

Republic of San Marino: Selected Issues

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REPUBLIC OF SAN MARINO

Selected Issues

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Approved by the European Department

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Contents	Page
I. Options for Managing Systemic Liquidity Risk.....	3
A. Introduction.....	3
B. Review of the Literature.....	4
C. Key Lessons from Country Experiences.....	7
D. Policy Options for San Marino.....	8
E. Conclusions and Policy Recommendations.....	17
Appendix Table. Systemic Liquidity Frameworks in Selected Countries.....	19
References.....	21
II. The Pension System in San Marino: Issues and Options for Reforms.....	23
A. Introduction.....	23
B. The Current Pension System.....	23
C. Pension Spending and its Financing.....	25
D. Sustainability of the Current Pension System.....	27
E. Policy Implications.....	28
References.....	31
Appendix Table. Reforms to Retirement Income Systems in Selected European Countries, 2004–2009.....	32
Boxes	
I–1. San Marino’s Responses to International Initiatives.....	11
I–2. Initiatives to Strengthen Economic and Financial Cooperation with Italy.....	14
Figures	
I–1. Selected Macro-Financial Indicators.....	10
I–2. Selected Financial Soundness Indicators, 2009.....	12
II–1. Pension Expenditure in Selected Countries, 2007.....	25
II–2. Pension Expenditure and Financing.....	25
II–3. Pension Contribution Rates in Selected European Countries, 2006.....	26

II-4. Pension Funds Projections	27
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Tables

II-1. Public Pension Systems and Demographic Indicators in Selected European Countries.....	24
II-2. Social Security Contribution Rates	26

I. OPTIONS FOR MANAGING SYSTEMIC LIQUIDITY RISK¹

A. Introduction

1. **Financial dollarization/euroization (as in the case in San Marino) or a currency board arrangement (CBA) can complicate banking crisis management and increase the vulnerability of financial systems to liquidity shocks because they limit the ability of the monetary authority to act as a lender of last resort (LOLR).** In a fully dollarized/euroized country or in a country with a CBA, the monetary authority does not have the discretion to print money, which limits its ability to back banks deposits and guarantee the whole payment system.
2. **The related macro-financial risks are particularly high in a country with a large financial sector relative to its GDP and fiscal capacity.** The main appeal of dollarization is the elimination of the exchange rate risk, allowing for smaller risk premiums and lower borrowing costs. While the elimination of exchange rate risk and the increased macroeconomic stability limit the incidence and magnitude of crisis and contagion episodes, the larger the financial sector as a proportion of GDP, the higher the possibility that banks may run out of liquid assets and the central bank could run out of reserves, creating the conditions for a self-fulfilling run.
3. **These risks are even greater if financial institutions are not affiliated with international banks that would allow them to access funding via their Head Office.** The strong assurance of open-ended support from foreign parent banks could serve as a substitute for holding liquid assets and limits the probability that the central bank would need to intervene by providing LOLR support. While the availability of contingent credit lines from private providers of liquidity and/or international financial institutions may also represent an additional support to forestalling and resolving financial crises, country experiences (Section C, and Appendix Table) show that obstacles have to be overcome if private or public institutions are to play an effective role as insurance providers.
4. **San Marino presents a number of features making systemic liquidity risk management a challenging task.** It is a fully euroized country, but is not part of the euro area. As a de facto offshore financial center for Italians, San Marino's financial sector is very large compare to GDP. Few banks in San Marino have parent banks located in major financial centers. There are no formal financial support arrangements either with the ECB or with the Bank of Italy (BI). Finally, the business model for the financial sector makes it prone to large potential outflows because the sector has relied heavily on the bank secrecy and tax discount pillars. On the basis of a review of the literature on the lender-of-last resort function in fully dollarized-euroized countries (Section B), and lessons from actual country experiences (Section C, and Appendix Table), the paper discusses policy options (Section D), and concludes with policy recommendations for the design of an institutional framework for systemic liquidity

¹ Prepared by Bernard J. Laurens and Valentina Flamini (both EUR). Comments and inputs by J. Vacher, E. Zoli (both EUR), A. Chailloux, S. Seelig, R. Maino and N. Sacasa (all MCM), Richard Pratt (MCM consultant), and Isabelle Mouysset (LEG) are gratefully acknowledged.

management better aligned with San Marino's macro-financial conditions than is currently the case (Section E).

B. Review of the Literature

5. **Fully dollarized economies and countries operating in the context of a CBA share a number of similarities as regards the LOLR function.** As will become clear in the following sections, differences lie more in terms of institutional or operational issues than conceptual ones. The literature on dollarization and CBAs has focused on the analysis of the pros and cons of dollarization and CBAs for macroeconomic policies as well as the implications of adopting such frameworks on bank soundness. Our review of the literature will focus on the implications for bank soundness and the ability of the monetary authorities to operate a LOLR facility.

Selected literature on dollarization

6. **Baliño et al. (1999) and Berg and Borensztein (2000) analyze the economic costs and benefits of full dollarization and explore its prudential and monetary policy implications.** With regard to the issues of interest to this paper, the authors note that, by relinquishing an autonomous monetary and exchange rate policy, the monetary authorities in a dollarized economy lose their ability to act as a LOLR to the banking system in the event of a systemic bank run. To be able to operate an effective LOLR facility the central bank should ideally hold liquid foreign exchange reserve in sufficient quantity to finance large outflows of deposits. The foreign exchange reserves however will generally not be large enough relative to the total banking system liabilities.

7. **Freixas et al. (1999) identify two main motivations for a central bank to be able to act as LOLR.** First, informational asymmetry makes otherwise solvent banks vulnerable to deposit withdrawals and/or the drying up of interbank lending. Second, because the failure of an otherwise solvent bank can risk the failure of the financial system as a whole. But LOLR intervention in individual cases should be considered only if the benefits outweigh the costs, particularly of moral hazard and potential losses to the tax-payer.

8. **A number of studies argue that the concerns about the limited ability of the central bank to act as lender of last resort in dollarized economies is by some means overstated.** Antinolfi and Keister (2001) argue that such ability is equally limited under fixed exchange rates and CBAs. Chang (2000) points out that dollarization would not imply the complete absence of a LOLR but only that the domestic central bank cannot perform it. As suggested by Calvo (1999) there are a number of alternative ways open to a dollarized country to provide bank liquidity. For example, the government could create a stabilization fund to be lent to banks in a crisis, or set up contingent credit lines with private banks. It is not clear, however, whether the credit lines would be large enough to replace what the central bank would be able to do via a LOLR. Moreover, enforcement questions would remain, including the actual reliability of the involved banks to deliver on their contractual obligations in a time of crisis instead of defaulting, and who will be entitled to enforce the contract between the government and the insuring banks.

9. **Gulde et al. (2004) emphasize that the extent and nature of the safeguards to limit liquidity risks vary substantially across highly dollarized countries.** Only a few of them have explicit regulations to limit banks' exposure to currency-induced credit risk. The paper proposes a regulatory tightening to help address some of the specific risks and it outlines prudential measures that could reduce banks' risk exposure and increase the cushion available to cover such risks. With regard to liquidity risk, the aim should be to reduce the liquidity of banks' dollar liabilities and increase that of their dollar assets. A micro-oriented approach, such as maturity matching of assets and liabilities, however, would not be appropriate to manage liquidity risk on a systemic basis. A preferable option is to generalize and, when appropriate, increase currency specific liquidity requirements that could reduce banks' risk exposure and increase the cushion available to cover such risks. Unlike liquidity requirements, LOLR arrangements by central banks are exposed to moral hazard as they fail to internalize risk and may further encourage dollarization by reducing the risk associated with taking dollar deposits. Finally, administrative measures – such as securitization of deposits, the extension of deposit maturities, or clearly defined restrictions on deposit withdrawals—are most likely to be needed to withstand severe liquidity shocks.

10. **Ize et al. (2005) evaluate ways to protect highly dollarized banking systems from systemic liquidity runs.** They focus on two ways in which a dollarized financial system can insure itself against a liquidity crisis: (i) *self-insurance*, that is the holding of a substantial stock of foreign-currency-denominated liquid assets, either by the central bank, or by individual banks; and (ii) *external insurance*, namely a contract with private providers of dollar liquidity or, alternatively, with international institutions that ensures financial institutions access to dollar liquidity at a reasonable cost. The paper argues that the central bank LOLR may induce moral hazard vis-à-vis weaker banks and penalize stronger and more conservative ones. On the other hand, holding a large amount of liquid assets by the central bank raises the cost of financial intermediation and reduces the amount of credit available for use, while the availability of private or official insurance schemes is subject to a number of important contractual limitations which reduce the appeal of this type of solution. The latter include high insurance premia, moral hazard and the need for hedging by insuring banks. The paper argues that decentralized (i.e., by each bank) liquid foreign assets requirements (LAR) on dollar deposits are thus generally preferable. The optimal level of LAR, and the associated cost in terms of reduced loanable funds and wider intermediation margins, can be reduced by complementing them with a scheme of circuit breakers, namely, the automatic and early suspension of convertibility of dollar deposits to prevent exhausting the dollar liquidity and compromising the payment system.

11. **Cayazzo et al. (2006) present a supervisory framework that addresses the vulnerabilities of partially dollarized banking systems.** They observe that, regardless of the currency denomination of deposits, liquidity risk is twofold: (i) *idiosyncratic*, due to deposit withdrawals affecting individual banks; and (ii) *systemic*, in case of a widespread liquidity shock, generally stemming from macroeconomic imbalances, contagion or generalized panic. Both risks are present in all financial systems but dollarized ones tend to be more vulnerable to systemic liquidity risk. Because of this duality, the regulatory framework governing liquidity in a highly dollarized banking system should include two elements: (i) a risk based supervision of liquidity risk and their management; and (ii) some type of minimum liquidity requirement to ensure that the banks internalize the liquidity risk of operating in a dollarized environment. The imposition

of limits on maturity gaps should be effective for the management of idiosyncratic risk, but may not be as effective in ensuring adequate levels of foreign currency liquid assets in the event of a systemic liquidity shock. To address the vulnerabilities of dollarized banking systems Cayozzo proposes a supervisory framework aimed at inducing agents to better internalize risks by implementing a risk based approach to supervision and by establishing buffers to cover higher liquidity risk.

Selected literature on currency board arrangements

12. **Santiprabhob (1997) discusses the implications of CBAs for the soundness of the banking system.** The rigidity of a CBA's backing and exchange rate rules reduces the scope for monetary operations and LOLR support (backing rules limit the scope for LOLR to the amount of foreign exchange in excess of that required for backing). Consequently, banks operating in CBAs are subject to high interest rate volatility because interest rates play a major role in the CBA adjustment. Based on these arguments, the paper recognizes the need to provide some liquidity support to banks and to set up LOLR facilities. Regardless of the differences in institutional arrangements, such facilities should follow the same best practices as those of traditional central banks: lending needs to be collateralized by sound assets, and granted only to solvent banks on a short-term basis at a penalty rate. Additional measures that may limit the potential for a liquidity crisis include: high reserve requirements that could be relaxed to provide liquidity during periods of stress; stricter prudential regulation and supervision than international standards; and a clear exit policy for insolvent banks.

13. **Baliño et al. (1997) analyze the tradeoff between credibility and flexibility in CBAs.** They argue that institutional arrangements and monetary and prudential instruments can be used to reduce the risk of a systemic liquidity crisis while limiting discretionary inference from the monetary authority. Nevertheless, some LOLR support may be needed to contain financial sector problems at an early stage and avert contagion risk. The authors argue that support can enhance confidence in the financial sector thus lowering intermediation spreads and should be arranged, preferably under central bank control, in a manner that addresses systemic problems while avoiding the bailout of insolvent banks. They also argue that higher reserve requirements or liquidity requirements in foreign currency can facilitate setting up a LOLR framework,² and that the need for LOLR can be reduced by adopting proper prudential regulations and supervisory arrangements: capital adequacy rules should be higher than otherwise would be, and they should be supplemented by prudential regulations to limit interest rate and liquidity risk. The authors also argue that, while liquidity requirements and adequate regulation and supervisory practices can reduce the need for a LOLR, they do not eliminate it. As long as domestic banks account for a substantial share of the banking system CBAs are likely to require at least some resources for LOLR support. The foreign exchange backing for such support can originate from the central bank or from a common pool of bank resources. An autonomous deposit insurance fund with limited coverage and funded by banks themselves can also be introduced. In such case, moral hazard may be limited by setting risk-based insurance premiums.

² They argue that, since high reserve requirements (unless remunerated at market interest rates) may harm bank profitability and promote disintermediation, liquidity requirements are better suited to prudential objectives.

Key conclusions from the literature

14. The following conclusions can be drawn from the review of the literature on the lender of last resort in dollarization and CBAs:

- *Dollarization and CBAs may enhance macroeconomic stability at the price of limitations to the traditional central bank functions such as monetary regulation and LOLR support.* Such limits come from potential limited availability of liquid foreign assets in dollarized economies and from the commitment to the backing and exchange rate rules in CBAs.
- *High liquidity buffers and strong bank supervision are essential for reducing vulnerabilities that emerge because of limited LOLR capacity.* Buffers can result from liquidity or high reserve requirements. There is also a broad consensus that bank supervision and prudential regulation in dollarized economies and CBAs should be more stringent than international standards.
- *Contingent credit lines from foreign banks or international institutions have limitations.* While useful tools, they are unlikely to provide adequate insurance against systemic liquidity risk unless the domestic financial sector is integrated with reputable and dependable international banking groups. In addition, one should not underestimate that such form of external insurance can suffer from contractual uncertainties which may further limit its effectiveness.
- *Because of the limitations of self insurance, some form of LOLR is desirable.* In particular, LOLR frameworks can help mitigate liquidity crises by addressing banking problems in a timely manner by and limiting the potential for contagion. In other words, high liquidity and strong bank supervision only reduce the need for LOLR support but does not eliminate it. However, the effectiveness of a LOLR framework will depend on the relative size of the liquidity buffer available for LOLR operations compared to the size of the financial sector.

C. Key Lessons from Country Experiences

15. **Fully dollarized economies and countries with a CBA have responded to the challenges they face in managing systemic liquidity risks in a number of ways.** The Appendix Table summarizes frameworks in place in selected fully dollarized economies (Ecuador, El Salvador and Panama) and CBAs (Hong Kong SAR, Bulgaria, Estonia and Lithuania). The following paragraphs discuss the key lessons that emerge from the survey.

- *In general, prudential norms on liquidity are stringent and all countries require banks to maintain high levels of liquidity (self insurance).* This is indeed the most common feature.
- *Reserve requirements (RR) play a role of liquidity buffer in a number of countries.* In several countries, the authorities have been using this instrument as a counter cyclical policy in times of stress by either allowing the banks to utilize part of the liquidity (Bulgaria, El Salvador), or reducing the level of the requirement (Bulgaria, Lithuania).

- *Support by the parent located in major financial market centers has helped in the event of a liquidity crisis.* This form of insurance plays an important role given that in a majority of countries the banking sector is dominated by subsidiaries of foreign banks (Bulgaria, Estonia, Lithuania, El Salvador, and Panama).
- *Contingent credit lines from non parent banks do not play an important role.* Such obligation exists in one country only (El Salvador) and its efficacy has not yet been tested.
- *Liquidity available for LOLR can be expanded with swap arrangements with central banks where the parents of local banks are located (Estonia with Sweden).*
- *Arrangements are in place in all countries to ensure that LOLR support is provided to solvent banks.* Typically, LOLR is short-term and provided against eligible collateral, most of the time according to pre-established rules rather than on a case-by-case basis.
- *A few countries (Ecuador, Panama) do not have LOLR frameworks.* However, there are plans to set up a fund financed by contribution from banks and which could provide emergency assistance in Ecuador. Panama is also developing a framework, but its implementation is facing delays because of the lack of financing.

D. Policy Options for San Marino

Attributes of San Marino's financial sector

16. **While the euro is its official currency, San Marino does not formally belong to the euro area, and the CBSM has a limited LOLR capacity.** San Marino uses the euro on the basis of a formal arrangement concluded in 2000 with the European Community, through a monetary agreement between Italy and San Marino; as of January 2001, euro banknotes and coins have legal tender status in San Marino. San Marino banks have only indirect access to the EU payment systems via Italian banks acting as direct participants on behalf of San Marino banks (Box 1). Such an arrangement generates credit risk, potential additional costs, and uncertainty to execute cross-border transactions if a direct participant cannot be found. Furthermore, the CBSM is not a member of the European System of Central Bank (ESCB), and local banks do not have access to Eurosystem liquidity. The CBSM can provide liquidity to banks, as happened in the past, by using savings accumulated over the years.³ However, its ability to respond to a systemic liquidity crisis is uncertain since it is unable to guarantee the whole payments system or to fully back bank deposits because it lacks the ability to print money.

³ In 2006 the CBSM provided liquidity assistance equivalent to 1.7 percent of GDP to a small bank eventually placed under special administration; the government assumed repayment of the loan. On November 25, 2009, a Decree-Law was adopted allowing the government to guarantee the repayment of CBSM borrowing from domestic or foreign financial institutions (Article 1); proceeds would be used for LOLR operations to financial institutions confronted with a temporary liquidity need (Article 4).

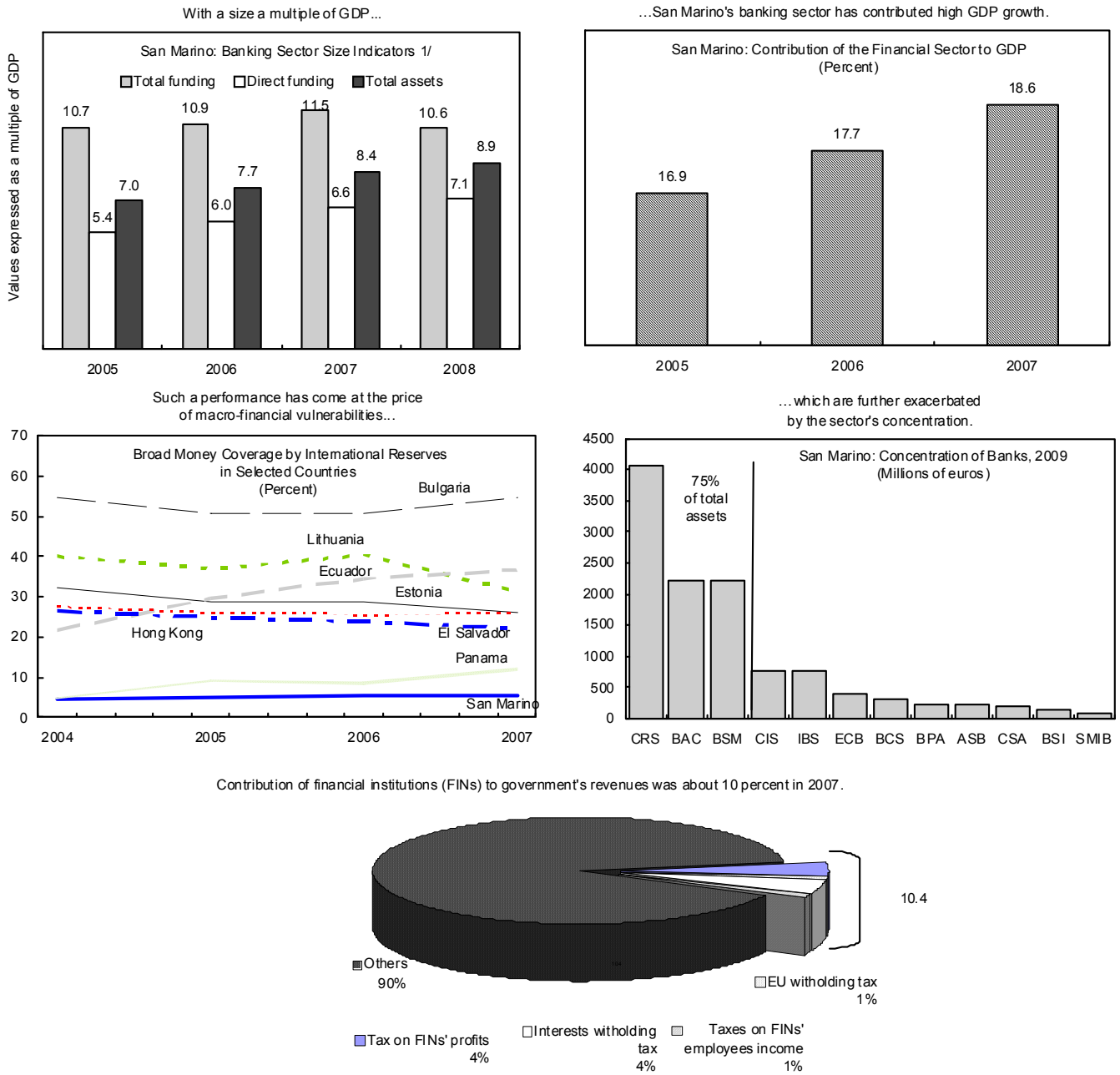
17. **The size of San Marino's financial sector, a multiple of its GDP, exceeds the capacity of the CBSM to respond effectively to a systemic liquidity shock. This situation generates macro-financial vulnerabilities.** The ratio of total assets of the financial sector to GDP has grown steadily over the past few years, from 7 in 2003 to close to close to 9 at the end of 2008 (Figure 1). On the positive side, the contribution of the financial sector to GDP has increased from about 16 percent in 2002 to 18.6 percent in 2007 (Figure 1), allowing San Marino's macroeconomic performance to be superior to that of Italy: growth averaged 3.1 percent annually from 2000 to 2008 compared with Italy's 1.2 percent.⁴ However, such strong performance has come at the price of macro-financial vulnerabilities in economy. In particular, even under an assumption that the banks are fundamentally solvent (in the sense that assets, if held to maturity, would be sufficient to cover all obligations), the CBSM cannot act as an effective lender-of-last resort: available resources for LOLR operations (CBSM own funds and surpluses accumulated by the State) amount to less than 5 percent of broad money, a ratio significantly below those observed in a selected group of fully dollarized economies or countries with a CBA (Figure 1).

18. **Macro-financial vulnerabilities are amplified due to several features of San Marino's financial sector.** Unlike in some off-shore financial centers (OFCs), most banks are not affiliated with international groups from which support could be requested in the event of liquidity pressures. The sector is also concentrated, with the two largest banks, which are locally owned, representing more than half of the sector, and the three largest banks about 75 percent (Figure 1). Financial sector's contribution to total government's revenues, at about 10 percent, is significant (Figure 1), and a decline in the sector's profitability will have an impact on the fiscal position. Finally, while banks have a large capital cushion and nonperforming loans have been contained, profitability indicators are relatively low (Figure 2).

19. **Recent changes in the environment which has supported financial sector growth could lead to liquidity pressures.** San Marino's financial sector has developed on the "deposit-taking bank" model characterized by bank secrecy, low taxation levels, and free circulation of capital to attract foreign capital. This model is being challenged due to several international initiatives (Box 1). In particular, increased focus on transparency and the exchange of information for anti-money laundering and tax purposes will have wide ranging implications for the future of San Marino's banking business model. In the short-term, these evolutions could lead to liquidity pressures as the banks and their customers adjust to the new environment.

⁴ If one adds the indirect contribution of the sector to the economy through ancillary business, the contribution of the financial sector the GDP growth reaches 24 percent in 2007 (CBSM, 2009a).

Figure 1. San Marino: Selected Macro-Financial Indicators



Sources: Central Bank of San Marino; IMF, *International Financial Statistics*, and IMF staff calculations.

1/ "Total funding" includes all funds collected by banks from customers (including those invested in assets under management and securities under administration); "Direct funding" includes funds collected by banks from customers and invested in deposits or certificates of deposit, and recorded in the banks' balance sheets. "Total assets" refers to banks' assets.

Box I–1. San Marino’s Responses to International Initiatives

International initiatives

Under a **EU Savings Tax Initiative** (Directive 2003/48/EC which came into force in 2005) aimed at tackling harmful tax competition with regard to income from interest on capital, EU Member States and dependent or associated territories, have the choice between exchanging information on interest on savings paid to the citizens of other Member States to those States' tax authorities or applying a withholding tax and maintain bank secrecy. Under the withholding tax option, the local tax authority keep 25% of the total amount collected and remit 75% to the relevant tax authorities. The initial withholding tax rate was set at 15%; raised to 20% from July 2008; and will reach 35 percent in 2011.

The **OECD initiative** to promote international cooperation in tax matters through the exchange of information gained impetus following recent G20 Summits. In particular, the G20 communiqué following the London (April 2009) Summit stated that “the era of banking secrecy is over”. Concomitantly, the OECD published a list of countries assessed by the OECD Global Forum on Transparency and Exchange of Information for Tax Purposes (the Global Forum), including the so-called “white list” of jurisdictions that had substantially implemented the internationally agreed tax standard; the “grey list” of jurisdictions that had committed to it, but have not yet substantially implemented; and “black list” of jurisdictions that had not committed to it. In the subsequent months, a number of tax agreements were signed (doubling the total number of agreements signed since 2000). As of September 25, 2009, only 20 jurisdictions were left in the “grey list” and all jurisdictions had committed to the international standard. Now, the Global Forum will focus on assessing the extent to which agreements are signed with partners that have a significant interest in exchanging information and are implemented in practice; and countries’ willingness to continue to enter into agreements even after they have reached the threshold of 12 agreements that was required for a country to qualify for the “white list”.

In 2007 **MONEYVAL** conducted an evaluation of San Marino’s compliance with the FATF Recommendations for Anti-Money Laundering and Combating of Terrorism (AML/CFT). Moneyval noted several shortcomings in the legal framework and its effective implementation and put San Marino under its compliance-enhancing procedures.

San Marino’s response

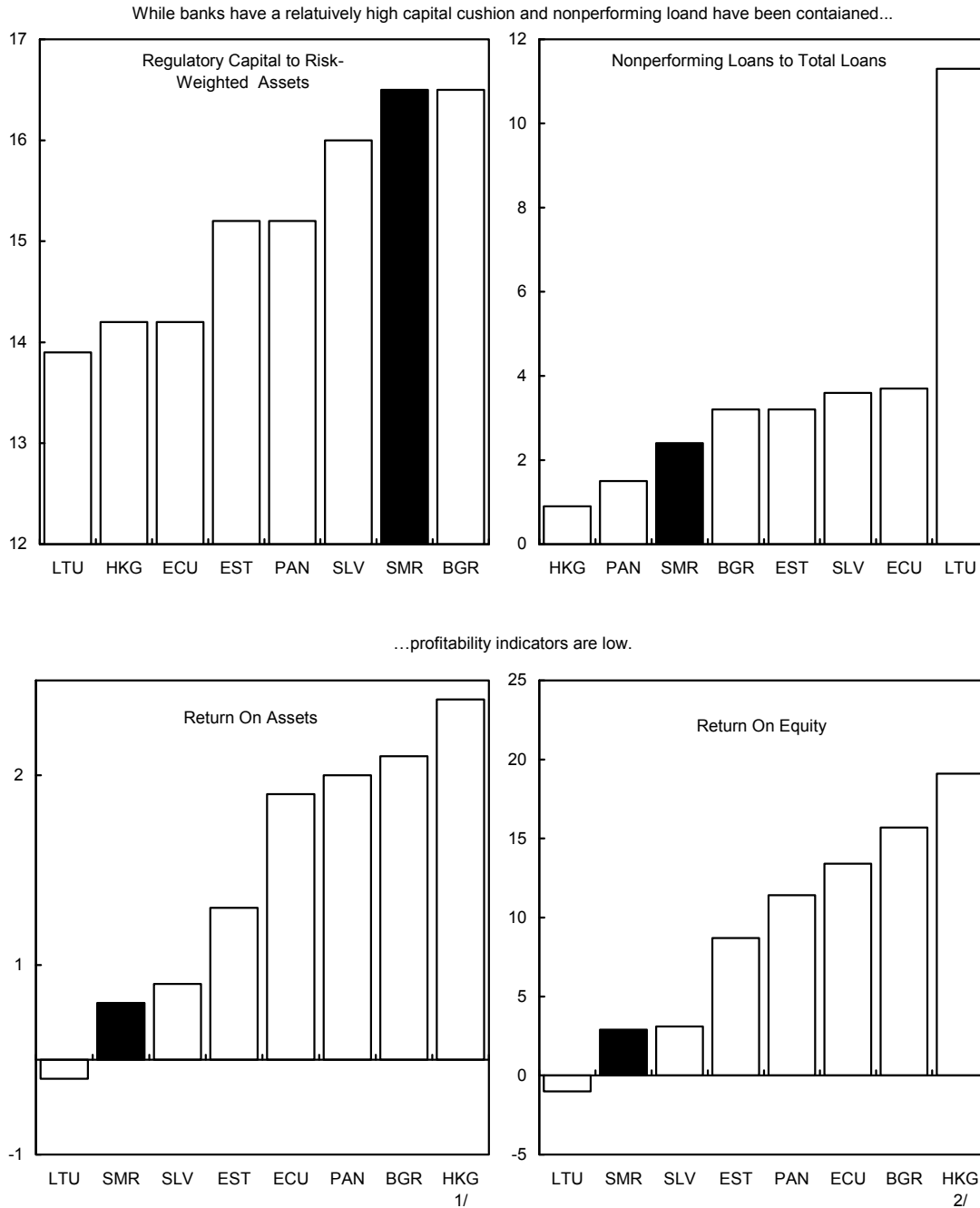
The **UE Savings Tax Initiative** became effective in San Marino in 2005 following the signing of an agreement with the EU. Its implementation did not trigger an immediate outflow of funds.

Regarding the **OECD initiative on tax matters**, in April 2000 San Marino committed to cooperate in the exchange of tax related information, and it was included among the cooperative institutions. Between April and end-September 2009, San Marino signed 12 bilateral agreements, allowing a move to the “white list”. Eight additional agreements were signed by mid-January 2010.

Regarding **AML/CFT**, San Marino reported to MONEYVAL in September and December 2008 and in September 2009 under the enhanced compliance procedure, and submitted a first progress report in March 2009. On September 24, 2009, the MONEYVAL Plenary decided to lift the enhanced compliance procedure for San Marino, being satisfied about progress achieved in addressing several shortcomings noted in the 2007 evaluation, but restating its concerns about effective implementation. With regard to the issues covered by the monetary agreement with Italy, and in order to enhance transparency of San Marino financial institutions’ clientele, in 2009 a database for the exchange of information between San Marino banks and Italian intermediary banks on cross border transactions that are settled through the Italian payment system was created. This effort led to contracts being signed between the CBSM and the Italian banks providing settlement services for San Marino banks; at the same time, the San Marino banks renegotiated the agreements regarding the information to be provided to the Italian banks.

Sources: CBSM (2009a) and OECD (2009).

Figure 2. San Marino: Selected Financial Soundness Indicators, 2009
(Percent)



Sources: *Global Financial Stability Report*, October 2009; Central Bank of San Marino; and IMF staff estimates.
1/ As of 2008.
2/ As of 2005.

20. **San Marino has taken a number of steps away from the “closed” financial system based on bank secrecy, to an “integrated and open” system based on greater transparency (Box 1).** In response to international initiatives San Marino took action to be upgraded from the OECD “grey list” of jurisdictions that have committed to internationally agreed tax standards but have not yet substantially implemented them, to the “white list” of jurisdictions that have substantially implemented the OECD tax standard. Furthermore, action taken in the area of anti-money laundering led in September 2009 to Moneyval lifting its enhanced compliance procedures for San Marino. These decisions are positive developments: accompanied by measures to find alternative services that could be offered competitively in accordance with international standards, they should strengthen the attractiveness of San Marino as an international financial center, and they will open new opportunities allowing the development of a business model less prone to shocks.

21. **Recent initiatives to intensify cooperation with Italy in economic and financial matters are also a positive development (Box 2).** They should contribute to expanding the range of options for strengthening the institutional framework for systemic liquidity management. In particular, the Financial Cooperation agreement with Italy will facilitate effective financial sector oversight on a cross-border basis, including through the signature of a Memorandum of Understanding between the CBSM and the BI, allowing for the exchange of information or the conduct of joint on-site inspections. The Financial Cooperation agreement will also open the way for the signature of a Memorandum of Understanding between the agencies responsible for AML/CFT and preventing and combating market abuses. All of this will enhance financial supervision effectiveness. In addition, the Financial Cooperation agreement will facilitate direct access to the payment systems of the EU for the banks. Early signature of the Double Taxation agreement is also desirable as it would improve further the business environment by facilitating the hiring of high-skilled workers from Italy, in turn facilitating a repositioning of the economy of San Marino to an international environment characterized by greater transparency.

Range of policy options

22. **Based on the review of the literature and country experiences a number of options are available to strengthen the framework for managing systemic liquidity risk in San Marino.** They include self insurance as well as external insurance mechanisms. Typically, self insurance mechanisms are the first line of defense against a liquidity stress, external insurance taking the relay where self insurance mechanisms reach their limits. Although this issue is not discussed in this paper, it is important to note from the outset that if there is a solvency problem of a systemic nature which goes beyond the capacity of the banks’ shareholders, only the strength of the fiscal authority (and willingness to allocate fiscal resources to a rescue effort) determines the banks’ chances of survival.

**Box I-2. San Marino: Initiatives to Strengthen
Economic and Financial Cooperation with Italy**

Recently, new impetus was given to strengthen cooperation on economic and financial matters with Italy, with a view to bring it to a new level, in the broader context of efforts toward greater internationalization of San Marino. It reflects the government's conviction that greater conformity to international standards will result in increased trade and other forms of exchange, for the benefit of the economy of San Marino. While such a move may result in short-term pressures as the economy adjusts to the new environment, in the medium-term it will be an opportunity for San Marino to change and re-position itself, and be seen as a worthwhile place to invest, in particular by Italian businesses given that 90 percent of all trade is with Italy.

A major achievement occurred with the March 31 official visit of the Italian Minister of Foreign Affairs to San Marino and the signing of the *Economic Cooperation Agreement* between Italy and San Marino, following negotiations that had begun in 2002 and had remained blocked for several years.

The second building block is the *Financial Cooperation Agreement*. This agreement acknowledges the cooperation established between the financial authorities of San Marino and Italy, but also between San Marino and the European Community in the areas covered by the Agreement. This agreement lays down the forms of collaboration in the banking, financial and insurance sectors.

- The agreement confirms the commitment of the parties to ensuring the development and integration of their respective financial systems, and collaborate as regards the prudential supervision of the financial sector (including banking and insurance); AML/CFT matters; combating market abuses; without constraints of confidentiality in the exchange of information between the competent authorities on those matters.
- San Marino agrees to reinforce the process of incorporating international standards into its own legal system, as well as the Community laws and regulations, including those on AML/CFT and market abuses.
- The agreement confirms that San Marino banks may be granted access to the payment systems of the euro zone on the basis of terms and conditions established by the BI, subject to the approval of the ECB, therefore making possible the implementation of a more secure and efficient access to the EU payment system than is currently the case.
- The agreement confirms the commitment of the parties to make possible effective oversight on a cross-border basis, in order to protect the stability, integrity and transparency of the financial sector. In particular it allows the signature of Memorandum of Understanding for the exchange of information between the CBSM and the BI (including conducting joint on-site inspections), as well as between the agencies responsible for AML/CFT and preventing and combating market abuses.

The third and last building-block of these initiatives has to do with a *Protocol* amending the *Convention on Double Taxation* with Italy, was signed in March 2002 but was never implemented. The Protocol amends the provisions of the 2002 convention with regard the exchange of information, adjusting the related provisions to the OECD standard on the exchange of information for tax purposes (Article 26 of the OECD model). The Protocol also clarifies issues having to do with residence for tax purposes taking into account the particular social, economic, and geographical situation of both countries.

The Financial Cooperation Agreement was signed on November 2009. The signature of the Protocol amending the March 2002 Convention on Double Taxation is expected in 2010.

Self insurance mechanisms

23. **Requiring banks to maintain *at all times* high levels of liquidity is the first line of defense.**

- ***Liquidity management framework for banks.*** Banks operating in San Marino are subject to a rule limiting medium and long term lending to 80 percent of the sum of medium and long term deposits, regulatory capital and 30 percent of other deposits. Banks are also required to establish time buckets, forecast liquidity mismatches and set minimum limits for themselves.⁵ The CBSM should focus on the requirement for banks to forecast liquidity mismatches and set limits for themselves, and satisfies itself that banks are doing this analysis robustly.
- ***Reserve requirements (RR).*** The option of making banks subject to reserve requirements (i.e., keeping a fraction of their deposits with the CBSM) should be considered. In the event of a liquidity shock, the CBSM could lower the ratio of required reserves, therefore allowing the banks to utilize all or part of their reserves at the CBSM to meet demands from depositors.⁶
- ***Use by the CBSM of the liquidity raised by a reserve requirements system.*** One could envisage that liquidity raised by the CBSM through a RR system could be used for LOLR operations. However, the risks involved in following such a route should not be underestimated, given the temporary (“borrowed”) nature of these resources. Therefore, before adopting such a framework the central bank would need to develop a robust and transparent collateral policy for liquidity provision operations. Second, in the case of San Marino, for such a framework to provide an effective buffer in the event of a liquidity shock, the ratio of required reserves would probably need to be higher than the ECB’s. Therefore, San Marino banks would be at a disadvantage compared to their euro area competitors.

⁵ Several of these measures (in line with the recommendations of the Basel Committee for Banking Supervision, were introduced in early 2009, at a time when several adverse events converged to generate liquidity pressures on local banks, including the global financial crisis; difficulties for the banks to participate in the Italian payment systems due to Italy’s new anti-money laundering regulations; reputational problems related to an Italian investigation related to anti-money laundering allegations; and prospects for a fiscal amnesty in Italy. The requirement for banks to provide a maturity ladder on their assets and liabilities, eventually leading to a daily reporting, were introduced in June 2009.

⁶ In early December 2009 the CBSM imposed on banks a mandatory 8 percent deposit requirement to deal with short-term liquidity pressures at the time. This instrument differs in several and important ways from a reserve requirements system: it is of a temporary nature and shall end in January 2010; it applies to interbank deposits as well as customer deposits; deposits required to be held with the CBSM will be blocked for the whole (monthly) maintenance period; derogation to the requirement may be granted based on demonstrated liquidity stress; liquidity assistance provided to banks through interbank lending can be deducted from the mandatory deposits.

External insurance mechanisms

24. **A second line of defense would be to secure contingent credit lines with reputable foreign banks.** Reliance on such a market-based insurance mechanism would limit the moral hazard that is often attached to LOLR frameworks. However, there are several obstacles to feasibility of such an arrangement for San Marino. First, if the contingent credit line were to be contracted by the central bank, it would need to be very large (in the vicinity of 70 percent of GDP to cover 10 percent of deposits) to provide system-wide protection, making it difficult to be secured.⁷ Second, the option of relying on contingent credit lines contracted by the banks themselves may not provide system-wide insurance given that only about 25 percent of deposits are in banks affiliated with international banks.⁸ Indeed, such a model is likely to be effective only in countries where the banking sector is closely integrated with international banking groups.⁹

25. **Another form of external insurance would be for the CBSM to enter into a precautionary arrangement with a neighboring central bank.** It is important that central banks cooperate and assist each other in times of financial stress, and the swap arrangement between Sweden and Estonia offer a good example of such cooperation. The financial systems (and more broadly economies) of San Marino and Italy are closely linked, therefore making a case for such an agreement between the CBSM and the BI. Such a precautionary arrangement would reduce the size of the cushion of liquidity the CBSM would need. Under such a framework, resources made available by the BI would in turn be utilized by the CBSM to provide liquidity assistance to banks in San Marino. From an operational point of view, the CBSM would need to develop a framework for liquidity providing operations, in particular a collateral policy so as to ensure that liquidity is only provided against high quality collateral and to fundamentally solvent banks.¹⁰ The CBSM would also need to make clear that such transactions are short-term and at penalty rates, so as to limit moral hazard in the banking sector.

⁷ As an example, the USD 6.1 billion private contingent credit line contracted by Argentina in 1996 with a group of banks was about 2 percent of GDP; the USD 2.5 billion contingent credit line contracted by Mexico in 1997 was less than 1 percent of GDP (IMF, 1999). As elaborated by Ize et al. (2005) these two experiences also indicated that private insurance, while possibly useful as a partial complement to other mechanisms, is not a promising alternative for countrywide coverage of systemic liquidity risk.

⁸ As of end-2008, the two local banks controlled by international banking groups represented about 25 percent of total deposits of the sector.

⁹ This is the case in some offshore financial centers (OFC) where most banks are closely integrated with international banking groups. In such OFCs there is not LOLR framework, and the soundness of locally-licensed banks depends on that of their parent institutions. OFC, however, have financial sector regulation and supervision capacities, one reason being that support from parents should not be taken for granted.

¹⁰ While such a task would involve limited conceptual work (the ECB framework could serve as a model), the human resources and technical infrastructure that would be required should not be underestimated.

26. **A final option would be for San Marino to secure for its banks full access to Eurosystem liquidity.** That would require either becoming full member of the euro area, or securing access to the Eurosystem monetary policy operations for San Marino banks in the context of the monetary agreement between Italy—on behalf of the European Community—and San Marino.¹¹ The monetary agreement between France—on behalf of the European Community—and Monaco offers a framework that could be emulated by San Marino.¹²

E. Conclusions and Policy Recommendations

27. **The combination of an unfinished integration of San Marino with the euro area and a large internationally active banking sector has led to macro-financial vulnerabilities.** The CBSM has accumulated some liquidity with which it can provide short-term assistance to individual banks, but it cannot act as an effective LOLR in the event of systemic liquidity shock.

28. **As a first line of defense, the CBSM should take measures to strengthen self insurance mechanisms to help banks cope better with idiosyncratic liquidity shocks.** Banks should be required to hold a substantial stock of liquid assets. To this end, the CBSM should focus on ensuring that banks are properly assessing their own liquidity mismatches and setting appropriate limits for their circumstances. Banks could also be required to secure credit lines from reputable and dependable international banking groups. Currently, two of the banks operating in San Marino are affiliated with international banking groups; enforcing such a policy on these banks would insure about a quarter of total deposits. The other banks should also be asked secure credit lines; those unable to do so could be required to hold a larger stock of liquid assets.

29. **The authorities should also seek ways to strengthen the institutional framework for the LOLR function.** To that effect, they should take advantage of current discussions for the

¹¹ In October 2009 the Commission of the European Communities adopted a recommendation for a Council decision on the position to be taken regarding the renegotiation of the monetary agreement with San Marino (European Community, 2009). The recommendation is for the European Community to seek changes in the agreement with a view for San Marino to undertake to adopt measures for the application of all relevant Community legislation relating to the activity and supervision of financial institutions, AML/CFT, and statistical reporting requirements; the recommendation does not envisage the possibility for Sammarinese banks to access Eurosystem liquidity. It is motivated by the size of San Marino banking sector and its close interaction with euro area banks. The ultimate objective is for San Marino to align its banking and financial sector legislation with that applicable in the Community with a view to create a level playing field in San Marino's financial sector. It is recommended that a new monetary should enters into force on January 1, 2010, with a transitional period of 5 years (January 1, 2015) for the introduction in San Marino of all relevant Community banking and financial legislation.

¹² Monaco uses the euro on the basis of a monetary agreement concluded between France (on behalf of the European Community) and Monaco. Banks have access to the euro area payment systems and Eurosystem liquidity through Banque de France. French monetary, banking and balance of payments statistics include Monegasque data. The agreement also stipulates that the EU legal framework governing the activities of banks applies to Monaco, ensuring the principle of a level playing-field in the sector. However, legislative provisions concerning, for example, criminal matters, which are specific to France and do not specifically concern credit institutions, are not applicable in Monaco, which has its own laws in these areas. Hence, Monegasque banks are subject to Monegasque AML/CFT legislation (ECB, 2006, and IMF Country Report No. 03/262).

renegotiation of the 2000 Monetary Cooperation agreement with Italy to explore the feasibility to secure access to Eurosystem liquidity for San Marino banks. Indeed, the point can be made that a natural consequence of creating a level playing field in San Marino's financial sector would also be for its banks to have access to the ECB's monetary policy operations. In the absence of an effective LOLR, a smaller scale financial sector focused on the needs of the economy of San Marino would be prudent.

30. If the banking sector were better integrated with reputable and dependable international banking groups than is currently the case, this would lessen the need for a LOLR framework, and the financial sector could remain large and internationally active. This model would be based on the development of a financial sector in which the soundness of locally-licensed banks would depend on that of their parent institutions. The need to maintain strong financial sector regulation and supervision capacities would nevertheless remain, partly because support from parents cannot be taken for granted. In this context, the challenge would be to balance prudential requirements for liquidity and exposure to related parties against business needs that entail high exposures to the parent. This would require close cooperation with home supervisors in order to keep under review the financial health of parent groups and their ability to support their local subsidiaries. Cooperation with home supervisors is particularly important for making contingency plans, to ensure that the interest of the host country are given timely consideration in any intervention by the home country on a bank with operations in the host country.

Appendix Table. Systemic Liquidity Frameworks in Selected Countries

	Lender of Last Resort (LOLR) Facilities	Other LOLR-Type and Precautionary Tools	Reserve Requirements (RR)	Prudential Norms	Others
Countries with a Currency Board Arrangement					
Hong Kong SAR	The Hong Kong Monetary Authority (HKMA) can buy/sell forex to support financial stability. Banks can borrow HK\$ overnight through repos agreements against eligible collateral. In 2008 new facilities were added (forex swaps and a term lending facility to provide HK\$ liquidity against collateral for up to three months). All operations have to be consistent with CBA rules.		No RR.	Banks are required to meet a minimum monthly average liquidity ratio of 25% (actual ratio around 50% in 2008). Banks have to document their policies & strategies for managing liquidity risk. This should be approved by the Board of Directors & agreed with the HKMA.	Banking sector dominated by a few large and complex international banks.
Bulgaria	LOLR against high quality liquid assets may be provided only to solvent and systemic banks for a maximum of 3 months. All operations have to be consistent with CBA rules.	Consideration is being given to using the Fiscal Reserve Account to provide emergency liquidity assistance to solvent banks, on commercial terms, and against collateral. Banks have been asked to obtain comfort letters from parents.	RR lowered to 10% at end 2008 to alleviate liquidity pressures. As of January 2009, RR on foreign funding cut to 5%. Banks may draw on RR in the event of pressures.	Capital adequacy ratios range between 14-30%, liquidity ratios between 22–39%.	Banking system dominated by subsidiaries of Western European banks (82% of assets).
Estonia	No LOLR but work has started to identify collateral required, terms for lending, interest to be charged, and documentation needs. CBE intends to decide conditions under which ELA is provided on a case-by-case basis rather than establishing a policy.	In 2009 the Riksbank and the central bank of Estonia (CBE) entered into a swap agreement, allowing the CBE to receive Swedish krona against Estonian kroon.	RR of 15% applied to a wide base of banks' liabilities. They can be constituted for up to 50% by high quality foreign securities.	High RR provides a liquidity buffer. Banks' exposure (liquid assets cover 31% of short term liabilities) mitigated given that it is to Nordic parent banks, as confirmed by actions of home-country central banks in 2008 following a bank run.	Banking sector is highly concentrated and foreign owned. Two Swedish-owned banks control 68% of assets and two other Nordic-owned banks control an additional 26%.
Lithuania	Three levels of liquidity provision: intranight, against collateral; repos, and liquidity loans (LOLR-type facility). Liquidity loans may not exceed 60% of		RR of 4% (6% before the financial crisis). Averaging over the maintenance period, and partial remuneration (up to ECB	The ratio of a bank's liquid assets to current liabilities may not be lower than 30% (actual ratio of 42% as of March 2009). Stress	Banking sector dominated by foreign banks (85 % of sector's assets) the majority Swedish. Systemic banks are owned by reputable and

	Lender of Last Resort (LOLR) Facilities	Other LOLR-Type and Precautionary Tools	Reserve Requirements (RR)	Prudential Norms	Others
	bank liabilities in litas and in foreign currency; only to solvent banks facing liquidity stress due to external factors, for up to 60 days, against acceptable collateral. All operations have to be consistent with CBA rules.		ratio).	tests conducted in early 2008 indicate that banks would be able to withstand stressful scenarios involving a reduction in parent bank financing.	highly rated foreign banks providing strong support for funding and capital.
Fully Dollarized Countries					
Ecuador	No LOLR.	Setting up of a "Fondo de Liquidez" in early 2009, available to banks subject to RR (off-shore banks are excluded). The Fund is controlled by the Banks Superintendence and administered by the central bank. Effectiveness of the arrangement not yet tested.	RR ratio of 2%, plus another 3% for the "Fondo de Liquidez."	Banks must hold 25% of deposits in liquid assets, of which 45% must be held domestically. As of July 2009, banks held liquid assets of 35% of deposits, however not all the banks were meeting the 45% requirement.	Banking sector is mostly domestically-owned.
El Salvador	No LOLR. The central bank is explicitly banned from utilizing liquidity from RR for LOLR operations.	Banks have been required to submit contingency liquidity plans, including on availability of foreign credit lines. The central bank plans to use proceeds from an IADB loan to purchase loans from banks to sustain credit growth to private sector.	RR were raised from 3 to 6% in June 2008 to strengthen banks' resilience to liquidity shocks, and then gradually eliminated in 2009. Banks can access reserves in tranches in the event of liquidity pressures.	Banks must hold 20 to 25% of liabilities in liquid assets. At end-November 2008, banks maintained a liquidity ratio of about 42%. Since late-2008 the authorities follow key liquidity indicators daily.	Banking sector dominated by foreign-owned banks following purchase of the three largest banks by foreign banks in the last two years, bringing the share of foreign-owned assets to above 90%.
Panama	There is no central bank in Panama. The system in place implicitly requires that each bank takes measures to ensure its own viability under all circumstances, in particular in the form of high liquidity ratios.	Setting up in 2009 of a collateralized line of credit by the Banco Nacional de Panama-BNP for banks affected by the reduced access to foreign credit. To make the framework operational the BNP needs additional external financing.	No RR.	In response to the global financial crisis, banks increased their already high liquidity ratios from 58% at end-2008, to above 64% in April 2009, to self-insure against shocks.	Nearly 60% of the on-shore banking system is foreign-owned. At end-2008, deposits in on-shore banks amounted to 130% of GDP; deposits in off shore banks amounted to 30% of GDP.

Sources: Hong Kong SAR: IMF Country Report 08/369; Bulgaria: IMF Country Report 09/96; Estonia: IMF Country Reports 09/86 and 09/89; Lithuania: IMF Country Report 08/137; Ecuador: IMF Country Reports 06/98; El Salvador: IMF Country Reports 09/35 and 09/71; Panama: IMF Country Report No. 09/207.

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II. THE PENSION SYSTEM IN SAN MARINO: ISSUES AND OPTIONS FOR REFORMS¹³

A. Introduction

31. **This paper reviews the current pension system of San Marino, in comparison with other European pension systems, and analyzes its sustainability.** The main conclusion is that, although the 2005 pension reform is in line with reforms enacted elsewhere, and contributions have increased significantly since then, the current system is not sustainable in the long run, and significant pitfalls persist. Therefore, further reforms should be implemented as a matter of urgency. The paper is organized as follows: section B presents the features of the pension system after the 2005 reforms. Section C reviews current pension spending and its financing. Section D discusses sustainability, and Section E draws policy implications.

B. The Current Pension System

32. **The pension system provides benefits to local residents and commuters in San Marino.** Major revisions introduced in 1993 failed to prevent a deterioration in social security balances.

33. **In 2005, the government introduced changes to the existing pay-as-you-go mandatory system entailing:**

- Starting January 1, 2006, a very gradual increase in retirement age from 60 to 65 years by 2017. Retirement at the age of 60 is allowed for those who have accumulated contributions for at least 40 years.
- Rise in the minimum contribution period from 15 to 20 years.
- A change in the pension calculation formula to reduce benefits.
- A plan to set up an optional defined-contributions second pillar scheme by 2007, to bolster the private sector's own effort to save for retirement, with a view of making it mandatory later.
- A gradual increase in social security contributions—especially for employers.
- Disincentives to early retirement for the 60 year olds who have accumulated between 35 and 39 years of contributions.
- A change in the indexation system, making ordinary pensions indexed to CPI inflation of the previous year. Indexation is partial, and lower for higher pensions.

¹³ Prepared by Edda Zoli.

34. **While the implementation of the 2005 pension reform is underway, there have been some setbacks, and the introduction of a fully-funded two pillar scheme has not started yet.** A 2008 law introduced additional few minor changes to the pension system, which seem to make the system a bit more generous, by increasing benefits for part-time workers and reducing disincentives to retire earlier. As of end 2009, the second pillar scheme has not been started yet.

35. **Although the 2005 pension reform is in line with reforms enacted elsewhere, the gross replacement ratio remains significantly above that of other European countries (Table 1).** Statutory and average retirement age as well as minimum contribution years required to take early retirement are now similar to those in other European countries.¹⁴ Demographic indicators are also close to those in other European countries. Nonetheless, the replacement ratio is high, also considering that pension in San Marino enjoy a very favorable fiscal treatment.

Table II- 1. Public Pension Systems and Demographic Indicators in Selected European Countries

	Gross Replacement Rate 1/	Average Age at Retirement for Old Age Pensions	Statutory Retirement Age (Male/Female) 2/	Average Retirement Age (Male/Female) 3/	Contribution Years to Take Early Retirement	Dependency ratio 4/	Coverage ratio 5/
San Marino (before 2005 reform)	87	60.8	60/56	60.8	35	...	...
San Marino (after 2005 reform)	70-80	61.6	65	61.6	40	25.4	126.0
Austria	80.1	65	65/60	62.6/59.4	37.5	25.4	172.9
Belgium	42	63	65/64	61.2/61.9	35	25.8	140.8
Cyprus	...	...	65/65	...	...	17.8	123.3
Denmark	...	...	65/65	61.4/59.7	...	23.6	159.9
Finland	56.2	66	62-68/62-68	62/61.3	...	24.8	153.2
France	53.3	62	60/60	59.5/59.4	...	25.1	138.9
Germany	43	63	65/65	62.6/61.5	35	30.0	121.6
Greece	...	...	65/65	61.6/60.5	15	27.8	...
Luxembourg	...	...	65/65	...	40	20.6	218.5
Ireland	...	...	66/66	...	Not allowed	15.9	...
Italy	67.9	62	65/60	61/59.8	40	30.4	134.3
Malta	...	...	61/60	...	...	19.3	124.3
Netherlands	...	...	65/65	64.2/63.6	Not allowed	21.8	139.4
Portugal	53.9	...	65/65	62.9/62.3	Not allowed	23.4	174.8
Spain	...	...	65/60	61.8/62.4	30	24.1	109
Sweden	61.5	65	61-67/61-67	64.2/63.6	...	26.7	137
United Kingdom	30.8	...	65/60	63.6/61.7	Not allowed	24.3	124.7

Sources: OECD, EU Commission, Sammarinese authorities, and IMF staff calculations.

1/ As of 2007. Ratio of pension during retirement to earnings when working (percent).

2/ As of 2008.

3/ For San Marino as of 2008; for other countries as of 2007.

4/ For San Marino, as of 2007, for other countries, as of 2008.

The dependency ratio is the ratio between persons aged 65 and over and persons aged 15-64.

5/ As of 2007. The coverage ratio is the total number of pensioners as a share of the population aged 65 and over.

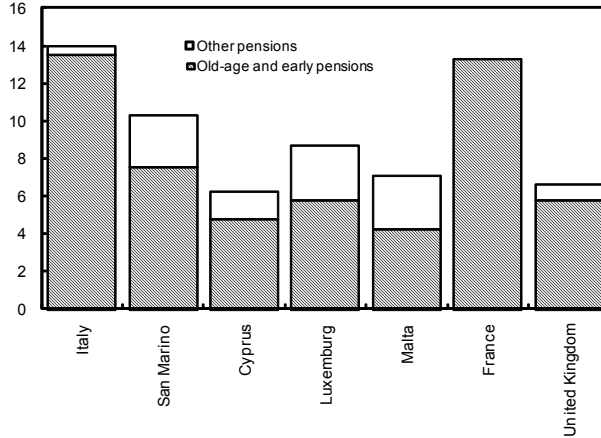
¹⁴ In the large majority of countries, the average exit age is lower than the statutory retirement age. Mostly, this is due to the existence of early retirement schemes and/or other government programs that provide income support to older people before they reach the official retirement age. Also, in a number of countries (like Finland and Sweden) the retirement age is flexible, with built-in incentives to remain active in the labor market.

C. Pension Spending and its Financing

36. **San Marino’s pension expenditure is higher than in other small European countries, but lower than in some large European economies, including Italy (Figure 1).**

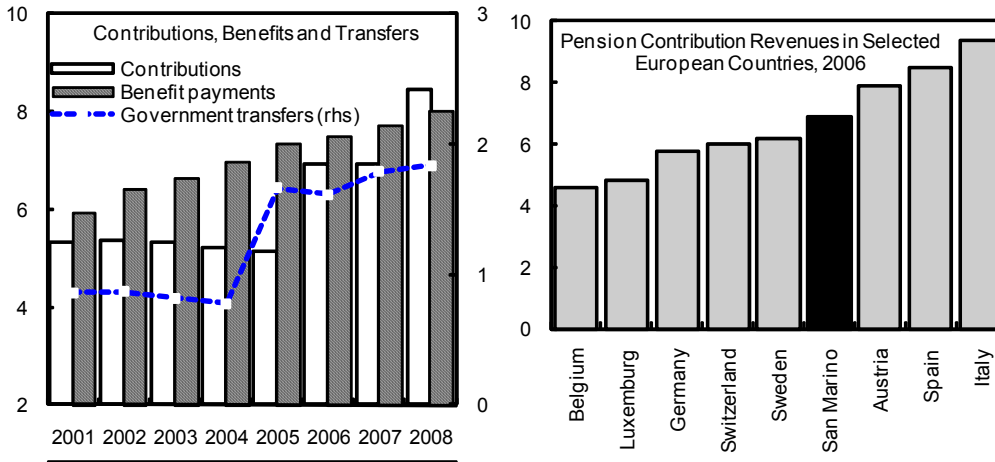
Increases in pension spending continued also after the 2005 reform (Figure 2). San Marino’s pensions are funded through payroll contributions and government transfers from the central government, in the amount of 10 to 25 percent of total contributions. The contributions are credited to seven separate pension funds (for agricultural workers, artisans, etc.) and no cross subsidization among funds in principle may occur.¹⁵ The artisan and trader funds needed extraordinary state transfers since 2005. Pensions are administered by an autonomous agency, the Social Security Institute, which also provides for healthcare and social services.

Figure 1. Pension Expenditure in Selected Countries, 2007
(Percent of GDP)



Sources: Sammarinese authorities, EU Commission.

Figure 2. San Marino: Pension Expenditure and Financing
(Percent of GDP)



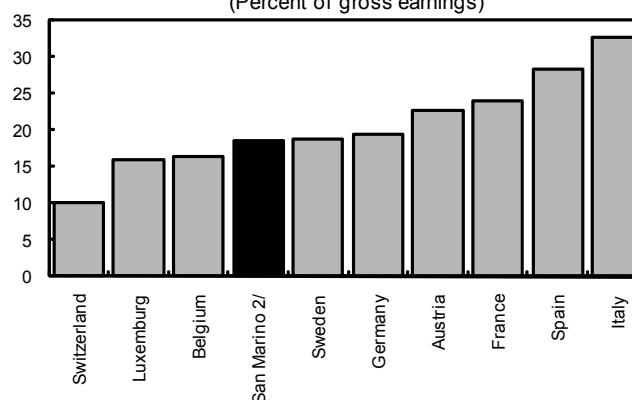
Sources: OECD, Sammarinese authorities, and IMF staff calculations.

¹⁵ For farmers state transfers are 80 percent of total contributions. The farmers fund also receives transfers from other worker categories.

37. **Pension contributions have increased significantly since 2005.** Contribution revenues seem to be in line with those in other European countries and in 2008 were overall able to cover pension benefits (Figure 2). Nevertheless, government transfers to pension funds have kept rising, and reached nearly 2 percent of GDP in 2008, owing to the rule automatically linking budget transfers to total contributions, and the need to cover the deficit of certain pension funds.

38. **Contribution rates are still relatively low, especially for certain worker categories.** Even after the reform contribution rates are lower than in the rest of Europe (Figure 3), particularly compared to Italy, a feature that should enable San Marino to continue to attract Italian businesses and workers. Commuters from Italy make sizable contributions, as they represent about 30 percent of total—a share that could increase after the agreement with Italy on double income taxation is signed. In San Marino there is still a large variance among contribution rates from the different worker categories, creating disparities across them (Table 2).

Figure 3. Pension Contribution Rates in Selected European Countries, 2006
(Percent of gross earnings)



Source: OECD, Sammarinese authorities.

1/ For San Marino as of 2008.

2/ Weighted average of contribution rates of the different workers categories.

Table 2. San Marino: Social Security Contribution Rates
(Percent)

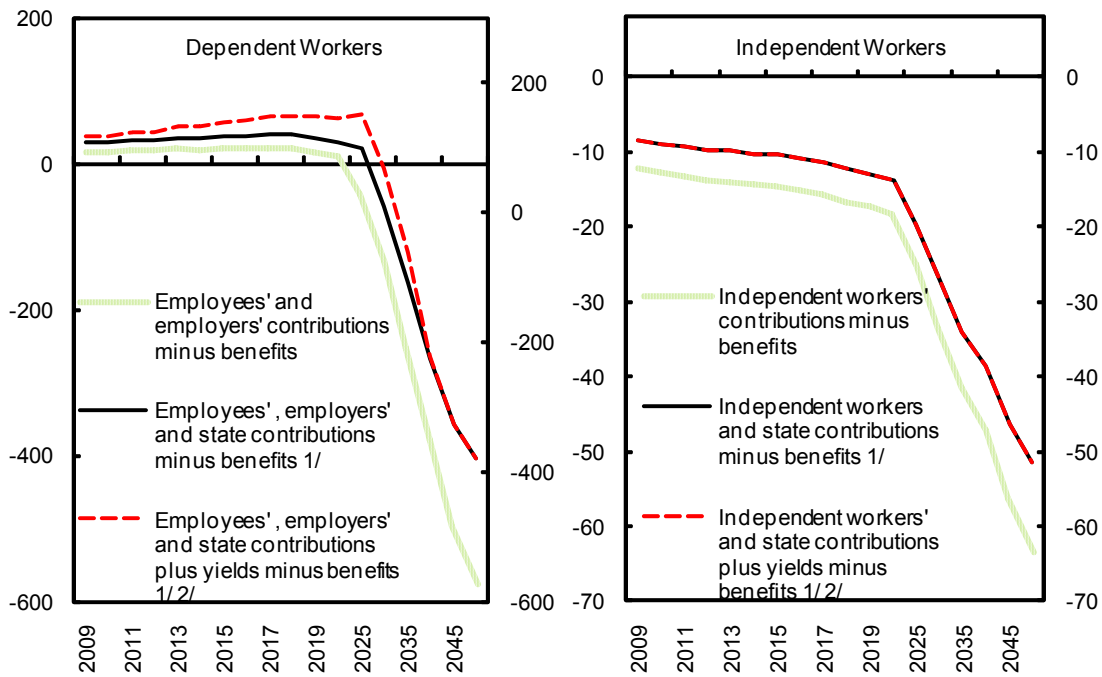
	Before the reform		After the reform	
	Employee	Employer	Employee	Employer
Dependent workers	1.6	10.3	3.6	14.3
Artisans	19.5		22	
Farmers	10		11	
Traders	18.5		21	
Entrepreneurs	10		13	
Professionals	10		13	
Agents and brokers	10		13	

Source: Sammarinese authorities.

D. Sustainability of the Current Pension System

39. **Recently released actuarial projections suggest that the current system is not sustainable in the long term.**¹⁶ With reference to the dependent workers' fund, after 2020 employees' and employers' contributions will not be able to cover pension benefits. Even with state transfers reaching the maximum limit of 25 percent of total contributions, and taking into account returns on outstanding reserves, the fund will post a negative balance by 2030. For the other workers categories together, contributions—even including state transfers and yields—are already lower than pension benefits (Figure 4).

Figure 4. San Marino: Pension Funds Projections
(Millions of euros)



Sources: Sammarinese authorities; and IMF staff calculations.

1/ For dependent workers state contributions are assumed to be 10 percent of total employees' and employers' contributions up to 2020, and 25 percent of total contributions afterwards. For independent workers state contributions are over 25 percent of total contributions.

2/ Annual yields are assumed to be 4 percent of fund reserves.

40. **These projections are based on fairly reasonable assumptions.** Labor productivity is assumed to grow at 1 per year. While this assumption may appear too pessimistic given that labor productivity in San Marino has increased by 1.6 percent from 1997 to 2007, the recent

¹⁶ Projections have been carried out in November 2009 by consultants from the University of Rome, at the request of the Sammarinese authorities'.

output contraction, coupled with the uncertainty about the timing and extent of the recovery justify such a fairly conservative assumption. The 2 percent annual inflation rate postulated for the projections is in line with recent inflation figures. The assumption of a 4 percent return on pension fund reserves is rather conservative, but even assuming a 7 percent annual return, by 2035 the dependent workers' pension fund will post a deficit, while there will be no change in the projections of the independent workers' fund balances.

E. Policy Implications

41. **San Marino pension system needs further reforms.** The 2005 pension reform has resulted in a significant increase in contributions that overall are now in line with benefits. Nevertheless, certain pension funds are constantly in deficit, requiring subsidization from other funds, as well as frequent extraordinary transfers from the state budget. Moreover, actuarial projections suggest that the current system is not sustainable in the long term. Building on the consensus that the 2005 reform has generated, additional measures should be considered, including: (i) harmonizing contribution rates across categories of workers, to avoid cross-subsidization; (ii) increasing contributions rates; (iii) changing the way earnings are measured to calculate benefits; (v) introducing defined contribution plans and linking pensions to higher life expectancy; and (vi) encouraging retirement savings, through the introduction of a fully funded second pillar.

Options for further reforms to the current public pension system

Increasing contributions rates and harmonizing them across worker groups

42. **There is scope to increase the contribution rates**, without necessarily jeopardizing the competitive advantage for workers and businesses, given that they are still lower than in Italy. In this event, the current rule under which state transfers are automatically linked to total contributions should also be reconsidered, as it would imply an automatic increase in central government pension expenditure. There also the need to a harmonize contribution rates across categories of workers, to avoid disparities and boost revenues in the pension funds currently in deficit.

Changing the way earnings are measured to calculate benefits

43. **Since the replacement rate in San Marino is still high by European standards, the authorities could reconsider the benefit calculation method.** Several advanced economies have extended the period over which earnings are included in pension benefit calculations. For example, France is moving from the best 10 years to the best 25 years in the calculation of pension benefits. Austria is gradually extending the averaging period from the 15 to the 40 best

years. Finland, Poland, Portugal and Sweden are all moving to a lifetime average earnings measure (OECD 2007, 2009).¹⁷

Introducing defined contribution plans and linking pensions to higher life expectancy

44. **Systemic reforms establishing defined-contribution (DC) mechanisms that adjust benefits to increasing life expectancy have been proposed or implemented in a number of European countries, including Denmark, Finland, France, Italy, Norway, Portugal, and Sweden (Whitehouse, 2007).**¹⁸ Under these DC schemes—whether they are funded or notional¹⁹—pension capital is accumulated in an individual account and transformed into a regular pension payment at retirement, using a formula based on life expectancy.

45. **Another approach is to increase the standard retirement age and/or the number of contribution years necessary to get a full benefit in line with the evolution of life expectancy.** For example, Denmark has introduced a direct link between increasing life expectancy and pension eligibility age. France has linked the required number of contribution years to get full pension to life expectancy.

Encouraging retirement savings²⁰

46. As public pensions will be much lower for workers entering the labor market today than in the past, voluntary private provisions for old age are needed to maintain living standards into retirement. Governments can encourage private sector savings by introducing mandatory or voluntary saving schemes, and providing tax incentives.

47. **The main argument for mandatory pension schemes is that they protects people** from the regret of not having saved enough for their retirement when they were younger, and societies from having to pay for safety-net benefits for those who did not provide for old age. There are also arguments against compulsion. The losses in terms of individual welfare from forcing people to over-save can be as great as the losses from myopia and under-saving; formal pension plans are not the only way people can and do save for retirement; mandatory

¹⁷ Currently most OECD countries – 17 out of the 22 with the relevant kinds of scheme – now use a lifetime earnings measure or a close proxy for the pension benefit calculation.

¹⁸ The appendix presents an overview of recent pension reforms in European countries.

¹⁹ Under the notional accounts system both the incoming contributions and accumulated interests exist only on the books of the managing institution.

²⁰ This section is based on OECD (2009).

contributions to pensions are often perceived as a tax, which is likely to discourage people from working.²¹

48. **An alternative to mandatory private pension schemes is the automatic enrollment into private pensions while leaving people the possibility to opt out.** For example, employer-provided pension plans in the United Kingdom and the United States have long used automatic enrolment to increase coverage among their employees. Financial education can also be a way to improve awareness of the need to save for retirement and, it is hoped, coverage of voluntary funded pensions.

49. **To encourage private, voluntary retirement savings government can offer preferential tax treatment to contributions and returns from investments in pension plans.** One option is to make contributions to private pension funds deductible from personal income tax liabilities, even though this implies that higher earners who pay higher marginal rates, get the greatest benefit, while low earners have a smaller tax incentive to save. To address this problem, the tax relief on contributions could be limited to the lower or standard rate of income tax. Another method is to offer matching contributions or tax credits that are paid to low earners.

²¹ In Australia, Iceland, Norway and Switzerland, for instance, voluntary private pensions, which historically had broad coverage, have been made mandatory. In Hungary, Mexico, Poland, the Slovak Republic and Sweden, mandatory private-pension contributions have been introduced as substitute for part of the public pension. Denmark, Sweden and the Netherlands do not directly mandate contributions to private pensions, but as a result of employment agreements, participation in private pensions is de facto compulsory (“quasi-mandatory”) and coverage exceeds 85% of employees.

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Appendix Table. Reforms to Retirement Income Systems in Selected European Countries, 2004–2009

Appendix: Reforms to national retirement income systems in selected European countries, 2004-2009

	Coverage	Adequacy	Financial sustainability	Economic efficiency	Administrative efficiency
Belgium	Increase in minimum pensions additional to standard indexation.		Increase in pre-pension eligibility age from 58 to 60 between 2008 and 2012. Abolition of social security tax exemption for sabbatical leave under the "time-credit" program. Tighter job-search requirements before older unemployed eligible for early-retirement benefits.		
Denmark			Increase early pension age from 60 to 62 between 2019 and 2022; increase normal pension age from 65 to 67 between 2024 and 2027; link both ages to life expectancy thereafter.		Adoption of "prudent-person" rule for portfolio allocation of private pensions.
Finland	New guaranteed pension to be introduced from 2011. Cuts in taxes on pensions worth between EUR 15 000 and 30 000 to bring pensioner tax into line with worker tax.	Earnings measure moves from final ten years to lifetime average. Link between benefits and life expectancy.	Changed adjustments for early and last retirement. Increase in early pension age from 63 to 65 over the period 2011-22 (proposal).		
France	New individual retirement-saving plan (PEIR) allowing 10% of earnings up to EUR 24000 to be contributed with tax privileges.	Increase in minimum pensions additional to standard indexation.	Indexation of public-sector pensions with prices rather than wages.	Employers compulsory retirement raised from 65 to 70. Increase in contribution years for public-sector workers from 37.5 to 40 by 2012; reduction in benefits for early retirement of public-sector workers. Gradual abolition by 2010 of "Delalande" tax on firing of workers over 50. Increment for working age 60-65 raised from 3% to 4% and 5% from age 65.	
Germany	Extension of social security tax exemption (due to expire in 2008) for DC OP contributions up to 4% of earnings.	Increase pensions by 1.1% in 2008 (rather than 0.46% under the 2005 rules); increase of 2.41% in 2009 (rather than 1.76%). Pensions were not increased in the period 2003-06.		Gradual increase in normal pension age from 65 to 67 between 2012 and 2029. (However, early retirement age will remain at 63, subject to benefit reductions.)	
Greece	New administrative arrangements (see right) aim to increase compliance with and coverage compliance with and coverage of public schemes.	One-off payment of EUR 100-200 to pensioners.		Equalise normal pension ages for men and women at 65; early retirement from 55 with at least 15 years' contributions.	Merger of 133 pension funds into 13 schemes; centralised database of members and employers; unique identification numbers issued of individuals.
Ireland			Contribution levy, averaging 7.5%, on members of civil-service pension scheme.	Reductions in civil-service pensions for early retirement.	
Italy	Companies' (with more than 50 employees) severance-pay schemes to be converted into pension plans; choice of employer plan, other private provider or government-run scheme. (The last is the default option.)		Reduction in transformation coefficient used to convert notional defined contribution balances into pensions from 2008 to reflect changes in life expectancy. Cuts in pensions range from 6.4% for new retirees aged 57 to 8.5% for 65-year-old retirees.	Increase full pension age from 57 to 58 in 2008 and 60 from 2011; increase in contribution years for full pension from 35 to 36 years. (However, this delays earlier laws to reach age 60 from 2008). Phased increase in normal pension age for women to 65 (proposal).	
Netherlands				Tax advantages for early-retirement OPs abolished. Increase in normal pension age from 65 to 67 in 24 monthly steps (proposal).	
Portugal	New centrally managed, voluntary DC plan, with contributions of 2% or 4% for under 50s and 6% for over 50s.		Cut pension benefits with life-expectancy increases from 2008; accelerated shift to lifetime earnings measure.		
Spain		Increase in minimum pensions of 6.4%.			
Sweden		Cut taxes on over 65s with incomes up to SEK 363 000 from 2009, affecting 90% of pensioners.	DB OP scheme for white-collar workers in private sector converted to a DC scheme.	Cut employers' social security contributions by 1% from 2009.	Merger of bodies managing public and mandatory DC plans.
United Kingdom	National pension savings scheme from 2012: automatic enrolment of 22-65 year olds without an OP or PP; employee contribution of 4%, employer of 3% and government of 1% phased in. Reduction in number of years required for full basic pension to 30.	Basic pension to be indexed to average earnings from 2012; increases 2004-08 in line with earnings. Acceleration of change of state second pension from an earnings-related to a flat-rate scheme, with initial benefits indexed to average earnings; improved credits for carers.		Increment for late retirement raised from 7.4% to 10.4% a year; increment now payable as a one-off bonus.	Central clearing house for new national pension savings scheme; aim to have costs of 0.5% of balance initially, falling to 0.3%. New Pensions Regulator established in 2005, combining previous agencies.

Source: OECD, *Pensions at a glance 2009*.

Note: DB = defined benefit; DC = defined contribution; NDC = notional accounts; OP = occupational pension; PP = personal pension; RR = replacement rate.