



EBA REPORT ON THE EUROPEAN SECURED NOTES (ESNS)

24 JULY 2018

EBA

EUROPEAN
BANKING
AUTHORITY

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Abbreviations

ABS	asset-backed securities
BRRD	Bank Recovery and Resolution Directive
CCR	central credit register
CfA	call for advice
CMU	Capital Market Union
COREP	Common Reporting
COSME	Competitiveness of Enterprises and SMEs 2014-2020
CRR	Capital Requirement Regulation
DECC	debt instrument backed by eligible credit claims
ECB	European Central Bank
EFSD	European Fund for Strategic Investments
EMIR	European Market Infrastructure Regulation
ESN	European Secured Note
ESNI	European Secured Notes Issuer
F-IRB	Foundation Internal Ratings Based Approach
HQLA	high-quality liquid assets
IRB	Internal Ratings Based
IRB-A	Internal Ratings Based Approach Advanced
LCR	liquidity coverage ratio
LGD	loss given default
LTV	loan to value
MREL	minimum requirement for own funds and eligible liabilities
NSFR	net stable funding ratio
OC	over-collateralisation
OTC	over-the-counter
RMBS	Residential Mortgage Backed Securities
SA	Standardised Approach
SMEs	small and medium-sized enterprises
SPE	special purpose entity
SPV	special purpose vehicle
STS	simple, transparent and standardised
TLTRO	targeted longer-term refinancing operation
UCITS	Undertakings for the Collective Investment of Transferable Securities

Executive summary

1. In October 2017, the European Commission sent to the EBA a call for advice (CfA) on the case for European Secured Notes (ESNs) to be delivered by 30 June 2018. The main purposes of the CfA are: (i) to assess whether or not a covered-bond-like dual-recourse instrument may provide a useful funding alternative to banks engaged in lending to SMEs and lending to infrastructure projects and (ii) to determine an appropriate EU framework and regulatory treatment for this new product. The assessment may possibly pave the way to the creation of a new distinct pan-European asset class.
2. The report includes the outcome of the assessment carried-out by the EBA to answer the CfA. It also puts forward some recommendations on key aspects for the European Commission to consider when possibly designing the legislative framework for ESNs.

Business case for ESNs

3. Based on the EBA's assessment, it appears that, in a stressed funding SME ESNs might provide a useful additional source of funding, especially for small institutions that do not have access to the securitisation market and/or have difficulty issuing unsecured long-term debt. For infrastructure ESNs the business case proves to be more challenging. The dual-recourse element of the infrastructure ESN might be less suitable to institutions given the relatively high regulatory capital consumption of infrastructure exposures, because of, among other factors, their long-term maturity profile, their large exposure amounts and the rules on provisioning.
4. From an investor perspective, among the main drivers of interest, (i) the risk-return profile of the instrument and (ii) the regulatory treatment of the product would be keys. In this regard, the treatment under the LCR and ECB collateral frameworks would be significant for the development of an ESN market.

Potential size of the ESN market

5. It is particularly challenging to assess the potential size of the ESN market, as this will depend on several structural and contingent elements, including the funding mix of issuing institutions, the current quantitative easing environment, the MREL needs, the economic growth, the assets availability, the relative pricing of ESNs and the regulatory and ECB collateral treatment.
6. One way of estimating the potential size of the ESN market is to assume a coverage of SME and infrastructure loans comparable to the range observed for mortgage loans in covered bonds. Under this straightforward method, the potential size of the ESN market for SMEs could be between EUR 310 billion and EUR 930 billion, and for infrastructure between EUR 80 billion and EUR 170 billion.

Impact of ESNs on asset encumbrance

7. The EBA acknowledges that ESNs' need for over-collateralisation is likely to be higher than that associated with CRR-compliant covered bonds and that asset encumbrance would probably rise in the EU following the introduction of ESNs. However, the overall potential increase in asset encumbrance levels is assessed to be moderate.

ESNs asset performance and pool eligibility criteria

SME ESNs

8. The data analysis suggests that exposures to SMEs are riskier than real estate portfolios and exposures to other corporates. In addition, the performance of SME portfolios relative to real estate portfolios also tends to be more heterogeneous, to display more extreme values and to be more pro-cyclical. However, such potential features do not necessarily imply a worse performance by a prudently structured SME ESN. A relatively high credit enhancement requirement applicable to SME ESNs would be able to deliver effectively structured products of relatively high credit quality.
9. Furthermore, given the high risk profile of SME exposures, the EBA recommends incorporating strict eligibility criteria at both loan and pool levels in the form of (i) selected SME exposures, (ii) sufficient granularity, (iii) concentration limit, (iv) quality standards and (v) an adequate minimum over-collateralisation requirement of at least 30%.

Infrastructure bonds

10. The data analysis suggests that the credit quality of project finance exposures tends to increase significantly over time. In particular, the credit quality of infrastructure projects increases as the construction is completed and the project enters its operational phase.
11. To ensure a high quality of infrastructure underlying assets and maximum consistency with the new CRR framework for project finance exposures, the EBA is of the view that the selection of the underlying exposures should be subject to eligibility criteria including restriction of ESNs to project finance, and exclusion of the project finance exposures in the construction phase, while granularity and concentration limits might not be appropriate.

ESNs applicable structure and features

SME ESNs

12. The EBA considers that SME ESNs could be structured as dual-recourse instruments. Consequently, all of the 2016 EBA best practices on covered bonds are generally deemed appropriate in the context of SME ESNs. However, some adjustments to these best practices would be needed to account for the particularities of SME loans. In particular, a more restrictive framework should be applied to SME ESNs for several best practices including for

(i) the composition of cover pools, (ii) the treatment of underlying assets located in different jurisdictions, (iii) the coverage principles and the legal/regulatory over-collateralisation, (iv) the liquidity buffer and (v) the scope of disclosure.

Infrastructure bonds

13. The EBA considers that a dual recourse structure would not be appropriate in the case of infrastructure exposures. Given this, most of the 2016 EBA best practices on covered bonds would not be relevant. Infrastructure projects tend to be very bespoke by nature, complex in structure and not granular. In addition, compared with real estate exposures, the infrastructure projects asset class is more heterogeneous and covers a wide range of very diverse assets, which may present different risk factors, revenue drivers and exposure to economic and market environments. Furthermore, their average exposure amount is usually significantly higher than typical exposure amounts backing covered bonds, making it difficult to create an infrastructure ESN instrument with a similar risk and underlying credit risk profile.

14. Although the EBA does not consider a dual-recourse ESN appropriate for project finance loans, its view is that a new distinct class of off-balance-sheet funding instruments for high-quality project finance loans could be considered in the form of an EU infrastructure bond. In particular, a standardised infrastructure bond secured by infrastructure loans transferred and segregated into an SPE, and offering issuing institutions some degree of capital relief through risk transfer, might be more suitable and should be considered by the European Commission.

15. This new product could be standardised into a pan-European framework and could be subject to public supervision. However, further work would be needed to specify the features of this potential new funding instrument and to determine its assignment under the CRR exposure classes as well as its attached regulatory treatment.

Regulatory treatment

SME ESNs

16. No preferential capital treatment could be granted to SME ESNs based solely on the performance of the underlying assets. However, compared with unsecured exposures to institutions, a differentiated risk weight requirement could be considered, provided that the following conditions are met:

- (i) The instrument presents a dual-recourse feature as well as structural and cover asset eligibility criteria that provide sufficient additional credit enhancement and mitigate many of the risks of the underlying assets.
- (ii) The overall consistency of the CRR capital framework between exposures classes is respected. Especially, the capital treatment of SME ESNs should be based on the

actual risk profile of the instrument and should not create unjustified level playing field issues at the expense of non-preferred covered bonds¹.

- (iii) A clear distinction between the prudential framework for SME ESNs and that of covered bonds is maintained to avoid market confusion and potential negative side effects on the covered bond market.

17. As regards the other regulatory frameworks, the EBA is of the view that some preferential treatment compared with unsecured exposures to institutions could be considered for SME ESNs on the basis that they take the form of a dual-recourse instrument, share many of the fundamental features of covered bonds and meet all the additional required eligible criteria under the regulation referred to. However, at this stage the EBA is not in a position to advise on the potential treatment under the LCR and the Solvency II frameworks ([Table 1](#)).

Table 1: Suggested regulatory treatment for ESNs

REGULATORY FRAMEWORK	PROPOSED TREATMENT
UCITs treatment (retail investment and lower investment limit)	YES
Bail-in exemption	YES
EMIR treatment (exemption collateral posting)	YES
HQLA eligibility under LCR framework	NOT ASSESSED
Solvency II capital treatment	NOT ASSESSED

18. It should be noted that the eligibility of ESNs under the ECB collateral frameworks has not been assessed, as it was not part of the mandate of the EBA provided in the CfA.

Infrastructure Bonds

19. Based on the suggested eligibility criteria and on other best practices of regulation and depending on the proposed framework for EU infrastructure bonds, the standardised EU infrastructure bonds should constitute a relatively safe asset class, whereby investors could benefit from the predictable cash flows of the operational phase of infrastructure loans but also from relatively low default rates and loss rates, especially in the long-term. For these reasons, some differentiated regulatory requirements could possibly be considered, in particular compared with traditional exposures to corporates.

¹ Non-preferred covered refers to covered bond instruments that comply with all the UCITS criteria but do not meet all the specific conditions of Article 129 of the CRR and are therefore subject to treatment as unsecured exposures to institutions.

20. However, the applicable regulatory requirements will also depend on the exposure type to which the infrastructure bond would be assigned. In this regard, further work would need to be carried out by the EBA, to further specify the features of this potential new funding instrument. In particular, it has to be assessed if and under what conditions such a non-dual recourse infrastructure bond may be classified as specialised lending or as non-STS securitisation exposure under the CRR. This assessment is required to identify the initial benchmark that should be used to determine the appropriate regulatory treatment of the EU infrastructure bonds.

1. Introduction

1.1 Context

21. In September 2015, the European Commission adopted an action plan that sets out a list of over 30 actions and related measures to establish the building blocks of an integrated capital market in the EU by 2019. In that communication, in order to support institutions' funding on the capital markets and, through that, bank lending to the real economy, the Commission proposed a Simple Transparent and Standardised (STS) securitisation framework and announced the proposal for a pan-European covered bonds framework.

22. In December 2016, the EBA published a Report on covered bonds following up on the work on covered bonds' best practices and capital treatment it had undertaken in 2014, in response to a recommendation of the European Systemic Risk Board². In its December 2016 Report, the EBA recommended introducing EU legislation on covered bonds in accordance with a three-step approach: (i) a directive setting out harmonised minimum quality standards of covered bonds across the EU, to provide a cross-sectoral definition of EU covered bond recognised throughout EU financial regulation not specifying eligibility of cover assets; (ii) an amended CRR framework for covered bonds, defining the eligibility conditions for preferential bank regulatory capital treatment and limiting such eligibility to the cover assets already included in Article 129 of the CRR; and (iii) a voluntary convergence initiative, covering elements of covered bonds regulation in relation to which a minimum harmonisation initiative either was not needed or could lead to potential market disruptions.

23. In June 2017, in its Communication on the Mid-term Review of the CMU Action Plan³, while confirming its intention to propose a pan-European covered bonds framework, the Commission indicated its intention to assess the case for introducing European Secured Notes (ESNs), an additional instrument available for institutions to gain funding on the capital markets, particularly infrastructure loans and loans to SMEs, which are not covered assets eligible for preferential bank regulatory capital treatment according to Article 129 of the CRR.

24. Always in June 2017, the European Parliament published on its own initiative a report entitled 'Towards a pan-European covered bonds framework', in which it advocated that an EU framework on covered bonds should, inter-alia, distinguish between 'Preferred Covered Bonds', i.e. those covered bonds that meet the requirements of CRR Article 129, and 'Non-Preferred Covered Bonds', i.e. those covered bonds that are UCITS Article 52(4) compliant but do not meet the requirements of CRR Article 129.

² See Recommendation of the European Systemic Risk Board of 20 December 2012 on funding of credit institutions (ESRB/2012/2).

³ [Link](#)

25. On 12 March 2018, the Commission published its proposal for a directive on covered bonds. The proposal defines what assets are eligible for inclusion in what can be defined as an EU-regulated covered bond, limiting eligibility to high-quality cover assets, explicitly including in that category the cover assets that benefit from preferential bank regulatory capital treatment in accordance with CRR Article 129. The directive, however, would also allow for the inclusion of other high-quality cover assets that meet specific requirements related to their valuation and the enforceability of security rights.

1.2 Mandate of the CfA

26. In this context, in October 2017, the Commission sent to the EBA a call for advice (CfA) on the case for the ESNs to be delivered by 30 June 2018. In the CfA, ESNs are defined as 'dual recourse financial instruments on an issuer's balance sheet applying the basic structural characteristics of covered bonds to two non-traditional cover pool assets – SME bank loans and infrastructure bank loans', whose funding model 'could either be a classic direct on-balance sheet covered bond without transferring the assets to an external entity or an on-balance sheet covered bond with a separate guarantor to whom the cover pool assets are transferred'.

27. The main purposes of the CfA, are (i) to assess whether or not a covered bond similarly dual recourse instrument may provide a useful funding alternative to banks engaged in lending to SMEs and lending to infrastructure projects and (ii) to determine an appropriate EU framework and regulatory treatment for this new product. This assessment may possibly pave the way to the creation of a new distinct pan-European asset class.

28. More specifically, the CfA requires the EBA to assess the main aspects related to the potential introduction of ESNs including:

1. The appropriateness of the EBA 2016 covered bond best practices for ESNs: the extent to which, *mutatis mutandis*, the best practices identified by the EBA could be applicable to ESNs (with the exception of the best practice on LTV limits and the best practice on LTV measurement method and frequency).
2. The risk treatment of ESNs, from a supervisory perspective and taking into account their risk-return profile. The regulatory dimensions to consider when assessing the risk treatment are the following:
 - a. UCITS Directive Article 52(4) (current EU definition of a covered bond);
 - b. CRR Article 129 (preferential capital treatment for investor institutions);
 - c. Solvency II Delegated Act (capital treatment for investor insurance companies);
 - d. LCR Delegated Act (treatment of instruments as HQLA);
 - e. Bank Recovery and Resolution Directive Art. 44(2) (bail-in treatment);
 - f. EMIR (RTS and ITS) (risk mitigation requirements on derivatives);

- g. Existing frameworks, programmes and structured products collateralised by SME bank loans and/or infrastructure bank loans.
- 3. The asset encumbrance implications of ESNs : the individual banks' impact in terms of asset encumbrance for unsecured bank creditors, taking into account:
 - a. EBA reports on asset encumbrance;
 - b. Dynamic nature of the cover pool;
 - c. Potential decrease of bail-inable debt in the event of issuer's resolution;
 - d. Potential reduction in recovery value in the event of a fire sale upon issuer's resolution.
- 4. Any technical aspects that are of relevance to ESNs.

1.3 Main content of the report

- 29. As a response to the CfA, the report includes an assessment of the business case for ESNs (Chapter 2), an analysis of the potential implications of issuances of ESNs on asset encumbrance (Chapter 3) and a data analysis of the risk profile of SME loans and project finance (Chapter 4).
- 30. It also contains the suggestions of the EBA on the pool eligibility criteria and the structure and the features of ESNs (Chapter 5) as well as some considerations regarding the potential regulatory treatment of ESNs (Chapter 6).
- 31. As a conclusion, the Reports puts forward five main policy recommendations on crucial aspects for the European Commission to consider when possibly designing the legislative framework for ESNs (Chapter 7).

2. Business case for ESNs

2.1 Funding practices and impediments to SME loans and infrastructure projects funding

2.1.1 SMEs funding

a. Existing funding models

32. The European Commission's annual report on SMEs 2016/2017⁴ illustrates that 99.8% of all non-financial enterprises that operated in the EU-28 during 2016 were SMEs⁵. SMEs account for 67 % of total employment in the EU non-financial business sector, and for 57% of the value added generated by the same sector. Consistent with the Commission's previous report on this topic, the 2016/2017 analysis shows a certain degree of variability across Member States in terms of contribution of the SME sector. Furthermore, 93 % of the SMEs are micro SMEs, i.e. they employ fewer than 10 persons. The sectors where SMEs are most important are 'accommodation and food services', 'business services' and 'construction'.

33. According to the report, 2016 was characterised by a continued growth in employment and value added stemming from the activity of SMEs in the EU, with SME employment exceeding its 2008 value for the first time since the financial crisis. The European Commission foresees the steady growth of SME activity will continue during 2018.

34. In its Report on SMEs and the SME supporting factor⁶, the EBA documented the high degree of reliance on bank finance that characterises SME in Europe. The latest European Central Bank's latest SAFE survey (April-September 2017)⁷ confirms that bank-related finance remains the most important financing channel for SMEs in the euro area. When asked about the different types of financing sources and their use in the last six months, slightly more than 50% of the SAFE respondents reported that bank overdrafts and bank loans were relevant or had been used, followed by leasing, trade credit and subsidised loans. As shown in [Figure 1](#) only around 14% of respondents said they had used retained earnings in the previous six months, whereas another 10% had not used them but said they were relevant.

⁴ See Annual Report on European SMEs Focus on self-employment 2016/2017, available here: [link](#)

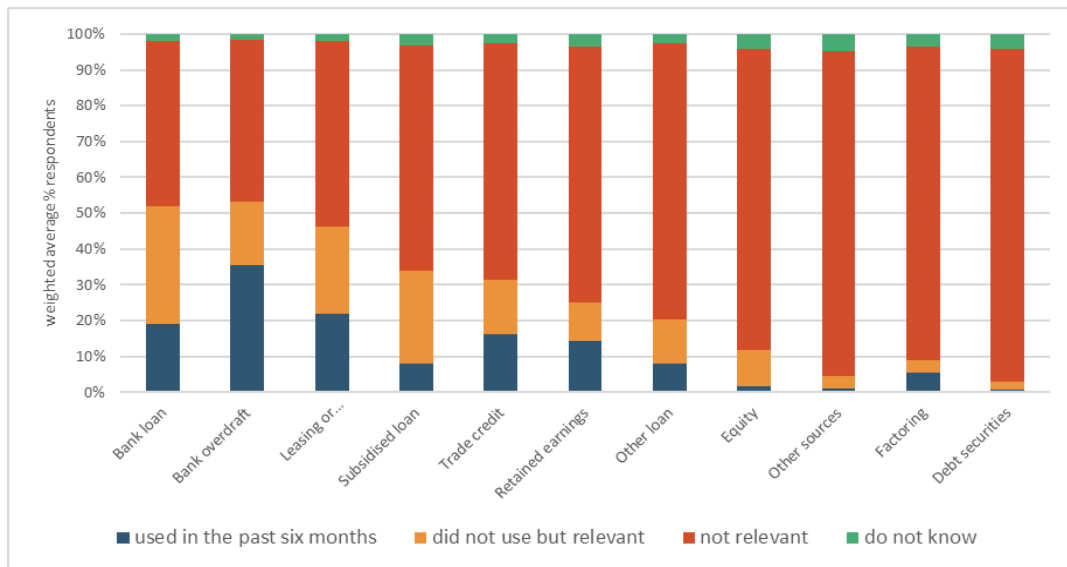
⁵ The European Commission's official definition of SMEs takes account of three different factors (number of employees, level of turnover, and size of the balance sheet). However, the statistics quoted in this chapter are based only on the employment definition, since this is the definition used by the European Commission's report on SMEs.

⁶ See EBA Report on SMEs and SME supporting factor (2016), available here: [link](#)

⁷ Survey on the Access to Finance of Enterprises in the Euro Area (April to September 2017), available here: [link](#)

Less than 1% of the respondents reported having used debt securities, whereas only around 1.5% of them reported having used equity (1.6%).

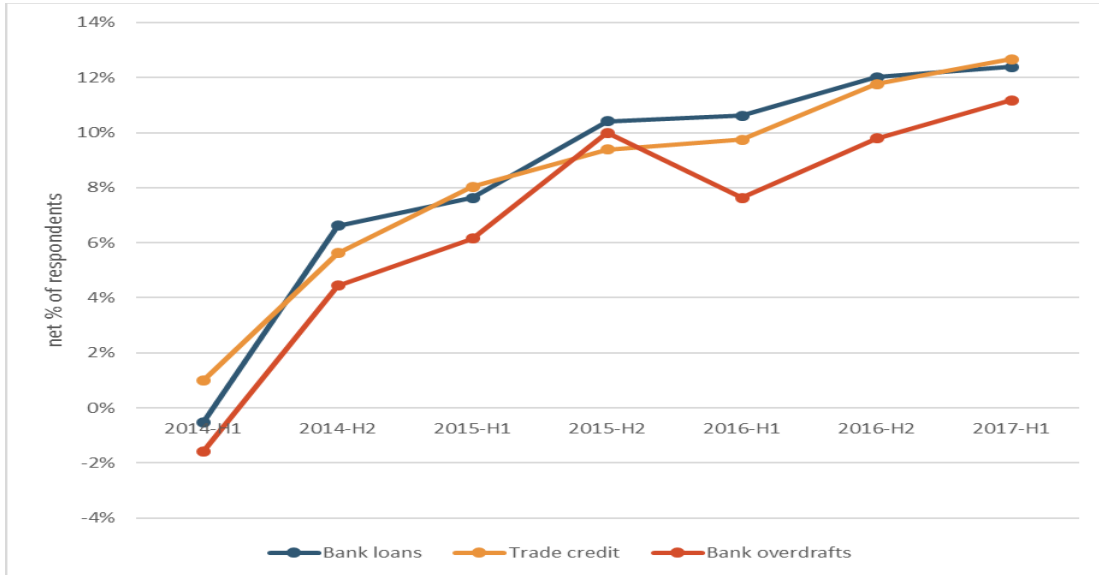
Figure 1: Relevance of financing sources for euro area SMEs



Source: ECB SAFE H1 2017

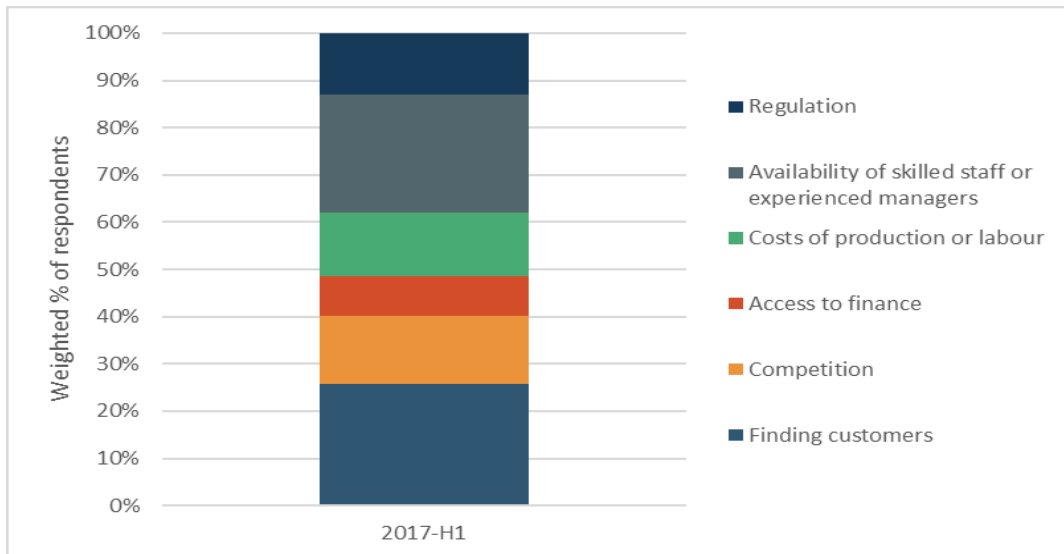
35. For the purposes of this report, it is worth noting that euro area SMEs perceived external finance provided by banks as being increasingly available during 2014-2017 (see [Figure 2](#)). The SME financing gap remained negative in most euro area countries in H1 2017, highlighting that the increase in the need for external financing remains smaller than the improvement in access to external funds. Overall, euro area SMEs did not report access to finance to be a major obstacle to their businesses during H1 2017 (see [Figure 3](#)). However, the SME funding gap differs greatly among EU countries.

Figure 2: Perceived availability of external financing sources for Eurozone SMEs



Source: ECB SAFE Apr-Sep 2017

Figure 3: Problems faced by Eurozone SMEs



Source: ECB SAFE H1 2017

36. European institutions traditionally fund SME lending through either their deposit base or the issuance of unsecured debt. In the post-crisis period, the extraordinary provision of liquidity by central banks supported bank lending, including to SMEs. The 2014 and 2016 targeted longer-term refinancing operations (TLTROs), for instance, linked the amount of funds banks can borrow to the volume of their loans to non-financial corporations and households.

37. Banks' recourse to secured funding on the capital markets has traditionally been very limited in relation to SME exposures:

- a. Only one bond programme collateralised by SME exposures has been issued to date in Europe (2013 Commerzbank AG SME Structured Bond), outside the German legal covered bond framework (the *Pfandbrief* law does not include SME exposures as eligible collateral) and, consequently, outside any prudential recognition in the European framework.
- b. Securitisation of SME exposures for funding purposes has played a role in the European asset-backed securities market, albeit of a limited magnitude in the post-crisis period. [Figure 4](#) shows that SME exposures represented between 8% and 18% of total securitisation issuance between 2012 and the first half of 2017. For the period under consideration, institutions obtained such funding by either placing securitisation bonds with market investors or pledging those bonds with central banks in exchange for liquidity.

Figure 4: European securitisation issuance by collateral

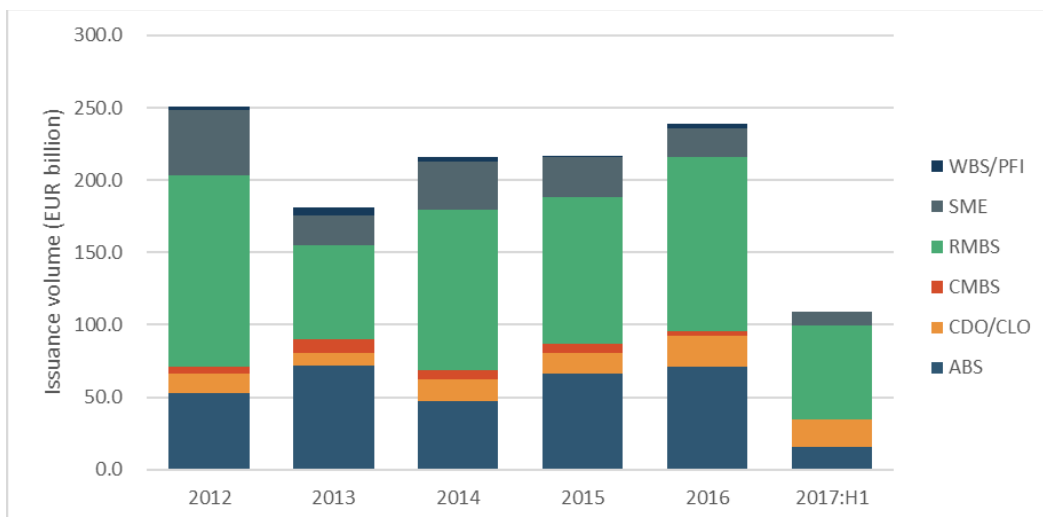
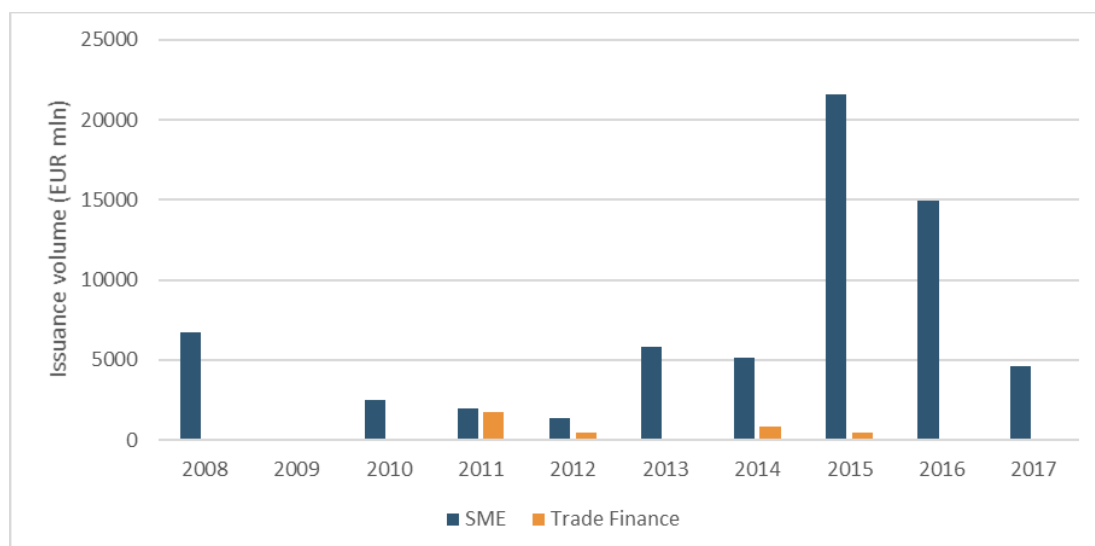


Figure 5: SME and trade finance synthetic securitisation (IACPM sample of 14 issuers EU-located portfolios)



38. Exposures to SMEs represent a large portion of European institutions' banking book. On the basis of 2017 EBA transparency exercise data, exposures to SMEs represent 8% of the aggregate SA portfolio in the sample (circa EUR 1 trillion) and 10% of the aggregate IRB portfolio in the same sample (circa EUR 2.1 trillion).

b. Past and recent initiatives to enhance SMEs funding

39. The European Commission supports SMEs via its (Competitiveness of Enterprises and SMEs 2014-2020) COSME programme. Among its objectives, COSME aims to facilitate SMEs' access to finance. To this end, the programme deploys a Loan Guarantee Facility and an Equity Facility for Growth. The former provides guarantees and counter-guarantees to financial institutions lending to SMEs, so as to expand the institutions' lending capacity. The latter provides risk capital to equity funds that invest in SMEs. The Loan Guarantee Facility of COSME is also deployed in cooperation with the European Investment Bank Group (EIB and EIF), in the form of uncapped portfolio guarantees and guarantees to SME securitisation transactions. In return for the risk-sharing support they receive from the EIB group, financial institutions commit to provide funding to SMEs on favorable conditions.

40. In several Member States promotional banks or other public financial institutions for development are active to facilitate institutions' lending to SMEs⁸ among other objectives.

41. Several Member States in the EU operate central credit registers (CCRs), i.e. centralised datasets collecting borrower information that help banks assess the creditworthiness of actual and potential borrowers. CCRs serve several purposes, among them alleviating the

⁸ Examples include KfW in Germany, SBCI in Ireland, IFD in Portugal, IfG in Greece, CDP in Italy, ICO in Spain, CDC in France and BGK in Poland.

informational problem, which is particularly acute in the case of SME lending. The French Central Bank also runs the FIBEN service, whereby it centralizes data and information on corporate borrowers and – in exchange for a fee – provides creditworthiness scores to those borrowers.

42. In order to support banks' funding of SME exposures, especially small credit claim exposures, the French Central Bank and some private institutions introduced the European Secured Notes Issuer (ESNI), a securitisation-like special purpose vehicle that issues notes backed by collateralised credit claims that satisfy all Eurosystem eligibility criteria for credit claims collected from a pool of lenders. The credit claims backing ESNI's liabilities are credit scored by the French Central Bank's FIBEN service and ESNI's notes may be used for refinancing in the interbank market and are eligible for collateral operations with the European Central Bank. Following the French initiative, the Eurosystem's monetary policy framework has been enhanced to include similar instruments, i.e., non-marketable debt instruments backed by eligible credit claims' (DECCs) that are eligible under the Eurosystem's collateral framework for any national central bank to apply.

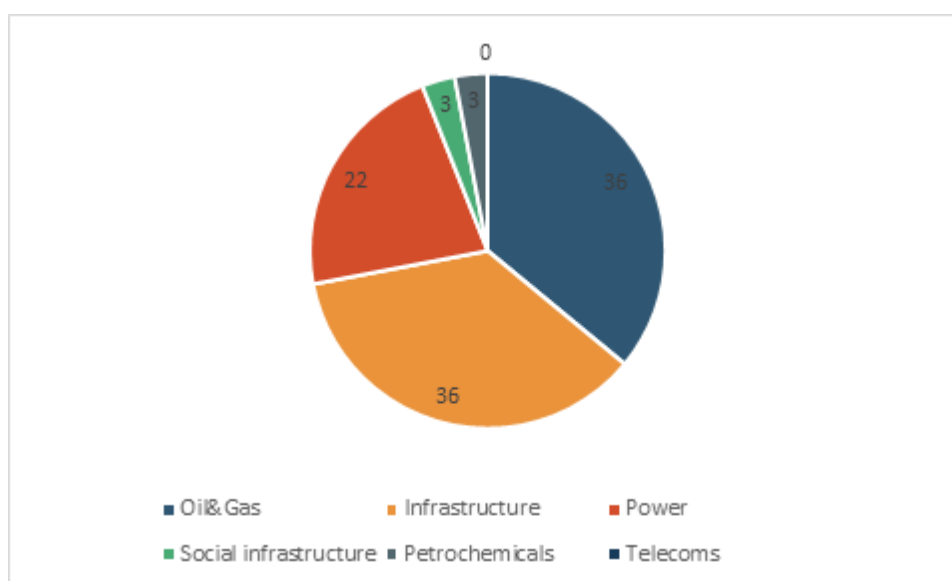
2.1.2 Infrastructure funding

a. Existing funding models

43. The European Commission's action plan for CMU identifies investments in infrastructures as key to supporting the general economy, to making Europe more competitive and to completing the single market. The European Commission also assessed that most of the decline in GDP in the EU between 2007 and 2013 was due to the drop in public and private investments⁹.

44. Public infrastructures usually encompass the facilities that a country needs in order to function properly and to support the development of its economy. According to AFME and Thomson Reuters data (Figure 6), what falls under the broad definition of project finance, with reference to December 2014, mostly comprises, in order of importance, oil and gas, infrastructure, power, petrochemicals, social infrastructure and chemicals.

Figure 6: Sector composition of projects financed by bonds—global 2014.



Source: AFME, Thomson Reuters

45. Traditionally, infrastructure projects have mostly been financed with public funds. Governments were the main investors in this area given the inherent nature of infrastructures as public good and the positive externalities often generated by such facilities. However, increased public deficits combined with the difficulties of the public sector in supporting efficient spending, have led to a reduction in the level of public funds allocated to infrastructures in many countries¹⁰.

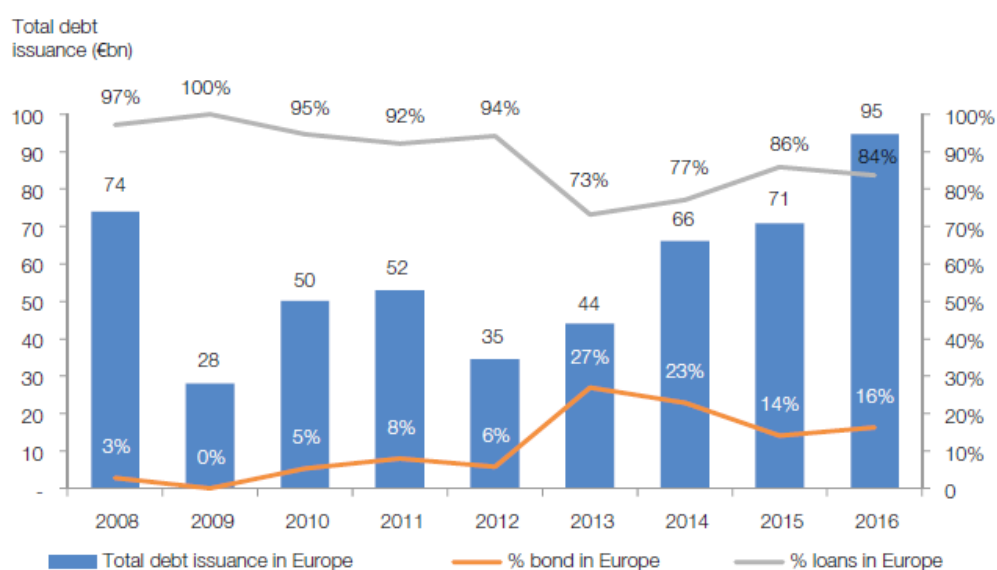
⁹ European Commission (2014): Why does the EU need an investment plan? Factsheet 1. [Link](#)

¹⁰ OECD (2015), Infrastructure Financing Instruments and Incentives. [Link](#)

46. In this context, banks have progressively become a major source of funding of infrastructure projects in Europe¹¹. The central role of banks in funding infrastructure projects is mainly explained by (i) their ability and expertise in the credit evaluation of project finance, particularly during the complex construction phase and; (ii) their ability to raise adequate funding to match the long-term profiles of infrastructure assets.

47. However, recent trends indicate a decrease in the percentage of infrastructure loans in the total infrastructure funding mix, from 100% in 2009, to 73% in 2013 (Figure 7). According to stakeholders, this decrease is due to the impact of post-crisis regulation. In particular, increased restrictions on the tenor of the loans, higher long-term funding and capital costs and concerns over political and regulatory risks may be affecting the economics of financing infrastructure for banks¹².

Figure 7: European infrastructure bond and loan issuance 2008-2016



Source: AFME, Thomson Reuters

48. Meanwhile, an alternative source of funding has been emerging with institutional investors (such as pension funds, insurance companies and sovereign wealth funds) increasingly entering the infrastructure market. For various reasons, including a lower risk appetite and a lack of familiarity with infrastructure investments, institutional investors at present allocate a limited fraction of their investments to infrastructure projects. These institutions have traditionally invested in infrastructure through listed companies and fixed income instruments such as project bonds¹³.

49. The increased interest of institutional investors in infrastructure investments has led financial markets to develop new forms of cooperation between banks and institutional investors

¹¹ AFME and ICMA (July 2017), European infrastructure finance: a stock take. [Link](#)

¹² Ibid.

¹³ OECD (2015).

(which may entail a part of disintermediation), resulting in funds being channeled to infrastructures. The available evidence indicates three alternative structures:

- **The partnership/co-investment model:** an infrastructure lender originates infrastructure loans and organises a syndicate, whereby the bank retains a pre-agreed portion of each loan in the portfolio and sells the remaining portion to institutional investors. The latter can therefore co-invest in infrastructure, while relying on the servicing of the loans in the portfolio provided by the originating bank.
- **The securitisation model:** a bank originates infrastructure loans and then sells them into a securitisation SPE. Institutional investors buy tranches of the infrastructure securitisation transaction.
- **The debt fund model:** an institutional investor provides a fund to an asset manager that is responsible for the selection/screening process and monitoring of the investments. These asset managers tend to be more experienced than institutional investors that do not have dedicated teams to invest in infrastructure assets.
- **Direct origination by institutional investors:** an institutional investor sets up a dedicated team to originate infrastructure loans, i.e. to invest in infrastructure assets.

50. Infrastructure projects can be financed with a diverse range of funding channels and instruments. In this regard, the OECD has suggested a taxonomy of instruments for infrastructure financing (Figure 8). These are divided into three main categories: fixed income into bonds and loans, equity into listed and unlisted shares, and hybrids, being combinations of both.

Figure 8: OECD taxonomy of instruments for infrastructure financing

Modes		Infrastructure Finance instrument		
Asset category	Instrument	Infrastructure Project	Corporate balance sheet / other entities	
		Bonds	Project bonds	Corporate bonds, Green Bonds
			Municipal sub-project bonds	
Fixed income	Loans	Green bonds - Sukuk	Subordinated bonds	
		Direct/ Indirect/ Co-investment lending to infrastructure project, Syndicated Project loans	Direct/ Co-investment corporate	
Mixed	Hybrid	Subordinated loans / Bonds, Mezzanine Finance	Subordinated bonds, convertible, Preferred stock	
Equity	Listed	YieldCos	Listed infrastructure & utilities stocks, closed end funds, REITs IITs, MLPs	

Modes	Infrastructure Finance instrument	
Unlisted	Direct/Co- Investment in infrastructure project equity, PPP	Direct/ Co-investment in infrastructure corporate equity.

Source: OECD

51. Despite the wide range of funding instruments, loans and bonds form the largest categories of infrastructure finance, reflecting the broader fixed-income markets.

b. Funding development (including past and recent initiatives to enhance infrastructure funding) and remaining impediments

52. Policymakers have been expressing concerns about the difficulty to resorb the infrastructure funding gap, despite high levels of liquidity available in Europe and a need to improve and expand the infrastructure framework in Europe. For example, EUR 2 trillion of investment in infrastructure projects will be needed in the EU by 2020¹⁴, according to the European Investment bank¹⁵.

53. The European Commission has already taken several initiatives. For example, it has created the European Fund for Strategic Investments (EFSI) and it has developed the project bond initiative. Jointly launched by the EIB Group, these initiatives aim to mobilise private investments in projects which are strategically important for the EU. In particular, the initiative is designed to enable promoters of infrastructure projects to attract additional private finance from institutional investors such as insurance companies and pension funds by providing credit enhancement to project companies raising senior debt in the form of bonds to finance infrastructure projects. The bonds is issued by the project companies themselves, and the EIB provides credit enhancement in the form of a subordinated instrument (either a loan or a contingent facility) to support the senior debt.

54. The European Commission has also suggested softening the capital requirement for some high quality infrastructure loans under both the CRR (see Chapter 4) and the Solvency II frameworks. Several national initiatives have also been taken mostly in the form of increasing public sector guarantees and developing public-private partnerships.

55. However, despite the numerous efforts made to increase the attractiveness of infrastructure projects for investors, financing them can still be particularly challenging because of the nature of infrastructure assets¹⁶, in particular with respect to the following aspects:

- **Capital intensity and longevity:** capital intensity, high up-front costs, lack of liquidity and a long asset life generate substantial financing requirements and a need for dedicated

¹⁴ OECD (July 2017) Technical note on estimates of infrastructure investment needs. [Link](#)

¹⁵ European Commission (July 2017) Mid-term review of the CMU action plan. [Link](#)

¹⁶ OECD (2005) *ibid.*

resources on the part of investors to understand the risks involved and to manage them. In addition, infrastructure projects may not generate positive cash flows and may entail significant risk in the early phases.

- **Heterogeneity and complexity:** infrastructure projects tend to be heterogeneous and bespoke, with possibly complex legal arrangements structured to ensure proper distribution of payoffs and risk sharing. These features make infrastructure investments less liquid.
- **Lack of transparency:** the information required by investors to assess the infrastructure market is insufficient or dispersed. In addition, the lack of a benchmark for measuring the performance of the project is also one of the main barriers to infrastructure investment.

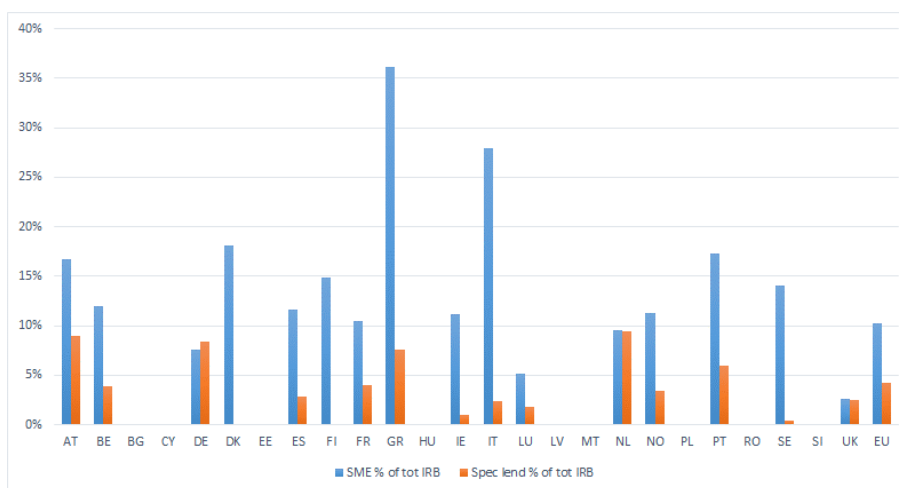
2.2 Business case for a new instrument

2.2.1 Potential size of the ESN market in the near term

56. The present section provides quantitative estimates of the potential size capacity of the ESN market. However, such an assessment is particularly challenging as it is conditioned by several key qualitative and quantitative elements, which cannot be factored in (as explained below). As a consequence, the results of the analysis should be interpreted with great care. They are indicative and should not be viewed as definite predictions.

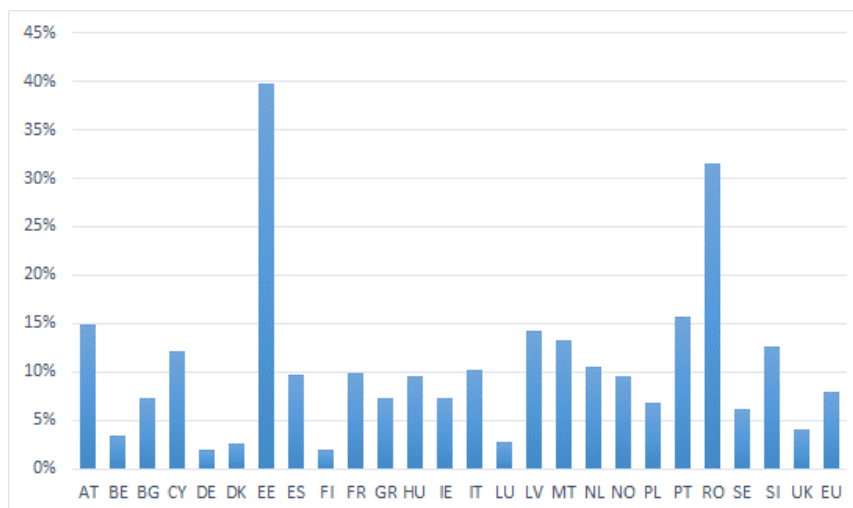
57. The potential size of the ESN market could be gauged using, as a starting point, the current total amount of EU institutions' exposures to SMEs and specialised lending. In June 2017, the total IRB portfolio of EU institutions was EUR 21 trillion, of which exposures to SMEs and to specialised lending represented respectively 10% (EUR 2.1 trillion) and 4% (EUR 840 billion) (Figure 9) and, the total SA portfolio was EUR 12.5 trillion, of which exposures to SMEs represented 8% (EUR 1 trillion) (Figure 10).

Figure 9: SME exposures and specialised lending (% of total IRB portfolio)



Source: EBA transparency exercise (data as of June 2017)

Figure 10: SME exposures (% of total SA portfolio)



Source: EBA transparency exercise (data as of June 2017)

58. Consequently, the aggregate pool of SME and infrastructure exposures potentially available in the EU banking system to be re-financed through ESNs is estimated to reach at least EUR 4 trillion, circa 12% of the total credit risk portfolio of EU institutions that participated in the 2017 EBA transparency exercise¹⁷. Although that sample does not represent all the institutions domiciled in the EU, its coverage in terms of EU banking assets reaches approximately 85%.

59. Whereas the stock of exposures potentially available for refinancing through ESNs appears to be large in particular with regard to the financing of SME loans, several considerations should be made on factors that may limit the potential size of the ESN market. Some of these headwind factors are of a structural nature whereas others are contingent on the current economic and regulatory juncture.

60. Among the **structural headwinds**, at least the following should be considered:

- a. **Structural diversification of bank funding:** institutions normally adopt a diversified mix of funding sources, whereby it is not generally reasonable to expect that the totality of a given portfolio is funded by means of one unique funding instrument. This may occur in specific cases/jurisdictions where specialised credit institutions operate (e.g. covered bond-funded institutions in Denmark).

¹⁷ The measurement of SME and infrastructure exposures through supervisory data is subject to the following main caveats: i) SME exposures are classified as such on the basis of institution-specific definitions, as a standardised definition of SME does not exist for the purposes of assigning exposures to exposure classes; ii) infrastructure lending exposures fall within a regulatory sub-class called 'specialised lending' of the IRB corporate exposure class, including a range of exposures that goes beyond infrastructure lending as defined in the CfA under consideration; iii) infrastructure lending cannot be identified in SA credit risk portfolios. Therefore, the volumes reported in this section do not reflect the infrastructure lending business of banks using the SA method for this exposure type.

- b. **Overlap with traditional covered bond market:** some of the infrastructure lending and, especially, SME lending exposures qualifies for inclusion in cover pools of CRR-compliant covered bonds. This is the case, for instance, for exposures to SME borrowers that meet the conditions to qualify as exposures collateralised by residential real estate property or commercial real estate property, in accordance with the criteria provided for in CRR Article 129 and related provisions. This may also be the case for certain infrastructure lending that benefits from eligible guarantees of public sector entities, in accordance with the CRR regime on the definition of exposures to, or guaranteed by, governments or other public sector entities.
- c. **Collateral quality, collateral complexity and eligibility criteria for ESNs:** only part of the SME and infrastructure portfolios would be suitable for inclusion in ESN cover pools (see [Chapter 4](#)), because of asset quality considerations and the fact that SME and infrastructure exposures have more complex credit and liquidity risk profiles than other exposures from the perspective of investors. These considerations, together with the need to justify and support some degree of preferential regulatory treatment for ESNs, would require establishing sufficiently prudent eligibility criteria for inclusion of available assets in ESN cover pools, which will also limit the ESN market growth potential.

61. Among the **contingent headwinds**, at least the following should be considered:

- a. **Current quantitative easing environment:** in a progressive manner, after the financial crisis struck, EU central banks introduced several wide-ranging measures of extraordinary monetary policy. The resulting funding environment, which still prevails at the time of writing, provides banks with abundant and cheap funding. The funding environment makes the use of alternative (secured) funding instruments, including traditional covered bonds and asset-backed securities, which are less profitable in relative terms. The same logic would apply to the use of ESNs.
- b. **MREL build-up phase:** with the entry into force and the national implementation of the Bank Recovery and Resolution Directive (BRRD), institutions in the EU are being required to gradually build up institution-specific target levels of liabilities that can be bailed-in, i.e. written down or converted into equity. Under certain conditions, secured liabilities – such as ESNs – are excluded from the scope of the bail-in. It may therefore be expected that, during the multi-year MREL build-up phase, institutions in the EU may have to favour issuance of unsecured MREL-eligible instruments, rather than secured funding instruments.
- c. **Balance sheet strengthening and risk transfer:** with the G-20 agenda of post-crisis reforms almost accomplished, EU institutions are still in the process of implementing prudential regulation reforms and of responding to the supervisory demand for stronger balance sheets and lower levels of legacy non-performing loans. In such context, institutions may favour risk transfer transactions through for instance

securitisation, rather than mere funding transactions. This may particularly be the case for SME exposures and infrastructure lending exposures which are among the most capital-consuming.

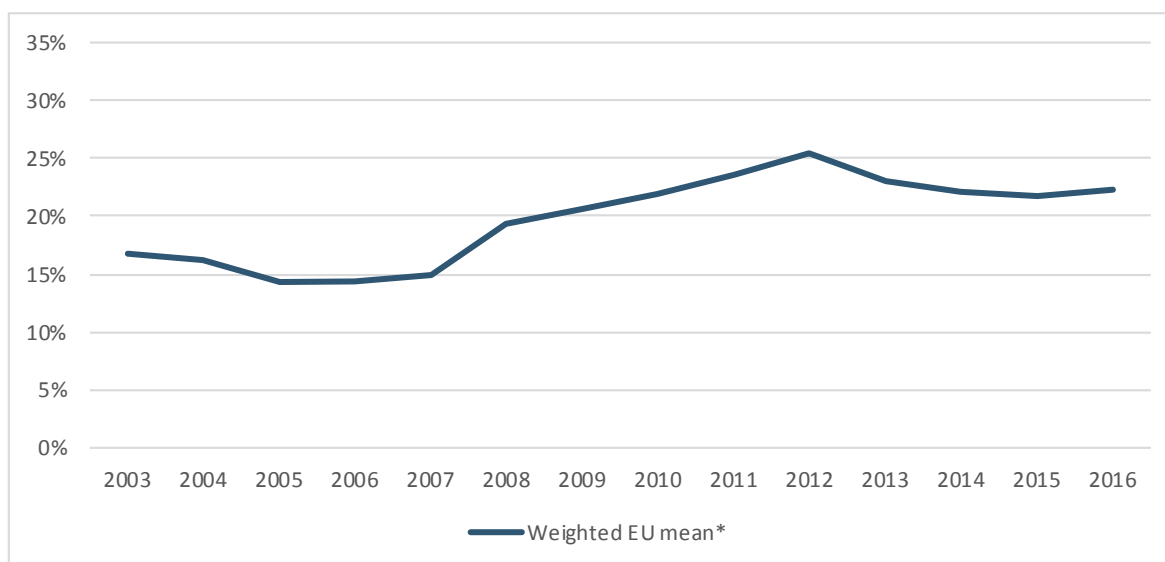
- d. Limited economic growth and asset availability:** more broadly, at the current juncture the availability of SME exposures and infrastructure exposures in need of funding appears limited for macro-economic reasons. Economic growth in the EU is still only mildly recovering, following the 2007-2009 financial crisis. SME's indebtedness remains, on average, high with most firms in need of re-balancing their funding strategy away from debt towards risk capital. In the infrastructure area, the availability of projects to be financed is currently limited, partly by the limited commitment of public fiscal resources in all those Member States where public finances are under stress.

62. Estimating what could be the size of the ESN market is particularly challenging. The above mentioned contingent impediments might no longer be binding in a medium-term where: (i) central banks have withdrawn their extraordinary monetary policy measures, (ii) the new regulatory framework is fully loaded and (iii) economic growth picks up to a greater extent.

63. However, the relative size of the traditional covered bond market, and its historical track-record, may provide a useful benchmark. On the basis of ECBC data it may be inferred that the average funding coverage of the mortgage market in the EU provided by traditional covered bonds was 25% in December 2016 but around 15% (each national mortgage market) in the pre-crisis period with different outcomes in different active national covered bond markets¹⁸. [Figure 11](#) shows that, as the crisis struck, covered bonds were increasingly used to cover the funding needs of the national mortgage markets, with a consistent trend across several Member States active on that market. The coverage starts decreasing in several national markets as the EU authorities and central banks put in place the measures of extraordinary support to the financial system (i.e. 2011-2012), although not always to a material extent, as covered bonds remained fully eligible instruments for repo transaction interventions and Central Bank's extraordinary asset purchase programmes.

¹⁸ [Link](#)

Figure 11: Mortgage-backed covered bonds as percentage of residential mortgage loans



*The sample is made of 10 EU countries (DK, DE, ES, FR,, IT, NL, PT, FI, SE, UK)

Source: EMF- ECBC 2017 Fact book

64. Assuming a coverage of SME and infrastructure loans comparable to the range observed for mortgage loans, the size of the ESN market could be between EUR 390 billion and EUR 1.2 trillion (Table 2). However, it should be noted that in the case where ESNs are not fully subject to the same framework and regulatory treatment as covered bonds, these figures could significantly overestimate the potential size of the market. In this regard, the eligibility of ESNs under ECB collateral as well as their treatment under the LCR framework would be crucial for the market.

Table 2: Estimates of the size of the ESN market in the near term (billion euro)

	Share of SME and infrastructure loans used to issue ESNs			
	100 %	10%	20%	30%
SME loans	3100	310	620	930
Infrastructure loans	800	80	170	250
Total ESNs market	3900	390	790	1180

Source: EBA calculation

2.2.2 Further elements shaping the case for a new funding instrument

65. The present section elaborates on further factors that may support the business case for SME and infrastructure ESNs within a steady-state EU banking system.

a. SMEs

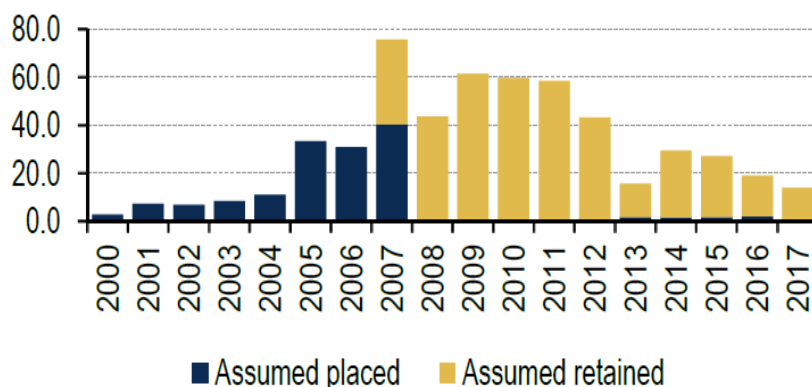
ISSUER PERSPECTIVE

66. **Cost of funding between senior unsecured and covered bonds.** SME-ESNs may provide issuers with a funding alternative priced between unsecured funding (upper bound) and covered bonds (lower bound). The experience of the 2013 Commerzbank AG SME structured bond could be informative about the price dynamics. After a year, the product was traded 100 bp below senior unsecured bonds. The instrument may also be priced between STS (SME) securitisation and covered bonds. The relative outcome would also depend on overall regulatory/central bank recognition.

67. **Funding alternative for small issuers that may not access the securitisation minimum scale.** For funding purposes, ESNs may provide an alternative to securitisation, where issues with smaller portfolios find the securitisation funding route too burdensome or costly. The ESN programmes may be set up once and maintained through time to support regular issuances. Therefore, the one-off costs related to several different standalone securitisation programmes would be saved.

68. **ESN tool to mobilise exposures against funding in times of stress.** ESN may play a role equivalent to that of covered bonds and funded securitisations in terms of providing a tool to mobilise SME exposures against central bank or interbank funding, particularly in times of financial stress. In this regard, ESNs might be useful to alleviate the pro-cyclicality pattern usually attached to SME exposures, provided that ESNs will qualify as eligible collaterals for the Eurosystem monetary policy operations. [Figure 12](#) illustrates the role of SME securitisation in periods of funding stress.

Figure 12: Estimated placed versus retained funded SME securitisation issuance 2000-2017



Source: BofA Merrill Lynch Global Research

69. ESN more suitable than securitisation for dynamic pool management. SME exposures have short to medium average maturity (3-5 years). Covered bond programmes, which are dynamically managed by the issuer, may be more suitable to manage SME loans replenishment securitisation transactions, which are traditionally more static.

INVESTOR PERSPECTIVE

70. Enhanced standardisation, transparency and supervision to attract wider investor base. A wider investor base may be attracted towards SME risk by the ESN product enhancing supervision, standardisation and transparency towards investors, so as to tackle the higher complexity of SME credit risk.

71. Higher yield available, than from covered bonds. First and foremost, the greater complexity of the underlying collateral could make ESNs more remunerative. Relative value investors may find ESN attractive, particularly in low-yield environments.

b. Infrastructures

ISSUER PERSPECTIVE

72. ESNs to improve the stability of funding of infrastructure lenders. If infrastructure ESNs were introduced as dual recourse funding tools, they could be structured to align their tenor to the long tenor of infrastructure exposures, hence improving the net stable funding ratio position of the issuer.

73. **Without dual recourse: ESNs to allow issuer to fully forgo the regulatory cost of infrastructure exposures** (particularly in operational phase). If infrastructure ESNs were introduced as structured bonds/notes without dual recourse issuers might forego the prudential capital and liquidity cost of eligible infrastructure exposures. Along-dated operational phase might be costly in capital and liquidity while providing the issuer with a less attractive risk-return profile. Low-risk type of institutional (non-bank) investors may be interested in that risk-return profile.

74. **Without dual recourse: ESNs to allow risk transfer.** If infrastructure ESNs were introduced as structured bonds/notes without dual recourse, issuers might transfer risk of eligible infrastructure exposures, by selling them with or without credit tranching provided the relevant requirements for such risk transfer are met.

INVESTOR PERSPECTIVE

75. **Enhanced standardisation, transparency and supervision, to attract wider investor base.** A wider investor base may be attracted towards infrastructure risk by the ESN product enhancing supervision, standardisation and transparency towards investors, so as to tackle the higher complexity of infrastructure credit risk (irrespective of whether or not dual recourse is granted).

76. **Higher yield available, than from covered bonds.** To remunerate first and foremost higher complexity of underlying collateral. Relative value investors may find ESN attractive, particularly in low-yield environments.

77. **ESN to attract long-term institutional investors toward long-term less risky operational phase exposures.**

2.2.3 The potential ESN investor base

78. Whereas issuers may find good reasons to rely on ESN financing for both SME exposures and infrastructure exposures, at steady state as well as in circumstances of wider stressed funding markets, the expansion of the ESN market will crucially depend on what type of investors may be attracted to the product.

79. In turn, the main drivers of investors' interest, affecting different categories of investors in a different ways, will be the following:

- **Risk-return profile** of the instrument, including the maturity of the instrument;
- **Overall regulatory/central bank collateral treatment** assigned to the instrument, determining crucial factors such as capital cost and liquidity cost on a relative basis, i.e.

vis-à-vis other secured investment alternatives such as covered bonds and ABSs, but also unsecured investments such as bank unsecured debt and corporate debt;

- **Liquidity of the instrument**, which in turn will be materially affected by the overall regulatory/central bank collateral treatment assigned to the instrument;
- **Complexity of the instrument**, with a major dividing line between dual-recourse (covered bond-like) instruments and securitisation-like instruments.

80.As regards the different types of investors:

- a. **Banks:** according to recent statistics, banks are the main component of both the covered bond and ABS investor bases. Depending on the design of the ESN regulatory/central bank collateral treatment, banks are likely to turn to SME ESNs. Infrastructure ESNs may also be of interest to investor banks, in either a dual-recourse or a risk transfer type of instruments, depending on the degree of investor sophistication and the yield, although the infrastructure loans' longer tenor may not be a primary interest.
- b. **Asset managers:** according to recent statistics, asset managers are, together with banks, among the main constituents of the investor base both the covered bonds and ABS. Asset managers may turn to both SME ESNs and infrastructure ESNs. In relation to infrastructure, they would favour either dual recourse or risk transfer, depending on investor sophistication and yields.
- c. **Institutional long-term investors (e.g. insurers and pension funds):** Insurers have shown some interest in covered bond investments and less interest in securitisation investments, the latter mostly as a consequence of the Solvency II conservative stance on securitisation investments. Some of these investors may be equally interested in SME ESNs. Given the long tenor of their assets, these investors may naturally bias their interest towards infrastructure investments that are longer-term investments. The less sophisticated investors may favour operational-phase infrastructure investments and potentially favour dual-recourse instruments. The more sophisticated and less risk-averse among these investors, may invest in both construction and operational phases and turn to securitisation-type instruments.

2.3 Conclusion

81. Based on the responses to the qualitative questionnaire circulated by the EBA¹⁹ to the banking associations and based on EBA's own assessment, it appears that ESNs might be neither a priority nor crucially needed at the moment, given the current good funding conditions. However, in a stressed economic environment, SME ESNs might provide a useful additional source of funding especially for small institutions with large SME exposures that do not have access to the securitisation market and/or can hardly issue unsecured long-term debt.
82. For infrastructure ESNs, the business case proves to be more challenging. The dual-recourse element of the infrastructure ESN might be less suitable to institutions given the relatively higher regulatory capital consumption of infrastructure exposures, due to among other factors their long-term maturity profile, their large exposure amounts and the rules on provisioning.
83. Among the several elements that would shape the business case for ESNs, the regulatory treatment of the product would be a key driver. In that respect, the treatment under the LCR and ECB collateral frameworks would be crucial for the development and the viability of the instrument.

¹⁹ For the purpose of this Report, the EBA circulated a qualitative questionnaire to a representative sample of EU banking associations to collect the view of the Industry on the case for ESNs. The feedback from this questionnaire was particularly useful for EBA to assess the business of this potentially new funding instrument.

3. Impact of ESNs on asset encumbrance

3.1 Asset encumbrance and its implications for credit institutions

84. Asset encumbrance is the process by which an institution uses its own assets or other items received as collateral with re-hypothecation rights, in order to secure, credit-enhance or collateralise specific claims. The main purpose of encumbering assets is to secure an institution's access to additional funding sources, to renew its maturing funding transactions or to access better funding conditions²⁰.

85. The impact of higher levels of asset encumbrance stemming from secured funding on individual banks is not univocal. Secured funding generates benefits but may also create challenges, as summarised in [Table 3](#).

Table 3: Pros and cons of secured funding

Pros of secured funding	Cons of secured funding
<ul style="list-style-type: none"> ▪ Funding diversification <p>Other things being equal, the use of secured funding instruments helps institutions to diversify their funding structure, hence increasing their resilience to funding stress, as different funding instruments respond differently in times of stress. The degree of reliance on covered bonds and their performance during the financial crisis support with this argument.</p>	<ul style="list-style-type: none"> ▪ Access to and cost of unsecured funding <p>Increased levels of asset encumbrance may reduce the recovery prospects of the issuer's unsecured creditors in a scenario of bank liquidation or resolution. As a consequence, investors in unsecured bank debt may be more reluctant to invest and/or willing to ask for higher remuneration for the funding.</p>
<ul style="list-style-type: none"> ▪ Funding stability <p>The use of secured funding of the medium- to long-term type, such as most asset-backed securities and covered bonds, increases the degree to which institutions can match their assets and liabilities, improving their stable funding position.</p>	<ul style="list-style-type: none"> ▪ Pro-cyclicality <p>As the value of collateral pledged to secure funding or claims decreases, for instance as a result of economic downturns, the institution may have to replenish/substitute collateral, further reducing the availability of assets to covering unsecured claims exactly in times of financial stress.</p>
<ul style="list-style-type: none"> ▪ Easier access to Central Bank and interbank liquidity <p>In times of financial stress, the availability of retained secured funding instruments increases the potential of</p>	<ul style="list-style-type: none"> ▪ Issuer's bail-inability <p>Under specific conditions, the BRRD exempts secured liabilities from the bail-in requirement. Increased reliance by an institution on secured funding may</p>

²⁰ For a more detail definition of asset encumbrance, the reader can refer to the *EBA report (2014) on EU covered bonds framework and capital treatment*, pp.136-137. [Link](#)

Pros of secured funding

Cons of secured funding

institutions' access to central bank funding programmes as well as inter-bank liquidity provision, as the secured bond format increases the liquidity of the underlying collateral, provided that ESNs will qualify as eligible collaterals for the Eurosystem monetary policy operations.

endanger the potential of the bail-in tool when the institution is put under resolution.

- **Transparency and asset quality**

The use of secured funding, e.g. in the form of asset-backed securities or covered bonds, and the related disclosure, increase the transparency of institutions' balance sheets and may incentivise institutions to perform better management and due diligence on the pledged assets.

86. The above-mentioned factors are also among those considered by rating agencies when assessing the risk profile of a financial institution, with the aim of assigning the institution an issuer rating. Among the elements assessed by rating agencies, the liquidity profile of an institution plays an important role. In that context, the degree of mismatch between the maturities of the institution's assets and liabilities and the reliability of the funding for the institution are crucial elements.

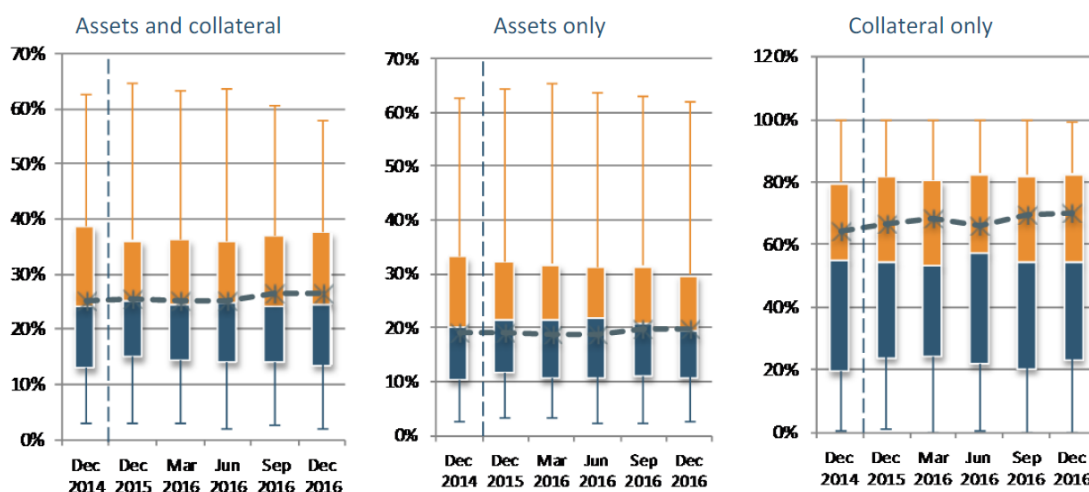
87. The EBA assesses that, in theoretical terms and considering all factors, a well-functioning secured funding instrument that increases the institution's asset encumbrance, particularly in circumstances of funding stress, may be an overall improvement rather than a worsening of the institution's risk profile.

88. However, it is clear that overreliance on secured funding and increasing levels of asset encumbrance pose additional risks at national level or to individual institutions. Ultimately, the potentially negative implications of asset encumbrance can constitute a threat to the regulatory objectives of financial stability, depositor protection, resolution and bail-in framework and reduction of systemic risk.

3.2 Levels and composition of asset encumbrance in the EU

89. Since the 2007 financial crisis, the level of asset encumbrance has rapidly increased. From 2007 to 2011, taking a sample of 27 banks reporting in both years, the average asset encumbrance ratio²¹ increased from 11% to 32%, according to the European Systemic Risk Board²². The most recently published EBA data shows that this ratio²³ has been stabilising at around 26% since 2014 (Figure 13).

Figure 13: Evolution and distribution of the asset encumbrance ratios of EU banks (weighted average, median, interquartile range, and 5th and 95th percentiles)



Source: EBA report (July 2017) on asset encumbrance

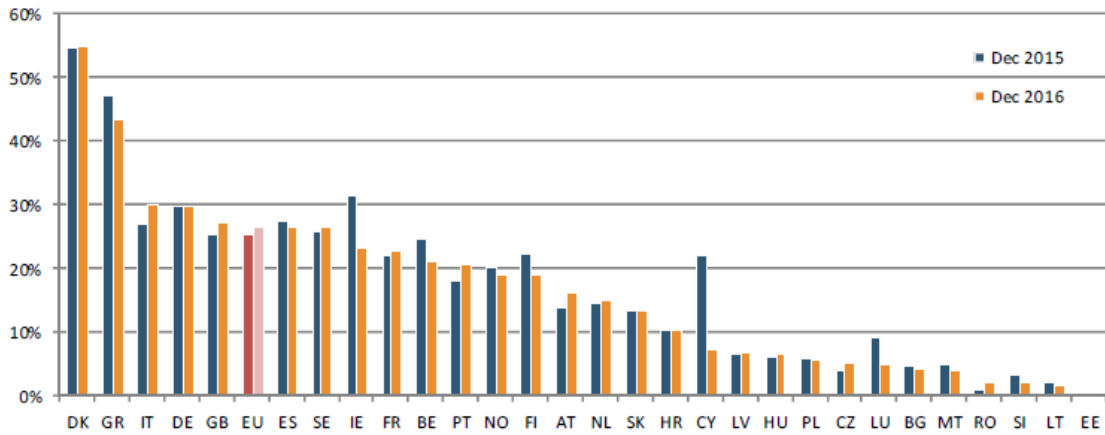
90. In December 2016, the weighted average ratio of encumbered assets and collateral received was 26.6% in the EU. However, the levels of asset encumbrance vary widely between institutions and EU jurisdictions (Figure 13 and Figure 14).

²¹ The level of encumbered assets weighted by total assets.

²² Recommendation of the European Systemic Risk Board of 20 December 2012 on funding of credit institutions" (ESRB/2012/2), February 2013.

²³ The asset encumbrance ratio equals the ratio of encumbered assets and collateral posted relative to the total assets and collateral received.

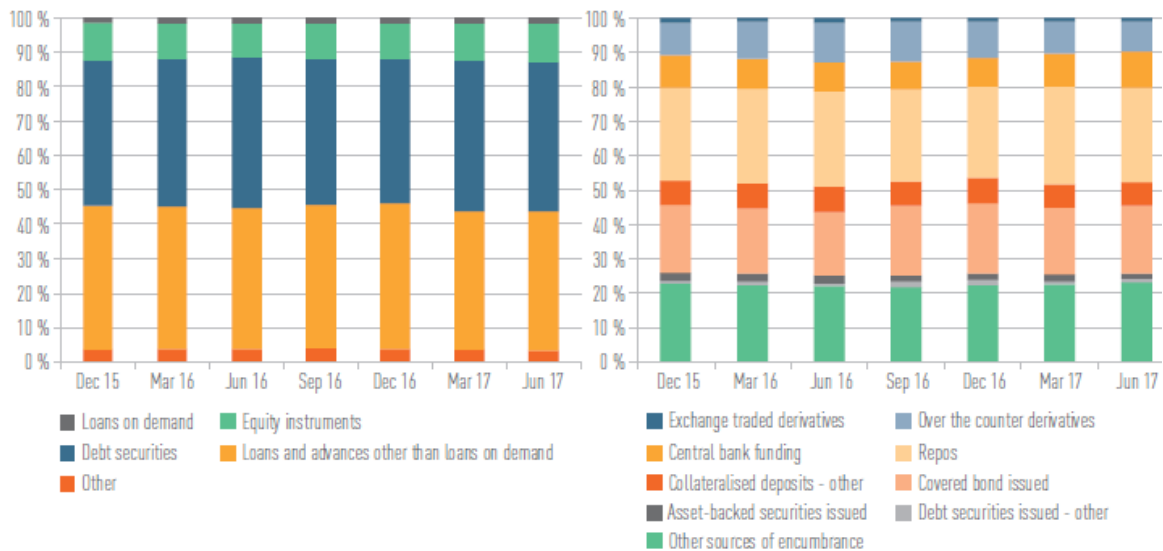
Figure 14: Weighted average asset encumbrance by country



Source: EBA report on asset encumbrance (July 2017)

91. The largest portion of encumbered assets and collateral was made up of debt securities and loans at 43% and 40% of total encumbered assets and collateral respectively, and the main sources of asset encumbrance (i.e. balance sheet liabilities for which collateral was posted) were repos (28 % of the total sources in June 2017). However, the percentages of central bank funding and covered bonds issued increased over the period (Figure 15)

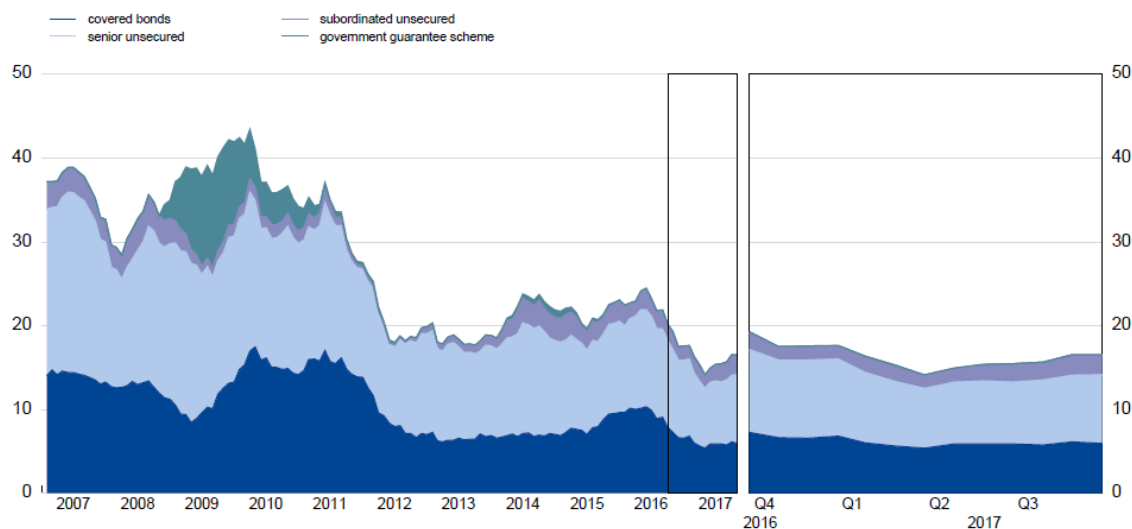
Figure 15: Encumbered assets and collateral by type; distribution of the sources of encumbrance



Source: EBA report on asset encumbrance (July 2017)

92. Consequently, the funding mix of EU institutions has shifted towards an increased reliance on secured funding at the expense of senior unsecured funding, especially in the long-term segment (Figure 16).

Figure 16: Banks' long-term debt securities issuance (EUR billion)



Source: ESRB risk dashboard (November 2017)

93. The market factors that drove the level of asset encumbrance of EU institutions are well known. The 2007/2008 financial crisis and the sovereign crisis led to a loss of confidence in banks. Investors became less willing to invest in unsecured bank bonds, or were only prepared to do so only at higher rates of interest. This led to banks increasingly using secured funding—mainly covered bonds repurchase agreements of the European Central Bank (ECB). In addition, the decline of securitisation also provided incentives for banks to look for alternative sources of funding.

94. Most recently, this trend has been supported by regulation. Specifically, the introduction of Basel III, Solvency II and the new resolution frameworks has increased the demand for secured funding, while the liquidity coverage ratio under Basel III also favours secured funding over unsecured short-term interbank funding. Part of the increase is also linked to the use of collateral for OTC transactions. Under the new EMIR framework, both CCPs and counterparties to non-centrally cleared derivatives transactions face restrictions on the re-hypothecation of collateral posted, and must meet stricter standards on eligible collateral assets and applicable haircuts. In addition, in order to gain an exemption from clearing requirements for derivatives under EMIR, covered bonds require a minimum 2% OC.

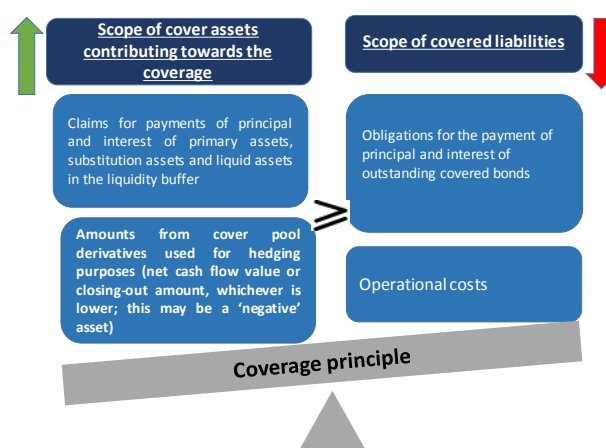
3.3 Asset encumbrance arising from ESNs

3.3.1 Coverage and over-collateralisation in ESNs

95.If ESNs were to be introduced in the form of dual recourse instruments, their issuance would add to the asset encumbrance of the EU banking system.

96.Similarly to covered bonds, ESNs would have to be subject to a coverage requirement based on the principle defined in Article 52(4) of the UCITS Directive²⁴. As further specified by the EBA in its 2016 recommendations²⁵ on best practices of covered bonds regulation, the UCITS principle should translate into a requirement that the sum of all payment claims on the cover assets (including primary assets, substitution assets, liquid assets and cover pool derivatives) has, at all times, to be at least equal to the sum of all payment obligations attached to the corresponding covered bonds (including associated operational costs) (Figure 17).

Figure 17: Coverage principle for covered bonds



97.Two elements related to coverage are likely to increase the level of asset encumbrance associated with ESNs collateralised by SME and infrastructure exposures, compared with covered bonds backed by traditional CRR-compliant covered bond collateral, namely the valuation of collateral and the levels of required minimum over-collateralisation.

98.Collateral valuation methods are likely to be more conservative, particularly in the case of SME exposures, as a result of low level of standardisation of valuation methods in the area of SME lending, where the collateral securing those exposures is not traditional residential or commercial real estate collateral, but also as a result of the lower market liquidity of SME exposures.

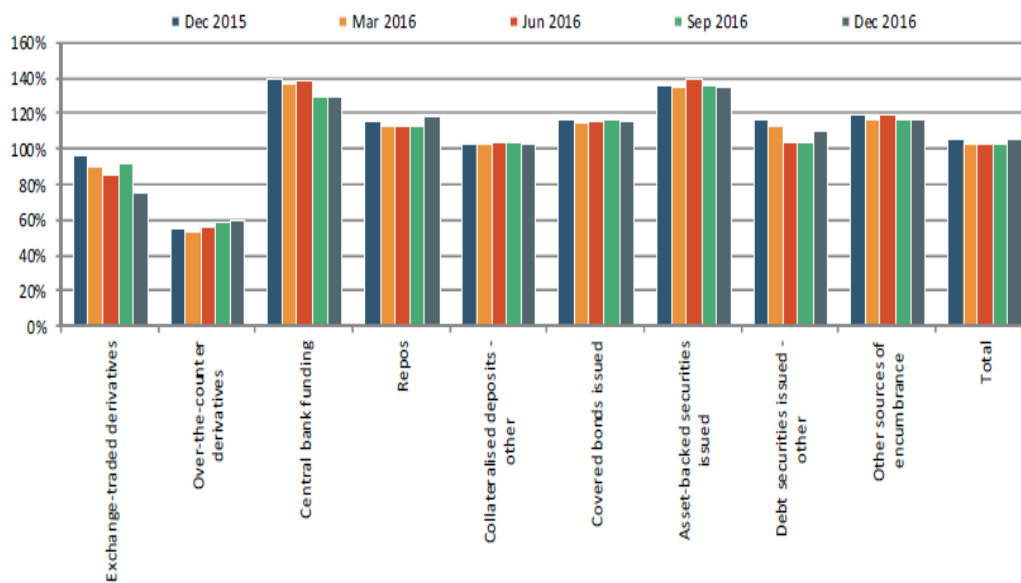
²⁴ In the proposal of the Commission for an EU Directive on covered bonds, the reference to UCITS would be replaced by the definition provided in the EU Directive.

²⁵ EBA Report on covered bonds (December 2016), Recommendations of harmonisation of the covered bonds framework in the EU. [Link](#)

99. The EBA identified over-collateralisation as a key safeguard of the credit quality of the covered bond. In its Report on covered bonds (2016), it has suggested that a minimum effective OC level should be set at 5% for covered bonds to be eligible for preferential risk weight treatment²⁶. In practice, the level of OC for covered bonds is higher than the requirement imposed within the corresponding national legal/regulatory framework. The level of OC tends to be mostly driven by the requirements of the rating agencies to achieve a targeted rating and, only to a lesser extent, by the regulatory requirements and by the institutions’ strategic or reputational choices regarding the buffer they wish to hold for the management of the cover pool.

100. Aggregate data published within the EBA Report on asset encumbrance (2017) can be used to identify the levels of asset encumbrance that may be associated with different types of transactions/products (Figure 18). In particular, as of December 2016, it can be shown that the aggregate OC level in the EU stemming from outstanding covered bond transactions was 18%. For comparison, the same variable was 38% for outstanding ABS transactions.

Figure 18: Encumbered assets to collateral relative to matching liabilities



Source: EBA (2017) Report on asset encumbrance

²⁶ Ibid.

3.3.1 The potential quantitative impact of ESNs issuance on EU asset encumbrance

101. [Table 4](#), shows what could be the potential impact of ESN issuance on the European banking system across different scenarios, as follows:

- **Available collateral:** In line with the hypothesis considered to estimate the potential size of the ESN market (see [Chapter 2](#)). Three different scenarios are assumed in terms of what share of the existing aggregate pool of SME²⁷ and infrastructure²⁸ exposures (estimated at around EUR 4 trillion, 12% of the total balance sheet of EU banks as per the 2017 EU transparency exercise) may be re-financed by the issuance of ESNs. The three levels are 10%, 20% and 30%. For reference, it should be noted that the median covered bond market in Europe²⁹ finances approximately 30% of the domestic outstanding mortgage exposures.
- **ESN over-collateralisation level:**
 - The lower bound OC scenario applicable to ESNs is the aggregate OC measured for outstanding covered bonds (18% as of December 2016). Given the higher complexity of ESN collateral, it can hardly be expected that ESNs will be issued with average OC levels lower than for covered bonds.
 - The upper bound OC scenario corresponds to the aggregate OC measured for asset-backed securities (38% as of December 2016). ABSs in the EU do not only finance high quality collateral, such as the traditional CRR-compliant covered bond collateral and, in addition, are not supported by any dual-recourse mechanism.
 - The intermediate bound of 30% is the minimum required OC level for SME ESNs as suggested by the EBA (see [Chapter 5](#)).

102. Under these assumptions, the expected increase in the asset encumbrance ratio, from its 26.6% December 2016 value, ranges across scenarios from +1.2 percentage points to +4.1 percentage points. The highest impact can be associated with the assumption that 38% of the available collateral might be re-financed through ESNs and that the average over-collateralisation absorption equals the level reached by ABS transactions.

²⁷ SME exposures refers to exposures to corporate SMEs, retail SMEs and SME exposures secured by real estate property

²⁸ Infrastructures exposures cover the IRB exposures to specialised lending (Slotting Approach, F-IRB and A-IRB). It should also be noted that only project finance (infrastructure projects which are funded by a separated entity created specifically for this purpose) could be isolated from the dataset, which means that infrastructure loans that take the form of a loan to a regular corporate could not be captured (so they are not reflected in these data).

²⁹ According to data included in the 2017 ECBC Covered Bonds Fact book. [Link](#)

Table 4: Potential impact of ESNs on asset encumbrance

% of SMEs and infrastructures portfolios used for ESNs	Assuming same collateralisation level as for covered bonds:118%			Assuming a collateralisation level of 130%			Assuming same collateralisation level as for ABS:138%		
	Volume of new encumbered assets(M EUR)	% of encumbrance	Impact on the ratio in pp.	Volume of new encumbered assets (M EUR)	% of encumbrance	Impact on the ratio in pp.	Volume of new encumbered assets (M EUR)	% of encumbrance	Impact on the ratio in pp.
30	1,394,760	30.1	3.5	1,536,600	30.5	3.9	1,631,160	30.7	4.1
20	929,840	28.9	2.3	1,024,400	29.2	2.6	1,087,440	29.3	2.7
10	464,920	27.8	1.2	512,200	27.9	1.3	543,720	28.0	1.4

Source: EBA calculation

3.4 Conclusion

103. The EBA acknowledges that, particularly in the case of SME exposures, ESNs' absorption of over-collateralisation will probably be higher than that associated with CRR-compliant covered bonds. Should the market for ESNs pick up, on the basis of SME and infrastructure exposures currently available on European banks' balance sheets, asset encumbrance would probably rise in the EU. However, on the basis of the assessment made in the context of this report, the EBA is of the view that:

- The introduction of a new and well-functioning secured funding instrument for SME and infrastructure exposures is likely to improve overall, rather than to worsen, the risk profile of issuers, particularly if the ESN market is of high liquidity and of sufficient resilience in times of financial stress. The instrument could improve, by diversifying it, the issuer's funding strategy while making it more resilient to financial stress and potentially less exposed to asset-liability maturity mismatches. However this holds only under certain conditions, e.g. that the total level of asset encumbrance of an institution is not already very high, or, if the level is already very high, that ESN would be used as a replacement for other types of secured funding previously used to which there is limited access under current economic circumstances.
- The overall increase in asset encumbrance levels is assessed to be moderate, even under the assumption that the ESN market picks up to levels that are comparable to the current covered bond market financing mortgages, i.e. with approximately 30% of the available SME and infrastructure collateral being re-financed by means of ESNs.
- In addition, depending on the treatment accorded to ESNs in the context of central bank's collateral frameworks, ESNs will add to the opportunity of issuers to mobilise SME and infrastructure exposures, traditionally assessed as less liquid, in the context of central banks' liquidity assistance and, indirectly, in the context of the interbank market for liquidity.

104. Overall, the EBA is of the view that the introduction of ESNs will not give rise to asset encumbrance implications for the global EU banking system that cause concern. However, should ESNs become highly successful, potential asset encumbrance limits at an aggregated level (not instrument level), at national level or for specific institutions could be considered.

4. ESNs asset performance and pool eligibility criteria

4.1 SME ESNs

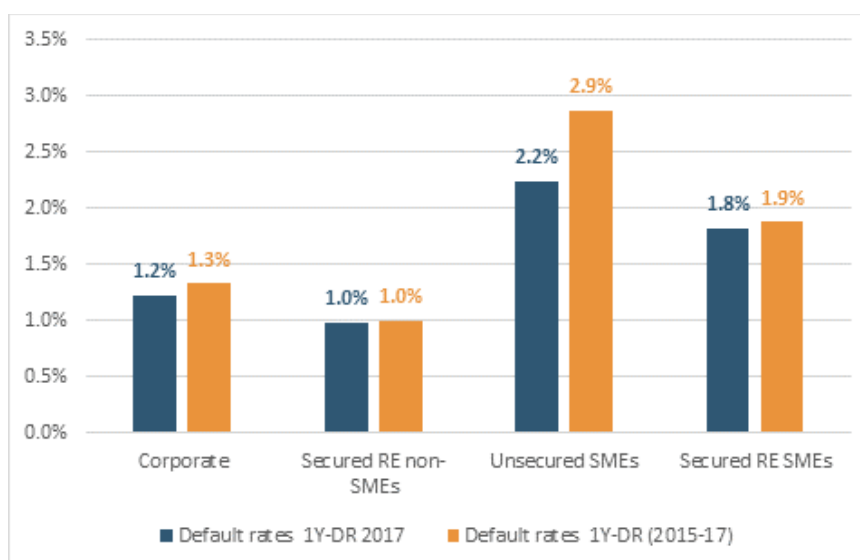
4.1.1 Performance of SME loans

a. Observed default rates, loss rates and NPL ratio

105. Based on aggregate COREP data, exposures to SMEs³⁰ can be compared with other exposures in terms of observed default and loss performance. In particular, the performance of different types of unsecured exposures to SMEs (corporate SMEs and other retail SMEs) can be compared with the performance of exposures secured by real estate – including residential and commercial mortgages that are eligible collateral for CRR-compliant covered bonds.

106. Exposures to SMEs are significantly riskier than real estate portfolios and exposures to other corporates. The observed defaulted rates are up to 2 to 3 times as higher for unsecured exposures to unsecured SMEs as for real estate portfolios ([Figure 19](#)).

Figure 19: Observed default rates



³⁰ It is important to note that the SME data analysis is subject to certain limitations. The CRR does not provide an explicit definition of SMEs in the Standardised Approach (SA) or in the Internal Ratings Based (IRB) and Approach except for SME exposures that may benefit from a preferential capital treatment, the common EU reporting for solvency (COREP) does not require EU institutions to follow a specific definition of SMEs when reporting these exposures.

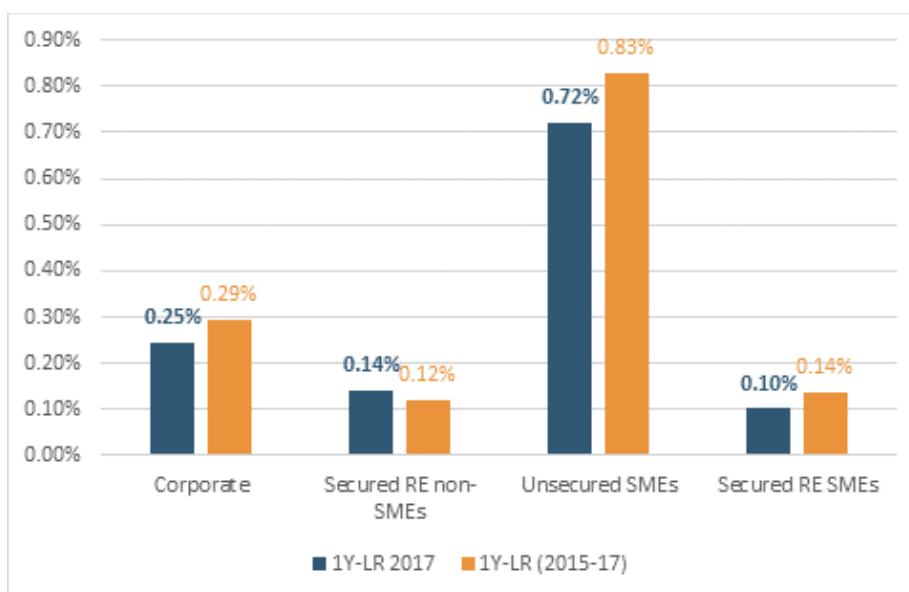
* 1Y-DR-2017= observed new default in 2017 divided by the amount of the non-defaulted assets existing 1 year before.

** 1Y-DR-2015-2017=observed weighted average 1 year default rate (as above) over the last 3 years.

Source: COREP

107. Similarly, the observed loss rates of unsecured exposures to SMEs are roughly 5 to 7 times as higher as the rates of real estate portfolios. Interestingly, it could also be noted that the loss rate of SME loans secured by real estate is comparable to the loss rate of a traditional non-SME real estate portfolio (Figure 20). Both exposures types are currently eligible under the CRR covered bond framework.

Figure 20: Observed loss rates



* 1Y-LR 2017= sum of credit risk adjustments and write-offs for the exposures that were classified as ‘defaulted exposures’ in 2017 divided by the number of new defaults in the last year times the observed loss rate.

** 1-LR 92015-17) = weighted average 1 year loss rate over the last 3 years times the observed loss rate over the last 3 years.

Source: COREP (2017)

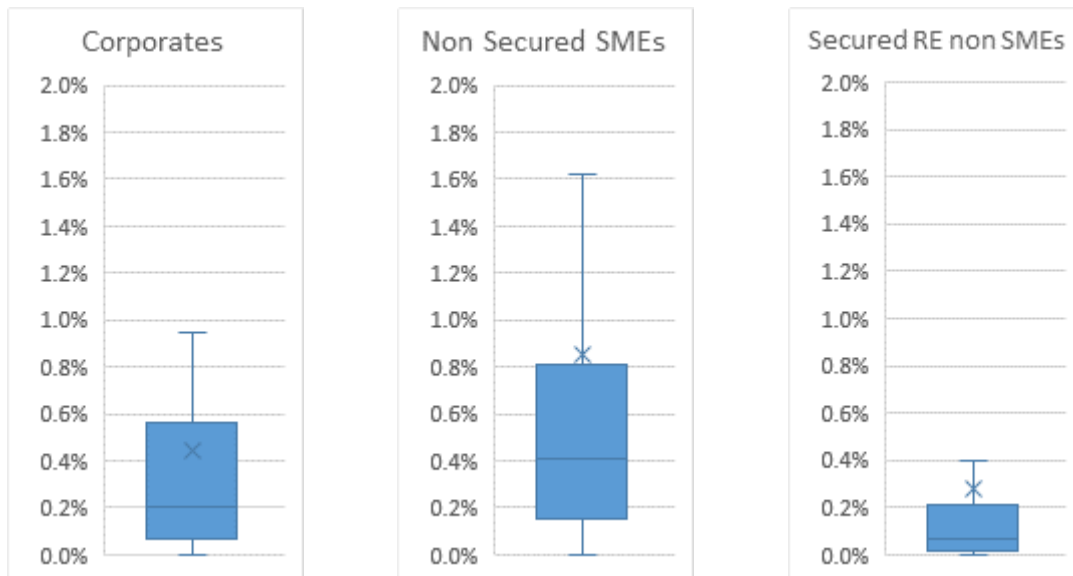
108. The performance of SME portfolios relative to real estate portfolios across institutions also tends to be more heterogeneous and to display more extreme values (Figure 21 and Figure 22).

Figure 21: Distribution of the 1-year observed default rate (2017) (mean, median, interquartile range, 5th and 95th percentiles)



Source: COREP

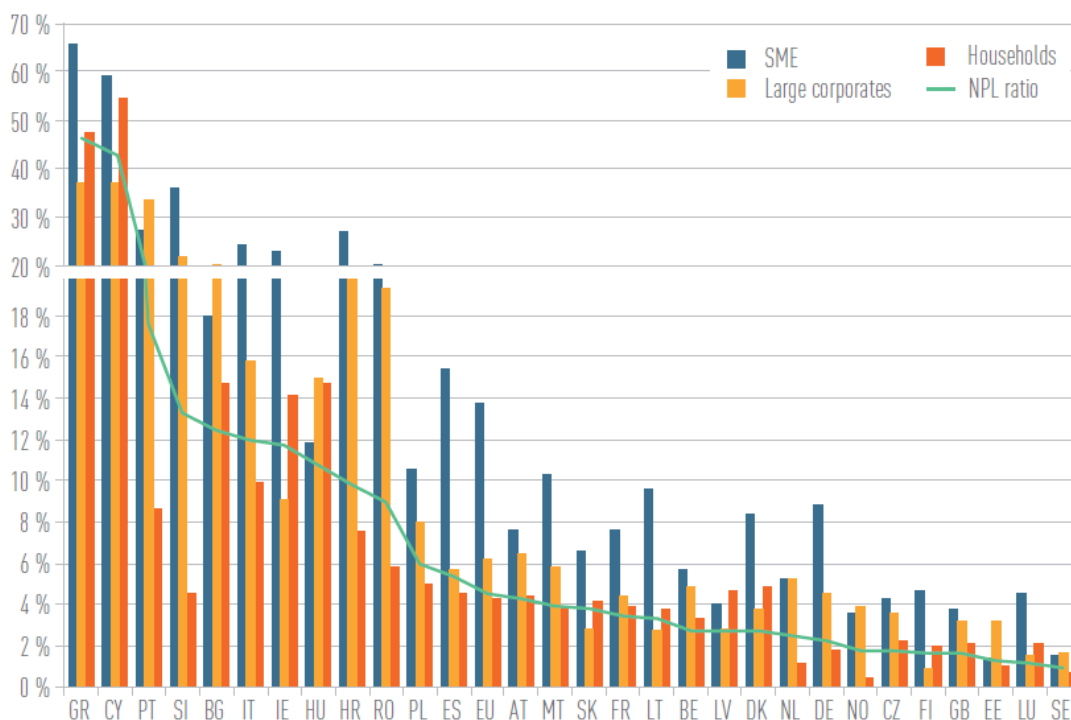
Figure 22: Distribution of the 1-year observed loss rate (2017) (mean, median, interquartile range, 5th and 95th percentiles)



Source: COREP

109. In addition, the NPL ratio of SME loans, which was 13.8 % in June 2017, is the highest NPL ratio in most EU jurisdictions (Figure 23).

Figure 23: Non-performing loans ratio by sectors, Q2 2017



Source: EBA risk indicators

b. SME collateral score values

110. Moody’s data ³¹ on the performance of asset-backed securities collateralised by, respectively, exposures to SMEs and residential mortgages confirms that the former is riskier than the latter. In particular, according to Moody’s methodology, the average credit enhancement (which measures the level of assets needed to absorb pool losses without the most senior rated notes incurring losses) for SMEs can be 3 to 6 times the RMBS underlying assets (Table 5).

³¹ These confidential data were provided to the EBA following a meeting with Moody’s. EBA also met other credit rating agencies to discuss ESNS but no similar data were disclosed to the EBA.

Table 5: Average credit enhancement for SME versus residential mortgage cover pools (May 2018)

Country	SME-ABS	Residential mortgages	Debt country ceiling
Germany	20.0%	5.1%	Aaa
Belgium	22.9%	5.0%	Aaa
Netherlands	20.7%	5.1%	Aaa
Spain	24.4%	8.8%	Aa1
Italy	29.5%	6.2%	Aa2
Portugal	32.0%	5.3%	A1

Source: Moody's³²

c. Cyclicalities of SME loans

111. The performance of SME loans is highly correlated with the economic cycle with default rates increasing during recession. As shown in the EBA Report on SMEs and SME supporting factor³³, the level of sensitivity varies across business models and across countries. However, the correlation is constantly negative and it can reach very high levels (e.g. up to -0.94 in Spain).

112. In addition, the quality of SME loans is very reliant on the performance of the banking sector given that banks are the main source of funding of SMEs in Europe. This risk materialises in several instances where the actual repayment of an SME loan at maturity is achieved only by means of granting a new loan.

4.1.2 Risk profile of SME ESNs

113. Given that such a product does not exist yet, the potential performance of SME ESNs cannot be assessed based on observed historical values. Moreover, the risk profile of SME ESNs will be mostly determined by the regulatory minimum requirements that will be applicable to such products as well as by additional requirements imposed by external rating agencies and investors. However, based on the above findings, a few considerations could be noted:

³² Moody's (May 2018), Structural protections can mitigate credit risk in SME loans ESN. [Link](#)

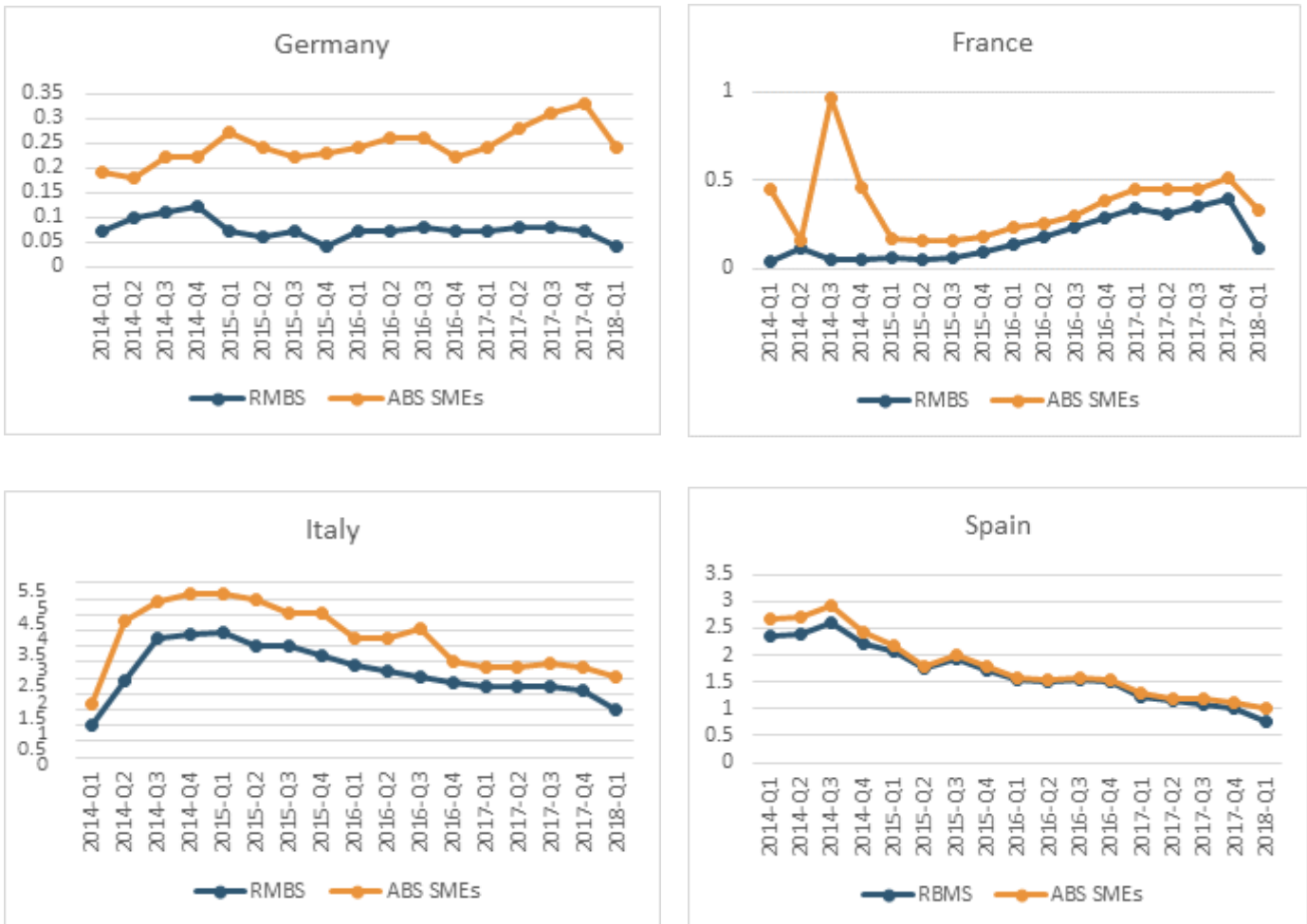
³³ EBA (2016) Report on SMEs and SME supporting factor. [Link](#)

- Overall, the credit performance of exposures to SMEs is assessed as worse than the performance of exposures that collateralise traditional (i.e. CRR-compliant) covered bonds.
- In addition, compared with traditional underlying assets of covered bonds:
 - A cover pool of SMEs could typically have a shorter maturity profile. Such a feature may increase the risk that the cover pool is repaid before the maturity of the note (replenishment risk).
 - SME ESNs may be more subject to contagion risk because of the close link between banks, SME cover pools and SME ESNs³⁴, and the lack of any material collateral backing the exposures in the SME cover pools.
 - The liquidity of SME ESNs could be more limited, especially in recession periods, given the higher credit risk of SME loans and their high correlation with the business cycle.

114. However, such potential features do not necessarily imply worse performance of a prudently structured SME ESN. Rating agencies' methodologies and approaches to SME securitisations show that relatively high average credit enhancement requirements applicable to SME exposures are able to deliver effectively structured products of high credit quality. As shown in [Figure 24](#), the differences in the observed credit quality of SME ABS and RMBS are lower than those observed in terms of default rates and loss rates of the underlying exposures, as a result of the different credit enhancement levels that are applicable to those products. In all four jurisdictions, the difference between ABS SMEs and RMBS in the ratio of defaulted loans over total outstanding amount of the securitised exposures is often below 1 percentage point across the considered period.

³⁴ There may be a downward trend whereby the quality of the SME cover pool may worsen as the financial and funding position of the originating bank deteriorates (and vice versa). This negative development may be exacerbated should SME ESNs be invested by banks only.

Figure 24: Evolution of defaulted loans (% of current balance)



Source: European Dataware House

4.1.3 Cover pool and eligibility criteria

a. Definition of SMEs

115. Currently no pan-European and legally binding definition of SMEs exists. Different definitions apply across EU jurisdictions, which mostly follow the same type of criteria (i.e. maximum number of employees, maximum amount of the turnover, maximum size of the balance sheet) but differ with respect to the thresholds (Table 6).

Table 6: Example of SME definition in EU countries.

Country	Maximum employees	Turnover	Total balance sheet
Belgium	<100	< €23m	-
France	<250	≤ € 50 m	≤ € 43 m
Germany	<500	< € 50m	
Netherland	<500	< € 23m	-
United Kingdom	<250	< £ 50m	-

116. In addition, the definitions used by EU institutions to identify and report SME exposures are not harmonised. The definition often vary depending on the size of the country in which the institution is domiciled and its business model. For example, according to an EBA assessment³⁵, internationally active banks appear to often have different SME definitions for each and every country in which they operate, while non-internationally active banks (typically using the SA) tend to share a common definition with other banks in their jurisdiction.

117. The CfA does not provide a definition of SMEs to be used for the specific purpose of ESNS. However, a common definition of SMEs is deemed necessary to ensure a shared understanding and effective implementation of a potential ESNS framework across the EU. In this regard, several options have been assessed, some of which are using a wider and some of which are using a narrower definition of SMEs.

118. When deciding on the appropriate SME definition to be used in the context of the CRR, the EBA considered that, it would be desirable to align the CRR definition of SMEs with the credit risk management practices of EU institutions. Such management practices are commonly based on consolidated financial figures on turnover or balance sheet rather than on number of employees. In particular, the EBA has conducted a survey that revealed that the use of turnover is the most widely practised and relevant method used by banks to identify SMEs exposures (EUR 50 million being the most common threshold). Consequently, under Article 501 (2) of the CRR, the applicable SME definition refers to enterprises with an annual turnover that does not exceed EUR 50 million. This definition applies to identify SME portfolios that are eligible for preferential prudential capital treatment in accordance with Article 501 of the CRR.

³⁵ EBA (2012) Assessment of SME proposals for CRDIV/CRR. [Link](#)

119. For consistency purposes, it would be preferable to align the ESN definition of SMEs with the CRR definition of SMEs applied in Article 501 of the CRR. Both EU institutions using the Standardised Approach and the IRB Approach to determine own funds requirements for credit risk are also already familiar with this approach to identifying SMEs, which is already used to report, under COREP, SME exposures eligible for the supporting factor. Moreover, this CRR definition of SMEs is wider than the definition included in Commission Recommendation of 2003/361/EC of 6 May 2003³⁶. The use of the CRR definition of SMEs as applied in Article 501 of the CRR would thus allow for a larger number of SME loans to be included in a cover pool, thus reducing the risk of a narrow SME ESNs market that would hinder the successful development of such a product.

b. Cover pool eligibility criteria

120. To ensure the high quality of SME cover pools, the selection of the underlying exposures must be subject to certain eligibility criteria. However, it should be noted that an overly prescriptive set of conditions may be unworkable for certain jurisdictions or would narrow the market unnecessarily leaving out a significant number of possibly good-quality loans. For this reason, it is considered more efficient to prescribe a limited set of minimum conditions for the cover pool to be met in the context of SME ESNs and to compensate for the limited number of eligibility criteria with a high level of required minimum over-collateralisation. In particular, it is suggested that the eligible cover pool assets of SME ESNs should meet the following conditions:

- Asset scope: only SMEs loans and leasing exposures to SMEs (as defined above) should be included in the cover pool. Other types of SMEs exposures such as overdraft and factoring exposures should be excluded on the grounds of their typically short maturity profile.
- Granularity of the cover pool: the granularity of the cover pool should be sufficiently high, i.e. the pool should contain at least 500 exposures³⁷. This requirement would guarantee sufficient distribution of the characteristics that may affect the risk profile of the underlying SMEs cover pool.
- Concentration of the cover pool: the cover pool should not be subject to material concentration, i.e. the aggregate exposures value to a single obligor in the cover pool should not exceed 2% of the total exposure value of all exposures in the cover pool³⁸.

³⁶ Under the SME definition of Commission Recommendation 2003/361/EC of 6 May 2003, the main factors determining whether or not a company is an SME are, first, the number of employees and, second, either the annual turnover or the annual balance sheet. SMEs are thus defined as companies that do not have more than 249 employees, with an annual turnover below EUR 50 million or with a total balance-sheet that does not exceed EUR 43 million. According to the European Commission, this definition covers 99% of all businesses in the EU.

³⁷ This threshold is based on a commonly accepted market practice. In addition, this threshold is also used in the EBA Guidelines on STS criteria and on the EBA draft RTS on the use of the purchase receivable approach for securitised exposures under Article 255 of the CRR.

³⁸ This threshold is aligned with the concentration limit applicable for STS securitisation to be eligible for preferential capital treatment under Regulation EU 2017/2401 Article 243 (1) (b) and (2)(b) (amending Regulation (EU) No 575/2013).

- Quality standards: SME loans have to be non-defaulted. In addition, credit institutions engaged in SME ESNs should have sound and well-defined credit underwriting standards.

c. **Minimum over-collateralisation requirement**

121. The EBA suggests that a minimum OC requirement should be prescribed for SME ESNs. It should be set at a pro-rata level of the observed risk of SMEs loans and it should take into account the actual OC observed for covered bonds and for securitisations using SME exposures as underlying as well as the minimum OC requirements recommended in the EBA Report on Covered bond (2016).

122. In the EBA Report on Covered bonds, the EBA has suggested that a minimum effective OC level should be set at 5% for covered bonds to be eligible for preferential risk weight treatment. The observed loss rate attached to SME loans is 5 to 7 times higher as those of underlying exposures of traditional covered bonds (Figure 20). As a consequence, to ensure a high credit quality of SME ESNs, it could be assumed that the minimum required OC for SME ESNs should be at least 5 to 7 times as much as that of covered bonds.

123. In the data analysis, the observed loss rate refers to only the last 3-year data points (2015-2017) and does not necessarily reflect the potential level of losses that could be experienced by a portfolio of SME loans in an economic downturn. However, on the other hand it could be expected that the credit quality of the cover pool of SME exposures that will be used to issue ESNs will be better than the average performance of all SME exposures on the issuer's balance sheet thanks to (i) the eligibility criteria of the cover pool and possibly (ii) the rating target/need of the instrument. For this reason, it is suggested that the OC requirement be aligned with the middle range of the observed loss rate and, consequently, to set at 30% minimum ($6 \times 5\%$). This minimum 30% OC requirement for SME ESNs will de facto sit between the observed OC levels for covered bonds (18%) and asset-backed securities (38%) in December 2016.

4.2 Infrastructure ESNs

4.2.1 Performance of infrastructure projects

a. Data source and caveat

124. Given the lack of relevant EBA data to assess the performance of infrastructure projects³⁹, the analysis relies on the information provided by the Data Alliance Project Finance Data Consortium, which is managed by Moody's Analytics. This information was used by Moody's Investors Service ('Moody's') in its study 'Default and recovery rates for project finance bank Loans (1983-2016)', but was disclosed in less detail. The study analyses the default and the recovery performance of unrated project loans. It is based on a dataset from a consortium of project finance lenders and investors. It comprises 7 052 projects, which represent 64.0% of all project finance transactions originated globally in the last 34 years.

125. Based on the data provided by the Data Alliance Project Finance Data Consortium, the EBA has isolated the EU infrastructure projects from the rest of the global sample and duplicated the above-mentioned analysis. The total sample comprises 2 938 infrastructure projects from 27 EU countries (plus Iceland and Norway) (Table 7). The results of the data analysis at the European level confirm most of the findings disclosed by Moody's in its study at the global level.

Table 7: EU sample of infrastructure projects

Country	Number of project loans	Country	Number of project loans
Austria	14	Lithuania	2
Belgium	39	Luxembourg	14
Bulgaria	6	Malta	1
Croatia	8	Netherlands	88
Cyprus	4	Norway	31
Czech Republic	13	Poland	36
Denmark	14	Portugal	49
Estonia	1	Romania	9
Finland	23	Slovakia	10
France	348	Slovenia	2
Germany	216	Spain	337
Greece	23	Sweden	39
Hungary	16	United Kingdom	1243
Iceland	3	Un-specified EU countries	9
Ireland	93	Total	2938

³⁹ The EBA has investigated the possibility of using COREP data on specialised lending but the analysis was not conclusive.

Country	Number of project loans	Country	Number of project loans
Italy	247		

Source: Moody's Data Alliance Project Finance Data Consortium

126. The analysis covers only project finance. Project finance is a financing technique used to finance infrastructure projects in which debt is raised by a non-recourse special purpose vehicle (SPV) created exclusively to complete the project. Payment of the principal and the interests is funded entirely from cash flows generated by the project. Generally, project finance allows a company to raise funds for a project based on its feasibility and its ability to generate revenues to cover the costs, service the debt and provide a return to the investor. The pools of project finance exposures could therefore be regarded as typical cover pool assets that could back infrastructure ESNs. Consequently, corporate financing (i.e. lending to corporates in the form of regular loan to carry out infrastructure projects without the use of an SPV) is not captured in the present analysis⁴⁰.

b. Default and recovery rates of project finance

127. The data analysis shows that the credit quality of project finance exposures tends to increase significantly over time. [Figure 25](#) compares the observed cumulative default rate⁴¹ of European infrastructure projects with the observed cumulative default rates of high speculative-grade instruments (Ba⁴²) and low investment-grade instruments (Baa⁴³). In the first 2-3 years of the infrastructure projects, the credit quality of such infrastructure projects is low as the cumulative default rate is very similar to that of non-investment grade instruments. However, as time passes this variable tends to stabilise at around 6% and when it reaches 10 years it gets closer to a low investment-grade level.

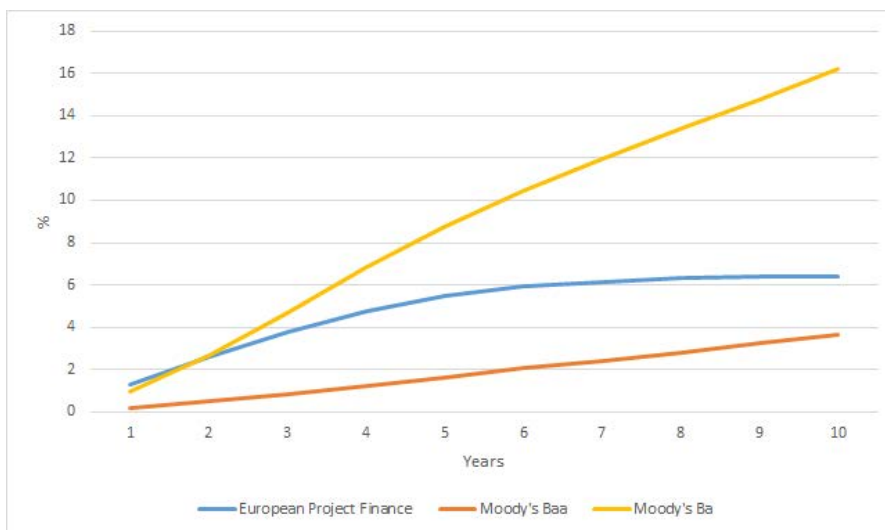
⁴⁰ Compared with project finance, the default rate of infrastructure exposures that take the form of a regular corporate loan is typically expected to be lower. This is explained by the fact that, in the case of project finance, the SPV is usually reliant on the performance of a single asset (e.g. cash flow and collateral value of the project's assets) to ensure the repayment of the loan, while other corporates can rely on a more diversified pool of assets. However, the recovery rate in the case of project finance may be higher thanks to the segregation of infrastructure assets.

⁴¹ The cumulative default rate is based on the weighted average of observed marginal default rates (1990-2016).

⁴² According to Moody's long-term rating definitions, Ba-rated instruments are considered to have speculative elements and are subject to substantial credit risk.

⁴³ According to Moody's long-term rating definitions, Baa-rated instruments are subject to moderate credit risk. They are considered medium grade and as such may possess some speculative characteristics.

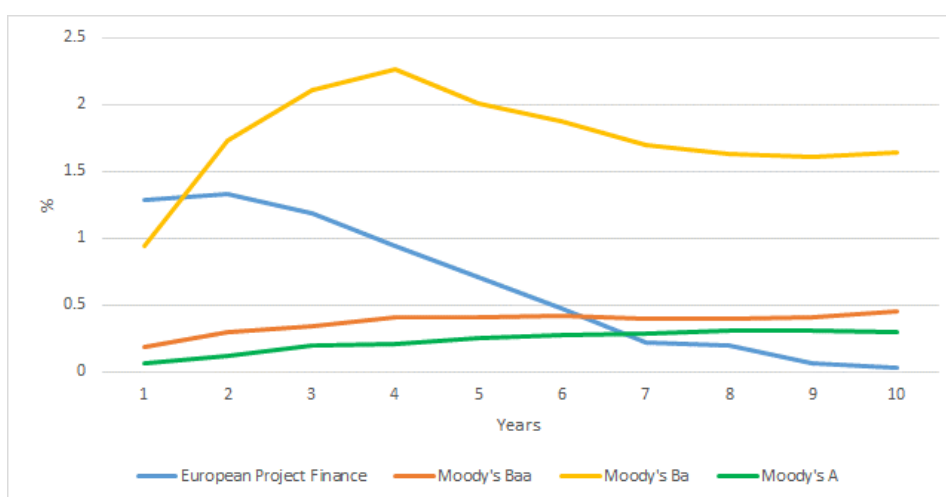
Figure 25: Cumulative default rate of European Project Finance



Source: Moody's Data Alliance Project Finance Data Consortium

128. Similarly, the annual marginal annual default rate⁴⁴ of European project finance declines over time. As shown in Figure 26, in years 1 and 2 the marginal default rate is consistent with that exhibited by Ba-rated corporates. At year 4, it is below 1%, which means that it gets lower than the observed rate for traditional real estate portfolios (as evidenced in Figure 19) and at year 7, it performs better than A rated corporates. This decline in the marginal annual default rate suggests that the credit quality of infrastructure projects increases as the construction is completed and the project enters its operational phase.

Figure 26: Marginal annual default rates of European project finance



Source: Moody's Data Alliance Project Finance Data Consortium

⁴⁴ Number of projects that have defaulted during a year divided by the number of projects exposed to the risk of default at the beginning of the year.

c. Construction phase versus operational phase

129. As evidenced in the data analysis, the magnitude of the risks associated with a specific infrastructure project generally varies across the lifetime of the project. In the construction phase, risks may be higher than in the operational phase, when the project starts generating cash flows:

- The construction phase covers the period during which the infrastructure is generated. It is characterised by high up-front investment costs while profits are still nil. It also typically involves technical risks and risks related to the governance and management of the project. Defaults are usually caused by a failure to deliver the project on time, on budget and/or under the agreed (qualitative) conditions.
- The operational phase begins when the infrastructure starts functioning and the project generates regular revenues. During this period, defaults are often caused by operational performance risk (e.g. cost overruns, insufficient service users) and market risk (e.g. adverse variation of commodity prices).

130. Figure 27 illustrates defaults and ultimate recovery rates, based on whether a default occurred during the construction or the operational phase:

Figure 27: Distribution of defaults and ultimate recoveries by project phase

	Defaults	Average time to default (years)	Recovery rates
Construction	28	2.70	66%
Operational	161	4.94	76%
Total	189	4.6	74%

Source: EBA calculation, Moody's Data Alliance Project Finance Data Consortium

- The average recovery rate of project loans that defaulted during the construction phase is significantly lower than the average recovery rate of project loans that defaulted during the operational phase (in the region of 10 percentage point higher). This is because investors in project finance can rely on only the value of the underlying pool of infrastructure assets to cover for the default. However, the asset value of that pool is by nature lower during the construction phase as the project is not fully completed and does not generate any positive cash flows yet.

- The average number of years to default in the construction phase is 2.7, which is fully consistent with the completion date of the construction phase, which is often planned to last 2-4 years. Indeed, in the sample studied, the average original tenor of the infrastructure project is 17.3 year and, on average, the construction finishes after 2.67 years. In principle, it could also be expected that defaults in the construction phase would appear around key construction milestones and/or completion dates when failure would become apparent.
- The average number of years to default in the operational phase is 4.9. This indicates that most projects defaulted very shortly after the completion of the construction or in the early stage of operation when they failed to deliver sufficient initial profitability.

131. As a result, getting involved in the construction phase requires technical expertise and a readiness to accept significant risk. This explains why the construction phase is usually financed by private equity and/or commercial bank lending facilities. Traditional institutional investors are usually more interested in financing infrastructure projects once the infrastructure is running, as the revenues that the assets generate provide a regular return and a greater level of predictability.

4.2.2 Cover pool and eligibility criteria

a. Asset scope

132. The CfA provides a definition of infrastructure loans to be used in the context of ESNS. Infrastructure loans are defined as ‘credit exposures to entities that operate or finance physical structures or facilities, systems and networks that provide or support essential public services’. This definition is in line with the Solvency II Delegated Regulation and with the proposed Article 501a amending the CRR.

133. In 2017, the European Commission proposed specific amendments to the CRR to further support infrastructure projects in Europe. In particular, paragraph 1 of Article 501a will allow credit institutions to apply a discounting factor (0.75) for the calculation of credit risks provided that the infrastructure exposures comply with all the criteria listed in Article 501a paragraphs 1 and 2.

134. An alignment of the ESN framework with the proposal of the revised CRR would restrict the cover pool to infrastructure loans that would meet all (or some) of the criteria listed in Article 501a. Such an alignment would ensure consistency and readability between the new CRR treatment of infrastructure projects and the framework for infrastructure ESNS.

135. In line with points (a) to (c) of Article 501a, the EBA suggests that ESNS are restricted to project loans (i.e. a financing technique in which debt is raised by a non-recourse special purpose vehicle created exclusively to complete the project).

b. Partition of infrastructure exposures

136. Based on the data analysis, to excluding infrastructure exposures in the construction phase from ESNs could be considered arguing that such exposures (i) might be better handled by infrastructure projects specialists, (ii) might be too risky to be eligible as cover pool assets and (iii) would not be of a sufficient quality to allow infrastructure ESNs to possibly benefit from a preferential risk weight treatment under the CRR.

137. Such a partition of the infrastructure assets, between the construction phase and the operational phase, is also suggested in the new Basel III framework, whereby project finance exposures will be risk-weighted at 130% during the pre-operational and 100% during the operational phase. Project finance exposures in the operational phase that are deemed to be of high quality, will be risk-weighted at 80%⁴⁵. Within the BCBS framework, the operational phase is defined as 'the phase in which the entity that was specifically created to finance the project has (i) a positive cash flow that is sufficient to cover any remaining contractual obligation, and (ii) declining long term debt'. The definition of a 'high quality project finance exposure' is based on a subset of the Solvency II Delegated Regulation criteria.

138. This distinction is also suggested in the amended Solvency II Delegated Regulation. Under the new framework 'qualifying infrastructure investments' form a distinct asset category of safer infrastructure projects which could benefit from lower capital charges. To be eligible for preferential capital treatment under Solvency II, infrastructure projects have to meet a list of restrictive criteria including the capacity to generate predictable cash flows.

139. However, the proposed revised CRR framework suggests an alternative approach whereby infrastructure projects in the construction phase could be eligible for preferential risk weight treatment provided that some safeguarding conditions of Article 501a (1) point (i) are met as follows:

(i) where the obligor is in the construction phase the following criteria shall be fulfilled by the equity investor, or where there is more than one equity investor, the following criteria shall be fulfilled by a group of equity investors as a whole:

(i) the equity investors have a history of successfully overseeing infrastructure projects, the financial strength and the relevant expertise,

(ii) the equity investors have a low risk of default, or there is a low risk of material losses for the obligor as a result of their default,

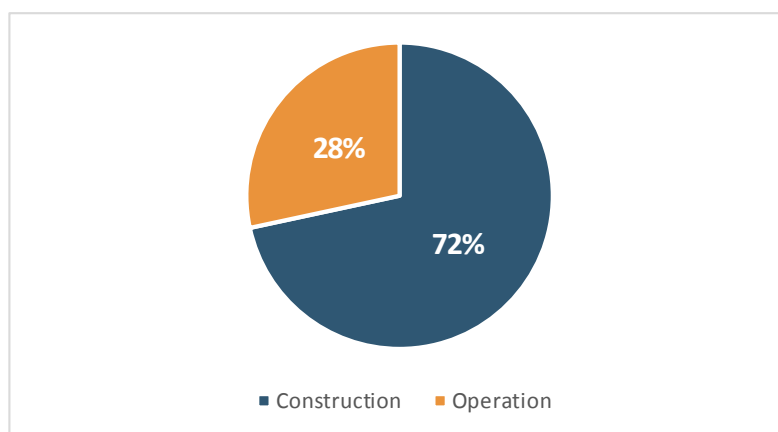
(iii) there are adequate mechanisms in place to align the interest of the equity investors with the interests of lenders; (..)

⁴⁵ Basel III: Finalising post crisis reforms (Dec. 2017), page 14, &47. [Link](#)

140. Full alignment of the ESN framework with the proposed revised CRR would allow infrastructure loans in the construction phase to be included in the scope of ESNs provided that they comply with the all-restrictive conditions of Article 501a (1) point (i).

141. It should be noticed that it is a common practice in project finance to cover both the operational and the construction phase as only a quarter of the infrastructure projects are currently originated solely after the construction phase is completed ([Figure 28](#))

Figure 28: Project phase at origination



Source: EBA calculation, Moody's Data Alliance Project Finance Data Consortium

c. Granularity and concentration thresholds

142. It is important to note that granularity and concentration thresholds can hardly be prescribed in the context of infrastructure ESNs given the specific characteristics of infrastructure projects. Compared with exposures to real estate, the infrastructure projects asset class is more heterogeneous. Infrastructure projects cover a wide range of very diverse assets (utilities, transportation networks, other diverse public facilities such as schools, hospitals, stadiums, etc.) which may present different risk factors, revenue drivers and exposure to economic and market environments. In addition, the average amount of infrastructure projects is usually significantly higher than typical exposures to non-financial corporates. According to Thomson Reuters, the average size of infrastructure loans originated between 1983 and 2016 was USD 330 million. Hence, given (i) the reduced number of available infrastructure loans and (ii) the fact that mixing infrastructure assets might result in a complex credit risk, EBA does not view granularity and concentration limits as appropriate for infrastructure ESNs.

d. Quality standards for the cover pool

143. Additional quality criteria and general principles listed in the proposed revised CRR could be relevant in the context of ESNs, to enhance the quality of the cover pool. In line with

Article 501a (1), it is suggested that the eligibility of the infrastructure loans in the cover pool should also be subject to all of the following conditions:

- Infrastructure loans have to be non-defaulted at the date of the transaction and substituted should a default occur during the lifetime of the issued bond over such collateral.
- The obligor can meet its financial obligations even under severely stressed conditions that are relevant to the risk of the project.
- The cash flows that the obligor generates are sufficiently predictable and cover all future loan repayments during the duration of the loan.
- The re-financing risk of the exposure is low or adequately mitigated.
- The contractual arrangements provide lenders with a high degree of protection.
- The obligation is senior to all other claims other than statutory claims and claims from derivatives counterparties.
- The obligor has adequate safeguards to ensure completion of the project in accordance with the agreed specification, budget or completion date; including strong completion guarantees.
- Where operating risks are material, they are properly managed.
- The obligor uses tested technology and design.
- All necessary permits and authorisations have been obtained.
- The obligor uses derivatives only for risk-mitigation purposes.

5. ESNs applicable structure and features

144. The EBA has performed extensive work on covered bonds to identify best practices in defining both the structure and the features of covered bonds. These practices were identified as necessary to ensure covered bonds are of a very high quality within a harmonised EU regulatory framework. In its CfA, the European Commission requests that the EBA assess the appropriateness of these practices for ESNs. Based on the risk profile and on the specific features of SME ESNs and infrastructure ESNs identified in previous chapters, the present chapter assesses the suitability of these practices and elaborates on the characteristics that EBA considers relevant to make ESN products safe and functional.

5.1 SME ESNs

5.1.1 Best practice 1: Dual recourse

EBA original recommendation

“In accordance with Article 52(4) of the UCITS Directive the (covered) bond must grant the investor:

a claim on the covered bond issuer limited to the complete fulfilment of the payment obligations attached to the covered bond, and

in case of issuer’s default, a priority claim on the assets included in the cover pool limited to the complete fulfilment of the payment obligations attached to the covered bond.

*Should the assets included in the cover pool prove insufficient to fully meet the payment obligations towards the covered bond investor, the covered bond investor should be granted a claim on the covered bond issuer’s insolvency estate which ranks *pari passu*⁴⁶ with the claim of the issuer’s unsecured creditors.*

Suitability assessment

145. The dual recourse feature was one of the key elements of the success of covered bonds and of their resilience in periods of crisis. The absence of default events and of historical losses borne by covered bond investors constitute a positive record often associated with the dual-recourse characteristic of the instrument.

⁴⁶ In the case of non-deposit-taking specialised covered bonds issuers, i.e. issuers whose business only or mostly focuses on the issuance of covered bonds, the covered bond investor could be granted a claim on the covered bond issuer’s insolvency estate which ranks senior to the claim of the issuer’s unsecured creditors.

146. In the case of SME ESNs, an on-balance sheet dual-recourse instrument using the funding technique of covered bonds is deemed relevant and feasible. Such instrument would be used by institutions for funding purposes while granting investors fundamental safeguards to mitigate the higher credit risk and lower liquidity of SME loans.

147. However, it should be noted that, in contrast to covered bonds backed by real estate, the cover assets of SME ESNs would probably not be secured by a real estate underlying security.

5.1.2 Best practice 2 – A: Segregation of the cover assets

EBA original recommendation for covered bonds

'The identification and effective segregation of all the assets over which the investor has a priority claim should be ensured, depending on the issuer model adopted at the national level, either by registration of the cover assets into a cover register or by transfer of the cover assets to a special entity (SPV or specialised institution). The covered bond legal/regulatory framework should ensure that the establishment of the cover register and/or the transfer of the (cover) assets to a special entity result in legally binding and enforceable arrangements, including in the event of default or resolution of the issuer.'

The segregation arrangement should include all primary assets covering the covered bonds as well as the substitution assets and derivatives entered into to hedge the risks arising in the covered bond programme.'

Suitability assessment

148. In the case of SME ESNs, the segregation of the cover assets is a necessary component of the dual-recourse mechanism. The priority claim of the SME ESN investor on the cover pool in the event of issuer default or resolution can be ensured only by an effective segregation of the cover assets. Similarly to covered bonds, the segregation of assets could be achieved in different ways (true sale, pledge/register/specialised issuer model).

5.1.3 Best practice 2 – B: Bankruptcy remoteness of the covered bond

EBA original recommendation

'The legal/regulatory covered bond framework should not require the payment obligations attached to the covered bond to automatically accelerate upon the issuer's default or resolution, in order to ensure that the options available to the covered bond administration to achieve full and timely repayment of the bonds are not constrained.'

The legal/regulatory covered bond framework should ensure that the assets registered in the cover pool and/or transferred to a special entity are treated within the insolvency proceedings related to the issuer's default, giving priority to the covered bond investor and any other parties whose claim

ranks at least pari passu with the claim of the covered bond investor, and do not permit a claim by the issuer's insolvency estate on the cover pool assets other than on a subordinate basis.

The covered bond legal/regulatory framework should ensure that the issuer has a plan in place at all times specifying the operational procedures aimed at ensuring an orderly functioning of the covered bond programme upon default or resolution of the issuer.'

Suitability assessment

149. The remoteness of the SME ESNs from the bankruptcy of the issuing entity is a core concept of the dual-recourse mechanism. It is needed to ensure full and timely repayment to the ESN investor. Similarly to the covered bond framework, the SME ESNs framework should incorporate two aspects of bankruptcy remoteness:

- a. Structural aspects, which should prevent an automatic acceleration of the outstanding repayment of the note and ensure a preferential claim for investors in the SME cover pool;
- b. Operational aspects, which should specify the procedures that the issuer should have in place to ensure a smooth transition of duties from the issuer to the administrator can occur in case of insolvency.

5.1.4 Best practice 2 – C: Administration of the covered bond programme after the issuer's insolvency or resolution

EBA original recommendation

'The legal/regulatory covered bond framework should provide that upon issuer's default or resolution the covered bond programme is managed in an independent way and in the preferential interest of the covered bond investor.

The legal/regulatory covered bond framework should provide for clear and sufficiently detailed provisions over the duties and powers of the administrative function so as to ensure that the latter can take all action which may be necessary for the full realisation of the interests of the covered bonds investor, while maintaining a high level of legal clarity and transparency vis-à-vis the investor over the covered bond management in scenarios of potential distress such as the issuer's default or resolution.'

Suitability assessment

150. This best practice is also deemed relevant to SME ESNs. Following the insolvency or the resolution of the issuer, an independent and effective administration of the ESN programme is needed to guarantee the fulfilment of all the scheduled payments attached to the notes and to protect the priority claim of the ESN investor on the cover pool.

5.1.5 Best practice 3 – A: Composition of cover pools

EBA original recommendation

'Cover pools comprising both residential mortgage (or guaranteed) loans and commercial mortgage loans should be structured and managed so as to ensure that the composition by mortgage type (residential vs. commercial) which characterises the pool at issuance does not materially change throughout the life of the covered bond, for reasons other than the amortisation profile of the cover assets. The EBA considers that regulatory limits on the composition of such mortgage pools could represent a best practice to ensure that a certain degree of consistency is maintained in the risk profile of the cover pool throughout the life of the covered bond.'

The EBA however also acknowledges that other tools may equally ensure consistency and stability in the composition of mixed cover pools, including contractual arrangements on the composition of the mixed cover pools and the supervision on the composition of mixed pools based on supervisory guidelines. Cover pools which comprise primary asset classes other than residential or commercial mortgages (not taking into account asset classes included in the pool as substitution assets) should consist exclusively of one primary asset class'.

Suitability assessment

151. As originally defined, this best practice is not relevant to SME ESNs. The ESN cover pool should be made of SMEs loans and should include only one asset class. However, the rationale for this practice, which is intended to define the composition of the cover pool and to ensure that the risk profile of the cover pool does not deteriorate throughout the life of the product, is still appropriate in the context of ESNs.

152. In the case of SME ESNs, the cover pool should comprise non-defaulted SMEs exposures (as defined in [Chapter 4](#)). Only SMEs loans and leasing exposures to SMEs should be included in the cover pool.

153. The management of the cover pool should be dynamic, i.e. the composition of the pool should be adjusted on an ongoing basis to ensure that the coverage requirement is continuously fulfilled. Given the potentially high risk of replenishment (i.e. a cover pool of SMEs would typically have a short maturity profile which may increase the risk that the cover pool is repaid before the maturity of the note), EBA recommends that the eligibility criteria, the granularity threshold and the concentration limit (as defined in [Chapter 4](#)) should

continue to apply throughout the lifetime of the product. This would ensure that the risk profile of the cover pool remains stable throughout the life of the instrument.

5.1.6 Best practice 3 – B: Cover pools with underlying assets located in different jurisdictions

EBA original recommendation

'The legal/regulatory covered bond framework should provide that cover pools are generally limited to comprise of assets located in the EEA, as this ensures that liquidation of collateral in the case of issuer default is legally enforceable.

In the case of cover assets that are loans secured by mortgages on residential or commercial property located in a non-EEA jurisdiction, it should be assessed that the requirements provided for in Article 208(2) of the CRR are met and that the priority claim of the covered bond investor is legally enforceable in an issuer's insolvency scenario in the jurisdiction under consideration.

For cover assets other than mortgages, it should similarly be ensured that access to the cover assets is legally enforceable. Underwriting standards should be similar to the ones applied on comparable loans granted in EEA jurisdictions and the loans should have similar risk characteristics. In addition non-EEA jurisdictions should apply prudential supervisory and regulatory requirements at least equivalent to those applied in the Union, as per Article 107(4) of the CRR.'

Suitability assessment

154. This best practice aims to ensure that the liquidation of assets and/or collaterals are legally enforceable especially when those assets and/ or collaterals are located outside the EEA. Because of the relative higher riskiness of SME loans, considerations could be given to excluding from the cover pool assets that are located outside the EEA. The EBA identifies prudential concerns related to exposures outside the EEA, in particular in jurisdictions whose bank prudential frameworks and insolvency frameworks have not been assessed as equivalent to that of the EU. The exclusion of the non-EEA assets from the ESNs cover pool would provide the ESN investor with greater certainty and predictability in the insolvency proceedings.

5.1.7 Best practice 5: Coverage principles and legal/regulatory over-collateralisation

EBA original recommendation

@The legal/regulatory covered bond framework should ensure that all the liabilities of the covered bond programme, including liabilities towards counterparties in derivative contracts and, as applicable, liabilities towards managers/administrators, servicers, trustees, cover pool monitors and similar entities involved in the process of the covered bond issuance, are covered by the cover assets.

The EBA considers that a legal/regulatory minimum over-collateralisation level constitutes a regulatory best practice. The recommendation of a quantitative legal/regulatory minimum over-collateralisation level would require further analysis as it depends on several factors including, but not limited to, the class of cover assets as well as, crucially, the chosen coverage principle among the several different coverage principles currently adopted across jurisdictions (nominal, net present value, prudent market value, net-present value under stress, etc.)'

Suitability assessment

155. This best practice is relevant to SME ESNs. Similarly to covered bonds, this practice should translate into a requirement that the sum of all payment claims on the cover assets (including primary assets, substitution assets, liquid assets and cover pool derivatives) has, at all times, to be at least equal to the sum of all payment obligations attached to the corresponding secured notes (including associated operational costs).

156. In addition, the EBA considers that a minimum OC requirement should be prescribed for SME ESNs. The required minimum OC should be set at a level above the nominal amount of the bond sufficient to cover properly for relatively high levels of credit risk of SME loans. Provisions should be deducted from the calculation of the nominal amount of the cover assets. Such requirements would have to be met on an ongoing basis.

5.1.8 Best practice 6 – A: Use of derivatives

EBA original recommendation

'The legal/regulatory covered bond framework should specify that derivative instruments are allowed in covered bond programmes exclusively for risk hedging purposes. The legal/regulatory covered bond framework should provide that derivative contracts entered into by the covered bond issuer with a derivative counterparty, and registered in the cover pool, cannot be terminated upon issuer insolvency.'

Suitability assessment

157. This best practice is relevant to SME ESNs. Derivative instruments would represent risk mitigation tools within ESN programmes to hedge the interest rate and currency risks arising from structural interest rate and currency mismatches. As in the case of covered bonds, derivative contracts entered into by the ESN issuer must ensure that, upon issuer default,

they are not terminated and, therefore, keep providing protection to the ESN programme in the interest of the ESN investor.

5.1.9 Best practice 6 – B: Liquidity buffer

EBA original recommendation

'The EBA considers that a requirement to mitigate liquidity risk in the covered bond programme, by means of liquid assets available at all times to cover the cumulative net out-flows of the covered bond programme over a certain time frame, constitutes a regulatory best practice. Determining the calibration and scope of a best practice requirement would require further analysis since, as the report acknowledges, different structures of the covered bond programme - e.g. hard bullet, soft bullet and conditional pass-through structures - expose to different extents the covered bond programme to liquidity risk.'

Suitability assessment

158. This best practice is relevant to SME ESNs. Liquidity risk is a key concern to be taken into account when assessing the capability of the ESN programme to ensure the timely repayment of principal and interest amounts to ESN investors.

159. Liquidity risk arises when the timely repayment of the programme's obligation is no longer covered by the natural amortisation of the cover pool. This may be caused (i) by a maturity and/or interest rate mismatch between the assets and liabilities of the programme, (ii) by a payment interruption particularly in a scenario of insolvency/resolution of the issuer or (iii) by substantial price discounts in the market in the event of a fire sale of the cover pool when liquidation is needed for the repayment of the investors.

160. Liquidity risk attached to SME ESNs is expected to be higher than for covered bonds. SME loans tend to be less liquid than mortgage loans given the lack of a secondary market. In addition, in a recession period, the asset value of SME loans may significantly decrease as a result of close correlation with the economic cycle. To cover for this structural liquidity risk mitigants should be introduced, possibly in the form of a conditional pass through (CPT) structure.

5.1.10 Best practice 6 – C: Stress testing

EBA original recommendation

'The legal/regulatory covered bond framework should require covered bonds issuers to carry out stress test exercises on the calculation of the coverage requirement taking into account, at least, the following factors:

- Shifts of relevant interest rate curves based on historical performance, where data is available;*

- Shifts of the currency pairs relevant to the covered bond programme based on historical performance, where data is available;

- Stresses on the credit quality of the underlying assets based on historical performance, where data is available;

- Stresses on the re-payment behaviour of the underlying assets based on historical performance, where data is available;

- Stresses on the liquidation price of the underlying assets based on historical performance, where data is available.

The stress tests should also take into account other risks, including but not limited to, set-off risks and commingling risks.'

Suitability assessment

161. This best practice is deemed relevant to SME ESNs. Similar to covered bonds, the overall credit quality and safety of the ESN depends on several risk factors, which include, but are not limited to: interest and currency risks, the credit risk performance of the underlying assets, the pre-payment risk associated with the cash flows generated by the underlying assets, the market risk at the liquidation of the cover assets, payment interruption risk, for instance due to commingling, and set-off risk.

162. The periodic implementation of stress test exercises on the main risk factors, and the assessment of their implications on the coverage and on the capability of the ESN programme to achieve full and timely payment of the note is deemed necessary, to help maintain the credit quality and safety of the ESNs and to ensure of pro-active management of the cover pool.

5.1.11 Best practice 7 – A: Appointment of the cover pool monitor

EBA original recommendation

'The legal/regulatory covered bond framework should provide that, at the establishment of a given covered bond programme, a cover pool monitor is appointed. The framework should: i) ensure that the cover pool monitor is an internal or external entity other than the ordinary auditor of the covered bonds issuer; ii) provide for the eligibility criteria for the appointment and the Cover Pool Monitor's main duties and powers including, but not limited to, the monitoring of all coverage requirements and eligibility tests and the random auditing of the cover pool.

Where similar tasks are directly carried out by the competent authority, the appointment of a cover pool monitor may not be necessary. The cover pool monitor and/or the issuer, based on the findings of the cover pool monitor, should regularly report to the competent authority.'

Suitability assessment

163. This best practice is relevant to SME ESNs. Independent monitoring of the ESN programme and of its compliance with the legal/regulatory requirements would make the product safer. It should also provide an adequate balance between the conflicting interests of the issuers and the investors and would ensure that the instrument is sufficiently standardised.

5.1.12 Best practice 7 – B: Supervision of the covered bond issuer

EBA original recommendation

'The legal/regulatory covered bond framework should provide that the competent authority approves the establishment, by a given issuer, of a covered bond programme. A covered bond programme shall be considered to have been established when a cover pool is established for the inaugural covered bond issue. Within the same covered bond programme additional collateral may be subsequently added to the cover pool and further covered bonds may be issued granting investors claims which rank pari passu with the claims attached to the existing bonds collateralised by the same cover pool, in the event of issuer's insolvency.'

At the establishment stage the competent authority should be satisfied, at least on the basis of information received from the issuer, that: i) adequate operational policies, procedures and controls are put in place by the issuer for the management of the covered bond programme, including in an issuer's insolvency or resolution scenario; ii) where provided by the national framework, the restrictions applicable to the issuer are met; iii) the features of the cover pool meet the applicable requirements.

The EBA acknowledges that the supervisory practice of licensing specialised covered bond issuers, which only carry out the covered bonds issuance activity and related ancillary activities, may ensure a level of supervision of the issuer which is comparable to the one achieved by the authorisation of the establishment of a new covered bond programmes. In any case all the applicable requirements attached to the granting of the licence should be regularly monitored and the establishment of new covered bond programmes should as a minimum be subject to ex-ante notification to the national authority. The legal/regulatory covered bond framework should provide a clear and sufficiently detailed illustration of the duties and powers of the competent authority regarding the ongoing supervision of the applicable activities/regulatory requirements of covered bond issuers.'

Suitability assessment

164. This best practice is deemed relevant to SME ESNs. Public supervision of this product would be needed for market suitability. As in the case of covered bonds, the EBA identifies a role for the competent authority in the ex-ante approval of the establishment of ESN programmes as a safeguard of their overall safety and compliance with the ESN framework. When the ESN programme is established, the ability of the issuer to meet the standards specified in the applicable regulations, the overall quality of the dynamic cover pool and the potential

implementation of material changes to existing programmes are to be monitored in order to ensure the comprehensive ongoing monitoring and supervision of the ESN product.

5.1.13 Best practice 7 – C: Duties and powers of the national authority in a scenario of the issuer’s insolvency

EBA original recommendation

‘The legal/regulatory covered bond framework should provide sufficiently detailed description of what the duties and powers of the competent authority are on the covered bond programme, as well as its administration, in a scenario of issuer’s default.’

Suitability assessment

165. This best practice is deemed relevant to SME ESNs. Given the specific features of the ESN instrument, and in particular the investor’s preferential claim to the assets in the cover pool in a scenario of default of the issuer, the need for a system of special public supervision becomes highly pressing in the event of the issuer’s default.

5.1.14 Best practice 8 – A: Scope of disclosure

EBA original recommendation

‘The legal/regulatory covered bond framework should require covered bonds issuers to disclose aggregate data on the credit risk, market risk and liquidity risk characteristics of the cover assets and the covered bonds of a given programme as well as other relevant information, including information concerning the counterparties involved in the programme and the levels of contractual and voluntary over-collateralisation. The information should be disclosed to a level of detail enabling investors to carry out a comprehensive risk analysis.’

Suitability assessment

166. The scope of disclosure should go beyond what is currently applicable to covered bonds given that SME loans are more complex and heterogeneous and information on their credit performance is not standardised. Accordingly, data at loan-by-loan level should be disclosed to facilitate due diligence by the investor. In particular disclosed data should include, information on (i) the number of loans in the cover pool, (ii) the exposure value of and (iii) the original tenor of each loans, (iv) the field of the industry in which the borrowers operate and (v) the location of the assets.

5.1.15 Best practice 8 – B: Frequency of disclosure

EBA original recommendation

‘The legal/regulatory covered bond framework should provide that the disclosure of the information mentioned under recommendation 8 - A should occur at least on a quarterly basis.’

Suitability assessment

167. In the case of SME ESNs, a disclosure on at least a quarterly basis is recommended.

5.2 Infrastructure ESNS

5.2.1 Suitability of a dual recourse feature

168. Given the bespoke nature and lack of granularity of infrastructure loans, such exposures can hardly be structured the same way as covered bonds. As evidenced in [Chapter 4](#), compared with exposures to real estate, the infrastructure projects asset class is more heterogeneous. In particular, infrastructure projects cover a wide range of very diverse assets (utilities, transportation networks, other diverse public facilities such as schools, hospitals, stadiums, etc.) which may present different risk factors, revenue drivers and exposures to economic and market environments. In addition, the average exposure amount to infrastructure projects is usually significantly higher than typical exposures to non-financial corporates. According to Thomson Reuters, the average size of infrastructure loans originated between 1983 and 2016 was USD 330 million. Hence, given (i) the reduced number of available infrastructure loans and (ii) the fact that mixing infrastructure assets might result in a complex credit risk, the EBA does not view that the dual-recourse as appropriate.

169. In addition, from a business case perspective, an instrument offering some degree of capital relief through risk transfer might be more suitable to institutions given the relatively high regulatory capital consumption of infrastructure exposures, due to among other factors their long-term maturity profile, the large exposure amounts and the rules on provisioning. Furthermore, the off-balance sheet structure may also allow issuers to reduce or eliminate the regulatory liquidity costs of infrastructure exposures. The off-balance-sheet structure may also constitute a new asset class for investment potentially offering investors a higher yield than bank on-balance-sheet products, such as covered bonds.

5.2.2 EU infrastructures bonds

170. Against this background, the EBA suggests that a new distinct class of funding instrument could be considered in the form of an EU infrastructure bond, whose structure would be similar to an off-balance sheet single recourse instrument. In particular, a static pool of eligible infrastructure loans would be transferred by means of true sale or pledging to a special purpose entity (SPE). The infrastructure bonds would be secured by the infrastructure loans segregated into the SPE.

171. Should the instrument takes the form of an EU infrastructure bond, most of the covered bond best practices would not be relevant. However, the EBA suggests that this instrument, like covered bonds, could be standardised into a pan-European framework and could be subject to public supervision.

172. Eligible assets could comprise infrastructure projects in the operational phase that are non-defaulted at the date of inclusion in the transaction and that meet all the eligible criteria as listed in [Chapter 4](#).

173. From an issuer's perspective, this standardised product could provide capital relief and present other benefits in the context of the liquidity and leverage ratio regulatory frameworks. From an investor's perspective, such a product would still be relatively safe, as investors would benefit from:

- a. Predictable long-term cash flows and relatively lower default rates characterising infrastructure loans in an operational phase, as well as the other elements of safeguard advised in this report in relation to the infrastructure collateral eligibility conditions;
- b. A robust and supervised bond structure, shaped in accordance with a standardised pan-European regulatory framework potentially designed on the basis of some elements of the STS framework.

174. However, further work would be needed to specify the structure and the features of this potential new asset class.

5.3 Conclusion

175. Based on the risk profile and on the specific features of SME loans, the EBA's view is that SME ESNs share some of the structural feature of covered bonds. Consequently, all of the 2016 EBA best practices on covered bonds are appropriate in the context of SME ESNs, but, importantly, some adjustments to these best practices would be needed to account for specific aspects of SME exposures. In particular, a more restrictive framework should be applied to SME ESNs in relation to certain best practices.

176. In the case of infrastructure loans, such exposures cannot be structured the same way as real estate and SME exposures because of their specific characteristics. Therefore, the covered bond best practices are not deemed relevant to infrastructure ESNs.

6. The regulatory treatment of ESNs

6.1 Dual recourse SME ESNs

6.1.1 Bank regulatory capital treatment (CRR)

a. Regulatory treatment assigned to covered bonds and institutions

177. Based on the structural considerations such as the dual-recourse structure proposed in this report for SME ESNs, and the proposal to applying to those ESNs covered bonds-like best practices of regulation like those applying to covered bonds, and not taking into account the conditions of Article 129 in terms of collateralization and credit quality of the underlying assets, CRR-compliant covered bonds and exposures to institutions represent the two most appropriate benchmarks for discussing any potential regulatory treatment of SME ESNs.

178. Covered bond compliant with Article 129 of the CRR are granted preferential treatment under both the Standardised Approach (SA) and Internal Ratings-based (IRBA) Approach to credit risk. UCITS compliant covered bonds which do not fulfill all the eligibility criteria of Article 129 of the CRR are classified within the exposure class ‘exposures to institutions’ for the determination of their risk weight treatment under the CRR (as specified in CRR Article 120/121 for the Standardised Approach).

179. Under the Standardised Approach, risk weights applicable to exposures to institutions and exposures to covered bonds compare as summarised in [Table 8](#). Depending on the credit quality step of the exposures, the risk weights of exposures to institutions are in the range of 1.5 to 2.5 times as high as those for exposures to covered bonds.

Table 8: CRR SA risk weights on covered bonds and exposures to institutions (per credit quality step)

Credit quality step	Exposures to covered bonds [A]	Exposures to institutions [B]	Multiplier [B]/[A]
1	10%	20%	2
2	20%	50%	2.5
3	20%	50%	2.5
4	50%	100%	2
5	50%	100%	2
6	100%	150%	1.5

180. The IRB Approach sets out ad-hoc supervisory value for the LGD assigned to exposures to covered bonds under the Foundation IRB Approach (F-IRB). Whereas (senior) exposures to institutions (without eligible collateral) are assigned a LGD value of 45%, covered bonds can be assigned a LGD value of 11.25% ([Table 9](#)).

Table 9: CRR LGD framework

	Exposures to covered bonds [A]	Exposures to institutions [B]	Multiplier [B]/[A]
F-IRB LGD value	11.25%	45%	4

b. Proposed treatment for SME ESNs

181. As illustrated in Chapter 4 of this report, the credit risk performance of exposures to SMEs is worse than the credit risk performance of portfolios of non-SME exposures collateralised by real estate (broadly representing residential and commercial mortgages), where the latter represent the most widespread type of collateral securing CRR-compliant covered bonds. This is true in terms of both observed default rates and observed loss rates.

182. Given the dual-recourse feature and other structural characteristics applicable to covered bonds proposed in this report for SME ESNs, the main driver of differences in the risk profile and credit risk performance between CRR-compliant covered bonds and ESNs is expected to be the credit risk profile of the underlying collateral resulting from differences in the eligibility of exposures in the cover pool in terms of types of obligors or required collateralisation of such exposures.

183. In the context of structured finance instruments, credit risk stemming from the cover pool can be, and usually is, mitigated by credit enhancement. As outlined in the EBA Report on covered bond frameworks and capital treatment (2014), credit enhancement, which in the case of covered bonds takes the form of over-collateralisation, is not only used to mitigate credit risk, but jointly tackles re-financing risk, market risk (i.e. interest and currency risk), set-off risks and commingling risk, and may cover some of the risks that fall under what is often referred to as the operational risk of the covered bond programme.

184. In designing a bank regulatory capital treatment for SME ESNs, over-collateralisation could be considered the main structural safeguard against, among other risks, the relatively high credit risk stemming from SME exposures.

185. The available data on observed default rates are not directly comparable across data sources, as time horizons, geographical breakdown and other specifications differ. However, overall, the available data point to SME exposures' default rates being, approximately, one to three times as high as those of non-SME exposures collateralised by real estate. The comparison includes rating agencies comparative data covering each asset class's worst vintage 5-years cumulative default rate, hence comparing worst-case performance across portfolios.

186. Loss rates, available only within supervisory data (COREP), provide the picture of a larger gap, with loss rates of unsecured SME exposures being up to seven times as high as those of non-SME exposures collateralised by real estate.

187. On the basis of the above considerations and empirical evidence, the EBA is of the view that:

- a) No preferential treatment (i.e. treatment similar to covered bonds) should be granted to SME ESNs, based on the performance of the underlying assets and also because, in contrast to covered bonds backed by real estate, the cover assets of SME ESNs would probably not be secured by a real estate underlying security or other type of standardised security of material value. Compared with unsecured exposures to institutions (Articles 120 and 121 of the CRR), a differentiated capital treatment and risk weights requirement might, however, be considered.
- b) When determining the appropriate treatment applicable to SME ESNs, the following principles should also be taken into account:
 - (i) The dual-recourse mechanism of the instrument and the structural and cover asset eligibility criteria provide additional credit enhancement and mitigate many of the risks of the underlying assets.
 - (ii) The CRR capital framework should be consistent overall between exposures classes. Especially, the capital treatment of SME ESNs should be based on the actual risk profile of the exposures and should not create unjustified level playing field issues at the expense of non-preferred covered bonds.
 - (iii) A clear distinction between the prudential framework for SMEs and covered bonds should be maintained to avoid market confusion and potential negative side effects on the covered bond market.

6.1.2 Liquidity coverage ratio treatment

a. Regulatory treatment assigned to covered bonds

188. The October 2014 Delegated Act of the European Commission on the liquidity coverage ratio established that different types of covered bonds might be eligible for different LCR treatments, as in [Table 10](#)⁴⁷:

⁴⁷ In its Report on HQLA (December 2013) the EBA had advised the Commission to exclude covered bonds from the Level 1 HQLA category. [Link](#)

Table 10: LCR treatment of covered bonds, in accordance with the Commission's Delegated Act of October 2014

<p>Level 1(B)</p> <ul style="list-style-type: none"> - 7% haircut - 70% portfolio cap (Level 1B and 2A) 	<ul style="list-style-type: none"> - UCITS or CRR compliance. - Exposures to credit institutions must be compliant with CRR Article 129(1) (c). - The investor and the issuer meet CRR Article 129(7) on transparency. - The issue size must be EUR500m or larger (or domestic currency equivalent). - Rating of at least 'AA-', or, where no rating has been assigned, a 10% risk weight under Article 129(5) of CRR; - The cover pool meets a minimum OC requirement of 2% at all times.
<p>Level 2(A)</p> <ul style="list-style-type: none"> - 15% haircut - 40% portfolio cap 	<ul style="list-style-type: none"> - UCITS or CRR compliance. - Exposures to credit institutions must be compliant with CRR Article 129(1) (c). - The investor and the issuer meet CRR Article 129(7) on transparency. - The issue size must be EUR 250m or larger (or domestic currency equivalent); - Rating of at least 'A-', or, where no rating has been assigned, a 20% risk weight under Article 129(5) of CRR. - The cover pool meets a minimum OC requirement of 7% at all times. However, covered bonds that meet all criteria for level 1B except the minimum size requirement need only a minimum OC level of 2% to be included in the level 2A category. <p>Non-EEA covered bonds included provided that:</p> <ul style="list-style-type: none"> - OC level of 7% (2% if issue size above EUR 500m) - Min rating AA- - Issued under a legal framework - Collateralised by public sector exposures, resi or commercial real estate or ship loans; - Exposures to credit institutions must be compliant with CRR Article 129(1) (c). - The investor and the issuer meet CRR Article 129(7) on transparency.
<p>Level 2(B)</p> <ul style="list-style-type: none"> - 30% haircut - 15% portfolio cap 	<ul style="list-style-type: none"> - UCITS or CRR compliance. - Exposures to credit institutions must be compliant with CRR Article 129(1) (c). - The investor and the issuer meet CRR Article 129(7) on transparency on a quarterly basis; - The issue size must be at least EUR250m (or the domestic currency equivalent); - the cover pool must meet an OC requirement of 10% - The cover pool is restricted to EEA public sector assets, residential mortgages or guaranteed home loans, qualifying for a risk weight of 35% or lower

b. Proposed treatment for SME ESNS

189. SME-backed dual recourse instruments do not currently exist in the EU financial markets. Consequently, no empirical evidence exists on their potential liquidity performance. Furthermore, the EBA does not deem it appropriate to assess the potential liquidity of SME ESNS on the basis of the performance of other instruments.

190. On the basis of the above considerations the EBA is of the view that the regulatory treatment of SME ESNS in the context of the LCR regulation cannot be assessed at this stage.

Should the instrument be introduced and used in financial markets, actual market-based evidence would have to be used to assess the liquidity properties of the new instrument.

6.1.3 Regulatory treatment in relation to UCITS

a. Regulatory treatment assigned to covered bonds

191. Article 52 of the UCITS Directive provides a set of minimum requirements for a bond to be eligible under UCITS. UCITS funds may normally invest up to 5% of their assets in bonds. However, provided that the conditions of Article 52(4) of the Directive are met, UCITS funds may invest up to 25% of their assets in a given bond. The specific conditions are as follows:

- The issuer must be a credit institution, registered in the EU and subject to a special prudential public supervision.
- The law must specify which assets can be included in the cover pool.
- The cover pool must provide sufficient protection to cover the claims of the bondholder throughout the whole life of the bond.
- Bondholders must have a priority claim on the asset pool in case of default of the issuer.

192. CRR Article 129 defines ‘covered bonds’ as all bonds fulfilling the conditions of UCITS Article 52(4).

193. In the future covered bonds framework, only bonds that would fulfil the definition and the structural features prescribed in the Covered Bonds Directive will be eligible for preferential UCITS treatment. Article 52(4) of the UCITS Directive will be amended accordingly.

b. Proposed treatment for SME ESNs

194. Preferential eligibility treatment under UCITS could be considered on the basis that SME ESNs are issued by credit institutions, are subject to many of the fundamental features of best practice for covered bonds, and meet all the additional UCITS criteria.

195. On the basis of the above considerations, the EBA is of the view that SME ESNs that comply with all the best practice requirements proposed in this report could be subject to lower UCITS investment limits.

6.1.4 Regulatory treatment in relation to the EMIR requirements on the posting of margins in connection with non-cleared OTC derivatives

a. Regulatory treatment assigned to covered bonds

196. Article 11 of Regulation No 648/2012 of the European Parliament and of the Council (EMIR) requires financial companies and non-financial companies to have in place risk management procedures to ensure the timely, accurate and appropriately segregated exchange of

collateral in connection with non-cleared OTC derivatives. The Level 1 legal framework is further specified by Delegated Regulation (EU) 2016/2251, which entered into force on 4 January 2017.

197. The Regulation establishes that covered bond issuers and cover pools may be exempted from posting both initial and variation margins where certain conditions are met. The exemption acknowledges that covered bond issuers and cover pools face legal impediments when posting margins, as margin payments from the cover pool resources breach the preferential claim rights of covered bond investors. The rationale of the exemption also acknowledges that the preferential claim that derivatives' counterparties have on the cover pool replaces the safeguard provided by margins.

198. The conditions for covered bonds to be exempted from posting margins are the following:

- a. The OTC derivative contract is not terminated in the event of resolution or insolvency of the CB issuer or cover pool.
- b. Counterparties rank at least *pari passu* with covered bond holders except where the relevant counterparty is the defaulting or the affected party or waives the *pari passu* ranking.
- c. The OTC derivative contract is registered or recorded in the cover pool of the covered bond in accordance with national covered bond legislation.
- d. The OTC derivative contract is used only to hedge the interest rate or currency mismatches of the cover pool in relation to the covered bond.
- e. The netting set does not include OTC derivative contracts unrelated to the cover pool of the covered bond Issuer.
- f. The covered bond to which the OTC derivative contract relates is collateralised by any of the eligible assets listed in paragraphs (1), (2) and (3) of Article 129 of the CRR.
- g. The cover pool of the CB to which the OTC derivative contract relates is subject to a regulatory over-collateralisation requirement of at least 2%.

b. Proposed treatment for SME ESNs

199. In accordance with this advice, SME ESNs should take the form of covered bond-like dual recourse instruments. The regulatory principles of best practice proposed to govern the SME ESNs are very similar to those applicable to covered bonds. Against this background, issuers of SME ESNs and/or ESNs' programmes would face legal impediments in posting regulatory margins that are very similar to the impediments faced by covered bond issuers and/or cover pools.

200. Furthermore, provided that sufficient levels of over-collateralisation are in place for SME ESNs, counterparties in derivative contracts connected to ESNs may find sufficient safeguard against counterparty credit risk in a preferential claim assigned to them in relation to the ESNs' cover pool. The regulatory conditions that further protect the converted bond's counterparty in the derivative contract and that determine eligibility for the exemption, as specified in Delegated Regulation (EU) 2016/2251, may equally protect the counterparties of SME ESNs in derivative contracts.

201. On the basis of the above considerations the EBA is of the view that SME ESNs should be exempted from posting margins in the context of the Delegated Regulation (EU) 2016/2251 provided that ESNs are issued by credit institutions, have the same fundamental features as covered bonds and meet all the additional EMIR criteria.

6.1.5 Regulatory treatment under the BRRD (the bail-in exemption)

a. Regulatory treatment assigned to covered bonds

202. Article 44(2) of the BRRD, which entered into force on 1 January 2015, provides that UCITS-compliant covered bonds are excluded from the scope of the bail-in tool. The provision does not prevent resolution authorities, where appropriate, from exercising bail-in powers in relation to any amount of a covered bond liability that exceeds the coverage level.

b. Proposed treatment for SME- ESNs

203. In accordance with this advice, SME ESNs should take the form of covered bond-like dual-recourse instruments. The regulatory principles of best practice proposed to govern the SME ESNs are very similar to those applicable to covered bonds. In this regard, SME ESNs would be secured liabilities that, like covered bonds, are governed by specific legislation.

204. On the basis of the above considerations, the EBA is of the view that SME ESNs should be exempted from bail-in.

6.1.6 Insurance regulatory capital treatment (Solvency II)

a. Regulatory treatment assigned to covered bonds

205. In the context of the Solvency II Regulation, a spread risk factor of 0.6% is assigned to AAA-rated covered bonds, compared with 0.9% for senior unsecured and corporate AAA-rated bonds.

b. Proposed treatment for SME ESNs

206. The EBA is not in a position to advise what should be the treatment of SME ESNs in the context of the Solvency II Regulation. However, the EBA is of the view that, on the basis of the present report and the advice on the structural features of SME ESNs, EIOPA and the Commission should carry out further work on SME ESNs. The insurers investor base appears particularly important as regards the possibility of helping the EU banking system to fund SME lending outside the system itself, thus reducing the dependence of SME funding on the financial health of the banking system and limiting the risk of contagion. Should a regulatory assessment of ESNs be performed by EIOPA, the suggested capital treatment under the CRR might provide some guidance.

6.2 EU infrastructure bonds

207. As the EBA advises against the dual-recourse for infrastructure-ESN, no assessment of its potential prudential treatment has been carried out.

208. In this Report the EBA suggests that a new distinct class of funding instruments could be considered in the form of an EU infrastructure bond, which could take the form of an off-balance-sheet instrument whereby a static pool of eligible infrastructure loans could be transferred, by means of either a true sale or a pledge, to a special purpose entity. In addition, the EBA recommends that the eligible infrastructure assets should comprise only high-quality loans (i.e. loans financing infrastructures that are in the operational phase) and that a pan-European framework could be considered (see [Chapter 5](#)).

209. Based on the suggested eligibility criteria, the standardised EU infrastructure bonds should constitute a relatively safer asset class, whereby investors would benefit from the predictable cash flows of the operational phase of infrastructure loans but also from relatively low default rates and loss rates, especially in the long-term. For these reasons, some differentiated regulatory requirements could possibly be considered, in particular compared with other infrastructure exposures.

210. However, the applicable regulatory requirements will also depend on the exposure type to which the infrastructure bond would be assigned. In this regard, it should be noted that there is currently some ambiguity, within the CRR credit risk framework, around the classification of exposures to infrastructure. Most exposures are currently classified as specialised lending, but in certain cases infrastructure exposures are treated as securitisation. The assignment to one or another exposure class is the key as it entails significant differences in terms of credit risk weight treatment under the CRR ([Table 11](#)).

Table 11: Credit risk treatment of different exposure classes

Exposure classes	Credit risk weight treatment
STS securitisation	10% floor (CRR. Articles, 260, 262, 264)
Non-STS securitisation	15% floor (CRR. Articles 259, 261, 263))
Specialised lending (Slotting Approach within the IRB Approach)	50% floor (CRR. Article 153)
Corporate exposure (Standardised Approach)	20% floor (CRR. Article 122)

211. Against this background, further work would need to be carried out by the EBA, regarding the classification of infrastructure exposures as either specialised lending or non-STIS securitisation under the CRR. This assessment is required to identify the initial benchmark that should be used to determine the most appropriate regulatory treatment if a standardised EU infrastructure bond is considered.

7. EBA recommendations

7.1 SME ESNs

RECOMMENDATION 1 : STRUCTURE AND COVER ASSETS

The EBA considers that SME ESNs could be structured as a dual recourse instrument, however, in contrast to covered bonds backed by real estate, the cover assets of SME ESNs would probably not be secured by a real estate-underlying security⁴⁸.

In this regard, the EBA is of the view that all of the 2016 EBA best practices on covered bonds are appropriate in the context of SME ESNs, but, importantly, some adjustments to these best practices would be needed to account for specific aspects of SME exposures. In particular, a more restrictive framework should be applied to SME ESNs in relation to certain best practices, including:

- i. composition of cover pools and cover pools with underlying assets located in different jurisdictions (Best practice 3);*
- ii. coverage principles and legal/regulatory over-collateralisation (Best Practice 5);*
- iii. liquidity buffer (Best practice 6); and*
- iv. scope of disclosure (Best practice 8A).*

Furthermore, because of the high credit risk and refinancing risk that characterise SME exposures, the EBA recommends incorporating strict cover assets eligibility criteria both at loan and pool level.

The selection of the underlying SME exposures should be subject to the following eligibility criteria:

- Asset scope: only loans and leasing exposures to SMEs (as defined in the CRR Article 501) should be included in the cover pool. Other types of SME exposures such as overdraft and factoring should be excluded because of their typically short maturity.*

⁴⁸ In addition, SME ESNs do not, unlike other CRR-compliant covered bond, require any other standardised collateralisation of all exposures in the cover pool or, apart from the exclusion of defaulted exposures, require that the obligors of all exposures in the cover pool meet a certain minimum credit quality.

- *Quality standards: only non-defaulted SME loans should be included in the cover pool. In addition, credit institutions issuing SME ESNs should have sound and well-defined credit underwriting standards.*
- *Granularity of the cover pool: the granularity of the cover pool should be sufficiently high, i.e. the pool should contain at least 500 exposures.*
- *Concentration of the cover pool: the cover pool should not be subject to material concentration, i.e. the aggregate value of exposures to a single obligor in the cover pool should not exceed 2% of the total value of all exposures in the cover pool.*
- *Mandatory minimum OC: a minimum OC requirement of at least 30% should apply at all times. For the purposes of calculating the requirement, defaulted SME exposures should not be taken into account and the provisions should be deducted from the nominal amount of the cover assets.*

RECOMMENDATION 2: REGULATORY TREATMENT

CREDIT RISK TREATMENT UNDER CRR

Based exclusively on the performance of the underlying assets, no preferential risk weight treatment could be justified for SME ESNs. However, taking into account the structural and cover assets enhancements proposed in Recommendation 1, a differentiated risk weight requirement compared with unsecured exposures to institutions (as specified in Articles 120 and 121 of the CRR for the Standardised Approach) could be considered.

When calibrating the appropriate risk weight framework applicable to SME ESNs, the following elements at least, should be taken into account :

- *Compared with unsecured exposures to institutions, the dual-recourse feature of the instrument, the structural enhancements and the cover assets eligibility criteria will improve the risk profile and credit quality of the instrument.*
- *The overall consistency of the CRR capital framework between exposure classes should be respected. Especially, the capital treatment of SME ESNs should (i) be based on the actual risk profile of the underlying exposures, and (ii) not create unjustified level playing field issues at the expense of non-preferred covered bonds⁴⁹. A holistic review of the existing framework for comparable instruments should also be considered.*

⁴⁹ 'Non-preferred covered bond' refers to covered bond instruments which comply with all the UCITS criteria but do not meet all the specific conditions of Article 129 of the CRR and are therefore subject to treatment as unsecured exposures to institutions.

- *A clear distinction between the prudential treatment of SME ESNs and covered bonds should be maintained to avoid market confusion and potential negative reputational side effects on the covered bond market.*

TREATMENT UNDER THE LCR

The prudential treatment of SME ESNs under the LCR cannot be reasonably determined because the liquidity of this instrument cannot be measured, since the instrument does not currently exist, and its liquidity cannot be prudently estimated. Therefore, it is suggested that SME ESNs should not be subject to a preferential liquidity treatment until such an assessment is performed. Should the instrument be introduced and used in financial markets, actual market-based evidence would have to be used to assess the liquidity properties of the new instrument in order to determine if and under what conditions SME ESNs could be considered as HQLAs under the LCR.

TREATMENT UNDER UCITS (RETAIL INVESTMENT AND INVESTMENT THRESHOLD)

Provided that SME ESNs are issued by credit institutions, are subject to many of the fundamental features identified as a best practice for covered bonds, and meets all the additional relevant UCITS criteria, a preferential investment threshold under UCITS could be considered. The Commission should also consider consulting other relevant ESAs to further assess the feasibility of SME ESNs benefiting from a preferential treatment under UCITS.

TREATMENT UNDER EMIR (EXEMPTION FROM COLLATERAL POSTING):

Provided that SME ESNs are issued by credit institutions, and are subject to many of the fundamental features identified as a best practice for covered bonds and to the specific arrangements under which ESNs can mitigate counterparty risks, an exemption from posting collateral under EMIR could be considered. The Commission should also consider consulting other relevant ESAs to further assess the feasibility of SME ESNs benefiting from a preferential treatment under EMIR.

TREATMENT UNDER BRRD:

The regulatory treatment of SME ESNs in the context of the BRRD should be comparable to that of secured liabilities. Therefore, SME ESNs could be exempt from bail-in.

7.2 Infrastructure ESNs

RECOMMENDATION 3: STRUCTURE AND COVER ASSETS

The EBA considers that a dual recourse structure would not be appropriate in the case of infrastructure ESNs. Accordingly, most of the 2016 EBA best practices on covered bonds would not be relevant given the bespoke nature, complex structure and lack of granularity characterising infrastructure loans. Compared with the real estate exposure class, the infrastructure projects asset class is more heterogeneous and covers a wide range of very diverse assets which may present different risk factors, revenue drivers and exposure to economic and market environments. Furthermore, the average amount of exposure to infrastructure projects is usually significantly higher than the amount of a typical exposure underlying covered bonds, making it difficult to create an infrastructure ESN instrument with a similar risk and underlying credit risk profile.

In addition, the dual-recourse feature of the infrastructure ESN might be less suitable for institutions, given the relatively high regulatory capital consumption of infrastructure exposures, due to among other factors their long-term maturity profile, their large exposure amounts and the rules on provisioning. The NSFR cost of long-dated exposures should also be considered in this respect.

The data analysis shows a clear difference in the credit risk between project finance loans during the construction phase and loans in the operational phase, with the latter showing substantially lower credit risk. The EBA also notes that in prudential regulation (Basel, Solvency II and CRR 2 proposal) a differentiation is made between different project finance loans based on certain criteria. Should the Commission intend to further assess the case for a funding instrument for infrastructure exposures, the EBA would recommend restricting the cover assets to project finance loans in the operational phase and the eligibility criteria proposed in the CRR 2 proposal relating to project finance exposures, in particular points (a) to (c) of Article 501a.

RECOMMENDATION 4: REGULATORY TREATMENT

As the EBA advises against the dual-recourse feature for infrastructure ESNs, no assessment of its potential regulatory treatment has been carried out.

Although the EBA does not consider a dual recourse ESN appropriate for project finance loans, the EBA is of the view that a new distinct class of off-balance-sheet funding instruments for high-quality project finance loans could be considered in the form of an EU infrastructure bond. In particular, a standardised infrastructure bond secured by infrastructure loans transferred and

segregated into an SPE, and offering the credit institution some degree of capital relief through risk transfer, might be more suitable and should be considered by the European Commission.

This new product could be standardised into a pan-European framework and could be subject to special public supervision. However, further work would be needed to further specify the features of this potential new funding instrument, its assignment under the CRR exposure classes and its regulatory treatment.

Against this background, the European Commission might consider issuing a call for advice to the EBA to investigate the case for a standardised EU infrastructure bond.

7.3 Asset encumbrance

RECOMMENDATION 5: ASSET ENCUMBRANCE

On the basis of the assessment made in the context of this report, the EBA is of the view that the introduction of SME ESNs will not give rise to asset encumbrance implications for the EU banking system as a whole that cause concern in the current financial environment. However, over-reliance on secured funding and increasing levels of asset encumbrance may pose additional risks at national level or to individual institutions.

Asset encumbrance has to be considered in the broad context of a bank's overall funding, liquidity and business model profile and not only at product level. Should ESNs become highly successful, potential asset encumbrance limits at an aggregate level (and not instrument level), at national level or for specific institutions could be considered.



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