



Financial capital assessment

Companies are increasingly challenged to identify and communicate their societal contribution. The financial capital assessment methodology by Ecomatters is developed to quantify a company's financial impact on the society at large, as well as provide insight into the creation of financial value along the product value chain.

Importantly, the design of the financial capital methodology allows for application in parallel with similar methodologies covering other relevant societal and environmental (value chain) impacts (e.g. the Natural Capital Protocol). The combined results can support the identification of improvement opportunities and facilitate effective communication and decision making processes.

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Introduction

Companies play a critical role in societal flourishing. They provide products and services consumers want and need. They contribute to the economy by purchasing products and services from upstream suppliers. Further, they generate income for their employees and pay taxes to the government. Yet society also pays a price for the activity of the business sector. Expansive land-use and consumption of the planet's natural resources negatively impact nature and the environment. Further, companies may exert negative effects on people and communities.

As a result, society is increasingly critical of the business community. This is especially true in Europe, where citizens are divided about whether the overall influence of companies is positive or negative. According to a 2012 survey of the European Commission (Flash Eurobarometer 363, 2013) 52% of the Europeans think that the overall influence of companies on society is positive, while 41% think it is negative. Although non-Europeans are by comparison more positive about the overall influence of companies on society, the role of business is increasingly scrutinized, debated and challenged on all continents. Particularly in the face of global issues including the financial crisis, population growth, climate change and the increasing water and resource scarcity, the consensus is growing that companies' social responsibility must reach beyond legal compliance, creating jobs and paying taxes.

In today's business environment, adopting a business strategy centered around people and the planet is essential to a company's profitability. Where traditionally the externalities of production (the effects on people and the environment) were of little consequence to a company's branding, risk profile or cash flow, companies currently find that by increasing their positive and decreasing their negative impacts they can grow their revenue, cut costs and reduce risk.

This is as true for financial value creation as it is for environmental and social impacts. Rather than presenting their total annual revenue or profit to be distributed to their shareholders, companies increasingly have to identify the financial value they create for the society at large. This paper discusses the methodology for financial capital assessment developed by Ecomatters and illustrates the specific procedure using the value chain of a book as an example.

1 Goal setting

The goal of financial capital assessment is to gain insight into and quantify the financial value creation along the product value chain. To ensure its applicability in a variety of settings, the assessment methodology follows a pragmatic and flexible approach. As a first step, it provides a procedure for the evaluation of financial capital creation at company level. Its modular design further allows for the extension of the assessment to cover one or multiple links of the product value chain.

The financial capital assessment is developed to be utilized in parallel with similar methodologies covering other relevant societal and environmental impacts, such as the Natural Capital Protocol (Natural Capital Coalition, 2016). Implementation of financial capital assessment in parallel with methodologies for the evaluation of natural, social and human capital was tested within the 4-Dimensional Profit & Loss (4D P&L) accounting framework (AkzoNobel, 2015). When applied to the book value chain, the combined results of the four methodologies demonstrated to support the identification of improvement opportunities and facilitate effective communication and decision making processes.

With this paper we intend to share our financial capital assessment methodology with the business community, so that it can be applied free of charge. More information on licensing and permissions is provided under ‘Additional information’.

2 Financial capital assessment

2.1 Concept and definition

Financial capital represents the financial value created in the process of production. Financial capital is based on the concept of gross value added (GVA), as defined in the System of National Accounts 2008 (SNA 2008), adopted by the United Nations Statistical Commission (UNSC). GVA equals the value of produced goods and services less the value of intermediate consumption. As a measure of the contribution of an individual producer, industry or sector to the gross domestic product (GDP) of a country, GVA is of analytical interest in macroeconomics. In the following sections, we will discuss the derivation of GDP as recommended by the SNA 2008 and demonstrate the analogue calculation of financial capital.

2.2 Financial capital: production account

GVA is calculated as the difference between output and intermediate consumption (SNA 2008). GDP is the sum of GVA for all production units in an economy plus that part of taxes (less subsidies) on production that is not already included in the valuation of output. GDP is hence derived as a measure of production (SNA 2008):

$$\text{Eq. 1} \quad \text{GDP} = \text{output} - \text{intermediate consumption} \\ + \text{taxes (less subsidies) on production not already included in the valuation} \\ \text{of output}$$

Conceptually, this ‘economy-wide production account’ is the aggregate of similar accounts for each resident production unit, sector or industry within the boundaries of the economy. Likewise, the total value created along a product value chain (*total financial capital*) is the summation of the added value (*financial capital*) allocated to each of the n separate links of the value chain:

$$\text{Eq. 2} \quad \text{Financial capital} = \sum_{i=1}^n \text{financial capital}_i$$

In order to quantify the financial capital allocated to each value chain link i , link-specific production accounts may be compiled. Like GVA, financial capital is calculated as output minus intermediate consumption. To ensure the financial capital represents the true contribution of the value chain link to the total financial capital of the value chain, any taxes excluded from the output must be added:

$$\text{Eq. 3} \quad \text{Financial capital}_i = \text{output}_i - \text{intermediate consumption}_i \\ + \text{taxes (less subsidies) on production not already included in} \\ \text{the valuation of output}_i$$

Combining equation 2 and 3 gives:

$$Eq. 4 \quad \text{Financial capital} = \sum_{i=1}^n \text{output}_i - \text{intermediate consumption}_i + \text{taxes (less subsidies) on production not already included in the valuation of output}_i$$

Thus, financial capital as calculated using equation 4 may represent either the financial capital allocated to one value chain link (identified as i), or the aggregated financial capital allocated to a collection of n links throughout a product value chain. The components of GDP and financial capital as a measure of production are further specified in Table 1.

Table 1 Production account items GDP and financial capital

| Item | Definition (SNA 2008) |
|--|--|
| Output | <p>Products and services produced by economic activities that are capable of being provided by one production unit to another. This item may be disaggregated to distinguish different kinds of output (e.g. market output, non-market output, output for own final use).</p> <p>More than one set of prices may be used to value outputs depending upon how taxes and subsidies on products and/or transport charges are recorded. Depending on the selected price (e.g. basic price, producer's price, purchaser's price), different (non-) deductible taxes may be excluded from the total value of output. These excluded taxes must be added to GVA to calculate the GDP (see item 'Taxes less subsidies on production not already included in the valuation of output').</p> |
| Intermediate consumption | Goods and services used up in the course of production within the accounting period. |
| Taxes less subsidies on production not already included in the valuation of output | Taxes payable or subsidies receivable on goods or services produced as outputs and other taxes or subsidies on production, that are not already part of the value of output. |

The compiling of GDP and financial capital as a measure of production is illustrated in Figure 1A. Figure 1B demonstrates that net domestic product (NDP) is obtained by deducting the consumption of fixed capital from GDP. Consumption of fixed capital is defined as the decline in the current value of the stock of fixed assets owned and used by a producer as a result of physical deterioration, normal obsolescence or normal accidental damage during the course of the accounting period (SNA 2008). Consumption of fixed capital is calculated based on estimated opportunity costs of using the assets at the time they are used, as distinct from the prices at which the assets were acquired.

2.3 Financial capital: income account

The total value corresponding to GDP is redistributed to the various economic actors as income. The process of income redistribution allows one actor to consume the goods and services produced by another actor or to acquire goods and services for later consumption. GDP as a measure of income is hence derived as compensation of employees plus taxes less subsidies on both production and imports plus gross operating surplus plus gross mixed income (SNA 2008):

$$Eq. 5 \quad GDP = \text{gross compensation of employees} \\ + \text{taxes less subsidies on production and imports} \\ + \text{gross operating surplus (+ gross mixed income)}$$

The income account of NDP is derived similarly (SNA 2008):

$$Eq. 6 \quad NDP = \text{gross compensation of employees} \\ + \text{taxes less subsidies on production and imports} \\ + \text{net operating surplus (+ net mixed income)}$$

The compiling of NDP as a measure of income is illustrated in figure 1C. Similar to a production account (section 2.2), an income account may be compiled for an economy or sector as well as for an industry or institutional unit. The latter is of particular interest in the context of financial capital quantification. Financial capital as a measure of income can be derived for company (or value chain link) i as:

$$Eq. 7 \quad \text{Financial capital}_i = \text{gross compensation of employees}_i \\ + \text{taxes less subsidies on production and imports}_i \\ + \text{lease rentals}_i + \text{interest}_i + \text{depreciation}_i + \text{profit}_i$$

As illustrated in figure 1D, the operating surplus item of financial capital is subdivided in lease rentals, interest and profit. As our financial capital assessment methodology focuses exclusively on incorporated enterprises, the item gross mixed income – defined as the surplus or deficit accruing from production by enterprises owned by households – is excluded from the equation. Rather than consumption of fixed capital, the difference between financial capital and NDP is depreciation, valued at historic cost as used in commercial accounting. The components of GDP and financial capital as a measure of income are further specified in Table 2.

Table 2 Income account items GDP and financial capital

| Item | Definition (SNA 2008) | Contribution to |
|--|--|--|
| Gross compensation of employees | The total remuneration (salaries, bonuses and benefits), in cash or in kind, payable by an enterprise to an employee in return for work done by the latter during the accounting period. Gross compensation of employees includes any income taxes payable by the recipients of incomes accruing from production, whether employers or employees. | Employees (income taxes to government) |
| Taxes less subsidies on production and imports | Taxes payable or subsidies receivable on goods or services produced as outputs and other taxes or subsidies on production and imports, such as those payable on the labor, machinery, buildings or other assets used in production. Taxes on production do not include any income taxes payable by the recipients of incomes accruing from production, whether employers or employees. | Government |
| Gross operating surplus (+ gross mixed income) | A measure of the surplus accruing from processes of production before deducting any explicit or implicit interest charges, rent or other property income is payable on the financial assets, land or other natural resources required to carry on the production. Operating surplus is the positive or negative balance remaining after taxes on production (less subsidies) and compensation of employees are subtracted from GDP. In the case of unincorporated enterprises, the balancing item is described as mixed income because it implicitly contains an element of remuneration for work done by the owner, or other members of the household, that cannot be separately identified from the return to the owner as entrepreneur. | Various actors |

| | | |
|---------------|--|-------------------------------|
| Lease rentals | The amount payable by the user of a fixed asset to its owner, under an operating lease or similar contract, for the right to use that asset in production for a specified period of time. | Owners of fixed capital goods |
| Interest | Interest receivable by the owners of certain kinds of financial assets (deposits, debt securities, loans, etc.) for putting the financial asset at the disposal of another institutional unit. | Providers of financial assets |
| Depreciation | The replacement cost of fixed assets at historic costs as used in commercial accounting. Depreciation does not cover the depletion or degradation of natural assets such as land, mineral or other deposits, coal, oil, or natural gas, or contracts, leases and licenses. | Suppliers of fixed assets |
| Profit | The residual item of financial capital. Profit is redistributed to shareholders or used for new investments. | Shareholders |

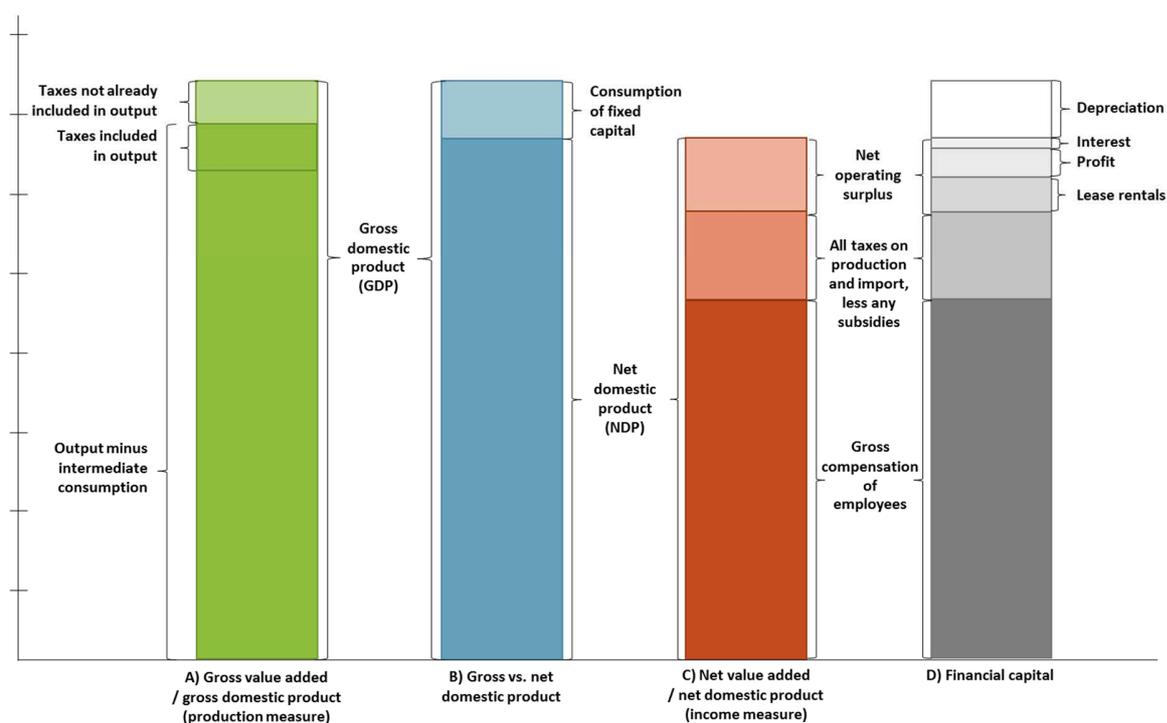


Figure 1 A) Gross domestic product (GDP) as production aggregate equals GVA plus any taxes on production not already included in the value of output. A similar production diagram may be compiled for financial capital; B) Net domestic product (NDP) equals GDP minus the value of consumed fixed capital; C) The net operating surplus is the residual item of the income account of NDP. D) Financial capital comprises of 5 measurable items (gross compensation of employees, taxes (less subsidies) on production and import, lease rentals, interest and depreciation) and 1 balance item (profit). If data or estimates are available of these components, financial capital may be compiled for a business unit, company, sector or industry.

3 Procedure illustrated with specific examples

3.1 Financial capital assessment at company level

As discussed in the previous section, financial capital comprises of five measurable items (gross compensation of employees, taxes (less subsidies) on production and import, lease rentals, interest and depreciation) and one balance item (profit). If data or estimates are available for these components, financial capital may be compiled at company level. Typically, the required inputs to equation 7 are

retrievable from (annual) financial reporting. An example of financial capital assessment for a typical Western European industrial company is provided in Table 3.

Table 3 Financial capital calculation of a typical Western European industrial company

| Item | Total | Unit |
|--|--------------|------------------|
| Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA) | | |
| Profit After Tax (PAT) | 120 | million € |
| Interest (I) | 20 | million € |
| Taxes (T) | 60 | million € |
| Depreciation (D) | 120 | million € |
| Total EBITDA | 320 | million € |
| Staff Compensation | 430 | million € |
| Lease Rentals | 40 | million € |
| Financial capital | 790 | million € |
| Total revenue | 2,500 | million € |

Rather than representing the financial value redistributed to solely shareholders, financial capital represents the financial value creation benefiting all stakeholders of the company. Equaling 790 million euro, the positive financial impact of the example company on the society at large is significantly larger than its profits alone (120 million euro).

3.2. Financial capital creation throughout the product value chain

3.2.1 Financial capital

As discussed in section 2.2, financial capital equals the difference between output (including all taxes) and intermediate consumption. The financial capital created throughout the product value chain is an aggregate measure of financial capital allocated to the separate value chain links. For each link in the value chain, the value of intermediate consumption equals the output of the previous value chain link. Since this value is created by upstream suppliers, it may be referred to as ‘indirect value added’. The relationship between financial capital as a measure of production and income is illustrated in figure 2.

It is important to note that, in the context of the product value chain, intermediate consumption represents the intermediate consumption of goods and/or services *as supplied by the upstream value chain partner(s) of the value chain under study*. Costs of purchased goods and services that are not accounted for separately within the value chain under study are not deducted separately and are therefore part of the financial capital of the respective value chain link where it is purchased. Hence, the financial capital *allocated* to a value chain link is not necessarily *created* in this link; each value chain link consumes goods and services that belong to other product value chains. Although in reality this financial value is reallocated to the respective creator(s), for simplicity this reallocation is omitted here.

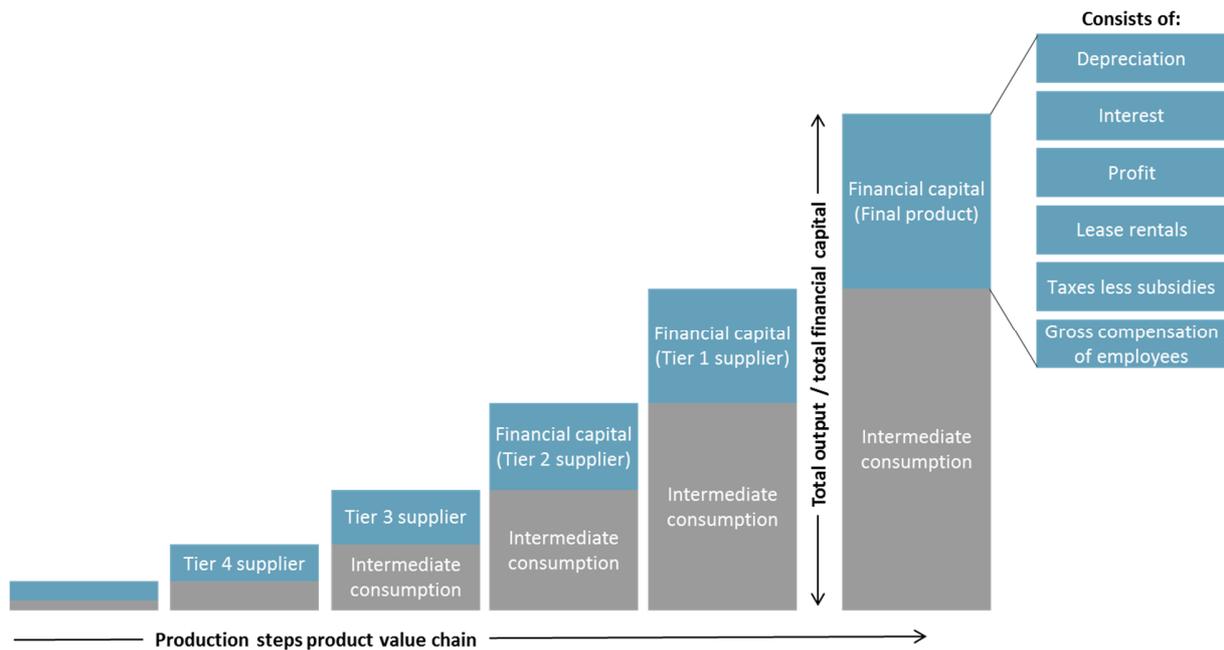


Figure 2 The financial capital created throughout the product value chain equals the sum of financial capital allocated to the separate links of the product value chain. The value of the financial capital allocated to each value chain link is redistributed as income to various economic actors (both within the link and upstream).

3.2.2 Example: the book value chain

In this section we will demonstrate how financial capital assessment was performed in the context of the 4-Dimensional Profit & Loss (4D P&L) project (AkzoNobel, 2015). The 4D P&L project focused on the cradle-to-gate book value chain, from paper production to the book store (figure 3). The societal impacts of AkzoNobel's own operations as well as those related to production processes further down the value chain were evaluated. This was done in multiple dimensions: financial, environmental, human and social 'profits' and 'losses' were assessed in parallel.



Figure 3 Overview of the book value chain

In order to create an average scenario for book production and sales, a number of assumptions were made. First, it was assumed that the European market price of an average book is € 20,-. Hence, the total financial capital (total output) created by book production and was set to € 20,- per book. Further, the book production was assumed to take place in Europe, using 50% virgin paper manufactured in Brazil and 50% recycled paper. Finally, the financial capital for each production phase was estimated based on generic industry data collected from public sources. The financial capital is reported per book. The results are illustrated in figure 4.

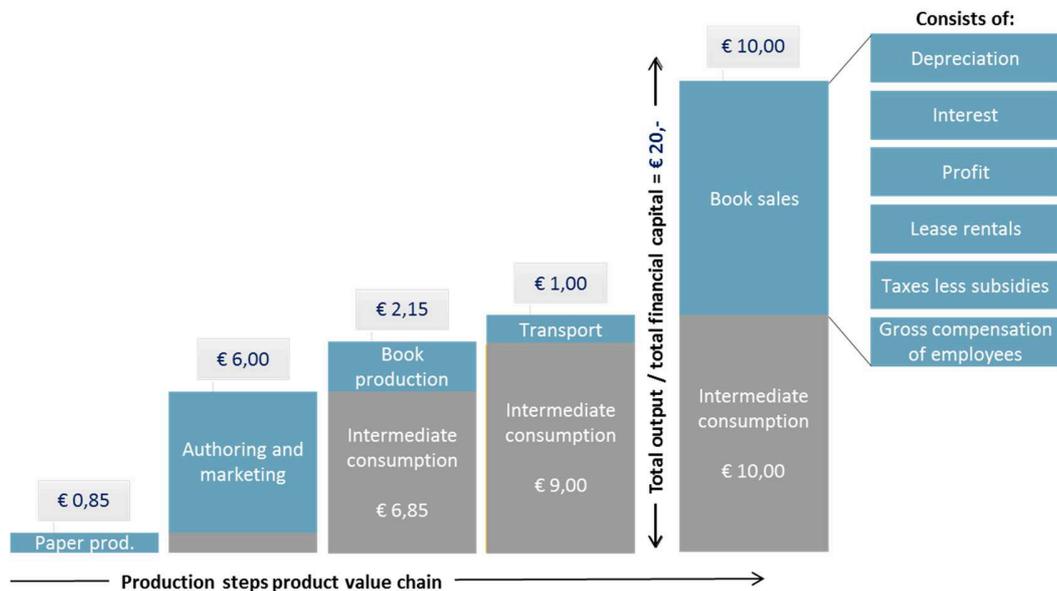


Figure 4 The financial capital created throughout the book value chain. The value of the financial capital allocated to each value chain link is redistributed as income to various economic actors (both within the link and upstream).

As discussed in section 3.2.1, the financial capital *allocated* to a value chain link is not necessarily created by activities *in* this link. That is, the financial capital allocated to each value chain link equals the output (incl. all taxes) of that link minus the intermediate consumption of goods and services *supplied by the upstream value chain partner(s) of the value chain under study*. For example, the output of the value chain link ‘book authoring and marketing’ is €6,85, of which €0,85 is subtracted as intermediate consumption of paper. The value of this intermediate consumption equals the total output of the value chain link ‘paper production’. The remaining financial capital (€6,-) includes the financial value as created by the authoring and marketing activities, as well as the costs of purchased goods and services not included in the separately considered upstream book value chain links (e.g. advertising services, external editors). Although in reality this financial value is reallocated to the respective creator(s), here this reallocation is omitted for simplicity. As a consequence, when financial capital is distributed over its six items (depreciation, interest, profit, lease rentals, taxes (less subsidies) on production and import and gross compensation of employees), each item is an aggregate of similar items for each activity bundled in the value chain link. A closer look at the results obtained in the 4D P&L project will demonstrated this:

1) Paper production

Paper is produced in large quantities and has a relatively low market value. As a result, only 4% (€0,85) of the financial capital of a book is allocated to the first link of the value chain. This financial capital includes the value created in this value chain link as well as in the upstream production of paper pulp, (bleaching) chemicals, etc.

2) Authoring and marketing

Much more financial value is allocated to the second link of the value chain; 30% (€6,-) of the total financial capital of a book is allocated to authoring and marketing. Most financial value flows to the author, who receives a few euros per book, and the publisher, who reallocates it partly

upstream (e.g. by advertising) and partly within his own value chain link (e.g. payment of employee wages and rent).

3) Book production

Around 11% (€2,15) of the financial capital of a book is allocated to the third value chain link. Since the processes in this link (printing, book binding, etc.) are to a great extent automated, they are less labor intensive and costly than those in the previous value chain link. Part of the financial capital allocated to book production is reallocated to upstream suppliers of ink, glue, electricity, etc.

4) Transport

The financial capital allocated to transport (5%, or €1,-) represents the value created by book transport by truck over 1200 km and includes a material loss of 1%. Part of this financial capital is reallocated upstream over the fuel value chain, from petrol station to oil company. The remaining financial capital is reallocated to the driver's wages, depreciation, taxes, etc.

5) Book sales

The bulk 50% (€10,-) of the financial capital is allocated to distribution and sales. This capital constitutes mainly the sales margin of the bookshop owner, which is used to pay the wages of the sales people, the rent and other indirect expenses such as electricity and advertising.

In conclusion, the application of financial capital assessment to the product value chain can provide insight in the allocation of financial value to the different value chain links. Typically, more financial capital will be allocated to value chain links in which more labor intensive processes take place.

4 Conclusions

We have demonstrated how financial capital assessment at company level provides insight into the creation of financial value for all stakeholders, rather than solely shareholders. The positive financial impact of a company on the society at large is significantly larger than its profits alone. Since companies are increasingly challenged to identify and communicate their societal contribution, we expect that the communication of financial capital results in financial reporting will bring great value to businesses and will eventually become mainstream. Further, we have shown how financial capital assessment can be applied to a (full) product value chain. This approach can provide insight in the allocation of financial value to the different value chain links.

Importantly, the Ecomatters financial capital methodology was developed to be utilized in parallel with similar methodologies covering other relevant societal and environmental impacts. The combined results can support the identification of improvement opportunities, facilitate effective communication, and decision making processes.

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Additional information

This methodology is online available at: <http://www.ecomatters.nl/financial-capital>

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