

Kako z vidika banke prepoznati vzdržnost poslovnega koncepta

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The current economy largely relies on business practices that stem from the Industrial Revolution. Ever since that period, economic development has followed the assumption that there will be a constant, economically viable supply of natural resources. This has resulted in a linear economic approach based on the extraction of resources, production of goods and services, and disposal of waste after end of use - a 'take, make, waste' mentality.

FinanCE working group

Agenda

1. Existing practice of banks in assessing the creditworthiness of companies
2. Presentation of the proposal for circular project
3. Linear business practices
4. Circular economy as a potential solution to linear risks
 - Circular risks
 - Implications for banking
5. Key activities to adapt the risks and opportunities in the area of circular/sustainable financing

1. Existing practice of banks in assessing the creditworthiness of companies

- Managing risk is a core part of the investment process for financiers, and a key factor to their stability and long-term growth.
- When measuring risk there are two main factors taken into account:
 1. the creditworthiness of the borrower and
 2. the value of the collateral (underlying assets, contracts, or both).
- The creditworthiness of the borrower is calculated by consideration of:
 - a. **Quantitative aspects** - the liquidity, solvency and profitability of the borrower based on financial statements and the financial indicators;
 - b. **Qualitative aspects** - the experience of directors and management, the quality of how the activities are managed, diversification in the customer base, the products and services, the suppliers, etc.
- The value of collateral, usually in the form of assets, is measured by its market value at a specific time.
- CRRS

What is wrong with that picture?

2. Proposal for circular project: The Mobile_Phone-as-a-Service

- Would you consider to rent a phone?
- "Young&Inovative" mobile phone company wants to shift concept of value from the product itself to the services that the product offers (shift from linear to circular business model) and proposed a potential business model for **mobile_phone-as-a-service**.
- "Young&Inovative" designs and wants to produce smartphones with minimal harm to society and the environment by focusing on four main issues:
 - fair materials,
 - good working conditions,
 - long-lasting design, and
 - reuse & recycling.

2. Proposal for circular project: The Mobile_Phone-as-a-Service

- Young&Inovative wants to develop a business model whereby it can not only be sustainable in its sourcing, but also at use and end-of-use stages.
- The Mobile_Phone-as-a-Service (MPaaS) business-to-business proposal is based on:
 - Access to functioning Young&Inovative devices for the customer's employees;
 - Services around the maintenance and updates of devices;
 - Guaranteed end-of-use take-back of devices and
 - One fixed monthly fee.
- A key enabler for the MPaaS model is modularity!

2. Proposal for circular project: The Mobile_Phone-as-a-Service

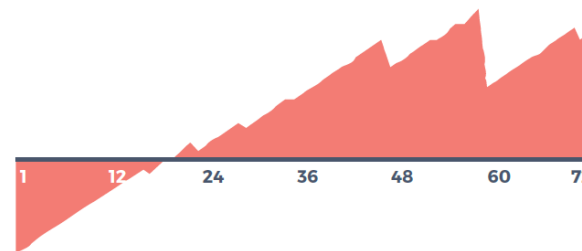
In order to identify financing needs Young&Inovative :

1. Estimate the service fee that will represent the bulk of expected revenue - three cost categories were identified and included in the service fee:
 1. Asset handling;
 2. Finance & insurance; and
 3. Service & operational costs
2. Define a realistic scenario for the use of devices and modules over a five year period:
 1. **The growth scenario** which reflect the growth of the customer base, the volume of contracts and the possible termination of existing contracts;
 2. **The cycle scenario** which requires in-depth understanding of usage patterns and service needs.

2. Proposal for circular project: The Mobile_Phone-as-a-Service

3. Model cash flows in line with key parameters defined in the realistic scenario:

- Initial investment needs are required to acquire devices, which means **the cumulative cash flow is negative at the beginning of the pilot project**;
- The cost/revenue balance is **positive**, which indicates profitability and suggests it may be possible to lower the service fee;
- The cumulative cash flow becomes positive after 21 months after which MPaaS requires no external financing anymore; and
- The failure of modules at the end of their expected lifetimes results in significant periodic costs.



2. Proposal for circular project: The Mobile_Phone-as-a-Service

- Decision about bankability have to be based on:
 - New (untested) technology
 - Financial statements for only one year
 - Demand for new type of service which is unknown
 - Product with with minimal harm to society and the environment
 - The cumulative cash flow becomes positive after 21 months
- Would you finance MPaaS?

Linear risks

- Managing risk is a core part of the investment process for financiers, and a key factor to their stability and long-term growth.
- However, companies that continue to operate in a linear economic 'take-make-waste' approach and the financial institutions that invest in these businesses are exposed to a variety of risks that are mostly overlooked and are missing in traditional risk evaluation approaches.

What is wrong with that picture? (cont.)

- Current risk assessment methodologies are insufficiently developed for circular/sustainable businesses/projects and:
 - For the linear industry, they do not always identify the risks of remaining in the linear model (e.g. climate, societal, regulatory, tax, etc.).
 - Existing models insufficiently capture the specific financial profile of circular business models (e.g. asset ownership, cash flow dynamics, depreciation) and fail to value the benefits/risk mitigants of circularity.

Linear risks: EXTERNALITIES

- Traditionally, externalities have been largely excluded from company's risk profiles and the measurements of corporate value or income statements:
 - This means that investors and companies have not been fully rewarded for the positive environmental or societal impacts they created through externalities, like creating jobs, using proven net-positive circular products or providing education and healthcare to workers or communities.
 - Conversely, investors and companies have also not been penalised for negative societal impacts, like generating or incinerating waste, depletion of scarce resources, noise and air pollution, or degrading ecosystems.

Linear business practices

- Companies that operate with a linear economic approach have a particular set of business practices - these companies tend to:
 - **Utilise non-renewable resources** - the company supplies or relies on primary resources that will become scarce or non-renewable for its operations;
 - **Prioritise sales of new products** - the company designs for short, single product ownership lifetimes that results in landfilling, incineration and export of waste products
 - **Fail to collaborate** - the company maintains strict control over knowledge and does not engage in partnerships or collaborative projects;
 - **Fail to innovate or adapt** - the company maintains their perspective on the market, and does not innovate or adapt to evolving market conditions.

Linear risks

- The exposure to the effects of linear business practices:
 - a. utilise scarce and non-renewable resources;
 - b. prioritise sales of new products;
 - c. fail to collaborate; and
 - d. fail to innovate or adapt - which will negatively impact an organisation's ability to continue as a going concern.

Linear risks

- Current risk assessments and disclosures do not comprehensively account for 'Linear Risks', and as a result financial portfolios are loaded with investments that are exposed to these risk factors without being properly considered in the risk assessment process.
- Some companies are acutely aware of the impact that volatility in resource supplies and prices would have on their business, particularly in resource intense industries.

Linear risks factors

- 'Linear Risks' account for developments and trends such as future volatility in resource supply and price, failures in the value chain, and disruptive new business models.
- To identify 'Linear Risks', we use a typology of four risk factors - market, operational, business, and legal risks:
 1. **Market** - market risks involve market and trade related factors that impact business' assets and liabilities, such as price volatility, resource scarcity, trade bans, higher interest rates, lower investor interest, etc.
 2. **Operational** - operational risks involve factors that threaten the internal operations of a firm, such as supply chain failures, internal process failures, worker safety issues, difficulty hiring or retaining talent, etc.

Linear risks factors

- To identify 'Linear Risks', we use a typology of four risk factors - market, operational, business, and legal risks:
 3. **Business** - business risks are a result of emerging societal, economic and political trends that threaten the firm's strategic business plan objectives, such as changing consumer demands, new technologies, new business models, etc.
 4. **Legal** - legal risk arises from the failure to comply with current as well as future regulations, standards or protocols, such as sourcing rules, new government policies, extended producer responsibility, and fines or lawsuits.

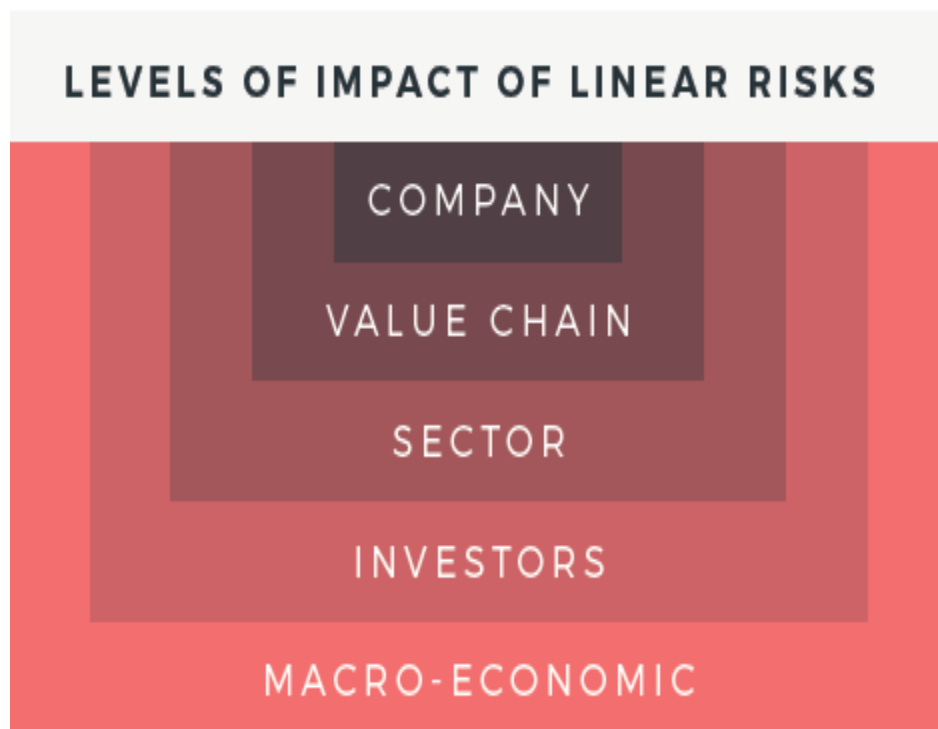
LINEAR RISKS MATRIX

Linear business practices:						
Risk factors:	Utilisse non-renewable resources		Prioritlise sales of new products	Fall to collaborate	Fall to Innovate or adapt	
	Market	Scarcity of primary resources Example - worlds cobalt supply scarcity	Bans on trade of waste Example - U.S. impacted by China waste ban	Limited opportunities to expand to new markets Example - pharmaceuticals battle IP rules in India	Scarcity of resources Example - shortage of waste for incinerators	
		Volatility of resource prices Example - nickel price volatility	Volatility of resource prices Example - cotton price volatility impacts mills		Volatlility of resource prices Example - construction materials/ equipment price volatility	
		Operational	Internal process failures Example - toxic jewelry removed from stores	Worker safety issues Example - worker safety issues in fast fashion supply chain	Supply chain inefficiencies Example - lack of common supplier requirements hurting construction industry	Inability to hire new talent Example - manufacturing industry facing challenge finding interested workers
			Changing demand for sustainable solutions Example - greater pressure for greener cleaners	Disruptive new business models Example - car sharing models impact sales	Disruptive new technologies Example - television industry impacted by online media	Disruptive new technologies Example - taxi industry impacted by new apps
Business	Decreasing cost of renewables Example - utility energy pricing impacts due to renewables	Decreasing margins from commoditisation Example - commodisation of Dell's PC business		Disruptive new business models Example - retailers shut down due to the Amazon factor		
	Legal	Fines for legal violations Example - Thai coal mining subsidiary fined for dumping hazardous waste	Requrements for extended producer responsibility Example - France pushes for 'lifetime' labelling	Fines for legal violations Example - Qualcomm sued for anti-competitive practices	More stringent environmental laws Example - chemical industry at risk of regulatory backlash similar to diesel industry	
More stringent environmental laws Example - sharp increase in climate change legislation						

Source: Circle Economy, PGGM, KPMG, EBRD, ABN AMRO bank, Rabobank, ING Bank, Intesa SanPaolo, European Investment Bank, Circularity Capital, Sitra, CDC, Sustainable Finance Lab, and Danish Business Authority



WIDER IMPACTS OF 'LINEAR RISKS'



THE VALUE CHAIN: When a company is unable to adapt to changing dynamics, it has implications for the organisation upstream and downstream in the value chain.

THE SECTOR: Companies are not the only entities who face 'Linear Risks' - entire industries and sectors can also be affected by these risks.

THE INVESTORS: As mentioned earlier, financial portfolios are currently loaded with investments that are exposed to 'Linear Risks' factors - equities, fixed income and commodities all inherit their own form of 'Linear Risks'.

THE MACRO-ECONOMIC: 'Linear Risks' within businesses, sectors, and financiers can ripple across the broader economy, leading to macroeconomic impacts - this not only leads to economical costs but also to societal costs, like unemployment and negative impact on GDP.

CIRCULAR ECONOMY AS A POTENTIAL SOLUTION TO 'LINEAR RISKS'

- The opportunities within the circular economy can provide a solution to mitigate 'Linear Risks'.
- The circular economy is an emerging economic concept that provides new business models and strategies to continuously reuse materials and resources to their fullest potential.
- At the heart of the circular economy is the idea of moving away from linear economic business practices and directly challenging the 'take, make, waste' mentality, aiming to achieve social well-being while operating within the boundaries of our planet.

CIRCULAR ECONOMY AS A POTENTIAL SOLUTION TO 'LINEAR RISKS'

- **First**, it is a growing market which is estimated to generate 1% to 4% economic growth over a ten year period - this is net growth and accounts for the disruptive aspects which forces some (linear) business to reduce or stop production.
- **Secondly**, it is a market that fits into the sustainability targets of many banks as these companies make the transition happen. The sustainability approach in the financial sector has evolved over time: starting from mitigating environmental and social risks (do no harm policies) to supporting sustainable business and integrating it into the core business and strategy (doing good policies).

Circular risks

- As well as the benefits of moving to a circular business models, there are also potential negative risks that need to be considered.
- Circular businesses can be easily marked as highly risky.
- However, conclusions on the riskiness of circular business should be handled with care - the perceived risk can be partly down to a lack of information and the traditional ways in which financial institutions model risk.

Circular risks

- Circular businesses are concerned with resource control and retaining added value:
 - used products are seen as a valuable source of modules and/or materials rather than as waste.
 - (This has major consequences for the business case) independency from virgin resources and potential additional (second, third, etc.) markets produce stronger and more stable longer-term margins and improved return on capital through enhanced resource productivity and asset utilisation.
 - (However) the required initial investment can cause deterioration in short-term margins.
- The resulting process of balancing short-term margin and long-term stability could impact on third-party perceptions of creditworthiness and the stability of the underlying business.

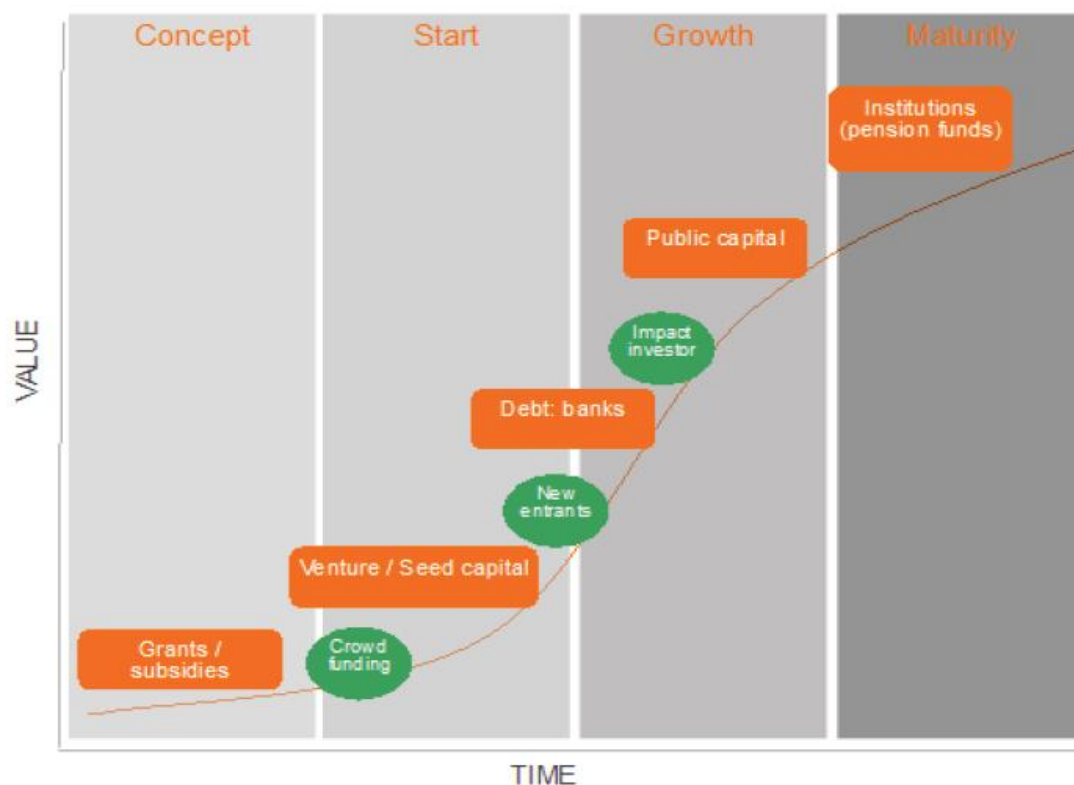
Circular risks

- Shift of mindset needed to see (used) products as valuable sets of modules and/or materials instead of waste.
- Required initial investment can cause deterioration in short-term margins.
- Balance of short-term margin versus long-term stability.
- Market demand for the offered products: customers and companies are currently used to owning products.
- Dependency on supply chain collaboration.
- Unknown residual value of many products, due to small market of circular output companies (i.e. companies that upcycle, re-use, remanufacture or refurbish).



Implications for banking

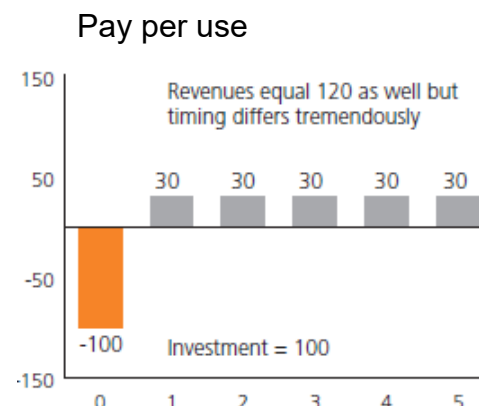
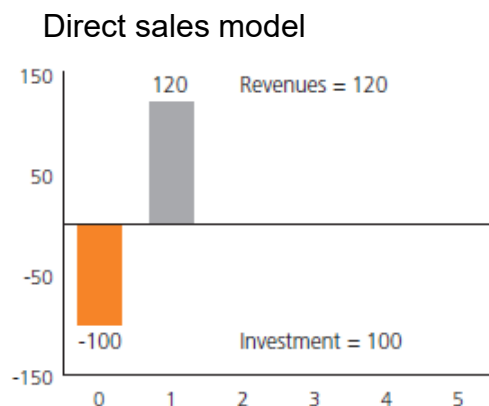
1. Circular business models require multiple forms of capital / different funding sources.



Implications for banking

2. Cash flow optimisation increases the financeability of circular business models:

- Pay per use models create a longer lasting financial relation
- The contract and its underlying cash flows become the principle value driver



Implications for banking

3. The underlying legal contract becomes pivotal in financing circular business cases:
- A shift from a one off transaction to an ongoing service requires a contractual agreement to be established between the service provider and customer.
 - The financier can no longer claim ownership in case things go wrong (traditionally the option to claim assets is valued highly by financiers).
 - Parties can sign a contract that not only specifies the payment structure to use the service, but they can also agree upon what should be done in case things go wrong.
 - But contracts don't bring security in case of bankruptcy of the client. Contracts can work well as long as all parties stick to it - this does not hold up in case of bankruptcy of a client.

Implications for banking

4. Credit worthiness deserves more attention as pay per use models run the risk of attracting less creditworthy users:
- with pay per use models the cash flow to the supplier is spread out over several periods;
 - over this period suppliers and financiers using circular business models run the risk of bankruptcy of the consumer of the service;
 - as durable products often have a lifespan of several years, this risk should not be neglected;
 - even if suppliers manage to attract creditworthy customers for their circular business model, things can always go wrong for a customer;
 - in a pay per use circular business model the supplier takes on a credit risk towards its customers;
 - **therefore it is recommended to upgrade current risk assessment methodologies.**

Implications for banking

5. Value creation in second hand markets can increase financeability:

- increasing the lifespan of a product through a second hand market is an important principle of the circular economy;
- In a second hand market the value of a good is objectified and determines the residual value of a product;
- when products have a positive residual value they don't have to be written off to zero in accounting terms which improves the financials of the circular business case and its bankability.

Financing The MPaaS

- Financing circular business models can be based on traditional economic framework that rewards risk with economic return.
- Current financial products can be transformed and tailored to the economic decisions made by circular economy businesses.
- These business models need financial products suitable for the specific criteria of each investment opportunity in order for the underlying principle of rewarding risk to remain a valid assumption.

Financing The MPaaS

- There are many different types of financial products which can be used for circular business models:
 - in the transition phase when a business is moving from a linear business model to a circular business model the risk profile may be more suited to higher-risk capital through the injection of equity or internal capital,
 - once the transition is complete the move to lower-risk capital and generic debt facilities may be more appropriate.

Financing The MPaaS

- Assessing whether a certain financing structure is appropriate requires consideration of factors including the strength and maturity of the business and its risk profile.
- The level of risk will then be reflected in the risk premium - when risk is high the premium has to be high, for the financier needs to be compensated for the risk being taken.

Financing The MPaaS

- Based on the cash flow, contractual considerations, and financing needs for the The Mobile Phone-as-a-Service preferred structure to work with can be a current account credit:
 - the amount of credit decreases depending on the payments received from the customer,
 - current account structure provides financial flexibility, with credit being exactly as high as the investment need,
- In the future, the financing structure would ideally be a combination of several lending structures:
 - combining the flexibility of current account structures with the robustness of a lease structure could be an effective way to finance the MPaaS proposition - lease structures indeed complement current account structure with longerterm fixed interest rates and lower termination risk.
- Drawbacks from this flexible type of financing, which can affect the profitability of the proposition:
 - interest rates can be volatile,
 - the bank technically has the right to terminate the current account on very short notice.

Key activities to adapt to the risks and opportunities in the area of circular/sustainable financing

- a. Introduce of circularity/sustainability in the bank's strategic priorities.
- b. Define concrete goals/objectives in the field of circular/sustainable economy.
- c. Introduce linear risk factors into risk assessment and processes:
 - recalibrate the risk measurement methodologies of linear projects and companies to take into account linear risk with aim to identify, standardise and introduce in the methodologies a set of measurable and relevant parameters measuring linear risk.
 - assess the existing (linear) credit risk assessment methodologies in order to identify which linear financial metrics are most affected by circular projects and businesses,
 - develop alternatives measures and/or suggest necessary adjustments to improve the comparability between linear and circular models in the different sectors.
 - Assess the portfolio's current exposure to linear risks

Key activities to adapt to the risks and opportunities in the area of circular/sustainable financing

- As creditworthiness becomes even more important establish a Circular Profile for bank's clients, which assesses the exposure of an entity's operations to observable linear and circular risks and opportunities.
- Clear definition of criteria for what a bank considers to be circular / sustainable activities.
- Circular economy project definition, taxonomy and measurements.
- Development of circular / sustainable financial products.
- Education and development needed to understand circular/sustainable business models.

Analysis of circularity and cost-benefit analysis

Box 3

- The traditional criterion for project appraisal is that the discounted benefit of each project i should equal or exceed its costs; that is,
$$\sum_t d_t [B_t - C_t] > 0,$$
where B_t is the benefits of the project in time period t , C_t is its costs in that time period, and d_t is the discount factor, equal to $1/(1 + r)^t$
- CBA embodies intuitive rationality in that any project is judged acceptable if 'benefits' outweigh 'costs'.
- What constitutes a gain or loss depends on the objective function chosen.
- Most CBA operates with a function based on economic efficiency, that is, any increase in total net benefits is desirable irrespective of the distribution of these benefits or the impact of the action on the noneconomic objectives.

Analysis of circularity and cost-benefit analysis (cont')

Box 3 (cont.)

- The circularity/sustainability criterion

$$\sum_t d_t \cdot [B_t - C_t - E_t] > 0,$$

where B is noncircular benefits, C is noncircular costs, E is net circular/sustainability costs or benefits, t is time, and d_t is the discount factor.

Viri, literatura

- European Commission (2019b). Accelerating the transition to the circular economy – Improving access to finance for circular economy projects. European Commission, Directorate-General for Research and Innovation, Directorate I — Climate Action and Resource Efficiency, RTD-PUBLICATIONS@ec.europa.eu, March 2019.
- Giacomelli Jurij, Damjan Kozamernik, Polona Lah (2018). Evaluating and monitoring circularity. BV 11/2018, 42-54.
- Money makes the world go round (and will it help to make the economy circular as well?) (2016); Working Group FINANCE, The Netherlands, March 2016; available in Pdf through Ellen MacArthur Foundation. <https://www.ellenmacarthurfoundation.org/assets/downloads/ce100/FinanCE.pdf>
- <https://dothemath.ucsd.edu/2012/04/economist-meets-physicist/>

Credit Risk Rating System

Box 1













- A rating system is one by which borrowers/facilities are systematically assigned to (grouped into) rating grades according to the credit risk characteristics (rating criteria or risk factors) of the borrowers/facilities.
- “Risk-Bucketing” system - banking book assets are grouped into “buckets”:
 - **Homogeneity**: borrowers assigned to the same rating grade should share similar risk characteristics
 - **Risk differentiation**: borrowers assigned to different rating grades should have different risk characteristics
 - **Risk quantification**: risk component(s) is/are estimated for each rating grade.
- Associated with each bucket is a fixed capital charge per dollar of exposure.
- 1.

Sustainable investing

Box 2

- Sustainability focuses on meeting the needs of the present without compromising the ability of future generations to meet their needs.
- The concept of sustainability is composed of three pillars: economic, environmental, and social—also known informally as profits, planet, and people¹.

ESG Profile Building Blocks (Factors)

Environmental	Social	Governance
 Greenhouse Gas Emissions	 Workforce & Diversity	 Structure & Oversight
 Waste & Pollution	 Safety Management	 Code & Values
 Water Use	 Customer Engagement	 Transparency & Reporting
 Land Use	 Communities	 Cyber-Risk & Systems

¹ Investopedia

Source: S&P Global Ratings