be qualitatively important *ex post*.

⁴ IMF (2011a)

⁵ IMF (2011b)

John Llewellyn

Partner

Llewellyn Consulting

john.llewellyn@llewellyn-consulting.com

Preston Llewellyn

Partner

Llewellyn Consulting

preston.llewellyn@llewellyn-consulting.com

Kelly Tonkin

Chief Investment Officer

Penrich Capital

kelly.tonkin@penrich.com

Sandra Horsfield

Senior Economist

Llewellyn Consulting & Penrich Capital

sandra.horsfield@llewellyn-consulting.com and sandra.horsfield@penrich.com

Bimal Dharmasena

Economist

Llewellyn Consulting

bimal@llewellyn-consulting.com

(V11)

References

Works that have informed this Study, and which have in most cases been explicitly cited, include:

IMF (2011a), *Fiscal Monitor: Addressing Fiscal Challenges to Reduce Economic Risks*, World Economic and Financial Surveys, September 2011

IMF (2011b), *Italy – Staff Report for the 2011 Article IV Consultation*, IMF Country Report No. 11/173, July 2011

Italian Government (2011), *A Strategy for Fiscal Consolidation, Growth and Social Fairness*, *Interventi per l'Italia*, 4 December 2011, http://www.governo.it/GovernoInforma/Dossier/salva_italia/doc/stampa_estera_20111204.pdf

OECD (2011), *Economic Outlook No. 90 Database*

See also the references cited within the above publications.

Disclaimer

The information, tools and material presented herein are provided for informational purposes only and are not to be used or considered as an offer or a solicitation to sell or an offer or solicitation to buy or subscribe for securities, investment products or other financial instruments. All express or implied warranties or representations are excluded to the fullest extent permissible by law.

Nothing in this report shall be deemed to constitute financial or other professional advice in any way, and under no circumstances shall we be liable for any direct or indirect losses, costs or expenses nor for any loss of profit that results from the content of this report or any material in it or website links or references embedded within it. This report is produced by us in the United Kingdom and we make no representation that any material contained in this report is appropriate for any other jurisdiction. These terms are governed by the laws of England and Wales and you agree that the English courts shall have exclusive jurisdiction in any dispute.

©Copyright Llewellyn Consulting LLP 2012 and Penrich Capital 2012. All rights reserved. The content of this report, either in whole or in part, may not be reproduced, or transmitted in any form or by any means, electronic, photocopying, digitalisation or otherwise without the prior written permission of the publisher.

Llewellyn Consulting LLP: 1 St. Andrew's Hill, London, EC4V 5BY
T: +44 (0)20 7213 0300 | F: +44 (0)20 7248 2695
E: enquiries@llewellyn-consulting.com
W: www.llewellyn-consulting.com

Penrich Capital UK Ltd: 11 Northern Road, London, E13 9JA
T: +44 (0)20 3536 8735
E: research@penrich.com
W: www.penrich.com