

# DEFAULT RATE REPORT

AS OF  
JUNE 2021



FISCAL YEAR 2021 (Q3) DEFAULT EXPERIENCE  
EXPORT-IMPORT BANK OF THE UNITED STATES

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# STATUTORY REQUIREMENT

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This report is prepared in accordance with the requirements of 12 U.S.C. § 635g(g).

*“(g) Monitoring of default rates on bank financing; reports on default rates; safety and soundness review*

*“(1) MONITORING OF DEFAULT RATES.—Not less frequently than quarterly, the Bank shall calculate the rate at which the entities to which the Bank has provided short-, medium-, or long-term financing are in default on a payment obligation under the financing, by dividing the total amount of the required payments that are overdue by the total amount of the financing involved.*

*“(2) ADDITIONAL CALCULATION BY TYPE OF PRODUCT, BY KEY MARKET, AND BY INDUSTRY SECTOR; REPORT TO CONGRESS—In addition, the Bank shall, not less frequently than quarterly-*

*(A) calculate the rate of default-*

*(i) with respect to whether the products involved are short-term loans, medium-term loans, long-term loans, insurance, medium-term guarantees, or long-term guarantees;*

*(ii) with respect to each key market involved; and*

*(iii) with respect to each industry sector involved; and*

*(B) submit to the Committee on Banking, Housing, and Urban Affairs of the Senate and the Committee on Financial Services of the House of Representatives a report on each such rate and any information the Bank deems relevant.*

# EXECUTIVE SUMMARY

## ABOUT EXIM

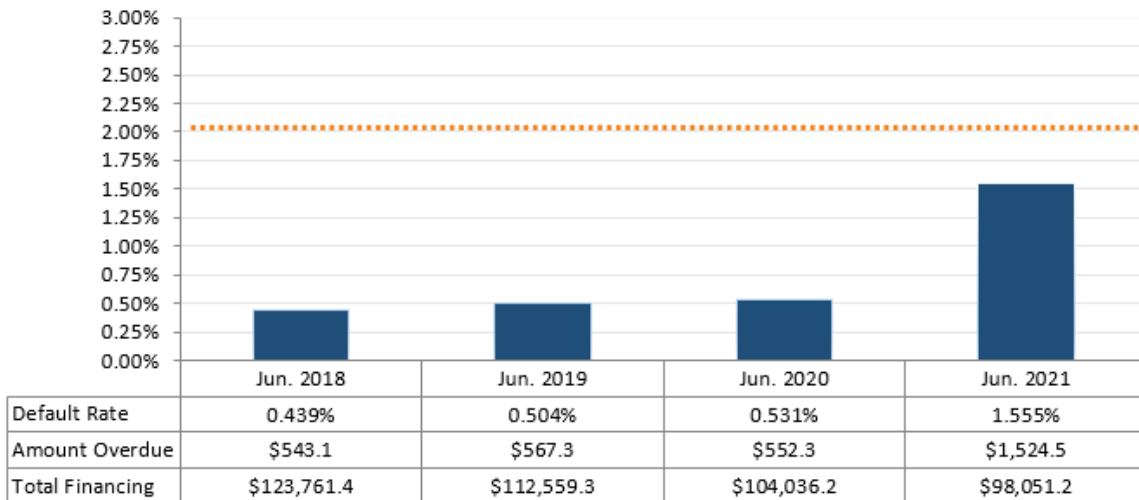
The Export-Import Bank of the United States (EXIM) is an independent executive branch agency with a mission to support American jobs through exports. EXIM provides export financing to help U.S. companies compete for global sales through loan guarantee, direct loan, and insurance programs. EXIM financing is only available in cases where the private sector is unable or unwilling to provide financing (e.g., due to portfolio or regulatory considerations) or when U.S. exporters are facing foreign competition backed by official export credit support. EXIM charges fees commensurate with the risk associated with its transactions.

EXIM maintains a comprehensive risk management framework to ensure the agency is able to effectively and responsibly fulfill its mission to support American jobs. This framework begins with due diligence and underwriting to ensure that each transaction has a reasonable assurance of repayment. Following approval, EXIM proactively manages transactions to reduce the risk of default, maximize recoveries, and protect the long-term financial interest of U.S. taxpayers.

## DEFAULT RATE

The default rate is calculated pursuant to statutory requirements and reflects actual defaults at a point in time.<sup>1</sup> EXIM's default rate as of June 30, 2021, is **1.555 percent** as shown in Exhibit 1. This rate reflects a "total amount of required payments that are overdue" (claims paid on guarantees and insurance transactions plus loans past due) divided by a "total amount of financing involved"

**Exhibit 1: Default Rate**



Data used to calculate the default rate is sourced from the agency's financial management system of records.

<sup>1</sup> 12 U.S.C. 635g(g)(1). This default rate differs from those published in the Federal Credit Supplement for the President's Annual Budget. The reported rate in the Budget Appendix reflects projected defaults over the life of the loan while the default rate in this report reflects actual defaults at a point in time. The Federal Credit Supplement can be found at <https://www.whitehouse.gov/omb/supplemental-materials/>.

(disbursements).<sup>2</sup> The default rate of 1.555 percent is below the statutory two percent cap at which EXIM's lending cap would immediately freeze.<sup>3</sup> EXIM has continued to provide liquidity relief to its borrowers most impacted by the global economic effects associated with COVID-19, resulting in an increase in the default rate from 1.048 percent in March 2021.

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<sup>2</sup> 12 U.S.C. § 635g(g)(1). The default rate is based on actual disbursements and not authorized financing amounts.

<sup>3</sup> 12 U.S.C. § 635e(a)(3)

# DEFAULT RATE

## DEFINED

Statute requires that EXIM calculate the default rate “by dividing the total amount of the required payments that are overdue by the total amount of the financing involved.”<sup>4</sup>

$$\text{Overdue Payments} = \text{Defaults Paid} + \text{Expenses} - \text{Recoveries}$$

$$\text{Total Financing} = \text{Disbursements (Active)}$$

The default rate is based on the total financing of EXIM’s active credit portfolio. Any disbursed loan, guarantee, or insurance policy that will mature after the date of this report is included as part of the active portfolio. Any claim payments made for guarantees and insurance transactions and any direct loan payments in

arrears in EXIM’s active portfolio are considered to be in default.

Data used to calculate the default rate is derived from information contained in EXIM’s financial system of record, which records all accounting data for all authorized transactions.

**Active Credit Example:** A long-term guarantee authorized in FY 2014 with a 10-year repayment term (the transaction matures in FY 2024)

**Inactive Credit Example:** A long-term guarantee in FY 1994 with a 10-year repayment term (the transaction matured in FY 2004)

## COMPONENTS OF THE DEFAULT RATE

### Numerator – Overdue Payments

The “total amount of required payments that are overdue,” representing the numerator, is defined as claims paid on guarantees and insurance transactions as well as unpaid past due installments on loans in EXIM’s active portfolio, net of any recovered amounts collected and expenses incurred related to recovery efforts. The breakdown of the components of overdue payments is provided below.

$$\text{Overdue Payments} = \$1,600.6\text{M (Defaults)} + \$0.4\text{M (Expenses)} - \$76.4\text{M (Recoveries)} = \$1,524.5\text{M}$$

### Defaults

Defaults are calculated differently for direct loans, loan guarantees, and insurance transactions. For loan guarantees and insurance transactions, upon default of a payment obligation by the foreign buyer of the U.S. export, EXIM pays a claim to the guarantors or the insured parties. These claim payments represent defaults paid. For loans, all monies 30 days or more past due are considered

<sup>4</sup> 12 U.S.C. § 635g(g)(1)

defaults. As part of its portfolio management, EXIM may work with borrowers and lenders to restructure troubled transactions to minimize the risk of loss. When transactions are amended to include provisions for full repayment of the defaulted amounts, such payments are no longer overdue. As of June 2021, EXIM paid out \$1,194.6 million in claims and other liquidity relief and had \$406.0 million in loans past due in its active portfolio for a total of \$1,600.6 million in defaults paid.

### Recoveries

Recoveries made after a default are applied to the specific claim paid or to the loan in arrears and thereby reduce the amount overdue. All recovered amounts are discounted to the time of claim payment or when the direct loan went into arrears. As of June 2021, EXIM recovered \$76.4 million. These recoveries, as well as fees collected from borrowers, are used to offset default claims paid. Recovery efforts occur on a continuous basis, and EXIM frequently collects recoveries for several years after the initial default.

### Expenses

All expenses incurred related to EXIM's recovery efforts are added to the amount overdue. As of June 2021, EXIM incurred \$0.4 million of expenses related to the recovery process.

### *Denominator – Total Financing*

The “total amount of financing involved,” the denominator, is defined as the disbursed financing associated with EXIM's active portfolio.

$$\text{Total Financing} = \$98,051.2\text{M} \text{ (Disbursements)}$$

As of June 2021, EXIM provided a total financing of \$98,051.2 million for transactions in its active portfolio through its loan, guarantee, and insurance programs.

### Disbursements

After a credit is approved, the value of the goods and services financed by EXIM is recorded once the goods are delivered to the buyer. Under the guarantee and insurance programs, the private sector provides transaction financing, and the transaction is guaranteed or insured by EXIM. The guaranteed or insured party notifies EXIM when a shipment of goods has occurred or services have been provided, and EXIM records a non-cash “disbursement” to reflect the value of the goods and services guaranteed or insured by EXIM. Under the direct loan program, the goods and services are financed directly by EXIM. Funds are disbursed to pay for the goods or services delivered to the buyer, and a loan receivable, with appropriate loss reserves, is reflected in EXIM's financial system of record.<sup>5</sup> Depending on the type of goods and services financed, the delivery (or disbursement) can occur over a period of several years.

### *Default Rate Calculation*

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<sup>5</sup> EXIM adheres to the provisions of the *Federal Credit Reform Act of 1990*, as amended (2 U.S.C. §§ 661-661f), when executing its reserving practices.

As of June 2021, the total amount of the required payments that are overdue (\$1,524.5 million) divided by the total amount of the financing involved (\$98,051.2 million) equated to a default rate of 1.555 percent for EXIM.

$$\begin{array}{l} \text{EXIM Default} \\ \text{Rate} \\ \text{(Jun. 2021)} \end{array} = \frac{\begin{array}{l} \$1,524.5\text{M} \\ \text{(Overdue Payments)} \end{array}}{\begin{array}{l} \$98,051.2\text{M} \\ \text{(Total Financing)} \end{array}} = 1.555\%$$

## EXPOSURE

EXIM's exposure differs from the total financing amount. Exposure includes authorized outstanding and undisbursed principal balance of direct loans, loan guarantees, and insurance. Total financing amount refers only to disbursements.

As of June 2021, EXIM's total exposure stood at \$42.6 billion. EXIM's total exposure may not exceed \$135.0 billion.<sup>6</sup> Additionally, statute<sup>7</sup> requires:

*"(3) **Freezing of lending cap if default rate is 2 percent or more.** If the rate calculated under section 635g(g)(1) of this title is 2 percent or more for a quarter, the Bank may not exceed the amount of loans, guarantees, and insurance outstanding on the last day of that quarter until the rate calculated under section 635g(g)(1) is less than 2 percent."*

As of June 2021, EXIM's default rate of 1.555 percent is below the two percent threshold. With the current default rate below two percent, EXIM's total exposure cap remains \$135.0 billion.

## RESERVES

In addition to reserve requirements under the *Federal Credit Reform Act of 1990*, as amended, EXIM must maintain a certain level of total reserves to protect against future losses.<sup>8</sup>

*"6(b) **Reserve Requirement.** The Bank shall build to and hold in reserve, to protect against future losses, an amount that is not less than 5 percent of the aggregate amount of disbursed and outstanding loans, guarantees, and insurance of the Bank."*

As of September 30, 2020, EXIM total reserves equaled \$4.0 billion, which was 10.5 percent of EXIM's outstanding exposure (\$38.1 billion).

<sup>6</sup> 12 U.S.C. § 635e(a)(1)

<sup>7</sup> 12 U.S.C. § 635e(a)(3)

<sup>8</sup> 12 U.S.C. § 635e(b)



# DEFAULT RATE – BY SUBCATEGORIES

## DEFAULT RATE: BY SUBCATEGORY

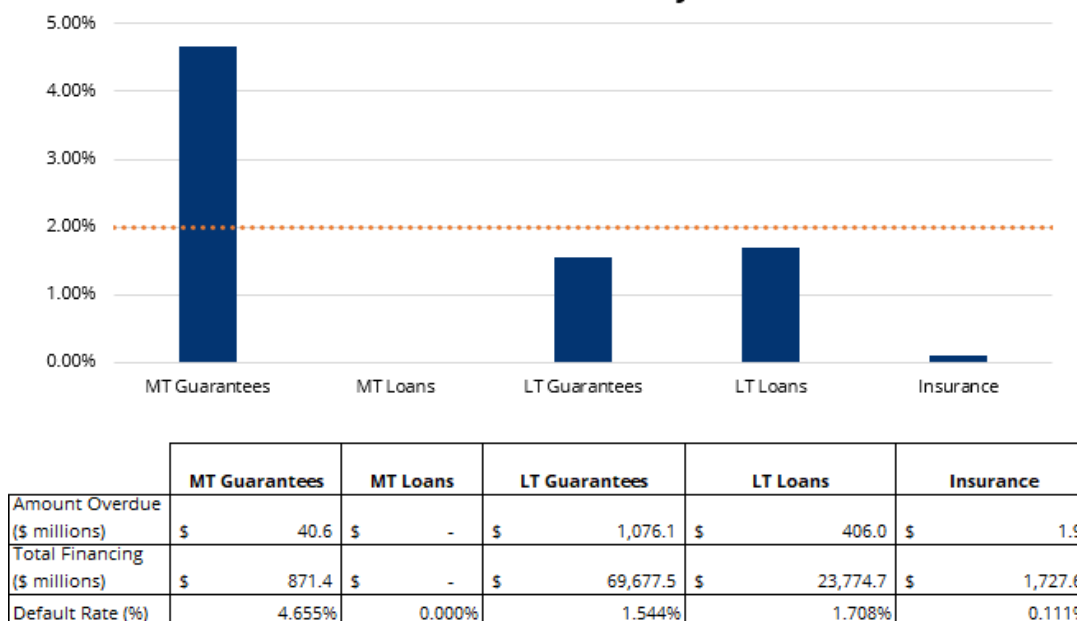
As required by statute, EXIM has calculated default rates based on each subcategory as of June 30, 2021.<sup>9</sup>

“(2) ADDITIONAL CALCULATION BY TYPE OF PRODUCT, BY KEY MARKET, AND BY INDUSTRY SECTOR; REPORT TO CONGRESS.—”

### By Type of Product

EXIM offers loans, guarantees, and insurance products. EXIM reports the default rate for: medium-term loans; long-term loans; insurance; medium-term guarantees; and long-term guarantees.<sup>10</sup> In general, medium-term transactions have a tenor greater than one year and are under \$25 million and long-term transactions are all transactions greater than seven years or more than \$25 million. As of June 30, 2021, only medium-term guarantees which had a default rate of 4.655 percent, exceeded the two percent threshold. The medium-term guarantee default rate increased as claim payments increased as a result of the COVID-19 pandemic. The medium-term guarantee portfolio comprises less than one percent of EXIM’s total financing. Exhibit 2 provides a breakout of the default rate by product. *By Industry Sector*

**Exhibit 2: Default Rate by Product**

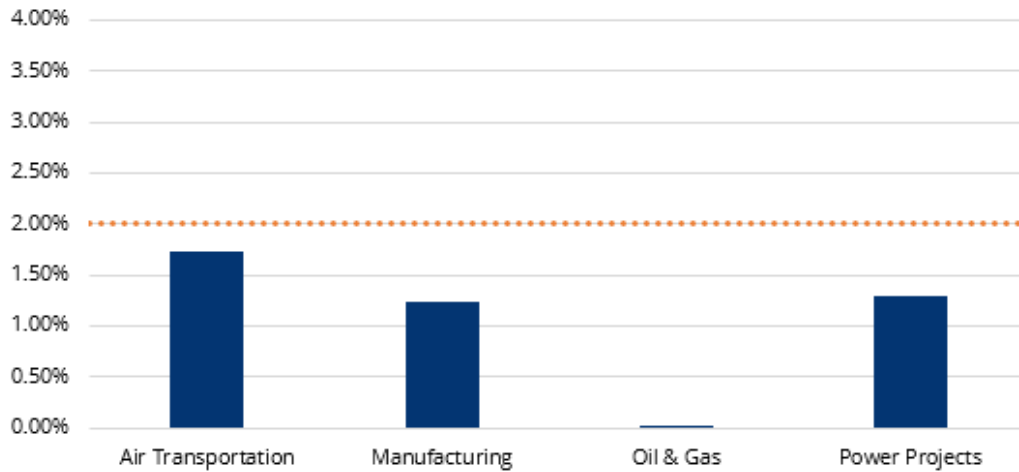


<sup>9</sup> 12 U.S.C. § 635g(g)(2)

<sup>10</sup> EXIM reports the default rates by product in accordance with 12 U.S.C. § 635g(g)(2)(A)(i). Currently, there are no short-term loans in EXIM’s active portfolio, and therefore no short-term loan default rate is reported. Consistent with Section 54002(a) of the *Export-Import Bank Reform and Reauthorization Act of 2015* (P.L. 114-94, Div. E), the medium-term program’s financing cap was expanded from \$10 million to \$25 million, effective May 2019. The default rate of medium-term financing is calculated on the categorization of the transaction at the time of authorization.

The four largest industries in EXIM’s active portfolio are Air Transportation, Manufacturing, Oil & Gas, and Power Projects. These sectors account for 86.8 percent of the total amount of EXIM financing. All the industry sectors experienced a default rate below two percent as shown in Exhibit 3.

**Exhibit 3: Default Rate by Industry Sector**

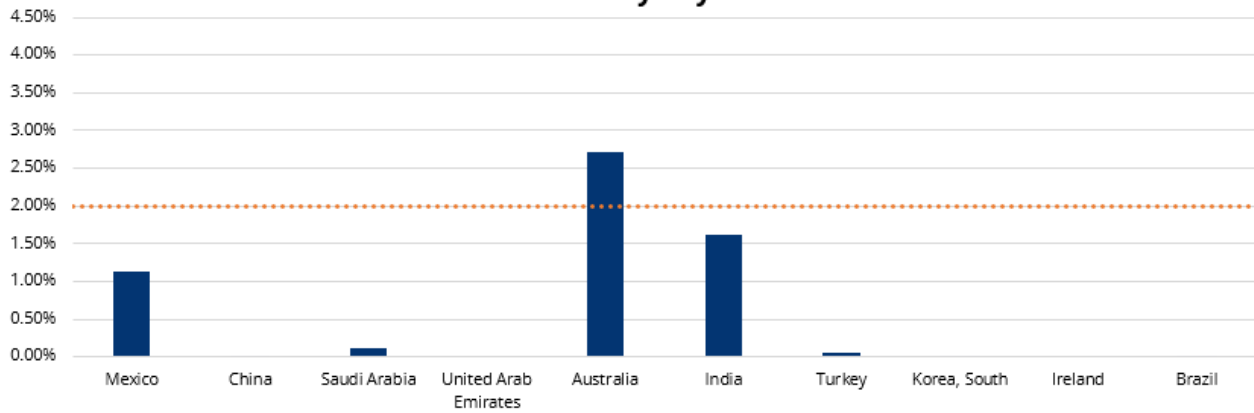


	<b>Air Transportation</b>	<b>Manufacturing</b>	<b>Oil &amp; Gas</b>	<b>Power Projects</b>
Amount Overdue (\$ millions)	\$ 1,001.1	\$ 137.0	\$ 0.0	\$ 42.6
Total Financing (\$ millions)	\$ 57,488.2	\$ 11,051.2	\$ 13,237.8	\$ 3,286.4
Default Rate (%)	1.741%	1.240%	0.000%	1.297%

### By Key Market

As of June 30, 2021, EXIM has exposure in more than 160 countries. As shown in Exhibit 4, the top ten markets, except for Australia, have experienced a default rate below two percent.<sup>11</sup> The default rate for Australia is due to one default that occurred in 2015.

**Exhibit 4: Default Rate by Key Market**



	Mexico	China	Saudi Arabia	United Arab Emirates	Australia	India	Turkey	Korea, South	Ireland	Brazil
Amount Overdue (\$ millions)	\$ 94.1	\$ 0.0	\$ 6.4	\$ -	\$ 136.3	\$ 79.2	\$ 2.3	\$ 0.2	\$ -	\$ 0.3
Total Financing (\$ millions)	\$ 8,393.3	\$ 6,046.5	\$ 5,954.1	\$ 5,526.1	\$ 5,004.1	\$ 4,905.3	\$ 4,738.7	\$ 4,693.4	\$ 4,650.8	\$ 2,824.7
Default Rate (%)	1.121%	0.000%	0.108%	0.000%	2.723%	1.614%	0.049%	0.005%	0.000%	0.010%

<sup>11</sup> The ten key markets reflect top ten markets by total financing.

## DEFAULT RATE: BY MANDATE

EXIM has congressional mandates to support small business, environmentally beneficial, and Sub-Saharan Africa transactions.

### EXIM Mandates

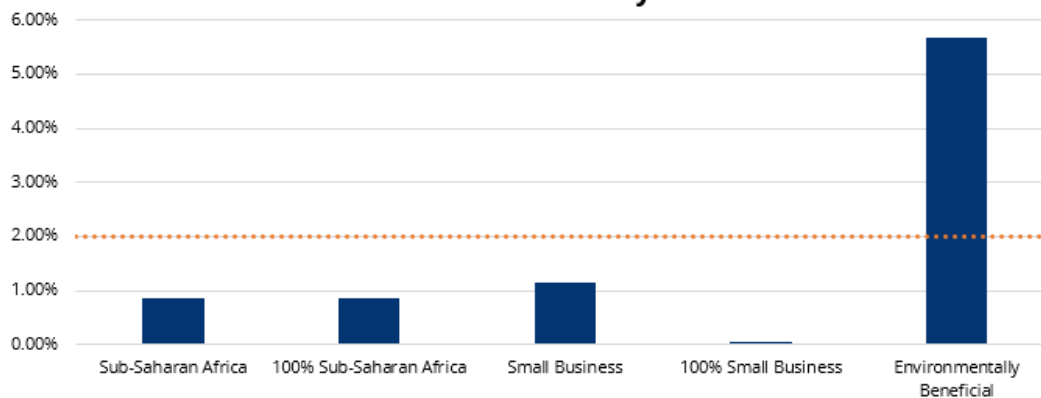
Small Business Mandate (12 U.S.C. § 635(b)(1)(E)(v)): “the Bank shall make available... an amount to finance exports directly by small business concerns (as defined under section 632 of title 15) which shall be not less than 30 percent of such authority for each fiscal year.”

Environmentally Beneficial Mandate (12 U.S.C. § 635i-5(b)(1)): “The Bank shall encourage the use of its programs to support the export of goods and services that have beneficial effects on the environment or mitigate potential adverse environmental effects....”

Sub-Saharan Africa Mandate (12 U.S.C. § 635(b)(9)(A)): “The Board of Directors of the Bank shall ... promote the expansion of the Bank’s financial commitments in sub-Saharan Africa....”

Transactions associated with these mandates account for 11 percent of the total amount of EXIM financing. As of June 30, 2021, Small Business and Sub-Saharan Africa transactions have experienced a default rate below two percent as shown in Exhibit 5. The Environmentally Beneficial default rate stood at 5.670 percent in June 2021. The elevated default rate was caused by two transactions that defaulted in March 2020 due to financial and operational issues that pre-existed the outbreak of COVID-19.

**Exhibit 5: Default Rate by Mandates**



	Sub-Saharan Africa	100% Sub-Saharan Africa	Small Business	100% Small Business	Environmentally Beneficial
Amount Overdue (\$ millions)	\$ 46.1	\$ 46.1	\$ 52.0	\$ 1.1	\$ 75.8
Total Financing (\$ millions)	\$ 5,291.2	\$ 5,268.8	\$ 4,488.2	\$ 2,749.2	\$ 1,336.4
Default Rate (%)	0.871%	0.875%	1.159%	0.040%	5.670%

Note: “Sub-Saharan Africa” and “Small Business” categories include all transactions that are partially or wholly attributed to these respective categories. The “100% Sub-Saharan Africa” and “100% Small Business” categories only include transactions that are wholly attributed to these categories.

### *Risk Rating: By Mandate*

EXIM risk rates its portfolio using a 1 – 11 budget cost level (BCL) scale. The ratings are based, in general, on a borrower’s (1) ability to make payments, as indicated by relevant economic factors and (2) willingness to pay, as indicated by payment record and political and social factors. Four categories, ratings 1 through 4, are roughly equivalent to “creditworthy” or “investment grade” private bond ratings. Three categories, ratings 9 to 11, are for countries either unable to pay fully, even with extended repayment periods, or currently unwilling to make a good faith effort at repayment. EXIM does not use the BCL scale for its working capital and multi-buyer insurance products, as these products are evaluated using a portfolio analysis approach.

Using the BCL at the time of authorization and based on the authorized amount, EXIM’s active portfolio’s weighted average risk rating is 4.28, corresponding to an investment grade portfolio. The following table provides the weighted average BCLs for the various EXIM mandates.

<b>Category</b>	<b>Budget Cost Level</b>
Sub-Saharan Africa	5.89
100% Sub-Saharan Africa	5.89
Small Business	4.28
100% Small Business	5.56
Environmentally Beneficial	4.42
<b>Active Portfolio</b>	<b>4.28</b>

# DEFAULT RATE REPORT

## *STRESS TEST ADDENDUM*

AS OF  
JUNE 2021



FISCAL YEAR 2021 (Q3) DEFAULT EXPERIENCE  
EXPORT-IMPORT BANK OF THE UNITED STATES

# STRESS TESTS

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In addition to measuring its current default rate, the Export-Import Bank of the United States (EXIM) regularly examines its current portfolio to measure the future default rate under various stressed scenarios.<sup>1</sup> As the Basel Committee on Banking Supervision states, “Stress testing should be used as a risk management tool” for risk identification, monitoring, and assessment.<sup>2</sup> The following section describes what stress testing is, why it is important, how stress testing works, EXIM stress test protocol, and recent results from EXIM’s stress tests.

Overall, the results of EXIM’s June 2021 standard stress tests are in line with prior stress tests given that, up until the start of the COVID-19 pandemic, transactions have been generally repaying, leading to a reduction in exposure.

As the COVID-19 pandemic continues to significantly affect the global economy, EXIM has supplemented its standard stress tests with additional scenarios to further analyze the financial and economic impact on its portfolio.

## WHAT IS STRESS TESTING?

The Federal Deposit Insurance Corporation defines stress testing as “a forward-looking quantitative evaluation of stress scenarios that could impact a banking institution’s financial condition and capital adequacy.”<sup>3</sup> The Federal Reserve has provided a similar definition: “For purposes of this guidance, stress testing refers to exercises used to conduct a forward-looking assessment of the potential impact of various adverse events and circumstances on a banking organization.”<sup>4</sup> In sum, stress testing is forward-looking in nature and there are multiple stressed scenarios that could impact the current portfolio and current default rates.

## WHY IS STRESS TESTING IMPORTANT?

EXIM follows a formalized stress testing protocol. Consistent with Federal Reserve guidance, EXIM’s stress testing builds capacity to understand EXIM’s risks and the potential impact of stressful events and circumstances on EXIM’s financial condition.<sup>5</sup> Stress testing is an important tool for portfolio management and risk mitigation. Furthermore, the International Monetary Fund states: “Stress testing has become an essential and very prominent tool in the analysis of financial

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<sup>1</sup> See also Government Accountability Office. (2013). Recent Growth Underscores Need for Continued Improvements in Risk Management. (GAO Publication No. 13-303). Washington, D.C.: U.S. Government Printing Office.

<sup>2</sup> Bank of International Settlements. “Basel Committee on Banking Supervision: Stress Testing Principles.” October 2018. <https://www.bis.org/bcbs/publ/d450.pdf>

<sup>3</sup> Baxter, William R. and Thomas F. Lyons. “Stress Testing Credit Risk at Community Banks,” *Supervisory Insights*. The Federal Deposit Insurance Corporation. Vol. 9, No. 1 (Summer 2012). <https://www.fdic.gov/regulations/examinations/supervisory/insights/sisum12/index.html>

<sup>4</sup> Guidance on Stress Testing for Banking Organizations with Total Consolidated Assets of More than \$10 Billion. SR Letter 12-7 Attachment. Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, Office of the Comptroller of the Currency. May 14, 2012. <https://www.federalreserve.gov/bankinfo/srletters/sr1207a1.pdf>

<sup>5</sup> Ibid.

sector stability and development of financial sector policy.”<sup>6</sup> The World Bank concurs, stating, “Regular stress testing of the financial system is the main tool of macroprudential monitoring.”<sup>7</sup> Finally, EXIM’s Inspector General recommended that “EXIM should develop a systematic approach to stress testing and should conduct stress testing at least annually as part of its re-estimate process.”<sup>8</sup> Based on industry best practices and EXIM’s commitment to a comprehensive risk management framework, EXIM implemented a stress testing protocol in Fiscal Year 2014.

## HOW DOES STRESS TESTING WORK?

The International Association of Credit Portfolio Managers made two overarching recommendations for portfolio stress testing:<sup>9</sup>

1. The institution should have a “top-down” stress-testing process in place to analyze the impact of extreme economic events on the credit risk of the overall credit portfolio; and
2. The institution should supplement the “top-down” approach with a “bottom-up” stress-testing process to measure the impact of adverse events on obligors, or sets of obligors, with significant exposures in the credit portfolio.

## EXIM STRESS TESTING PROTOCOL

On an annual basis, EXIM looks at different ways to perform both a top-down analysis on the entire portfolio as well as a bottom-up approach on certain sets of obligors. For the top-down stress test EXIM decided to use a Monte Carlo simulation approach, consistent with best practice. This approach allows EXIM to look at numerous scenarios. A report published by the Society of Actuaries found that “the Monte Carlo simulation is one of the most widely used methods of stress testing.”<sup>10</sup> This allows EXIM to use a forward-looking approach over numerous scenarios. The simulation takes every transaction in EXIM’s exposure and simulates whether it defaulted or not during the remainder of its term, based on EXIM’s most current loss rate model. In the default simulation, the total default amount less recoveries is calculated. This loss rate model is reviewed annually by the Office of Management and Budget and audited by KPMG. Each portfolio simulation takes every transaction and sums their respective default amounts. The total is EXIM’s loss for that simulation. EXIM then runs this same simulation 20,000 times to create a distribution of possible losses. By creating a distribution of possible losses, EXIM is able to look at the extreme tails of the distribution to see how the portfolio performs at its worst. In essence, this means EXIM

<sup>6</sup> “European Union: Publication of Financial Sector Assessment Program Documentation—Technical Note on Stress Testing of Banks,” IMF Country Report No. 13/68, March 2013. International Monetary Fund. <https://www.imf.org/external/pubs/ft/scr/2013/cr1368.pdf>

<sup>7</sup> Buncic, Daniel; Melecky, Martin. 2012. Macroprudential stress testing of credit risk: a practical approach for policy makers. Policy Research working paper ; no. WPS 5936. Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/994091468251373046/Macroprudential-stress-testing-of-credit-risk-a-practical-approach-for-policy-makers>

<sup>8</sup> “Report on Portfolio Risk and Loss Reserve Allocation Policies.” OIG-INS-12-02, September 28, 2012. Office of the Inspector General, Export-Import Bank of the United States. <http://www.exim.gov/sites/default/files/oig/reports/Final-20Report-20Complete-20Portfolio-20Risk-20120928-1.pdf>

<sup>9</sup> *Sound Practices in Credit Portfolio Management*. Ed. Gene D. Guill and Charles Smithson. The International Association of Credit Portfolio Managers. 2005. [www.iacpm.org/about-us/IACPM\\_Sound\\_Practices.pdf](http://www.iacpm.org/about-us/IACPM_Sound_Practices.pdf)

<sup>10</sup> Guo, Lijia. “Effective Stress Testing in Enterprise Risk Management.” (2008). <https://soa.org/library/monographs/other-monographs/2008/april/mono-2008-m-as08-1-guo.pdf>



looked at 20,000 different “lives” of the portfolio. In some lives perhaps many more defaults occur than expected, others have fewer. By running so many different lives of the portfolio, EXIM can isolate those times where many more defaults occur and look at the impact. EXIM is also able to put probabilities around the chance that these events could occur. Furthermore, EXIM looks at the results of scenarios if no recoveries occur. This is an extreme scenario as EXIM regularly recoups more than 50 cents on the dollar after payments have been made to financial institutions as a result of borrower non-payment or insurance payouts. Recoveries take time and this scenario can show what the stressed default rate could reach with no recoveries, albeit temporarily.

For the bottom-up approach, EXIM looks at applicable data from the Federal Reserve’s Comprehensive Capital Analysis and Review adverse and severely adverse scenarios. These scenarios are applied to the largest obligors to determine the adverse scenario the average risk rating. In doing this, EXIM is able to measure the risk of each obligor similar to a Moody’s or S&P credit rating but using a 1-8 scale. EXIM measures the impact on these obligors under the adverse and severely adverse scenario, resulting in 1.2 notch and 2.5 notch downgrades, respectively. In effect, this scenario would increase the riskiness for a typical transaction by 30 percent for adverse scenarios and 63 percent for severely adverse scenarios.

Next, EXIM runs another 20,000 trial simulations of the entire portfolio based on the results of the obligor specific stress tests, each obligor is downgraded by two notches. This effectively moves an A1 rated credit to a Baa3 credit or a Baa3 to a Ba3 on the Moody’s scale. These scenarios allow EXIM to look at its risk profile from a variety of perspectives and ascertain the current risk within the portfolio.

As part of its stress testing process, EXIM annually reviews its stress testing protocol.

### **EXIM STANDARD STRESS TESTING RESULTS**

EXIM’s standard stress test uses 20,000 Monte Carlo simulations to forecast the default rate of the current non-overdue portfolio. This stress test does not forecast what the default rate will be at a specific point in time; rather, it projects a range of potential default rates over the lifetime of the current non-overdue portfolio.

Under the June 2021 baseline forecast, the median default rate for the current non-overdue portfolio is 0.49 percent with a 95 percent confidence level that it will be below 2.13 percent.

Under a stressed scenario where all of the ratings were downgraded by two Budget Cost Level notches, the median default rate for the current non-overdue portfolio would increase to 2.19 percent with a 95 percent confidence level that the default rate for this portion of the portfolio would be below 3.63 percent. Finally, under a stressed scenario where none of the defaults were recovered the median default rate for the current non-overdue portfolio would be 1.05 percent, with a 95 percent confidence level that it would be below 4.08 percent.

In addition to calculating the default percentages for the current non-overdue portfolio, EXIM calculated the total dollar loss of this distribution. Under the baseline forecast, the median loss amount for the current non-overdue portfolio is \$0.42 billion. Under a stressed scenario in which all of the ratings were downgraded by two notches, the median loss amount would increase to \$1.89 billion. In a stressed scenario where none of the defaults were recovered, the median loss amount would be \$0.91 billion.

These results are comparable to the results from the last stress test performed at the end of March 2021 as the COVID-19 pandemic continues to impact the credit risk profile of EXIM's portfolio. The median default rate for the current non-overdue portfolio under the baseline forecast in June 2021 is 0.49 percent compared to 0.54 percent in March 2021.

<b>Current Non-Overdue Portfolio: Base Scenario &amp; Standard Stressed Scenario</b>						
<i>(Amounts in USD Billions)</i>						
	<u>Median</u>		<u>Average</u>		<u>95 Percentile</u>	
	Percent	Amount	Percent	Amount	Percent	Amount
Total	0.49%	\$0.42	0.83%	\$0.72	2.13%	\$1.84
No Recoveries	1.05%	\$0.91	1.65%	\$1.43	4.08%	\$3.53
Downgrade 2 Notches	2.19%	\$1.89	2.01%	\$1.74	3.63%	\$3.14

Next, EXIM simulated how the above stress test results would affect EXIM's overall default rate, which was 1.555 percent at the end of June 2021. EXIM ran the base case, Downgrade Two Notches, and No Recoveries stress test scenarios to incorporate all transactions in EXIM's active portfolio. The portfolio data and stress test protocols otherwise remain unchanged from the scenario descriptions above.

Under the base scenario, the median simulated default rate declined from the current overall default rate (1.555 percent) to 1.09 percent (reflecting expected recoveries over the life of the portfolio), the average simulated default rate would rise to 1.43 percent, and there is a 95 percent confidence level that the default rate would be below 2.71 percent. Under both stressed scenarios, the median, average, and 95 percent confidence level simulated default rates exceeding the two percent statutory threshold, which would immediately freeze EXIM's lending cap.

<b>Active Portfolio: Base Scenario &amp; Standard Stressed Scenario</b>						
<i>(Amounts in USD Billions)</i>						
	<u>Median</u>		<u>Average</u>		<u>95 Percentile</u>	
	Percent	Amount	Percent	Amount	Percent	Amount
Total	1.09%	\$0.96	1.43%	\$1.26	2.71%	\$2.39
No Recoveries	2.60%	\$2.29	3.20%	\$2.82	5.58%	\$4.92
Downgrade 2 Notches	2.78%	\$2.45	2.62%	\$2.31	4.22%	\$3.72

## COVID-19 IMPACTS: THREE-MONTH AND TWELVE-MONTH ANALYSES

Over the next year, EXIM expects its borrowers will focus on maintaining sufficient liquidity over the short-term and cutting costs as much as possible to offset the sharp decline in revenue. In order to forecast the potential effects of COVID-19 on EXIM's portfolio at future points in time, EXIM undertook an outlook analysis of scenarios covering a three-month and twelve-month interval.

### *Three-Month Outlook Impact Analysis – Default Rate Scenario*

EXIM assessed what the impact on the default rate would be if borrowers exhibiting a moderate or high level of immediate payment concern missed individual debt service payments between July 1, 2021, and September 30, 2021. Because of the exigent circumstances presented by the COVID-19 crisis, individual missed installment payments do not necessarily translate to a default of the entire credit; instead, most credits will likely continue to perform over the long-term. As such, the assessment of high concern does not necessarily translate to a high probability of default for the entire credit, but the classification can serve as a basis for a short-term analysis of the potential range of the default rate in the coming three months. In keeping with this assumption, the analysis does not incorporate the total exposure for these credits, but rather includes only those individual missed payments during the period.

### *Three-Month Outlook Impact Analysis – Default Rate Scenario Results*

The three-month outlook analysis builds off the June 2021 default rate calculation outlined earlier in this report. Since the period for this analysis covers July 2021 to September 2021, EXIM assumed the Total Financing (i.e., the denominator of the default rate calculation) would remain unchanged from June 30, 2021, at \$98,051.2 million.<sup>11</sup> The June 2021 Overdue Payments of \$1,524.5 million (i.e., the numerator of the default rate calculation) served as a starting point for assessing the impact of potential short-term defaults of borrowers that are experiencing liquidity issues. EXIM assumed that it would not collect any recoveries or pay any expenses related to recovery efforts during this period.

If all borrowers with a high level of immediate payment concern defaulted on their upcoming individual payments through September 2021, EXIM's overdue payments would increase to \$1,591.3 million and thereby increase the default rate to 1.623 percent. In addition to these borrowers with a high level of concern, if all borrowers with a medium level of immediate payment

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<sup>11</sup> While Total Financing would change over the next quarter, the impact on the overall default rate is approximately one-half of a basis point for every \$1 billion added or subtracted to the denominator. As such, assuming a steady Total Financing amount does not have a material impact on the analysis.

concern defaulted during the same period, overdue payments would increase to \$1,782.5 million, increasing the default rate to 1.818 percent.

<b>COVID-19 Three-Month Outlook Impact Analysis</b>			
<i>(Amounts in USD Millions)</i>			
<i>Scenario (No Recoveries)</i>	<i>Total Overdue Payment</i>	<i>Total Financing</i>	<i>Default Rate</i>
June 2021	\$1,524.5	\$98,051.2	1.555%
High Concern Level	\$1,591.3	\$98,051.2	1.623%
High & Medium Concern Levels	\$1,782.5	\$98,051.2	1.818%

Overall, even as certain borrowers are experiencing elevated risk of missing their immediate debt service payments, within the next three months the default rate is not expected to reach the statutory two percent cap at which EXIM's lending cap would immediately freeze.

#### *Twelve-Month Outlook Impact Analysis – Short-Term Stress Test Scenario*

EXIM also developed an additional stress test scenario to simulate potential full exposure defaults for transactions that have a high or medium level of immediate payment concern. The short-term stress test scenarios utilized the annual default rate data provided in Moody's Investor Service's *Annual Default Study* (February 2020) that tracks one-year corporate default rates between 1920 and 2019. By leveraging Moody's more expansive historical data to simulate "once in a century" annual default rates experienced by the corporate sector, EXIM could simulate the default rate over the next twelve-month period. Additionally, a risk rating downgrade was applied to borrowers that have an elevated risk of defaulting on repayments occurring in the next three to six months, as shown in the table below:<sup>12</sup>

<b>COVID-19 Twelve-Month Outlook Impact Stress Test Scenario</b>	
<i>Immediate Payment Concern Classification</i>	<i>Risk Rating Notch Downgrade</i>
Low	0
Medium	1
High	2

#### **Twelve-Month Outlook Impact Analysis – Short-Term Stress Test Results**

By applying Moody's loss rates and immediate payment concern parameters discussed above, the expected default rate (i.e., the median value of all the simulations) for the current, non-overdue portfolio after 12 months would be 0.96 percent with a 95 percent confidence level that it will be below 2.52 percent. This is an increase from the base case scenario's median default rate for the current, non-overdue portfolio of 0.49 percent discussed in the "Stress Test" section. Additionally, in a scenario where Moody's loss rates and the immediate payment concern classifications are

<sup>12</sup> As described in the "EXIM Stress Testing Protocol" section, EXIM's internal risk rating system is similar to Moody's or S&P's credit rating, but utilizes a 1-to-8 scale.

applied and where EXIM does not make any recoveries on the defaults, the median default rate for the current non-overdue portfolio would be 2.15 percent with a 95 percent confidence level that it would be below 5.04 percent. The results of these scenarios are provided in the table below.

<b>Current Non-Overdue Portfolio: Twelve-Month Outlook Impact Stress Test Results</b>						
<i>(Amounts in USD Billions)</i>						
	<u>Median</u>		<u>Average</u>		<u>95 Percentile</u>	
	Percent	Amount	Percent	Amount	Percent	Amount
Total	0.96%	\$0.83	1.20%	\$1.04	2.52%	\$2.18
No Recoveries	2.15%	\$1.86	2.57%	\$2.22	5.04%	\$4.36

Next, EXIM simulated how the above stress tests results would affect EXIM's overall default rate, which was 1.555 percent at the end of June 2021. EXIM again applied Moody's loss rates and immediate payment concern parameters as described above. In this scenario, EXIM's median overall default rate rises to 1.55 percent with a 95 percent confidence level it would be below 3.08 percent. Assuming no recoveries, the median default rate rises to 3.67 percent with a 95 percent confidence level it would be below 6.49 percent.

<b>Active Portfolio: Twelve-Month Outlook Impact Stress Test Results</b>						
<i>(Amounts in USD Billions)</i>						
	<u>Median</u>		<u>Average</u>		<u>95 Percentile</u>	
	Percent	Amount	Percent	Amount	Percent	Amount
Total	1.55%	\$1.37	1.79%	\$1.58	3.08%	\$2.72
No Recoveries	3.67%	\$3.24	4.08%	\$3.60	6.49%	\$5.72

### COVID-19 ONE-TO-TWO YEAR OUTLOOK: IMPACT ANALYSIS

EXIM executed additional stress test scenarios that model the possible medium-term impact of the financial and economic fallout from the outbreak of the virus. COVID-19 is expected to have a major impact on Transportation, Commodities, and Sovereign (non-Transportation) portfolios, but may have a more limited impact on Power and High-Tech portfolios. Additionally, the impact on a particular industry may vary by geographic region.

Depending on the length and severity of the crisis, financial conditions could warrant rating downgrades for impacted industries or regions. Given this potential outcome, EXIM developed a stress test scenario that applies a risk rating downgrade to every transaction based on an assessment of the impact of COVID-19 on a particular region and industry risk. By applying a set risk rating downgrade to all transactions that fall into a given sub-portfolio, EXIM can simulate the potential deterioration of credit quality for key sectors in its portfolio and therefore assess COVID-19's impact on potential losses. The risk rating notch downgrade by risk classification for this scenario is outlined in the table below:

COVID-19 One-to-Two-Year Outlook Impact Scenario	
Region-Industry Risk Clarification	Risk Rating Notch Downgrade
Low	0
Low to Medium	1
Medium	2
Medium to High	3
High	4

For example, if EXIM determined that COVID-19 would have a “Medium to High” impact on the Transportation industry in the Asia-Pacific region, then in this stress scenario all Transportation transactions in the Asia-Pacific region would have their current risk rating downgraded by three notches. For regions and industries where COVID-19 is expected to have a “Low” impact, transactions would retain their current risk rating.

### One-to-Two-Year Impact Analysis - Results

By applying the region and industry risk rating parameters discussed above, the expected default rate (i.e., the median value of all the simulations) for the current non-overdue portfolio would be 1.13 percent with a 95 percent confidence level that it would be below 3.02 percent. This represents an increase from the base case scenario’s median default rate for the current non-overdue portfolio of 0.49 percent discussed in the “Stress Test” section.

Additionally, in a scenario where the region and industry risk parameters are applied and EXIM does not make any recoveries on the defaults, the median default rate for the current non-overdue portfolio would be 2.67 percent with a 95 percent confidence level that it would be below 6.12 percent. As discussed in the EXIM Stress Testing Protocol section, a “no recoveries” scenario is an extreme scenario in the long-term given EXIM’s historical recovery experience. This stress scenario, however, shows what could temporarily happen to the default rate after EXIM pays a claim, but before recovery efforts are completed. Historically, EXIM recoups more than 50 cents for every dollar paid out in claims. The results of these scenarios are provided in the table below.

Current Non-Overdue Portfolio						
One-to-Two-Year Outlook Impact Stress: Region-Industry Risk Clarification						
<i>(Amounts in USD Billions)</i>						
	Median		Average		95 Percentile	
	Percent	Amount	Percent	Amount	Percent	Amount
Total	1.13%	\$0.98	1.48%	\$1.28	3.02%	\$2.62
No Recoveries	2.67%	\$2.31	3.24%	\$2.80	6.12%	\$5.29

Next, EXIM simulated how the above stress tests results would affect EXIM’s overall default rate, which was 1.555 percent at the end of June 2021. EXIM again used region and industry risk rating

parameters as described above. In this scenario, EXIM's median overall default rate rises to 1.73 percent with a 95 percent confidence level it would be below 3.56 percent. Assuming no recoveries are made, the median default rate rises to 4.19 percent with a 95 percent confidence level it would be below 7.54 percent.

<b>Active Portfolio</b>						
<b>One-to-Two-Year Outlook Impact Stress: Region-Industry Risk Clarification</b>						
<i>(Amounts in USD Billions)</i>						
	<u>Median</u>		<u>Average</u>		<u>95 Percentile</u>	
	Percent	Amount	Percent	Amount	Percent	Amount
Total	1.73%	\$1.52	2.07%	\$1.82	3.56%	\$3.14
No Recoveries	4.19%	\$3.69	4.76%	\$4.20	7.54%	\$6.65

While EXIM is currently within the parameters of the two percent default rate, the agency is closely monitoring its credits and defaults and taking proactive measures to provide relief through restructuring efforts.