SURVEY SUMMARY
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About Moody's Analytics Data Alliance

The Moody's Analytics Data Alliance is one of the world's largest and most comprehensive data consortia covering Commercial & Industrial, Commercial Real Estate, Project & Infrastructure Finance, and Asset Finance. Built in partnership with over 120 leading global financial institutions, the Data Alliance database contains private firm financial statement, loan, default, and other key financial metrics.

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https://dataalliance.moodysanalytics.com/

Examining Infrastructure as an Asset Class

Summary

Project Finance is a well-managed asset class, with a low default portfolio. It consists of loans with higher risk in the early years and lower risk as the loans season. The Project Finance and Infrastructure industry has seen key changes recently. While banks underwent a period of deleveraging and decreased exposures to project finance and infrastructure transactions, institutional investors increased their interest in this asset class. Currently, the market has a new equilibrium where banks and institutional investors often collaborate to devise viable financing solutions. Banks have expertise in construction risk but are hesitant to finance long-term deals. Enter the asset managers and insurance companies looking for longer maturities for asset liability matching. Key findings from this analysis include:

» The cumulative default rates for infrastructure loans are consistent with low investment-grade corporate loans. By year 11, infrastructure loans are comparable with Baa3-rated corporate loans (5.11% vs. 5.13%). By year 19, infrastructure loans are comparable with A-rated corporate loans (5.25% vs. 5.22%).

» Project and default concentrations are mostly consistent between the Infrastructure subsectors except in Social Infrastructure, with 14.3% of projects and 4.3% of the defaults. 5.6% of the projects are in Media and Telecom with 10.4% of the defaults. Transportation holds 15.8% of the projects with 21.9% of the defaults. Transportation defaults peaked between 2009–2015. Media and Telecom defaults were concentrated from 1998-2003.

» The cumulative default rates for infrastructure loans in high-income countries perform as well as Baa3-rated corporate loans by year 10 (4.80% vs. 5.13%) and as Baa3-rated in middle- and low-income countries by year 14 (7.03% vs 7.34%).

» The cumulative default rates for infrastructure PPP Loans in High-Income countries are consistent with Baa3-rated corporate loans by year 7 (3.39% vs. 3.37%). Infrastructure non-PPP loans in high-income countries are consistent with Baa3-rated corporate loans by year 12 (5.47% vs. 5.66%). In middle- and low-income countries, infrastructure Public-Private Partnership (PPP) loans are consistent with Baa3-rated corporate loans by year 7 (3.7% vs. 3.7%). Infrastructure non-PPP loans are consistent with Baa3-rated corporate loans by year 16 (7.95% vs. 8.55%).

» Ultimate recovery rates for infrastructure loans averaged 82.6% compared to 77.9% for the consortium dataset.

» Ultimate recovery rates for infrastructure PPP loans in high-income countries are 74.6% compared to 89.5% in middle- and low-income countries. Ultimate recovery rates for infrastructure non-PPP loans in high-income countries are 83.6% compared to 83.9% in middle- and low-income countries.

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Overview

Moody's Analytics Data Alliance Project Finance Consortium was established in 2010 with leading sector lenders to study the credit profile of project finance bank loans. In response to increasing regulatory pressure and funding costs, the consortium was designed to enhance the understanding of default and recovery behavior and to facilitate further evolution of the asset class. Furthermore, the participants—which now number 75 global institutions (banks, insurance companies, and asset managers)—view the consortium as a key to promote transparency, increase liquidity, and assist with capital relief under Basel capital requirements.

Moody's Analytics collected data from 8,583 project loans and losses (consortium dataset) from the consortium members. The project loans originated from 1983–2018. The dataset contains 587 project loan defaults based on the Basel definition of default and 289 ultimate recoveries. The definitions of project finance, the Basel definition of default, and ultimate recovery can be found in the glossary.

Working with Moody's Investors Service, a study has been published each year. This research highlights current trends and gives an verview of the performance of the 8,583 projects and covered the period from 1983–2018. The link to the Moody's Investors Service March 9, 2020 published report can be found in the glossary.

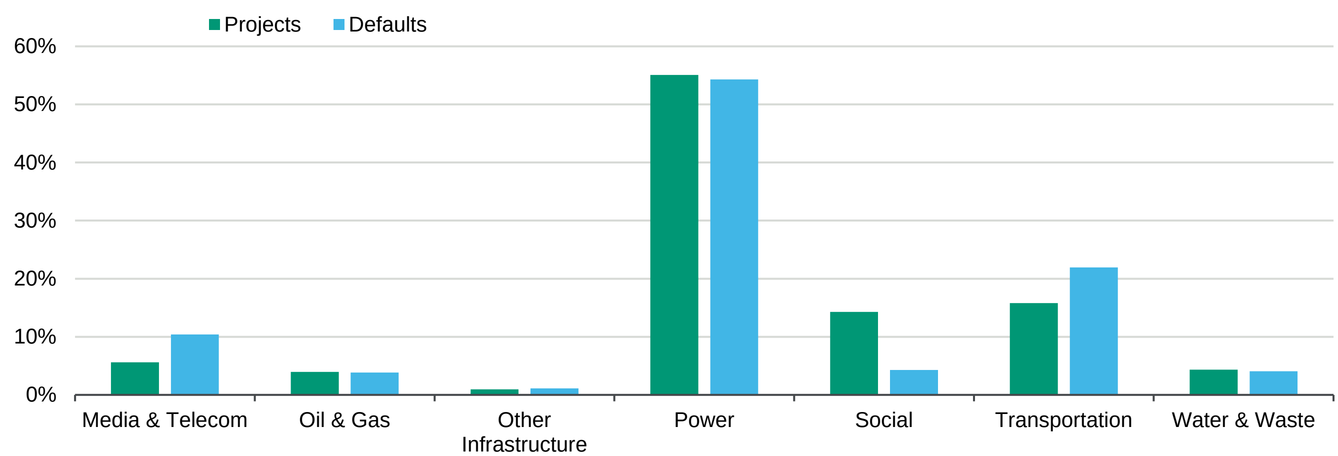
For this analysis, 7,047 of the 8,583 projects—adopting a wider definition of infrastructure than the Social, Transportation and Environmental sectors than the annual study uses—were selected from subindustries within the Social, Transportation, Water and Waste, Media and Telecom, Oil and Gas, and Power sectors. The subindustries include 1,006 Social projects with 19 defaults, 1,114 Transportation projects with 97 defaults, 305 Water and Waste projects with 18 defaults, 68 Other infrastructure projects with 5 defaults, 395 Media and Telecom projects with 46 defaults, 278 Oil and Gas distribution and refining projects with 17 defaults, and 3,881 Power generation and transmission projects with 240 defaults. Within infrastructure, there are 5,909 projects in high-income countries with 335 defaults, and 1,138 projects in middle- and low-income countries with 107 defaults.

The purpose of this research is to highlight the credit behavior of infrastructure project loans and compare the performance of high-income economies with middle- and low-income economies. Cumulative default rates (CDRs) from subsets of the 7,047 infrastructure loans will be compared to CDRs taken from Moody's Investors Service-published research. The research focuses on default and recovery rates for corporate bond, loan and deposit issuers rated in the Aaa, A, Baa, Ba, and B rating categories for the period 1983–2018. A link to that report can be found in the glossary.

Database composition

Figure 1 presents the concentration of projects and defaults for the infrastructure project loans in each sector. Most of the industry sectors have similar concentrations of projects and defaults. Social projects show a lower default concentration than the remaining industries, while Media and Telecom and Transportation show higher default concentrations.

Figure 1 Concentration of projects and defaults



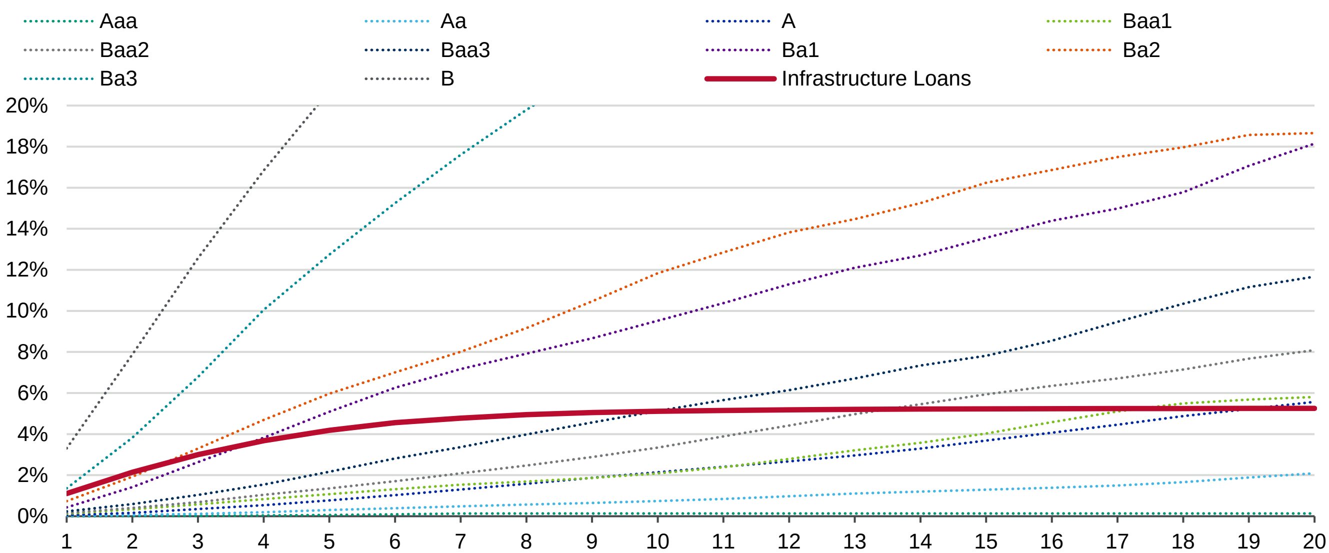
Source: Moody's Analytics Data Alliance Project Finance Consortium

Infrastructure debt performance

Figure 2 compares the 20-year CDR for the infrastructure project loans of 5.3%. It is consistent with the 20-year CDRs for corporate issuers of low investment-grade credit quality. By comparison, corresponding CDRs for Baa1, 2, and 3-rated; Ba1, 2, and 3-rated; and B-rated corporates are 5.8%, 8.1%, 11.7%, 18.2%, 18.7%, 38.9%, and 47.5% respectively.

The CDRs from the infrastructure project loans flatten out and perform as investment grade by year 10. This indicates a decreasing amount of risk as the loans mature—unlike corporate debt, which displays increasing CDRs over time. The marginal default rates—the likelihood of defaulting during a given year—for infrastructure project loans are less than 0.01% by year 17 and 0% as the loans approach 20 years.

Figure 2 Performance of global infrastructure debt



Note: Includes 7,047 Infrastructure project loans with 442 defaults.

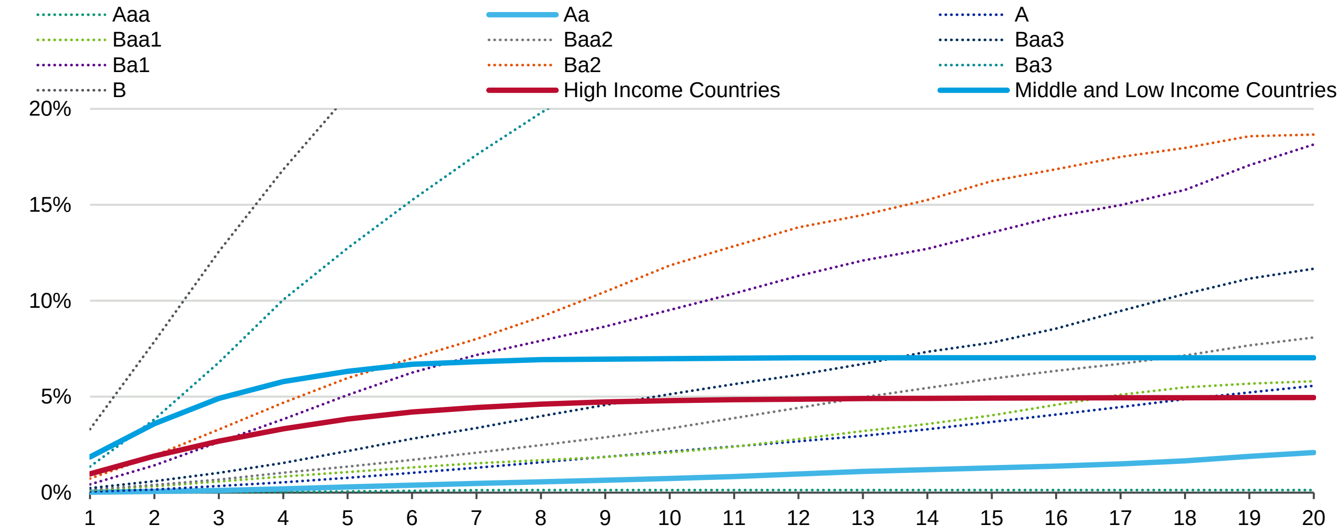
Source: Moody's Analytics Data Alliance Project Finance Consortium, Moody's Investors Service "Annual default study: Defaults will rise modestly in 2019 amid higher volatility"

Figure 3 compares CDRs from high-income and middle- and low-income countries' infrastructure loans from 1983–2018, to CDR data. The data was taken from Moody's Investors Service published research on default and recovery rates for corporate bond, loan, and deposit issuers rated in the Aaa, A, Baa, Ba, and B rating categories for the period 1983–2018.

The 20-year CDR of 5.3% for high-income countries and 7.0% for middle- and low-income countries are consistent with the 20-year CDRs for corporate issuers of low investment-grade credit quality. By comparison, corresponding CDRs for Baa1, 2, and 3-rated; Ba1, 2, and 3-rated; and B-rated corporates are 5.8%, 8.1%, 11.7%, 18.2%, 18.7%, 38.9%, and 47.5% respectively.

The CDRs from infrastructure loans in high-income countries flatten out and perform as investment grade at year 10. Middle- and low-income country loans perform at investment grade by year 14.

Figure 3 Performance of infrastructure debt by country income



Note: These include 5,909 high-income country project loans with 335 defaults and 1,138 middle- and low-income country project loans with 107 defaults.

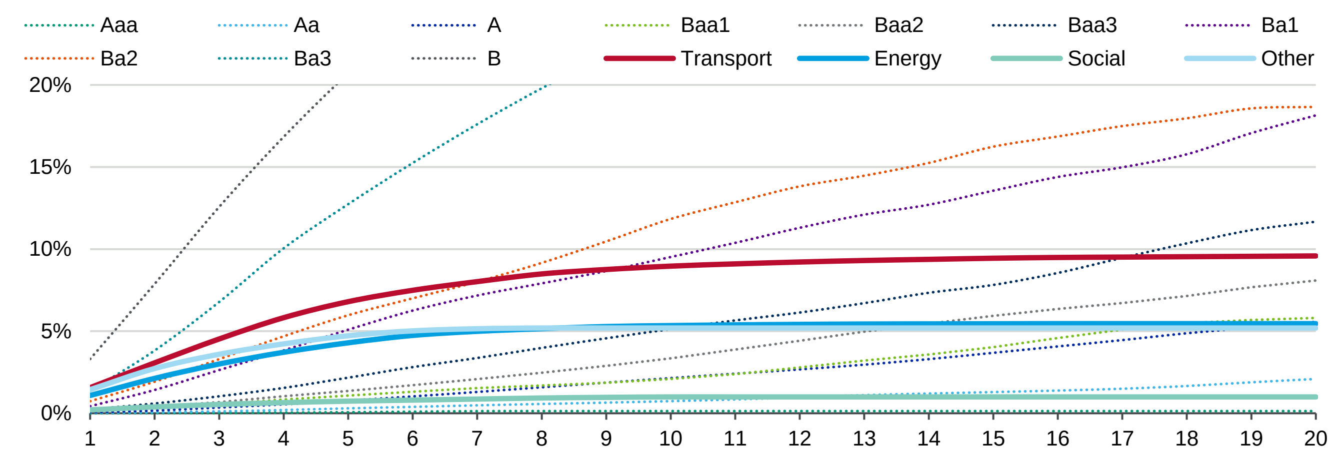
Source: Moody's Analytics Data Alliance Project Finance Consortium, Moody's Investors Service "Annual default study: Defaults will rise modestly in 2019 amid higher volatility"

Figure 4 compares CDRs from high-income countries' infrastructure loans by sector from 1983–2018, to CDR data. The data was taken from Moody's Investors Service published research on default and recovery rates for corporate bond, loan, and deposit issuers rated in the Aaa, A, Baa, Ba, and B rating categories for the period 1983–2018.

The 20-year CDRs for high-income countries in Transportation, Energy, and Other are 9.6%, 5.5% and 5.2% respectively and are consistent with the 20-year CDR rates for corporate issuers of low investment-grade credit quality. By comparison, corresponding CDRs for Baa1, 2, and 3-rated; Ba1, 2, and 3-rated; and B-rated corporates are 5.8%, 8.1%,11.7%, 18.2%, 18.7%, 38.9%, and 47.5% respectively. The 20-year CDR for high-income countries Social infrastructure loans was 1.0% crossing into investment grade by year 1 and as a A-rated debt by year-5.

Within the high-income country infrastructure loans, there are 939 Transportation loans with 85 defaults, 3411 Energy loans with 190 defaults, and 586 Other loans with 43 defaults. More than two-thirds of the Other defaults are from the Telecom sector. There are 973 Social loans with 17 defaults.

Figure 4 Performance of infrastructure debt in high-income countries by sector



Note: Includes 939 high-income Transportation project loans with 85 defaults, 3,411 high-income Energy project loans with 190 defaults, 973 high-income Social project loans with 17 defaults, and 586 high-income Other project loans with 43 defaults.

Source: Moody's Analytics Data Alliance Project Finance Consortium, Moody's Investors Service "Annual default study: Defaults will rise modestly in 2019 amid higher volatility"

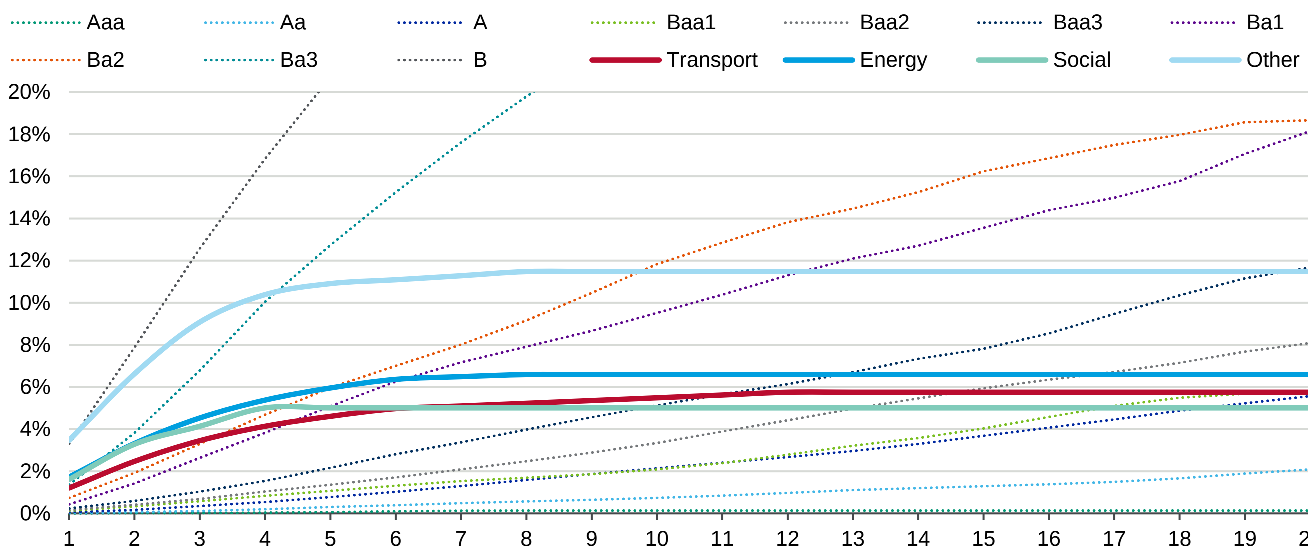
Figure 5 compares CDRs from middle and low-income country infrastructure loans from 1983–2018 to CDR data taken from Moody's Investors Service published research on default and recovery rates for corporate bond, loan, and deposit issuers rated in the Aaa, A, Baa, Ba, and B rating categories for the period 1983–2018.

The 20-year CDRs for middle- and low-income countries in Transportation, Energy, and Other are 5.8%, 6.6% and 10.5% respectively and are consistent with the 20-year CDR rates for corporate issuers of low investment-grade credit quality. By comparison, corresponding CDRs for Baa1, 2, and 3-rated; Ba1, 2, and 3-rated; and B-rated corporates are 5.8%, 8.1%,11.7%, 18.2%, 18.7%, 38.9%, and 47.5% respectively.

The infrastructure loan CDRs for middle- and low-income country loans in the Transportation sector perform as investment grade by year 12. Energy loans perform as investment grade by year 14 and Other loans perform as investment grade by year 19.

Within the middle- and low-income country infrastructure loans, there are 175 Transportation loans with 12 defaults, 748 Energy loans with 67 defaults, and 215 Other loans with 28 defaults. More than two-thirds of the Other defaults are from the Telecom sector.

Figure 5 Performance of infrastructure debt in middle- and low-income countries by sector



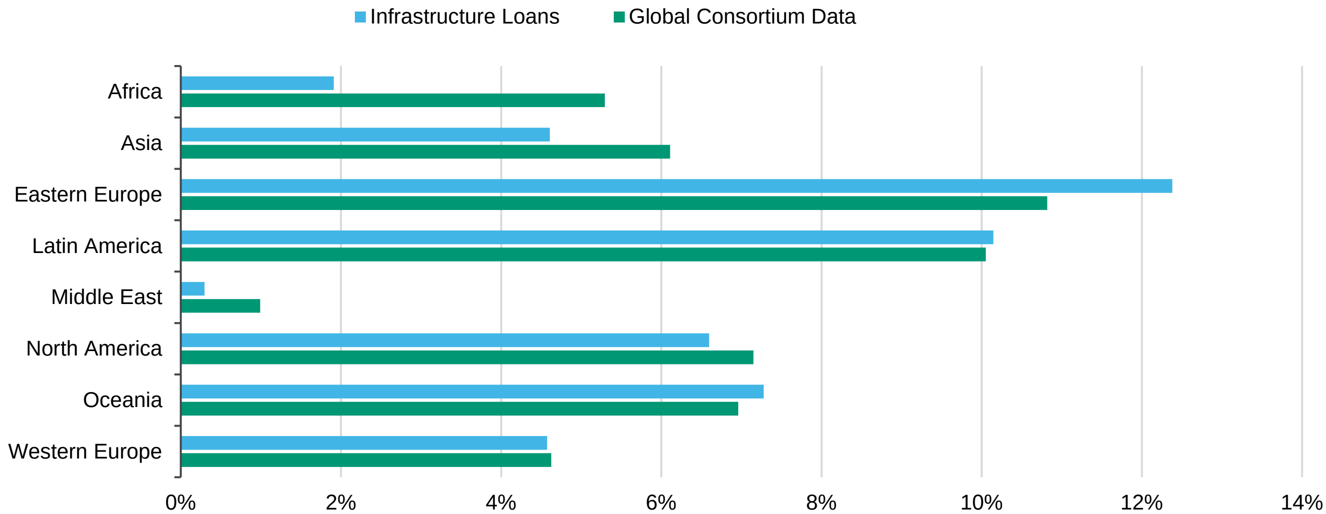
Note: Includes 175 middle- and low-income Transportation project loans with 12 defaults, 748 middle- and low-income Energy project loans with 67 defaults, 33 middle- and low-income Social project loans with 2 defaults, and 182 middle- and low-income Other project loans with 26 defaults.

Source: Moody's Analytics Data Alliance Project Finance Consortium, Moody's Investors Service "Annual default study: Defaults will rise modestly in 2019 amid higher volatility"

Regional Analysis

Figure 6 compares Regional CDRs from the global consortium dataset to CDRs from infrastructure loans. Infrastructure loans perform as well as or better than the global consortium dataset in North America and Western Europe—the two largest markets—and Africa, Asia, and the Middle East. Infrastructure loans perform slightly worse in Eastern Europe, Latin America, and Oceania.

Figure 6 Infrastructure debt 10-year cumulative default rate by region



Source: Moody's Analytics Data Alliance Project Finance Consortium

Figure 7 displays the count of infrastructure project loans and defaults and consortium project loans and defaults as supporting information to Figure 6.

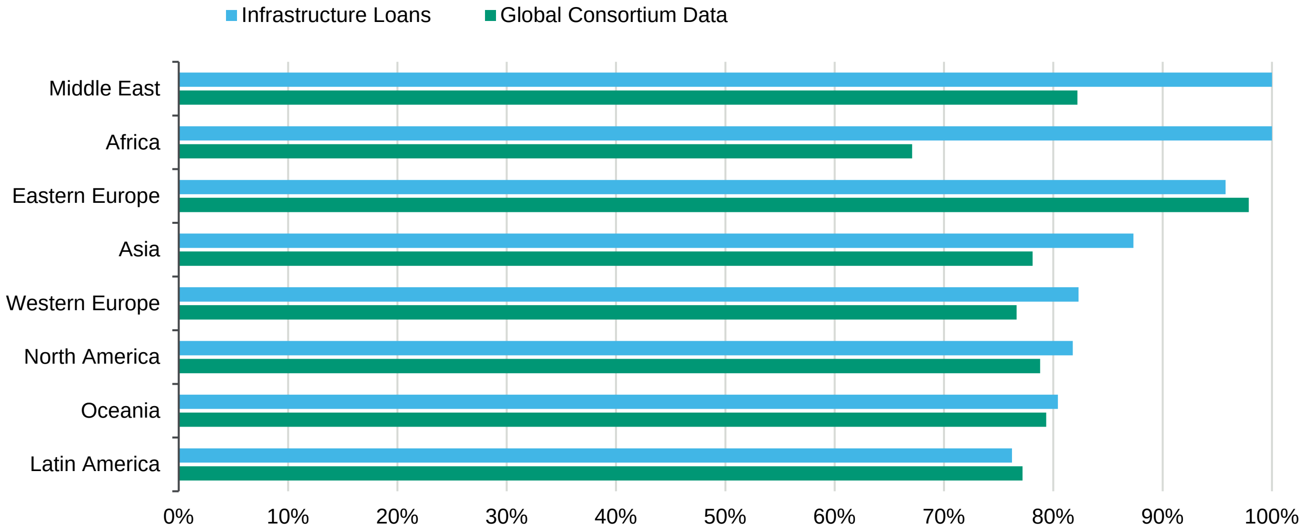
Figure 7 Count of project loans by region

	CONSORTIUM DATA		INFRASTRUCTURE DATA	
VALUE	LOANS	DEFAULTS	LOANS	DEFAULTS
Africa	428	20	234	6
Asia	685	59	447	35
Eastern Europe	162	18	112	13
Latin America	520	70	363	46
Middle East	360	7	226	2
North America	2363	181	1989	136
Oceania	456	29	352	22
Western Europe	3609	203	3324	182
Total	8583	587	7047	442

Source: Moody's Analytics Data Alliance Project Finance Consortium

Figure 8 compares Regional Ultimate Recovery Rates from the Consortium dataset to Ultimate Recovery Rates from infrastructure loans. The average recovery for infrastructure project loans is 82.6%, which is higher than the consortium dataset average recovery of 77.9%. Infrastructure loans perform as well as or better than the consortium dataset in North America and Western Europe—the two largest markets—as well as in Africa, Asia, and the Middle East. Infrastructure loans received slightly lower recoveries in Eastern Europe, Latin America, and Oceania.

Figure 8 Infrastructure debt ultimate recovery rates by region



Source: Moody's Analytics Data Alliance Project Finance Consortium

Figures 9 and 10 compare the recovery statistics from infrastructure project loans to consortium project loans. Infrastructure project loans, with an average recovery of 82.6%, performed better than the consortium project loans, with an average recovery of 77.9%.

Infrastructure project loans performed for a longer time before a default with an average of 4.5 years. This compares to the consortium project loans in Figure 9 with an average time to default of 4.2 years. The average time in default is 2.3 years for the infrastructure project loans, compared to 2.4 years in Figure 10 for consortium project loans.

Figure 9 Summary of the Infrastructure project loan recovery metrics by region

	INFRASTRUCTURE DATA					
VALUE	DEFAULT COUNT	AVERAGE YEARS TO DEFAULT	RECOVERY COUNT	AVERAGE RECOVERY	STANDARD DEVIATION	AVERAGE YEARS IN DEFAULT
Africa	6	3.5	3	100.0%	0.0%	4.1
Asia	35	3.4	23	87.3%	25.1%	3.6
Eastern Europe	13	5.1	2	95.8%	6.0%	3.3
Latin America	46	3.1	20	76.2%	34.7%	2.5
Middle East	2	2.2	2	100.0%	0.0%	2.6
North America	136	4.2	67	81.8%	28.5%	2.0
Oceania	22	4.1	12	80.4%	36.1%	2.0
Western Europe	182	5.2	76	82.3%	30.3%	2.1
Total	442	4.5	205	82.6%	29.5%	2.3

Source: Moody's Analytics Data Alliance Project Finance Consortium

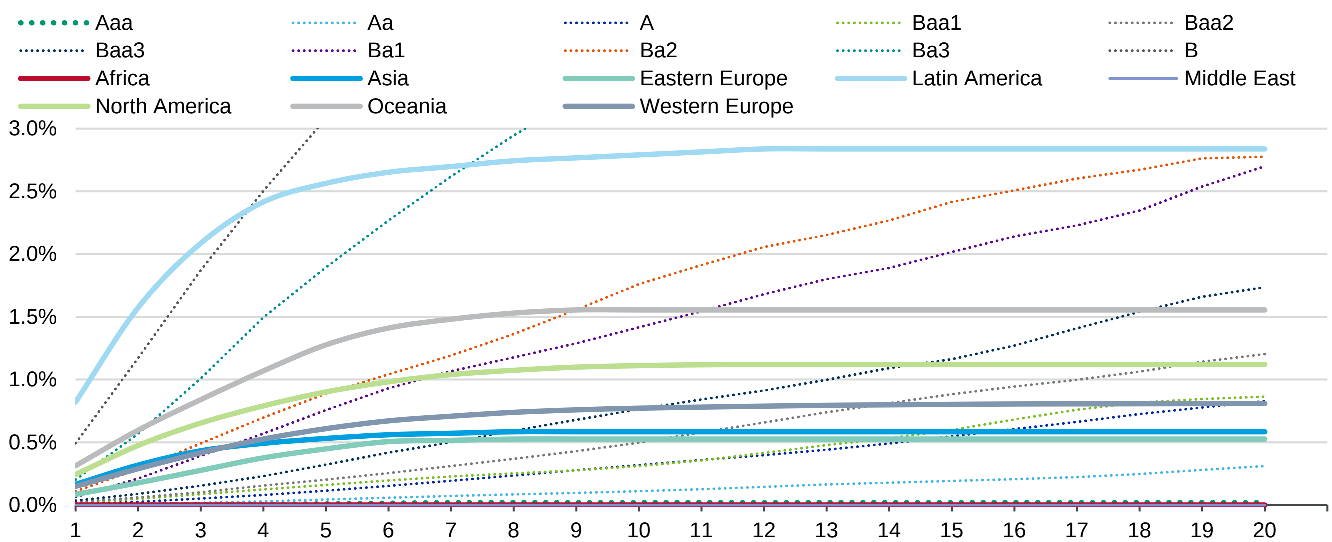
Figure 10 Summary of the Consortium project loan recovery metrics by region

		CONSORTIUM DATA				
VALUE	DEFAULT COUNT	AVERAGE YEARS TO DEFAULT	RECOVERY COUNT	AVERAGE RECOVERY	STANDARD DEVIATION	AVERAGE YEARS IN DEFAULT
Africa	20	4.7	7	67.1%	42.7%	3.4
Asia	59	3.6	40	78.1%	35.1%	3.6
Eastern Europe	18	4.5	4	97.9%	4.2%	2.0
Latin America	70	3.0	35	77.2%	34.9%	2.4
Middle East	7	3.2	5	82.2%	39.8%	4.0
North America	181	4.0	96	76.6%	32.5%	2.1
Oceania	29	3.8	16	79.3%	34.3%	2.1
Western Europe	203	5.0	86	78.8%	33.9%	2.1
Total	587	4.2	289	77.9%	33.6%	2.4

Source: Moody's Analytics Data Alliance Project Finance Consortium

Figure 11 compares the Expected Loss (EL) PD*LGD, by region for infrastructure loans to the EL from Moody's Investors Service published research. The research focuses on default and recovery rates for corporate bond, loan, and deposit issuers rated in the Aaa, A, Baa, Ba, and B rating categories for the period 1983–2018. For simplicity, the Moody's EL contains a single LGD value determined from Moody's Investors Service Ultimate Recovery Database.

Figure 11 Expected loss in high-income countries



Source: Moody's Analytics Data Alliance Project Finance Consortium, Moody's Investors Service "Annual default study: Defaults will rise modestly in 2019 amid higher volatility"

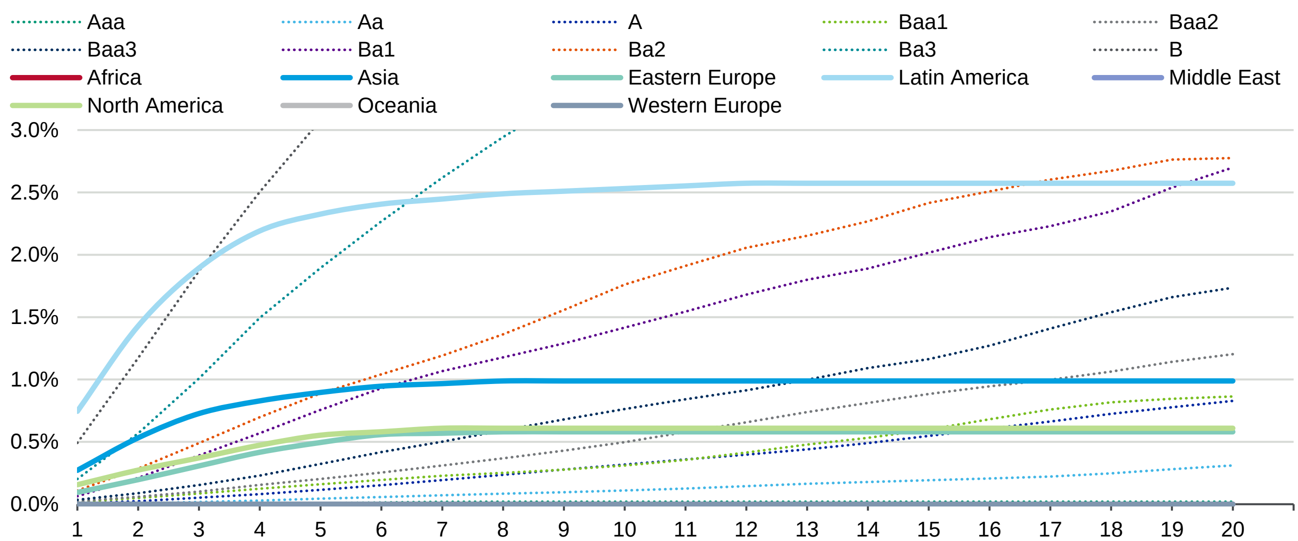
Figure 12 contains supporting information for Figure 11.

Figure 12 Count of infrastructure project loans and defaults by region in high-income countries

REGION	PROJECT COUNT	DEFAULTS	LGD
Africa	0	0	0.0%
Asia	186	1	24.3%
Eastern Europe	12	0	0.0%
Latin America	12	0	0.0%
Middle East	152	1	0.0%
North America	1872	129	23.9%
Oceania	351	22	20.7%
Western Europe	3324	182	21.2%
Total	5909	335	22.1%

Source: Moody's Analytics Data Alliance Project Finance Consortium

Figure 13 Expected loss in middle- and low-income countries



Source: Moody's Analytics Data Alliance Project Finance Consortium, Moody's Investors Service "Annual default study: Defaults will rise modestly in 2019 amid higher volatility"

Figure 14 contains supporting information for Figure 13.

Figure 14 Count of infrastructure project loans and defaults by region in middle- and low-income countries

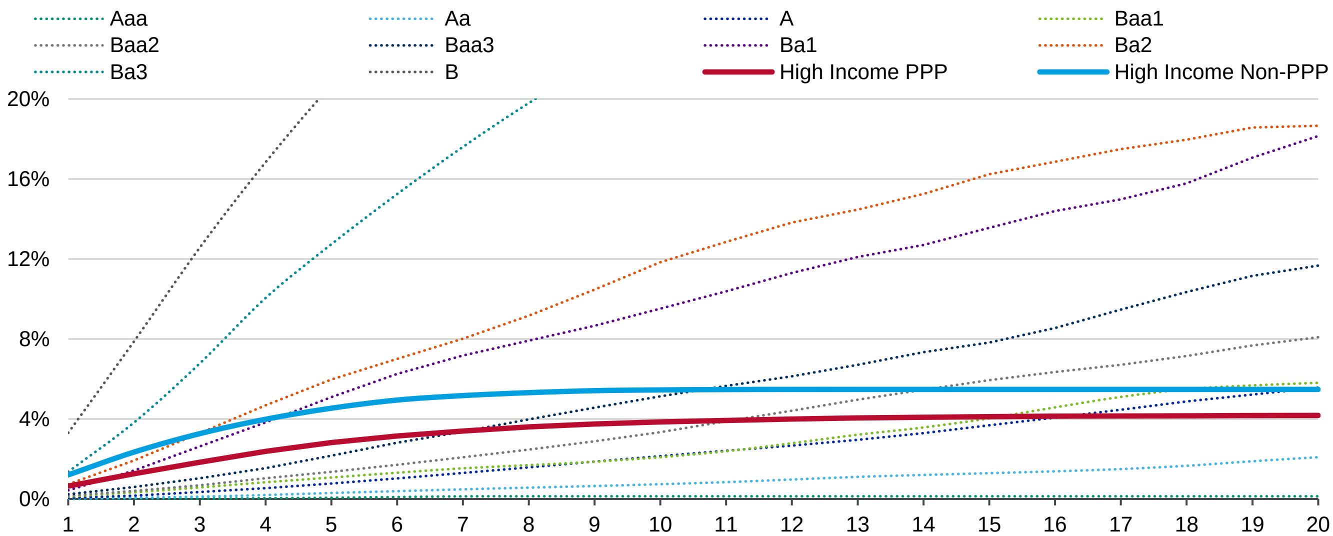
REGION	PROJECT COUNT	DEFAULTS	LGD
Africa	234	6	0.0%
Asia	261	34	12.7%
Eastern Europe	100	13	4.2%
Latin America	351	46	23.8%
Middle East	74	1	0.0%
North America	117	7	14.8%
Oceania	1	0	0.0%
Western Europe	0	0	0.0%
Total	1138	107	15.8%

Source: Moody's Analytics Data Alliance Project Finance Consortium

Figure 15 compares CDRs from middle- and low-income country infrastructure PPP and non-PPP loans from 1983–2018, to CDR data taken from Moody's Investors Service published research. The research focuses on default and recovery rates for corporate bond, loan, and deposit issuers rated in the Aaa, A, Baa, Ba, and B rating categories for the period 1983–2018.

Middle- and low-income PPP loans perform as well as Baa3-rated debt by year 7 and non-PPP loans by year 16.

Figure 15 Performance of infrastructure debt in high-income countries for PPP projects

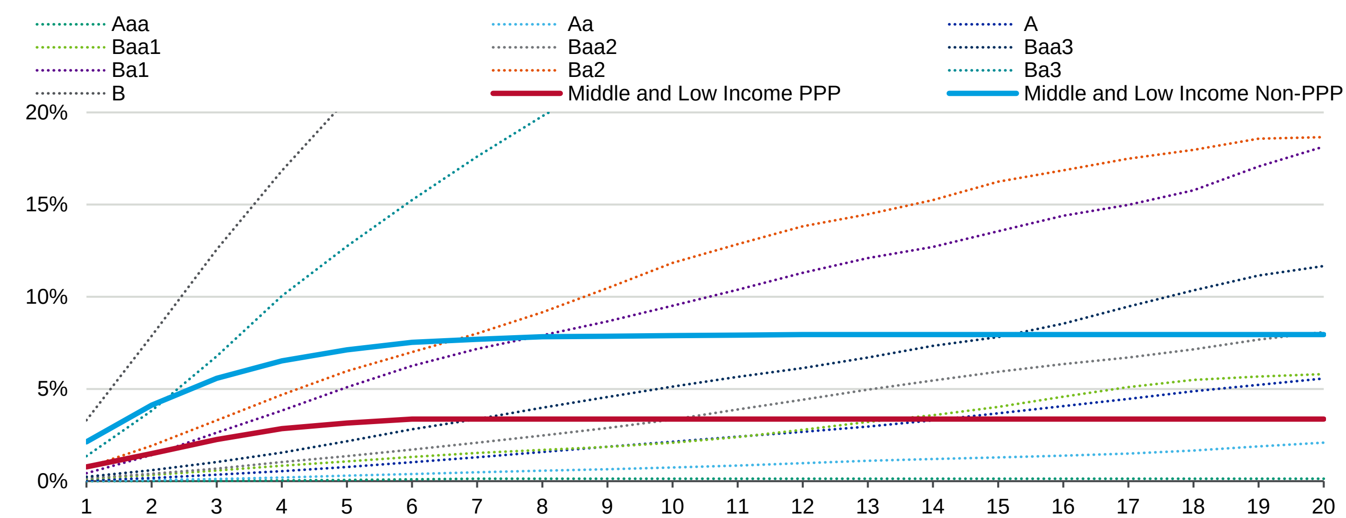


Note: Includes 1,718 high-income country PPP project loans with 89 defaults, and 4,191 high-income country non-PPP project loans with 246 defaults.

Source: Moody's Analytics Data Alliance Project Finance Consortium, Moody's Investors Service "Annual default study: Defaults will rise modestly in 2019 amid higher volatility"

Figure 16 compares the CDRs from middle- and low-income PPP and non-PPP projects. Non-PPP projects perform as investment grade by year 15 and PPP loans perform as investment grade by year 7.

Figure 16 Performance of infrastructure debt in middle- and low-income countries for PPP projects



Note: Includes 215 middle- and low-income country PPP project loans with 9 defaults, and 923 middle- and low-income country non-PPP project loans with 98 defaults.

Source: Moody's Analytics Data Alliance Project Finance Consortium, Moody's Investors Service "Annual default study: Defaults will rise modestly in 2019 amid higher volatility"

Appendix: Glossary

Cumulative Default Rates (CDR)	Cumulative default rates are calculated from the weighted average marginal default rates (hazard rates) for all cohorts.
Default (Basel)	A default based on the Basel definition of default. We include below relevant extracts from the Basel Framework (paragraph 36.69 and 36.70): "A default is considered to have occurred, with regard to a particular obligor when either or both of the two following events have taken place. The bank considers that the obligor is unlikely to pay its credit obligations to the banking group in full, without recourse by the bank to actions such as realising security (if held). The obligor is past due more than 90 days on any material credit obligation to the banking group. Overdrafts will be considered as being past due once the customer has breached an advised limit or been advised of a limit smaller than current outstandings.
	"The elements to be taken as indications of unlikeliness to pay include: The bank puts the credit obligation on non-accrued status. The bank makes a charge-off or account-specific provision resulting from a significant perceived decline in credit quality subsequent to the bank taking on the exposure. The bank sells the credit obligation at a material credit-related economic loss. The bank consents to a distressed restructuring of the credit obligation. This is likely to result in a diminished financial obligation caused by the material forgiveness, or postponement, of principal, interest, or (where relevant) fees. The bank has filed for the obligor's bankruptcy or a similar order in respect of the obligor's credit obligation to the banking group. The obligor has sought or has been placed in bankruptcy or similar protection where this would avoid or delay repayment of the credit obligation to the banking group." This definition of default is the same as the one published by the Basel Committee on Banking Supervision in its previous Basel III and Basel II Frameworks.
Emergence from Default	For a loan that has defaulted, emergence from default is deemed to occur following any of the events set out below: Repayment of overdue interest Restructuring with no subsequent default Restructuring with lender being taken out of the deal—for example, by repayment of the defaulted loan with no participation in a restructured debt facility Material restructuring Liquidation
Energy	Energy project loans for the construction and maintenance of renewable and non-renewable power plants, transmission and distribution, and oil refineries.
Marginal Default Rates	The marginal default rate (hazard rate) is the ratio of the number of project defaults in a specific time period divided by the number of projects exposed to the risk of default at the beginning of that time period. For the purposes of this study, marginal default rates have been calculated on a monthly basis.
Middle- and Low-Income	Our middle- and low-income subset comprises projects located in countries that were classified by the World Bank Group as non-high-income, on average, over the period 1995–2018. The middle- and low-income subset includes project finance bank loans in the following countries: Algeria, Angola, Argentina, Armenia, Azerbaijan, Bangladesh, Benin, Bolivia, Botswana, Brazil, Bulgaria, Burkina Faso, Cabo Verde, Cameroon, Chad, Chile, China, Colombia, Costa Rica, Croatia, Democratic Republic of the Congo, Djibouti, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Estonia, Ethiopia, Fiji, Gabon, Ghana, Guatemala, Guinea-Bissau, Guyana, Honduras, Hungary, India, Indonesia, Iran, Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Lao PDR, Lebanon, Lesotho, Liberia, Lithuania, Madagascar, Malawi, Malaysia, Mali, Marshall Islands, Mauritania, Mauritius, Mexico, Moldova, Mongolia, Morocco, Mozambique, Myanmar, Namibia, Niger, Nigeria, Pakistan, Panama, Papua New Guinea, Peru, Philippines, Poland, Romania, Russia, Senegal, Serbia, Sierra Leone, Slovakia, Solomon Islands, South Africa, Sri Lanka, Syria, Tanzania, Thailand, Timor-Leste, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, Uruguay, Uzbekistan, Venezuela, Vietnam, Yemen, Zambia, and Zimbabwe.

High-Income	Our high-income subset comprises projects in defined by the World Bank Group as high-income, on average, from 1995–2018 and includes the following countries: Australia, Austria, Bahamas, The, Bahrain, Belgium, Bermuda, Brunei, Canada, Cayman Islands, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Guam, Hong Kong, Iceland, Ireland, Isle of Man, Israel, Italy, Japan, Kuwait, Luxembourg, Macau, Macedonia, Malta, Netherlands Antilles, Netherlands, New Zealand, Norway, Oman, Portugal, Puerto Rico, Qatar, Saudi Arabia, Singapore, Slovenia, South Korea, Spain, Sweden, Switzerland, Taiwan, Trinidad and Tobago, Turks and Caicos Islands, United Arab Emirates, United Kingdom, and United States.
Infrastructure	These comprise selected subindustries within Water, Waste, Transportation (Roads, Bridges, Tunnels, Rail, and Ports & Terminals); Media & Telecom (Media Distribution and Telecom); and Oil & Gas Refining and Power (Transmission and Distribution, Renewable and Non-Renewable Electricity Generation).
Moody's Analytics Data Alliance – Project Finance Consortium	The project finance data consortium is composed of leading project finance lenders and investors that provide historical portfolio and credit loss data to Moody's Analytics, for the purpose of creating an aggregate data set.
Moody's Investors Service Annual Corporate Default Study	Annual default study: Defaults will rise modestly in 2019 amid higher volatility https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_1156859
Moody's Investors Service Annual Project Finance Default and Recovery Study	Default and recovery rates for project finance bank loans, 1983–2018 https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_1216692
Other	Project loans for the construction and maintenance of water systems; water desalination, waste treatment, waste to energy, other, media distribution (cable, satellite television, radio, and so on) and telephone (landline, cellular, and satellite telephone systems).

Project Finance	The following is the Basel definition of project finance: **Definition of corporate exposure** 30.07 In general, a corporate exposure is defined as a debt obligation of a corporation, partnership, or proprietorship. Banks are permitted to distinguish separately exposures to small or medium-sized entities (SMEs), as defined in CRE31.9. 30.08 Within the corporate asset class, five sub-classes of specialized lending (SL) are identified. Such lending possesses all the following characteristics, either in legal form or economic substance: 1. The exposure is typically to an entity (often a special purpose entity, or SPE) which was created specifically to finance and/or operate physical assets; 2. The borrowing entity has little or no other material assets or activities, and therefore little or no independent capacity to repay the obligation, apart from the income that it receives from the asset(s) being financed; 3. The terms of the obligation give the lender a substantial degree of control over the asset(s) and the income that it generates; and 4. As a result of the preceding factors, the primary source of repayment of the obligation is the income generated by the asset(s), rather than the independent capacity of a broader commercial enterprise. The five sub-classes of SL are project finance (PF), object finance (OF), commodities finance (CF), income-producing real estate (IPRE), and high-volatility commercial real estate (HVCRE). Each of the sub-classes is defined in the following section. **Project finance** 30.10 PF is a method of funding in which the lender looks primarily to the revenues generated by a single project, both as the source of repayment and as security for the exposure. This type of financing is usually for large, complex, and expensive installations. This might include, for example, power plants, chemical processing plants, mines, transportation infrastructure, environment, and telecommunications infrastructure. Project finance may take the form of financing of the construction of a new capital installation, or refinancing of an existing installation, with or without improvements. 30.11 In such transactions, the lender is usually paid solely or almost exclusively out of the money generated by the contracts for the facility's output. This includes the electricity sold by a power plant. The borrower is usually an SPE that is not permitted to perform any function other than developing, owning, and operating the installation. The consequence is that repayment depends primarily on the project's cash flow and on the collateral value of the project's assets. In contrast, if repayment of the exposure depends primarily on a well-established, diversified, credit-worthy, contractually obligated end user for repayment, it is considered a secured exposure to that end user. The Basel definition of project finance is the same one that the Basel Committee on Banking Supervision previously published.
Social	Social infrastructure project loans for the construction and maintenance of facilities that support social services. Types of social infrastructure include healthcare (hospitals), education (schools and universities), and public facilities (community housing and prisons).
Transportation	Transportation project loans for the construction and maintenance of roads, bridges, tunnels and rail services, and ports and terminals.
Ultimate Recovery (Basel)	A default (Basel) for which recoveries have been realized following emergence from default, as defined in the preceeding section.

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