Mining & Money – beta data – financial research methodology

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Introduction

Mining & Money aims to highlight the role that finance plays in deforestation and human rights issues through mining in forest-rich region. This beta dataset is the result of a combination of different pieces of research on the topic developed over the last year and a half for Amazon Watch (a member of the Forests & Finance coalition) and Milieudefensie (Friends of the Earth Netherlands). Both organizations have agreed to support the development of Mining & Money by allowing the data gathered for their respective pieces of research to be hosted online on the Forests & Finance sister site – Mining & Money.

Forests & Finance is a coalition of campaign and research organisations including Rainforest Action Network, TuK INDONESIA, Profundo, Amazon Watch, Repórter Brasil, BankTrack, Sahabat Alam Malaysia and Friends of the Earth US. Collectively, these organisations and their allies seek to achieve improved financial sector policies and systems that prevent financial institutions from supporting the kind of environmental and social abuses that are all too common in the operations of their clients operating in forest-rich regions. The Mining & Money project assesses the financial services received by 22 companies directly involved in mining supply chains, whose operations impact natural tropical forests in Southeast Asia, South America as well as Central and West Africa. For more information please contact info@forestsandfinance.org.

This Methodology note outlines the company selection methodology, the types of finance included in the study, the calculated elements in the corporate financing research, and financial research data sources. This research included three categories of calculated elements the corporate financing research: 1) financial institution financing contributions, 2) segment adjusters, and 3) geographical adjusters.

This Methodology note is organized as follows: Section 1 outlines the company selection methodology; Section 1.2 describes the types of finance included in the study; Section 3 details the methodology used to calculate the financing contributions where these were not provided; Section 4 provides details on how the segment and geographic activities of companies was analysed to adjust the financing contributions to more accurately reflect the value of financing directed towards mining in the focus forest-rich focus regions (Central & West Africa, South America, and Southeast Asia).

1 Company selection methodology

As noted above, this beta dataset is the result of different pieces of research for different organizations with different scopes and company selection criteria. The work conducted for Amazon Watch focused specifically on mining companies in Brazil. The research for Milieudefensie also looked initially at mining companies in Central & West Africa and Southeast Asia, however, with a more limited number of companies and a focus on mining companies with potential links to the Netherlands.

The 22 company groups selected for as part of the Mining & Money beta dataset are involved in the upstream segment of the mining supply chains in Southeast Asia, Central & West Africa and Brazil – collectively referred to as 'tropical forest-risk countries'. This selection of companies is intended to be a representative sample of companies impacting tropical forests, and is not an exhaustive list of all companies impacting or having the potential to impact tropical forests.

Although the company selection methodology was generally similar, the company selection methodology is presented separately for each of the three geographies included in the scope of the study.

1.1 Central & West Africa

The company selection methodology for mining companies in Central & West Africa looked at the size of operations, and potential links with financiers from the Netherlands for companies active in countries in Central & West Africa where mining is considered to be a key driver of deforestation (Ghana and DRC). The focus was, therefore, more on companies with potential for financing from the Netherlands, based on a quick scan of financiers. The following companies were selected:

- Alphamin Resources
- AngloGold Ashanti
- Barrick
- China Molybdenum
- Gécamines
- Glencore
- Gold Fields (ZA)
- Newmont Mining
- Société des Mines d'Or de Kilo-Moto

1.2 South America

Mining companies in Brazil were selected in two different ways for Amazon Watch and Milieudefensie. Amazon Watch selected 9 mining companies in Brazil based on the size of their (planned) operations, and their operations in the Amazon region:

- Anglo American
- AngloGold Ashanti
- Belo Sun
- Brazil Potash (Potássio do Brasil)
- Glencore
- Minsur
- Rio Tinto
- Serabi Gold
- Vale

The company selection methodology for Milieudefensie also looked at the size of (planned) operations, but additionally focused on potential links with financiers from the Netherlands. Therefore, focussing more on companies with potential for financing from the Netherlands, based on a quick scan of financiers. The selection of companies from Milieudefensie was limited to five companies, some of which were also in the selection for Amazon Watch:

- Belo Sun
- Norsk Hydro
- Rio Tinto
- South 32
- Vale

1.3 Southeast Asia

The company selection methodology for mining companies in Southeast looked at the size of operations, and potential links with financiers from the Netherlands for companies active in countries in Southeast Asia where mining is considered to be a key driver of deforestation (Indonesia). The focus was, therefore, more on companies with potential for financing from the Netherlands, based on a quick scan of financiers. The following companies were selected:

- Adaro Energy
- Bumi Resources
- Freeport McMoRan
- PT. Indonesia Asahan Aluminium
- Vale

2 Types of finance

This section describes the types of finance included in the research. Financial institutions can invest in companies through a number of modalities. Financial institutions can provide credit to a company. This includes providing loans and the underwriting of share and bond issuances. Financial institutions can also invest in the equity and debt of a company by holding shares and bonds. This section outlines the different types of financing, how they were researched and the implications for the study.

2.1 Corporate loans

The easiest way to obtain debt is to borrow money. In most cases, money is borrowed from commercial banks. Loans can be either short-term or long-term in nature. Short-term loans (including trade credits, current accounts, leasing agreements, et cetera) have a maturity of less than a year. They are mostly used as working capital for day-to-day operations. Short-term debts are often provided by a single commercial bank, which does not ask for substantial guarantees from the company.

A long-term loan has a maturity of at least one year, but generally of three to ten years. Long-term corporate loans are in particular useful to finance expansion plans, which only generate rewards after some period of time. The proceeds of corporate loans can be used for all activities of the company. Often long-term loans are extended by a loan syndicate, which is a group of banks brought together by one or more arranging banks. The loan syndicate will only undersign the loan agreement if the company can provide certain guarantees that interest and repayments on the loan will be fulfilled.

2.1.1 Project finance

One specific form of corporate loan is project finance. This is a loan that is earmarked for a specific project.

2.1.2 General corporate purposes / working capital

Often a company will receive a loan for general corporate purposes or for working capital. On occasion while the use of proceeds is reported as general corporate purposes, it is in fact earmarked for a certain project. This is difficult to ascertain.

2.2 Share issuances

Issuing shares on the stock exchange gives a company the opportunity to increase its equity by attracting a large number of new shareholders or increase the equity from its existing shareholders.

When a company offers its shares on the stock exchange for first time, this is called an Initial Public Offering (IPO). When a company's shares are already traded on the stock exchange, this is called a secondary offering of additional shares.

To arrange an IPO or a secondary offering, a company needs the assistance of one or more (investment) banks, which will promote the shares and find shareholders. The role of investment banks in this process therefore is very important.

The role of the investment bank is temporary. The investment bank purchases the shares initially and then promotes the shares and finds shareholders. When all issued shares that the financial institution has underwritten are sold, they are no longer included in the balance sheet or the portfolio of the financial institution. However, the assistance provided by financial institutions to companies in share issuances is crucial. They provide the company with access to capital markets, and provide a guarantee that shares will be bought at a pre-determined minimum price.

2.3 Bond issuances

Issuing bonds can best be described as cutting a large loan into small pieces, and selling each piece separately. Bonds are issued on a large scale by governments, but also by corporations. Like shares, bonds are traded on the stock exchange. To issue bonds, a company needs the assistance of one or more (investment) banks which underwrite a certain amount of the bonds. Underwriting is in effect buying with the intention of selling to investors. Still, in case the investment bank fails to sell all bonds it has underwritten, it will end up owning the bonds.

2.4 (Managing) shareholdings

Banks can, through the funds they are managing, buy shares of a certain company making them part-owners of the company. This gives the bank a direct influence on the company's strategy. The magnitude of this influence depends on the size of the shareholding.

As financial institutions actively decide in which sectors and companies to invest, and are able to influence the company's business strategy, this research will investigate the shareholdings of financial institutions of the selected companies. Shareholdings are only relevant for stock listed companies. Not all companies in the study are listed on a stock exchange. The company selection has tried to take this into account by including the major companies in the relevant sectors. However, some ownership forms may dominate in certain sectors under analysis. Additionally, some ownership forms are more prominent in some countries.

Shareholdings have a number of peculiarities that have implications for the research strategy. Firstly, shares can be bought and sold on the stock exchange from one moment to the next. Financial databases keep track of shareholdings through snapshots, or filings. This means that when a particular shareholding is recorded in the financial database, the actual holding, or a portion of it, might have been sold, or more shares purchased. Secondly, share prices vary from one moment to the next.

2.5 (Managing) investments in bonds

Banks can also buy bonds of a certain company. The main difference between owning shares and bonds is that owner of a bond is not a co-owner of the issuing company; the owner is a creditor of the company. The buyer of each bond is entitled to repayment after a certain number of years, and to a certain interest during each of these years.

3 Financial institution financing contributions

During the financial data collection process, this research utilized financial databases (Bloomberg, Refinitiv, TradeFinanceAnalytics, and IJGlobal), company reports (annual, interim, quarterly) and other company publications, company register filings, as well as media and analyst reports. Corporate loans, credit and underwriting facilities provided to the selected companies was researched for the period 2016-2021 (November). Investments in bonds and shares of the selected companies were identified through Refinitiv, Thomson EMAXX and Bloomberg at the most recently available filing date in February 2022.

Financial databases often record loans and issuance underwriting when these are provided by a syndicate of financial institutions. Company reports and publications, company register filings, and the media will also provide information on loans provided bilaterally, i.e. between one bank and the company in question. The level of detail per deal often varies. Some sources may omit the maturity date or term of the loan, the use of proceeds, or even the exact issue date. Financial databases often do not report on the proportions of a given deal that can be attributed to the participants in deal. In such instances, this research calculated an estimated contribution based on the rules of thumb described below.

3.1 Loans & underwriting services

Individual bank contributions to syndicated loans and underwriting (bond & share issuance underwriting) were recorded to the largest extent possible where these details where included in financial database, or company or media publications.

In many cases, the total value of a loan or issuance is known as are the banks that participate in this loan or issuance. However, often the amount that each individual bank commits to the loan or issuance has to be estimated.

In the first instance, this research attempted to calculate each individual bank's commitment on the basis of the fee they received as a proportion of the total fees received by all financial institutions. This proportion (e.g. Bank A received 10% of all fees) was then applied to the known total deal value (e.g. 10% x US$ 10 million = US$ 1 million for Bank A).

Where deal fee data was missing or incomplete, this research used the bookratio. The bookratio (see formula below) is used to determine the spread over bookrunners and other managers.

$$\text{Bookratio: } \frac{number\ of\ participants - number\ of\ bookrunners}{number\ of\ bookrunners}$$

Table 1 shows the commitment assigned to bookrunner groups with our estimation method. When the number of total participants in relation to the number of bookrunners increases, the share that is attributed to bookrunners decreases. This prevents very large differences in amounts attributed to bookrunners and other participants.

Table 1 Commitment to assigned bookrunner groups

Bookratio	Loans	Issuances
> 1/3	75%	75%
> 2/3	60%	75%
> 1.5	40%	75%
> 3.0	< 40%*	< 75%*

* In case of deals with a bookratio of more than 3.0, we use a formula which gradually lowers the commitment assigned to the bookrunners as the bookratio increases. The formula used for this:

$$\frac{\frac{1}{\sqrt{bookratio}}}{1.443375673}$$

The number in the denominator is used to let the formula start at 40% in case of a bookratio of 3.0. As the bookratio increases the formula will go down from 40%. In case of issuances the number in the denominator is 0.769800358.

Forests & Finance can present the underlying deals dataset for verification of deals and contributions when requested. This dataset includes data sources and dates of access.

3.2 Shareholding

The number and values of shares held by financial institutions are reported in financial databases, they were not subject to adjustment.

3.3 Bondholding

The number and values of bonds held by financial institutions are reported in financial databases, they were not subject to adjustment.

4 Segment and geographic adjusters

4.1 Segment adjusters

This section explains the methodology by which segment adjusters for mining activities in the scope of the Mining & Money beta research project were calculated and applied.

Segment adjusters were developed for all companies and every year for which financing was identified. As it is not possible to consistently breakdown the supply chains of the analysed companies into up-, mid- and downstream segments. This research therefore developed sector adjusters for whole supply chains, with the understanding that the impact of upstream operations (potential deforestation and human rights issues) is driven by the demand from the mid- and downstream segments.

These segment adjusters were not applied to project finance. When project finance was identified, this research investigated the purpose of the identified project finance to determine whether it fell within the scope of this research. When there was insufficient detail, project finance was treated with the segment adjuster. When the identified financing had multiple use of proceeds, the deal was treated as financing for general corporate purposes.

Segment adjusters were developed using the segment reporting in annual reports to the fullest extent possible, complemented by further information from company publications and websites and estimations where necessary. The following financial indicators were used in order of preference: *segment capital expenditures / additions to non-current assets, segment liabilities, segment assets, segment revenues,* and *segment profit/loss*.

Where financing was identified at the subsidiary level, this research identified the segment activities using company publications. Where financing was identified for a financing vehicle, the group level adjuster was applied.

The segment adjusters, including source, details of the methodology and indicators used, and segment definitions of the companies in question, are available on the Mining & Money website.

4.1.1 Example calculation

This sub-section illustrates how a segment adjuster is developed for a company and applied to identified financing.

In April 2019, Norsk Hydro ASA issued a bond worth US$ 561 million which was underwritten by BNP Paribas, Citigroup, ING Group and Nordea. Each financial institution underwrote an estimated US$ 140.25 million.

Norsk Hydro has six reportable operating segments: Hydro Bauxite & Alumina; Hydro Aluminium Metal; Hydro Rolling; Hydro Extrusions; and Hydro Energy, as well as the Hydro Metal Markets. The mining adjuster is based on Hydro Bauxite & Alumina as this includes bauxite mining activities, production of alumina and related commercial activities, primarily the sale of alumina. Segment additions to non-current assets were not available, therefore segment total assets were used. Using these segment definitions and figure, the mining adjuster for Norsk Hydro was estimated at 18%.

Therefore, US$ 101 million of the US$ 561 bond issuance was attributed to mining. At the individual financial institution level, US$ 25 million of each financial institution's contribution was attributed to mining.

4.2 Geographic adjusters

As section 1 showed, a number of the selected companies are active in more than one geography. To account for this, geographic adjusters were developed for all companies and every year for which financing was identified. A similar approach for calculating geographic adjusters was used as with segment adjusters (see section 4.1).

These geographic adjusters were not applied to project finance. When project finance was identified, this research investigated the location of the identified project finance to determine whether or not it fell within the scope of this research, and how to attribute it. When there was insufficient detail, project finance was treated with the geographic adjuster. When the identified financing had multiple use of proceeds, the deal was treated as financing for general corporate purposes.

Where financing was identified at the subsidiary level, this research identified the location of its activities using company publications. Where financing was identified for a financing vehicle, the group level adjuster was applied.

Geographic adjusters were developed using the segment, geographic and general reporting in annual reports to the fullest extent possible, complemented by further information from company publications and websites and estimations where necessary. Geographic adjusters were applied to segment adjusters.

The following financial indicators were used in order of preference: *geographic capital expenditures / additions to non-current assets*, *geographic liabilities*, *geographic assets*, *geographic revenues*, and *geographic profit/loss*.

The geographic adjusters, including source, details of the methodology and indicators used are available on the Mining & Money website.

The combined segment and geographic adjusters were applied to each identified financial relationship identified.

4.2.1 Example calculation

This sub-section illustrates how a geographic adjuster is developed for a company and applied to identified financing.

In March 2021, Newmont Corp attracted a five-year revolving credit facility worth US$ 3 billion. 18 financial institutions participated in the deal. Newmont is a pureplay mining company, with activities in North America, South America, Africa, and Australia. It’s activities in Africa are all located in Ghana, a country of focus for Mining & Money. The geographic adjuster is based on total assets in Ghana as proportion of total, 8%. Therefore, US$ 240 million of US$ 3 billion revolving credit facilities was attributed to mining in Ghana (Central & West Africa).