- Executive Summary -

# Financing meat, dairy and feed production

## Bank of America, Citigroup, and JP Morgan Chase face financial risks

**Gerard Rijk, Léa Pham Van**

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## About this executive summary

This executive summary is based on a report commissioned by Friends of the Earth US. The content is solely the responsibility of Profundo and does not necessarily reflect the views of Friends of the Earth US.

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## Authorship

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# Key Findings

Climate risk is financial risk. And U.S. banks are increasingly under pressure from policymakers, investors, and civil society to minimize this risk by reducing the greenhouse gas (GHG) emissions attributable to the loans, underwriting, investments, and other financial services they provide.

Bank of America (BofA), Citigroup (Citi), and JPMorgan Chase (JPMC) are among the largest U.S. banks that have responded to these demands by joining the Net Zero Banking Alliance (NZBA) and committing to align emissions from their lending and investment portfolios with pathways to net zero.[1] While agriculture is among the high-emitting sectors for which NZBA signatories are required to set 2050 net zero targets, no bank has taken this critical step.

Within the agriculture sector, corporations involved in meat, dairy, and feed production are among the world's highest emitting. And BofA, Citi, and JPMC (the "Big Three" in this analysis) are among the companies' largest U.S.-based lenders. In their April 2024 report *Bull in the Climate Shop: Industrial livestock financing sabotages major U.S. banks' climate commitments*, Friends of the Earth US and Profundo reported that of the US$134B in loans and underwriting from U.S.-based banks to the world's largest meat, dairy, and feed corporations between 2016 and 2023, 57% (US$ 74B), was provided, arranged, or issued by the Big Three.[2]

While the US$ 74B+ in financing provided by the Big Three constituted a minor fraction of the banks' overall lending and underwriting, it provided significant support for the expansion of industrial livestock production and had a major impact on the banks' financed emissions. The Big Three's lending to corporations reviewed for the report represented just 0.25% of the banks' total loans outstanding but roughly 11% of their reported financed emissions.[3] Among the key implications of these findings are:

(1) The Big Three's collective failure to address ~11% of their financed emissions undermines the credibility of their public commitments to "transition the operational and attributable emissions from their lending and investment portfolios to align with pathways to net-zero."[4]
(2) Curtailing lending to and investment in corporations involved in meat, dairy, and feed production would impact a tiny fraction of the banks' lending portfolios while resulting in significant financed emissions reductions.

This report builds on the findings from *Bull in the Climate Shop* by analyzing the financial risks for the Big Three associated with the banks' continued lending to and investment in 31 of the world's largest meat, dairy and feed corporations (see Appendix I). The analysis calculates the corporations' potential climate-related losses and translates these into potential losses for the Big Three.

## Findings at a Glance

- In the near term (to 2030), the **31 meat, dairy, and feed corporations reviewed for this report could face US$116B in losses, putting US$ 0.43B to US$ 1.12B of the banks' loans and investments in the 31corporations at risk**
- In the long term (to 2050), the **31 meat, dairy, and feed corporations face total climate-related financial risk in the range of US$ 536B to US$ 5,415B**.

    - At the low end, **total financial risk comprises a major part of the 31 companies' US$ 725B in equity value and US$ 932B in enterprise value**

    - At the high end, **potential losses could exceed the 31 corporations' equity value by 7.5X and enterprise value by 5.8X**

- In the long term, **the Big Three banks face much higher financial risks,** ranging from US$2.5B to US$9.3B of their US$10.4B outstanding financing to the 31 companies[i]

- **Even in scenarios where the 31 corporations' revenues increase by 16%-25%, the costs of carbon could outstrip gains and negatively impact the corporations' EBITDA and/or value,** putting 24% - 91% of the Big Three's loans and investments at risk[ii]

- For the Big Three, **ending financing to the 31 corporations in the near-term (as soon as current loans are redeemed), would reduce climate-related financing risk by 83% to 95%**

## Recommendations

The data is clear: climate risk is financial risk. By significantly curtailing or ending financing to a small number of high-emitting companies in the agricultural sector, the Big Three and any other lenders or investors in the sector can limit exposure to climate-related losses and make significant progress on their net zero commitments.

Importantly however, climate-related risks are not the end of the story. Corporations involved In meat, dairy and/or feed production face additional regulatory, reputational, and operational risks associated with other negative environmental and social impacts.[5] These include:

- Deforestation and biodiversity loss
- Air, land and water pollution
- Freshwater depletion
- Antimicrobial resistance
- Infectious diseases, including zoonotic pandemics
- Food insecurity
- Human rights violations, including against Indigenous communities
- Animal cruelty

Calculating the financial risks associated with these impacts is beyond the scope of this report. However, all such risks should factor into a comprehensive analysis of potential losses to financiers of corporations involved in meat, dairy, and feed production. The negative environmental and social impacts of industrial livestock production are already being scrutinized by regulators, investors, and consumers. Such scrutiny will only increase — and combine with intensifying physical risks — as the polycrisis[6] worsens.

Financiers of meat, dairy and feed corporations are already facing pressure from investors[7] and civil society[8] to address their role in the global expansion of industrial, extractive agricultural practices based on the incompatibility of this expansion with public and private sector sustainability goals.

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[ii] Total value (US$ 10.4B) of lending and investments as of 12/31/22.

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While continued support for industrial livestock production involves financial risks for the Big Three, the reality is that U.S. banks' support for the continued expansion of industrial livestock extends well beyond portfolio returns and enterprise value to the broader climate system, the stability of financial markets, and the long-term portfolio returns on which global economic growth ultimately relies.

Given the fierce urgency of the climate crisis, it is incumbent on all financial actors — who themselves rely on a sustainable and relatively stable global economy — to acknowledge the role of industrial livestock production in warming the planet and driving concurrent market-disrupting environmental and social disasters.

Beginning now, the Big Three must take swift and meaningful action to reduce — and ultimately eliminate — financed and facilitated emissions from corporations involved in meat, dairy, and/or feed production. Taking action on a tiny portion of their portfolios will have an outsized impact on the banks' ability to honor their net zero commitments, comply with existing and forthcoming climate and sustainability-related regulations, and align their lending and investment activities with the Paris Agreement, Global Methane Pledge, and international initiatives supporting sustainable and resilient agriculture.[9]

## Key Actions for the Big Three

**Curtail and ultimately halt financing that enables the expansion of industrial livestock production, including by:**

a. Not issuing new corporate or project-based financing or revolving credit facilities to corporations involved in meat, dairy or feed production
b. Not renewing any existing loans or facilities to such corporations
c. Not underwriting bonds, IPOs, or secondary offerings of such corporations
d. Halting new investment in such corporations' publicly traded securities

**Until banks halt financing that supports the global expansion of industrial meat, dairy and feed production, they should require that clients involved in such production disclose third-party verified 1.5°C targets and action plans that align with IPCC or an equivalent science-based sectoral pathway. At a minimum, banks should require that these clients:**

a. Disclose 100% of their disaggregated ($CH_4$, $CO_2$, $N_2O$) GHG emissions across all Scopes (1-3)
b. Set and disclose near-term and long-term timebound absolute reduction targets for $CH_4$, $CO_2$, $N_2O$
c. Prioritize reduction of $CH_4$ and adopt absolute $CH_4$ emissions reductions of at least 30% from 2020 levels by 2030 (to align with the Global Methane Pledge)[10]
d. Achieve emissions reductions by reducing the number of animals in global supply chains and without reliance on carbon offsets, credits or similar mechanisms[11]

# Executive Summary

Climate risk is financial risk. And U.S. banks are increasingly under pressure from policymakers, investors, and civil society to minimize this risk by reducing the greenhouse gas (GHG) emissions attributable to the loans, underwriting, investments, and other financial services they provide.

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Within the agriculture sector, corporations involved in meat, dairy, and feed production are among the world's highest emitting. And BofA, Citi, and JPMC (the "Big Three" in this analysis) are among the companies' largest U.S.-based lenders. In their April 2024 report *Bull in the Climate Shop: Industrial livestock financing sabotages major U.S. banks' climate commitments*, Friends of the Earth U.S. and Profundo reported that of the US$134B in loans and underwriting from U.S.-based banks to the world's largest meat, dairy, and feed corporations between 2016 and 2023, 57% (US$ 74B), was provided, arranged, or issued by the Big Three.[13]

While the US$ 74B+ in financing provided by the Big Three constituted a minor fraction of the banks' overall lending and underwriting, it provided significant support for the expansion of industrial livestock production and had a major impact on the banks' financed emissions. The Big Three's lending to corporations reviewed for the report represented just 0.25% of the banks' total loans outstanding but roughly 11% of their reported financed emissions.[14] Among the key implications of these findings are:

(1) The Big Three's collective failure to address ~11% of their financed emissions undermines the credibility of their public commitments to "transition the operational and attributable emissions from their lending and investment portfolios to align with pathways to net-zero."[15]
(2) Curtailing lending to and investment in corporations involved in meat, dairy, and feed production would impact a tiny fraction of the banks' lending portfolios while resulting in significant financed emissions reductions.

This report builds on the findings from *Bull in the Climate Shop* by analyzing the financial risks for the Big Three associated with the banks' continued lending to and investment in 31 of the world's largest meat, dairy and feed corporations (see Appendix I). The analysis calculates the corporations' potential climate-related losses and translates these into potential losses for the Big Three.

## Key Findings

**In the near term (to 2030), the 31 corporations profiled for this report could face US$ 116B in losses, representing 44% of their gross debt.** For the Big Three, this translates to financial risk in the range of US$ 0.43B to US$ 1.12B, representing roughly 4% - 10% of the banks' total loans outstanding to the 31 companies as of 12/31/2022.[iii]

**In the long term (to 2050), the 31 meat, dairy and feed corporations profiled for this report face a total climate-related financial risk in the range of US$ 536B to US$ 5,415B.** Even at the low end,

[iii] Risks to publicly traded bonds and equities were not calculated in the near term.

total financial risk comprises a major part of the 31 companies' US$ 725B in equity value and US$ 932B in enterprise value.[iv]

The corporations' losses translate into significant long-term risk for the Big Three. **The banks face risks in the range of US$ 2.5B to US$ 9.3B of their US$ 10.4B (24% - 91%) of their outstanding financing to the 31 companies** as of 12/31/22.

Because the long-term risks of financing corporations involved in meat, dairy and feed production are significantly higher than the near-term risks, **ending financing** to the meat, dairy and feed corporations reviewed for this report **in the near term would reduce climate-related risks to the Big Three's financing by 83% to 95%.**[v]

## Key Valuation and Investment Data

**Meat, dairy and feed corporations reviewed for this report**:

Between 2016 and 2023, the 31 corporations received US$ 74B of loans and underwriting services from the Big Three banks. As of 12/31/22, the Big Three had US$ 7.1B in outstanding loans in the 31 companies, US$ 3.2B in shares , and US$ 0.12B in outstanding bonds.

- As of 12/31/22, the total enterprise value of the 31 companies was US$ 932B. The enterprise value includes, among others, the equity value of US$ 725B and gross debt of US$ 264B.
- In 2022, the 31 companies had net revenues of US$ 1,072B (2022), and EBITDA (Earnings Before Interest, Tax payments, Depreciation, and Amortisation) of US$ 88B.

**Table 1 Key data for the meat, dairy and feed corporations reviewed for this report**

| US$B | 2022 |
|---|---|
| Revenues | 1,072.2 |
| EBITDA | 87.9 |
| Fixed assets | 380.0 |
| Gross debt | 263.5 |
| Cash | 69.8 |
| Market capitalisation | 725.2 |
| Enterprise value | 932.0 |

Source: Profundo. Enterprise value of privately owned companies are pro forma calculated using sector-relevant valuation multiples.

**Big Three investments in the 31 meat, dairy and feed corporations reviewed for this report:**

As of 31 December 2022, the Big Three had an outstanding financial exposure of US$ 10,395 million (= US$ 10.4B) to the 31 corporations reviewed for this report. Of the total outstanding financing, 68% was in loans, 31% in shares, and 1% in bonds.

[iv] Figures are as of 12/31/2022.

[v] This report has not calculated the financial risks related to biodiversity loss or the impact of meat and dairy production and consumption on human health or human rights. These financial damages and risks would increase total financial risks.

**Table 2 Big Three climate-related financing of the 31 meat, dairy and feed corporations**

| US$ million | Bank of America | Citigroup | JPMorgan Chase | Total | As % of total |
|---|---|---|---|---|---|
| Outstanding loans | 2,889.9 | 2,277.1 | 1,908.1 | 7,075.1 | 68.1% |
| Shares | 469.2 | 110.2 | 2,617.0 | 3,196.4 | 30.8% |
| Bonds | 0.4 | 0.0 | 122.9 | 123.3 | 1.2% |
| Total | 3,359.5 | 2,387.3 | 4,648.0 | 10,394.8 | 100.0% |
| As % of total | 32.3% | 23.0% | 44.7% | 100.0% | |
| Total in US$B | 3.4 | 2.4 | 4.6 | 10.4 | |
| Total portfolio (US$B) | 1,045.7 | 640.2 | 1,135.6 | 2,821.6 | |
| Meat, dairy and feed corporations financing as % of total portfolio | 0.3% | 0.4% | 0.4% | 0.4% | |

Source: Profundo

## Near-term climate-related risks explained

**In the near term (to 2030), the 31 corporations profiled for this report could face US$ 116B in losses,** representing 44% of the companies' total debt as of 12/31/22. **For the Big Three, this translates into US$ 0.43B to US$ 1.12B of financial risk,** or 4% - 11% of their total outstanding loans to the 31 corporations as of that date.

**For the 31 corporations, near-term climate-related financial risk lies in the deterioration of the meat, dairy and feed corporations' EBITDA** (Earnings Before Interest, Depreciation and Amortisation), owing to two primary factors:

- Market access: increasing or declining consumer demand
- Rising feed costs attributable to climate change-related supply chain risks (bad harvests)

These factors are likely to impact the 31 corporations' EBITDA. Companies dealing with declining EBITDA may struggle to repay existing debt when their net debt/EBITDA ratio > 5. In the period that a loan is outstanding, banks might be confronted with a deferral of payments on debt.

Adding to impacts on EBITDA, either of these climate-related factors could negatively affect the value of any of the 31 meat, dairy or feed corporations, the value of the companies' shares, and/or the value of their debt (loans and bonds). Decreases in value would negatively impact banks' debt and/or equity investments.

To calculate potential near-term losses to the 31 corporations and the Big Three, we considered the following four scenarios:

| US$B | Scenario A1 | Scenario A2 | Scenario B1 | Scenario B2 |
|---|---|---|---|---|
| Description | Declining demand, EBITDA margin -4%-points | Declining demand, EBITDA margin -4%-points | Increasing demand, EBITDA margin -2%-points | Increasing demand, EBITDA margin -2%-points |

**In the scenario with declining volume (A1), the group of 31 companies' net debt/EBITDA ratio would deteriorate from 2.2x (existing situation) to 4.2x.** While the average ratio of 4.2x could suggest there is little to no near-term debt-related risk, more than 40% the companies' net debt/EBITDA ratios exceed 5x. **For an additional 10% of companies, near-term EBITDA projections are negative, putting 100% of their debt at risk.**

**In the scenario where demand for meat and dairy continues to rise (B1), the risks are lower, though not eliminated altogether.** On average, the 31 companies' net debt/EBITDA ratios could improve slightly from 2.2x (existing situation) to 2.1x (pro forma) because the higher EBITDA from market growth would exceed the negative EBITDA impact from higher feed costs. **Despite increasing revenues, 16% of companies still face net debt/EBITDA ratios higher than 5x, putting their debt at risk.**

See below for details of the near-term risk analysis.

### Table 3 Near-term climate-related financial risk to the 31 meat, dairy and feed corporations

| US$B | Scenario A1 | Scenario A2 | Scenario B1 | Scenario B2 |
|---|---|---|---|---|
| Description | Declining demand, EBITDA margin impact high* | Declining demand, EBITDA margin impact high* | Increasing demand, EBITDA margin impact low* | Increasing demand, EBITDA margin impact low* |
| **Existing** | | | | |
| Gross debt | 263.5 | 263.5 | 263.5 | 263.5 |
| Net debt | 193.8 | 193.8 | 193.8 | 193.8 |
| EBITDA 2022 | 87.9 | 87.9 | 87.9 | 87.9 |
| Net debt/EBITDA (x) | 2.2 | 2.2 | 2.2 | 2.2 |
| Value at risk in existing situation | 59.7 | 59.7 | 59.7 | 59.7 |
| **Additional risk** | | | | |
| Annualized impact market access risk | -13.2 | -13.2 | 18.5 | 18.5 |
| Annualized impact operational risk | -28.6 | -28.6 | -14.3 | -14.3 |
| **Pro forma** | | | | |
| EBITDA, including risks | 46.1 | 46.1 | 92.1 | 92.1 |
| Net debt/EBITDA (x) | 4.2 | 4.2 | 2.1 | 2.1 |
| Value at risk | 116.0 | 116.0 | 62.0 | 62.0 |
| % of gross debt | 44.0% | 44.0% | 23.5% | 23.5% |

| US$B | Scenario A1 | Scenario A2 | Scenario B1 | Scenario B2 |
|---|---|---|---|---|
| Additional risk | 56.3 | 56.3 | 2.3 | 2.3 |
| % of gross debt | 21.4% | 21.4% | 0.9% | 0.9% |

Source: Profundo: The focus of further analysis is on the outcome "excluding stranded assets" as this value affects companies' cash flows. "Stranded assets" do not affect future cash flows as the investments have already been spent in earlier years and decades.
*No EBITDA margin impacts at agri-commodity traders.

In scenarios A1 and A2, Bank of America face risks on 21.5% of its loans to corporations involved in meat, dairy and feed production. Citigroup sees a risk for 6.6% of its loans to these corporations; JPMC sees a risk of 5.3%.[vi]

**Table 4 Risks to Big Three lending and investment to the 31 meat, dairy and feed corporations**

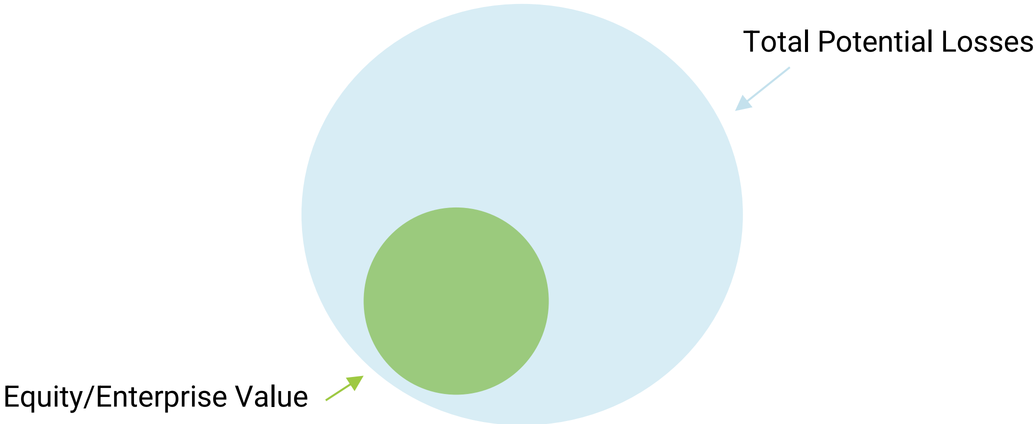
| US$B | Scenario A1 | Scenario A2 | Scenario B1 | Scenario B2 |
|---|---|---|---|---|
| Description | Declining demand, EBITDA margin -4%-points | Declining demand, EBITDA margin -4%-points | Increasing demand, EBITDA margin -2%-points | Increasing demand, EBITDA margin -2%-points |
| Bank of America | 0.72 | 0.72 | 0.24 | 0.24 |
| Citigroup | 0.16 | 0.16 | 0.04 | 0.04 |
| JPMorgan Chase | 0.24 | 0.24 | 0.15 | 0.15 |
| Total | 1.12 | 1.12 | 0.43 | 0.43 |
| **% of loan portfolio to 31 corporations** | | | | |
| Bank of America | 21.5% | 21.5% | 7.2% | 7.2% |
| Citigroup | 6.6% | 6.6% | 1.5% | 1.5% |
| JPMorgan Chase | 5.3% | 5.3% | 3.3% | 3.3% |
| Total | 10.9% | 10.9% | 4.2% | 4.2% |
| **% of total portfolio** | | | | |
| Bank of America | 0.07% | 0.07% | 0.02% | 0.02% |
| Citigroup | 0.02% | 0.02% | 0.01% | 0.01% |
| JPMorgan Chase | 0.02% | 0.02% | 0.01% | 0.01% |
| Total | 0.04% | 0.04% | 0.02% | 0.02% |

Source: Profundo

[vi] Risks to publicly traded bonds and equities were not calculated in the near term.

## Long-term climate-related risks explained

**In the long term, the 31 meat, dairy and feed corporations profiled for this report face a total climate-related financial risk in the range of US$ 536B (Scenario B1) to US$ 5,415B (Scenario B2).**




Even at the low end of the risk range (US$ 536B), potential losses comprise 74% of the current US$ 725B in equity value and 58% of the US$ 932B in enterprise value of the 31 corporations. At the high end (US$ 5,415B) potential losses comprise 747% of the corporations' equity value and 581% of their total enterprise value.

In the long term, the factors influencing climate-related financial risks to the 31 corporations and Big Three are more numerous than the factors influencing near term risk. In addition to higher feed costs and volume changes, meat, dairy and feed companies may be confronted with carbon taxes, higher interest rates, and reputation loss. Any or all of these factors may negatively impact EBITDA and the companies' net debt/EBITDA ratio, the value of shares, and the companies' ability to repay debt.

Long-term risk factors included in scenario analyses:

- Stranded assets
- Market access/declining consumer demand
- Higher feed costs
- Carbon taxes
- Interest rate/cost of capital increases
- Loss of reputation

To calculate potential long-term losses to the 31 corporations and the Big Three, we considered the following four scenarios:

| US$B | Scenario A1 | Scenario A2 | Scenario B1 | Scenario B2 |
|---|---|---|---|---|
| Description | Declining demand, low $CO_2e$ prices and interest rates raised by 0.25% | Declining demand, high $CO_2e$ prices and interest rates raised by 1% | Increasing demand, low $CO_2e$ prices and interest rates raised by 0.25% | Increasing demand, high $CO_2e$ prices and interest rates raised by 1% |

**In three of the four scenarios, the climate damage costs are a dominant contributor to the total financial risks (>84%).** In high $CO_2e$ price scenarios, revenue and profit growth do not outpace climate damage costs. In the high carbon cost scenarios, Scenario B2 (increased market access) losses exceed Scenario A2 (diminished market access). This is due to increased production-related climate damage costs.

Losses incurred by the 31 corporations would negatively impact shareholders (equity value) first. Impacts on the corporations' lenders would follow. But the magnitude of these potential losses means their impact could extend beyond the corporations' lenders and investors. **The risk range of US$ 536B (Scenario B1) to US$ 5,415B (Scenario B2) is between 2.0% and 19.8% of the USA's 2023 GDP (Gross Domestic Product of US$ 27.4 trillion).[16]**

The following table summarizes the four scenarios and the long-term financial risk facing the 31 meat, dairy and feed corporations reviewed for this report.

**Table 5 Summary of long-term climate-related financial risks for the 31 companies**

| US$B | Scenario A1 | Scenario A2 | Scenario B1 | Scenario B2 |
|---|---|---|---|---|
| Description* | Declining demand, low $CO_2e$ prices and interest rates raised by 0.25% | Declining demand, high $CO_2e$ prices and interest rates raised by 1% | Increasing demand, low $CO_2e$ prices and interest rates raised by 0.25% | Increasing demand, high $CO_2e$ prices and interest rates raised by 1% |
| Stranded assets risk | -57.0 | -57.0 | 0.0 | 0.0 |
| Market access risk | -188.2 | -188.2 | 290.4 | 290.4 |
| Operational risk: higher feed costs | -424.7 | -424.7 | -212.4 | -212.4 |
| Climate damage costs/liability | -387.1 | -4,429.3 | -464.6 | -5,314.0 |
| Financing risk | -9.8 | -39.1 | -9.8 | -39.1 |
| Reputation risk | -139.8 | -139.8 | -139.8 | -139.8 |
| Total risk including stranded assets** | -1,206.6 | -5,278.1 | -535.8 | -5,414.8 |
| Total risks excluding stranded assets** | -1,149.6 | -5,221.1 | -535.8 | -5,414.8 |

Source: Profundo

*In addition to the description of the distinguishing characteristics, every scenario included 15% reputation risk on market values of the companies, and scenarios A1 and A2 included an EBITDA margin impact of -4%-points, scenarios B1 and B2 -2%-points

** The focus of further analysis is on the outcome of "excluding stranded assets" as this value affects the cash flows of companies. "Stranded assets" do not affect future cash flows as the investments have already been spend in earlier years and decades.

**In the long term, the Big Three face risks in the range of US$ 2.5B to US$ 9.3B of their US$ 10.4B (24% - 91%) of their outstanding financing to the 31 corporations reviewed for this report.** At the total portfolio level, the financial risks represent 0.05% to 0.36% in the various scenarios for each of the three financial institutions.

**Table 6 Long-term risk: Big Three financing to 31 meat, dairy and feed corporations**

| US$B | Scenario A1 | Scenario A2 | Scenario B1 | Scenario B2 | Total outstanding |
|---|---|---|---|---|---|
| Description* | Declining demand, low $CO_2e$ prices | Declining demand, high $CO_2e$ prices | Increasing demand, low $CO_2e$ prices | Increasing demand, high $CO_2e$ prices | |

| US$B | Scenario A1 | Scenario A2 | Scenario B1 | Scenario B2 | Total outstanding |
|---|---|---|---|---|---|
| | and interest rates raised by 0.25% | and interest rates raised by 1% | and interest rates raised by 0.25% | and interest rates raised by 1% | |
| ***Bank of America*** | ***3.11*** | ***3.20*** | ***0.97*** | ***3.20*** | ***3.36*** |
| of which shares | 0.47 | 0.47 | 0.37 | 0.47 | 0.47 |
| of which loans | 2.64 | 2.73 | 0.60 | 2.73 | 2.89 |
| ***Citigroup*** | ***1.87*** | ***2.02*** | ***0.32*** | ***2.01*** | ***2.39*** |
| of which shares | 0.11 | 0.11 | 0.09 | 0.11 | 0.11 |
| of which loans | 1.76 | 1.91 | 0.23 | 1.90 | 2.28 |
| ***JPMorgan Chase*** | ***3.55*** | ***4.12*** | ***1.17*** | ***3.52*** | ***4.53*** |
| of which shares | 1.90 | 2.37 | 0.78 | 1.77 | 2.62 |
| of which loans | 1.65 | 1.75 | 0.39 | 1.75 | 1.91 |
| ***Three banks' total*** | ***8.52*** | ***9.34*** | ***2.46*** | ***8.73*** | ***10.27*** |
| of which shares | 2.48 | 2.95 | 1.23 | 2.35 | 3.20 |
| of which loans | 6.04 | 6.39 | 1.23 | 6.38 | 7.08 |

Source: Profundo

*In addition to describing the distinguishing characteristics, every scenario included a 15% reputation risk on the companies' market values. Scenarios A1 and A2 included an EBITDA margin impact of -4% points, and scenarios B1 and B2 -2% points.

**By ending financing to the 31 meat, dairy and feed corporations as soon as loans are redeemed, the Big Three can reduce risk by 83 to 95%.**[vii]

### Table 7 Long-term versus near-term risk of Big Three financing to meat, dairy and feed corporations

| US$B | Scenario A1 | Scenario A2 | Scenario B1 | Scenario B2 |
|---|---|---|---|---|
| Description* | Declining demand, low $CO_2e$ prices and interest rates raised by 0.25% | Declining demand, high $CO_2e$ prices and interest rates raised by 1% | Increasing demand, low $CO_2e$ prices and interest rates raised by 0.25% | Increasing demand, high $CO_2e$ prices and interest rates raised by 1% |
| **Long-term risk** | | | | |
| Bank of America | 3.11 | 3.20 | 0.97 | 3.20 |
| Citigroup | 1.87 | 2.02 | 0.32 | 2.01 |
| JPMorgan Chase | 3.55 | 4.12 | 1.17 | 3.52 |
| Total | 8.52 | 9.34 | 2.46 | 8.73 |

[vii] This report has not calculated the financial risks related to biodiversity loss or the impact of meat and dairy production and consumption on human health or human rights. These financial damages and risks would increase total financial risk

| US$B | Scenario A1 | Scenario A2 | Scenario B1 | Scenario B2 |
|---|---|---|---|---|
| **Near-term risk** | | | | |
| Bank of America | 0.72 | 0.72 | 0.24 | 0.24 |
| Citigroup | 0.16 | 0.16 | 0.04 | 0.04 |
| JPMorgan Chase | 0.24 | 0.24 | 0.15 | 0.15 |
| Total | 1.12 | 1.12 | 0.43 | 0.43 |
| **Early redemption risk reduction (US$B)**** | | | | |
| Bank of America | 2.38 | 2.48 | 0.73 | 2.96 |
| Citigroup | 1.71 | 1.86 | 0.28 | 1.98 |
| JPMorgan Chase | 3.31 | 3.88 | 1.02 | 3.37 |
| Total | 7.40 | 8.22 | 2.03 | 8.30 |
| **Early redemption risk reduction*** (%)** | | | | |
| Bank of America | 76.7% | 77.4% | 75.1% | 92.4% |
| Citigroup | 91.6% | 92.2% | 88.7% | 98.2% |
| JPMorgan Chase | 93.2% | 94.2% | 87.1% | 95.7% |
| Total | 86.9% | 88.0% | 82.5% | 95.1% |

Source: Profundo

* In addition to describing the distinguishing characteristics, the calculations for every long-term scenario included a 15% reputation risk on the companies' market values. Scenarios A1 and A2 included an EBITDA margin impact of -4% points, and scenarios B1 and B2 -2% points. For the medium-term scenario calculations, only declining/increasing demand and EBITDA margin changes were included.

**Long-term loss minus near-term loss

***The difference between long-term and near-term loss, divided by long-term loss

## Recommendations

The data is clear: climate risk is financial risk. By significantly curtailing or ending financing to a small number of high-emitting companies in the agricultural sector, the Big Three and any other lenders or investors in the sector can limit exposure to climate-related losses and make significant progress on their net zero commitments.

Importantly however, climate-related risks are not the end of the story. Corporations involved In meat, dairy and/or feed production face additional regulatory, reputational, and operational risks associated with other negative environmental and social impacts.[17] These include:

- Deforestation and biodiversity loss
- Air, land and water pollution
- Freshwater depletion
- Antimicrobial resistance
- Infectious diseases, including zoonotic pandemics
- Food insecurity
- Human rights violations, including against Indigenous communities
- Animal cruelty

Calculating the financial risks associated with these impacts is beyond the scope of this report. However, all such risks should factor into a comprehensive analysis of potential losses to financiers of corporations involved in meat, dairy, and feed production. The negative environmental and social impacts of industrial livestock production are already being scrutinized by regulators, investors, and consumers. Such scrutiny will only increase — and combine with intensifying physical risks — as the polycrisis[18] worsens.

Financiers of meat, dairy and feed corporations are already facing pressure from investors[19] and civil society[20] to address their role in the global expansion of industrial, extractive agricultural practices based on the incompatibility of this expansion with public and private sector sustainability goals. While continued support for industrial livestock production involves financial risks for the Big Three, the reality is that U.S. banks' support for the continued expansion of industrial livestock extends well beyond portfolio returns and enterprise value to the broader climate system, the stability of financial markets, and the long-term portfolio returns on which global economic growth ultimately relies.

Given the fierce urgency of the climate crisis, it is incumbent on all financial actors — who themselves rely on a sustainable and relatively stable global economy — to acknowledge the role of industrial livestock production in warming the planet and driving concurrent market-disrupting environmental and social disasters.

Beginning now, the Big Three must take swift and meaningful action to reduce — and ultimately eliminate — financed and facilitated emissions from corporations involved in meat, dairy, and/or feed production. Taking action on a tiny portion of their portfolios will have an outsized impact on the banks' ability to honor their net zero commitments, comply with existing and forthcoming climate and sustainability-related regulations, and align their lending and investment activities with the Paris Agreement, Global Methane Pledge, and international initiatives supporting sustainable and resilient agriculture.[21]

## Key Actions for the Big Three

**Curtail and ultimately halt financing that enables the expansion of industrial livestock production, including by:**

a. Not issuing new corporate or project-based financing or revolving credit facilities to corporations involved in meat, dairy or feed production
b. Not renewing any existing loans or facilities to such corporations
c. Not underwriting bonds, IPOs, or secondary offerings of such corporations
d. Halting new investment in such corporations' publicly traded securities

**Until banks halt financing that supports the global expansion of industrial meat, dairy and feed production, they should require that clients involved in such production disclose third-party verified 1.5°C targets and action plans that align with IPCC or an equivalent science-based sectoral pathway. At a minimum, banks should require that these clients:**

a. Disclose 100% of their disaggregated ($CH_4$, $CO_2$, $N_2O$) GHG emissions across all Scopes (1-3)
b. Set and disclose near-term and long-term timebound absolute reduction targets for $CH_4$, $CO_2$, $N_2O$
c. Prioritize reduction of $CH_4$ and adopt absolute $CH_4$ emissions reductions of at least 30% from 2020 levels by 2030 (to align with the Global Methane Pledge)[22]
d. Achieve emissions reductions by reducing the number of animals in global supply chains and without reliance on carbon offsets, credits or similar mechanisms[23]

## Abbreviations

| Abbreviation | Description |
|---|---|
| **EBITDA** | Earnings before interest, tax, depreciation, amortisation |
| **EBITDA margin** | EBITDA as percentage of revenues |
| **Enterprise value** | Equity value + net debt + minorities |
| **Equity value** | = market capitalisation |
| **Fixed assets** | Non-current assets like property, plant, equipment |
| **Gross debt** | Total of loans and bonds |
| **Market capitalisation** | Number of shares X share price |
| **Net debt** | Gross debt minus cash |

## Appendix 1 The 31 companies

| US$ million | Private/ listed | Revenues | EBITDA | EBITDA % | Fixed assets |
|---|---|---|---|---|---|
| **Meat companies:** | | **475,199** | **42,486** | ***8.9%*** | **190,148** |
| BRF - Brasil Foods | Listed | 10,442.19 | 562.25 | *5.4%* | 5,049.92 |
| Cargill | Private | 165,000.00 | 11,500.00 | *7.1%* | 39,994.00 |
| CP Group | Listed | 17,572.28 | 1,175.80 | *6.7%* | 13,065.84 |
| Fujian Sunner | Listed | 2,504.28 | 275.56 | *11.0%* | 2,649.86 |
| Guangdong Haid Group | Listed | 15,593.44 | 873.18 | *5.6%* | 3,694.00 |
| Guangdong Wens Foodstuff Group | Listed | 12,467.72 | 1,906.10 | *15.3%* | 10,827.43 |
| Industrias Bachoco | Listed | 4,924.09 | 520.58 | *10.6%* | 2,392.55 |
| JBS | Listed | 72,749.17 | 6,662.49 | *9.2%* | 22,308.70 |
| Marfrig | Listed | 25,352.29 | 2,956.53 | *11.7%* | 13,141.83 |
| Minerva | Listed | 6,012.00 | 536.84 | *8.9%* | 1,402.94 |
| Muyuan Foodstuff | Listed | 18,587.47 | 4,480.76 | *24.1%* | 22,827.76 |
| New Hope Group | Listed | 21,071.27 | 850.56 | *4.0%* | 12,252.34 |
| NH Foods | Listed | 10,261.73 | 640.28 | *6.2%* | 6,171.94 |
| Seaboard | Listed | 11,243.00 | 892.00 | *7.9%* | 4,435.00 |
| Tyson Foods | Listed | 53,282.00 | 5,639.00 | *10.6%* | 18,400.00 |
| WH Group | Listed | 28,136.00 | 3,014.00 | *10.7%* | 11,534.00 |
| **Dairy companies:** | | **240,779.83** | **32,992.58** | ***13.7%*** | **123,226.93** |
| Agropur | Private | 8,479.00 | 522.00 | *6.2%* | 2,322.23 |
| China Mengniu Dairy | Listed | 13,788.31 | 1,204.75 | *8.7%* | 6,607.16 |
| Danone | Listed | 29,140.30 | 4,998.93 | *17.2%* | 17,808.22 |
| DFA - Dairy Farmers of America | Private | 24,500.00 | 500.00 | *2.0%* | 5,723.57 |
| Fonterra Cooperative Group | Listed | 14,762.68 | 987.85 | *6.7%* | 7,756.88 |
| Inner Mongolia Yili | Listed | 18,341.18 | 2,080.19 | *11.3%* | 8,923.30 |
| FrieslandCampina | Private | 14,833.29 | 496.34 | *3.3%* | 3,413.26 |
| Glanbia | Listed | 5,944.15 | 474.49 | *8.0%* | 1,168.80 |
| Nestlé | Listed | 98,993.91 | 20,779.97 | *21.0%* | 63,998.27 |
| Saputo | Listed | 11,997.01 | 948.08 | *7.9%* | 5,505.24 |

| US$ million | Private/ listed | Revenues | EBITDA | EBITDA % | Fixed assets |
|---|---|---|---|---|---|
| **Trader or feed companies:** | | **356,230.89** | **12,434.53** | ***3.5%*** | **66,672.00** |
| ADM - Archer Daniels Midland | Listed | 101,556.00 | 5,348.00 | *5.3%* | 27,863.00 |
| Bunge | Listed | 67,232.00 | 2,826.00 | *4.2%* | 8,860.00 |
| COFCO Group | Private | 108,286.14 | 2,163.84 | *2.0%* | 23,412.30 |
| Land O'Lakes | Private | 19,225.75 | 446.70 | *2.3%* | 2,841.70 |
| Louis Dreyfus Company | Private | 59,931.00 | 1,650.00 | *2.8%* | 3,695.00 |
| **Total** | | **1,072,209.65** | **87,913,04** | ***8,2%*** | **380,047,02** |

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