

# Untenable investments

Nuclear weapon producers  
and their financiers



**ICAN**  
International Campaign to  
Abolish Nuclear Weapons

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**This updated report corrects errors published in the version of "Untenable Investments" released on 21 February 2024. Specifically, the dataset provided by PAX's data provider, Profundo, contained errors that showed \$41.9 billion more in loans and \$24.6 billion more in underwriting than it should have. This version provides corrected values for all loans and underwriting services. The corrections did not involve removing from or adding financial institutions to the report.**

There remains a marked lack of official information available in the public domain about the use, production, transfer and stockpiling of nuclear weapons. We strived to achieve the highest level of accuracy in reporting. The information in this report reflects official information available in the public domain. We welcome comments, clarifications, and corrections from governments, companies, financial institutions and others, in the spirit of dialogue, and in the common search for accurate and reliable information on this important subject. If you believe you have found an inaccuracy in our report, or if you can provide additional information, please contact: [nukes@paxforpeace.nl](mailto:nukes@paxforpeace.nl).

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And all those who work tirelessly to stigmatize, outlaw, and eliminate nuclear weapons.

*Notes:*

Certain figures in this report may not tally exactly due to rounding. All figures are presented in United States Dollars (USD) (unless otherwise indicated). Commas (,) are used as thousands separators.

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**About PAX**

PAX means peace. Together with people in conflict areas and concerned citizens worldwide, PAX works to build just and peaceful societies across the globe. PAX brings together people who have the courage to stand for peace. Everyone who believes in peace can contribute. We believe that all these steps, whether small or large, truly matter and will contribute to a just and peaceful world. PAX is an ICAN partner. More information about PAX can be found at: [www.paxforpeace.nl](http://www.paxforpeace.nl).

**About ICAN**

ICAN is a global campaign coalition promoting adherence to and implementation of the United Nations Treaty on the Prohibition of Nuclear Weapons. ICAN is comprised of more than 650 partner organizations in over 100 countries. More information about ICAN can be found at: [www.ICANw.org](http://www.ICANw.org).

**About Profundo**

Profundo is an economic research consultancy analyzing commodity chains, financial institutions and corporate social responsibility issues. It works predominantly for environmental, human rights and development organizations in the Netherlands and abroad. [www.profundo.nl](http://www.profundo.nl).

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## Key Findings

### 287 financial institutions finance 24 nuclear weapon producers

Between January 2021 and August 2023, 287 banks, pension funds, insurance companies, asset managers and other financial institutions had financing or investment relations with one or more of the 24 nuclear weapon producing companies profiled in this report, down from 306 institutions in previously published results.

### Investors held \$477 billion in shares and bonds

Investors held \$476,843 million in shares and bonds in the 24 nuclear weapon producing companies, an increase of \$15.7 billion since the last Don't Bank on the Bomb financial analysis.

### \$276 billion provided in loans and underwriting

During the analyzed period, \$276,155 million was provided to the 24 nuclear weapon manufacturers in loans and underwriting, a drop of \$9.4 billion since the last Don't Bank on the Bomb financial analysis.

## 24 Companies producing nuclear weapons

Companies from China, France, India, Italy, the Netherlands, the Russian Federation and the United States are significantly involved in the production of nuclear weapons. Many of the companies included in this report have multi-year contracts, totalling at least \$336 billion and continuing for decades.

Northrop Grumman and General Dynamics are the biggest nuclear weapons profiteers, with outstanding contracts with a potential value of at least \$21.2 billion and \$23.7 billion respectively, not including the consortium and joint venture revenues. BAE Systems, Boeing, Lockheed Martin and RTX also hold multi-billion-dollar contracts for nuclear weapon production and/or sustainment.

### THE LIST OF COMPANIES PROFILED IN THIS REPORT AND THE ARSENALS TO WHICH THEY CONTRIBUTE ARE:

1. Airbus (France);
2. BAE Systems (France, United Kingdom, United States);
3. Bechtel (United States);
4. Bharat Dynamics (India);
5. Boeing (United Kingdom, United States);
6. China Aerospace Science and Technology (China);
7. Fluor (United States);
8. General Dynamics (United Kingdom, United States);
9. Honeywell International (United States);
10. Huntington Ingalls Industries (HII) (United States);
11. Jacobs Solutions (formerly Jacobs Engineering) (United States);
12. L3Harris Technologies (United States);
13. Leidos (United States);
14. Leonardo (France);
15. Lockheed Martin (United Kingdom, United States);
16. Northrop Grumman (United Kingdom, United States);
17. Peraton (United States)
18. RTX (formerly Raytheon Technologies) (United States);
19. Rolls-Royce (United Kingdom);
20. Rostec (Russian Federation);
21. Safran (France);
22. Textron (United States);
23. Thales (France), and;
24. Walchandnagar Industries Limited (India).

# Methodology

## Nuclear weapon producing companies

### 24 fully profiled companies

This report describes the involvement of 24 companies in the production of nuclear weapons. The companies profiled in this report are open to external financing and provide key components or services that contribute to activities prohibited under the Treaty on the Prohibition of Nuclear Weapons, including the development, testing, production, manufacture, possession, stockpiling or use of nuclear weapons. Such involvement may be related to warheads, or to specifically designed nuclear capable delivery systems, like missiles. Contributions to the production of nuclear armed submarines (SSBNs) have until now remained outside the scope of the Don't Bank on the Bomb publications. However, given that these launch platforms are specifically designed for the delivery of nuclear weapons, companies involved in their production (including Rolls-Royce) are included in the 2024 publication's list of fully profiled companies.

### Watchlist

In addition to the 24 companies fully profiled, this report also includes a watchlist, which serves to provide additional information about companies connected to the nuclear weapons enterprise. For example, some companies build the facilities that allow for the stationing, installation, or deployment of nuclear weapons on national territory. Other companies may not be open to external financing. The watchlist also includes companies who act as subcontractors, as well as companies for which ties to the nuclear weapons enterprise have been identified, but where sufficient information to clarify their precise scope of activities related to nuclear weapon production, deployment or stockpiling is unavailable. The profiles included in the watchlist are not a comprehensive review of companies of this nature. Rather, they are an example of the types of companies that are also involved in the nuclear weapon industry.

## Nuclear weapon financiers

This report lists the financial institutions with financing or investment relationships with one or more of the 24 nuclear weapon producing companies. This includes the providing of loans and other forms of credit (commercial banking), underwriting of share and bond issuances (investment banking), investments in shares and bonds (asset management) and other financial services. These investments can be made by financial institutions on their own behalf or on behalf of third parties. Financial institutions are listed at the parent group level, and the total amounts listed include any financing found from their subsidiaries. The companies concerned are often active in a wide range of markets and, as such, also engaged in activities other than their involvement in nuclear weapon production. This report does not claim that the entirety of capital provided by financial institutions listed exclusively flows to nuclear weapon related activities. Nevertheless, financing a company generally supports that company in its entirety, thereby connecting the financial institution to the company's overall activities. It is impossible to ensure that funds provided will *not* facilitate nuclear weapon production, as even 'earmarked' funds provided by lenders or bond underwriters tend to free other capital flows that companies can use at their discretion.

This report does not list every single investment or line of credit granted to the companies listed for their involvement in the nuclear weapon industry. Government financing is not included. Moreover, the focus of this report lies on the financial institutions which were found to have the most substantial financing relationships with one or more of the selected companies. For this purpose, the following criteria were applied:

- All financial institutions participating in loans and underwriting deals since 1 January 2021. In addition, to provide a fuller picture of the overall credit granted to the nuclear weapons producing companies, participation in loans which have been closed before that date, but have not matured before 1 October 2022, is included in this report.
- All financial institutions which own at least 0.5% of the outstanding shares or bonds of one or more of the fully profiled companies at most recent filing dates. The data was collected in August 2023, meaning the most recent filing date in many cases was June, 30rd, 2023.

The information is retrieved from annual reports, stock exchange filings, other publications of the companies, investment portfolios of financial institutions, company websites, a general media search, as well as from specialized financial databases (Refinitiv Eikon, Refinitiv EMAXX, Bloomberg, IJGlobal, TradeFinance Analytics and Preqin). While these sources of information are reputable and well-known, they are themselves not comprehensive. The numbers provided in the report are therefore a conservative estimation of the total global financing of the nuclear weapons industry. For previous Don't Bank on the Bomb publications, in addition to the main financial research, a manual search for financial relations of a selected list of institutions was conducted. This additional check was not carried out for this report.

Certain figures in this report may not tally exactly due to rounding. All figures are presented in United States Dollars (USD) (unless otherwise indicated). Commas (,) are used as thousands separators.

## Executive Summary

As Russia's invasion of Ukraine approaches its two-year mark, global tensions and risks of nuclear conflict remain at a heightened level. While the very real possibility of nuclear war has prompted even nuclear-armed states to explicitly condemn and delegitimize nuclear weapon threats, they simultaneously maintain that such risks can only be answered with a continued reliance on and further expansion of their own nuclear forces.

A growing global movement is challenging this assertion. At the conclusion of the 2023 second Meeting of States Parties to the Treaty on the Prohibition of Nuclear Weapons (TPNW), states strongly condemned reliance on nuclear deterrence as obstructing progress towards nuclear disarmament and agreed to work together to challenge its underlying narratives.

It is these narratives that ensure the ongoing flow of astronomical sums of money into the nuclear weapon industry. All nuclear-armed states are currently modernizing their nuclear weapon systems.

In 2022, the nine nuclear-armed states together spent \$82.9 billion on their nuclear weapons arsenals, an increase of \$2.5 billion compared to the previous year, and with the United States spending more than all other nuclear powers combined.<sup>1</sup>

### Nuclear weapon producing companies

Northrop Grumman and General Dynamics are the biggest nuclear weapons profiteers, with outstanding contracts with a potential value of at least \$21.2 billion and \$23.7 billion respectively, not including the consortium and joint venture revenues. BAE Systems, Boeing, Lockheed Martin and RTX also hold multi-billion-dollar contracts for nuclear weapon production and/or stockpiling.

The majority of companies profiled contribute to the production of U.S. nuclear weapon systems. Others are involved in the French and UK arsenals. The report also

profiles companies based in India, Russia and China, yet the limited amount of information available on companies involved in these countries' arsenals remains a challenge.

### Financiers

Altogether, 287 financial institutions were identified for having substantial financing or investments relations with 24 companies involved in nuclear weapon production. \$477 billion was held in bonds and shares, and \$276 billion was provided in loans and underwriting.

The TPNW comprehensively prohibits the development, manufacturing, testing, possession, use and threat of use of nuclear weapons, as well as assistance with those acts. For companies that build the key components needed to maintain and expand countries' nuclear arsenals, access to private funding is crucial. As such, the banks, pension funds, asset managers and other financiers that continue to invest in or grant credit to these companies allow for the production of inhumane and indiscriminate weapons to proceed. By divesting from their business relationships with these companies, financial institutions can reduce available capital for nuclear weapon related activities and thereby be instrumental in supporting the fulfilment of the TPNW's objectives.

Financial sector involvement in raising awareness and increasing opposition against nuclear weapons is growing. Financial sector actors are also increasingly calling for better regulation around responsible investment practices. During the negotiation phase of the EU's Corporate Sustainability Due Diligence Directive (CSDDD), investors and investor networks consistently advocated to be included under the Directive.<sup>2</sup> Financial institutions have also called on the European Commission to revive efforts to extend the current EU Taxonomy framework to include a social and human rights dimension.<sup>3</sup> In 2022, the EU platform on sustainable finance issued its recommendations for such a social taxonomy, which among others include taking into account the TPNW when considering which activities should be classified as "harmful".<sup>4</sup>

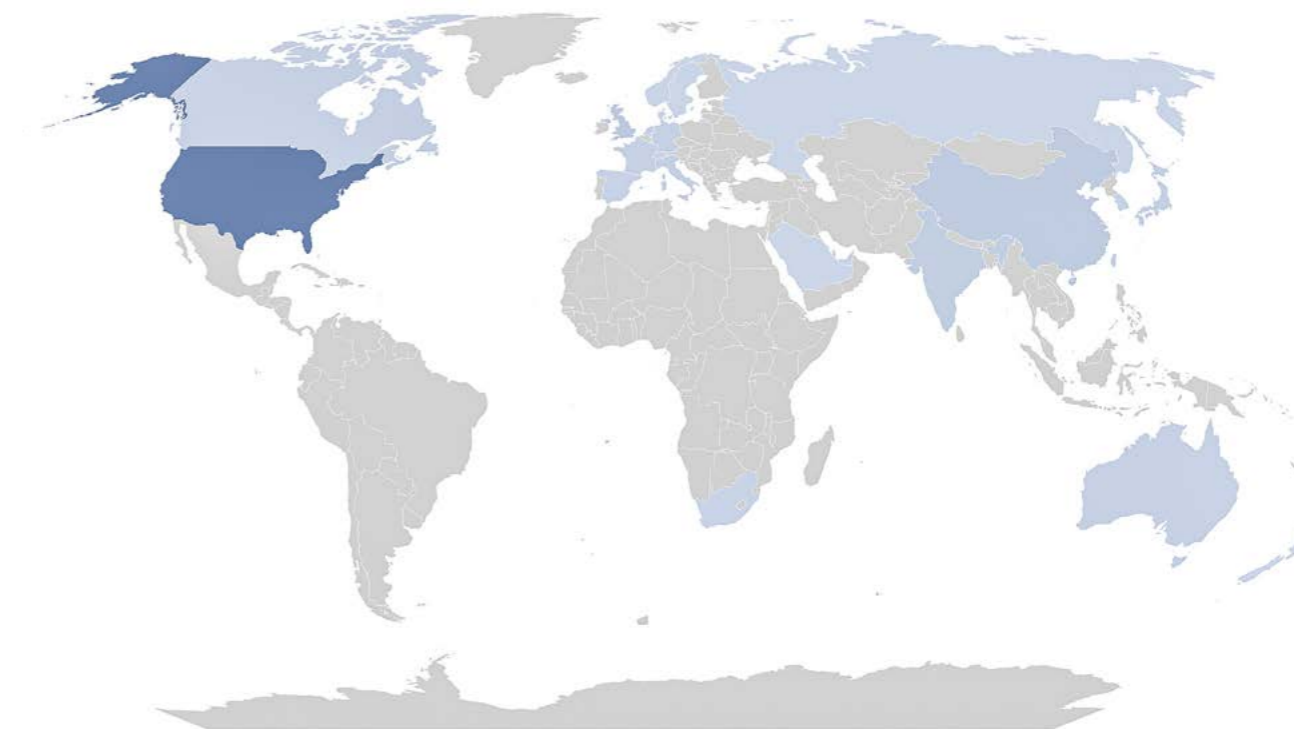
The human rights and environmental risks attached to nuclear weapons are severe and irremediable. New scientific evidence presented at the second Meeting of States Parties to the TPNW gave additional insights into the cascading effects of nuclear war on food supplies,

the financial system and energy production.<sup>5</sup> Financial institutions are uniquely placed to address these risks and foster corporate sustainable and responsible behaviour. As such, they can and should play a key role in supporting efforts that seek to achieve a world free of the nuclear threat.

### Global financing

There are a total of 287 institutions with financing or investment relationships to the nuclear weapon producing companies, from 28 countries. Most of these investments come from countries that either possess nuclear weapons of their own or otherwise endorse the use of nuclear weapons. With the exception of three financial institutions (from South Africa and New Zealand), none of the financiers come from countries that have joined the Treaty on the Prohibition of Nuclear Weapons (TPNW).

FIGURE 1: MAP OF FINANCIERS GLOBALLY



### Top 10 financiers

The top 10 share and bondholders are all based in the United States. Their combined investments in the 24 nuclear weapon producing companies totals \$327,150 million.

**TABLE 1: TOP 10 SHARE AND BONDHOLDERS COMPARED. ALL FIGURES IN USD MILLIONS**

| INVESTOR               | COUNTRY       | 2023             | 2022             | CHANGE          |
|------------------------|---------------|------------------|------------------|-----------------|
| Vanguard               | United States | \$72,487         | \$68,180         | \$4,307         |
| Capital Group          | United States | \$62,548         | \$51,292         | \$11,256        |
| State Street           | United States | \$55,503         | \$56,733         | -\$1,230        |
| BlackRock              | United States | \$53,161         | \$48,052         | \$5,110         |
| Wellington Management  | United States | \$18,712         | \$22,285         | -\$3,573        |
| Fidelity Investments   | United States | \$15,297         | \$12,024         | \$3,273         |
| Newport Group          | United States | \$14,310         | \$15,683         | -\$1,373        |
| Geode Capital Holdings | United States | \$13,865         | \$12,511         | \$1,354         |
| Bank of America        | United States | \$12,168         | \$13,383         | -\$1,215        |
| Morgan Stanley         | United States | \$9,098          | \$8,317          | \$781           |
| <b>GRAND TOTAL</b>     |               | <b>\$327,150</b> | <b>\$308,460</b> | <b>\$18,690</b> |

The top 10 lenders and underwriters provided \$143,083 million in loans and underwriting to the 24 nuclear weapon producing companies.

**TABLE 2: TOP 10 LENDERS AND UNDERWRITERS COMPARED. ALL FIGURES IN USD MILLIONS**

|                          | COUNTRY       | 2023             | 2022             | CHANGE           |
|--------------------------|---------------|------------------|------------------|------------------|
| Citigroup                | United States | \$23,685         | \$27,251         | -\$3,566         |
| Bank of America          | United States | \$21,838         | \$27,956         | -\$6,118         |
| JPMorgan Chase           | United States | \$20,451         | \$22,609         | -\$2,158         |
| Wells Fargo              | United States | \$15,448         | \$17,807         | -\$2,359         |
| Mizuho Financial         | Japan         | \$11,720         | \$12,900         | -\$1,181         |
| BNP Paribas              | France        | \$11,382         | \$12,701         | -\$1,319         |
| Goldman Sachs            | United States | \$10,250         | \$10,701         | -\$451           |
| Mitsubishi UFJ Financial | Japan         | \$10,106         | \$11,452         | -\$1,346         |
| SMBC Group               | Japan         | \$9,929          | \$10,308         | -\$380           |
| Crédit Agricole          | France        | \$8,274          | \$8,258          | \$16             |
| <b>GRAND TOTAL</b>       |               | <b>\$143,083</b> | <b>\$161,944</b> | <b>-\$18,861</b> |

### Types of financing compared

Overall bondholding value continued to decrease in 2023, with a drop of \$774 million compared to 2022. Total shareholding value, on the other hand, went up again in 2023, with an increase of \$16.4 billion compared to previously published results.

**TABLE 3: BOND AND SHAREHOLDING COMPARED 2023-2020. ALL FIGURES IN USD MILLIONS**

|                    | 2023             | 2022             | 2021             | 2020             |
|--------------------|------------------|------------------|------------------|------------------|
| Bondholding        | \$5,975          | \$6,749          | \$7,820          | \$9,180          |
| Shareholding       | \$470,868        | \$454,413        | \$345,919        | \$413,340        |
| <b>GRAND TOTAL</b> | <b>\$476,843</b> | <b>\$461,162</b> | <b>\$353,739</b> | <b>\$422,520</b> |

Total loans increased in 2023 with \$41.4 billion compared to previously published results. Total underwriting, on the other hand, decreased, with a \$50.8 billion drop from the 2022 financial analysis.

**TABLE 4: LOANS AND UNDERWRITING COMPARED 2023-2020. ALL FIGURES IN USD MILLIONS**

|                    | 2023             | 2022             | 2021             | 2020             |
|--------------------|------------------|------------------|------------------|------------------|
| Loans              | \$221,625        | \$180,208        | \$211,399        | \$180,778        |
| Underwriting       | \$54,531         | \$105,307        | \$120,046        | \$42,752         |
| <b>GRAND TOTAL</b> | <b>\$276,155</b> | <b>\$285,515</b> | <b>\$331,445</b> | <b>\$223,530</b> |

### Full list of financiers

173 financial institutions had substantial investment relationships (share and bond holdings) with the 24 nuclear weapon producing companies. Only institutions with share and bond holdings of at least 0.5% of the total number of outstanding shares of the nuclear weapon producing companies are listed.

132 financial institutions provided financing in the form of loans or underwriting to the 24 nuclear weapon producing companies.

TABLE 5: FULL LIST OF INVESTORS (SHARE AND BOND HOLDING). ALL FIGURES IN USD MILLIONS

| INSTITUTION  | COUNTRY        | INVESTMENTS |
|--|----------------|-------------|
| Abrams Capital Management                                | United States  | \$223       |
| Aditya Birla Capital                                     | India          | \$8         |
| Aegon  | Netherlands    | \$52        |
| Affiliated Managers Group                                | United States  | \$1,055     |
| AGF Management   | Canada         | \$83        |
| Allianz  | Germany        | \$405       |
| Allspring Global Investments                             | United States  | \$797       |
| Allstate   | United States  | \$115       |
| Alpine Associates Management                             | United States  | \$110       |
| Alyeska Investment Group                                 | United States  | \$123       |
| American Century Investments                             | United States  | \$411       |
| American Financial Group                                 | United States  | \$40        |
| American National Insurance                              | United States  | \$14        |
| Ameriprise Financial                                     | United States  | \$4,825     |
| AQR Capital Management                                   | United States  | \$323       |
| Aristotle Capital Management                             | United States  | \$1,786     |
| Artisan Partners   | United States  | \$1,521     |
| Auto-Owners Insurance                                    | United States  | \$15        |
| Aviva  | United Kingdom | \$59        |
| Aware Super  | Australia      | \$196       |
| Baird  | United States  | \$276       |
| Balyasny Asset Management                                | United States  | \$251       |
| Bank of America  | United States  | \$12,168    |
| Bank of New York Mellon                                  | United States  | \$1,458     |
| Barclays   | United Kingdom | \$1,468     |
| Bessemer Group   | United States  | \$188       |
| BlackRock  | United States  | \$53,161    |
| Boston Private   | United States  | \$57        |
| Brandes Investment Partners                              | United States  | \$281       |
| Calamos Investments                                      | United States  | \$33        |
| California Public Employees' Retirement System (CalPERS) | United States  | \$435       |
| California State Teachers' Retirement System (CalSTRS)   | United States  | \$10        |
| Canada Pension Plan Investment Board                     | Canada         | \$682       |
| Canara Bank  | India          | \$15        |
| Capital Group  | United States  | \$62,548    |
| Carlson Capital  | United States  | \$56        |
| Cartenna Capital   | United States  | \$35        |
| Causeway Capital Holdings                                | United States  | \$1,216     |
| Charles Schwab   | United States  | \$5,437     |
| Children's Investment Fund Management                    | United Kingdom | \$5,592     |
| China Southern Asset Management (CSAM)                   | China          | \$21        |
| China Structural Reform Fund Corporation Limited         | China          | \$97        |
| CI Financial   | Canada         | \$114       |
| CIBC   | Canada         | \$176       |
| Cincinnati Financial                                     | United States  | \$15        |
| Citadel  | United States  | \$308       |

|  |                      |          |
|--|----------------------|----------|
| Crédit Agricole                            | France               | \$1,744  |
| D.E. Shaw & Co.                            | United States        | \$47     |
| Dai-ichi Life                              | Japan                | \$25     |
| Deka Group                                 | Germany              | \$718    |
| Diamond Hill Investment Group              | United States        | \$232    |
| Dimensional Fund Advisors                  | United States        | \$1,785  |
| Dodge & Cox                                | United States        | \$3,201  |
| Empyrean Capital Partners                  | United States        | \$102    |
| Equitable Holdings                         | United States        | \$892    |
| Exor                                       | Netherlands          | \$464    |
| Farallon Capital Management                | United States        | \$53     |
| Fidelity International                     | United States        | \$448    |
| Fidelity Investments                       | United States        | \$15,297 |
| Findlay Park Partners                      | United Kingdom       | \$190    |
| First Eagle Investment Management          | United States        | \$590    |
| First Seafont Fund Management              | China                | \$26     |
| First Trust Advisors                       | United States        | \$370    |
| Fisher Investments                         | United States        | \$1,891  |
| Focus Financial Partners                   | United States        | \$149    |
| Franklin Resources                         | United States        | \$7,552  |
| Fullgoal Fund Management                   | China                | \$29     |
| Gabelli Funds                              | United States        | \$186    |
| Geode Capital Holdings                     | United States        | \$13,865 |
| Goldman Sachs                              | United States        | \$342    |
| Government Pension Fund Global (GFPG)      | Norway               | \$4,874  |
| Government Pension Investment Fund (GPIF)  | Japan                | \$3,825  |
| GQG Partners                               | United States        | \$287    |
| Groupe BPCE                                | France               | \$3,142  |
| Guardian Life Insurance Company of America | United States        | \$87     |
| Guggenheim Capital                         | United States        | \$20     |
| HDFC Bank                                  | India                | \$240    |
| Hotchkis & Wiley Capital Management        | United States        | \$142    |
| Hubei Juyuan Technology Investment         | China                | \$56     |
| Invesco                                    | United States        | \$7,573  |
| Invest AD                                  | United Arab Emirates | \$8      |
| Jackson Financial                          | United States        | \$33     |
| Janus Henderson                            | United Kingdom       | \$1,115  |
| JPMorgan Chase                             | United States        | \$7,652  |
| Kotak Mahindra Bank                        | India                | \$40     |
| Kryger Capital                             | United Kingdom       | \$103    |
| Lalitabai Lalchand Charity                 | India                | \$0      |
| Lazard                                     | Bermuda              | \$1,096  |
| Legal & General                            | United Kingdom       | \$3,602  |
| Life Insurance Corporation of India        | India                | \$47     |
| Lord, Abbett & Co                          | United States        | \$165    |
| LSV Asset Management                       | United States        | \$359    |
| M&G  | United Kingdom       | \$421    |
| Macquarie Group                            | Australia            | \$606    |

|                                    |                |          |
|------------------------------------|----------------|----------|
| Magnetar Capital Partners          | United States  | \$93     |
| Manulife Financial                 | Canada         | \$160    |
| MassMutual Holdings                | United States  | \$150    |
| Masters Capital Management         | United States  | \$30     |
| Mawer Investment Management        | Canada         | \$506    |
| Max Financial Services             | India          | \$70     |
| MetLife                            | United States  | \$144    |
| Millennium Management              | United States  | \$259    |
| Minnesota Mutual Companies         | United States  | \$10     |
| Morgan Stanley                     | United States  | \$9,098  |
| National Pension Service           | South Korea    | \$776    |
| National Western Life Group        | United States  | \$19     |
| Nationwide Mutual Insurance        | United States  | \$122    |
| Neuberger Berman                   | United States  | \$93     |
| New York Life Insurance            | United States  | \$12     |
| Newport Group                      | United States  | \$14,310 |
| Ninety One                         | South Africa   | \$236    |
| Northern Trust                     | United States  | \$4,048  |
| Northhill Capital                  | United Kingdom | \$468    |
| Northwestern Mutual                | United States  | \$161    |
| Nuance Investments                 | United States  | \$63     |
| Ontario Teachers' Pension Plan     | Canada         | \$414    |
| Orbis Group                        | Bermuda        | \$524    |
| Orix Corporation                   | Japan          | \$1,153  |
| Owl Creek Asset Management         | United States  | \$27     |
| Passionate Investment Management   | India          | \$26     |
| Pendal Group                       | Australia      | \$112    |
| Pensioenfonds Detailhandel         | Netherlands    | \$7      |
| Pentwater Capital Management       | United States  | \$198    |
| PFA Group                          | Denmark        | \$26     |
| Point72                            | United States  | \$39     |
| Power Corporation of Canada        | Canada         | \$592    |
| Primecap Management                | United States  | \$2,054  |
| Principal Financial Group          | United States  | \$25     |
| Prudential Financial (US)          | United States  | \$330    |
| PSquared Asset Management          | Switzerland    | \$56     |
| Raven's Wing Asset Management      | United States  | \$6,086  |
| Raymond James Financial            | United States  | \$178    |
| Renaissance Technologies           | United States  | \$37     |
| Royal Bank of Canada               | Canada         | \$2,289  |
| Royal London Group                 | United Kingdom | \$55     |
| Ruane, Cunniff & Goldfarb          | United States  | \$538    |
| Rubric Capital Management          | United States  | \$101    |
| Sanders Capital                    | United States  | \$2,674  |
| Schroders                          | United Kingdom | \$143    |
| SEI                                | United States  | \$65     |
| Select Equity Partners             | United States  | \$522    |
| Silchester International Investors | United Kingdom | \$993    |
| Smith Capital Investors            | United States  | \$9      |

|  |               |                  |
|--|---------------|------------------|
| Sociedad Estatal de Participaciones Industriales | Spain         | \$4,680          |
| Sound Shore Management                           | United States | \$83             |
| Southern Farm Bureau Life Insurance              | United States | \$11             |
| State Farm                                       | United States | \$378            |
| State Street                                     | United States | \$55,503         |
| Steel Partners Holdings                          | United States | \$155            |
| Sun Life Financial                               | Canada        | \$8,733          |
| Sundarm Finance Group                            | India         | \$9              |
| T. Rowe Price                                    | United States | \$6,703          |
| The Hartford                                     | United States | \$126            |
| Third Point                                      | United States | \$161            |
| Thornburg Investment Management                  | United States | \$18             |
| Thrivent Financial                               | United States | \$50             |
| TIAA   | United States | \$4,600          |
| Toronto-Dominion Bank                            | Canada        | \$212            |
| Two Sigma Investments                            | United States | \$1,281          |
| UBS  | Switzerland   | \$2,705          |
| UBS SDIC Fund Management Co                      | China         | \$21             |
| Unum Group                                       | United States | \$50             |
| Van Eck Associates Corporation                   | United States | \$75             |
| Vanguard   | United States | \$72,487         |
| Victory Capital                                  | United States | \$953            |
| Virtus Investment Partners                       | United States | \$123            |
| Water Island Capital                             | United States | \$63             |
| Wellington Management                            | United States | \$18,712         |
| Wells Fargo                                      | United States | \$4,542          |
| Westchester                                      | United States | \$117            |
| White Mountains Insurance                        | Bermuda       | \$137            |
| White Oak Capital Management                     | India         | \$15             |
| Woodline Partners                                | United States | \$85             |
| <b>GRAND TOTAL</b>                               |               | <b>\$476,843</b> |

TABLE 6: FULL LIST OF LENDERS AND UNDERWRITERS. ALL FIGURES IN USD MILLIONS

| INSTITUTION                            | COUNTRY        | LOANS AND UNDERWRITING |
|--|----------------|------------------------|
| Academy Securities                     | United States  | \$309                  |
| Ally Financial                         | United States  | \$52                   |
| Alter Domus                            | Luxembourg     | \$205                  |
| Amerivet Securities Inc                | United States  | \$7                    |
| ANZ                                    | Australia      | \$1,868                |
| Apple Financial Holdings               | United States  | \$24                   |
| Arab Banking Corporation (Bank ABC)    | Bahrain        | \$58                   |
| Banca Monte dei Paschi di Siena        | Italy          | \$88                   |
| Banca Passadore & C.                   | Italy          | \$88                   |
| Banca Popolare di Sondrio              | Italy          | \$158                  |
| Banco Bilbao Vizcaya Argentaria (BBVA) | Spain          | \$3,301                |
| Banco BPM                              | Italy          | \$350                  |
| Banco de Sabadell                      | Spain          | \$10                   |
| Bancroft Capital (PA)                  | United States  | \$23                   |
| Bank of America                        | United States  | \$21,838               |
| Bank of China                          | China          | \$1,436                |
| Bank of New York Mellon                | United States  | \$1,082                |
| Barclays                               | United Kingdom | \$6,487                |
| BayernLB                               | Germany        | \$999                  |
| Blaylock Beal Van                      | United States  | \$56                   |
| BMO Financial Group                    | Canada         | \$1,470                |
| BNP Paribas                            | France         | \$11,382               |
| BPER Banca                             | Italy          | \$279                  |
| Cabrera Capital                        | United States  | \$4                    |
| Caisse des Dépôts et Consignations     | France         | \$143                  |
| Capital One Financial                  | United States  | \$1,147                |
| Cassa Depositi e Prestiti              | Italy          | \$221                  |
| CastleOak Securities                   | United States  | \$60                   |
| Cathay General Bancorp                 | United States  | \$138                  |
| Chang Hwa Commercial Bank              | Taiwan         | \$10                   |
| China Merchants Bank                   | China          | \$1,315                |
| CIBC                                   | Canada         | \$496                  |
| CITIC                                  | China          | \$1,225                |
| Citigroup                              | United States  | \$23,685               |
| Citizens Financial Group               | United States  | \$478                  |
| CL King & Associates                   | United States  | \$12                   |
| Comerica                               | United States  | \$440                  |
| Commerzbank                            | Germany        | \$2,830                |
| Commonwealth Bank of Australia         | Australia      | \$213                  |
| Crédit Agricole                        | France         | \$8,274                |
| Crédit Mutuel                          | France         | \$1,482                |
| CSC Financial                          | China          | \$303                  |
| Danske Bank                            | Denmark        | \$271                  |
| DBS                                    | Singapore      | \$2,039                |
| Deutsche Bank                          | Germany        | \$7,833                |
| Donghai Securities                     | China          | \$6                    |
| Drexel Hamilton                        | United States  | \$27                   |

|   |                      |          |
|---|----------------------|----------|
| DZ Bank                                 | Germany              | \$321    |
| EFG International                       | Switzerland          | \$51     |
| European Investment Bank                | Luxembourg           | \$2,947  |
| Export-Import Bank of the United States | United States        | \$350    |
| Fifth Third Bancorp                     | United States        | \$1,284  |
| First Abu Dhabi Bank                    | United Arab Emirates | \$1,951  |
| First Bancorp                           | United States        | \$4      |
| First Capital Securities                | China                | \$6      |
| First Horizon                           | United States        | \$201    |
| FNB Corporation                         | United States        | \$35     |
| Fuyo General Lease                      | Japan                | \$150    |
| Goldman Sachs                           | United States        | \$10,250 |
| Great Pacific Securities                | United States        | \$4      |
| Groupe BPCE                             | France               | \$1,717  |
| Hancock Whitney                         | United States        | \$149    |
| HSBC                                    | United Kingdom       | \$3,870  |
| Hua Nan Financial                       | Taiwan               | \$10     |
| Hubei Bank                              | China                | \$6      |
| Hull Street CLO                         | Cayman Islands       | \$2      |
| Huntington Bancshares                   | United States        | \$3      |
| ICICI Bank                              | India                | \$181    |
| Industrial and Commercial Bank of China | China                | \$1,412  |
| ING Group                               | Netherlands          | \$321    |
| Intesa Sanpaolo                         | Italy                | \$1,010  |
| Jarden                                  | New Zealand          | \$144    |
| Jefferies Financial Group               | United States        | \$18     |
| JPMorgan Chase                          | United States        | \$20,451 |
| KeyCorp                                 | United States        | \$46     |
| KfW                                     | Germany              | \$178    |
| KKR Group                               | United States        | \$2,097  |
| La Banque Postale                       | France               | \$143    |
| La Caixa Group                          | Spain                | \$111    |
| Legend Holdings                         | China                | \$6      |
| Lloyds Banking Group                    | United Kingdom       | \$2,853  |
| Lone Star Funds                         | United States        | \$79     |
| Loop Capital                            | United States        | \$83     |
| Macquarie Group                         | Australia            | \$1,290  |
| Mediobanca Banca di Credito Finanziario | Italy                | \$138    |
| Mega Financial                          | Taiwan               | \$10     |
| MFR                                     | United States        | \$43     |
| Mischler Financial Group                | United States        | \$52     |
| Mitsubishi UFJ Financial                | Japan                | \$10,106 |
| Mizuho Financial                        | Japan                | \$11,720 |
| Morgan Stanley                          | United States        | \$7,957  |
| NatWest                                 | United Kingdom       | \$1,688  |
| Northern Trust                          | United States        | \$2,924  |
| Northwestern Mutual                     | United States        | \$616    |
| Opus Corporate Finance LLP              | United Kingdom       | \$37     |

|                                 |                |                  |
|---------------------------------|----------------|------------------|
| Penserra Capital Management     | United States  | \$12             |
| Penserra Securities             | United States  | \$4              |
| People's United Financial       | United States  | \$34             |
| PNC Financial Services          | United States  | \$3,625          |
| R. Seelaus & Co                 | United States  | \$41             |
| Regions Financial               | United States  | \$978            |
| Riyad Bank                      | Saudi Arabia   | \$1,972          |
| Royal Bank of Canada            | Canada         | \$6,676          |
| Santander                       | Spain          | \$4,977          |
| SAR Holdings                    | United States  | \$35             |
| Scotiabank                      | Canada         | \$4,377          |
| Shank Williams Cisneros & Co    | United States  | \$72             |
| Shenwan Hongyuan Group          | China          | \$6              |
| Silvermore CLO                  | Cayman Islands | \$2              |
| Skandinaviska Enskilda Banken   | Sweden         | \$1,125          |
| SMBC Group                      | Japan          | \$9,929          |
| Société Générale                | France         | \$4,546          |
| Standard Bank                   | South Africa   | \$64             |
| Standard Chartered              | United Kingdom | \$2,602          |
| State Bank of India             | India          | \$583            |
| State Street                    | United States  | \$661            |
| Stifel Financial                | United States  | \$15             |
| Sun Life Financial              | Canada         | \$482            |
| Taiwan Business Bank            | Taiwan         | \$8              |
| Taiwan Cooperative Financial    | Taiwan         | \$12             |
| Taiwan Financial Holding        | Taiwan         | \$18             |
| Toronto-Dominion Bank           | Canada         | \$5,151          |
| Truist Financial                | United States  | \$779            |
| UBS                             | Switzerland    | \$3,515          |
| UniCredit                       | Italy          | \$4,338          |
| United Bankshares               | United States  | \$27             |
| US Bancorp                      | United States  | \$6,145          |
| Veritas Capital Fund Management | United States  | \$385            |
| VTB Group                       | Russia         | \$3,000          |
| Wells Fargo                     | United States  | \$15,448         |
| Westpac                         | Australia      | \$1,215          |
| Zions Bancorporation            | United States  | \$46             |
| <b>GRAND TOTAL</b>              |                | <b>\$276,155</b> |





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