AXA Investment Managers

Infrastructure Debt

The benefits of investing

AXA IM Real Assets – Infrastructure Finance

February 2019

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EUROPE PROPERTY INVESTOR AWARDS – FUND OF THE YEAR INFRASTRUCTURE – WINNER 2017

PRIVATE DEBT INVESTOR AWARDS 2017 – Infrastructure Debt Manager of the Year, Europe

PROPERTY INVESTOR EUROPE – European Property Investor Awards 2018 – Winner

Infrastructure Fund of the Year" awarded at the 2018 European Property Investor Awards 2018

Infrastructure Debt

MARKET OPPORTUNITY

Defensive cash flow profiles due to the low correlation with economic cycles of the underlying assets

- Essential service
- Monopoly or near monopoly (regulation, concession, contracts)
- Capital intensive and strong asset backing
- Visibility over future cash flows due to low demand risk
- Typically single asset or simple business model

Alternative to more conventional fixed income products for investors looking to diversify their portfolios while aiming to generate an additional return by capturing an illiquidity premium

- Creditworthiness of project typically decorrelated from that of the sponsors (limited or no recourse to sponsors, secured on assets)
- Diversification even within an infrastructure portfolio
- Private debt typically attracts an illiquidity premium versus public market
- Unrated market but underlying credits are generally Investment Grade

Infrastructure financing market opening up to institutional investors

- Banks retreating from lending long term due to regulatory constraints
- Professionalisation of the investor base with the hiring of former bankers (arrangers, structurers,..)
- Favourable solvency treatment

Asset usually have a positive environmental and/or social impact

- ESG and energy transition
- SRI

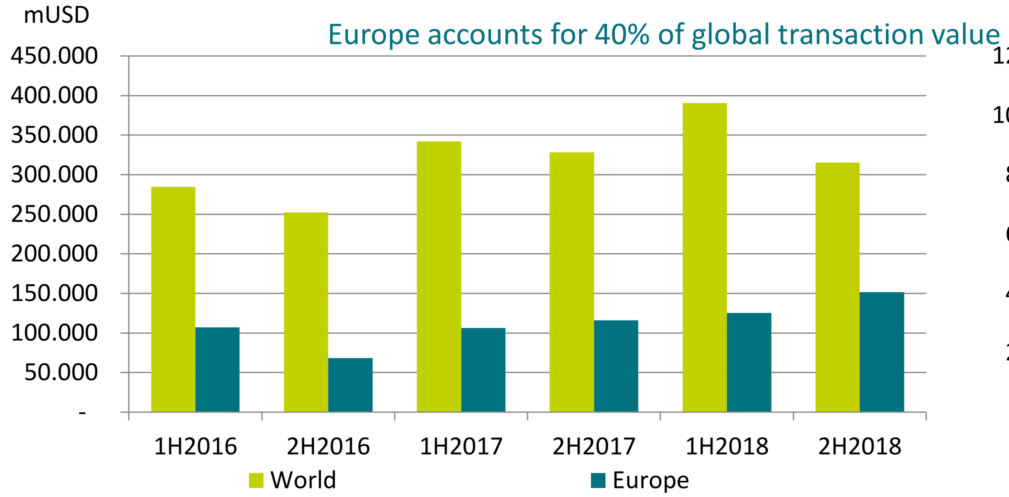
Commission Delegated Regulation (EU) 2016/467

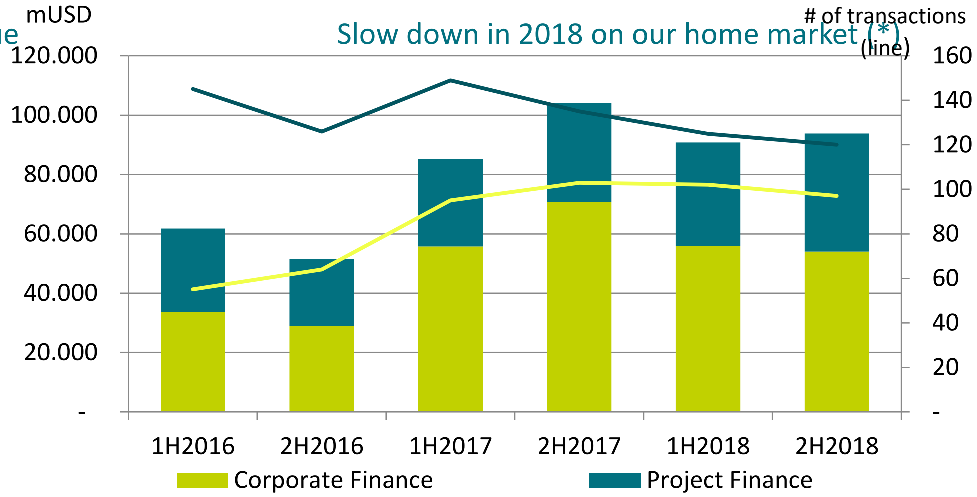
Infrastructure loans benefit from a preferential capital treatment under Solvency II, making them attractive to insurance companies

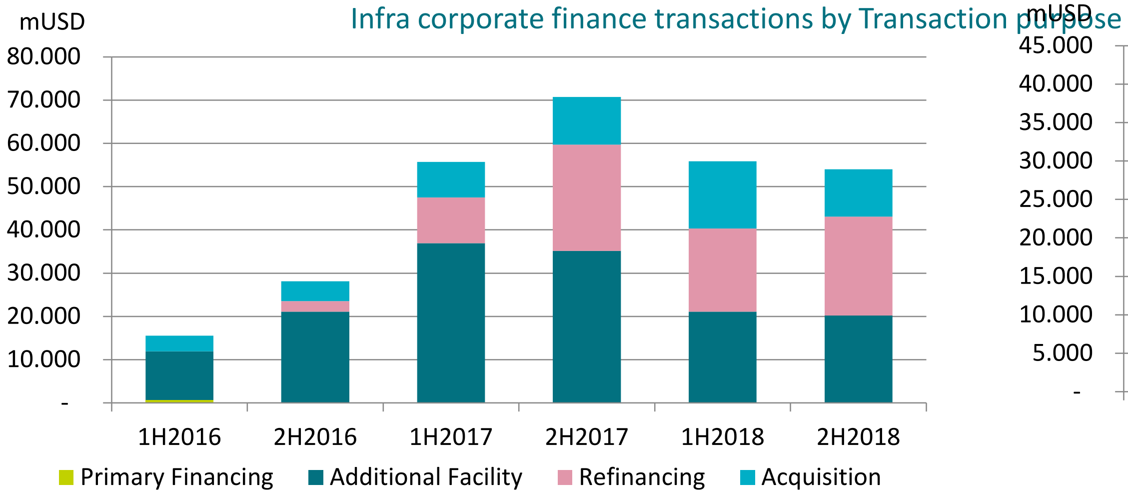
As at February 2019, our first generation commingled fund, European Infrastructure Senior 1 (ESI 1), has an ***indicative SCR capital charge of 12.88%.***

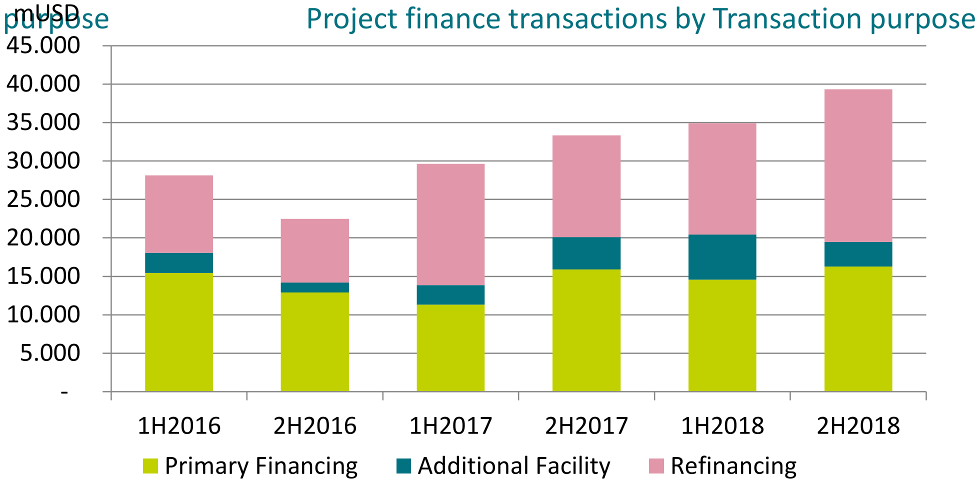
(WAL 10 yr, BBB- internal)

Overview of the European infrastructure debt market







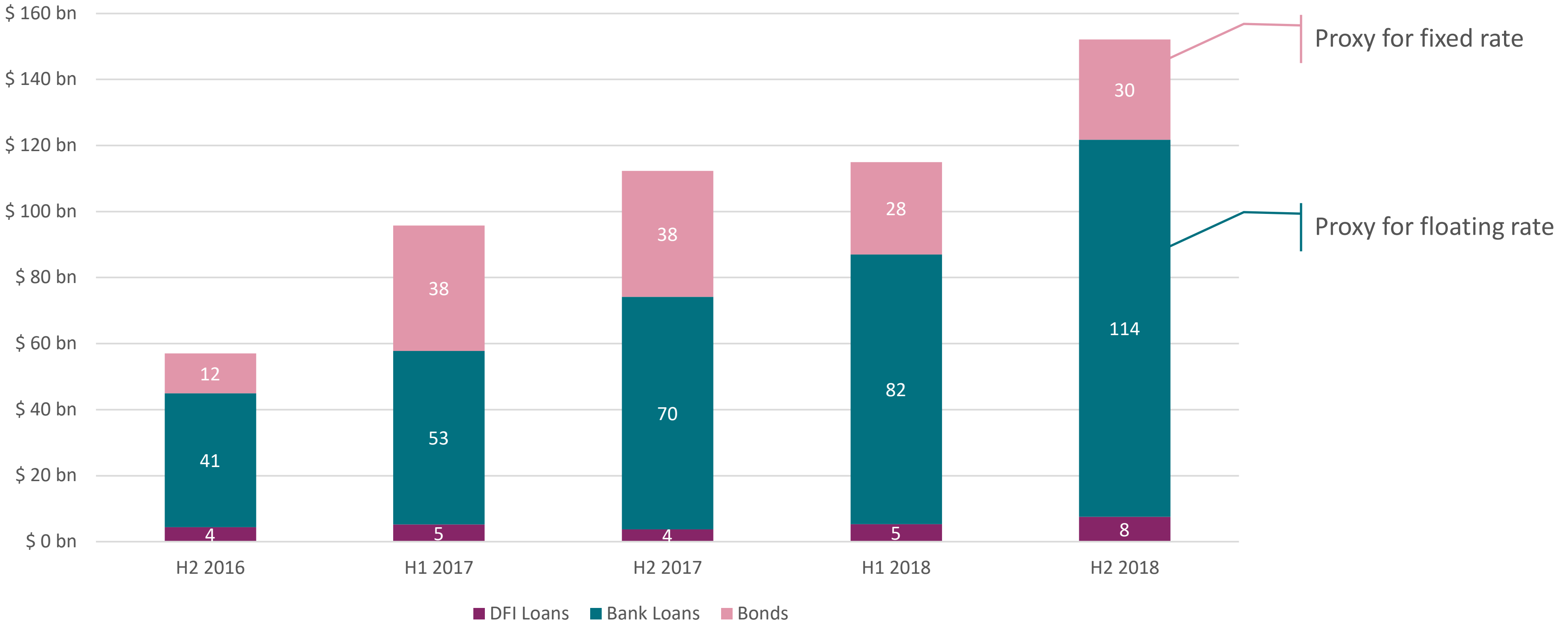


(*) Europe excluding Portugal, Greece, Turkey, Russia, and other non OECD countries . 10 largest transactions over 2016-2018 disregarded (incl. Abertis, Yamal)

Source: IJ Global

Overview of the European infrastructure debt market

Both floating and fixed rate assets are available, duration matching?



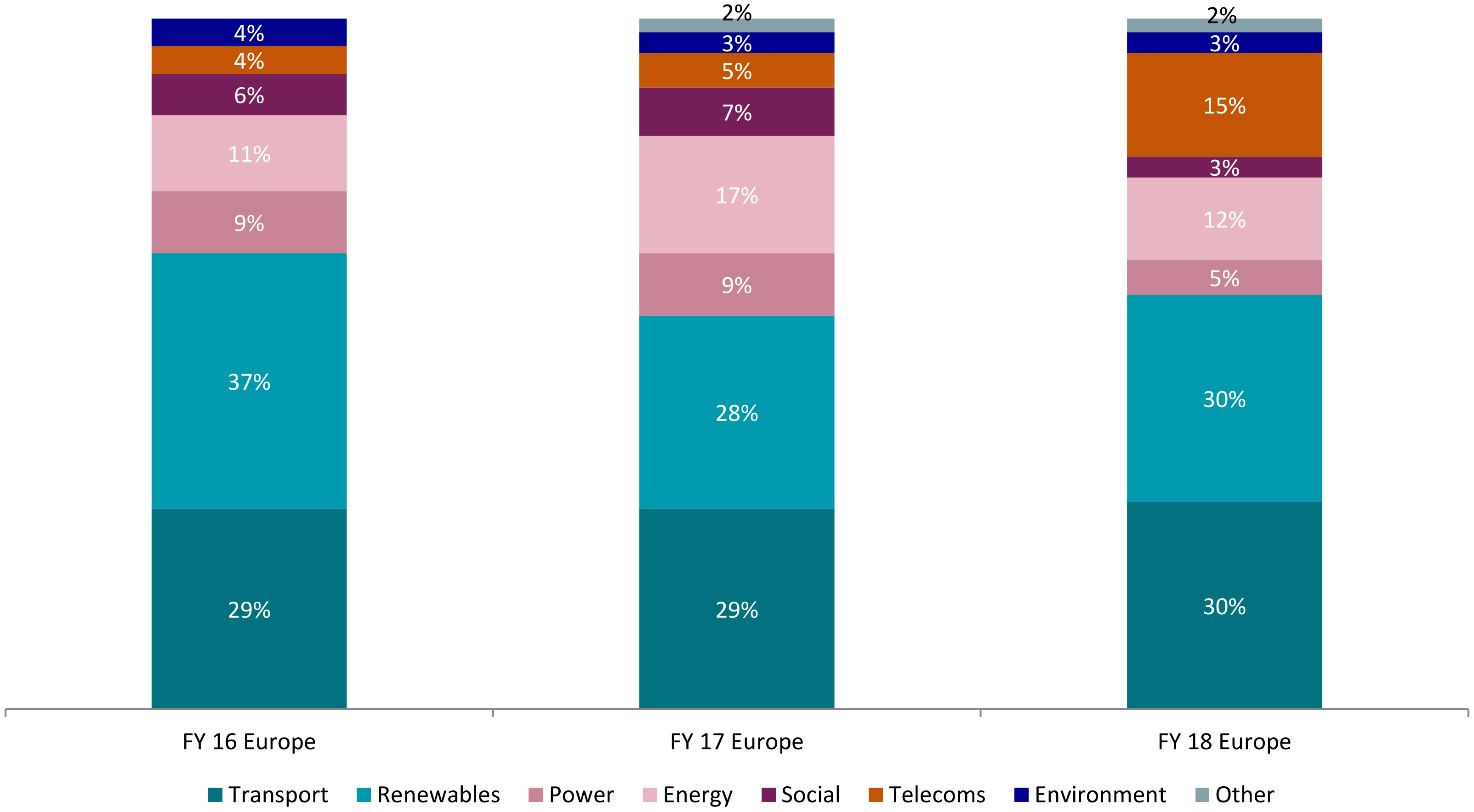
Floating rates loans represented **68%** of the financing market for the period covering 2016 to 2018

Source: Infrastructure Journal as at the end of September 2018

Overview of the European infrastructure debt market

Most active sectors are Transportation, Renewables and Power

- The renewable market continues to be very active globally and in Europe in particular
- Social infrastructure is declining in Europe, with a smaller supply of PPP/PFI deals. Transportation and Power continues to account for half of deal supply
- Telecom sector is growing as a core asset class within the infrastructure sector. We expect this dynamic to continue in the following years

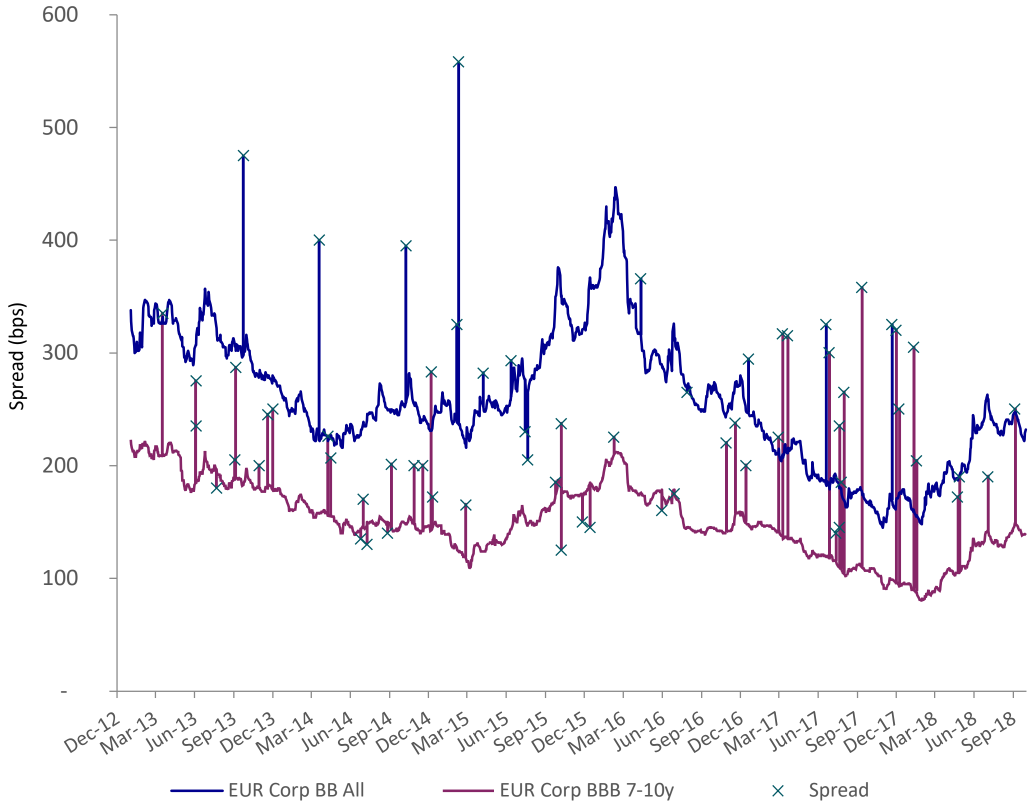


Source: Inframation Deals FY18 League Table and Trend Report

Senior secured infrastructure financing

Relative value vs. public markets

Risk	Economic Model	Indicative Coupon
	Availability Revenue – Public	Libor/Euribor + 100bps/130bps
	Regulated	Libor/Euribor + 120bps/175bps
	Contracted – Private	Libor/Euribor + 150bps/225bps
	Concession	Libor/Euribor + 175bps/250bps
	Merchant	Libor/Euribor + 200bps/300bps

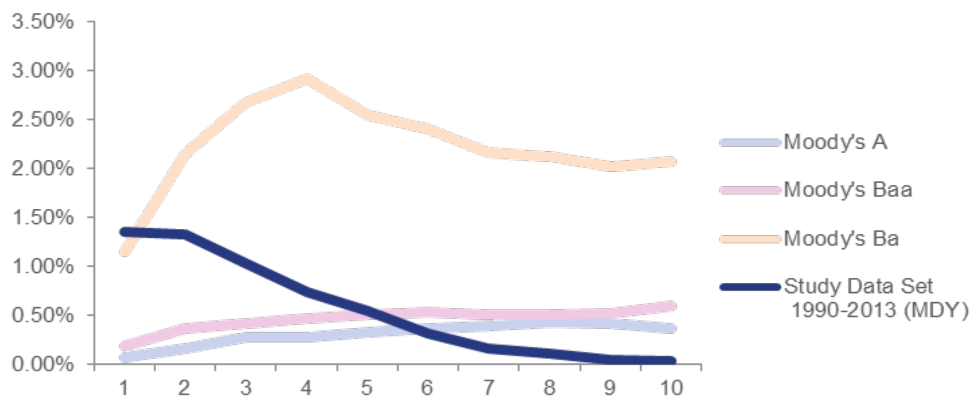


Source: BoA ML indices ER44 *(EUR Corp BBB 7-10y)*, HE10 *(EUR Corp BB All)* and AXA-IM Real Assets as at 31/12/2018

Private infrastructure debt

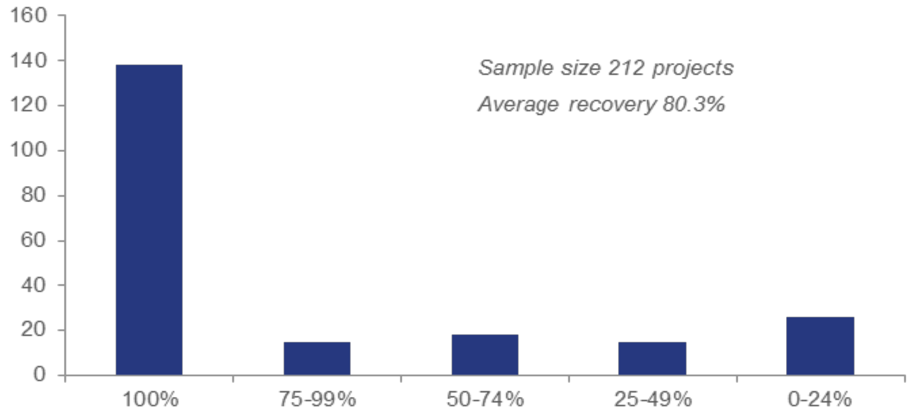
Strong covenant and security package

Marginal annual default rates (1)



Default rate for project finance loans rated above Ba (Moody's) is sub 1%
The initial three year period of elevated default rates is linked to construction-phase risk, while we observe an improvement with the maturity of project operations

Distribution of recovery rates (2)



Ultimate recovery rates for project finance bank loans average 80% However, the most likely recovery rate is 100%, i.e. no economic loss, which occurs almost 2/3 of the time

Private infrastructure debt

- Is characterised by defensive covenants and security package which can offer protection to investors (see graphs on right hand side)

Source: Moody's - Default and Rating analytics 2017
(1)Moody's Definition of Default
(2) Under Basel II Definition of Default

EU rules to promote Investments in Infrastructure Projects

All types of investors benefit from the stringent conditions imposed by Solvency 2

On 01 April 2016, the European Commission's Delegated Regulation (EU) 2016/467 (the Delegated Regulation) was published in the Official Journal offering **better incentives for insurers to invest in infrastructure projects, in particular by reducing the amount of capital which insurers must hold against the debt and equity of qualifying infrastructure projects.**

The effective reduction of the risk calibration compared with the previous risk calibration is over 30% for bonds of credit quality step 3, and over 40% for unrated bonds which meet the applicable qualification criteria

Article 164a: Qualifying infrastructure investment shall include investment in an infrastructure project entity that meets the following criteria:

(a) the infrastructure project entity can meet its financial obligations under sustained stresses conditions that are relevant for the risk of the project;

(b) the cash flows that the infrastructure project entity generates for debt providers and equity investors are predictable;

(c) the infrastructure assets and infrastructure project entity are governed by a contractual framework that provides debt providers and equity investors with a high degree of protection including the following:

- (a) where the revenues of the infrastructure project entity are not funded by payments from a large number of users, the contractual framework shall include provisions that effectively protect debt providers and equity investors against losses resulting from the termination of the project by the party which agrees to purchase the goods or services provided by the infrastructure project entity;
- (b) the infrastructure project entity has sufficient reserve funds or other financial arrangements to cover the contingency funding and working capital requirements of the project;

  Where investments are in bonds or loans, this contractual framework shall also include the following:
- (i) debt providers have security to the extent permitted by applicable law in all assets and contracts necessary to operate the project;
- (ii) equity is pledged to debt providers such that they are able to take control of the infrastructure project entity prior to default;
- (iii) the use of net operating cash flows after mandatory payments from the project for purposes other than servicing debt obligations is restricted;
- (iv) contractual restrictions on the ability of the infrastructure project entity to perform activities that may be detrimental to debt providers, including that new debt cannot be issued without the consent of existing debt providers;

(d) Where investments are in bonds or loans, the insurance or reinsurance undertaking can demonstrate to the supervisor that it is able to hold the investment to maturity;

(e) Where investments are in bonds for which a credit assessment by a nominated ECAI is not available, the investment instrument is senior to all other claims other than statutory claims and claims from derivatives counterparties;

(f) Where investments are in equities, or bonds or loans for which a credit assessment by a nominated ECAI is not available, the following criteria are met:
(i) the infrastructure assets and infrastructure project entity are located in the EEA or in the OECD;
(ii) where the infrastructure project entity 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;
- the equity investors have a history of successfully overseeing infrastructure projects and the relevant expertise;
- the equity investors have a low risk of default, or there is a low risk of material losses for the infrastructure project entity as a result of the their default;
- the equity investors are incentivised to protect the interests of investors;

(iii) the infrastructure project entity has established safeguards to ensure completion of the project according to the agreed specification, budget or completion date;
(iv) where operating risks are material, they are properly managed;
(v) the infrastructure project entity uses tested technology and design;
(vi) the capital structure of the infrastructure project entity allows it to service its debt;
(vii) the refinancing risk for the infrastructure project entity is low;
(viii) the infrastructure project entity uses derivatives only for risk-mitigation purposes.

2. For the purposes of paragraph 1(b), the cash flows generated for debt providers and equity investors shall not be considered predictable unless all except an immaterial part of the revenues satisfies the following conditions:
(a) one of the following criteria is met:
(i) the revenues are availability-based;
(ii) the revenues are subject to a rate-of-return regulation;
(iii) the revenues are subject to a take-or-pay contract;
(iv) the level of output or the usage and the price shall independently meet one of the following criteria:
– it is regulated;
– it is contractually fixed;
– it is sufficiently predictable as a result of low demand risk;
(b) where the revenues of the infrastructure project entity are not funded by payments from a large number of users, the party which agrees to purchase the goods or services provided by the infrastructure project entity shall be one of the following:
(i) an entity listed in Article 180(2) of this Regulation;
(ii) a regional government or local authority listed in the Regulation adopted pursuant to Article 109a(2)(a) of Directive 2014/51/EU;
(iii) an entity with an ECAI rating with a credit quality step of at least 3;
(iv) an entity that is replaceable without a significant change in the level and

Article 261a Risk management for qualifying infrastructure investments

1. Insurance and reinsurance undertakings shall conduct adequate due diligence prior to making a qualifying infrastructure investment, including all of the following:
   (a) a documented assessment of how the project satisfies the criteria set out in Article 164a, which has been subject to a validation process, carried out by persons that are free from influence from those persons responsible for the assessment of the criteria, and have no potential conflicts of interest with those persons;
   (b) a confirmation that any financial model for the cash flows of the project has been subject to a validation process carried out by persons that are free from influence from those persons responsible for the development of the financial model, and have no potential conflicts of interest with those persons.
2. Insurance and reinsurance undertakings with a qualifying infrastructure investment shall regularly monitor and perform stress tests on the cash flows and collateral values supporting the infrastructure project entity. Any stress tests shall be commensurate with the nature, scale and complexity of the risk inherent in the infrastructure project.
3. Where insurance or reinsurance undertakings hold material qualifying infrastructure investments, they shall, when establishing the written procedures referred to in Article 41(3) of Directive 2009/138/EC, include provisions for an active monitoring of these investments during the construction phase, and for a maximisation of the amount recovered from these investments in case of a work-out scenario.
4. Insurance or reinsurance undertakings with a qualifying infrastructure investment in bonds or loans shall set up their asset-liability management to ensure that, on an ongoing basis, they are able to hold the investment to maturity.';

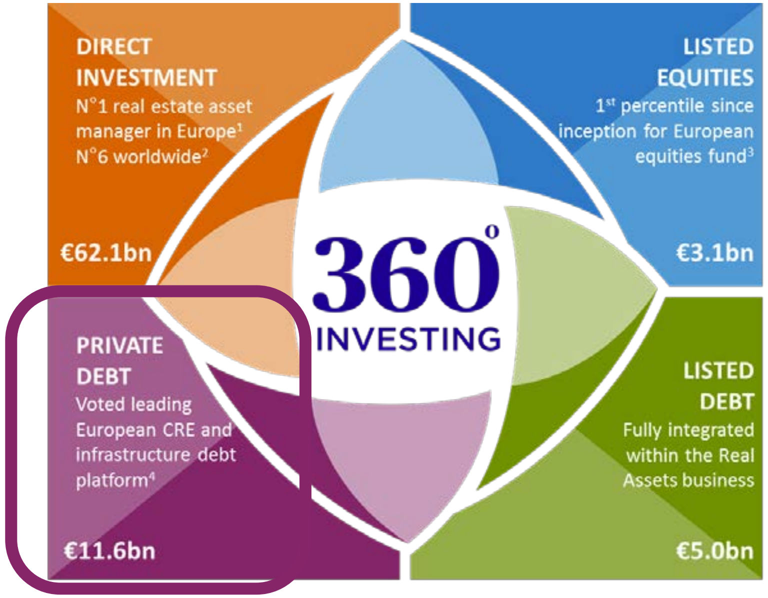
AXA Investment Managers

Infrastructure Finance at AXA IM Real Assets

AXA IM – Real Assets, a market leader in real asset financing

Our 360° view of Real Assets provides

- A thorough understanding of relative value in real asset markets
- Focus on optimising the management of cycles
- Agility and flexibility in asset allocation
- A comprehensive understanding of balance sheet capital structure



- with industry recognition

"Infrastructure debt manager of the year, Europe" awarded at the 2017 Private Debt Investors (PDI) Annual Awards.

"Fund of the Year, Infrastructure" awarded at the 2017 Property Investor Europe (PIE) 2017 Property Finance Awards.

"Fund of the Year, Infrastructure" awarded at the 2018 Property Investor Europe (PIE) 2018 Property Finance Awards.

Infrastructure Fund of the Year, Infrastructure" awarded at the 2018 European Property Investor Awards 2018

"Infrastructure debt manager of the year, Europe" awarded at the 2018 Private Debt Investors (PDI) Annual Awards.

Source for all AUM data: AXA IM – Real Assets data (unaudited) as at 30 June 2018. / [1] Source: INREV/ANREV Fund Manager Survey – May 2018. Rankings based on non-listed direct real estate assets under management. / [2] Source: AXA WF Framlington Europe Real Estate Securities Morningstar ranking: top percentile since inception and over 10 years. Fund compared to the category "Property – Indirect Europe" and Primary Share class = Offshore Territories. Past performance is not a guide to future performance. Data retrieved on 30 June 2018. / [3] Source: Best European Insurance Company Lender of the Year, *Real Estate Capital* 2014, 2015; Debt Investor of the Year, *Property Investor Europe* 2017

Key figures

#4 worldwide

Ranking based on infrastructure debt capital raised over the past five years(1)

€6.0 billion

under management as at 31 December 2018(2)

€1.2 billion

raised for first commingled fund (EIS1), 80% invested as at 31 Jan. 2019(2)

€444 million

first closing for the second commingled fund (EIS2)(2)

231 bps

Spread gross of management fees for EIS1 to date(3)

61 investments

Outstanding investments as at 31 December 2018

(1) Source: *Infrastructure Investor* Top 10 Infrastructure Debt Managers ranking, February 2019. The references to league tables and awards are not an indicator of future performance or places in league tables or awards. / (2) Source: AXA IM - Real Assets data, unaudited figure. / (3) Past performance is not representative of future results or performance

Co-investment program ensuring the alignment of interests of all investors

The pooling of resources from mandates and funds enables us to commit large ticket sizes per investment and provides us with leverage with borrowers

Mandates

AXA Entity 1

AXA Entity 2

AXA Entity 3

AXA Entity 4

AXA Entity 5

Commingled Fund

EIS I

Commingled Fund

EISF 2

Eligible investments

allocated according to the respective capacities of each mandate and each fund

AXA IM - Real Assets's added value

Reputation, size and execution skills bring access to diversified transactions, bargaining power with banks, and economies of scale

REPUTATION

AXA IM - Real Assets' track record is key to sourcing investment opportunities

- We enjoy long standing relationships with Sponsors, Banks, and Advisers in the Infrastructure Market
- Our expertise in understanding and pricing complex transactions makes us a trusted counterparty

TICKET SIZE

Size is essential to access the infrastructure market

- AXA IM - Real Assets has a recognised ability to source and execute large transactions, leading to greater bargaining power with banks
- A co-investment program that is designed to enable investors to participate in large transactions regardless of the size of their commitments – *see overleaf*

SKILLS

A loan platform demands specific skills. AXA IM - Real Assets brings execution capacity and economies of scale

- Infrastructure is core to AXA IM - Real Assets' strategy
- Structuring skills, execution and management practices of the wider Real Assets platform

Disclaimer 1/2

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