INTERNATIONAL MONETARY FUND

IMF Country Report No. 13/348

ITALY

December, 2013

TECHNICAL NOTE ON THE FINANCIAL SITUATION OF ITALIAN HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS AND RISKS TO THE BANKING SYSTEM

This Technical Note on the Financial Situation of Italian Households and Non-Financial Corporations and Risks to the Banking System on Italy was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed in August 2013. The views expressed in this document are those of the staff team and do not necessarily reflect the views of the government of Italy or the Executive Board of the IMF.

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Price: $18.00 per printed copy

2013 International Monetary Fund
Washington, D.C.

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INTERNATIONAL MONETARY FUND

ITALY

FINANCIAL SECTOR ASSESSMENT PROGRAM

August 2013

TECHNICAL NOTE

THE FINANCIAL SITUATION OF ITALIAN HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS AND RISKS TO THE BANKING SYSTEM

Prepared By
Monetary and Capital Markets Department

This Technical Note was prepared by IMF staff in the context of the Financial Sector Assessment Program in Country. It contains technical analysis and detailed information underpinning the FSAP's findings and recommendations. Further information on the FSAP can be found at:
http://www.imf.org/external/np/fsap/fssa.aspx.

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INTRODUCTION AND MAIN FINDINGS[1]

1. This paper analyzes the vulnerabilities of the balance sheets of the Italian household and corporate sector in order to assess the risk to the banking system. It takes a different approach than the solvency and liquidity stress tests by assessing the financial soundness of the main borrowers of the Italian banking system—households and the non-financial corporate sector—and quantifying the potential impact from macroeconomic shocks. It relies on various sources of information, including aggregate statistics and more granular information from household surveys and corporate balance sheet databases.

2. The credit risk from Italian households is mitigated by their considerable net wealth. Income has declined during the crisis, leading to tighter financial conditions for households, especially for young and low-income groups, but low indebtedness, high levels of assets and declining interest rates have protected households from wide-spread debt payment difficulties. Sensitivity analysis show that further deterioration in economic conditions, through a fall in income and higher interest rates, would reduce households' debt repayment capacity, but their net wealth position would continue to provide a considerable buffer, thereby dampening the potential risk from the household sector to the banking system.

3. Real estate is the predominant source of collateral for loans, and severe strains in the housing market could increase bank losses. The sharp drop in housing market activity reflects the economic downturn, which has in turn put downward pressure on prices. Though housing prices are not estimated to be substantially misaligned, continued weak activity is likely to put further downward pressure on prices in the next few years. Sensitivity analysis shows that a moderate decline in housing prices could be absorbed, partly due to the prudent loan-to-value ratios applied to loans, but a more extreme shock, though not anticipated, would likely trigger credit losses for banks and eat into provisioning coverage.

4. The financial situation of non-financial corporations, in particular SMEs, is fragile, as evidenced by already high loan default rates. Even if the indebtedness of Italian firms is moderate, leverage is high and has increased. About one-third of Italian firms, holding 45 percent of the debt, are estimated to have interest payment coverage at vulnerable levels. SMEs have higher than average leverage and lower interest payment coverage. Downside shocks to profits and interest

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[1] Prepared by Bergljot Bjørnson Barkbu. The note incorporates the following important contributions: Paolo Finaldi Russo and Antonio de Socio (Bank of Italy) provided the sensitivity analysis for Italian firms, Dawn Chew (Legal Department) drafted Box 3 on corporate bankruptcy law and parts of section III.C, and David Velazquez Romero (European Department) carried out the Contingent Claims Analysis. I would also like to thank Marcello Bofondi, Laura Bartiloro, Silvia Magri, Raffaella Pico and Francesco Zollino at the Bank of Italy for excellent input and suggestions, and Zhengpeng Guo, Chen Kan, Piyaporn Nikki Sodsriwiboon, Amadou Sy, and Kenichi Ueda for very helpful comments and advice.

rates would increase credit risk stemming from the corporate sector though the additional strains would likely be contained.

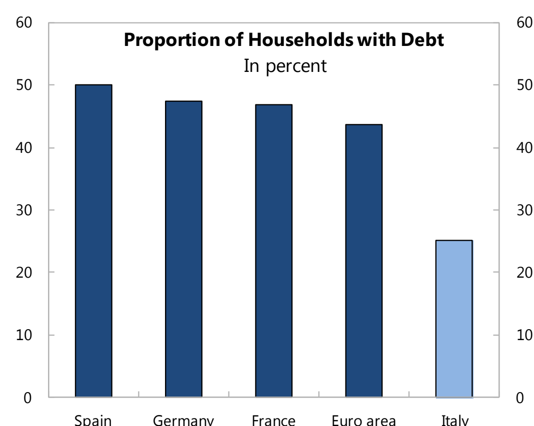
5. Continued strong policy action will be important to mitigate the impact of these vulnerabilities, especially for firms. The government's new initiative to pay part of its overdue debt represents a crucial step to ease firms' liquidity constraints. Continued efforts to increase provisions–including by reducing fiscal disincentives and speed up the judicial process, strengthen prudential considerations in collateral valuation and disclosure, and strengthened capital plans, where needed, will be crucial to bolster confidence in banks, given the increase in non-performing loans on their balance sheets. Also, further development of the private market for distressed assets would help accelerate the disposal of non-performing loans and promote corporate restructuring. Finally, with SMEs relying heavily on bank financing and suffering from tight credit conditions, measures to expand SME financing, through more risk-based bank lending and opening up non-bank financing channels, will be crucial to support their financial situation and the economic recovery.

THE ITALIAN HOUSEHOLD SECTOR

A. Household Balance Sheets

6. Italian households' debt level is low in an international perspective. Debt ratios more than doubled during the low-interest period following the launch of the euro area; and have gone from 33 percent of gross disposable income in 1998 to 74 percent December 2012 (Figure 1). [2]However, they remain well below those in other large economies such as France, Germany and the United Kingdom, as well as the euro area average of 109 percent. Mortgages have been the key source of the increase in household debt to banks (from a share of 50 percent of total bank loans in 2003 to 60 percent in 2012), though reliance on mortgage financing continues to be low compared to other countries.

7. The small degree of aggregate indebtedness reflects a modest share of indebted households. About 25 percent of households had debt outstanding, compared with 40 to 50 percent in other major euro area countries, and more than 60 percent in the United States and the United Kingdom. The highest proportion of indebted households is among those with higher income, with 41 percent of those in the highest quintile having outstanding debt (see Bank of



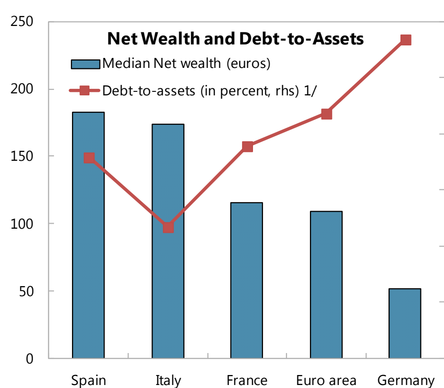
Source: ECB (2013).

[2] Households include households and non-profit institutions servicing households.

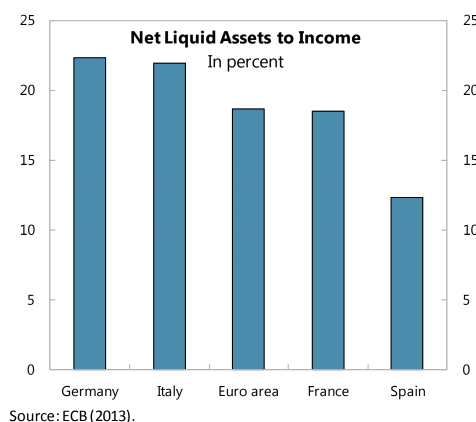
Italy, 2012a). Among lower-income households (lowest quintile), only 17 percent have debt outstanding. The median debt-to-income ratio for Italian indebted households is about 50 percent, 10 percentage points below the euro area average. Among indebted household, the average debt-to-income ratio was 112 percent in 2010, though it is much higher for the lower-income households. Also, given the high frequency of low values and progressively declining frequency for higher values, the median debt-to-income ratio is much lower, at 46 percent. Debt-service, however, remains moderate, at an average of 13 percent of income for indebted households in 2010, in line with the euro area average.

8. The ratio of debt to disposable income has continued to increase during the crisis, mainly due to stagnating income. The pace of growth of household debt slowed during the crisis, reflecting tight credit conditions and low demand. Due to modest wage growth and high unemployment, household disposable income has declined somewhat during 2008–12, and has fallen by 13 percent in real terms (Figure 1). As a result, households' debt-to-income burden has continued to increase and the household savings rate dropped from 13 to 8 percent over the same period as many lower-income households became unable to save (see Bartiloro and Rampazzi, 2012).

9. Italian households have considerable wealth, as well as a buffer of liquid assets. In 2010, Italian households' net wealth and their ratio of liquid assets to income were above the euro area average, while the debt-to-asset ratio was below. Net wealth represented about 8 times disposable income, somewhat lower than in the U.K. (8¼), but higher than in France (7¾) and Japan (5½). In the three years 2008–10, total net wealth increased by 1¾ percent; the growth was the result of the flow of saving, which, though declining, more than offset the effects of the losses caused by the fall in the value of financial assets.



Source: ECB (2013).
1/ For indebted households.



Source: ECB (2013).

10. Real assets, mostly housing, represent an important share of Italian households' wealth. Home ownership in Italy is high, with 68 percent of households owning their house in 2010, which is high compared to the euro area average (60 percent), Germany (44 percent) and France (58 percent), though below Spain (83 percent). Real assets make up about two thirds of household

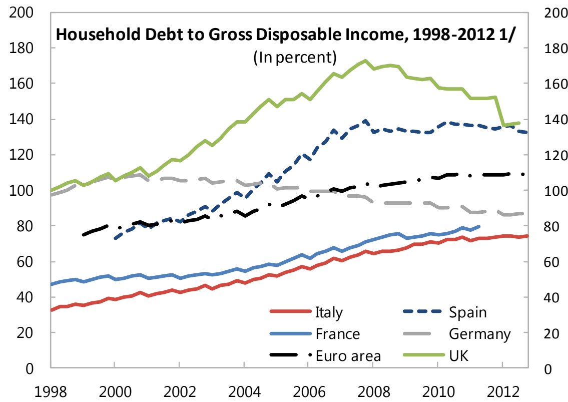
assets, and given relatively stable housing prices to date, have protected households from fluctuations in asset prices during the financial crisis (see Bank of Italy, 2012b).

11. Financial wealth is concentrated in less risky assets such as deposits and bonds. The value of Italian households' financial assets as a ratio to disposable income (3½) has remained broadly unchanged during the crisis. Some 92 percent of Italians hold financial assets, somewhat below the euro area average (97 percent). The proportion of Italian households holding riskier assets such as mutual funds (6 percent) and shares (5 percent) are about half that of the euro area average (11 and 10 percent, respectively). Italian households' financial portfolios contain a high proportion of relatively low-risk assets, partly reflecting an ageing population, such as public and private bonds (15 percent, compared to a 5 percent euro area average), and insurance and pension reserves. Over the past decades, mostly due to a decline in asset prices, the value of investment in risky assets has declined. Consequently, the share in financial assets of mutual funds and shares has been reduced from 47 percent in 2000 to 25 percent in 2012. Ownership of the riskier assets is concentrated in high-income households, with holders of mutual funds and shares predominantly belonging to the two highest quintiles of the income distribution.

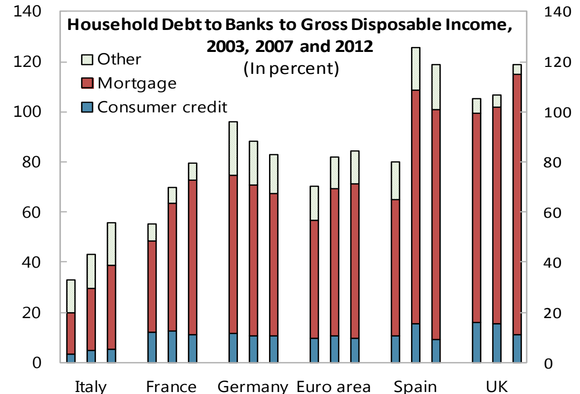
12. Low-income and young households have a small and declining share of the wealth, making them more vulnerable to an economic downturn. Low-income and young households have been more strongly hit by the decline in income and tight financial conditions during the crisis. The richest 10 percent of households owned 46 percent of net wealth in 2010, up from 44 percent in 2008. The net wealth of low-income households is 7 percent, which is low in a historical perspective, and young households (with a head younger than 35 years) also hold a historically low share of net wealth, at 5 percent.

Figure 1. Italy: Household Debt and Wealth

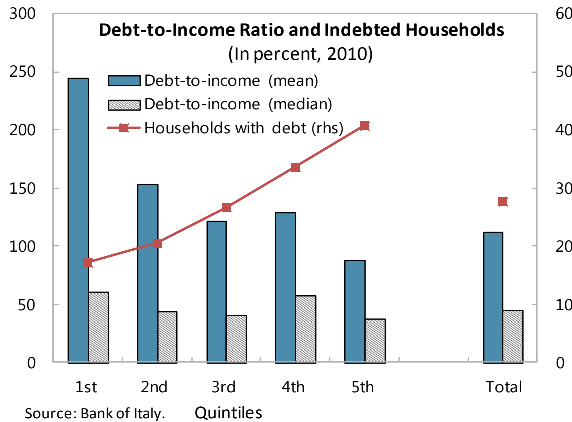
Household debt in Italy is low in an international perspective



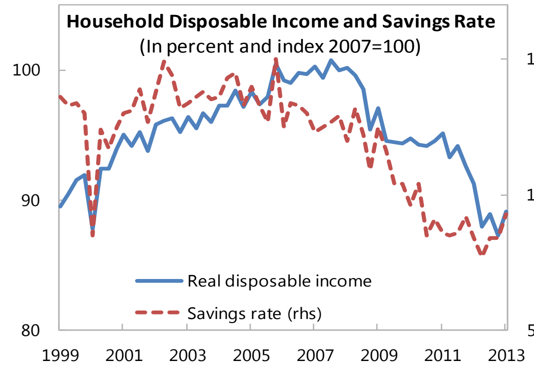
Mortgage financing has expanded, but remains below levels in other advanced countries



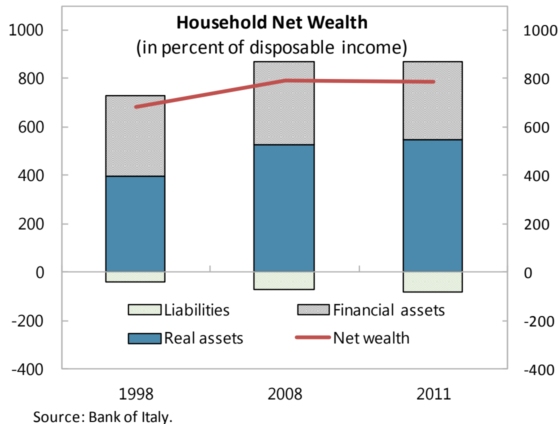
Debt is less frequent among lower-income households, though their average debt burden is more elevated



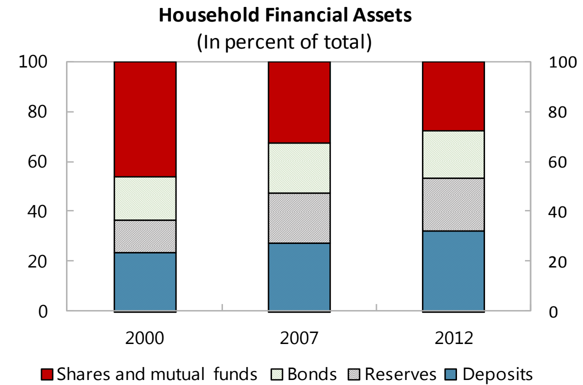
The economic downturn has reduced real disposable income and savings



High real assets have contributed to a comfortable and stable net wealth position



The share of riskier assets in financial assets has been reduced, mostly reflecting declining asset values



B. The Housing Market

13. House price inflation in Italy has been in line with the euro area average. Over the last decade, Italian housing prices increased on average by 4½ percent a year, about 2 percentage points above HICP inflation, consistent with euro area trends (Figure 2). Indices of affordability show that Italian house prices are somewhat above their long-term average, calculated as the average since 1980, though less so than in countries where housing prices appear substantially overvalued. The price-to-rent ratio was 2 percent above its historical average in 2012, while the price-to-income ratio was 15 percent above. However, a study by the Bank of Italy—based on an econometric analysis to determine a simultaneous equilibrium on the property market, the mortgage market and the construction loan market—suggests that housing price developments have been in line with fundamentals over the 25 years estimation period.[3] The current discrepancy between actual and equilibrium housing prices is estimated to be less than one percentage point.

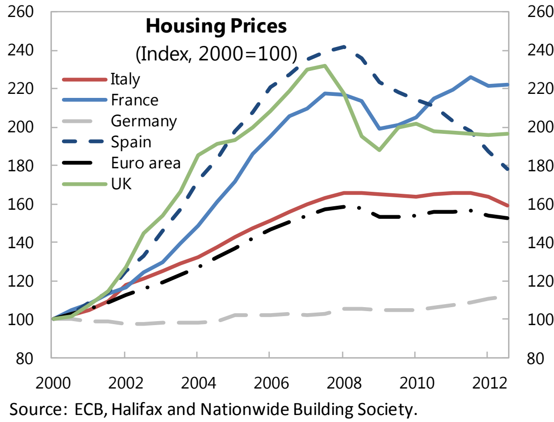
14. The weak economy and credit tightening have nevertheless translated into sharp declines in housing market activity over the past year. High unemployment and declining real incomes coupled with tightened bank lending standards have led to sharp falls in construction investment and depressed house sales to half the peak level recorded in 2006. Housing transactions started falling sharply in early 2012. Transactions declined by an annual rate of 30 percent in 2012 Q4, (Figure 2), though recovered to -14 percent in 2013 Q1, and the annual growth rate of household mortgages turned negative in the beginning of 2013. The average time to sale has reached more than 8 months. The majority of responding real estate agents in the April 2013 *Housing Market Survey* (Bank of Italy, 2013a) believes that the real estate tax put into effect in 2012 have contributed to weak activity and price declines.

15. Weak housing market activity and confidence have in turn exerted downward pressure on prices. The *Housing Market Survey* shows that the number of transactions is being depressed by a large price gap between sellers and buyers. The discount-to-ask price for sold houses reached 16 percent in 2013 Q1 (Figure 2). The official house price indices from ISTAT and the Bank of Italy show that housing prices have fallen by almost 7 percent since their peak in 2011. The price fall is larger for existing houses than new houses, for which prices just started falling in 2012 Q3. Price indices from private sources show a larger price decrease, but have less comprehensive coverage and do not capture the quality adjustment embedded in the official price index. In the next few years, continued weak activity and tight lending conditions are likely to put further downward pressure on prices. In this vein, most real estate agents surveyed by the Bank of Italy expect prices to continue to fall in the next two years.

[3] See Nobili and Zollino (2012).

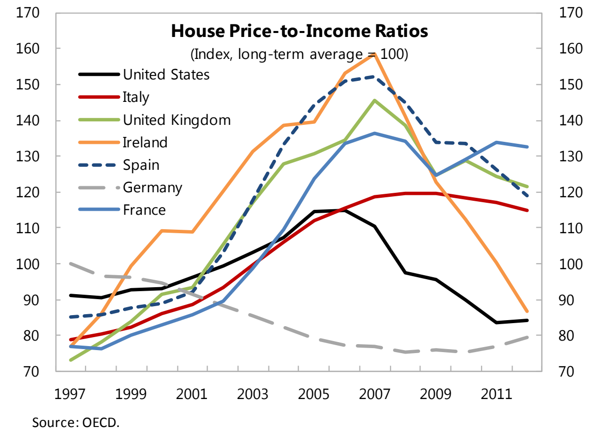
Figure 2. Italy: The Housing Market

House prices in Italy have increased broadly in line with the euro area average



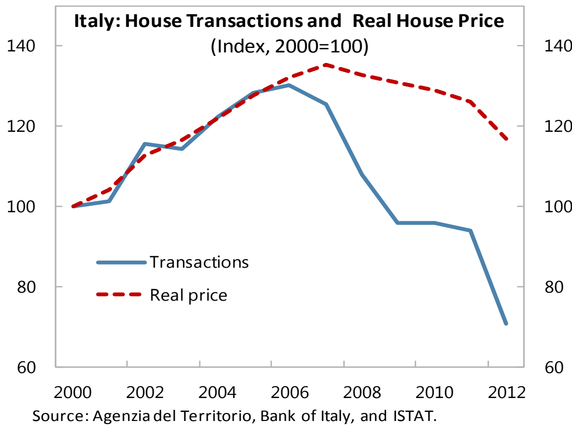
Source: ECB, Halifax and Nationwide Building Society.

House prices relative to income are somewhat above long-term averages, but less so than in some countries



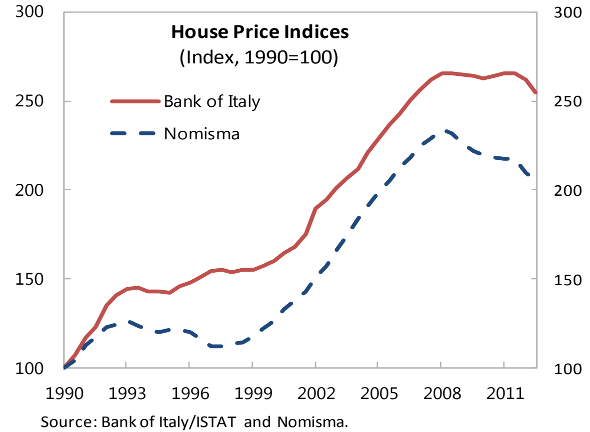
Source: OECD.

Transactions have fallen by almost 50 percent since their peak in 2006, but the price adjustment has been limited



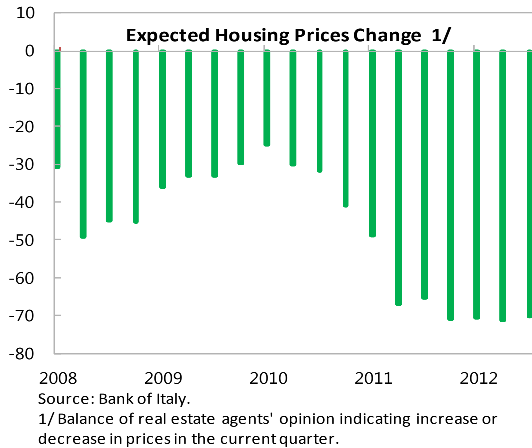
Source: Agenzia del Territorio, Bank of Italy, and ISTAT.

The discrepancy of official price indices with private sources reflects quality adjustment and a larger sample



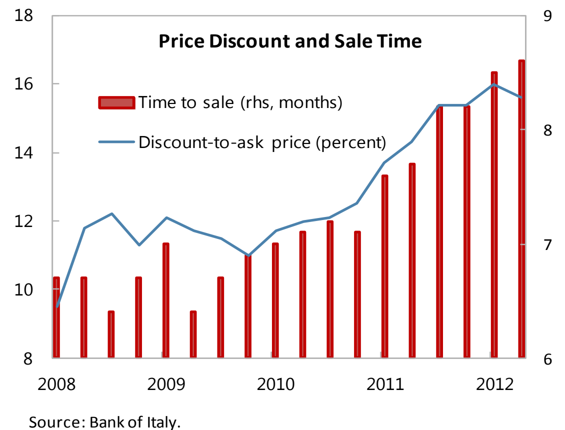
Source: Bank of Italy/ISTAT and Nomisma.

Real estate agents expect prices to continue to decline in the short term



Source: Bank of Italy.
1/ Balance of real estate agents' opinion indicating increase or decrease in prices in the current quarter.

A large price gap between sellers' and buyers' prices is one of the reasons for an increasing average time to sale



Source: Bank of Italy.

C. Financial Linkages

16. Bank credit to households has tightened since the onset of the crisis. Prior to the crisis, during 2005–07, household debt granted by banks grew at an annual pace of more than 10 percent. The growth slowed rapidly to 3 percent during 2008–09 and turned negative in late 2012, reaching -1 percent in May 2013. The deceleration in 2012 affected all categories of loans, though mortgages were particularly impacted, as new mortgages granted in 2012 roughly halved compared to 2011.[4] New consumer loans fell somewhat less, by 14 percent. The *Bank Lending Survey* (Bank of Italy, 2013b) shows that both tighter credit standards by banks and lower loan demand by households have contributed to the decline in credit. Currently, lower loan demand appears to be the predominant factor, with households being affected by weak consumer confidence, lower consumption and negative housing market prospects. Banks' tight credit standards are explained by negative prospects of the economy and the housing market for mortgages, and increasing concerns about the credit worthiness of households for consumer credit.

17. Households' relatively strong balance sheets have mitigated the impact of the crisis on banks' asset quality.[5] The stock of bad debt was 6 percent of total household debt in June 2013, of which about 65 percent is secured with real assets (Figure 3). Default rates, given by the ratio of new bad loans to total performing loans at the beginning of the period, have been stable at 1¼ percent over 2010–13, relative to about ¾ percent in the pre-crisis years. But more leading indicators such as past due and doubtful loans have recently seen increases, pointing to a possible further deterioration in household credit quality. Past due household loans increased to 1.2 percent in June 2013, compared to 0.9 percent in December 2011, and doubtful household loans increased to 2.6 percent from 2.1 percent over the same period.[6] For both past due and doubtful loans, the increases have been mainly for consumer credit and other loans (comprising overdrafts and mortgages other than those used to purchase primary residences).

18. Loan-to-value (LTV) ratios for mortgages are prudent, and have decreased for new mortgages. The low LTV ratios are, in part, a result of strict housing credit regulations and prudent bank practices. According to the *Housing Market Survey*, LTV ratios on new mortgages have declined from 69 percent at end-2008 to 56 percent in early 2013 (Figure 3). The average length of new mortgage loans has remained broadly constant at 22 years over this period. For outstanding mortgages, about two thirds had LTV ratios of between 50 to 80 percent, and only 8 percent had LTV ratios above 80 percent in September 2012. The LTV ratios for first-time home buyers in Italy are at the lower range of those in euro area countries. The Bank of Italy estimates that the share of mortgages in negative equity is near zero.

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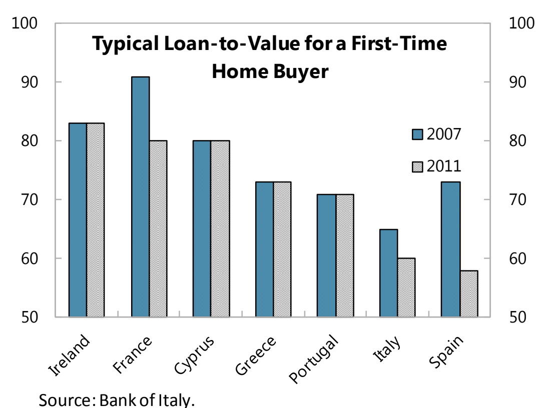
[4] The reduction in new mortgages is partly due to a drop in mortgage substitution and subrogation, as interest rates on new mortgages became less favorable.

[5] The loan classification rules and supervisory practices are more conservative in Italy than elsewhere in Europe, making comparison of NPL figures across countries potentially misleading.

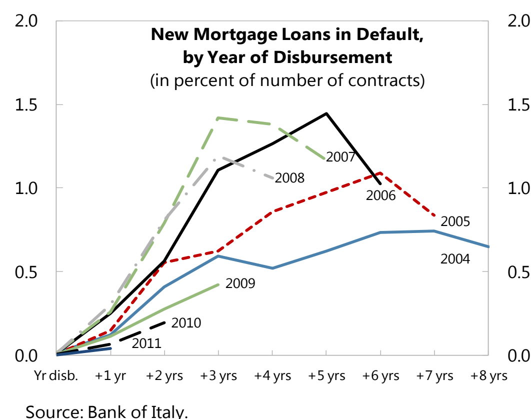
[6] The increase in past due loans is partly explained by the expiration of exceptions that allowed banks to wait to classify loans as past due until they had been in arrears for 180 days. Now that the exceptions have expired, loans that have been in arrears for 90 days are classified as past due.

19. Default rates on mortgages are low, more so for younger vintages. Stricter selection criteria and lower LTV ratios for mortgage loans have translated into a pronounced decline in default rates on mortgage loans concluded during 2009–11, compared to those granted in the three previous years.

20. A low share of mortgages and variable interest rates limit further the balance sheet risk for banks. Outstanding mortgage lending amounted to EUR 365 billion at end-December 2012, accounting for some 15 percent of total bank credit. Most mortgages—about 70 percent—have variable rates typically linked to the three-month Euribor, though of these, 10 percent have a cap on the interest rate. The reduction in Euribor rates following the 2008 financial crisis reduced the debt burden of indebted households. However, as part of the tightened credit conditions, lenders have increased the spread over Euribor on new mortgages, to about 3½ percentage points, against an average of 1 percent in the pre-crisis years.



Source: Bank of Italy.



Source: Bank of Italy.

21. Mortgage substitution and subrogation are commonly used to enhance the financing terms. A 2007 reform liberalized the mortgage market, including through the elimination of pre-payment penalties, effectively increasing the mobility of mortgage customers. Mortgage substitution, where a borrower renegotiates the contract (with the same bank or a new bank) to obtain better financing conditions, possibly also amending the amount of the loan, or mortgage subrogation, where borrower ends the contract and start a new contract (with the same or another bank) to obtain better financing conditions, have been common in past years when interest rates were low and falling. However, with worsening financing terms on new mortgages in 2011–12, mortgage substitutions and subrogations are now less attractive. Mortgage substitutions and subrogations amounted to about 12 percent of new mortgages in 2011, down from 20 percent in 2009 and 16 percent in 2010, and are expected to have decreased further in 2012. Renegotiations with the same banks were done for 7½ percent of mortgages in 2008, 3 percent in 2009 and 1–2 percent in 2010–11. The number of debt restructurings, where the bank incurs a loss, is very limited (less than 0.1 percent of loans in December 2012).

22. Banks and the government have adopted measures to protect low-income and distressed borrowers during the crisis. Under the initiative of the Italian Banking Association and the main consumer organizations, a moratorium on mortgages was implemented in February 2010, with wide participation from banks (Box 1). The moratorium expired in March 2013, and has enabled

around 100,000 homeowners to suspend repayments. Since banks do not incur a loss, mortgage under the moratorium are not classified as "restructured" and are not considered part of impaired loans. About 70 percent of those benefiting from the moratorium have resumed regular payments at the end of the suspension, suggesting that the measure has improved the creditworthiness of the participating households (see Bartiloro, Carpinelli, Finaldi Russo and Pastorelli, 2012, and Bank of Italy, 2012c). The government's Solidarity Fund (Box 1) is targeted at low-income households and contributes to interest payments on mortgage loans for first-time home buyers during payment suspensions. The capital endowment of EUR 20 million for 2011 was quickly exhausted, and contributed to the interest payments of 5,000 households. A further EUR 20 million have been allocated for 2012–2013.

23. Mortgage loans are full recourse under Italian law, offering considerable protection to creditors. As in other countries in continental Europe, borrowers in Italy must repay their debt in full, regardless of any change in the value of the property, and a creditor can in some cases attach other (present and future) assets of the debtor.

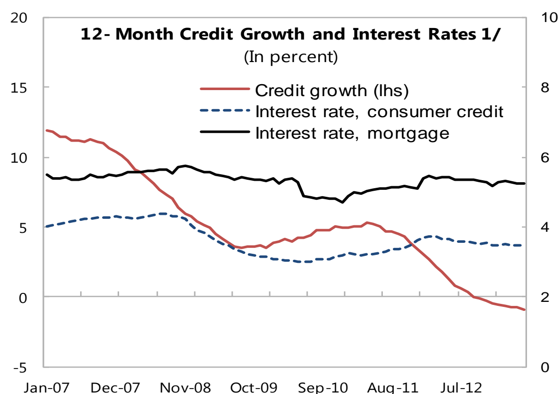
24. The recent law on personal bankruptcy provides support for households that are unable to pay their debt. Under the new law, over-indebted households can chose between two new insolvency procedures; restructuring and liquidation. The restructuring is done with the intervention of an ad-hoc body, and if feasible, approved by a judge. The debtor can propose an agreement that can, among other, postpone payment deadlines or discount the total debt. However, if the procedure encompasses secured debts, creditors should be repaid no less than the collateral market value. The liquidation process is managed by an agent appointed by a judge, and once started, prohibits new legal action against the debtor. If the liquidation of all the debtor's assets is closed but the debt is not yet fully paid off, the debtor can ask the court for a discharge, which can be granted if strict conditions are satisfied.[7]

25. The lengthy process to recover collateral affect banks' expected recovery values. The legal process to repossess collateral can be initiated after single or multiple delays in the payment of installments. The average length of the legal procedures leading to repossession was about three years in 2011, having improved from six years in 2001. The lender can, in addition, activate a foreclosure procedure on other assets of the debtor, consistent with the full recourse legislation.

[7] The debtor needs to prove good faith, i.e., the debtor needs to be cooperative, not having been sentenced for bankruptcy crimes and not responsible for the default, and not having been granted a discharge of debt in the previous eight years.

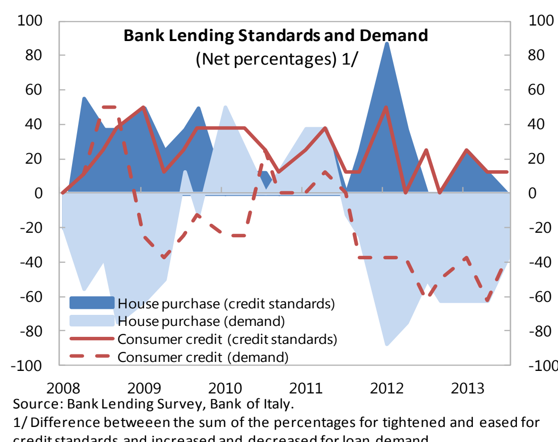
Figure 3. Italy: Households' Financial Conditions

Credit growth has turned negative, and interest rates on new loans remain high



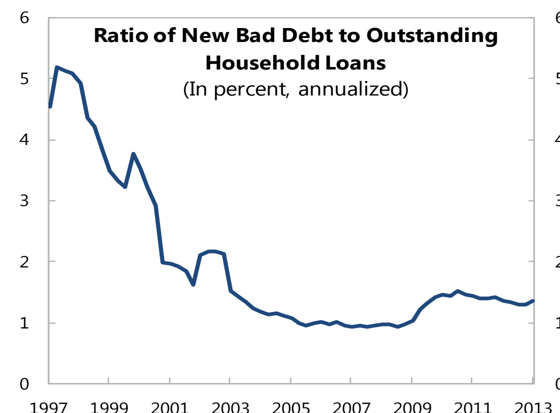
Source: Bank of Italy and ECB.
1/ Corrected for securitization. Interest rates on new loans (rhs).

Bank credit standards have tightened and demand for credit has declined substantially.



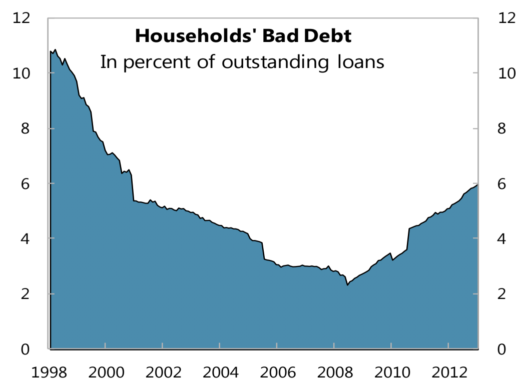
Source: Bank Lending Survey, Bank of Italy.
1/ Difference between the sum of the percentages for tightened and eased for credit standards and increased and decreased for loan demand.

The flow of new bad household loans is stable at a low level



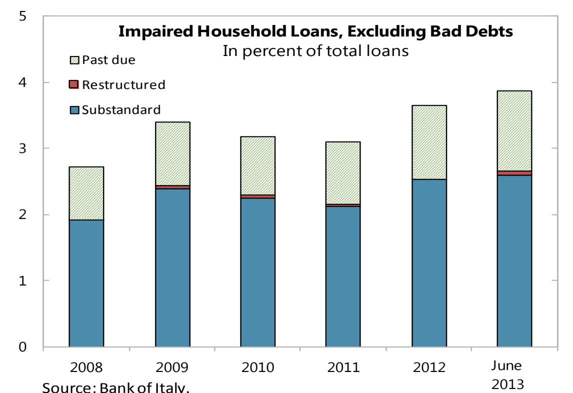
Source: Bank of Italy.

The stock of bad debt reflects a large amount of legacy assets



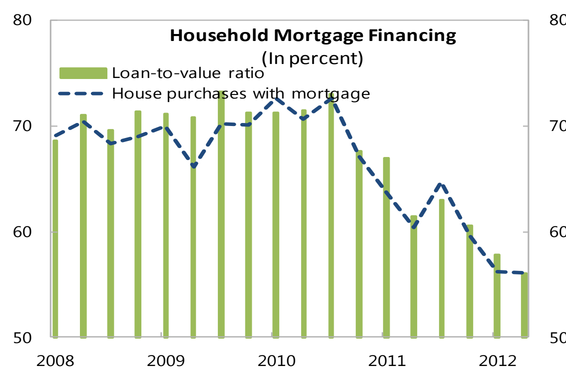
Source: Bank of Italy.

The stocks of past due and substandard household loans are on the rise



Source: Bank of Italy.

Loan-to-value ratios are low, but have come down, further as has the use of mortgages for house purchases



Source: Bank of Italy.

Box 1. Italy—Support Measures for Low-Income and Distressed Households

Moratorium. The moratorium promoted by the Italian Banking Association together with the main consumer organizations, has allowed households in difficulty to suspend mortgage loan repayments for at least 12 months, under the following conditions:

- Mortgage not higher than EUR 150,000 for the purchase or restructuring of the primary residence.
- Annual household income up to EUR 40,000.
- Loss of main income source after January 1, 2009, because of job loss, job reduction (including under the Wage Supplementation Fund) for at least 30 days, or death of household main income earner.

The suspension of payment include principal or principal and interest payments, and the amortization period of the mortgage is extended for the period of the suspension, during which interest continues to be due.

The participation of banks has been wide (92 percent). Since February 2010, the moratorium has enabled around 85,000 homeowners (approximately 30 percent of mortgage holders in the lowest income quartile) to suspend repayments, amounting on average to EUR 7,130 (approximately one quarter of the disposable income of mortgage holders in the lowest income quartile). The moratorium expired in March 2013.

Solidarity Fund. The government's Solidarity Fund is targeted at low-income households and contributes to interest payments on mortgage loans for first-time home buyers during payment suspensions. The selection criteria are stricter than for the moratorium; in particular, those benefiting from the Wage Supplementation Fund do not qualify, and bank participation is mandatory. The Fund's capital endowment of EUR 20 million for 2011 was quickly exhausted, and contributed to the interest payments of 5,000 households. A further EUR 20 million has been allocated for 2012–13.

In addition, the government has put in place a credit fund for parents of newborn children, valid until 2014. Between 2010 and 2011, this fund disbursed loans totaling EUR 116 million to 21,000 households (0.2 percent of total loans to households). Finally, a guarantee funds for purchase of a primary residence by young couples has been set up, where the government covers 50 percent of the residual amount due in case of insolvency. The latter fund has been used scarcely, and the conditions, in particular the cap on the spread applied to variable rate mortgages are currently under review.

D. Sensitivity Analysis

26. This section analyzes the risk to financial stability from household indebtedness. The analysis uses the dataset from the Bank of Italy's *Survey of Household Income and Wealth* (2010), which allows a detailed analysis of households' indebtedness across income groups. The 2010 Survey covers 7,951 households in Italy. To assess vulnerabilities, the analysis considers the financial situation of households in 2010 (the baseline) and the impact of a set of hypothetical macroeconomic shocks illustrating the key risks to the household sector; a further fall in income, an increase in interest rates, and a continued decline in housing prices.[8]

Baseline

27. The debt burden of Italian households is modest. In 2010, only 22 percent of households had mortgage or consumer credit, see Table 1 and Figure 1.[9] Indebtedness is larger in the more wealthy percentiles of the income distribution. The median debt-service to income ratio for indebted households is 10 percent. Considering the ratio of debt payment to income as an indicator of vulnerability, a household is defined to be vulnerable if debt service exceeds 30 percent of income—a conservative threshold. The proportion of vulnerable household in the total sample is 2¼ percent, which is low in an international perspective, and the proportion of vulnerable households among indebted households is 10 percent.

28. The lowest income group represents the most vulnerable group among indebted households. Their median debt payment to income ratio was 18 percent, against 10 percent for all indebted households. As a result, the share of distressed households was 29 percent for this income group, about the double of that of the second lowest income group.

29. Vulnerable households hold a considerable share of total household debt. In total, vulnerable households hold 27 percent of total household debt, though with large variation across income groups. In the lowest income group, almost 75 percent of the debt is held by vulnerable households, whereas the proportion is about 12 percent in the highest income group.

30. A large part of the debt of vulnerable households (debt at risk) is covered by real and financial assets. The positive net wealth position, defined as real and financial assets minus financial debt, provides a buffer for most indebted households. Only 1.2 percent of total debt is held by vulnerable households (e.g., with debt service above 30 percent of income) that do not have a positive net wealth position. The proportion is somewhat higher for the lowest income group; at 3 percent. In line with this, the loan default rate for Italian households is relatively low.

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[8] The survey is bi-annual and the 2012 dataset will become available in early 2014. See Bank of Italy (2011) for a sensitivity analysis based on an extrapolation of the dataset to 2012.

[9] The definition of debt used here includes mortgages and consumer credit, but excludes credit cards, overdrafts, and business loans. If debt on credit cards and overdrafts are included, 27 percent of households are indebted. Income includes non-monetary income.

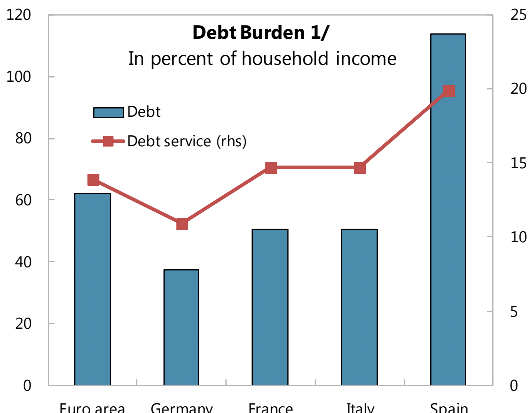
Table 1. Italy: Household Debt Burden (2010)

	All households	Indebted households				
Income	Proportion of indebted households (in percent of total)	Proportion of distressed households (in percent of total)	Ratio of debt payment to income (median)	Share of distressed households (in percent)	Share of debt at risk (in percent)	Debt at risk not covered by household assets (in percent of loans)
<20	11.3	3.3	18.2	29.1	73.2	3.0
20-40	16.7	2.5	12.6	15.1	40.9	1.0
40-60	22.2	2.6	11.5	11.9	42.4	1.5
60-80	27.2	1.7	10.2	6.3	21.6	0
80-90	28.3	0.6	9.4	2.2	12.0	4.3
90-100	32.8	0.6	6.9	1.9	12.5	0
Total	21.6	2.2	10.1	10.0	26.5	1.2

Source: Staff estimates using the Bank of Italy's 2010 *Household Income and Wealth Survey*.

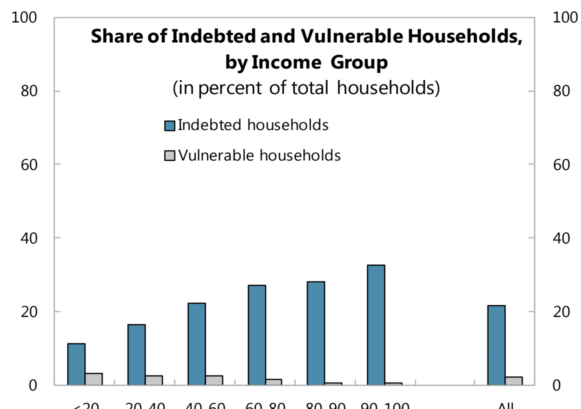
Figure 4. Italian Household: Baseline Debt Vulnerability

The debt burden of Italian households is moderate and in line with euro area averages

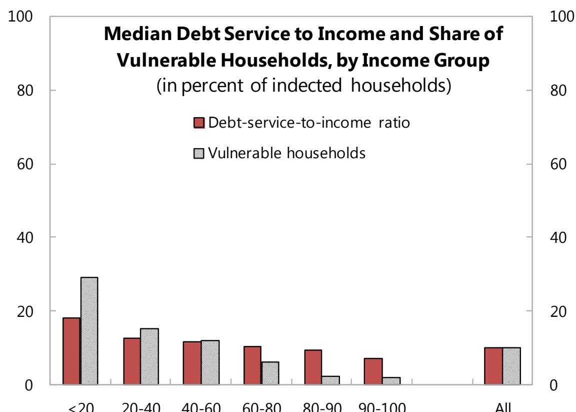


1/ 2010, except for Spain (2008). For indebted households.

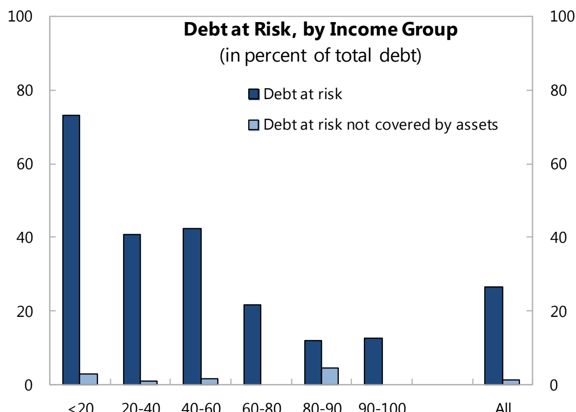
Indebtedness is higher for higher income groups, but vulnerabilities are largest in the lower income groups



Debt service constitutes a larger share of income in the lower income groups, making households more vulnerable



The debt of vulnerable households is mostly covered by positive net wealth positions



Source: IMF staff estimates based on the Bank of Italy's 2010 *Household Income and Wealth Survey* and ECB (2013) for cross-country data on debt burden.

Sensitivity Test Scenarios

31. The sensitivity analysis considers the impact on the number of vulnerable households and debt at risk of a set of hypothetical macroeconomic shocks. It takes the 2010 balance sheets as the starting point and simulates the impact of the shocks to interest rates and income on households, comparing the share of vulnerable households and households' debt-servicing capacity with the baseline figures. Since the results depend also on the valuation of net wealth, a house price shock is also included.

32. The sensitivity tests find that credit risk from households is mostly mitigated by their positive net wealth position, even under severe shocks. Interest rate and income shocks have a moderate impact on debt-at-risk, in particular when net wealth is taken into consideration. House price shocks, however, due to the importance of real assets in financial assets, could have a substantial impact on households' net wealth and the collateral coverage of their loans.

33. Households are vulnerable to higher interest rate, though uncovered debt at risk remains fairly moderate even under a severe scenario. About 60 percent of mortgages in the survey have variable rates (against 70 percent nationally), and a rise in the interest rate could make it more difficult for household to service their existing mortgages. Assuming a 100 basis points shock to variable interest rate mortgages—similar to the increase in rates on new mortgages in 2011–12—would increase the share of distressed households to 11 percent and debt at risk would increase to 29 percent. In a more extreme scenario, where interest rates on mortgages increase by 300 basis points, the share of distressed households increases to 13 percent, bringing debt at risk to 35 percent. The shocks particularly affect the number of distressed households among the lower income groups. However, the share of debt at risk, not covered by households' assets, even in the most severe scenario (a 300 basis points hike in interest rates) is limited to 1.2 percent of total household loans.

34. Income shocks have further large impact on debt-servicing capacity, but are also mitigated by the net wealth position. In a downside scenario where income declines by 3 percent (similar to the decline in gross household disposable income in 2012), the share of vulnerable households would increase to close to 11 percent, brining debt at risk to 29 percent. In a more severe scenario—such as a 15 percent decline in income—14 percent of indebted households would become distressed, and 36 percent of debt would be at risk. A combined interest rate and income shock would increase further the share of distressed households, but the debt at risk not covered by households' net assets would be limited to about 1.6 percent of total household loans even in the most severe combined scenario.

35. A housing price shock could, however, have a significant impact on the value of vulnerable households' collateral. The debt-servicing capacity is not directly affected by housing prices. But if housing prices fall, the collateral of the debt held by vulnerable households would be reduced. A moderate decline in housing prices of 5 percent would increase somewhat debt-at-risk not covered by assets to 1.6 percent of total household loans, reflecting the prudent loan-to-value ratios applied to mortgages. But in a more severe downside scenario where housing prices fall by 20 percent, debt at risk not covered by such collateral could increase to 12 percent, considerably increasing credit risk for banks.

Table 2. Italy: Sensitivity Analysis of Indebted Households

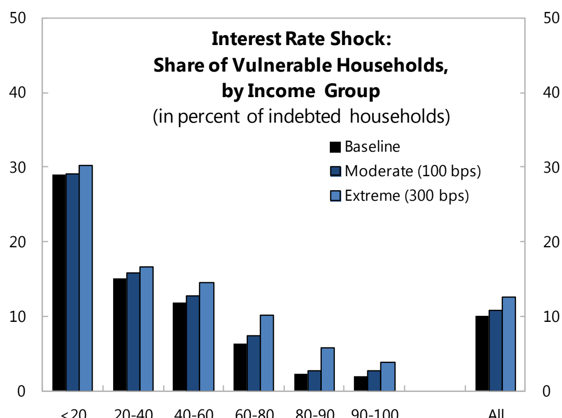
(In percent of indebted households)

Income	Ratio of debt payment to income (median)	Share of distressed households (in percent)	Share of debt at risk (in percent)	Debt at risk not covered by household assets (in percent of loans)
Baseline	10.1	10.0	26.5	1.2
Shocks				
Interest rate increase				
Moderate (100 bps)	12.2	10.7	29.3	1.2
Extreme (300 bps)	12.6	12.6	35.1	1.2
Income decline				
Moderate (3 percent)	12,2	10.6	29.4	1.3
Extreme (15 percent)	13.9	14.3	35.5	1.6
House price decline				
Moderate (5 percent)	10.1	10.0	26.5	1.6
Extreme (20 percent)	10.1	10.0	26.5	11.7
Combined shock (Interest rate increase and income decline)				
Moderate (100 bps, 3 percent)	10.7	11.3	30.6	1.3
Extreme (300 bps, 15 percent)	12.6	17.2	43.5	1.6

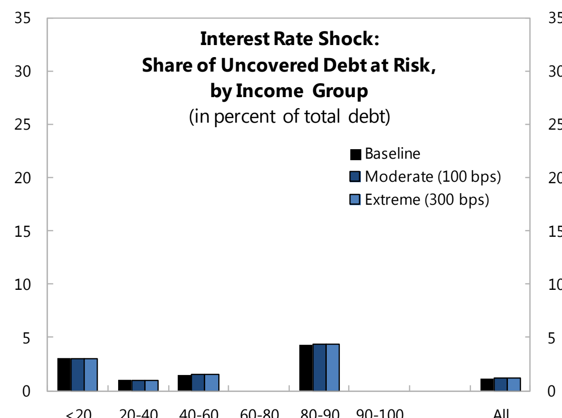
Source: Staff calculations using the Bank of Italy's 2010 *Household Income and Wealth Survey*.

Figure 5. Italian Household: Sensitivity Analysis

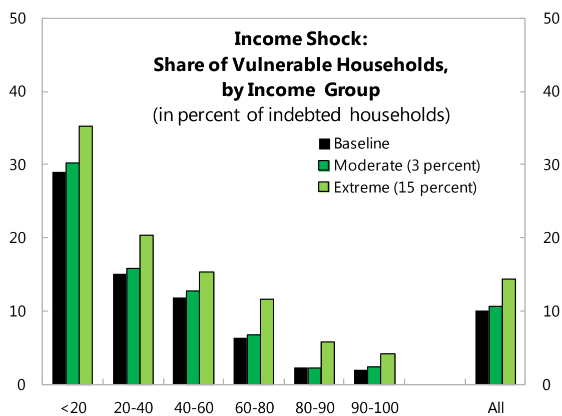
Higher interest rates would increase the share of vulnerable households, especially in mid-income groups



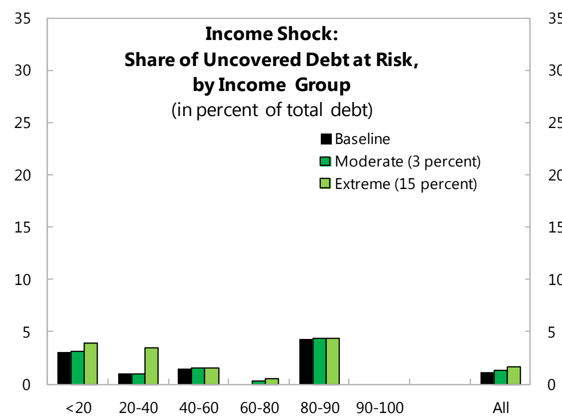
The impact on debt at risk (not covered by net assets) is limited even in a severe scenario, given high wealth



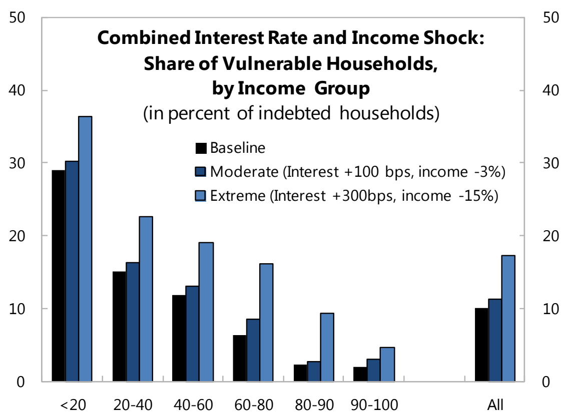
An adverse income shock would also directly reduce debt-servicing capacity



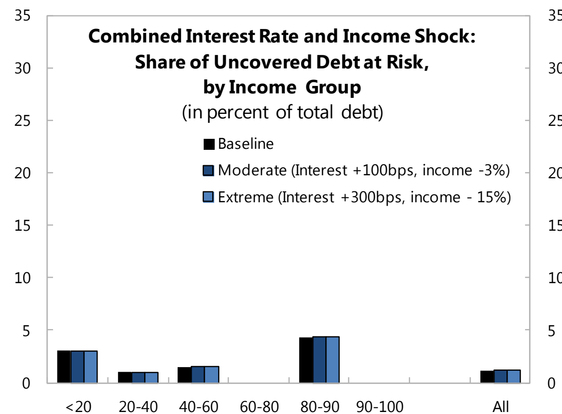
But again, large household wealth impact constitutes an important collateral buffer



A combined severe interest rate and income shock would make almost 50 percent of households distressed



But as before, large household buffers would dampen the impact of debt at risk



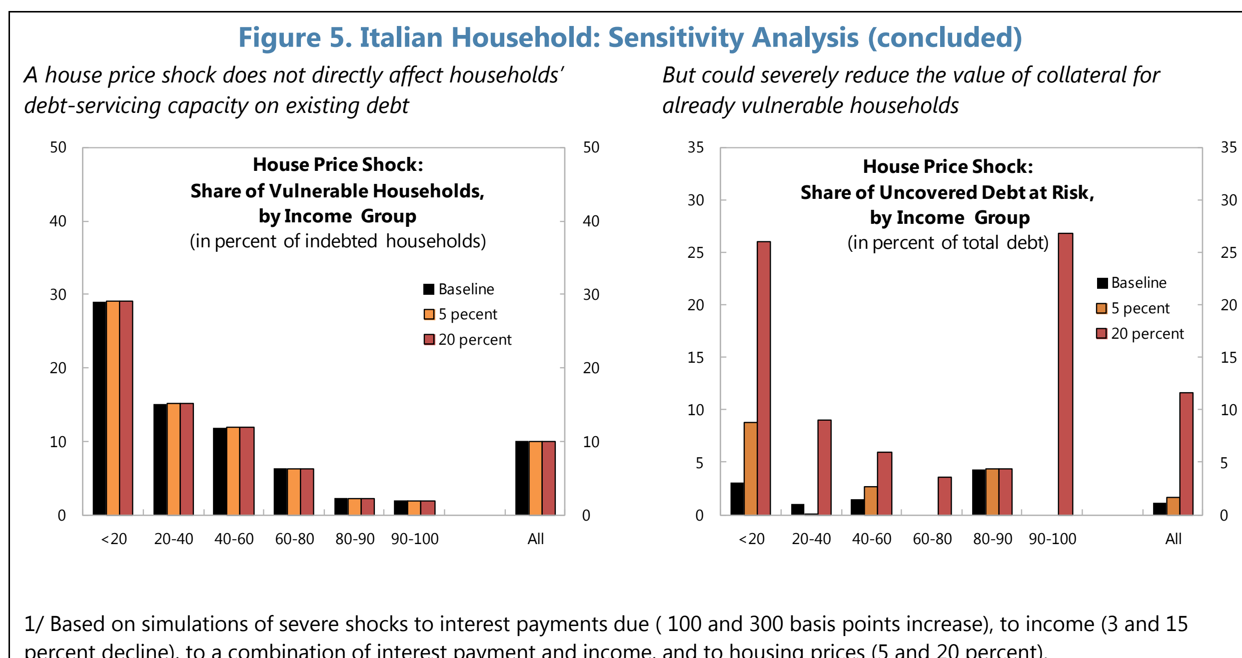


Figure 5. Italian Household: Sensitivity Analysis (concluded)

1/ Based on simulations of severe shocks to interest payments due (100 and 300 basis points increase), to income (3 and 15 percent decline), to a combination of interest payment and income, and to housing prices (5 and 20 percent).

THE ITALIAN NON-FINANCIAL SECTOR[10]

A. Non-Financial Corporate Balance Sheets

36. The Italian corporate sector is dominated by SMEs. The SME's share in business valued added is above 70 percent, with 33 percent produced by micro enterprises, compared to EU averages of 58 percent and 22 percent, respectively.[11]

37. The debt burden of the corporate sector is moderate, but leverage is high. Corporate balance sheets, made fragile by the prolonged recession, are weighed down by a historically high level of debt in relation to both value added and equity. Leverage has increased during the crisis, though mostly reflecting a decline in the value of equity. On average, Italian firms' leverage is among the highest in the euro area (Figure 6). SMEs are more highly leveraged than other firms. In 2011, micro firms had a leverage ratio of 58 percent and small firms 55 percent, both above the average of 52 percent in the Bank of Italy's dataset of Italian companies. Large companies have below average leverage (at 49 percent).

[10] In this paper, the terms corporate sector, corporate and firms are used to refer to non-financial corporations.

[11] European Commission (2011). A micro firm employs fewer than 10 persons and its annual turnover and/or balance sheet total does not exceed EUR 2 billion. A small firm employs fewer than 50 persons and its annual turnover and/or balance sheet total does not exceed EUR 10 million. A medium-sized firm employs fewer than 250 persons and its annual turnover or balance sheet total does not exceed EUR 50 million or EUR 43 million, respectively.

38. The reliance on bank financing is high, in particular for SMEs. In 2011, bank lending to firms represented 56 percent of GDP, against 49 percent on average for the euro area and 35 percent for Germany and 43 percent for France. About 50 percent of non-financial corporations' financial debt is from banks, but for SMEs, the reliance on bank debt is higher, at 73 percent. Also, Italian companies' reliance on bond financing is limited. In 2012, the ratio of securities to loans was 8 percent, against 12 percent on average for the euro area and 40 percent for the United Kingdom. The level and composition of Italian firms' bank debt made them vulnerable to higher interest rates and tighter bank lending standards during the crisis.

39. A large share of debt has short maturity. Loans with an original maturity of less than one year make up 45 percent of firms' bank debt in Italy, compared with 24 percent in the euro area. The maturity of debt has shortened during the crisis, partly reflecting that bank lending standards tightened more for long-term than short-term financing. SMEs are more vulnerable, with 54 percent of their bank debt being short term.

40. Italian firms face headwinds from weak profitability. The protracted recession has caused a sharp decline in profitability, with gross operating profit of firms continuing to fall in 2011, having recovered in most large European economies, and its ratio to value added falling to the lowest level since the 1990s (34 percent). The proportion of profit-making firms was 57 percent in 2011, while 25 percent were loss-making (Figure 6). Exporting firms are faring somewhat better than other firms, with 65 percent recording profits and 23 percent recording losses.

41. The construction and real estate sectors have been hit strongly by the crisis. The recession in the construction sector started in 2005, earlier than the economy-wide recession, following a prolonged expansion since the end of the 1990s. As the financial crisis deepened, the fall in non-residential investment has been particularly severe, with non-residential investment currently at 70 percent of its pre-crisis level, and residential investment at 85 percent. Despite the decline in investment, the stock of unsold new houses suggests that there is a considerable over-supply in the market.

42. Delays in intra-firm payments reinforce payment difficulties. The need of many firms for external financing continued to reflect the large delays in payment of business transactions. The average payment duration for Italian firms was 96 days in 2012, among the longest in the euro area (Intrum Justitia, Figure 6). The payment delays have increased during the crisis, and the percentage of firms with very late payments (more than 60 days beyond the agreed payment date) was 9 percent in 2013 Q1 (Cerved group). The delays in intra-firm payments to some extent are due to the delays payments by the public administration—at an average of 180 days, the longest in the euro area, which is currently being addressed (see section III.B).

43. Firms' liquidity buffers have been relatively stable. The average liquidity ratio (current assets to current liabilities) has been relatively stable at 114 percent during the crisis, two percentage points below the average in the pre-crisis years (Cerved group). It increased from 2009 to 2011 for small firms, whereas it decreased for medium and large enterprises. Firms can still rely on substantial bank credit lines. The ratio between drawn and granted credit lines is equal

to 57 percent, though it has been increasing in recent years (Central Credit Registry). The ratio is lower for larger firms (with more than 20 employees), suggesting that these firms can rely on larger liquidity buffers.

B. Financial Linkages

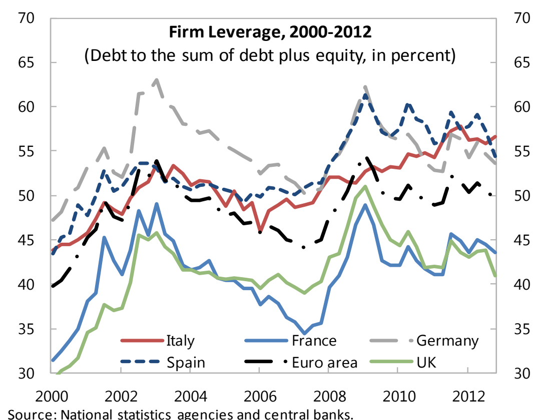
44. Bank credit to firms has declined substantially since the onset of the crisis. The growth in bank loans to firms, net of repos and bad debts, began to slow from the middle of 2011 and turned negative in mid-2012. By May 2013, credit was contracting at 3.6 on an annual basis. Unlike the previous phase of reduction in credit in 2009, the contraction of the past months was greater for small firms. The rising trend of bank interest rates for firms, under way since the middle of 2010, slowed somewhat in 2012. In June, interest rates on new loans to firms were on average 3½ percent, 90 basis points above the euro area average reflecting continued financial fragmentation.

45. The decline in credit reflects both tighter credit conditions and slower demand.[12] The *Bank Lending Survey* shows that both demand and supply factors have affected credit, though with different intensity at varying stages of the crisis (Figure 7). The slowdown in credit to firms during 2008–09 reflected to a large extent weak loan demand. From 2010 onward, when the economy recovered, supply constraints started playing an increasingly important role, and by the second half of 2011 at the peak of the Italian sovereign crisis, supply factors were prevailing. However, as demand collapsed in 2012, the situation reversed, so that weak demand now tends to be the stronger factor driving the decline in credit. Consistent with this, according to the *Survey of Industrial and Service Firms*, some 40 percent of firms reported a worsening of access to credit in the second half of 2011, twice as many as in the corresponding period of 2010. The leading reason cited for the deterioration was the cost of credit, but the share of firms that had trouble getting the desired amount of financing also rose significantly. The percentage of firms reporting that they got less than the full amount of credit requested reached its highest level since the start of the crisis.

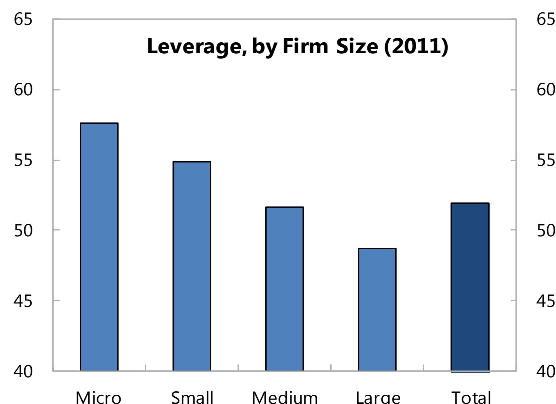
[12] See Zoli (2013) for a discussion of the role of supply and demand in explaining recent credit developments.

Figure 6. Italy: Corporate Leverage, Funding Sources, and Profitability

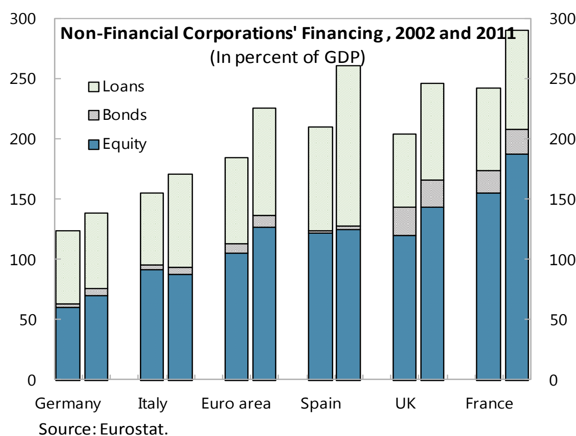
Italian firms have high leverage in an international perspective



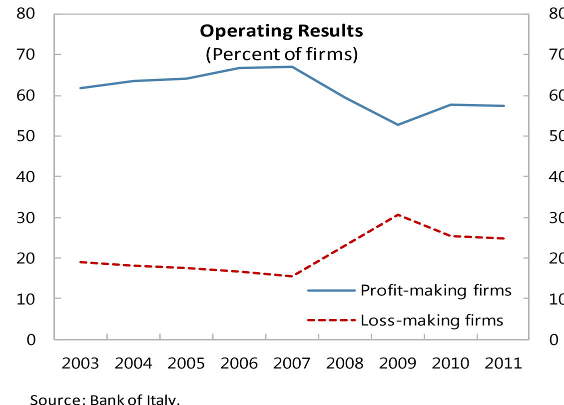
Leverage is higher for smaller firms



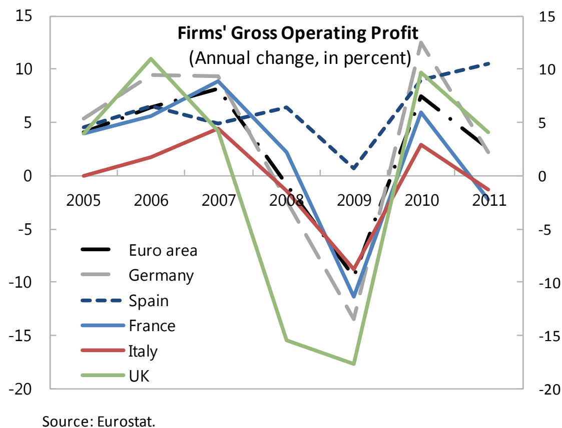
Reliance on bank loan financing is large in Italy



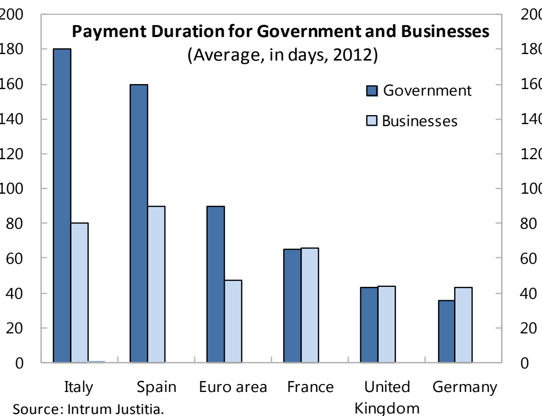
The share of loss-making firms has increased and that of profit-making firms has fallen



Profitability has not recovered in line with other European economies

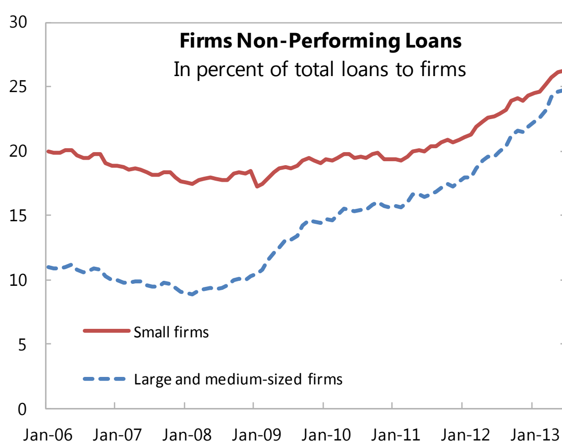


Delays in government and intra-firm payments are among the highest in the euro area

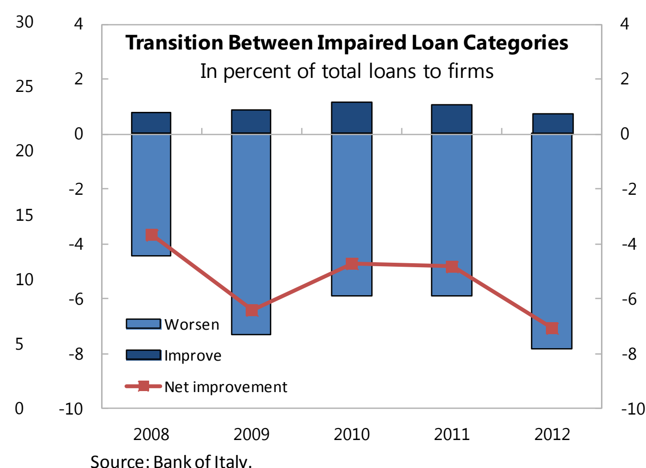


46. Firms' financial difficulties have translated into a sharp deterioration in banks' asset quality. The share of firms' loans that are considered non-performing reached 25 percent in June 2013, with that of smaller firms 26 percent. The flow of new bad debts (as a ratio of outstanding firm loans) have increased to 3 percent from about 1 percent pre-crisis (annualized, Figure 7). The stock of bad debt was 14.1 percent of total firm debt in June 2013, of which less than 40 percent is secured with real assets. Default rates, in terms of number of borrowers defaulting each year, have doubled relative to the pre-crisis years to 3 percent in 2012. For the more forward-looking categories, in June 2013, substandard loans represented another 7.3 percent of total loans, while restructured and past due were 1.1 and 2.6 percent, respectively. Once classified as non-performing, the loan quality in most cases deteriorates, as shown by the transition dynamics between the NPL categories, suggesting continued increases in bad loans going forward.

47. Loans to construction firms represent considerable risk for Italian banks. These loans amounted to EUR 150 billion in 2011 or 10 percent of total credit to the private sector. Based on Cerved Group data, 52 percent of construction firms made losses in 2011, compared to 35 percent for manufacturing firms and 42 for the entire sample. In August 2012, 16 percent of bank loans to construction firms were classified as bad debts and another 14 percent were impaired. Banks also have a substantial exposure (EUR 120 billion) to real-estate service companies (sales, rentals, management and brokerage). The quality of credit to these companies is deteriorating rapidly; 8 percent of all loans were classified as bad debts and another 14 percent were substandard, restructured or past due.



Source: Bank of Italy.



Source: Bank of Italy.

48. The use of collateral to back loans has increased. The share of firms' loans that are backed by collateral or guarantees increased from 64 to 68 percent between 2007 and 2012. The increase was stronger for smaller firms, whose access to new financing is more conditioned on the availability of collateral. Many firms benefit from guarantees issued by the entrepreneur (or a member of the entrepreneur's family), backed by personal real and financial assets. These kinds of guarantees are estimated to represent about 15 percent of total real and financial assets used as collateral or guarantees for loans. There is however no harmonized data reporting on collateral held by banks and also no available data on unpledged assets that could be used as collateral or guarantees for new loans.

Box 2. Italy—Measures to Support SME Financing

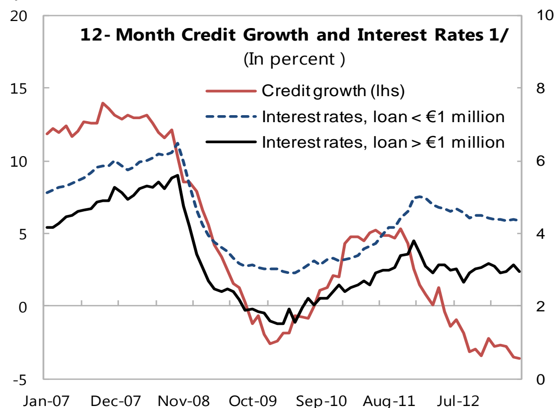
During the crisis, several initiatives have been implemented to alleviate SMEs' temporary debt payment difficulties and support their access to credit:

- **Debt Payment Moratoria for SMEs**. The government, the banking association, and business associations signed an agreement in August 2009 to allow the suspension of principal repayments on part of SME debt. During the first two years, the moratorium was applied to debt totaling EUR 65 billion on 225,000 loans, resulting in the suspension of some EUR 15 billion in loan repayments. A new moratorium with stricter eligibility criteria was agreed in February 2012, which was applied to debt of EUR 28 billion as of April 2013. Although it expired in June 2013, a new round of debt moratoria similar to previous ones was signed in July 2013. The moratoria have helped firms face temporary payment difficulties. According to the Bank of Italy, regular payments are resumed for about 60 percent of loans after suspension, suggesting limited forbearance risk.
- **Payment of Government Overdue Debt**. To ease the liquidity problems of suppliers due to late payments by government entities, the government approved in April 2013 a plan to pay a substantial part (EUR 40 billion, 2½ percent of GDP) of its overdue debt during 2013–14. The implementation of the plan, which was approved by Parliament in May 2013, should bolster firms' liquidity position and improve their debt-servicing capacity, and more generally, boost growth, thereby enhancing firm profitability. Moreover, in August 2013 a plan to further increase the payment by EUR 7 billion in 2013 was approved.
- **Guarantee Fund for SMEs**. The government's Guarantee Fund for SMEs was boosted in response to the crisis, by increasing its endowment, widening the eligibility criteria for firms, easing the minimum requirement for the firm's financial indicators, and providing a government back-stop guarantee to allow a more favorable prudential treatment of the guarantees. The value of the guarantee amounts to a maximum of 80 percent of the loan (or EUR 1.5 million). Up to end-2012, the fund had given guarantees amounting to EUR 21 billion, for total loan amounts of EUR 39 billion.
- **The SME Plafonds from Cassa Depositi e Prestiti (CDP)**. Since 2009, CDP has used its retail deposit base to grant medium-and long-term credit to SMEs through banks at below-market interest rates. The total amounts that can be provided are EUR 18 billion, 75 percent of the banking system participates, and 60,000 firms have received financing so far.

Initiatives are also in place to strengthen capital and promote alternative financing opportunities for SMEs, to reduce their leverage and reliance on bank funding. First, the Italian Investment Fund (a EUR 1.2 billion private equity fund promoted by the government and mainly funded by the largest Italian banking groups) supports capital strengthening and mergers and acquisitions among medium and large enterprises. Second, to strengthen the capitalization of firms and foster "internal" growth, the government has made the notional return on new equity deductible from taxable income, according to the allowance for corporate equity principle. Finally, the government increased fiscal incentives to facilitate the issuance of unlisted firms of commercial paper and bonds.

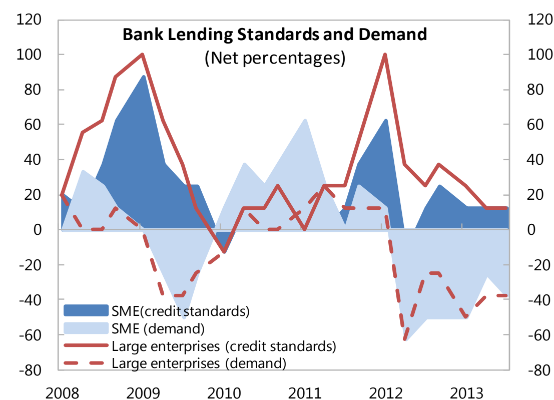
Figure 7. Italy: Firms' Financial Conditions

Credit to firms has declined, and interest rates remain high despite lower euro area rates



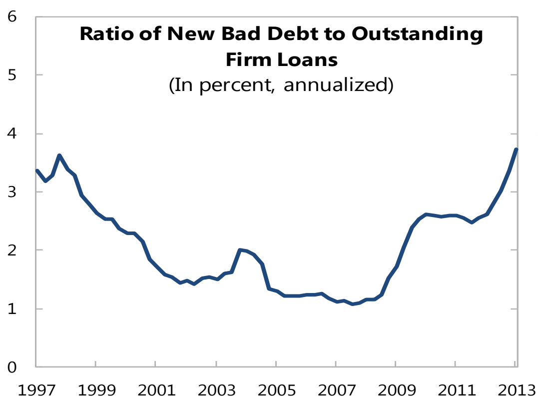
Source: Bank of Italy and ECB.
1/ Corrected for securitization. Interest rates on new loans (rhs).

Bank credit standards have tightened substantially, and demand for credit has declined.



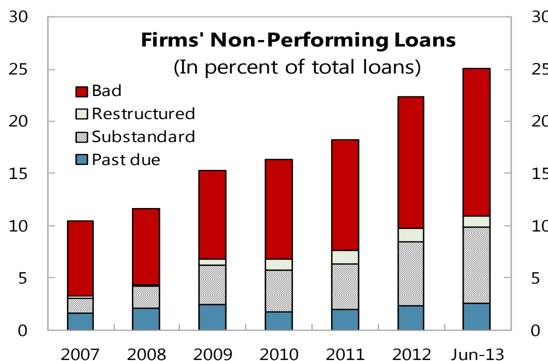
Source: Bank Lending Survey, Bank of Italy.
1/ Difference betweeen the sum of the percentages for tightened and eased for credit standards and increased and decreased for loan demand.

The flow of new bad debts from firms is on an increasing trend



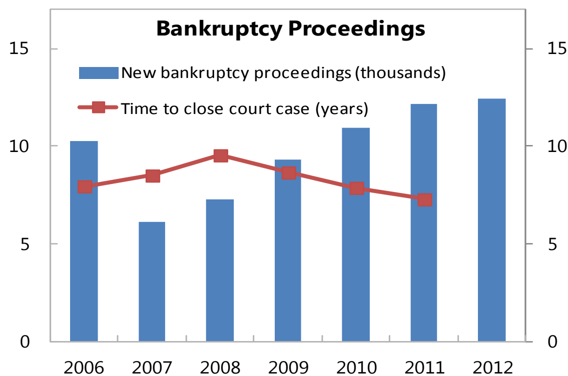
Source: Bank of Italy.

Firms' non-performing loans have doubled in the past five years



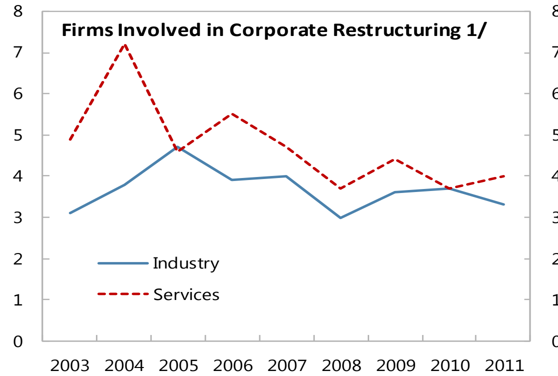
Source: Bank of Italy.

New bankruptcy proceedings reached new highs in 2012, making it more challenging to reduce the length



Source: Ministry of Justice and Cerved Group.

The use of corporate restructuring options is moderate and below pre-crisis levels



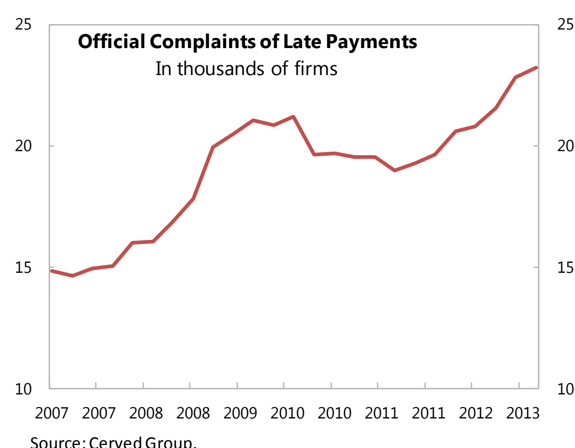
Source: Bank of Italy.
1/ Covers mergers, acquisitions, contributions, transfers and splits.

49. Several initiatives have been implemented by the government and banks to support firms', in particular SMEs', access to credit (Box 2). The government, the Banking Association, and business associations signed an agreement in August 2009 to allow the suspension of principal repayments on some forms of debt held by SMEs. During 2009–11, 225,000 applications were accepted and the moratorium was applied to debt totaling EUR 65 billion (three quarters of it in the form of mortgages). It is estimated that the agreement resulted in the suspension of some EUR 15 billion in loan repayments. New moratoria with stricter eligibility criteria were agreed in February 2012 and July 2013. 68,000 applications were accepted and the moratorium was applied to debt totaling EUR 22 billion. Evidence from Bank of Italy inspection suggest that the forbearance risk related to the moratoria is limited, as following the suspension, regular payments were resumed in respect of loans worth 60 percent of the total value covered by the moratorium (Bank of Italy, 2012c).

50. The government's new initiative to pay overdue debt represents a crucial step to ease firms' liquidity constraints. The government approved in 2013 a plan to pay a substantial part (EUR 47 billion, 3 percent of GDP) of its overdue debt during 2013–14. The implementation of the plan should bolster firms' liquidity position and improve their debt-servicing capacity, and more generally, boost growth and reduce uncertainty in the economy, thereby enhancing firm profitability.

C. Insolvency and Debt Restructuring

51. The number of business closures and bankruptcies has increased substantially. About 104,000 firms closed in 2012, representing a 2¼ percent increase from 2011 (Cerved Group, 2013a). The largest share of firm closure consists of voluntary liquidations (about 90,000). In 2012, over 12,000 bankruptcy procedures began, a 2¼ percent increase from 2011, and the highest number registered in historical data. Since 2009, more than 45,000 firms have declared bankruptcy, nearly half of them in the service sector (Figure 7). The bankruptcy rate is however largest in industrial companies, where 5¼ percent of firms have declared bankruptcy, as compared to 4½ percent in the construction sector and 2¼ percent in the service sector. Non-bankruptcy insolvency procedures, including proceedings oriented at debt restructuring, also increased in late 2012, especially in the construction sector. An early warning indicator for bankruptcies—official complaints of late payments—suggest that a further deterioration is likely in the near term (Cerved Group, 2013b).



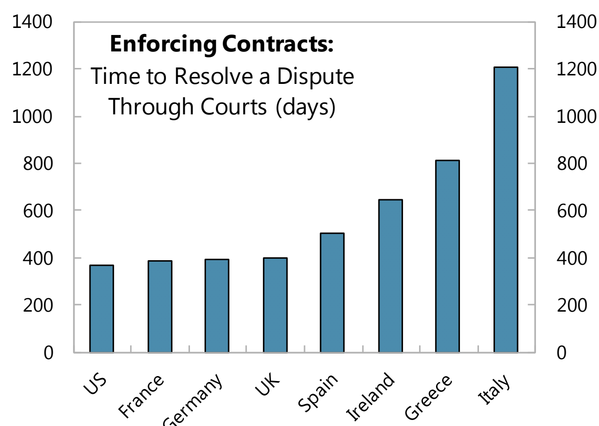
Source: Cerved Group.

52. Firms have only made moderate use of debt restructuring operations. The share of firms resorting to restructuring or re-negotiations of loans was about 7 percent in 2011, down from 10 percent in 2010 (Bank of Italy, 2012d). The most commonly used restructuring operations are a lengthening of the maturity of the loan and granting additional financing, whereas converting debt to equity or writing down debt were only used in a few instances.

The use of corporate restructuring options is also limited; the share of firms resorting to corporate restructuring (including mergers, acquisition, contributions, transfers and splits) was 3.6 percent in 2011, broadly unchanged from 2010 (3.7 percent) (Bank of Italy, 2012d, Figure 7).

53. The legal framework for bankruptcy has been amended in past years (Box 3). The bankruptcy framework comprises three main restructuring options; creditor composition, debt restructuring agreement and out-of-court restructuring plan. Recent reforms have introduced several aspects to facilitate restructuring and business continuation, including super-priority status for interim financing, a moratorium on creditors' action; and no claw-back action in relation to payments made pursuant to the agreements. While the restructuring options have been successfully used by some companies to avoid liquidation, there have also been cases of abuse. Some companies file applications to take advantage of the moratoria on payments and seek to "buy-time" relating to their debts, to delay the commencement of liquidation proceedings. The courts are becoming increasingly mindful of abuses, are taking measures to mitigate the problem.

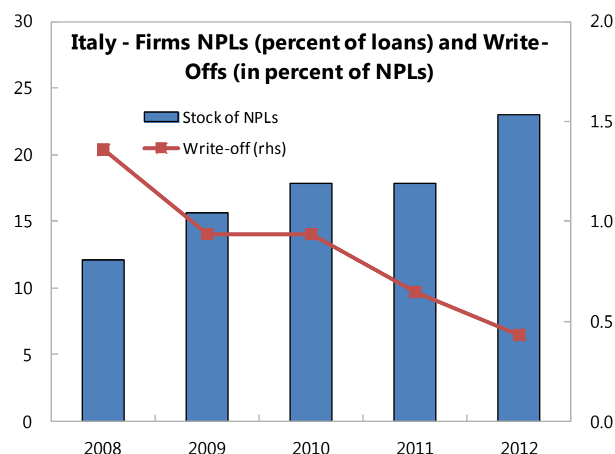
54. The liquidation process continues to be slow, partly attributed to lengthy court proceedings. The reform of bankruptcy law has reduced the backlog of bankruptcy cases, bringing the average time to complete the court case down from a peak of more than nine years in 2008 to about seven years in 2011. However, geographical differences are substantial—while some courts have committees for bankruptcy courts and the process is relatively faster, some other courts face a substantial backlog of cases. The lengthy court procedures represent an important hurdle to corporate restructuring in Italy, and are part of a wider problem of enforcing contracts in Italy compared to in other advanced economies.



Source: World Bank Doing Business

55. Banks' make limited write-offs of non-performing loans, partly reflecting the lengthy legal procedures, as well as fiscal disincentives. The stock of banks' legacy NPLs from firms is already high, and new NPLs are rising quickly. Banks' write-offs have been limited over the past years, and have declined to below ½ percent of non-performing loans in 2012.

- **Lengthy legal procedure.** It takes on average three years to obtain a real estate asset used for collateral through court and on average seven years to close a bankruptcy procedure.



Source: Bank of Italy.

- **Fiscal disincentives for provisioning and write-offs.** The deductibility from taxable income of loan-loss provisions is limited to 0.3 percent of the banks' outstanding loans, with the exceeding amount being deductible over 18 years. The tax deductibility of write-offs follow a similar treatment, except in cases of a court judgment on insolvency, small loans delinquent for over six months and losses resulting from the sale of a distressed asset.

- **A price gap between banks' valuation of the asset (the book value) and the market's valuation of the asset**. The high uncertainty about the developments of the real economy pushes investors to ask for a large haircut on distressed assets, and there is limited activity in the private market for distressed assets, in Italy, as in the rest of Europe.

Box 3. Italy—The Legal Debt Restructuring Framework for Firms[1]

The Italian Bankruptcy Law has been amended several times from 2006 to 2012 to better facilitate the reorganization/ rehabilitation of firms. It comprises of three main restructuring options: (i) creditor composition; (ii) debt restructuring agreement; and (iii) out-of-court restructuring plan. Important features which have been introduced to facilitate restructuring/business continuation for (i) and (ii) include: (a) super priority status for interim financing; (b) a moratorium on creditors' action; (c) no claw-back action in relation to payments made pursuant to the agreements (also for (iii)); and (d) the possibility to switch from (i) to (ii) and vice versa. The three main options are summarized below.

- **Creditor composition**: This process, which is designed to enable the company to continue business as a going concern, involves reaching a creditors composition agreement with the majority of creditors (50 percent plus 1 of the liabilities admitted to the list of liabilities) or majority of all claims and classes of creditors (if creditors are divided into different classes). Once approved by the court, it becomes binding on all creditors. Secured creditors need to receive a minimum payment of at least what they would expect from the sale of the assets over which they have security and can only vote for the part of the debt on which they are not to receive a payment under the proposal or if they give up their security. An independent expert is required to evaluate the accuracy of the financial data and feasibility of the proposal. This process allows the company to suspend payments (relating to privileged credits) for a period of up to 180 days, while negotiating the agreement with creditors and this suspension remains in force until the court approves the agreement.
- **Debt restructuring agreement**: This procedure involves the company reaching a restructuring agreement with the majority of creditors holding at least 60 percent of the value of all claims and becomes binding after the court's approval. The agreement does not bind creditors who are not parties to the agreement, but payment for such creditors may be delayed by up to 120 days. An independent expert is required to evaluate the accuracy of the financial data and feasibility of the proposal. As soon as the debtor files a proposal, he can ask the court for a moratorium for up to 60 days (extendable by a further 60 days), to allow the debtor to negotiate the agreement with creditors.

Box 3. Italy—The Legal Debt Restructuring Framework for Firms (concluded)

- **Restructuring plan:** This out-of-court procedure involves the company proposing an agreement with some of its creditors to restructure certain debt. Creditors who do not take part in the agreement are not bound by the terms. An independent expert appointed by the debtor is in charge of evaluating the accuracy of the financial data and feasibility of the proposal. The law provides for immunity of the operations under the plan from the risk of claw-back in a bankruptcy proceeding.

In addition, other available restructuring procedures specific to the size of companies include:

Extraordinary administration. This process is available for a large insolvent company - one who employs at least 200 employees and with accrued debts amounting to two-thirds of assets or previous years' revenues or 500 employees, with outstanding debt of at least EUR 300 million. An extraordinary commissioner manages the company's assets and prepares a restructuring plan. The plan usually involves a creditor composition and must be approved by the majority of creditors.

Over-indebtedness agreement. Similar to the debt restructuring agreement, this process is available for small entities and involves reaching an agreement with at least 60 percent of creditors. Secured creditors do not vote if they are paid the full amount of their credits but may be paid with a maximum of one year delay. The agreement is reviewed and approved by the court. Payments are suspended in the interim to allow the preparation of the plan.

1/ Box 3 was drafted by Dawn Chew (Legal Department).

D. Sensitivity Analysis

56. This section analyzes the risk to financial stability from firm indebtedness. The analysis is done by the Bank of Italy using Cerved data through 2011, covering almost 700,000 Italian firms holding 80 percent of the total financial debt of Italian corporations. To assess vulnerabilities, the analysis considers the financial situation of firms in 2011 (the baseline) and the impact of a set of hypothetical macroeconomic shocks, based on an extrapolation of the dataset to 2012 using national and financial accounts and to 2013 using the FSAP stress test scenario. The macroeconomic shocks illustrate the principal risks to Italian firms: a further decline in profitability and a worsening of firms' financing terms.

Baseline

57. Almost one third of firms, holding half of the financial debt, could be considered vulnerable based on the ratio of interest expense to gross operating income. The ratio of interest expense to gross operating profits has increased in past years, though remains below the peak in 2008 (Table 3). Taking a conservative threshold, a firm could be considered vulnerable if the

ratio is above 50 percent, implying an interest coverage ratio of less than 2.[13] Rating agencies estimate that coverage ratios below 2 are broadly consistent with B ratings or lower, suggestive of about 20 percent probability of default over a five-year horizon. With this threshold, 31 percent of the firms are considered vulnerable. These firms hold 47 percent of the debt ("debt at risk"). While the proportion of vulnerable firms has decreased since the peak in 2008, it has been on an upward trend in the past two years. The high vulnerabilities are consistent with the already high default rates of Italian firms.

58. Smaller firms and firms in the construction and real estate sectors have a larger proportion of debt at risk. Among micro-and small-sized firms, the proportion of vulnerable firms is 31 percent and 27 percent, respectively, compared to 24 percent for large firms (Table 4). On this basis, about 54 percent of micro firms' debt and 49 percent of small firms' debt is at risk. This is consistent with the higher non-performing loans among smaller firms. Furthermore, the analysis confirms the vulnerabilities of the construction and real estate sectors. Figure 8 shows that firms in agriculture has the largest share of vulnerable firms (44 percent), followed by construction (34 percent) and real estate (29 percent). The debt at risk in the construction and real estate sectors is particularly high, from 55 and 65 percent, as vulnerable firms have larger debt than in other sectors.

Table 3. Italy: Firms' Ratio of Interest Expense to Gross Operating Income

Year	Number of firms	Ratio of interest expense to gross operating income		Firms with ratio above 50 percent	
		Average	Median	Share of firms	Share of debt held
2008	682,960	31.4	24.4	35.5	49.4
2009	701,389	25.2	20.9	34.4	43.8
2010	706,334	20.3	15.8	30.3	42.0
2011	684,569	22.3	16.7	30.5	43.7
2012	684,569	23.9		30.8	46.6

Source: Bank of Italy

[13] The choice of the ratio of interest expense to gross operating income rather than the interest rate coverage ratio (gross operating income/interest expense) adds an additional layer of caution. The interest coverage ratio would not be calculated if interest expense is zero, but the ratio of interest expense to gross operating income would be zero independently of the gross operating income. In cases where the gross operating income is zero or negative, the ratio of interest expense to gross operating income is approximated by the 99th percentile of the firm distribution; implying that firms with non-positive operating income are classified as vulnerable in any case. An interest coverage ratio below 1 would imply that the firm is not able to service its debt, while a ratio of 1½ is in most cases considered a "bare minimum," and a ratio below 2 percent would imply substantial vulnerabilities.

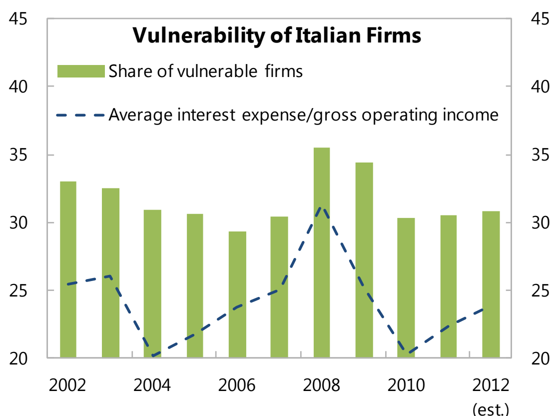
Table 4. Italy: Ratio of Interest Expense to Gross Operating Profits by Firm Size (2011)

Size of firm	Number of firms	Ratio of interest expense to gross operating income		Firms with ratio above 50 percent	
		Average	Median	Share of firms	Share of debt held
Micro	587,147	33.2	16.0	31.2	54.4
Small	71,159	26.8	20.0	26.8	48.5
Medium	21,060	21.4	17.3	24.8	40.0
Large	5,203	18.9	15.6	23.8	37.8
Total	**684,569**	**22.3**	**16.7**	**30.5**	**43.7**

Source: Bank of Italy.

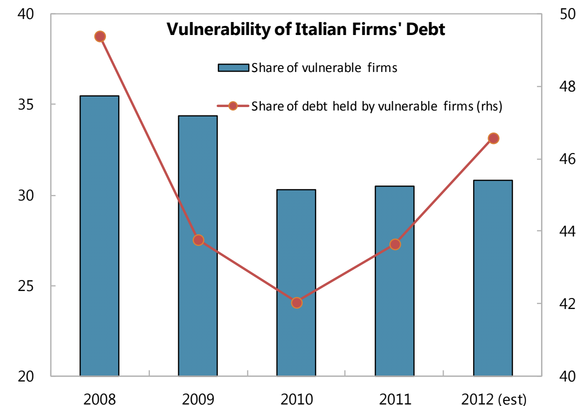
Figure 8. Italy: The Financial Situation of Italian Firms

Interest coverage and the share of vulnerable firms has improved since 2008, but remain elevated



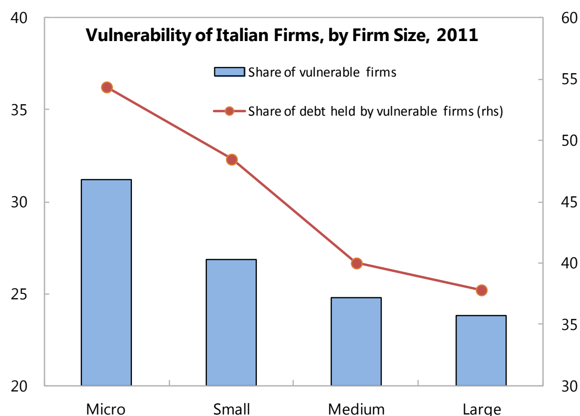
Source: Bank of Italy.

Debt at risk is also down from the peak in 2008, but was estimated at 46 percent in 2012.



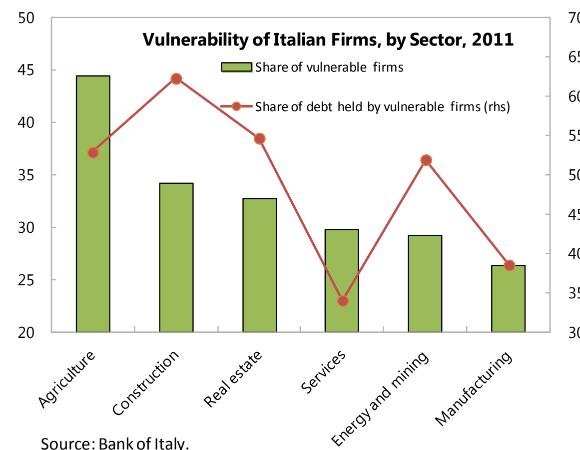
Source: Bank of Italy.

Smaller firms are more vulnerable, and have a higher proportion of debt-at-risk



Source: Bank of Italy.

Construction and real estate are the sectors with the highest proportion of debt at risk



Source: Bank of Italy.

Sensitivity Test Scenarios

59. Downside shocks would increase credit risk stemming from the corporate sector, though the increase in vulnerable firms and debt at risk is contained. The 2013 baseline assumes a 3 percent reduction in operating income and 25 basis points fall in interest rates, consistent with the macroeconomic framework used for the FSAP stress tests. The following shocks are imposed in addition:

- **Profitability**. Simulations show that the impact on firms' debt-servicing capacity of a decline in operating income by 10 percent (slightly more than in the 2011–12 downturn) or by a more severe 15 percent would be moderate.
- **Interest rates**. The impact of an interest rate shock is somewhat more pronounced; a 50 basis points increase in interest rates, in line with the increase seen in 2011/12, would increase the proportion of vulnerable firms to 32 percent, putting 51 percent of firms' debt at risk. A doubling of the shock to 100 basis points would further increase debt at risk by 1½ percentage points.
- **Combined severe shock**. In the extreme event of a combined severe shock (15 percent decline in operating income, 100 bps increase in interest rates), the proportion of vulnerable firms would reach 34 percent, leaving 55 percent of debt at risk.

60. Reflecting a weaker starting point, smaller firms are most vulnerable to shocks. Under a combined severe shock, the proportion of vulnerable firms among micro and small firms could rise to 33–24 percent and debt at risk for micro firms would represent almost two-thirds of their total debt.

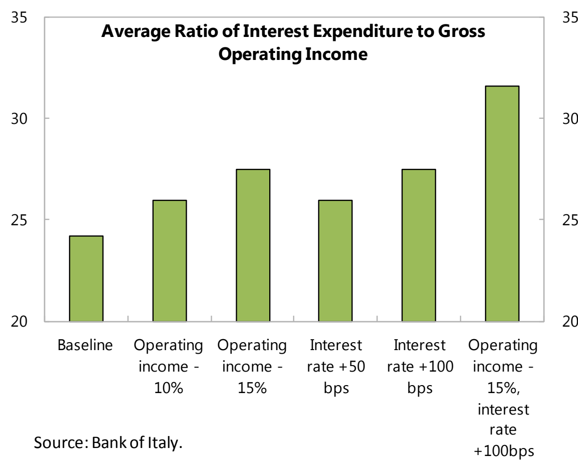
Table 5. Italy: Ratio of Interest Expense to Gross Operating Profits by Firm Size (2011)

Size of firm	2013 baseline	Operating income: -10 percent	Operating income: -15 percent	Interest rate: +50 bps	Interest rate: +100 bps	Combined: Operating income -15 percent, interest rate +100 bps
Share of vulnerable firms						
Micro	31.3	31.9	32.4	32.5	33.2	34.4
Small	27.7	28.8	29.6	29.7	31.1	33.3
Medium	26.5	27.5	28.4	28.8	30.3	32.4
Large	25.6	26.4	27.0	27.6	29.0	30.9
Total	**30.7**	**31.4**	**31.9**	**32.0**	**32.9**	**34.2**
Share of debt held by vulnerable firms						
Micro	58.1	59.5	60.6	59.5	60.6	65.4
Small	52.4	54.2	55.6	54.2	55.6	61.0
Medium	43.5	45.4	46.5	45.4	46.5	52.5
Large	39.6	42.7	45.2	42.7	45.2	48.5
Total	**46.5**	**48.8**	**50.6**	**48.8**	**50.6**	**55.0**

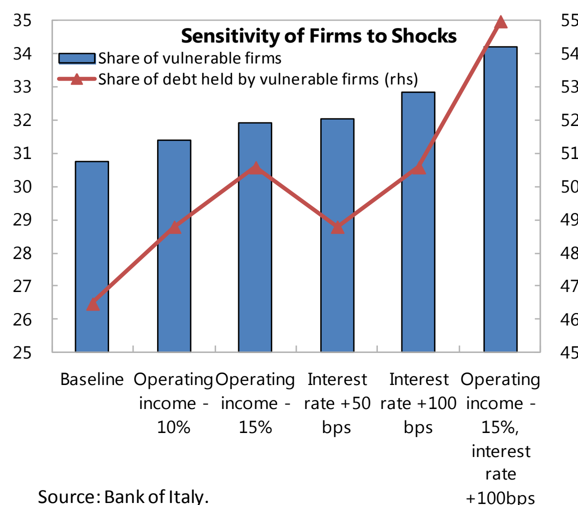
Source: Bank of Italy.

Figure 9. Italy: Sensitivity Analysis for Italian Firms

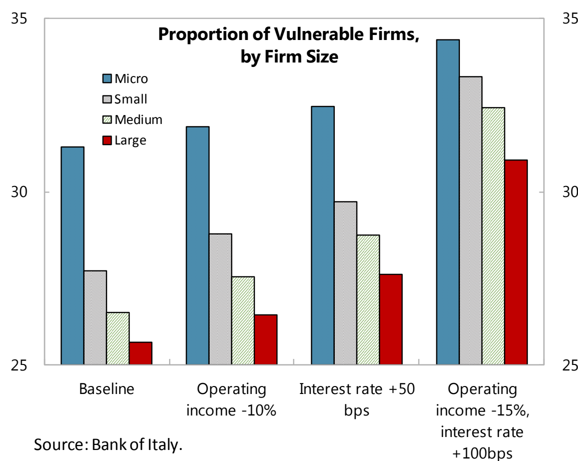
The average share of interest in operating income is highly sensitive to income and interest rate changes



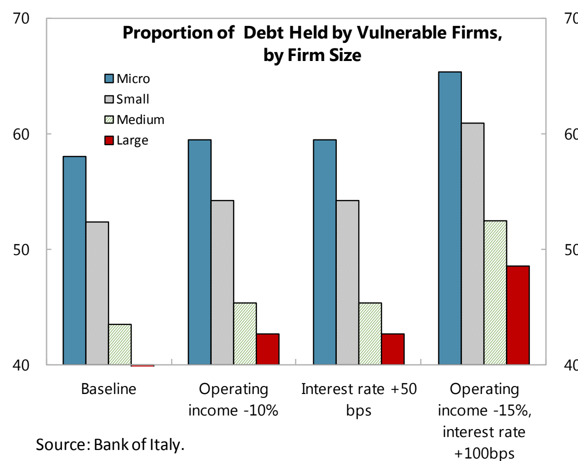
The share of debt held by vulnerable firms could reach 55 percent in a severe downside scenario



Medium-sized firms would experience the largest increase in vulnerability in a downside scenario



In a severe downside scenario, more than 60 percent of debt held by micro and small firms would be at risk



E. Contingent Claims Analysis[14]

61. A Contingent Claims Analysis (CCA) helps assess market expectations of failures of large corporations, with potential implications for banks. The CCA, based on Merton (1974), allows estimating the probability that a company may not be able to meet its debt obligation in the future, thus imposing losses on its creditors. It is based on market information; implicitly embedding market participants' view of listed companies, to the extent that the market incorporates efficiently

[14] The CCA was carried out by David Velazquez-Romero with data from Moody's KMV.

all relevant information into the companies' equity prices. Moody's-KMV has developed a comprehensive database of listed companies around the world, to estimate credit risk indicators using the Merton model. The CCA's time-series estimates of default probabilities provide useful information of how market views develop over time. Estimates of potential losses give an indication of costs to be borne by creditors, including banks. Also, the data allows considering these variables by sector of economic activity.

62. While the CCA adds a market perspective, the small sample and the illiquid of equity markets for many companies may bias the results. The sample is considerably less comprehensive than the analysis in Section D, as it considers only the 211 listed Italian non-financial companies. One short-coming is that the companies in the sample are less reliant on bank lending than the average, as is typical for listed companies. Also, several of the listed non-financial companies are in 'second-tier' more illiquid market, where liquidity shortfalls, rather than market assessment of firms' fundamentals, may be driving equity prices.

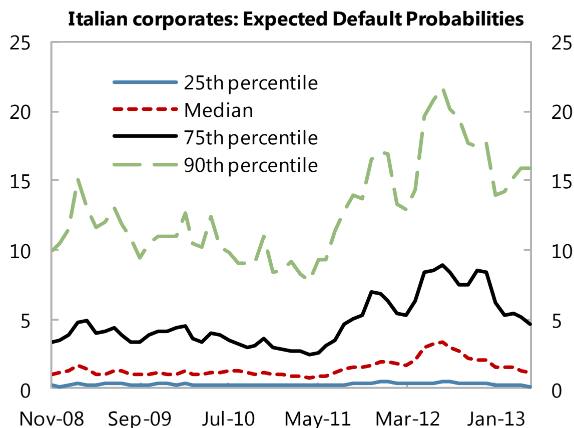
63. The estimated default probabilities of Italian firms deteriorated in early 2011, reaching their peak in July 2012, but have improved since then (Figure 10). During this period, equity prices were negatively affected by market forecasts of negative earnings, mainly reflecting the weak economic outlook and the sovereign crisis, which also reduced the liquidity of equity markets. The estimated probability of default, as of end-May 2013, over a one-year horizon, ranges from about ¼ percent for firms in the 25th percentile, to more than 15 percent for firms in the 90th percentile. The fraction of firms with estimated one-year-ahead probabilities of default larger than 5 percent has moved from less than 2 percent in 2010 to more than 15 percent in 2012, but has now come back to about 5 percent. The estimated default probabilities are, however, likely to be partly driven by the deterioration in liquidity conditions during the sovereign crisis, which have currently abated. Similar effects could also affect the Spanish equity markets, though it is notable that the median probability of default of Italian firms (2 percent) is almost double that of Spanish listed companies, and well above that of German, French, and U.K. listed firms.

64. Construction and real estate are the riskiest sectors. Firms in this sector have been exposed to the economic downturn and weak investment, and have incurred large valuation losses. Other capital-intensive sectors such as material and fabrication, machinery and equipment, and the automobile sectors are also considered highly risky.

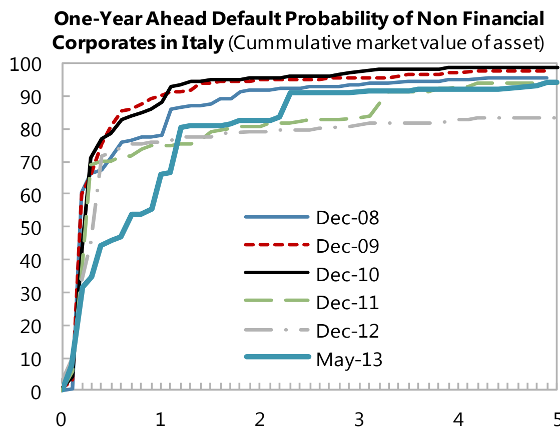
65. The estimated default probabilities suggest that losses for listed firms could be substantial. As of May 2013, based on historical values of loss-given-default rates, losses could reach 1 percent of GDP within one year, though the illiquid markets likely also bias this result upward. The largest losses are expected in the automobile and utilities and electric industries, mostly reflecting their importance among listed Italian firms.

Figure 10. Italy: Contingent Claim Analysis for the Corporate Sector

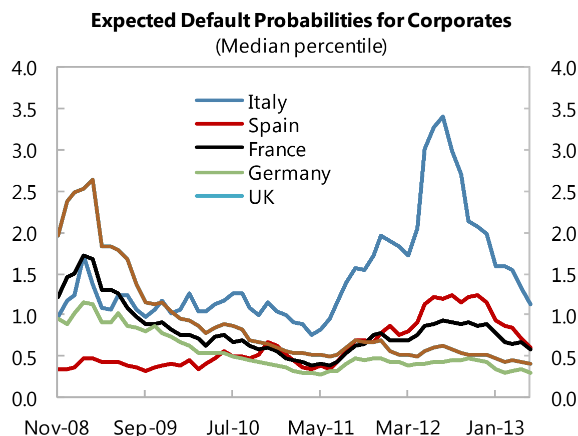
Default probabilities increased starting in early 2011, in particular for the weaker tail



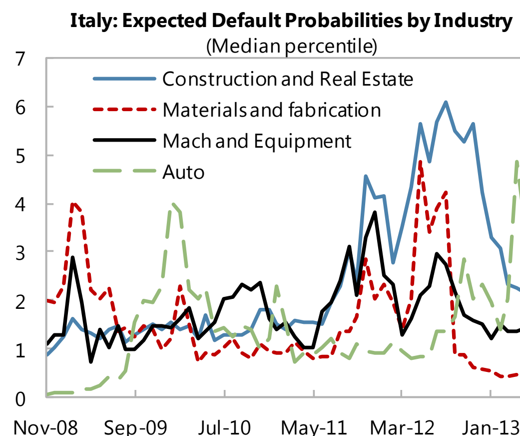
The market value of assets subject to a 5 percent default probability is about 5 percent



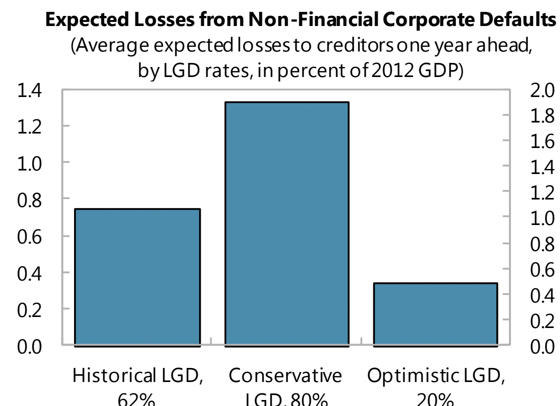
Expected default probabilities for the median percentile are above levels in other large European economies



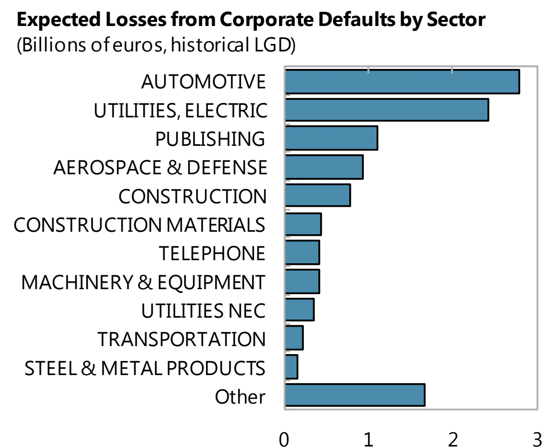
The construction and real estate sectors are considered most risky



Losses could reach close to 1 percent of GDP, based on historical loss-given-default rates



Expected losses are largest for the automotive and utilities sector, reflecting their importance among listed companies



Sources: Moody's MKMV and IMF Staff Calculations

CONCLUDING REMARKS

66. Italian banks' credit risk is predominantly from exposures to the non-financial corporate sector, while the risk from the household sector is limited. The financial situation of non-financial corporations, in particular SMEs, is weak and vulnerable to downside shocks. For the household sector, the credit risk is mitigated by the considerable net wealth, though severe shocks to wealth—through the housing market—could increase bank losses also from the household sector.

67. The analysis of the financial situation of firms and households can help understand the large expected credit losses in the FSAP solvency stress test. In the stress test, credit losses are expected to be a main driver of the decline in capital ratios, consistent with the fragility of the corporate sector. The high share firms' debt at risk is in line with the large credit losses in the baseline, and in both analyzes, the impact on credit losses in the adverse scenarios are negative but contained.

References

Agenzia del Territorio (2013), "Andamento del Mercato Iimmobiliare nel IV Trimestre 2012 e Sintesi Annua," Nota Trimestrale, March 2013.

Albareto, Giorgio, and Paolo Finaldi Russo (2012), "Financial Fragility and Growth Prospects: Credit Rationing During the Crisis," Bank of Italy Occasional Paper No. 127.

Bank of Italy (2011), Financial Stability Report, No. 2, November 2011.

Bank of Italy (2012a), "Household Income and Wealth in 2010," Supplements to the Statistical Bulletin No.6, Sample Surveys, January 2012.

Bank of Italy (2012b), "The Wealth of Italian Households," Supplements to the Statistical Bulletin No.65, December 2012.

Bank of Italy (2012c), Financial Stability Report, No.3, April 2012.

Bank of Italy (2012d), "Business Outlook Survey of Industrial and Service Firms," Supplement to the Statistical Bulletin No. 56, Sample Surveys, November 2012.

Bank of Italy (2012), 2011 Annual Report, May 2012.

Bank of Italy (2012), Financial Stability Report, No. 4, November 2012.

Bank of Italy (2013a), "Sondaggio congiunturale sul mercato delle abitazioni in Italia, Aprile 2013," Supplement to the Statistical Bulletin, No. 24, Sample Surveys, March 2013.

Bank of Italy (2013b), "July 2013 Bank Lending Survey."

Bank of Italy (2013), 2012 Annual Report, May 2013.

Bartiloro, Laura, Luisa Carpinelli, Paolo Finaldi Russo and Sabrina Pastorelli (2012), "Access to Credit in Times of Crisis: Measures to Support Firms and Households," Bank of Italy Occasional Papers No. 111.

Bartiloro, Laura and Cristina Rampazzi (2012), "Saving and Wealth of Italian Households During the Recession"

Bofondi, Marcello and Tiziano Ropele (2011) Macroeconomic Determinants of Bad Loans: Evidence from Italian Banks," Bank of Italy Occasional Paper No. 89, March 2011.

Bugamelli, Matteo, Luigi Cannari, Francesca Lotti, and Silvia Magri (2012), "The Innovation Gap of Italy's Production System: Roots and Possible Solutions," Bank of Italy Occasional Paper No. 121.

Bugamelli, Matteo, Riccardo Cristadoro and Giordano Zevi (2009), "The International Crisis and the Italian Productive System: An Analysis of Firm-Level Data," Bank of Italy Occasional Paper.

Cerved Group (2012), "Cerved Group Risk Index: Insolvency Risk Among Italian Companies," Number 5, November 2012.

Cerved Group (2013a), "Monitor of Bankruptcies, Insolvency Proceedings and Business Closures," February 2013.

Cerved Group (2013b)," Monitor of Company Payments and Non-Payment Protests," Number 10, March 2013.

European Central Bank (2013), The Eurosystem Household, Finance and Consumption Survey, Results from the first wave", Statistics Paper Series, No.2, April 2013.

European Commission (2011), "Small Business Act Factsheet 2010/11," European Commission, Enterprise and Industry.

IMF (2011)," United Kingdom—Vulnerabilities of Household and Corporate Balance Sheets and Risks for the Financial Sector Technical Note," July 2011.

IMF (2012), "Spain—Vulnerabilities of Private Sector Balance Sheets and Risks to the Financial Sector," Technical Note for the Financial Sector Assessment Program Update, May 2012.

Intrum Justitia (2012), European Payment Index 2012.

Magri, Silvia, and Raffaella Pico (2012), "L'Indebitamento delle Famiglie Iitaliane Dopo la Crisi del 2008," Bank of Italy Occasional Paper No. 134, September 2012.

Merton, Robert (1974), "On the Pricing of Corporate Debt: The Risk Structure of Interest Rates," Journal of Finance, 29, 449-470.

Muzzicato, Salvatore, Roberto Sabbatini and Francesco Zollino (2008), "Prices of Residential Property in Italy: Constructing a New Indicator," Bank of Italy Occasional Papers No. 17, August 2008.

Nobili, Andrea and Francesco Zollino (2012), "A Structural Model for the Housing and Credit Markets in Italy," Bank of Italy Working Papers, No. 887, 2012.

Rapaccciuolo, Ciro (2013), "Credit Crunch e Recessione: Il Circolo Vizioso Si Spezza Solo con una Politica Economica che Rilancia la Crescita," Nota dal Cervizio Studi di Confindustria No. 2013-2, March 2013.

Zoli, Edda (2013), "Italian Sovereign Spreads: Their Determinants and Pass-through to Bank Funding Costs and Lending Conditions," IMF Working Paper No. 13/84, April 2013.