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REPUBLIC OF SAN MARINO

SELECTED ISSUES

December 2024

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November 15, 2024

Approved By
European Department

Prepared by Ezequiel Cabezon, Carlos de Resende and Ritong Qu.

CONTENTS

IMPROVE SAMMARINESE BANKS' PROFITABILITY: A PEER ANALYSIS WITH ITALIAN REGIONAL BANKS[1]

Notwithstanding important progress in increasing liquidity and reducing NPLs, San Marino's banking system remains vulnerable. Sammarinese banks face near-term challenges from recognizing legacy losses. In the medium term, the EU association agreement will subject the banks to higher compliance costs and increased competition from Italian banks. To cope with these challenges, it is key to improve Sammarinese banks' low structural profitability. The paper compares Sammarinese banks with nearby Italian banks with similar business models, highlighting gaps in asset quality, capital adequacy, and cost efficiency. Individual banks can boost profits by reducing the high operating costs and increasing the share of income-generating assets. If within bank consolidation is insufficient to restore competitiveness, system-wide consolidation can be considered to achieve economies of scale.

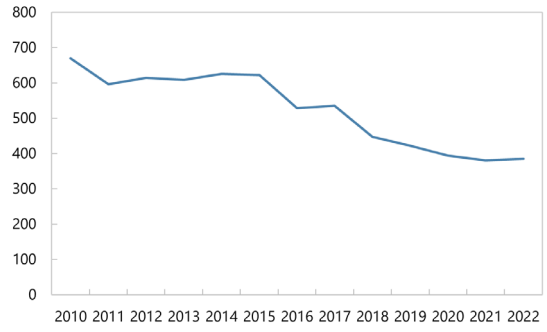
1. San Marino's banking sector has gone through prolonged deleveraging since the global financial crisis. The international efforts to address preferential tax regimes greatly reduced the business opportunities of San Marino's banking sector, which had relied on servicing non-residents. The recession from 2010 to 2014 significantly impaired banks' loan portfolios. After subsequent rounds of liquidity support and state recapitalization of banks, the number of banks in San Marino declined from 12 to 4, and banks' total assets have gradually declined below 300 percent of GDP from over 600 percent of GDP in 2009. During 2010-14, banks' gross value added to GDP declined by more than 80 percent and has remained flat.

2. As the sector deleveraged, significant progress has been made to reduce costs. Total employment in the banking sector and the number of bank branches have declined by more than 40 percent respectively since 2010. Average personnel costs per employee went down from a higher level than surrounding Italian regional banks before 2010 to around 90 percent of the regional peers, mainly explained by higher wage growth in Italy. As a result, total personnel costs and other administrative costs have been on a gradual downward path since 2010.

3. Despite recent improvements, San Marino's banking sector profits are low, posing long-term challenges. The banking sector have been making losses until 2021. The recent years' profits are still low compared to other EU countries. The adjustment of expenses lags the decline of income generating assets and has stalled in recent years. Absent deep restructuring of the banks' cost and income structures, weak profitability still puts banks' long-term viability at risk.

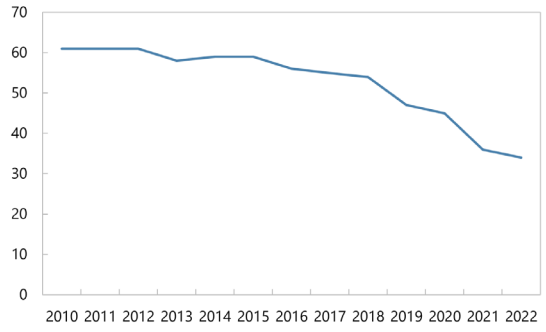
[1] Prepared by Ritong Qu. The author would like to thank Paul Leonovich for helpful comments. All errors in this paper are the author's.

Number of Bank Employees



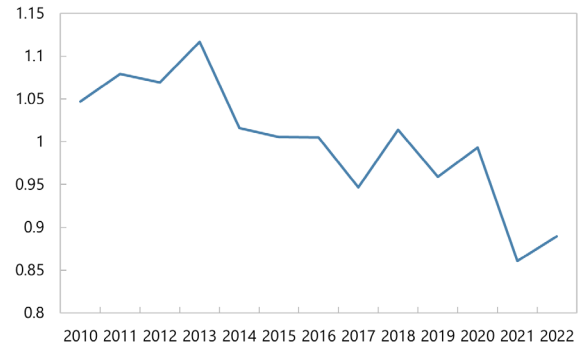
Source: Fitch Connect.

Number of Branches



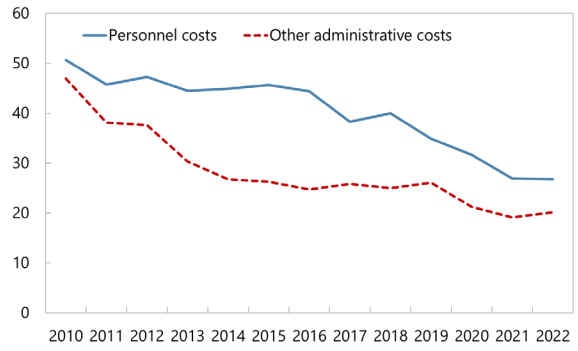
Source: IMF Financial Access Survey.

Relative Personnel Expense Per Employee against Italian Regional Banks
(Million euro)



Sources: Fitch Connect and IMF Staff Estimates.

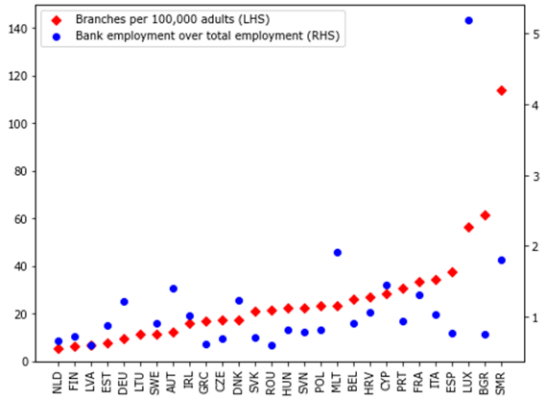
Personnel Costs and Other Administrative Costs
(Million euro)



Sources: San Marino Authorities and FSI.

4. San Marino's banking sector is oversized relative to the country's population. Despite the consolidation, bank branches per capita and size of banking employment rank among the highest compared with EU countries: bank branches per capita, in particular, is almost twice the highest level in the EU. In addition, the business opportunities of San Marino banks are further limited as many export-oriented manufacturers have access to Italian bank credit.[2]

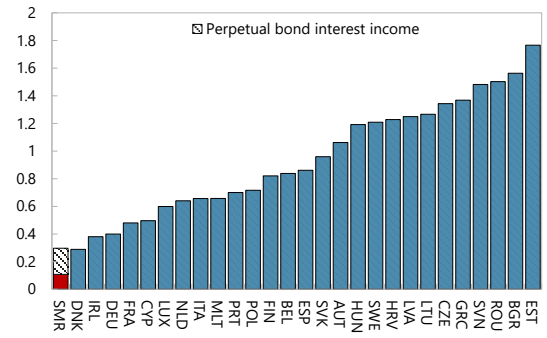
Branches per 10,000 Adults and Bank Employment over Total Employment (2022)



Sources: IMF Financial Access Survey and Eurostat.

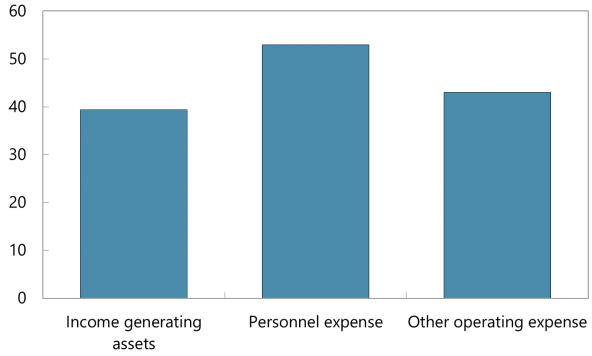
[2] See Annex V in IMF Country Report No. 2023/373.

Return on Assets of EU Countries, 2022
(Percent)



Sources: FSI and IMF staff calculations.

Income Generating Assets, Personnel Expense and Other Operating Expense, 2022
(Percent, relative to 2010 level)



Sources: FSI, Fitch Connect and IMF staff calculations

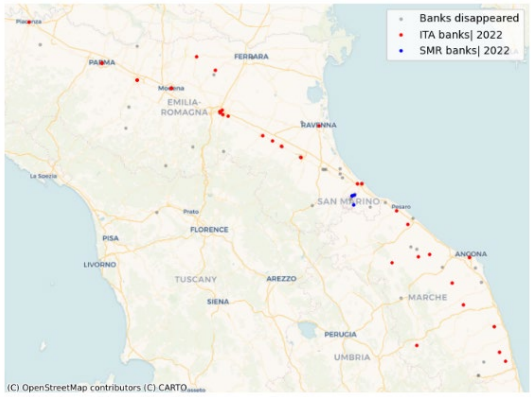
5. Improving profitability is more pressing because of several challenges. First, the NPL reduction strategy is unveiling banks' legacy losses as well as potential capital shortfalls. Second, the EU association agreement will subject banks to higher regulatory standards and compliance costs. Third, the opening of the banking sector with Italy as required by the agreement will increase competition. Finally, the liquidity constraint of an euroized economy puts more burden on fiscal policies to resolve problem banks.

6. This annex evaluates San Marino banks' long-term viability, identifying the gaps in cost efficiency and providing quantitative recommendations. We compare San Marino banks with Italian banks in adjacent regions which have similar size and business models. The resulting similarity in labor and financing costs between the two groups enables us to quantify areas of improvement.

A. Comparing San Marino Banks with Italian Benchmarks

7. We use data of peer Italian regional banks as benchmark to analyze San Marino banks' profitability and cost efficiency.[3] To identify areas of improvements, we select comparable Italian banks with similar labor costs, funding options, and business models. San Marino currently has four banks (BAC, BSI, BSM and CRSM), with assets levels ranging from 0.8 to 1.5 billion euro. The largest bank, CRSM is state-owned. Sammarinese banks' major source of financing is customer deposits, and their major source of income is interest from customer loans and securities portfolios. We focus on Italian banks

Location of San Marino Banks and Peer Banks in the Region



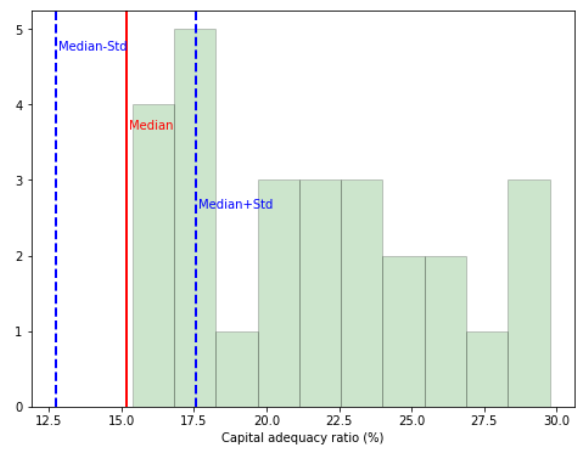
Source: Fitch Connect.

[3] See Data Annex at the end of the paper for data sources and definitions of balance sheet variables used.

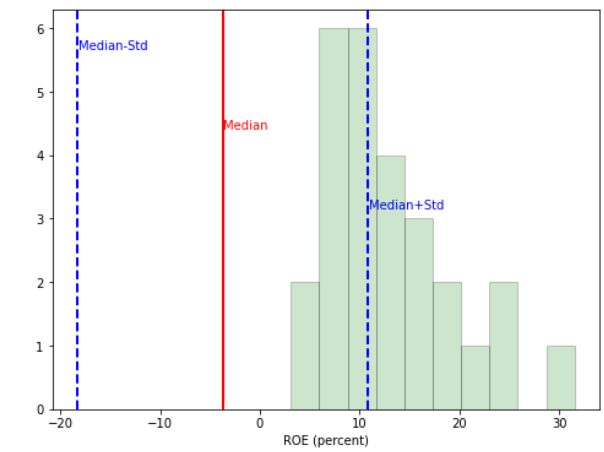
whose headquarters are in nearby regions, namely, Emilia-Romagna and Marche, and follow similar business models as identified with the approach in Ayadi et al. (2015).

8. The strategy identifies 27 Italian regional banks as peers. Their total assets are comparable to San Marino's banks, with a median of 1.5 billion euro. Most of peer Italian banks are within a two-hour drive from San Marino. Two of them are in Rimini, overviewed by Monte Titano. They are direct competitors to San Marino banks. There are currently no foreign bank branches in San Marino, but San Marino banks already face competition from Italy. Due to absence of a physical border, Italian banks are easily accessible to the export-oriented corporate sector, who often have factories on both side of the border. The mortgage lending market, however, is accessible only to San Marino banks. This paper examines San Marino banks' balance sheet structure vis-a-vis their Italian regional peers, in terms of profitability, capital adequacy, asset quality, cost efficiency and funding costs.

9. Most San Marino banks are less profitable than Italian peers. We evaluate ROE and ROA based on operating profits which exclude one-off profits such as revaluation of owned real estate. Under these measures, three out of four San Marino banks rank the lowest in profitability compared with Italian peers. In general, Italian regional banks also have higher capital adequacy ratios. Combined with the higher ROE, it indicates Italian regional banks have sufficient capital and retained profits to sustainably support credit growth, while most San Marino banks are capital constrained. As a result, external corporate loans from Italy are growing due to more competitive credit supply.[4]



Histogram of 2022 Capital Adequacy Ratios
(Percent)



Histogram of 2022 ROE
(Percent)

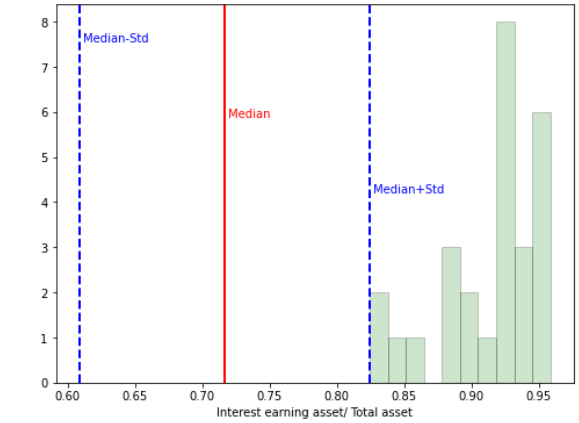
Sources: Fitch Connect and bank balance sheets.

10. Most San Marino banks have asset quality lower than the Italian peers. Three San Marino banks have the lowest income generating assets over total assets and over total funding. The asset quality is still recovering from the banking crisis. Sizable NPLs and fixed assets recovered from NPLs need to be resolved, and deferred tax assets yield little income when bank profits are low. Moreover, CRSM's income generating assets include a €455 million state perpetual bond with a

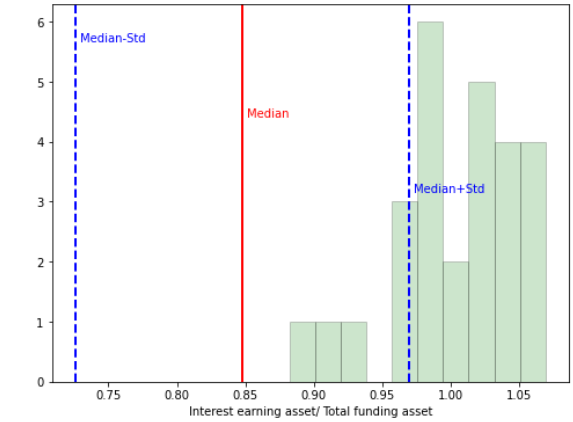
[4] See Annex V in IMF Country Report No. 2023/373.

below market interest rate.[5] Low asset quality is constraining the net interest income of San Marino banks.

Income Generating Nowcasting Assets over Total Assets (Ratio)



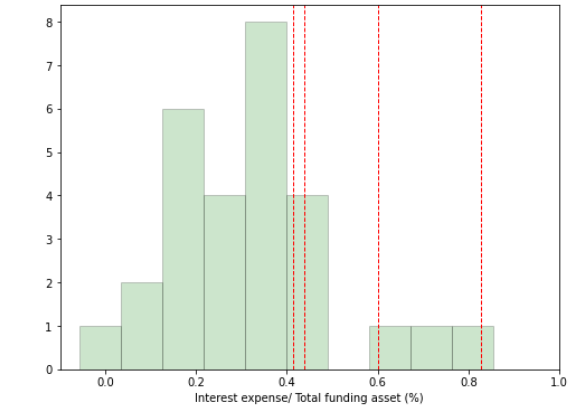
Income Generating Assets over Total Funding (Ratio)



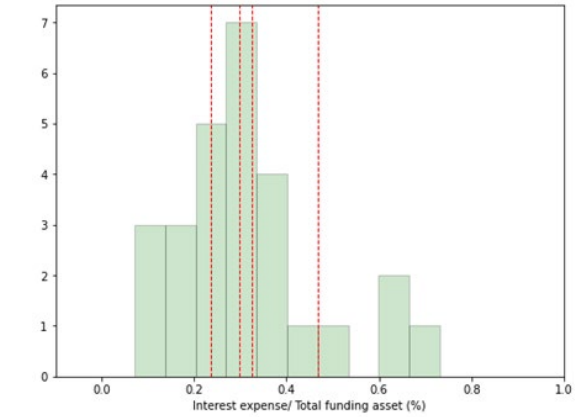
Sources: Fitch Connect and bank balance sheets.

11. Funding costs of San Marino banks are largely aligned with Italian peers. Thanks to the Euro bond[6], confidence in San Marino banks has improved, evidenced by significantly lower funding costs in 2022 than 2020.

2020 funding costs
(Percent)



2022 funding costs
(Percent)



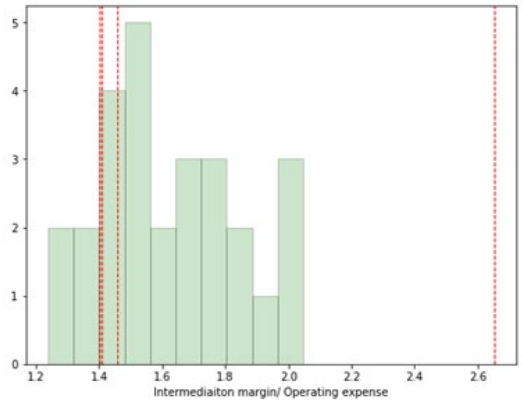
Sources: Fitch Connect and bank balance sheets.

[5] The bond amounts to €455 million and carries a fixed interest rate of 1.75 percent, while the country's Eurobond carries a coupon of 6.50 percent.

[6] San Marino issued €340 million Eurobond in 2021 for the first time, with an interest rate of 3.25 percent. The bond was rolled over in 2023 with a maturity of 3.75 years and an interest rate of 6.50 percent.

12. Most San Marino banks' cost efficiency is lower than Italian peers. We analyze the distribution of intermediation-margin-to-operating-expense ratio of San Marino banks and Italian benchmarks. Intermediation margin is computed as the sum of net interest income, net commissions and other operating income. Operating expense is computed as the sum of personnel expense, administrative expense and other operating expenses incurred through the normal course of business. The measure doesn't include the recognition of legacy loan losses and focuses more on variables under current managements' control. In terms of intermediation margin to cost ratio, three San Marino banks are near the lower end of the distribution, while the other one is the most efficient bank in the sample. We proceed to examine the drivers of higher operating costs.

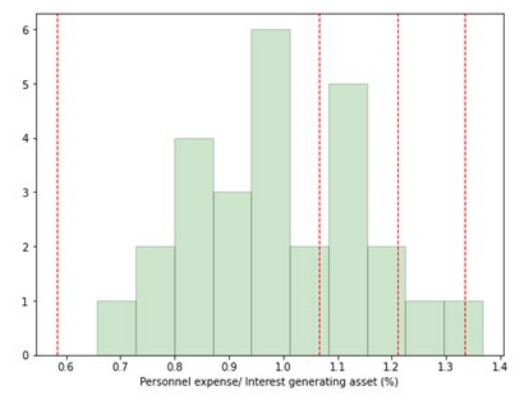
Intermediation Margin Over Operating Expense
(Ratio)



Sources: Fitch Connect and bank balance sheets.

13. Most San Marino banks' personnel costs are higher than that of regional peers. We compare the ratio of personnel costs over income generating assets across banks. A higher level indicates excessive human resources are used to maintain income generating assets of a bank. For CRSM, we compute the ratio without including the perpetual bond in the denominator, because the income from the perpetual bond is a transfer from the state which requires no human resources to manage. Two out of four San Marino banks are on the high end of the distribution in terms of the personnel costs to income generating assets ratio. One bank is slightly above the median, and one bank is the lowest in the distribution.

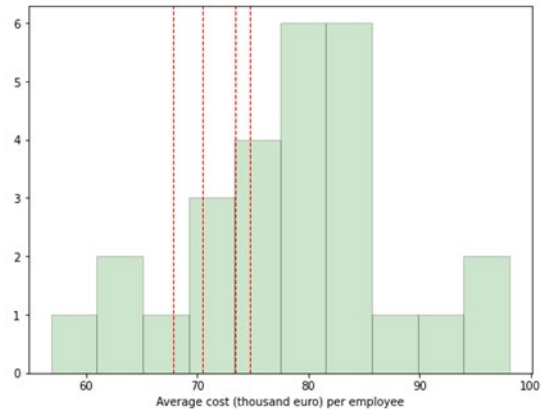
Personnel Costs Over Income Generating Assets
(Percent)



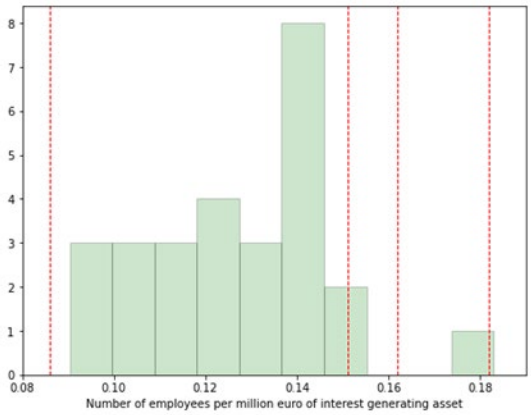
Sources: Fitch Connect and bank balance sheets.

14. An analysis of personnel costs indicates that most San Marino banks employ more staff compared to their Italian peers while wage levels are in line with the regional banks. Three out of four San Marino banks are on the higher end of number of employees to income generating assets. In contrast, one bank is in the left tail of the distribution. At the same time, wages are largely line with the Italian peers. The three San Marino banks therefore have sizable room to improve efficiency by reducing the number of employees.

Personnel Cost Per Employee
(Thousand euro)



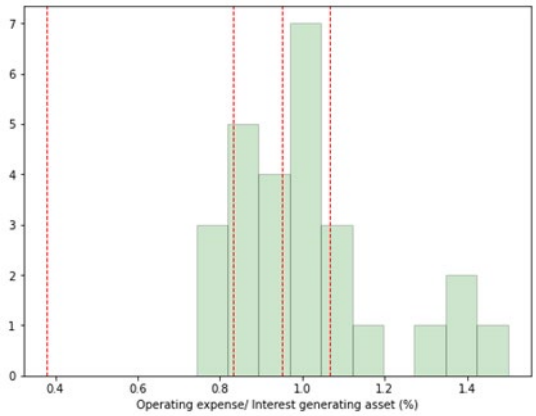
Number of Employees Per Million Euro of Total Income Generating Assets
(Employees per million euro)



Sources: Fitch Connect and bank balance sheets.

15. San Marino banks' other operating expense are broadly in line with the Italian peers, but there is still room for improvement in some banks. We examine the ratio of other operating expenses (excluding personnel costs and credit impairment costs) over total earning assets. Two Sammarinese banks are at the lower end of the distribution; one is around the median; and one bank is close to the 75th percentile of the distribution, indicating sizable room for improvements. Note that the other operating expense recorded on balance sheets omits the opportunity costs of owning branches. Selling and renting out the underlying properties can potentially improve profits and liquidity.

Other Operating Expense Over Income Generating Assets
(Percent)

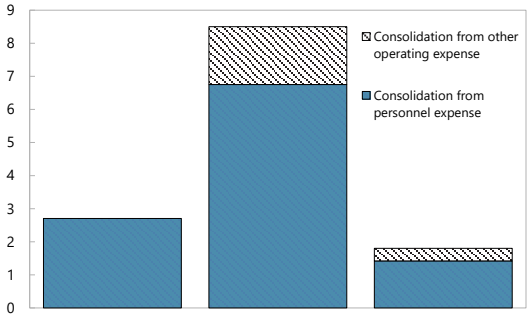


Sources: Fitch Connect and bank balance sheets.

B. Policy Recommendations

16. Targeting cost structures consistent with Italian regional peers can significantly improve San Marino banks' profitability. Given the imperative to accumulate capital buffers for recognizing legacy losses, San Marino banks should target the ratio of personnel expenses over income generating assets and the ratio of other operating expenses over income generating assets to the corresponding 25th percentile of Italian banks.

ROE Improvement from Consolidation
(Percent)

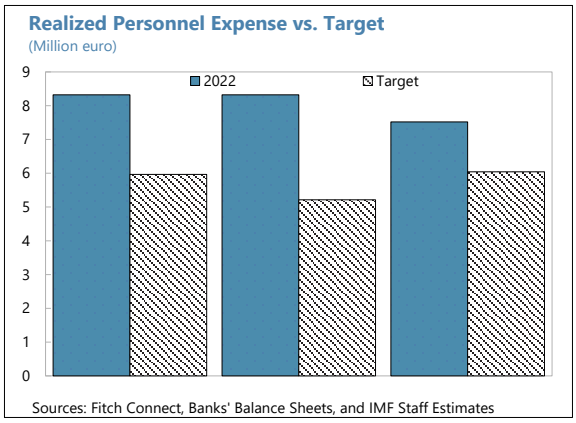


Sources: Bank balancesheets and IMF staff estimation

The target is realistic as one Sammarinese bank and close-by Italian banks function well under much lower costs. We identified sizable room of improvements in three Sammarinese banks. For one bank, the possible improvement is more than 8 percent in ROE. For the other two, the improvements are smaller ranging from 2 to 3 percent of ROE.

17. To achieve the target, most Sammarinese banks will have to reduce personnel costs significantly, primarily through rationalizing staff levels. The task can be challenging. Past experience suggests stringent labor laws and strong labor unions make the needed adjustments difficult. Also, the near-term costs can increase from severance packages. On the other hand, increasing income generating assets is a slow process, due to the small, segmented, and illiquid real estate market. To achieve the long-term viability, it is therefore necessary to rationalize banks' cost structure. Three banks should respectively target reducing personnel costs by 20 to 30 percent respectively. At the same time, two banks should respectively target reducing other operating costs by 5 to 15 percent, while the remaining two banks' other operating costs are below most of the Italian peers in the region.

18. The share of income-generating assets should be increased. To facilitate NPL recovery, the insolvency framework should be updated, and the state should consider relaxing constraints on nonresident's ownership of real estate. Barriers on shareholding structure should be removed to attract external capital. The state should gradually replace the perpetual bond in CRSM with marketable instruments to increase capital quality in line with EU regulations. On the liability side, there is limited room to reduce funding costs which are already aligned with the Italian peers.



19. A system-level consolidation can be considered. The banking sector remains oversized. The number of bank branches needs to be reduced by more than two thirds to reach the EU level. Despite the imperative to reduce costs, recent banking sector collective agreements restarted wage growth to achieve cumulative wage growth of 9.5 percent by 2025, due to the previous agreement expired and not renewed for 13 years. Further system-level consolidation can overcome these issues if gains from cost reduction within individual banks are not sufficient.

C. Conclusion

20. It is key to improve the competitiveness of the banking sector well-ahead of the 15-year time frame granted by the EU association agreement. The analysis shows most San Marino banks need to catch up in terms of asset quality, capital adequacy and cost efficiency. While the San Marino banking sector's income generating assets have shrunk considerably, operating costs, in particular, personnel costs have not adjusted sufficiently. These issues need to be resolved quickly to

mitigate potential capital needs from NPL securitization and calendar provisioning in the near-term. In the long-term, San Marino banks need to be competitive in cost efficiency, growing income generating assets, and managing risks to take advantage of the opening of the financial market.

Reference

Ayadi, R., De Groen, W. P., Sassi, I., Mathlouthi, W., Rey, H,. & Aubry, O. (2015), "Banking Business Models Monitor 2015, Europe.", International Research Centre on Cooperative Finance.

Annex I. Data Annex

Our goal is to compare banks' balance sheet ratios under the same definitions. In practice, accounting standards differ across countries. We adjust the ratios to be consistent across banks, but there can be small estimation errors due to approximation. Nevertheless, they are not going to affect our main conclusions. The Italian and Sammarinese banks' balance sheet data is sourced from Fitch Connect. Due to difference in accounting rules, Sammarinese banks' other operating expense includes value adjustments related to financial leasing assets which are treated as interest expense by Italian banks. I adjust Sammarinese banks' balance sheet data from Fitch Connect to be consistent with accounting practices in Italy, using value adjustments of financial leasing assets recorded in annual reports. The following paragraphs list the definitions of some of the balance sheet items used in this paper.

1. The return of equity is computed as the ratio of operating profit over total equity. Operating profit from Fitch Connect excludes non-recurring income and non-recurring expense. Operating profit is the sum net interest income, total non-interest operating income minus loan and credit impairment charge.

2. The income generating assets used in this paper is "Total Earning Assets" from Fitch Connect, which is defined as the sum of net loans, loans and advances to banks, total securities, insurance assets, investments in property and other earning assets (other financial assets that are designed to make a return, which do not fall into any other category).

3. The total funding used in the paper is "Total Funding" item from Fitch Connect, which is defined as the sum of total deposits, money-market and short-term funding, total long-term funding, derivatives liabilities and trading liabilities.

THE IMPACT OF THE EU ASSOCIATION AGREEMENT[1]

The EU association agreement represents opportunities, but also challenges for San Marino. This annex summarizes main features of San Marino's association agreement, then it reviews another small state experience of integration in the EU single market, and finally presents the results of two business-surveys of expected outcomes of the EU association. The main conclusions are that the EU association will improve Sammarinese institutions and help to mobilize domestic reforms including the strengthening of the financial sector. As a result, an increase in confidence in the San Marino economy is expected. Concert efforts across government will be needed to ensure EU standards are adopted, so firms and citizens can maximize the benefits of the deeper integration with the EU single market.

A. What does EU Association Agreement Imply?

1. The EU Association Agreement is a treaty that regulates San Marino's participation in the EU Single Market. After almost a decade of negotiations, Andorra and San Marino successfully concluded negotiations on the EU association agreement. The negotiations, which started in 2015, involved intense political and technical discussions and concluded successfully in December 2023. With only a few pending technical issues, the agreement is expected to be ratified and to enter into force next year. The agreement aims to deepen integration and cooperation with the EU by promoting the free movement of goods, services, capital, and people.

2. The agreement provides a legal framework that ensures a level playing field for San Marino's firms and citizens within the EU Single Market. The agreement sets an institutional framework that includes legal provisions, dispute resolution procedures, and independent supervision of various markets. It covers the free movement of goods, services, capital, and people, as well as so-called horizontal supporting provisions, such as corporations law, state-aid, competition, and environment legislation among others. Recognizing the unique characteristics of small states, the agreement incorporates specific adaptations —transitional periods and tailored implementations— to the general norms of the EU single market.

Free Movement of Goods

3. San Marino is already highly integrated in the EU goods market,[2] so additional benefits will come from reducing red tape and transaction costs, including dealing with certifications and legal disputes. Specifically, San Marino products will circulate freely within the EU single market without discrimination. San Marino will be able to set its own product certification bodies recognized by the EU. If disputes arise, Sammarinese producers can invoke the mutual recognition principle. San Marino consumers will be sheltered from discrimination based on

[1] Prepared by Ezequiel Cabezon.

[2] Due to Cooperation and Customs Union Agreement, 1991

nationality. Therefore, San Marino only negotiated an adaptation for the state-owned utility company to maintain the monopoly on the supply of electricity and gas until end 2030.[3]

Freedom to Provide Services

4. The legal provisions on service access will increase San Marino's access to EU market and improve Sammarinese service-regulatory institutions. Free flow of services ensures services can be provided in the EU single market, even when the provider is not a national from where the service is provided. San Marino will have to improve its administrative procedures and authorization regimes, by creating a digital one-stop shop, ensuring rights to information, and implementing the Internal Market Information System (IMI) —an online tool that facilitates the exchange of information among public agencies across the EU. To achieve these goals, additional resources will be needed and San Marino has negotiated transition periods of 1½ to 3 years.

5. The integration of financial services will require sizable efforts to address gaps between San Marino and the EU framework. To access the EU market of financial services, San Marino must transpose EU financial services regulation and supervision practices within 15 years at the latest —however the authorities consider that the majority of financial sector segments will benefit from the opening to the European single market in a considerably shorter time. The opening of markets can be achieved at different times for the banking, insurance and reinsurance, asset management, and securities markets segments. A transition process has been agreed, that starts with San Marino pointing out which segments will be integrated gradually and which immediately. Then San Marino authorities will submit a road map to meet the conditions[4] for integration for each market to the European Commission (EC). Following the road map implementation, the EC will assess the transposition and application of the EU norms of the financial sector as well as the supervisory infrastructure and decide if the integration of the financial segment can proceed or if further efforts are needed. The process will be resource intensive, but it will strengthen San Marino's financial system.

Free Movement of Capital

6. The free movement of capital can facilitate FDI and foster the real estate market in San Marino. While San Marino has no capital controls on financial flows, the agreement can streamline regulation for merges and acquisitions. Given San Marino's limited land, the country will keep the current procedures for nonresidents purchases of real estate. Currently nonresidents' purchases beyond two real estate units need official authorization provided they have underlying interests in the country. The streamlining of this regulation can help attract foreign investors to the real estate market to acquire up to two units.

[3] After 2030 the adaptation can be extended.

[4] There are three conditions: i) full transposition and application of relevant normative; ii) the existence of good supervisory capabilities and arrangements; iii) MoUs on supervisory cooperation, exchange of information and consultation between the San Marino and the EU supervisory authorities (EBA, ESMA, EIOPA, Authority for AML/CFT).

Free Movement of People

7. The free movement of people will allow Sammarinese citizens to settle in the EU, while new non-national residents to San Marino will only increase gradually. To preserve national identity, a quota system for permanent residents will be set —which will be reviewed every 10 years. The quota limits the new residence permits for EU citizens. Every year, the residence permits for EU citizens will increase by 3 percent of the active EU residents in San Marino in the previous year.

Table 1. Republic of San Marino: Quotas System for New Resident Permits

	2024	2025	2026	2027
EU citizens residents in San Marino	3,335	3,435	3,538	3,644
Δ residents permit (3 percent quota)	…	+100	+103	+106

8. The free movement of workers will not substantially change the San Marino labor market. San Marino labor market is already relatively liberalized for cross-border workers, so foreign workers flows will remain stable. The recognition of professional qualifications will have a positive impact as San Marino will recognize EU professional qualifications, while professional qualifications issued by San Marino will be recognized by the EU. This will improve the prospects of San Marino University degrees and foster labor mobility. A temporal adaptation of 2-year period was negotiated on the recognition of professional qualifications —to align with EU standards of administrative cooperation through the IMI System. San Marino will have to integrate the government agencies monitoring the implementation of EU provisions related to free movement of workers.

Horizontal Provisions

9. Government efforts will also be needed to adopt horizontal provision. Among them are:

- Competition: It will be required to apply EU norms on public procurement, on intellectual, industrial, and commercial property. Transposing EU legislation will strengthen the public procurement and enhance competition leading to a more efficient use of public funds. It will also allow San Marino companies to participate in EU governments tenders.
- Social policy: San Marino will have to transpose EU-legislation on health and safety in the workplace, work posting, secondments, and work through temporary agencies. Transition periods of 1-5 years for different legislations have been granted, but government efforts and investments from Sammarinese firms will be needed to comply with EU standards.
- Corporate law: San Marino will need to amend corporate registers regulations, digitalize, and connect them with EU registers. Therefore, San Marino was granted a transition period of 2 years for connecting the business registers to EU registers.

10. San Marino's government will need to develop expertise in EU laws and regulation. The agreement includes the obligation to communicate new draft legislation to the European Commission, and also the European Commission to communicate to San Marino new draft EU

legislation. Analyzing these legislations will require significant efforts. Some departments, including foreign affairs and justice have already hired additional staff to work on it.

B. What was the Outcome of the Liechtenstein's European Integration?

11. Liechtenstein European Economic Area (EEA) integration experience provides valuable insights for San Marino, given the countries' similarities. Both countries are small states without physical borders that were already highly integrated into EU member neighbors' economies at the time of signing the agreement. Both countries have dynamic manufacturing sectors that account for about ⅓ of GDP and rely heavily on cross-border workers. Additionally, both were listed as tax heavens[5] in the past, which adversely affected their financial sectors. Finally, both countries have capacity constraints in the public administration due to the small size of population.

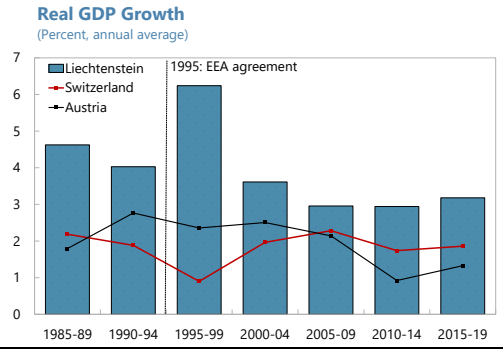
Selected Indicators, 2022

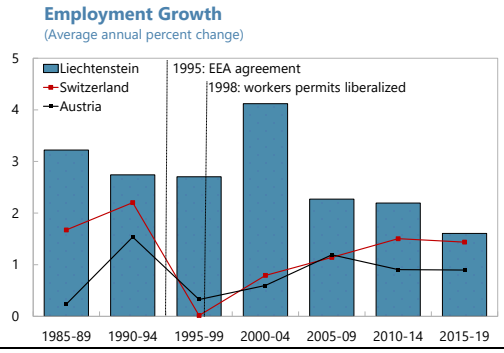
	Liechtenstein	San Marino
Area (Km^2)	160	61
Population (thousand)	39.7	34.0
Nominal GDP (million Euros)	6,988	1,739
GDP per capita (Euros)	176,126	51,121
Employment (thousand)	42.5	22.9
Share of cross-border workers (percent)	56.8	31.5
Share of Manufacturing in GVA (percent)	36.7	36.3
Bank assets-to-GDP (percent)	1,099	244.5

Source: Country authorities; and IMF staff estimates.

12. San Marino's EU association agreement and adaptations are similar to Liechtenstein's agreement. Liechtenstein's agreement was enacted in 1995 and the key adaptations were: i) a quota system[6] for new permanent residents to preserve national identity and ii) restrictions on the purchases of real estate for nonresidents given the limited inhabitable land. In Liechtenstein's experience, parts of the agreement related to free provision of financial services and free movement of people were the most challenging to implement.

Figure 1. Liechtenstein: Selected Indicators

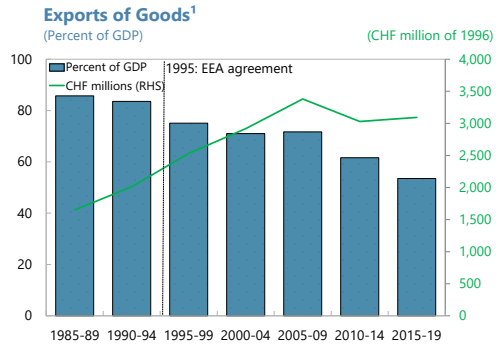


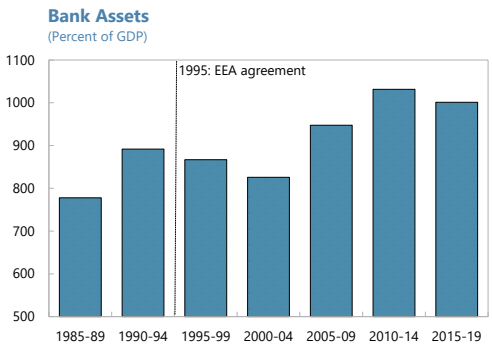


[5] Liechtenstein exited OECD uncooperative tax jurisdictions list in 2009. San Marino exited Italy's tax black list in 2014.

[6] The adaptation restricted new permanent resident permits to 56 employed and 16 non-employed persons.

Figure 1. Liechtenstein: Selected Indicators (Concluded)





1/ Export of goods does not include trade between Switzerland and Liechtenstein.

Sources: Country authorities and IMF staff estimates.

13. It is difficult to quantify the exact effect of the EEA agreement on Liechtenstein economy due to globalization trends in the 1990s and domestic structural developments. Many reforms in Liechtenstein may have occurred even without the EEA agreement (E.g., VAT was introduced in 1995). Unprecedented changes in the global economy —globalization, technology innovation, increased cooperation in Europe— and Liechtenstein specific shocks —such as the listing of the country as uncooperative tax heaven during 2007-09— undermines a theoretical-dynamic assessment. In addition, data weaknesses were significant before 1995. Nevertheless, data point out a spike in real GDP growth shortly after the agreement was enacted, and an acceleration in employment growth with lag, as EEA agreement helped to liberalize working permits in 1998. However, data do not show clear changes on external trade or banking sector assets after 1995.

14. After 30 years, the EEA agreement is perceived as having a positive impact on the economy. On the one hand, the agreement increased the legal provisions, which expanded the administrative costs and reduced domestic discretion. On the other hand, the agreement guaranteed the access to the EU single market. Before signing the agreement, the expectations varied considerably among businesses. While manufacturing businesses were committed to the agreement, some trade and financial services firms were concerned with competition. There were also concerns among liberal professions, engineers, architects, and doctors. The competitive pressure was a major challenge for businesses initially, but the economy overcome the challenges. After 30 years, the EEA agreement has a positive image according to surveys.[7] Large companies rate the agreement more positively than small companies, despite the access to the EU single market provided a major advantage for all companies.

15. Significant efforts were needed to align financial services, but this allowed the diversification of the sector. The global financial crisis and the 2007 listing of the country as tax heaven, adversely impacted the financial sector. Therefore, the authorities focused on closing the gaps with EU regulatory and supervision framework. This included upgrades on investment funds and OTC derivatives regulations, upgrades in banking regulation, and the adopting EU framework

[7] 74 percent of individuals believe the EEA agreement as a success model and 81 percent of individuals believe the agreement is the best option for the country in the coming years.

for crisis management and bank resolution. As a result of Liechtenstein access to the EU financial services market, banks expanded. The banks' balance sheets expanded significantly.[8] Also, Liechtenstein's insurance and investment funds developed thanks to the EU association in particular, as some Swiss financial intermediaries used Liechtenstein to access the EU single market. Overall, the financial sector leverages the access to the EU financial market to actively promote to international clients the benefits of using Liechtenstein financial institutions for wealth management

16. The complex legal provisions of the EEA agreement implied continued large efforts to transpose EU legislation into the domestic normative acts and to enforce it. The EU single market normative is continually evolving, setting a key challenge for a small state with limited staff. While prior to the agreement, there were concerns on the disproportionate costs to monitor the EU normative, currently officials have a positive view of the agreement. The EEA agreement increased demands on the public administration, but also helped the modernization and increased efficiency of the administration. Liechtenstein official reports acknowledge that staff needed to administer the agreement efficiently was underestimated initially, but over time this challenge was addressed.

17. Government reports on the status of the EEA agreement had a key role. The Liechtenstein government had published reports on the progress of the EEA agreement every 5 years. These reports monitor the implementation progress, enhance accountability to address pending issues, and communicate with businesses and citizens. These reports were submitted to parliament and were key to define next steps ahead.

C. What are the San Marino Businesses' Expectations from the Agreement?[9]

18. To assess the expected impact of the agreement, the IMF team has conducted two business-surveys in cooperation with industrial associations. The IMF designed and conducted the surveys with the support of key businesses' chambers. A businesses survey for small services businesses (which represent largely SMEs) and another survey for manufacturing business (which represent largely large businesses) have been performed. Each survey aimed to: i) assess the qualitative expected impact of the agreement and ii) identify areas where government efforts would be a priority to maximize the benefits of the agreement. The online surveys were answered during July 2024 and reflected the businesses' expectations. By that time, many businesses were still analyzing the agreement.

19. The Surveys were answered by members of two business chambers in San Marino:

- **The manufacturing business survey was conducted with the support of the Associazione Nazionale Industria San Marino (ANIS).** Fifty-eight businesses, covering different segments

[8] Nevertheless, few new banks have established since 2001 and no large international bank operates in the country.

[9] The author thanks to ANIS and OSLA for their collaboration. In particular to Romina Menicucci and Alice Monti from ANIS, as well as Marilisa Mazza and Michele and Michele Andreini from OSLA. The author also appreciated Andrea Neri from Banca D'Italia for the methodological suggestions.

but largely in the manufacturing sectors, answered the survey. The sample has a high coverage in terms of employment and turnover (Table 2)

- **The small services business survey was conducted with the support of Organizzazione Sammarinese degli Imprenditori (OSLA).** Twenty-seven businesses, covering different segments but largely in the services sectors, answered the survey. The sample is representative in terms of diversity, but coverage on employment and turnover was modest.

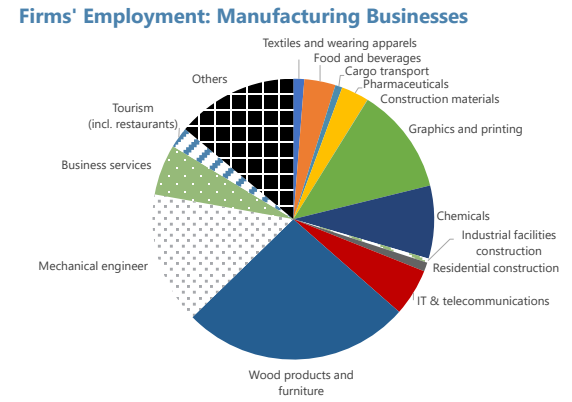
Table 2. Republic of San Marino: Surveys: Summary Indicators

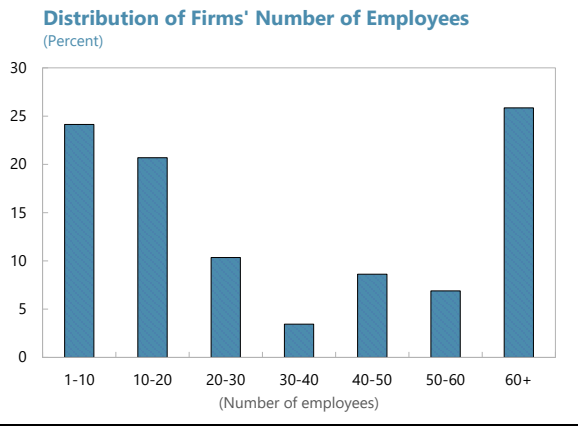
	Firms	Employment	Turnover	
	(number)	(percent of total employment)	(percent of total turnover)	(percent of GDP)
Manufacturing businesses survey	58	15.6	22.2	64.2
Small services businesses survey	27	0.8	0.8	2.4

Source: IMF staff calculations.

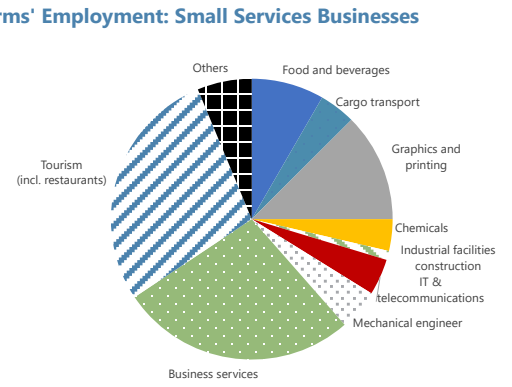
Figure 2. Republic of San Marino: Sectoral and Size of Firms in the Survey

Large Manufacturing Businesses





Small Services Businesses



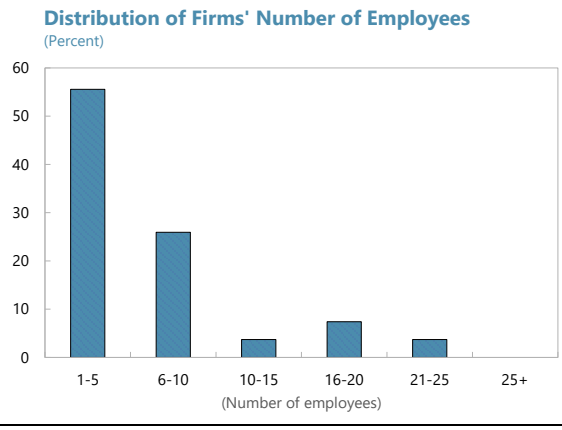
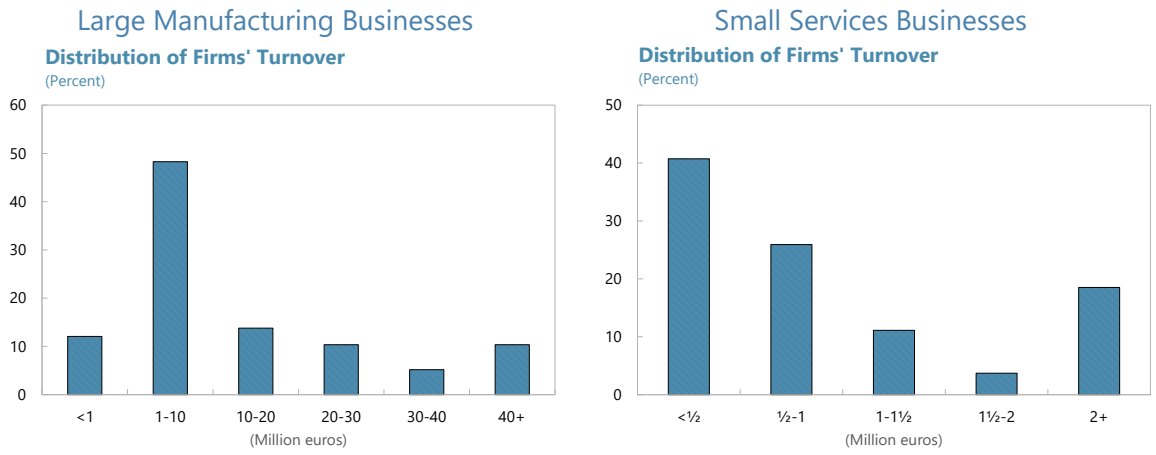


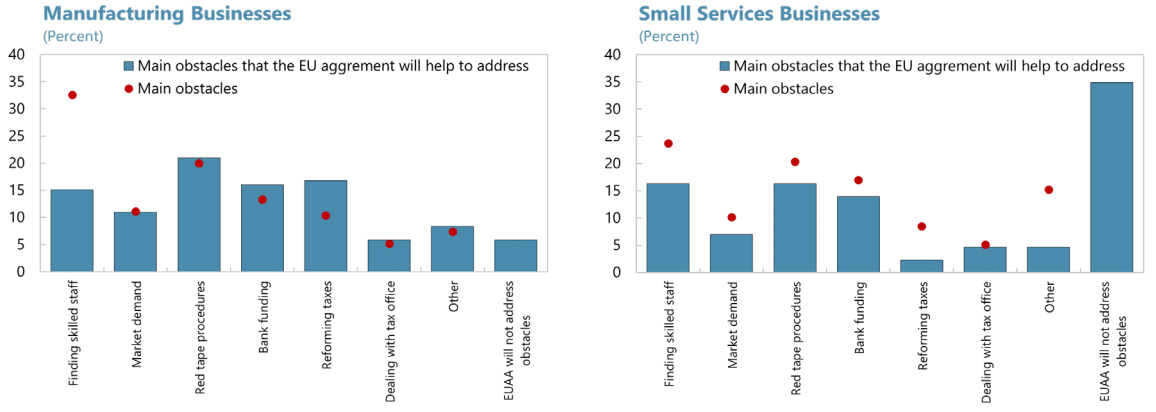
Figure 2. Republic of San Marino: Sectoral and Size of Firms in the Survey (Concluded)



Source: IMF staff calculations.

20. The association agreement is expected to eventually address several of the main obstacles for businesses. When businesses are asked what the three main obstacles are for doing business (red dots), and which obstacles the EU association will help to address (chart blue bars), the distributions are sparse. Making it difficult to identify main obstacles. Despite this heterogeneity, the firms do expect that the agreement will address obstacles. This can be seen as the share of firms reporting a main obstacle (red dots) is close to the share of firms reporting the obstacle is expected be addressed with the EU association (Blue bars). In particular, both small services and manufacturing businesses expect the association agreement will address red-tape and funding issues.

Figure 3. Republic of San Marino: Main Obstacles for Doing Business



Source: IMF staff calculations.

21. Still, manufacturing and small services businesses have different views on what obstacles the association agreement will help to address. Specifically:

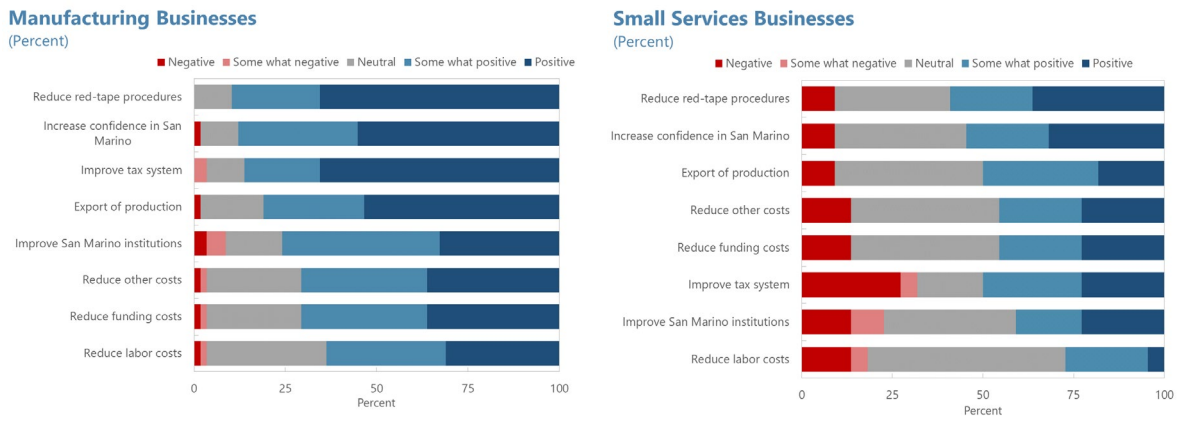
- Only 7 percent of manufacturing firms expect the association agreement will not address obstacles for doing business, but this share soars to 35 percent among small services businesses.

- Manufacturing firms expect the association agreement to have a moderate role to address the skilled staff shortages, but small services businesses consider the agreement will have a more relevant role to address these shortages.

- Manufacturing businesses expect the agreement to address tax impediments, but only a small share of small services businesses expect this.

22. The expectation of a positive impact from the association agreement is more prevalent among manufacturing businesses than small services companies. More than half of the manufacturing businesses assess the impact of the association will be "positive" or "somewhat positive" (Figure 4). In contrast, less than 50 percent of small services businesses expect a "positive" or "somewhat positive" impact from the association across most areas. Overall, small services businesses assess that the agreement impact as neutral.

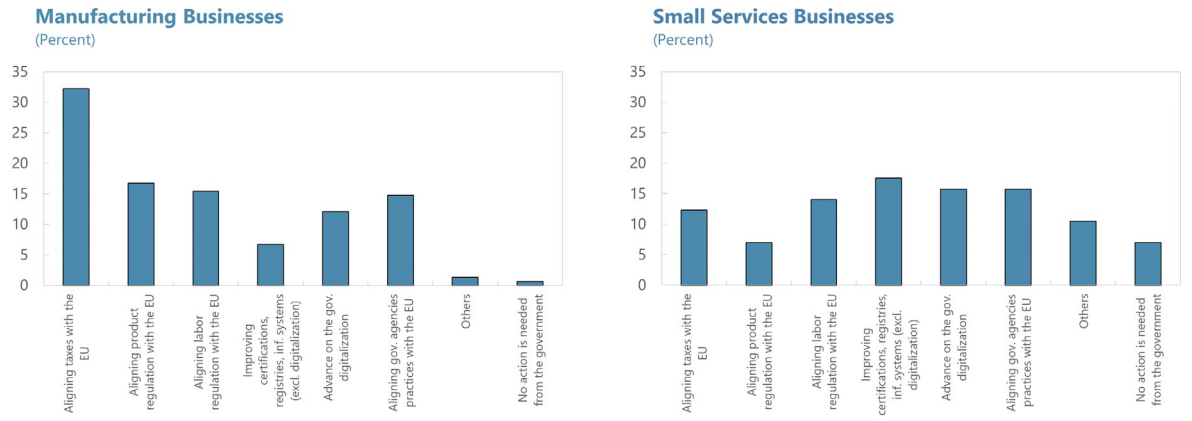
Figure 4. Republic of San Marino: What is the Expected Impact of the EU Association Agreement for San Marino?



Source: IMF staff calculations.

23. Both manufacturing and small service companies rank increased confidence and reduced red-tape procedures as the top two positive effects from the association agreement. For manufacturing businesses, the main positive (including "some what positive") impact will be via: i) increasing the confidence in the country, ii) improving the quality of Sammarinese institutions, iii) improving the tax system, and iv) reducing red-tape burden. For small service businesses, the main positive impact will be via: i) increasing the confidence in the country, ii) reducing red-tape burden, iii) reducing other cost (beyond funding and labor), and iv) improving the quality of Sammarinese institutions. However manufacturing and small services businesses seem to have very different views on the impact of the association agreement on the tax system. While 75 percent of manufacturing companies expect a positive (or "somewhat positive") impact on the tax system, only 40 percent expect positive (or "somewhat positive") impact on the taxes. Furthermore, about 31 percent of the small services businesses expect the EU association will have a negative impact on the tax system.

Figure 5. Republic of San Marino: What can the Government do to Maximize the Benefits of the EU Association?



Source: IMF staff calculations.

24. Different businesses have different views on what should be the priorities for the government. Manufacturing businesses point out that government efforts should prioritize aligning the tax system with the EU (this is related to moving forward with VAT and streamlining taxes reporting systems). In contrast, small service businesses have a more diverse view on the priorities. They signal that government efforts should focus on upgrading registers, labor regulation, digitalization, and enhance Sammarinese government office to adopt EU standards. Navigating these different demands can be challenging for the government. A suitable option would be to prioritize by addressing gaps that can generate more employment or more fiscal revenue in the near term. This will allow more maneuver space while addressing the remaining gaps.

A NOWCASTING TOOL FOR ESTIMATING SAN MARINO'S QUARTERLY AND ANNUAL GDP[1]

"The problem of predicting the present, the very near future, and the very recent past is called nowcasting."[2]

Nowcasting is used in economics and finance to estimate current or very recent states of economic indicators that are released with significant lags, used for gauging the state of economy in real-time or near-real-time. In San Marino, critical economic data such as GDP are not published quarterly, and its annual estimates are released with lags as long as three quarters. This creates a challenge for the timely understanding of current economic conditions in the country. Nowcasting fills this gap by utilizing high-frequency indicators (HFIs)—such as monthly or quarterly indicators thought to be correlated with economic activity—to provide lower-frequency (i.e., annual) estimates of real GDP before official figures are released. In the process, high-frequency estimates of GDP are also obtained, enabling policymakers and analysts to make informed decisions based on the most current economic data.

A. The DFM Approach to Nowcasting

4. Approaches to Nowcasting range from bridge equations (Trehan, 1989; Parigi and Golinelli, 2007) to machine learning (Richardson, Mulder and Vehbi, 2021). Literature reviews include BańBura, Giannone and Reichlin (2012) and Stundziene *et al* (2023). This paper uses Dynamic Factor Models (DFMs) as in Mariano and Murasawa (2003), Giannone, Reichlin and Small (2008), and Bańbura and Modugno (2014).

Overview of Dynamic Factor Models

5. The analytical approach adopted in this note postulates that the comovements in high-frequency indicators of macroeconomic variables have a common element that can be captured by a single (or a few) underlying unobserved variable(s). Stock and Watson (1991) call this latent variable the general "state of the economy."

6. Following Mariano and Murasawa (2003), we use maximum likelihood factor analysis to extract the unobserved state of the economy from a mixed-frequency dataset consisting of annual real GDP in San Marino, and both monthly and quarterly coincident business cycle indicators from San Marino and neighboring Italian regions. Predicated on the assumption that a small number of latent factors can capture the co-movements among a *larger* set of observed

[1] Prepared by Carlos de Resende.

[2] The Oxford Handbook of Economic Forecasting.

variables, DFMs reduce the dimensionality of these large datasets by extracting the common factors, which are then used to forecast (nowcast) the variables of interest, such as real GDP growth.

7. The model structure can be represented by a *measurement* equation and a *state* equation. The former relates a vector of observed variables (Y_t) at time *t* to underlying (unobserved) common factors (F_t):

$$Y_t = \Lambda F_t + \epsilon_t, \qquad (1)$$

where Λ is a matrix of factor loadings that define the strength of links between each indicator in Y_t and unobservable common factors, and ϵ_t is a vector of idiosyncratic errors (possibly autocorrelated but with a random iid component). The state equation governs the dynamic law of motion) of the factors as:

$$F_t = \mathrm{A}F_{t-1} + \eta_t, \qquad (2)$$

where A is a matrix of parameters to capture autoregressive of factors and η_t are iid factor innovations.

Estimation and Forecasting

8. The first step towards estimating DFM models is to cast it into a state space form like (1)–(2). Because the model is linear in the unobserved variables, the Kalman Filter can be used to construct and evaluate the Gaussian likelihood function (Harvey, 1981). The filter recursively constructs minimum mean square error (MMSE) estimates of the unobserved common state vector F_t, given observations on Y_t and trial set of parameters (i.e., an initial "guess" set by the econometrician). It also permits the calculation of *retrospective* estimates of F_t. The likelihood function can be used to estimate the unknown parameters Λ and A by maximum likelihood. Once the model is estimated, the common factors are used to nowcast the target economic variables, leveraging the state equation's predictive power (Stock and Watson, 1991).

Application to San Marino's GDP

9. To estimate the DFM for nowcasting GDP in San Marino, we consider 30 series in the vector of observable variables, Y_t. See Table 1.

Table 1. Republic of San Marino: Nowcasting GDP: Data Used

Annual Frequency		
Series	**Unit**	**Sample**
Real GDP	2015 € Million	2002 – 2022
Quarterly Frequency		
Series	**Unit**	**Sample**
Purchasing Managers Index	Index	2010Q1 – 2023Q4
Credit Card – SMR, Financial Institutions	2015 € Million	2018Q1 – 2024Q2
Credit Card – SMR, Merchants	2015 € Million	2020Q1 – 2024Q2
Monthly Frequency		
Series	**Unit**	**Sample**
Unemployment Rate	Percent	Jan 2002 – July 2024
Unemployment Rate Stricter Definition	Percent	Jan 2002 – July 2024
Youth Unemployment Rate	Percent	Jan 2002 – July 2024
Total Employment	Millions of persons	Jan 2002 – July 2024
Employment in Manufacturing Sector	Millions of persons	Jan 2002 – July 2024
Imports of Goods and Services	2015 € Million	Dec 2002 – June 2024
Exports of Goods and Services	2015 € Million	Dec 2002 – June 2024
Exports of Manufacturing Goods	2015 € Million	Jan 2015 – May 2024
SMaC Transactions	2015 € Million	Jan 2015 – July 2024
Tax Revenues	2015 € Million	Jan 2017 – Aug 2024
Tourism: Arrivals	Millions of persons	Jan 2002 – Aug 2024
Tourism: Hotel Nights	Millions of persons	Jan 2002 – Aug 2024
Tourism: Visitors	Millions of persons	Mar 2002 – Aug 2024
Wage Supplementation Hours Paid	Hours	Jan 2014 – June 2024
Wage Supplementation Sum Paid	2015 € Million	Jan 2014 – June 2024
Italian Exports to SMR	2015 € Million	Jan 2010 – May 2024
Consumption of Electricity	KWH	Jan 2007 – May 2024
Economic Activities	Number of firms	Jan 2004 – July 2024
Industrial Production	Index	Jan 2014 – May 2024
Economic Activity Indicator	Index	Dec 2015 – May 2024
Emilia Romagna Confidence Index: Consumption	Index	Jan 2002 – Aug 2024
Emilia Romagna Confidence Index: Industry	Index	Jan 2002 – Aug 2024
Emilia Romagna Confidence Index: Services	Index	Mar 2005 – Aug 2024
Marche Confidence Index: Consumption	Index	Jan 2002 – Aug 2024
Marche Confidence Index: Industry	Index	Jan 2002 – Aug 2024
Marche Confidence Index: Services	Index	Mar 2005 – Aug 2024

10. The list of variables described in Table 1 contains indicators that capture different aspects of the business cycle in San Marino—labor markets, external trade, private consumption, tourism, industry and manufacturing, and confidence in the economy—and are thought to be correlated with real GDP. By capturing the underlying economic dynamics through the extracted factors, the model (1)–(2) can provide timely estimates of GDP growth as new monthly information becomes available. This approach is particularly advantageous for small economies like San Marino, where traditional economic indicators may be sparse or delayed, enabling more responsive and informed policy decisions.

11. All data series described in Table 1 that are expressed in current euros were deflated by SMR CPI. Lower-frequency data (annual and quarterly) were interpolated to their monthly counterparts. Annual real GDP and quarterly Purchasing Managers Indicator (PMI) were interpolated using Cholette's (1984) modification of the method originally proposed by Denton (1971), relying on several monthly indicators in Table 1 as benchmarks. Quarterly confidence indicators from neighboring Italian regions Emilia Romagna and Marche were interpolated using the same method but without tracking any benchmark series.[3]

12. Both the interpolated and original monthly series were then transformed to make them stationary. Series expressed in levels, regardless of units of measure—such as GDP, imports, tax revenues, and credit card transactions (in euros), employment (persons), and electricity consumption (KWH), or as index numbers, such as industrial production and confidence indices—were transformed using the first difference of their natural log multiplied by 100, which is approximately equal to their percent growth rates. For unemployment rates, which are already stationary and expressed in percentage, their absolute difference (in percentage points) was used. All changes were calculated on a year-on-year (YoY) basis (i.e., relative to the same month of previous year).

13. To reduce the number of estimated parameters, two final transformations were applied. First, all the observable series expressed in log-differences were subtracted from their averages, so a constant term in measurement equation (1) is not needed. Finally, the principal component of selected groups of variables were extracted and used as single indicators to further reduce the dimensionality of the system.[4]

[3] Consider a high-frequency indicator h thought to be correlated with lower-frequency benchmark series z, whereby both series being observed. For each lower-frequency period k divided into T high-frequency subperiods, this method finds an interpolated series x(t) for each t Î [1, T] by setting the x(t) sequence that minimizes the squared sum of the differences in the ratio x(t)/h(t) relative to its lag (i.e., x(t -1)/h(t -1)) while constraining the sum S x(t) = z(k) or the average S x(t)/T = z(k) for all subperiod t in period k. If no benchmark series is specified, then z = 1 which amounts to setting the same x(t) for all subperiods in each period k. Cholette's (1984) modification removes a transient movement at the beginning of the interpolated series, which should track the movement in the lower-frequency benchmark series.

[4] For instance, the following groups of observable variables were combined into different one-principal component series: the three series of unemployment rate, the three tourism indicators, and the three confidence indicators from both the Emilia-Romagna and Marché Italian regions.

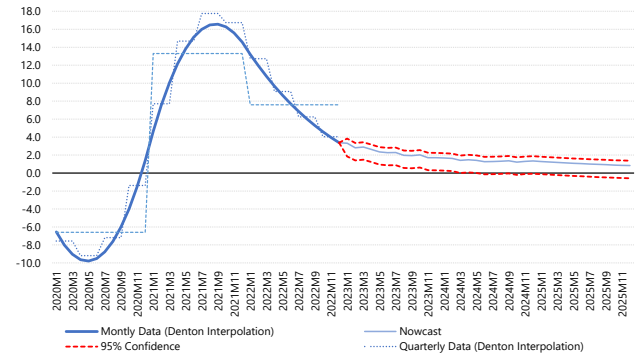
14. With all transformations, the vector Y_t of observable series in model (1)–(2) contains demeaned, YoY growth rates (in percent) or absolute changes (in percentage points) of GDP and 17 monthly indicators.

B. Results

15. Figure 1 displays the monthly data (interpolated from annual data) and forecasts of GDP growth—calculated as natural log-differences—in San Marino, along with 95 percent confidence bands obtained from 20,000 bootstrapped samples of the empirical distributions of forecast errors. For convenience, the interpolated quarterly and raw annual data are included.

Figure 1. Republic of San Marino: Monthly Backcasts and Nowcasts of GDP Growth

(in percent, year-on-year)

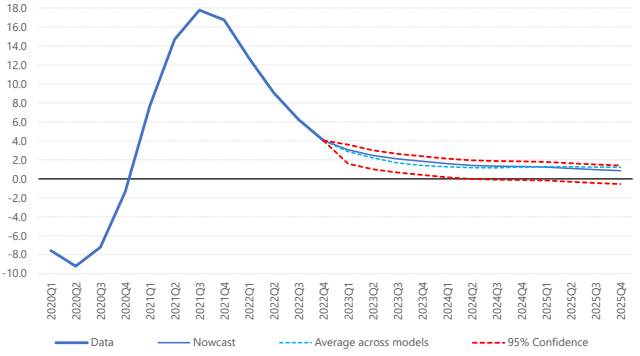


Source: IMF staff estimates.

16. Results indicate that, on a year-on-year basis, monthly GDP was growing at 4.1 percent by the end of 2022, decelerated to 2.8 percent by mid-2023, and further declined to 1.9 percent by September 2024. The model also produces forecasts beyond 2024, based on the intrinsic autocorrelation embedded in the observable series and captured by the unobserved common factor assumed to be driving GDP.

Figure 2. Republic of San Marino: Quarterly Backcasts and Nowcasts of GDP Growth

(in percent, year-on-year)



Source: IMF staff estimates.

17. Figure 2 displays the quarterly forecasts implied by the monthly forecasts along with the average forecast profiles across 23 different DFMs.[5] Note that the average forecast across models tracks the nowcast profile quite well, indicating that the robustness of the nowcasts.

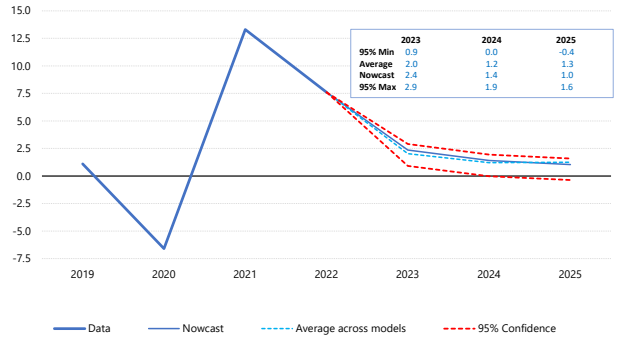
18. Figure 3 shows the implied annual forecasts. It again indicates the deceleration of GDP growth from very fast growth in the aftermath of the Covid-19 pandemic. From 7.6 percent in 2022,

[5] The 23 DFMs are constructed incrementally, staring from a two-variable DFM, and sequentially adding one monthly indicator at the time, up to the 17-variable DFM used in the main forecast. Because two different starting two-variable DFM incremented up to eight-variable DFMs were used, the total number of models is 23. See Annex for more details about the different DFMs used.

GDP growth is estimated to have declined to 2.4 percent in 2023 (backcast) and, based on data up to August 2024, to be at 1.9 percent in 2024 (nowcast).

19. Figure 3 also shows the 95 percent confidence bands, suggesting that the uncertainty around the forecasts is sizeable. For 2023, it indicates that GDP growth could have been as low as 0.9 percent or as high as 2.9 percent. For 2024 and 2025, the lower bound estimates are zero and -0.4 percent, respectively.

Figure 3. Republic of San Marino: Annual Backcasts and Nowcasts of GDP Growth
(in percent, year-on-year)

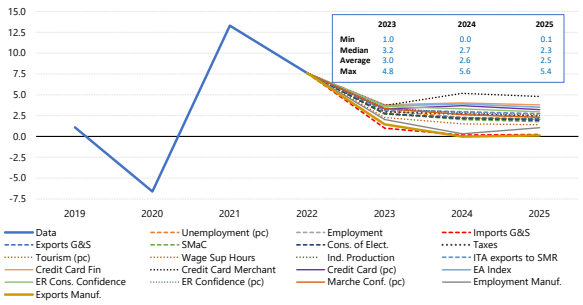


Source: IMF staff estimates.

20. While Figure 3 describes the main forecast, based on the 17-variable DFM, Figure 4 shows forecasts made with each individual indicator, one at the time. That helps on the assessment of the role of each individual indicator in the main forecast and sheds light on its main drivers. For example, the single-variable DFMs based on credit card data, total employment, the number of active firms in economic activities and the index of economic activity produced by the Statistics Office of San Marino are producing the highest forecast profiles for GDP growth in 2023-2025.

21. On the other hand, single-variable DFMs based on total imports, manufacturing employment, manufacturing exports, wage supplementation hours paid, total exports, and electricity consumption, in this order, produce the lowest forecasts for GDP growth over 2023-2025. In fact, considering a sequence of DFMs that start from a two-variable model based on manufacturing exports and employment and add these indicators one at the time will produce backcasts and nowcasts that pull the GDP growth forecasts towards negative territory (models DFM2B to DFM6B, Figure 5a).

Figure 4. Republic of San Marino: Annual Backcasts and Nowcasts of GDP Growth based on Single Indicators
(in percent, year-on-year)



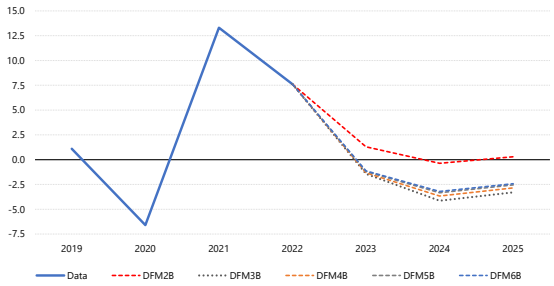
Source: IMF staff estimates.

As more indicators are sequentially added, one at the time, the forecast converges to the main forecast (DFM17) shown in Figure 3. Figure 5(b) displays the forecasts produced by all the 23 different DFMs listed in the Annex. The fact that the average of these forecasts, reproduced in Figure 3, tracks the main forecast very well is an indication of the robustness of the main forecast. The wide dispersion of forecasts shown in both Figure 4 and Figure 5(b) are an indication of the large uncertainty surrounding the forecasts. This is to be expected of data from a very open microstate

economy, like San Marino, which is frequently hit by external shocks that have more direct and full propagation to the economy relative to bigger economies.

Figure 5a. Republic of San Marino: Annual Backcasts and Nowcasts of GDP Growth based on Selected Sequentially Multiple Indicators

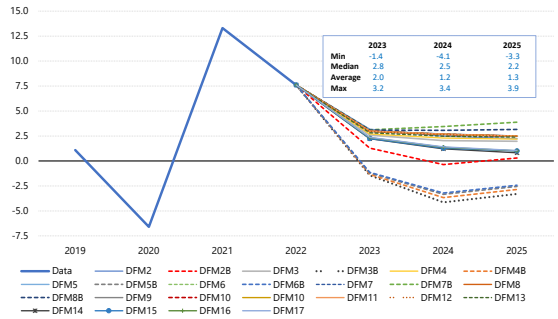
(in percent, year-on-year)



Source: IMF staff estimates.

Figure 5b. Republic of San Marino: Annual Backcasts and Nowcasts of GDP Growth based on Sequentially Multiple Indicators

(in percent, year-on-year)



Source: IMF staff estimates.

C. Concluding Remarks

22. This paper presents a simple implementable tool for Backcasting and nowcasting GDP growth in San Marino, which is only available at annual frequency and publicly released with significant lags. The tool can be used for gauging the state of the Sammarinese economy in real-time or near-real-time using readily available monthly indicators, facilitating the decision-making process for policymakers and allowing analysts to make more informed decisions based on the most current information.

Annex I. Sequential DFMs

1. 23 different models were considered, including the main 17-variable DFM.

Table AI.1. Republic of San Marino: Sequential DFMs

Model	Included Variables
DFM2	Total employment and the principal component of 3 unemployment series
DFM3	DFM2 series + imports of goods and services
DFM4	DFM3 series + exports of goods and services
DFM5	DFM4 series + SMaC
DFM6	DFM5 series + tax revenues
DFM7	DFM6 series + principal component of 3 tourism series
DFM8	DFM7 series + wage supplementation data
DFM2B	Exports of manufacturing goods and manufacturing employment
DFM3B	DFM2B series + imports of goods and services
DFM4B	DFM3B series + wage supplementation data
DFM5B	DFM4B series + exports of goods and services
DFM6B	DFM5B series + consumption of electricity
DFM7B	DFM6B series + industrial production
DFM8B	DFM7B series + SMaC
DFM9	DFM8 series + exports of Italy to San Marino
DFM10	DFM9 series + consumption of electricity
DFM11	DFM10 series + industrial production
DFM12	DFM11 series + Emilia-Romagna confidence indices (principal component)
DFM13	DFM12 series + Marche confidence indices (principal component)
DFM14	DFM13 series + exports of manufacturing goods
DFM15	DFM14 series + manufacturing employment
DFM16	DFM15 series + index of economic activity
DFM17	DFM16 series + credit card transactions

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