Sub-Sovereigns Rating Methodology

Sovereign and Public Sector

5 May 2022

Contacts

Giacomo Barisone
Managing Director
Sovereign & Public Sector
g.barisone@scoperatings.com

Alvise Lennkh
Executive Director
Sovereign & Public Sector
a.lennkh@scoperatings.com

Jakob Suwalski
Director
Sovereign & Public Sector
j.suwalski@scoperatings.com

Table of Contents

1. Introduction

This document presents our methodology for assigning short-term and long-term issuer credit ratings to sub-sovereigns outside of the United States[1] and their debt obligations. The criteria set out in this methodology are intended to be applicable to higher-tier governments (regional governments, states or communities) and lower-tier governments (cities, districts and municipalities). We believe that a 'framework-driven' approach is best suited to the assignment of sub-sovereign ratings. This approach reflects the importance of the varying frameworks and intergovernmental relationships between sub-sovereign and sovereign entities as well as the resulting country-specific debt management procedures and liquidity practices. Our sub-sovereign methodology takes the lessons of the recent financial crisis into account as well as institutional and financial trends, and has the following characteristics:

- **Framework-driven approach**

Our analysis acknowledges the importance of the relationship between sub-sovereign and sovereign government tiers. We therefore determine the degree of intergovernmental integration between government tiers by analysing the institutional framework, which results in an indicative downward rating range from the sovereign rating. This approach allows us to explicitly consider the interdependence between institutional frameworks and individual credit profiles.

- **Transparent quantitative and qualitative scorecards**

We provide a transparent and detailed presentation of our analytical framework, including a rationale for each key rating factor. Our methodology uses scorecards to enhance rating transparency and comparability, underpinned by consistent assessments of: i) the institutional framework across countries per government tier; and ii) the individual credit profile of a government tier. In order to assess the individual credit profile, we use a qualitative scorecard (QS) which includes a total of 10 forward-looking assessments. We complement our qualitative assessment by applying a core variable scorecard (CVS) with which we establish individual strengths and weaknesses by benchmarking quantitative variables against national peers.

- **Exclusion of mechanistic and absolute thresholds**

An essential component of our approach is the assessment of the sub-sovereign's individual credit profile compared to national peers within an indicative rating range generated by our framework assessment. By comparing individual credit ratios with national peers, we acknowledge that sub-national fiscal, economic and debt data: i) need to be viewed in the context of the respective framework; and ii) are susceptible to distortion by significantly different national accounting policies. Our approach ensures that the selected ratios are more meaningful, compared to the application of absolute thresholds.

- **Extended balance sheet and liquidity assessment**

Our approach is underpinned by new research on sub-sovereign risk that emerged during the global financial crisis. Liquidity pressures and the accumulation of high off-balance risks can be a major source of fiscal deterioration for a sub-sovereign, as observed during recent crises. It is our view that a reliance on short-term borrowing for cash flow purposes coupled with off-balance sheet risks can erode the financial health of sub-sovereign governments, leading to the circumvention of tight budgets and/or limitations on direct debt. Consequently, we place significant emphasis on our individual credit profile analysis of a sub-sovereign's liquidity practices and its ability to service debt in the case of interrupted access to capital markets and external liquidity. We also focus on risks from off-balance sheet financing, including, for example, contractual contingent liabilities, implicit contingent liabilities and policy commitments in the form of future pension payments.

- **Incorporation of environmental, social and governance (ESG) sustainability aspects**

Our approach includes an assessment of ESG risks, whereby governance is part of our formal risk assessment, while environmental and social risks are captured under additional considerations. Our assessment of governance includes an analysis of the effectiveness and quality of policymaking including the quality and impartiality of public services provided by a sub-sovereign. Environmental and social risks also play an important role for sub-sovereign funding, including the issuance of sustainability bonds and the use of special loan programmes provided by public international institutions such as the European Union. We recognise this development with an explicit assessment of a sub-sovereign's activities towards sustainable finance and investment to reduce water or air pollution as well as policies related to ecological and social sustainability.

---

[1] The sub-sovereign fiscal framework in the United States has developed in entirely different historical and political contexts compared for example to European sub-sovereigns as reflected in their heterogeneity. US sub-sovereigns have unique characteristics which include a mature US muni bond market with municipalities having the ability to secure their bonds with a "general obligation" pledge, differing levels of tax autonomy and a formal bankruptcy procedure, with the situation differing substantially between US States and local governments. Scope considers this form of set-up as exceptional with the need to define a dedicated rating approach.

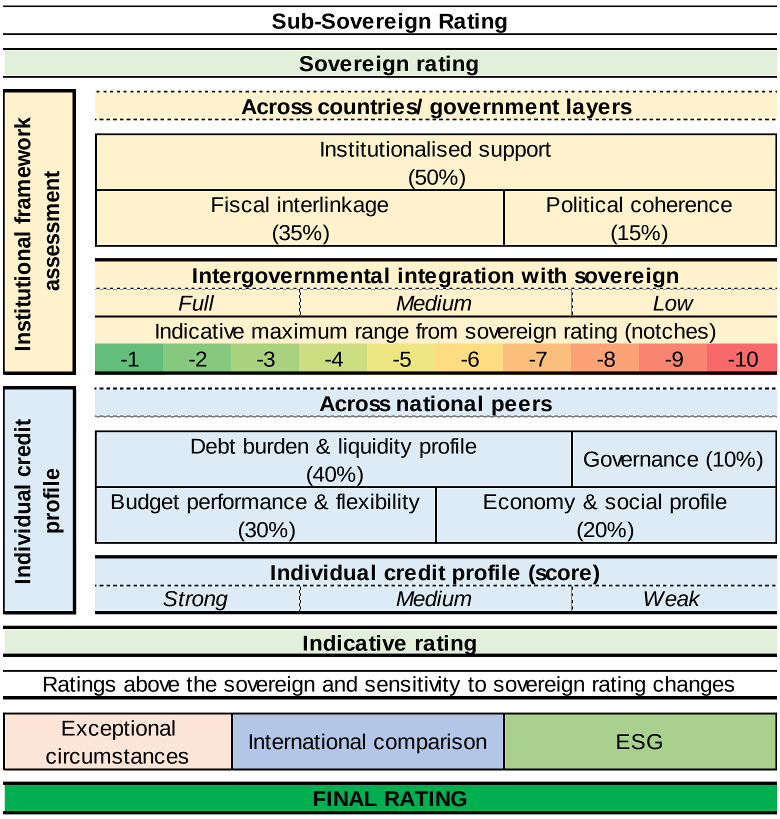
1.1 Scope's definition of sub-sovereigns

Under our methodology, a sub-sovereign is a particular level of regional or local government that is assigned the responsibility to provide a certain range of public services along with sources of revenue to fund these mandates. We do not consider public or private companies (such as hospitals, schools, universities or government-related entities) which undertake some of the sub-sovereign government's responsibilities as being part of that government, but we do assess the links between them. Scope's methodology for assigning issuer credit ratings to government-related entities (GRE) can be found here.

1.2 Summary of Scope's 'framework-driven' approach

Our approach to rating sub-sovereigns is split into two fundamental steps. As the first step, we determine the degree of intergovernmental integration between the sovereign and sub-sovereign entity per government tier. Based on our assessment of the framework under which a sub-sovereign operates, we determine the indicative rating range vis-à-vis the sovereign rating whereby, the higher (lower) the level of integration, the narrower (wider) the rating range. Having established the indicative rating distance to the sovereign within which the ratings of the respective sub-sovereigns can fall, we move on to the second step, which is the analysis of a sub-sovereign's individual credit profile, in order to determine the final rating.

Figure 1: Overview of Scope's 'framework-driven' approach



Source: Scope Ratings GmbH.

The key distinction between the two assessments is that the framework drivers reflect specific government-tier factors which are usually valid for all sub-sovereigns of the same government tier within a country, as opposed to the assessment of the sub-sovereign's individual credit profile. Thus, under our approach, an integrated institutional framework is a sufficient condition for a rating level close to the sovereign ratings, whereas a strong individual credit profile is a necessary condition for a rating level close to the sovereign ratings if there is a low level of intergovernmental integration. Our assessment of a sub-sovereign's creditworthiness starts with an assessment of the strength of sovereign and sub-sovereign intergovernmental integration, for the following reasons:

- First, in the case of financial distress, the ultimate recourse of a sub-sovereign to honour its obligations is not its own balance sheet but rather the willingness and ability of the sovereign or higher-tier government to provide additional or exceptional resources, usually via solidarity mechanisms. We are mindful that other sub-sovereigns of the same government tier can also provide resources in case of need, constituting a backstop for the sub-sovereign's ability to honour its financial obligations.

- Second, we believe that sub-sovereigns are usually not shielded from the jurisdictions of national courts and consequently their ability to honour debt obligations depends on the functioning of the relevant national legal system, regulation and/or policy framework. The recent financial crisis confirmed that the capital market funding ability of sub-sovereigns (even of those whose autonomy is enshrined in the national constitution) is strongly impaired if the sovereign faces financial distress. Consequently, we only allow a sub-sovereign to pierce the sovereign rating in rare and exceptional circumstances that would have to be justified on a case-by-case basis.
- Third, different institutional frameworks have varying effects on a sub-sovereign's individual credit profile, affecting its liquidity practices and debt management. Starting our analysis with the institutional framework and complementing it with a peer comparison per national government tier thus acknowledges country-specific parameters and allows us to evaluate the differences between the strongest and weakest entities within each framework.

Step 1: Institutional framework assessment

In this part of the assessment, we determine the intergovernmental integration between the sovereign and sub-sovereign by assessing the supportiveness of the institutional framework. We use three key analytical factors to assess systemic support: i) institutionalised support; ii) fiscal interlinkage; and iii) political alignment between government tiers. The outcome of this assessment is used to determine the indicative downward rating range between the sovereign rating and the rating of the sub-sovereign entity. This ranges from 0 to -10 notches, whereby a higher (lower) level of intergovernmental integration results in a lower (higher) adjustment from the sovereign rating. Details are provided in chapter 2.

Step 2: Individual credit profile

Having established the indicative rating range from the sovereign within which the ratings of the respective sub-sovereigns can fall, we assess the individual credit profile, based on a qualitative and quantitative analysis of four key risk categories: i) debt burden and liquidity profile; ii) budget performance and flexibility; iii) economy and social profile; and iv) quality of governance. This risk assessment is conducted on a scale from 1 to 100 whereby a high (low) score is associated with a strong (weak) credit profile. Details are provided in chapter 3.

Step 3: Indicative sub-sovereign rating

We determine the indicative sub-sovereign rating by mapping the indicative maximum rating distance from the sovereign rating, as determined by the institutional framework assessment, to the individual credit profile. The rating committee decides on the indicative positioning of a sub-sovereign within the given rating range. The mapping is shown in Figure 2.

Figure 2: Mapping the individual credit profile to the institutional framework assessment

Indicative sub-sovereign rating			Individual credit profile						
			Strong		Medium			Weak	
			≥ 75	≥ 65	≥ 55	≥ 45	≥ 35	≥ 25	< 25
			Indicative maximum notch adjustment from sovereign rating:						
Institutional framework: integration with sovereign	Full	0 - 1	0	0	0	-1	-1	-1	-1
		0 - 2	-1	-1	-1	-1	-1	-2	-2
		0 - 3	-1	-1	-1	-2	-2	-2	-3
		0 - 4	-1	-1	-2	-2	-3	-3	-4
	Medium	0 - 5	-1	-2	-2	-3	-3	-4	-5
		0 - 6	-2	-2	-3	-3	-4	-5	-6
		0 - 7	-2	-2	-3	-4	-5	-5	-7
		0 - 8	-2	-3	-4	-4	-5	-6	-8
	Low	0 - 9	-2	-3	-4	-5	-6	-7	-9
		0 - 10	-3	-4	-5	-6	-7	-8	-10

A practical application of the mapping process is presented in the case study in section 6.1.

Step 4: Additional considerations

Based on this indicative sub-sovereign rating, we assess the sensitivity of the sub-sovereign's rating to changes in the sovereign rating (chapter 4) and, finally, include additional considerations to determine the final rating which include: i) an assessment of exceptional circumstances; ii) an international peer comparison; and finally iii) ESG factors. Details are provided in chapter 5.

2. Institutional framework assessment

2.1 Overview

In our view, the ability and willingness of the sovereign or higher-level government to provide support in the case of need is a key determinant of a sub-sovereign's creditworthiness. The ability to provide support is assessed by the sovereign's, or alternatively, the higher-level government's issuer rating, while the willingness to provide support depends on the degree of intergovernmental integration[2] between the government tiers, as defined by coherent legal frameworks and de-facto applied rules. As such, our framework assessment is centred around the comparison of different jurisdictions.

Typically, the framework assessment is identical across sub-sovereigns of the same government layer except for the rare cases of sub-sovereigns which operate under distinct legal frameworks and whose characteristics cannot be captured by their individual credit profile. In these cases, our framework assessment may differ across sub-sovereigns of the same government tier within a country based on their legal status. In section 4, Scope also defines the conditions under which a sub-sovereign may be rated higher than the sovereign.

2.1.1 Definition of the rating range

The degree of intergovernmental integration between the sovereign and government tier defines the indicative maximum deviation of the sub-sovereign's rating from that of the respective sovereign. This methodology reflects a low degree of intergovernmental integration with an indicative distance of up to minus ten notches. A history of rare default events given usually strong economic and institutional ties between government tiers justifies the maximum 10-notch indicative range threshold. Conversely, we usually consider the sovereign rating as an indicative upper ceiling for sub-sovereigns, unless the conditions apply as defined in section 4. We set the lower indicative range of the framework to a range of zero to minus one notches to reflect that even sub-sovereigns in highly integrated political systems are: i) separate legal entities; and ii) rely to a limited extent on their individual credit strength.

2.1.2 Intergovernmental integration

To account for the importance of a higher-tier government's ability and willingness to support a lower-tier sub-sovereign, we consider strong intergovernmental integration with a highly-rated sovereign as a sufficient condition for a high rating assessment, irrespective of the higher-tier sub-sovereign's individual economic and financial strength. Conversely, a strong individual credit profile is a necessary condition for more independent sub-sovereigns to receive a high rating.

We structure our analysis of intergovernmental integration between government tiers around three key factors: i) institutionalised support; ii) fiscal interlinkage; and iii) political coherence. For each category, we assess whether intergovernmental integration between the sovereign and sub-sovereign is 'strong', 'medium' or 'low'. The outcome of this assessment is then used to determine the indicative distance between the sovereign or higher-tier government and the rating of the sub-sovereign entity.

Where available, we use indices provided by Eurostat and the OECD for a preliminary assessment across frameworks to identify a sub-sovereign's intergovernmental integration with a higher-tier government. However, institutional frameworks and rules are characterised by complex peculiarities, which cannot entirely be captured on a purely quantitative basis. Thus, our framework integrates quantitative and qualitative components in order to determine the final rating range.

[2] The term 'intergovernmental integration' captures the relationship between government tiers, emphasising the degree of mutual reliance and coherent policymaking instead of one-sided dominance by the sovereign or higher-tier government. The distinction between intergovernmental integration and interlinkage is also based on our view that mutual dependence and agreement between two tiers of governments have a stronger impact on the willingness to provide support than one-sided dominance. The latter could more easily result in the default of a sub-sovereign government, if it is not involved in the decision-making process, in the case of significant delays in transfers received, unilateral revenue withdrawal or compression, or by the higher-tier government's refusal to provide support.

Figure 3: Institutional framework assessment – intergovernmental integration between government tiers

Institutional framework assessment

Intergovernmental integration between government layers

Category	Weight			Full integration	Medium integration	Low integration
Institutionalised support	**50%**	**25%**	**Transfer and bailout regime**	System-wide legal framework for transfers and/or track record of formal support	No legal framework but track record of discretionary support	Credible no-bailout clause and/or default history of SNG
		15%	**Borrowing limits**	Legal framework with credible fiscal/borrowing rules	Self-imposed fiscal rules with limited credibility	Non-existent or inappropriate fiscal rules
		10%	**Funding support**	Autonomous and/or joint issuance with risk weights aligned to the sovereign	Limited ability or prohibition to access capital markets	Autonomous funding and separate risk weights
Fiscal interlinkage	**35%**	**20%**	**Tax authority**	Shared tax authority across government levels	Central tax authority with limited revenue and expenditure flexibility	Separate tax authority with high revenue and expenditure flexibility
		15%	**Fiscal equalisation**	Strong alignment of fiscal capacity to attain equal living standards	Predictable equalisation of fiscal capacity to cover mandatory spending	Less predictable transfers or only special transfers to selected regions
Political coherence	**15%**	**10%**	**Distribution of powers**	Clearly defined and/or uniform responsibilities across jurisdictions	Heterogeneous distribution of legislative and executive powers across jurisdictions	Frequent political conflicts and persistent separatist movements
		5%	**Common policymaking**	Stongly integrated legislative process with high co-ordination needs across layers	Limited political co-ordination with one-sided dominance	No influence of SNGs on nationa legislation, unilateral control by central government

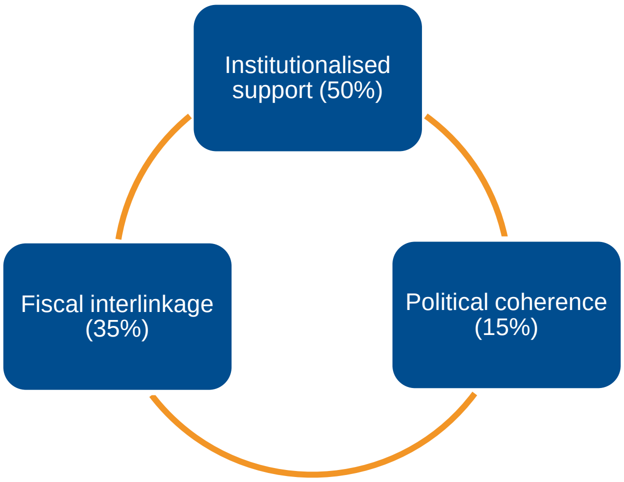
Integration	Institutional framework (indicative rating range)
0-100%	**(0-10)**
	downwards

NB. Calculation of the final rating range: the indicative notch adjustment from the sovereign ranges from 0 (full intergovernmental integration) to -10 notches (low intergovernmental integration). The seven sub-factors enter the calculation with their individual weight, multiplied by 0 (low intergovernmental integration), 50 (medium intergovernmental integration) or 100 (full intergovernmental integration). Accordingly, the final score for the interlinkage ranges from 0-100%. A one-notch adjustment reflects a score of 90-100%. There are linear adjustments along the scale up to a maximum of 10 notches for intergovernmental integration between 0-10%.

2.2 Qualitative assessment

In our view, institutionalised support from the sovereign and/or higher-tier government is the most important driver of the degree of intergovernmental integration between government layers. **It therefore accounts for 50% of our assessment**. Alongside transfers provided for by the constitution, bail-out rules and related practices, the willingness to provide support also depends on soft factors such as borrowing limits and funding practices. While **political coherence (category weight: 15%)** affects the quality of policy decisions and reflects the degree of co-ordination between lower- and higher-tier governments, it is less tangible than the factual integration of governments through **fiscal interlinkages (category weight: 35%)**. All three categories are usually interdependent. In general, the provision of institutionalised support requires a certain degree of political coherence and fiscal interlinkage across governments.[3]

Figure 4: Determinants of a higher-tier government's 'willingness to provide support'



Source: Scope Ratings GmbH

2.2.1 Institutionalised support

We assess institutionalised support based on: i) the transfer and bail-out regime and track record of support; ii) borrowing limits; and iii) the funding support between government levels. The relative weight of the three indicators for institutionalised support reflects our view that a legally binding bailout and transfer regime is the most tangible and trustworthy criterion for identifying strong intergovernmental integration on a *gone-concern* basis. Conversely, intergovernmental funding integration and limits on borrowing are assessed on a *going-concern* basis and considered as complements rather than substitutes for the bailout and support framework. Moreover, subnational fiscal rules have no impact or a limited impact on fiscal performance, given the expectation of bailouts and weak implementation.

➢ **Transfer and bailout regime**

The transfer and bail-out regime accounts for the outright legal requirement of higher-tier governments to provide support to a sub-sovereign. This support can either take the form of explicit transfers, emergency liquidity assistance, loans with concessional terms, guarantees or debt relief[4]. Our transfer and bailout regime assessment also includes an evaluation of the track record of discretionary and rules-based support measures. Intergovernmental integration is assessed as 'high' for those cases with a system-wide legal framework for transfers, confirmed by fundamental (court) decisions or public declarations favouring support. Frameworks which show a track record of financial support but provide no legal rules or public declarations favouring support are assessed as 'medium'. Finally, credible no-bailout regimes and/or a default history indicate that a country's sub-sovereigns are more subject to market discipline, which results in a 'low' assessment of intergovernmental integration.[5]

[3] Blöchliger and Kantorowicz 2015 provide a detailed assessment of fiscal constitutions in the OECD.
[4] We also define additional revenue grants (e.g. a higher tax share) or lower expenditure requirements as indirect support measures so long as these are explicitly dedicated and identified as such. Otherwise, revenue and expenditure relations are captured under fiscal interlinkage.
[5] In 2003, a Swiss Supreme Court declared that the canton Valais was not required to bail out the highly indebted municipality Leukerbad. We view this decision as sufficient evidence of a credible no-bailout regime in line with the relevant literature (see Feld et al. 2013).

➢ **Borrowing limits**

The second criterion we use to measure institutionalised support relates to legal frameworks that control the sub-sovereign's borrowing limits. Limits to debt financing usually refer to fiscal rules such as, for example, nominal budget or debt (service) targets enshrined in the constitution or set by public law including restrictions on debt and liquidity management limiting the sub-sovereign's exposure to currency risk. We assess the intergovernmental integration between government tiers as 'high' if permanent, quantitatively specified, legally binding and *credible* borrowing limits for a sub-sovereign exist. Conversely, we attribute 'medium' intergovernmental integration to those sub-sovereigns which adhere to either self-imposed or lax borrowing limits. Finally, borrowing limits are assessed as 'weak' if a sub-sovereign government neither faces a fiscal rule beyond its control nor a self-imposed limit to borrowing. Besides qualitative judgements, we use quantitative measures provided by the European Commission and/or the OECD's Fiscal Decentralisation Database[6].

➢ **Funding support**

The assessment of funding support relates to the debt financing frameworks and practices used by sub-sovereigns. To determine intergovernmental integration, we analyse funding practices (separate or common), the extent to which sub-sovereign debt is held by a higher-tier government and the regulatory treatment of sub-sovereign exposure in comparison with the respective sovereign's exposure to banks, which, in Europe, is determined by the European Banking Authority's Capital Requirements Regulation.

We assign a 'high' level of integration to sub-sovereigns with a history of notable common issuance volumes and the same risk weights as the higher-tier government. Common debt issuance between governments signals strong intergovernmental integration by offsetting interest rate differentials between governments[7]. Consequently, we interpret common funding as a provision of indirect support. Similarly, identical risk weights imply that the sovereign trusts in the sub-sovereign's credibility and capacity to issue debt on a standalone basis, despite institutional arrangements in place which reduce their default risk (i.e. bail-out rules). Therefore, if the sub-sovereign has access to autonomous funding but its risk weights are identical to the sovereign, we may assess intergovernmental integration as 'high'.

'Medium' funding support is assigned to sub-sovereigns whose: i) independent capital market access is restricted and/or whose debt is either held directly by the higher-tier government or indirectly via public institutions owned and controlled by the government; or ii) whose decisions to hold debt are often shaped by political considerations and/or depend on the higher-tier government's willingness to provide funding. Finally, we assign a 'low' degree of funding support to sub-sovereigns with completely autonomous funding practices, separate risk weights and/or a low share of debt owed to the higher-tier government.

Figure 5: Institutionalised support

Category	Weight			Intergovernmental integration between government layers Full integration	 Medium integration	 Low integration
Institutionalised support	50%	25%	**Transfer and bailout regime**	System-wide legal framework for transfers and/or track record of formal support	No legal framework but track record of discretionary support	Credible no-bailout clause and/or default history of SNG
		15%	**Borrowing limits**	Legal framework with credible fiscal/borrowing rules	Self-imposed fiscal rules with limited credibility	Non-existent or inappropriate fiscal rules
		10%	**Funding support**	Autonomous and/or joint issuance with risk weights aligned to the sovereign	Limited ability or prohibition to access capital markets	Autonomous funding and separate risk weights

Source: Scope Ratings GmbH

2.2.2 Fiscal interlinkage

The fiscal interlinkage between government tiers constitutes the second most important pillar in our support assessment. The division of tax authority, revenue distribution, and expenditure responsibilities as well as the constitutional law on fiscal equalisation form the basis of a sub-sovereign's interlinkage with other (higher-tier) governments on a going-concern basis. This methodology

[6] http://www.oecd.org/tax/federalism/fiscal-decentralisation-database.htm#E_12
[7] Common issuance has been organised across government tiers but also between sub-sovereigns also to broaden the investor base.

highlights the importance of: i) tax authority, which relates to shared responsibility between governments; and ii) the degree of a sub-sovereign's integration in fiscal equalisation schemes.

- **Tax authority**

We measure the degree of policy co-ordination between government tiers by looking at the unilateral tax authority of the respective government layer and the rules governing tax sharing with other government tiers. We use qualitative (legal frameworks) and quantitative indicators to assess the degree of budgetary intergovernmental integration and tax autonomy[8]. When there is 'full' intergovernmental integration, both government levels share the tax authority by setting tax rates and revenue distribution as well as expenditure responsibilities. In these cases, sub-sovereigns are entitled to adequate endowment and thus receive revenues to cover the provision of mandated expenditures. We assess intergovernmental integration as 'medium' if the higher-tier government exerts unilateral control over major tax rates, revenue distribution and expenditure requirements.

A limited taxing capacity could lead to excessive deficits if a sub-sovereign entity lacks adequate resources to cover the provision of services for which it is responsible. In these cases, sub-sovereigns typically depend on the higher-tier government's willingness to provide adequate budget flexibility, i.e. with early transfers or ad-hoc grants. While the size of grants and transfers show a higher-tier government's willingness to support sub-sovereigns, they could also be the consequence of insufficient regular own-source revenues to cover mandated expenditures. Finally, intergovernmental integration is assessed as 'low' if sub-sovereigns retain full control over the majority of tax rates and revenues with limited higher-tier government influence.

- **Fiscal equalisation**

Fiscal equalisation is defined as a transfer across jurisdictions which aims to reduce fiscal imbalances between sub-sovereigns resulting from their different revenue-generating capabilities. Most developed countries have fiscal equalisation schemes, although their importance and structure differ substantially across countries[9]. Transfer flows are either horizontal (across regions) and/or vertical (across government tiers) and they can be based on either revenues and/or costs. The degree of fiscal equalisation is often difficult to measure precisely, especially if countries use implicit forms of equalisation, which are not defined as such[10]. While equalisation systems are often perceived as creating incentives for poorer regions to rely on transfers, they could also contribute to a more effective provision of public services/goods and to balancing disparities between regions based on demographic characteristics (urban vs. rural, old vs. young), which are not directly linked to economic strength.

With these caveats in mind, we assess the contribution of fiscal equalisation to the interlinkage of governments as 'high' if transfer flows compensate for differences in the fiscal capacity of sub-sovereigns with the ultimate objective of attaining equal living standards. In our view, an almost complete equalisation of fiscal capacities across regions reflects a willingness to achieve equal living standards across regions. If, however, equalisation only ensures the ability of sub-sovereigns to cover their mandatory spending, the interlinkage is assessed as 'medium'. In these cases, transfers are often based on recurring negotiations between government tiers and are thus less predictable and timely than in systems with a transparent legal equalisation framework. While the definition for a 'medium' assessment acknowledges the active role of higher-tier governments, it rules out a general, unconditional transfer which is not related to expenditure needs. Conversely, interlinkage via equalisation is assessed as 'low' if payments are purely granted on an ad-hoc and voluntary basis with no institutional framework in place.

[8] Useful information on tax autonomy across government tiers is provided by the OECD's fiscal decentralization database.
[9] A detailed overview is provided by Blöchliger et al. 2007: Fiscal equalization, OECD working papers on Fiscal Federalism, no. 4, OECD Publishing, Paris.
[10] For instance, central governments may direct investment to poorer regions at the expense of more prosperous ones without explicit earmarking the funds. Also, central government tax revenues are often distributed to regions in order to harmonise living standards across regions without explicit reference to equalisation.

Figure 6: Fiscal interlinkage

Category	Weight			Full integration	Medium integration	Low integration
				Intergovernmental integration between government layers		
Fiscal interlinkage	35%	20%	Tax authority	Shared tax authority across government levels	Central tax authority with limited revenue and expenditure flexibility	Separate tax authority with high revenue and expenditure flexibility
		15%	Fiscal equalisation	Strong alignment of fiscal capacity to attain equal living standards	Predictable equalisation of fiscal capacity to cover mandatory spending	Less predictable transfers or only special transfers to selected regions

Source: Scope Ratings GmbH

2.2.3 Political coherence

The political alignment between government levels forms the third important determinant of our framework assessment, measured by: i) the distribution of powers; and ii) common policymaking. As the previous dimensions already incorporate a substantial part of the legal ties between governments, this assessment complements our analysis with a comparison of multilevel governance arrangements and intergovernmental relations, which help to identify the political ties across government tiers. The methodology does not restrict our analysis to the distribution of competencies across levels, but also considers the management of shared functions.

➢ **Distribution of powers**

The distribution of powers refers to the predictability and stability of the system, the scope regional governments have to shape policy and the extent of their representation. We assess recent legislative changes and additional qualitative and country-specific qualitative factors such as political fragmentation and the potential for conflict across government tiers. Regions which are directly mandated by regular elections (representation) and whose administrations can independently exert legislative control, receive a 'high' assessment. Greater autonomy could be interpreted as low intergovernmental integration. However, in this part of the assessment, we believe that a clear separation of powers and uniform responsibilities across sub-sovereigns reduces conflicts between government tiers.

Conversely, a 'medium' assessment reflects a situation with an ambiguous distribution of legislative and executive powers across jurisdictions, evidenced by less coherent political arrangements with heterogeneous distribution of responsibilities across sub-sovereigns. We consider the lack of a clear distribution of responsibilities and unbalanced powers to increase the potential for conflicts between government tiers, thereby reducing intergovernmental integration.[11] The distribution of powers is assessed as weak across sub-sovereigns with a history of frequent conflicts regarding political independence and persistent independence or separatist movements. This includes a review of court decisions on the legal status of regions as well as military intervention and/or convictions for separatist behaviour on the part of elected officials.

➢ **Common policymaking**

The methodology uses the RAI to measure the degree of common decision-making, namely 'law making', 'executive control', and 'constitutional reform'. These three indicators capture the degree of institutionalised, coordinated policymaking, i.e. the relative influence of government tiers on national legislation via intergovernmental meetings and/or common legislative authority. A higher level of co-ordination needs (e.g. if sub-sovereigns have the power of veto) and routine meetings lead to a 'high' assessment of political alignment. One-sided power with the limited co-ordination of legislation results in 'medium' intergovernmental integration. We assess integration as low if the sub-sovereign has no influence on national legislation and the higher government exerts unilateral control over most policy areas within the jurisdiction of the sub-sovereign.

[11] Blöchliger and Kantorowicz (2015) present a detailed overview of fiscal constitutions, including indices for the degree of autonomy, responsibility and co-determination.

Figure 7: Political coherence

Category	Weight			Intergovernmental integration between government layers: Full integration	Medium integration	Low integration
Political coherence	15%	10%	Distribution of powers	Clearly defined and/or uniform responsibilities across jurisdictions	Heterogeneous distribution of legislative and executive powers across jurisdictions	Frequent political conflicts and persistent separatist movements
		5%	Common policymaking	Stongly integrated legislative process with high co-ordination needs across layers	Limited political co-ordination with one-sided dominance	No influence of SNGs on nationa legislation, unilateral control by central government

Source: Scope Ratings GmbH

2.3 Scorecard calculation

In order to map our framework assessment into the indicative rating range, we use a qualitative scorecard, which is structured along three key categories: i) (50%) institutionalised support; ii) (35%) fiscal interlinkage; and iii) (15%) political coherence. On the integration scale, each category is assessed as either 'full', 'medium' or 'low'. We use a score system assigning 0 scores to 'low', 50 scores to 'medium' and 100 scores to a 'full' assessment. The weighted scores determine the overall level of integration, ranging from a maximum score of 100 to a minimum of 0. For example, the highest possible integration of 100 is achieved if the framework is assessed as fully integrated across all categories, whereas the lowest possible integration of 0 is equivalent to a low integration assessment. Finally, we map the integration score to the indicative notch thresholds. A high (low) integration score thus results in a low (high) deviation from the sovereign rating. The highest indicative deviation from the sovereign rating, corresponding to an extremely low intergovernmental integration, is -10 notches.

Figure 8: Mapping of framework scores to rating ranges

Integration score	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Indicative notch range	0-10	0-9	0-8	0-7	0-6	0-5	0-4	0-3	0-2	0-1

Source: Scope Ratings GmbH.
Nb. Notches are indicative downward adjustments from sovereign rating.

3. Individual credit profile

3.1 Overview

The individual credit profile is the second pillar in our credit assessment of sub-sovereigns. Our qualitative and quantitative assessments, both of which are structured around the same four key risk categories, determine the individual credit profile of the sub-sovereign. For most cases, we expect to apply a 50% weighting to both scorecards. The analysis is conducted across sub-sovereign entities within the same jurisdiction.

- **Four key risk categories**

We structure our individual credit profile analysis around four key categories: i) debt burden and liquidity profile; ii) budget performance and flexibility; iii) economy and social profile; and iv) quality of governance.

- **Qualitative assessment (QS)**

In a first step, we apply a qualitative scorecard (QS) which includes a total of 10 forward-looking assessments. Details on the QS are provided in chapter 3.2.1.

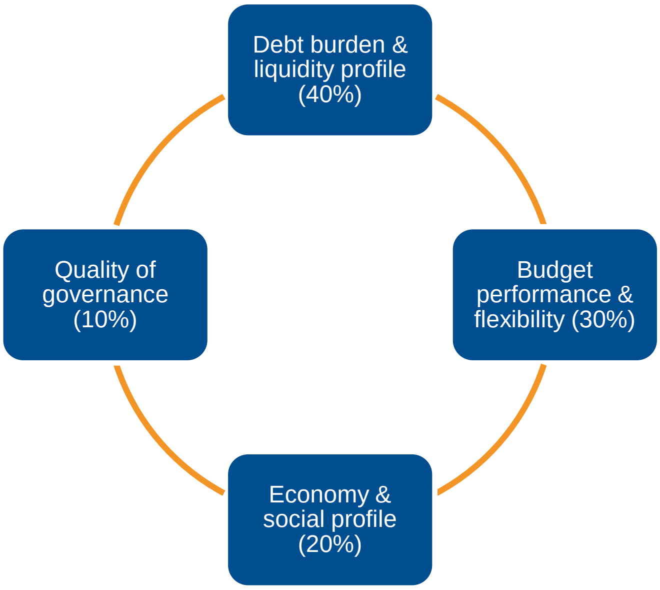
- **Quantitative assessment (CVS)**

In order to quantitatively assess the individual credit profile, we have chosen 15 core ratios based on empirical economic research, analytical judgement and availability. These will be assessed by conducting a relative comparison with peers of the same-tier government. In cases where data for peers is not available in an appropriate format, the CVS analysis will be performed qualitatively. Details on the CVS are provided in chapter 3.2.2.

- **Weights**

The following weights are assigned to the four key categories based on our analytical judgment of their relative importance in assessing the individual credit profile:

Figure 9: Four key categories in our assessment of a sub-sovereign's individual credit profile



Source: Scope Ratings GmbH

Debt burden and liquidity profile (40%): We assign the highest weight to this category to reflect our view that (contingent) debt and liquidity risks are central to a sub-sovereign's debt servicing capacity. The sovereign debt crisis in Europe has shown that the accumulation of sizeable off-balance risks from risk-taking investment strategies was one of the main reasons for financial distress and even triggered sub-sovereign defaults, caused by eroded liquidity profiles and the circumvention of budget or policy limitations on direct debt.

Budget performance and flexibility (30%): The assessment of a sub-sovereign's revenue adequacy and ability to adjust resources to cover interest expenses and debt repayments is key. This is because persistent fiscal imbalances increase the probability of a sub-sovereign default, particularly under adverse conditions or during prolonged deficit periods.

Economy and social profile (20%): The relatively low weight of this factor reflects our view that in many countries, material transfer-dependency may weaken the link between the individual credit profile and the performance of the economy in which a sub-sovereign is located. In addition, starting the assessment with the sovereign rating already captures critical elements related to the overall macroeconomic environment.

Quality of governance (10%): The weighting of this key category is justified by our framework-driven assessment which already captures critical governance elements. However, the quality of governance generally affects the individual credit profile in the longer term or beyond the typical investment horizon. Finally, severe policy risks which may trigger sub-sovereign defaults, are captured under final rating adjustments.

The QS forward looking assessments in each risk category are equally weighted. The weights of CVS core ratios in each risk category are reported respectively in figures 11, 12, 13 and 14 below.

3.2 Scorecard calculations

We use a score system from 1 to 100 for quantitative and qualitative scorecards. In cases where both scorecards are applicable, the two scores result in the individual credit profile which we map to our assessment of the institutional framework. The relative contribution of the individual credit profile, as measured in rating notches, is thus a function of the institutional framework. Depending on data actuality and availability, the relative weight of qualitative and quantitative assessments is subject to changes by the rating committee.

Figure 10: Weighting scheme by indicator and (sub-)category

Sub-sovereign risk category	Qualitative scorecard (QS)		Core variable scorecard (CVS, quantitative)	
Debt burden & liquidity profile (40%)	1. Debt profile 2. Explicit & implicit contingent liabilities 3. Funding sources & liquidity management	+	Interest payments, % operating revenue	*50%*
			Debt, % operating revenue	*25%*
			Balance before debt movement, % total revenue	*25%*
Budget performance and flexibility (30%)	1. Budget management 2. Expenditure flexibility 3. Revenue flexibility	+	Operating balance, % operating revenue	*40%*
			3Y st. dev. of operating balance, % operating revenue	*15%*
			Personnel expenditure, % operating expenditure	*15%*
			Capital expenditure, % total expenditure	*15%*
			Transfers/grants, % operating revenue	*15%*
Economy and social profile (20%)	1. Growth prospects & diversification 2. Labour market & demographics	+	GDP per capita, EUR	*40%*
			Real GDP growth volatility, st. dev.	*20%*
			Unemployment rate, % labour force	*20%*
			Old-age dependency ratio	*20%*
Quality of governance (10%)	1. Recent events and policy risk 2. Transparency and accountability	+	Quality index	*33%*
			Impartiality index	*33%*
			Corruption index	*33%*

Source: Scope Ratings GmbH

3.2.1 Debt burden and liquidity profile

Our analysis places strong emphasis on a sub-sovereign government's debt servicing capacity and financing ability as reflected in its interest payments, financing and debt position. We consider the liquidity profile to be an important determinant of timely debt service payments, particularly during periods of interrupted access to capital markets. The combination of risk-taking policy strategies and high recourse to debt financing for investments was one of the key triggers of financial distress and – as a result of eroded liquidity profiles and the circumvention of tight budgets or policy limitations on direct debt – even led to sub-sovereign defaults. Consequently, we use an 'extended-balance sheet approach' to assess the potential crystallisation risk of explicit and implicit contingent liabilities. Where data is available, we also conduct a 'liquidity stress scenario analysis' to assess a sub-sovereign's ability to ensure timely debt repayment over a 12-month period under market stress, assuming interrupted access to external funding.

Figure 11: Debt burden and liquidity profile

Sub-sovereign risk category	Qualitative scorecard (QS)		Core variable scorecard (CVS, quantitative)	
Debt burden & liquidity profile (40%)	1. Debt profile 2. Explicit & implicit contingent liabilities 3. Funding sources & liquidity management	+	Interest payments, % operating revenue	*50%*
			Debt, % operating revenue	*25%*
			Balance before debt movement, % total revenue	*25%*

Source: Scope Ratings GmbH

- **Qualitative assessment**

In our qualitative assessment, we use three key factors, namely: i) debt profile; ii) funding sources and liquidity management; and iii) explicit and implicit contingent liabilities.

First, to assess a sub-sovereign's debt profile, we examine its refinancing policy, debt composition including borrowing flows, exposure to maturity structure risk, refinancing risk, interest rate risk, currency risk, counterparty risk, use of derivatives as well as internal limits and monitoring procedures. Typically, conservative debt management is demonstrated by a debt structure characterised by long maturity and fixed, non-variable interest rates, reducing a sub-sovereign's exposure to refinancing or interest rate risk. Conversely, a borrowing profile characterised by predominantly short tenors or an unfavourable maturity structure may expose a sub-sovereign to (re)financing risk, particularly during times of financial stress. For our analysis of the debt profile, we use complementary ratios which include, but are not limited to: i) the share of short-term debt to operating revenue (or outstanding debt) which is key to an assessment of refinancing risk; ii) debt growth, which may indicate increased deficit funding; iii) the debt burden, debt service or interest payments relative to operating balance, whereas a higher debt service compared to the operating balance would indicate a strong reliance on refinancing to make annual debt service payments.

Second, we examine a sub-sovereign's funding sources and liquidity management, including capital market access, in order to assess its ability to issue debt or access external liquidity. In countries with mature, deep, liquid and well-functioning sub-sovereign capital markets, we analyse factors such as the size and frequency of (benchmark) issues by the sub-sovereign, as well as the number of investors and turnover in secondary markets. In countries where sub-sovereigns typically rely on bank loans, we assess the quality of committed facilities with banks by analysing the number of banks providing these facilities, their credit quality and ownership, and where available, the usage of the facilities, their conditions and expiration dates. Typically, favourable access to a domestic bank market would include a strong track record of well-established relationships with several lenders of high credit quality and/or access to a variety of funding instruments. We also consider access to alternative public borrowing resources, including loans from the sovereign, government-backed banks, agencies or other levels of government.

In this context, we analyse a sub-sovereign government's cash flow potential, i.e. its 'internal' ability to repay debt, depending on the national context. Our assessment of internal cash flow potential relative to debt service and other cash outflows is a forward-looking analysis, evaluating: i) the seasonality of cash inflows and outflows (including outstanding receivables and payables[12]); ii) the financing of capital expenditure, including the share of transfers paid relative to operating revenue[13]; and iii) available liquid assets. Here, where available, we incorporate stressed conditions into our analysis, such as declining revenue or growing interest and operating expenditure in combination with limited access to new external funding over a twelve-month period.

Finally, the assessment of explicit and implicit contingent liabilities is the third element in our qualitative analysis of a sub-sovereign's debt burden and liquidity profile. The size of contingent liabilities relative to the sub-sovereign's direct liabilities may pose a significant credit risk. We take into account the strategic importance of off-balance sheet liabilities, as well as the degree of oversight to monitor the credit quality of related public sector entities (GREs) and enterprises to which a sub-sovereign is expected to provide financial support in times of distress. In this context, we review the quality of the sub-sovereign's management of its GREs by analysing its effectiveness in monitoring the GRE's mandates, medium-term targets and financial health. Typically, strong management of the GRE-sector is reflected in a sound rationale for the existence and set-up of GREs under a comprehensive financial strategy, including the ability to fully cover costs with their own sources or fees received from the sub-sovereign.

We examine the exposure of a sub-sovereign to a wide range of contingent liabilities, including those items that are not consolidated in the sub-sovereign's financial statements. These may include: i) explicit, contractual guarantees to public sector entities and enterprises; ii) debt-like instruments or commitments such as leases, public-private partnerships and securitisations; iii) the majority ownership of enterprises without explicit guarantees or obligations of companies whose importance could force a sub-sovereign government to provide financial support (for instance, utilities); iv) arrears to suppliers, contractors, or central government agencies or delayed payments of civil servant wages; and v) future pension liabilities for civil servants.

- **Quantitative assessment**

Our core quantitative indicators for a sub-sovereign's debt and liquidity profile include: i) the interest payments burden relative to operating revenue[14]; ii) the debt burden relative to operating revenue; and iii) the balance after capital spending as a share of total revenue. The ratio of interest payments to operating revenue is a key indicator which serves as a proxy for a sub-sovereign's debt affordability. In addition, we assess the debt burden to operating revenue ratio as a proxy for a sub-sovereign's leverage by measuring the level of debt compared to recurrent resources. Finally, the balance before debt movement as share of total revenue indicates overall financing needs (or surplus) after operating and investment activities, illustrating the level of a sub-sovereign's fiscal and financial imbalances.

3.2.2 Budget performance and flexibility

Our evaluation of budget performance and flexibility focuses on a sub-sovereign's ability to maintain balanced budgets under adverse conditions and to cover operating and investment expenditure, interest expenditure and debt repayments. We also assess the predictability of revenue and expenditure flows from operations and investment activities which can be used to service debt. These are considered important components of a sub-sovereign government's capacity to manage its fiscal position sustainably.

[12] An increase in outstanding payables in the form of delayed payments to suppliers usually indicate a potential liquidity shortage.
[13] A high share may indicate a high outsourcing degree of provided services and thus a potential accumulation of off-balance sheet risks. For example, a sub-sovereign may extensively use public-private partnerships, with the payments to the third party reported as operating expenditure.
[14] Alternatively, dependent on national reporting standards, we compare debt service with other measurements of revenue capacity.

Figure 12: Budget performance and flexibility

Sub-sovereign risk category	Qualitative scorecard (QS)		Core variable scorecard (CVS, quantitative)	
Budget performance and flexibility (30%)	1. Budget management 2. Expenditure flexibility 3. Revenue flexibility	+	Operating balance, % operating revenue	*40%*
			3Y st. dev. of operating balance, % operating revenue	*15%*
			Personnel expenditure, % operating expenditure	*15%*
			Capital expenditure, % total expenditure	*15%*
			Transfers/grants, % operating revenue	*15%*

Source: Scope Ratings GmbH

- **Qualitative assessment**

We use three key criteria for the qualitative assessment of budget performance and flexibility: i) budget management; ii) expenditure flexibility; and iii) revenue flexibility.

Our analysis of budget management assesses a government's ability to generate revenues, plan and control expenditure, and provide consistent budgetary policies and processes. Our qualitative analysis differentiates between persistent budget deficits and one-off shortfalls following a temporary drop in tax revenues. In addition, our analysis includes projections for the operating, current and capital balances given the region's economic outlook, demographic trends and the sub-sovereign's budget, fiscal and investment policies. We also examine the sensitivity of the budget to business cycles and the size of available fiscal buffers to mitigate shocks from economic downturns. The review of budget management also evaluates the degree of tax compliance, and the consistency and credibility of multi-year planning. Subject to their availability, we also use complementary ratios[15].

We examine expenditure flexibility to assess the sub-sovereign's ability to manage or cut expenditure. We estimate the proportion of non-adjustable expenditure by assessing essential expenditure items mandated by the national (or higher level) government as well as associated minimum spending levels to provide predefined levels of public services. We also analyse the sub-sovereign government's track record in expenditure cuts as an indication of expenditure flexibility, especially during economic downturns. In this context, we evaluate the share of investments not required to maintain the existing infrastructure or to complete important new projects (i.e. non-essential capital expenditure). We examine legal or political constraints as these can materially limit the potential for budget expenditure cuts. A flexible cost structure and the proven ability and willingness to cut expenditure to respond to economic downturns indicates strong operational efficiency and will be assessed as credit positive.

Finally, our analysis of revenue flexibility indicates a sub-sovereign's potential to increase its revenues through higher tax rates, an expansion of the tax base, or the sale of assets. To this end, we estimate the adjustable share of revenue, that is, policy areas in which the sub-sovereign retains the flexibility to change rates independently of the higher-tier government or national legislation.

- **Quantitative assessment**

Our core quantitative indicators for the assessment of budget performance and flexibility include: i) the ratio of operating balance to operating revenue; ii) the volatility of the operating balance; iii) the ratio of personnel costs to operating expenditure; iv) the share of capital expenditure to total expenditure; and v) the transfer-dependency ratio.

The operating balance as a share of operating revenue indicates the capacity of a sub-sovereign to repay its debt and fund investments with its own sources prior to any new borrowing or asset sales. High operating surpluses tend to indicate more investment-driven responsibilities in an international context and/or a high fiscal adjustment capacity in the national context. The standard deviation of the operating balance indicates stability and predictability. Generally, high and stable operating surpluses enable a sub-sovereign to fund its expenditure and use its resources to repay its debt obligations. Conversely, operating deficits increase a sub-sovereign's need for debt obligations while volatile fiscal results weigh on the predictability of budget performance and planning ability.

Our quantitative assessment of expenditure flexibility includes the ratios of personnel costs to operating expenditure and capital expenditure to total expenditure. Typically, personnel costs are a major mandatory spending item, and as cuts in salaries usually imply considerable political costs as well as legal hurdles in the form of national minimum wage requirements, sub-sovereigns

[15] These may include: i) operating expenditure as a share of budgeted operating expenditure, measuring reliability in forecasting expenditure needs; ii) operating revenue and expenditure growth; iii) the current balance (defined as the operating balance including interest expenditure and revenue) as a share of operating revenue; and iv) capital revenue and/or current balance as share of capital expenditure to measure the share of self-funded capital expenditure.

generally prefer to postpone or reduce spending on investment rather than on personnel. Consequently, lower personnel and higher capital expenditure imply greater expenditure flexibility, and thus lower risk. Finally, we review the transfer-dependency of a sub-sovereign by comparing its share of transfers relative to operating revenue (as defined by national reporting standards) which provides a proxy for assessing revenue flexibility. Typically, a high share of transfers to operating revenue indicates a sub-sovereign's inability to generate additional revenue, particularly in periods of financial stress, thereby making a sub-sovereign reliant on continued revenue transfers. In our view, an inability to generate additional revenue in the event of fiscal distress increases a sub-sovereign government's reliance on external support, which may not be guaranteed[16].

3.2.3 Economy and social profile

This risk category reviews the reliability of a sub-sovereign's revenue base and its future spending needs, both ultimately affecting a sub-sovereign's ability to service debt in the medium to long term.

Figure 13: Economy and social profile

Sub-sovereign risk category	Qualitative scorecard (QS)		Core variable scorecard (CVS, quantitative)	
Economy and social profile (20%)	1. Growth prospects and diversification 2. Labour market & demographics	+	GDP per capita, EUR	*40%*
			Real GDP growth volatility, st. dev.	*20%*
			Unemployment rate, % labour force	*20%*
			Old-age dependency ratio	*20%*

Source: Scope Ratings GmbH

- **Qualitative assessment**

The qualitative assessment consists of two key factors: i) growth prospects, diversification and volatility; and ii) labour market efficiency and demographics.

First, we assess the growth prospects and diversification of local and regional economic activities in order to evaluate a sub-sovereign's growth potential and its associated long-term ability to generate its own revenues. To analyse economic growth prospects, we assess the competitive advantages of the region, including natural resources, strategic location, special legal or capital status, transport infrastructure and industrial strength. We also consider recent and projected trends in output, private and public investment growth, the importance of exports, the quality of the business infrastructure and level of entrepreneurial and innovation activities. We assess the predictability of revenue growth across sub-sovereigns as this may affect a sub-sovereign's budget performance. To this end, we examine economic diversification by analysing a sub-sovereign's reliance on specific employers or industries and their exposure to local, regional and/or global shocks. Usually, a narrow economic base with high reliance on a specific industrial sector increases the volatility of a sub-sovereign's tax revenue, weighing on its budget performance, which will be assessed as credit negative.

Second, our qualitative assessment also accounts for labour market efficiency and demographics in order to evaluate the sub-sovereign's public service needs. The assessment includes the variation in education and skill levels within the workforce, employment growth, and structural unemployment. Moreover, we consider structural economic changes to gauge whether these will result in long-term spending on social welfare programmes or weigh on tax revenue potential. We also assess demographic trends measured by population size, growth and structure as these factors typically determine, albeit to varying degrees, the amount of transfers and grants from the central government. Slow population growth and a relatively stable age structure are usually expenditure-neutral, and will thus be assessed as credit positive. Conversely, either a fast-growing population with a high share of families or a shrinking population with an increasing share of retirees, could greatly increase demand for public services, especially related to investments to improve social infrastructure endowments, which we assess as credit negative.

- **Quantitative assessment**

The core quantitative ratios for the economy and social profile include: i) GDP per capita; ii) GDP growth volatility; iii) the unemployment rate, as a percentage of the labour force; and iv) the old-age dependency ratio. If data for a lower-tier government level is not available, for example, a municipality, we use data on the surrounding region. Generally, relatively wealthy sub-sovereigns benefit from a more productive tax base which allows them to generate the necessary own-source revenues and reduce

[16] See Hanniman (2018).

transfer dependency. A high GDP per capita and low GDP volatility thus underpin high credit ratings. Similarly, a low unemployment rate and old-age dependency ratio imply lower current and future spending pressures which will be assessed as credit positive.

3.2.4 Quality of governance

Our analysis of quality of governance focuses on political and institutional strengths as sub-sovereign defaults may be triggered by weak institutions and/or political instability, which directly or indirectly affect their ability and perceived willingness to service debt. In our view, socio-economic disparities between regions can be due to differences in the governance of public institutions[17] and thereby determine long-term social sustainability[18].

Figure 14: Quality of governance

Sub-sovereign risk category	Qualitative scorecard (QS)		Core variable scorecard (CVS, quantitative)	
Quality of governance (10%)	1. Recent events and policy risk 2. Transparency and accountability	+	Quality index	*33%*
			Impartiality index	*33%*
			Corruption index	*33%*

Source: Scope Ratings GmbH

- **Qualitative assessment**

Our qualitative assessment is centred around two key factors: i) recent events and policy risks; and ii) transparency and accountability.

First, recent policy events emphasise a sub-sovereign's policy predictability and decision-making flexibility, including its ability to implement structural reforms and fiscal consolidation programmes which may be politically difficult. We also examine a sub-sovereign's track record in meeting the policy objectives defined in a strategic plan, as well as dealing with any adjustments due to changes to the framework or external shocks. A strong track record demonstrating the ability of various governments to reach across party lines and approve local or regional budgets would be credit positive. We also review the frequency of changes in government and management bodies during past political and economic crises within an administration. A weak track record in adhering to policies or frequent changes in management bodies following elections may weigh on long-term political stability, policy predictability and/or management effectiveness. In contrast, modest management turnover following elections indicates a transparent delineation of the political roles and responsibilities of management and administrative staff, underlining policy stability and predictability.

Second, we view transparency and accountability as another important qualitative factor when reporting financial data. We examine the degree to which a sub-sovereign's budgetary processes are institutionalised, the accuracy and timeliness of disclosure standards, as well as whether independent audit procedures by a private entity or public authority exist. Failures to adopt budgets on a timely basis may potentially result in breaches of financial reporting laws or regulations, affecting a sub-sovereign's financial operations and weighing on its perceived credibility. Non-mandatory external audits limited to basic information would be evaluated as credit negative.

- **Quantitative assessment**

Where available, we incorporate comparable data on quantitative governance indicators into our assessment of governance quality. This includes data from the European Quality of Government Index (EQI), which measures institutional quality at the regional level in the European Union by evaluating three key areas, namely corruption risks along with the impartiality and quality of public services provided by a sub-sovereign. The EQI complements quantitative data with qualitative studies in order to reflect characteristics shared by both high and low performing regions, capturing average citizens' perceptions and experiences of corruption and the extent to which they rate their public services as being impartial and of good quality. Alternatively, we will rely on the analysis of comparable governance data provided by national sources.

3.2.5 Qualitative scorecard (QS)

The qualitative scorecard is structured along the four key categories of the CVS: i) debt burden and liquidity profile; ii) budget performance and flexibility; iii) economic and social profile; and iv) quality of governance. In total, there are 10 forward-looking

[17] Charron, Dijkstra, and Lapuente (2014, 2015); Farole, Rodríguez-Pose and Storper (2011); Tabellini (2010); Rodríguez-Pose and Garcilazo (2015)
[18] Higher (lower) levels of governance quality increase (reduce) economic and human development as measured by life expectancy, educational attainment and living standards. Quality of governance is a major factor contributing to environmental sustainability Morse (2006), reducing pollution at all income levels Welsch (2004).

assessments to evaluate risks which cannot be captured by the quantitative core variables of the CVS alone. This risk assessment is conducted on a three-point scale comprising 'low risk', 'medium risk' and 'high risk'.

We use a point system assigning 100 points for a 'low risk', 50 points for a 'medium risk' and 1 point for a 'high risk' assessment. The QS category scores are calculated as arithmetic means of the assessment scores within the category, i.e. with equal weights per category. To determine individual credit strength (QS score), the category scores are weighted according to the category-specific weights as outlined in chapter 3.1., resulting in a range from a maximum of 100 to a minimum of 1. For example, the highest (lowest) possible individual QS credit score of 100 (1) is achieved if the 10 qualitative factors are assessed as 'low risk' ('high risk') across all categories. If the application of the CVS is constrained by a lack of available and/or up-to-date data, we apply the QS on a standalone basis taking into account selected core ratios, as far as available.

3.2.6 Core variable scorecard (CVS)

The assessment of a sub-sovereign's individual credit profile compared to national peers within an indicative rating range generated by our framework assessment is a key part of our approach. By comparing individual credit ratios with national peers, we acknowledge that sub-national fiscal, economic and debt data: i) needs to be viewed in the context of the respective framework; and ii) is susceptible to distortions due to significantly different national accounting policies. This approach ensures that the ratios selected are more meaningful (as compared to the application of absolute thresholds) and allows us to make a comparative analysis across sub-sovereigns and across time, which is essential to ensure consistency.

The CVS acts primarily as a scoring tool which results in an indicative individual credit score. In our opinion, the limited number of sub-sovereign defaults means that it is not possible to perform an adequate statistical analysis of the probability of default. Therefore, the CVS serves as an analytical tool for assessing a sub-sovereign's relative strengths and weaknesses by benchmarking selected core quantitative ratios with national peers, allowing us to identify positive and negative outliers and meaningful differences between the strongest and weakest entities.

When calculating the CVS score, we use a minimum-maximum algorithm to determine a score for each of the 15 indicators, which ranges from 1 (worst) to 100 (best). We calculate the minimum and the maximum for each rating indicator and place national peers within this range. Sub-sovereigns with the strongest results for each rating indicator receive the highest scores and sub-sovereigns with the weakest results receive the lowest score. For example, if the MAX (MIN) of a variable is identified as the value 1 (-10), the score of a variable with the value 0.3 would be derived using the following calculation: $1 + 99 \times |(X - MIN)| / (MAX - MIN)$ or $1 + 99 \times |(0.3 - -10)| / (1 - -10) = 93.7$. In this case, a higher score corresponds to a stronger result. Conversely, if a lower score corresponds to a stronger result, we use the following formula to derive the score of a variable: $1 + 99 \times |(X - MAX)| / (MAX - MIN)$. We use statistical analysis to exclude outliers (statistical noise) at either end of the distribution. The identification of outliers is conducted on the basis of the median absolute deviation[19] which adds (subtracts) the median of the absolute difference between each observation and the median of the full sample multiplied by a constant to (from) the median of the sample. In a final step, the individual scores are aggregated into a category CVS score using category-specific weights as shown in figure 14 and detailed in section 3.1.

The CVS incorporates a combination of historical and current economic, fiscal and debt data which is subject to revisions and changes. The CVS is therefore updated on an ongoing basis. Each sub-sovereign is reviewed at least twice a year. We use publicly available macro-economic and financial data. For selective indicators, we calculate a three-year weighted average of the latest available data, by assigning a higher weight to the most recent year. Otherwise, we use the most recent data point (see Appendix 5.2). A case study illustrating how we determine the individual credit score of a sub-sovereign is shown in appendix 6.1.

4. Sovereign ceiling and rating sensitivity

In this part of the analysis we assess whether i) the sub-sovereign meets the criteria to be rated above the sovereign and ii) the sensitivity of the sub-sovereign's ratings to rating changes of the sovereign, that is, the degree of automaticity between sovereign and sub-sovereign rating changes.

4.1 Criteria to be rated above the sovereign

Under our approach, a sub-sovereign rating is indicatively capped by the sovereign rating. Exceptions can exist but are not very likely. The indicative cap reflects our view that a minimum degree of default interdependence between sub-sovereigns and sovereigns exists even among highly autonomous entities. In a non-US context, sub-sovereigns are typically not shielded from the

[19] See 'Leys, C. et al. 2013. 'Detecting outliers: Do not use standard deviation around the mean, use absolute deviation around the median'

jurisdictions of national courts and consequently their ability to honour their debt obligations is dependent on the functioning of their particular national legal system, regulation and/or policy framework. The recent financial crisis confirmed that the capital market funding ability of sub-sovereigns – even those whose autonomy is enshrined in the national constitution – is strongly impaired if the sovereign faces financial distress. Consequently, we would only pierce the sovereign rating in exceptional circumstances that would have to be justified on a case-by-case basis. To justify a rating above the sovereign, two conditions are assessed:

- First, the extent of a special legal status or degrees of fiscal autonomy shielding the sub-sovereign from central government intervention regarding its tax revenues, expenditures and treasury accounts.
- Second, an exceptionally strong individual credit profile compared to national and international peers. The combination of these two factors must ensure an exceptionally strong liquidity and financing profile as well as budgetary flexibility and resilience. Scope defines these factors as i) autonomous access to liquidity with a very strong debt profile, typically reflected by very low financing needs, comfortable cash buffers covering stressed cash outflows over the coming 12 months, and exceptionally high autonomy to incur debt without sovereign interference; i.e. sub-sovereign finances are fully protected from political interference risk by constitutional elements or public laws; ii) extraordinary budget flexibility, reflected by strong revenue robustness during economic cycles, very low transfer-dependency and a sub-sovereign's control over the tax payment system with no obligation to forward tax receipts to other government tiers or for redistribution, enabling a sub-sovereign to withstand protracted periods of macroeconomic and financial stress; and iii) exceptionally strong revenue resilience to external shocks and a high potential to outperform, also in cases of sovereign stress/default.

A positive assessment of these factors allows the sub-sovereign to continue servicing its debt obligations, even in the event of sovereign default, which is itself a very unlikely scenario, and can thus result in a sub-sovereign rating above the sovereign.

4.2 Sensitivity to sovereign rating changes

To assess the sensitivity of a sub-sovereign's rating to a sovereign rating change, we analyse on a case-by-case basis: i) the drivers of the rating action on the sovereign, and specifically, the extent to which the sovereign's ability to provide support is affected; ii) any possible implications for the institutional framework; and iii) the expected impact on the individual credit profile relative to national and international peers.

In general, sub-sovereigns operating in less aligned institutional frameworks coupled with a strong individual credit profile are less affected by a sovereign rating change. Conversely, sub-sovereigns which are institutionally highly integrated with the sovereign and/or characterised by a weak individual credit profile, are usually more affected by a sovereign rating change. This reflects our view that institutional frameworks assessed as having lower intergovernmental integration typically reduce the direct impact of a sovereign rating change. In the case of a sovereign rating change, the impact does not automatically trickle down to all entities, depending on their individual credit strengths. Therefore, sovereign rating changes usually are likely to affect sub-sovereign ratings asymmetrically.

5. Additional considerations

The combination of the sovereign rating with our assessment of the institutional framework and the individual credit profile provides an indicative rating for the sub-sovereign. However, given the idiosyncratic nature of the sub-sovereign universe, we include additional considerations when determining the final rating, including: i) a review of exceptional circumstances, ii) an international peer comparison; and iii) ESG factors. Although we do not define a limit to these adjustments, each assessment resulting in a deviation from the indicative rating will be explicitly communicated and justified.

5.1.1 Review of exceptional circumstances

Our rating approach indicatively limits the maximum rating distance to the sovereign ratings, or alternatively to the higher-tier government level, as established by our framework assessment. The indicative rating range reflects our view that a minimum intergovernmental integration between the sub-sovereign and the sovereign exists, also in very decentralised frameworks. However, in exceptional circumstances that cannot be captured by the quantitative and qualitative scorecards, we may adjust the indicative sub-sovereign rating further downwards, that is, below the indicative rating range.

Typically, these additional factors include, but are not restricted to: i) an extremely weak debt and liquidity profile with no credible alternatives to access liquidity; ii) sizeable, growing and risky contingent liabilities; iii) very tight budget or materially deteriorating structural performance or a very aggressive investment strategy with high recourse to debt; iv) an extremely structurally burdened or narrow economic base, with poor growth prospects or characterised by a materially shrinking population due to outmigration; v) a recent history of default/debt restructuring; vi) acute political interference weighing on the sub-sovereign's willingness to pay; vii) direct conflicts with the higher-tier government casting doubt on the latter's willingness to provide support; and viii) event risks, such as wars, natural disasters, a global financial crisis, leading to a worsening liquidity profile in the short term that has not yet been captured by data or forecasts.

5.1.2 International comparison

We supplement our analysis of the individual credit profile with an international peer comparison in order to account for the heterogeneity across sub-sovereigns. This assessment is especially important for those issuers with few national peers. The assessment includes the use of publicly available data on non-rated entities or on foreign issuers with public or private ratings. We give preference to those international peers with similar characteristics in terms of regional proximity, size, economic development and institutional framework.

5.1.3 Long-term environmental and social risks

Local and regional governments, particularly those in the European Union, work on achieving compliance with the United Nations' 'Sustainable Development Goals', which require them to fulfil seventeen criteria related to environmental and social policy areas by 2030. We acknowledge sub-sovereigns' efforts to increase the number and depth of projects addressing sustainable production and consumption[20]. Where available, we use comprehensive data and comparable information to analyse: i) the effectiveness and stringency of ecological policy measures intended to mitigate environmental risks[21]; and ii) measures to attain social policy goals in compliance with the Sustainable Development Goals.

At the same time, we acknowledge the limited materiality of these risks for a sub-sovereign credit rating within our defined risk horizon. While they could become relevant for a sub-sovereign's creditworthiness in the long-term (10 years or beyond), our methodology captures material environmental and social risks by the individual credit profile.

In exceptional and clearly defined cases, our analysis could lead to a positive rating adjustment if we conclude that the implemented policy measures have a material impact on the sub-sovereign's: i) future economic and social profile, by reducing risks from exposure to 'stranded' assets, which emerge through new regulations and/or materialising risks; and ii) ability to appeal to specific long-term oriented investors with the issuance of green and/or social bonds, thereby widening its investor base to include the growing ESG investment community.

[20] Subnational governments were responsible for around 60% of total public investment in 2015 across OECD countries and for almost 40% worldwide with most investments naturally related to the 'sustainable development goals' in policy areas such as education, health, social infrastructure, energy, transport and housing.

[21] This includes integral energy infrastructure programmes to reduce dependency on fossil energies, activities to incentivise households towards more sustainable living, for instance with favourable tax schemes or regulatory measures to internalise external costs. Climate-related policies include deforestation, fishing, land use, carbon sequestration, waste recycling, the substitution of fossil-based materials, but also engagement with third countries to reduce their natural resource footprint.

6. Annex

6.1 Case study: Stylised sub-sovereign rating

Figure 15: Case study of how we determine a sub-sovereign's final rating

Step 1 - Framework assessment: integration with the sovereign - country/government layer specific

Category	Weight	Sub-weight		Integration	Score	Weighted score
Institutionalised support	*50%*	*25%*	Transfer & bailout regime	Full	100	25
		15%	Borrowing limits	Medium	50	8
		10%	Funding support	Full	100	10
Fiscal interlinkage	*35%*	*20%*	Tax authority	Medium	50	10
		15%	Fiscal equalisation	Low	0	0
Political coherence	*15%*	*10%*	Distribution of powers	Medium	50	5
		5%	Common policymaking	Full	100	5
				Integration with the sovereign	**Σ**	***63***

Integration	Indicative range
0-10	**0-10**
10-20	**0-9**
20-30	**0-8**
30-40	**0-7**
40-50	**0-6**
50-60	**0-5**
60-70	**0-4**
70-80	**0-3**
80-90	**0-2**
90-100	**0-1**

Step 2 - Individual credit profile - issuer specific

Category	Weight	QS	Risk	Score	CVS	Score	Weight	Total (QS+CVS)/2
Debt burden and liquidity profile	*40%*	Debt profile	Low	100	Interest, % op.rev.	21.0	*50%*	**55.9**
		Contingent liabilities	Medium	50	Debt, % op.rev	8.3	*25%*	
		Funding and liquidity mgmnt	Low	100	Balance before debt, % op.rev.	63.5	*25%*	
		Debt QS score	**Σ**	**83**	***Debt CVS score***	**Σ**	**28**	
Budget performance and flexibility	*30%*				Operating balance, % op.rev.	39.7	*40%*	**58.7**
		Budget management	Low	100	SD operating balance	100	*15%*	
		Expenditure flexibility	Medium	50	Personnel exp., % op.exp.	32.3	*15%*	
		Revenue flexibility	Medium	50	Capex, % tot exp.	28.4	*15%*	
					Transfers, % op.rev.	71.6	*15%*	
		Budget QS score	**Σ**	**67**	***Budget CVS score***	**Σ**	**51**	
Economy and social profile	*20%*				GDP per capita	25.9	*40%*	**47.1**
		Growth & diversification	Medium	50	Unemployment rate	60.4	*20%*	
		Labour market & demographics	Medium	50	GDP volatility	65.9	*20%*	
					Old-age dependency ratio	42.6	*20%*	
		Economy QS score	**Σ**	**50**	***Economy CVS score***	**Σ**	**44**	
Quality of governance	*10%*	Recent events & policy risk	Low	100	Quality	66.6	*33%*	**86.2**
		Transparency & accountability	Low	100	Impartiality	88.1	*33%*	
					Corruption	62.4	*33%*	
		Governance QS score	**Σ**	**100**	***Governance CVS score***	**Σ**	**72**	
						Individual credit profile	**Σ**	***58***

Step 3 - Indicative rating: notch adjustment - *downwards* - from sovereign rating

Indicative sub-sovereign rating			**Individual credit profile:**						***58***
			Strong		Medium			Weak	
			≥ 75	≥ 65	***≥ 55***	≥ 45	≥ 35	≥ 25	< 25
			Indicative maximum notch adjustment from sovereign rating:						
63	Full	0 - 1	0	0	0	-1	-1	-1	-1
Institutional framework: Integration with sovereign		0 - 2	-1	-1	-1	-1	-1	-2	-2
		0 - 3	-1	-1	-1	-2	-2	-2	-3
	Medium	0 - ***4***	-1	-1	***-2***	-2	-3	-3	-4
		0 - 5	-1	-2	-2	-3	-3	-4	-5
		0 - 6	-2	-2	-3	-3	-4	-5	-6
		0 - 7	-2	-2	-3	-4	-5	-5	-7
	Low	0 - 8	-2	-3	-4	-4	-5	-6	-8
		0 - 9	-2	-3	-4	-5	-6	-7	-9
		0 - 10	-3	-4	-5	-6	-7	-8	-10

Issuer
ABC
Country
XYW
Sovereign rating
A
Indicative rating adjustment
-2
Additional considerations
-
Final rating
BBB+

Source: Scope Ratings GmbH

Step 1: Framework assessment

The outcome of this assessment is used to determine the indicative range between the sovereign rating and the rating of the sub-sovereign entity. This range allows downwards adjustments between 0 to 10 notches, whereby higher (lower) intergovernmental integration results in a lower (higher) indicative distance from the sovereign rating.

Step 2: Individual credit profile

We calculate 'adjusted scores' for each risk category between: i) the respective QS category score; and ii) the CVS category score. The QS category scores are calculated as arithmetic means of the assessment scores within the category, i.e. with equal weights per category, for details see chapter 3.2.1. The CVS score is derived by benchmarking core variables with national peers, for details see chapter 3.2.2. In cases where data for peers is not available in an appropriate format, the CVS analysis will be performed qualitatively. Finally, we aggregate the adjusted CVS and QS category scores into a total adjustment score, using category-specific weights as outlined in chapter 3.1.

Step 3: Indicative sub-sovereign rating

Based on the pre-defined indicative rating range provided by the framework assessment, we map the individual credit profile to the framework assessment to determine the indicative notch adjustment from the sovereign rating. The notch adjustment is derived from a mapping table as detailed in section 1.2., resulting in an indicative rating.

Step 4: Additional considerations

We account for additional considerations which are outlined in chapter 5. These would be reflected by notch adjustments from the indicative rating, resulting in the final rating.

Figure 16: Application of qualitative scorecard (QS)

Individual credit profile QS

Category	CVS Score	Peer-group analysis	Low risk	Medium risk	High risk	Individual credit profile (category score)
Debt burden & liquidity profile (40%)	28	Debt profile	◉ Conservative debt policy, favourable maturity profile and debt composition	○ Moderate maturity structure risk, currency/interest rate risk	○ Elevated financing risk with unfavourable maturity structure or debt composition	56
		Explicit and implicit contingent liabilities	○ Low contingent liabilities, good financial health of GREs, low pension commitments	◉ Considerable but manageable contingent liabilities	○ High or materially growing contingent liabilities, troubled financial health of GREs	
		Funding sources and liquidity management	◉ Excellent capital market access or established facilities incl. alternative funding instruments	○ Limited access to capital markets/liquidity facilities	○ Weak capital market access or reliance on single liquidity facility for upcoming financing needs	
Budget performance & flexibility (30%)	51	Budget management	◉ Strong operating/structural performance, credible budgets	○ Adequate and stable operating/ structural performance, limited budgetary pressures	○ Weak operating performance, frequent deficits/volatile fiscal results	59
		Expenditure flexibility	○ Flexible cost structure, ability/willingness to cut spending	◉ Sizable share of non-adjustable expenditures	○ Rigid cost structure, inability/unwillingness to adjust spending	
		Revenue flexibility	○ Flexible revenue structure, ability/willingness to increase revenues	◉ Some flexibility to increase revenues via higher/new taxes, shared taxes or asset sales	○ Rigid revenue structure, inability/unwillingness to adjust revenues	
Economy and social profile (20%)	44	Growth prospects and diversification	○ Large economic base, highly diversified, limited concentration	◉ Sizable economic base, moderate diversification with some concentration	○ Narrow economic base, high reliance on a single sector	47
		Labour market efficiency & demographics	○ Favourable socio-economic profile and demographic trends	◉ Socio-economic profile and trend in line with the national economy	○ Below-average and/or adverse demographic trend, low population	
Quality of governance (10%)	72	Recent events and policy risk	◉ Long-term political stability and policy predictability	○ Moderate level of policy risk, no major political events	○ High political risk, frequent changes in government and management bodies	86
		Transparency & accountability	◉ Constant, timely, accurate reporting. No findings in regular, independent audits	○ Largely complete and timely reporting, no serious findings in independent audits	○ Repeated failure to timely adopt budgets or incomplete reporting, no mandatory audits	

Institutional framework (indicative rating range)	Individual credit profile (score)	Max indicative adjustment (notches)
4	58	2
downwards		downwards

Source: Scope Ratings GmbH

6.2 Quantitative variables (CVS)

Variable	Description	Sources
Debt and liquidity profile		
Interest payments, % operating revenue	Three-year weighted average of interest payments as a percentage of operating revenues using data for the past three years	National Ministry of Economy, Central Bank, Statistical Institute
Debt, % operating revenue	Three-year weighted average of debt as a percentage of operating revenues using data for the past three years	
Balance before debt movement, % total revenue	Three-year weighted average of balance before debt movement as a percentage of total revenues using data for the past three years	
Budget performance and flexibility		
Operating balance, % operating revenue	Three-year weighted average of operating balance as a percentage of operating revenues using data for the past three years	National Ministry of Economy, Central Bank, Statistical Institute
Volatility of the operating balance as a % operating revenue	Standard deviation of operating balance as a percentage of operating revenues using data for the past three years (multiplied by 10)	
Transfers, % operating revenue	Three-year weighted average of transfers (as defined by national reporting standards) as a percentage of operating revenues using data for the past three years	
Personnel expenditure, % operating expenditure	Three-year weighted average of personnel expenditure as a percentage of operating expenditures using data for the past three years	
Capital expenditure, % total expenditure	Three-year weighted average of capital expenditure as a percentage of total expenditures using data for the past three years	
Economy and social profile		
GDP per capita, % national average	GDP per capita as a % of national average, latest available data	National Ministry of Economy, Central Bank, Statistical Institute
Real GDP volatility	Standard deviation of real GDP growth using data for the past three years	
Unemployment rate	Unemployment rate, latest available data	
Old-age dependency ratio	Ratio of population 65 and over to population 15-to-64-year old, latest available data	Eurostat, National Statistical Institute
Quality of governance		
Degree of corruption	Pillars of the European Quality of Government Index (2017 edition) for the sub-national level, other public sources for entities located outside Europe	European Commission, other public sources
Quality of services provided		
Impartiality of services provided		

6.3 Selected cases of sub-sovereign defaults and financial stress

Western Europe			
Date and sub-sovereign	**Country**	**Default status**	**Comments**
1988-92, Land of Saarland, Land of Bremen	Germany	Default avoided	Due to impeding budgetary hardship, the Länder were entitled to receive financial support from all the other members of the Federation so that they could fulfil their constitutional duties. The reasons for their financial distress included poor economic growth prospects, a high debt burden, and weak budget performance.
1990, City of Angouleme	France	Default	Adverse structural changes to the local economy coupled with weak governance and weak budget & debt management practices resulted in fiscal slippages. Unable to service rising debt levels, the city declared a moratorium on its debt service payments. No additional allocation was given by the central government to help the city to meet its financial commitments.
1990s, City of Western Isles	UK	Default avoided	Contingent liabilities deriving from strategic investments in a bank that collapsed resulted in financial distress. The central government provided support, allowing the council to recover the loss over a 30-year period. Creditors to the local authority were indemnified in the process.
Early 1990s, Municipality of Haninge	Sweden	Default avoided	The municipality faced financial distress due to contingent liabilities linked to its housing company. The crisis was resolved by central government interventions with subsidised loans. The municipality, however, was compelled to take cost-cutting measures and increase tax rates, and lenders were forced to prolong the credits they had extended.
1991, Municipality of Lebesby	Norway	Default avoided	The municipality ran into financial difficulties due to contingent liabilities in the form of guarantees for a private fish breeding company. The central government intervened, the municipality received additional grants, and was placed under special monitoring until it returned to financial viability.
1993, City of Naples	Italy	Default avoided	Contingent liabilities linked to the municipal transport company lead to the *dissesto* procedure.
1993, City of Malaga	Spain	Default	The city defaulted on a loan obligation for political reasons as opposed to liquidity problems.
1993, City of Karkila	Finland	Default avoided	The city had entered into guaranteed obligations for a private company which took up currency loans with two of Finland's leading commercial banks. Support to the city was supplied through subsidised loans. No creditor losses were reported.
1998, the municipality of Leukerbad	Switzerland	Default	Reasons for default included: i) weak debt and liquidity profile, reflected by sizeable accumulation of contingent liabilities coupled with a risk-taking investment strategy and on-lending to government-related companies; and ii) a credible no-bail-out regime. The companies' insolvencies and related crystallization of contingencies overburdened the municipality with high debt repayments, which it was unable to honour. In addition, the Federal Supreme Court of Lausanne decided that the Canton Valais was not obliged to bail out Leukerbad, thus rejecting lawsuits filed by banks again the Canton Valais for having violated its supervisory duty.

1998, City of Avignon	France	Default avoided	Faced default due to inadequate liquidity management, however the central government allowed advances on tax payments to boost liquidity. Additionally, the city was forced to constrain its borrowing and spending levels in order to obtain an extension of its credits. No bank or lender losses were incurred.
2006, City of Taranto	Italy	Default	Mismanagement and poor budgetary performance led to missed bond payments.
2010, City of Athens	Greece	Default	Overstretched municipal budget performance due to investments related to the Olympic Games.
Eastern Europe			
Autumn 1998, sector-wide default (more than 50 regions out of total 89)	Russian Federation	Default	Sector-wide defaults triggered by sovereign default, economic recession and rouble devaluation with deteriorating effect on regional budget performance, including a sizeable accumulation of tax arrears.
1998, City of Odessa	Ukraine	Default	Weak debt profile and budget performance were major grounds for the city of Odessa to fail to repay its municipal bond and interest.
2015-2016, City of Kiev	Ukraine	Default	The City imposed a moratorium on the bond amid sharp devaluation and economic recession, which negatively impacted budget revenue.
Other emerging markets			
1991, City of Bogota	Colombia	Default avoided	Central government bailout for debt transaction related to purchase of buses.
1994-1998, States of Sao Paulo, Rio de Janeiro, Minas Gerais, Rio Grande do Sul and Municipalities of Sao Paulo, Rio	Brazil	Default	Sub-national debt crises following severe macroeconomic shocks, including hyperinflation.
2002, Provinces of Buenos Aires, Santiago del Estero, Tucuman, Mendoza and City of Buenos Aires	Argentina	Default	The provinces defaulted on debt service payments, following economic depression.

6.4 Default definitions

For default definitions, please refer to Scope's Rating Definitions. Non-default events of sub-sovereigns include, but are not limited, to: i) arrears on payment to employees and/or suppliers; ii) failure to pay on a swap instrument if subject to legal dispute; and iii) the default of a government-related entity which is owned by the sub-sovereign but for which no guarantees have been issued.

6.5 Local-and foreign-currency issuer ratings

Scope assigns local and foreign currency issuer ratings. Ability and willingness to pay in either local-currency or foreign-currency debt is considered by Scope to be equal for most sub-sovereigns located in advanced economies. A foreign-currency issuer rating is unlikely to differ substantially from the local-currency equivalent for sub-sovereigns from countries with deep and well-developed financial markets and local-currency debt issuance that can meet sub-sovereign refinancing needs.

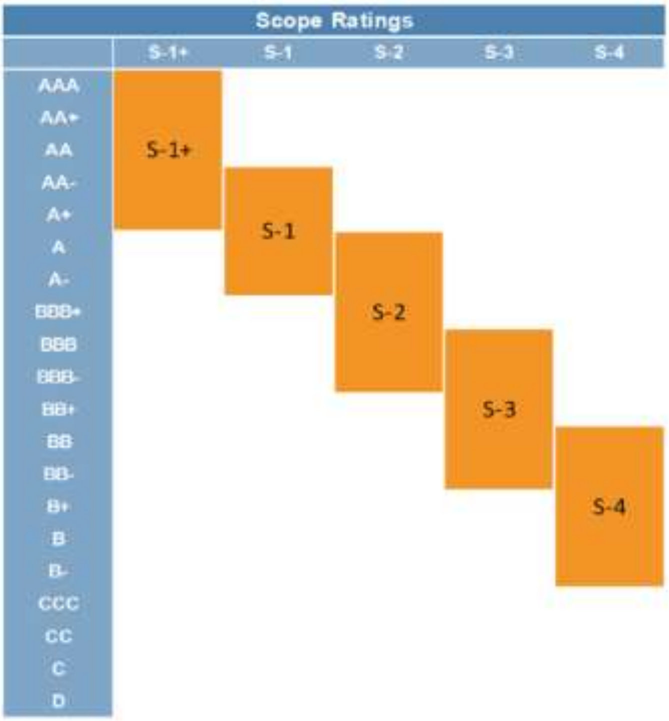
6.6 Long-term and short-term issuer ratings

Scope's rating definitions apply to sub-sovereign issuers and their long-term and short-term debt obligations.

Short-term ratings are derived from the long-term ratings as per the mapping table presented below (Figure 17), which provides five possible overlapping short-term rating positions over five long-term rating categories. To address risks and considerations related to short-term sub-sovereign funding, Scope places strong emphasis on short-term liquidity, funding flexibility and liquid reserves.

Specifically, in cases of an overlap per the below mapping table, Scope will choose the higher of the two options for those sub-sovereigns with robust liquidity positions and good access to external liquidity. Important elements for this liquidity assessment that may result in the higher of the two short-term ratings, are, usually, readily accessible liquidity facilities, committed bank facilities, track record of favourable capital markets access, or access to liquidity from the sovereign, a government-owned bank or agency. Conversely, Scope will choose the lower of the two options for those sub-sovereigns with a comparatively weaker liquidity and funding profile. The liquidity analysis is informed by Scope's assessment of the sub-sovereign's funding sources and liquidity management as well as framework-specific elements impacting the sub-sovereign's liquidity management and investment policies.

Figure 17: Short-term rating scale



6.7 Sources of information

We conduct our analysis based on the sub-sovereign's respective statutes and governing documents, annual reports, financial/economic statements/figures and investor relations presentations. In addition to quantitative metrics, qualitative assessments are incorporated into the process for deriving the final credit rating.

7. Bibliography

Alcidi, C., A. Giovannini, F. Infelise and J. Núnez Ferrer (2014), Division of powers between the European Union, member states, candidate and some potential candidate countries, and local and regional authorities: Fiscal decentralization or federalism, *Report for the European Union, Committee of the Regions*.

Allain-Dupré, D. (2018), "Assigning responsibilities across levels of government", *OECD Working Papers on Fiscal Federalism*, No. 24, OECD Publishing, Paris.

Bach, S., H. Blöchliger and D. Wallau (2018), "The spending power of sub-central governments: A pilot study", *OECD Working Papers on Fiscal Federalism*, No. 08, OECD Publishing, Paris.

Beck, Roland, G. Ferrucci, A. Hantzsche and M. Rau-Göhring (2017), "Determinants of sub-sovereign bond yield spreads – The role of fiscal fundamentals and federal bailout expectations", *Journal of International Money and Finance*, 79 (2017), pp. 72-98.

Blöchliger, H. (2018), "Market mechanisms in public service provision", *OECD Working Papers on Fiscal Federalism*, No. 06, OECD Publishing, Paris.

Blöchliger, H. and J. Kantorowicz (2015), "Fiscal constitutions: An empirical assessment", *OECD Economics Department Working Papers*, No. 1248, OECD Publishing, Paris.

Blöchliger, H. and O. Petzold (2009), "Finding the dividing line between tax sharing and grants: A statistical investigation", *OECD Working Papers on Fiscal Federalism*, No. 10, OECD Publishing, Paris.

Blöchliger, H. *et al.* (2007), "Fiscal equalisation in OECD countries", *OECD Working Papers on Fiscal Federalism*, No. 4, OECD Publishing, Paris.

Boadway, R. and A. Shah (2007), "Intergovernmental fiscal transfers – Principles and practice", *The World Bank – Public sector governance and accountability series*, Washington D.C.

Canuto O. and L. Liu (2010), "Subnational debt finance and the Global Financial Crisis", *The World Bank Economic Premise*, No. 13 (May 2010).

Charbit, C. and O. Romano (2017), "Governing together: An international review of contracts across levels of government for regional development", *OECD Regional Development Working Papers*, 2017/04, OECD Publishing, Paris.

Charbit, C. (2010), "Explaining the Sub-National Tax-Grants Balance in OECD Countries", *OECD Working Papers on Fiscal Federalism*, No. 11, OECD Publishing, Paris.

Escolano, J., L. Eyraud, M. Moreno Badia, J. Sarnes and A. Tuladhar (2012), "Fiscal performance, institutional design and decentralization in European Union countries", *IMF Working Paper Series*, WP/12/45, February 2012, Washington D.C.

Eyraud, L. and L. Lusinyan (2013), "Vertical fiscal imbalances and fiscal performance in advanced economies", *Journal of Monetary Economics*, 60 (2013), 571-587.

Feld, L., A. Kalb, M. Moessinger, and S. Osterloh (2013), "Sovereign bond market reactions to fiscal rules and no-bailout clauses – The swiss experience", *ZEW Discussion Paper Series*, No. 13-034.

Heppke-Falk K. and G. B. Wolff (2007), "Moral hazard and bail-out in fiscal federations: evidence for the German Länder", *Deutsche Bundesbank Discussion Paper Series*, No. 07/2007, Frankfurt.

Herold, K. (2018), "Insolvency frameworks for sub-national governments", *OECD Working Papers on Fiscal Federalism*, No. 23, OECD Publishing, Paris.

Jannone-Bellot, N., L. Martí-Selva and L. García-Menéndez (2017), "Determinants of sub-sovereign government ratings in Europe", *Transylvanian Review of Administrative Sciences*, No. 50 E/2017, pp. 110-126.

Jenkner, E. and Z. Lu (2014), "Sub-National Credit Risk and Sovereign Bailouts—Who Pays the Premium?", *IMF Working Paper*, WP/14/20, January 2014.

Koetter, M. and A. Popov (2018), "Politics, banks, and sub-sovereign debt: Unholy trinity or divine coincidence?", *ECB Working Paper*, No. 2146, May 2018.

Liu, L. and M. Waibel (2010), "Managing subnational credit and default risks", *The World Bank, Policy Research Working Paper*, No. 5362, Washington D.C.

Liu, L. and K. Song Tan (2009), "Subnational credit ratings", *The World Bank, Policy Research Working Paper*, No. 5013, August 2009.

Mitze, T. and F. Matz (2015), "Public debt and growth in German federal states: What can Europe learn?" Journal of Policy Modeling, vol. 37 (2015), pp. 208-228.

Padovani, E., L. Rescigno and J. Ceccatelli (2018), "Municipal bond debt and sustainability in a non-mature financial market: The case of Italy", *Sustainability*, vol. 10, 3248.

Pérez, J. and R. Prieto (2014), “The structure of sub-national public debt: Liquidity vs credit risks”, *Banco de Espana Working Paper Series*, No. 1403.

Pérez, J. and R. Prieto (2014), “Risk factors and the maturity of subnational debt: An empirical investigation for the case of Spain”, *Public Finance Review*, vol. 43(6), pp. 786-815.

Sola, S. and G. Palomba (2016), “Sub-nationals’ risk premia in fiscal federations: Fiscal performance and institutional design”, *Journal of International Money and Finance*, 63 (2016), 165-187.

Sola, S. and G. Palomba (2015), “Sub-national governments’ risk premia: Does fiscal performance matter?”, *IMF Working Paper*, WP/15/117, May 2015.

von Hagen, J., M. Bordignon, M. Dahlberg, B. Grewal, P. Petterson and H. Seitz (2000): Subnational government bailouts in OECD countries: Four case studies, *Inter-American Development Bank Research Network Working Paper*, No. R-399.

Scope Ratings GmbH

Headquarters Berlin
Lennéstraße 5
D-10785 Berlin

Phone +49 30 27891-0

Frankfurt am Main
Neue Mainzer Straße 66-68
D-60311 Frankfurt am Main

Phone +49 69 66 77 389 0

Paris
23 Boulevard des Capucines
F-75002 Paris

Phone +33 6 62 89 35 12

Oslo
Karenslyst allé 53
N-0279 Oslo

Phone +47 21 62 31 42

Madrid
Paseo de la Castellana 141
E-28046 Madrid

Phone +34 914 186 973

Milan
Via Nino Bixio, 31
20129 Milano MI

Phone +39 02 30315 814

Scope Ratings UK Limited

London
52 Grosvenor Gardens
London SW1W 0AU

Phone +44 20 7824 5180

info@scoperatings.com
www.scoperatings.com

Disclaimer

7.1