



# **Sustainability - oriented Business Model Innovation: Context and Drivers**

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# Background

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The theme of sustainability is getting central for the business sector

*Business case for Sustainability :*

Rationale for a **profit-driven response** to social and environmental problems

Business experience contrasts the traditional belief of a **trade-off** between profits and social benefits (Salzmann et al., 2005; Whelan and Fink, 2016)

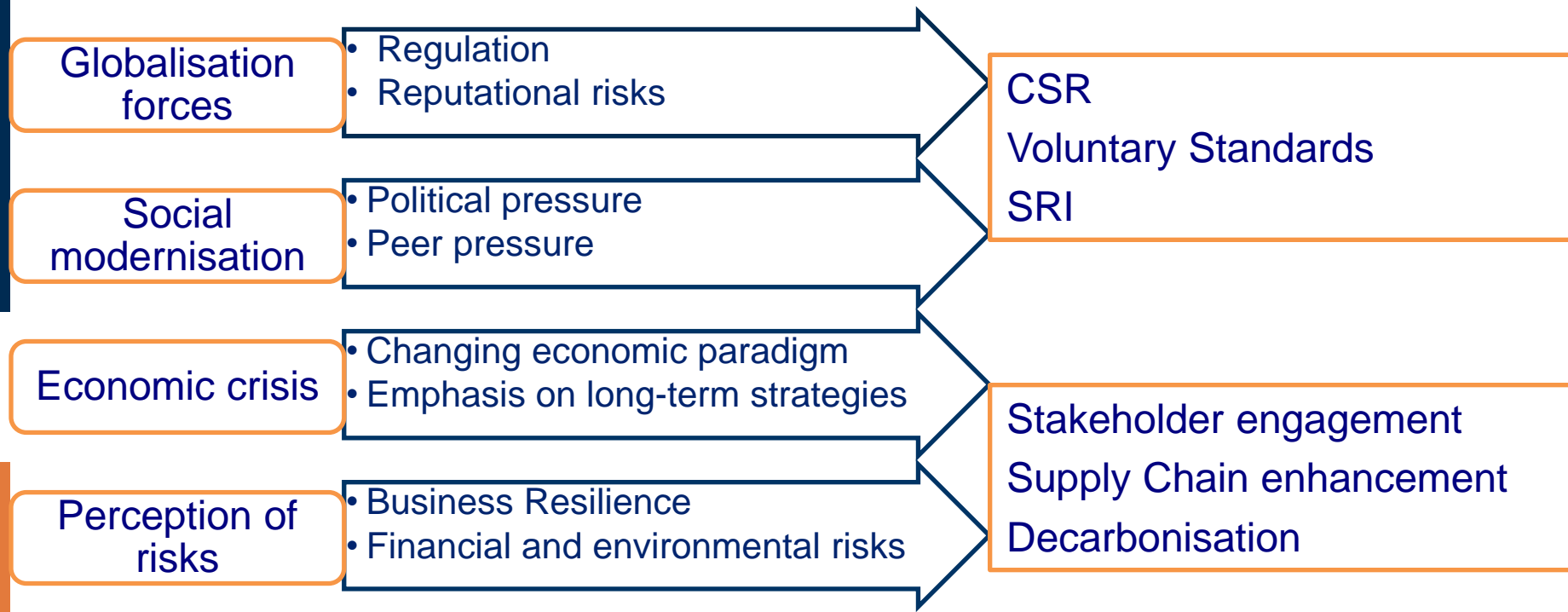


*There is one and only one social responsibility of business - to use its resources and engage in activities designed to **increase its profits** so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud. (Milton Friedman, 1970)*

# Objective

To provide a deep understanding of the forces that have led the topic of sustainability to acquire relevance for the business sector

A systemic review of business, political sciences, sociology and economics literature to trace an analysis of the contextual changes and of the drivers of business model innovation



# Outline

## 1. The process of **global integration**

- *Political and Social transformations*
- *Changing regulatory frameworks*
- *Business voluntary initiatives and self-regulation*



## 2. The **financial crisis**

- *Rethinking the economic paradigm*
- *Perception of risks and focus on business resilience*
- *Investors' pressure and environmental concern*



## 3. **Next** research steps

- *Investors' role in driving business transformation*
- *Carbon disclosure to increase accountability*



## Capital Mobility

The **balance of power** has shifted from labour to capital, with higher degree of international mobility (Hall and Soskice, 2001)



Investments allocation rewards countries with softer regulation and lead them to compete in a *race-to-the-bottom* (Olney, 2013; Frankel, 2003; Medalla and Lazaro, 2005)

The business exerts global influence but lacks accountability (Vogel, 2008; Keohane, 2003)

Unethical practices, business **scandals** implied declining social trust in business, anti-corporate protests, **conflict with policy-makers**

(Fiorina, 2004; Gjørberg, 2009; Snider et al., 2003; Porter and Kramer, 2011)



Sovereign authority is limited to territorial boundaries. Limited ability to cope with the global interconnections of the private sector  
(Ruggie, 2007; Keohane; 2003).

International coordination is addressed by **supra-national institutions**, with limited democratic accountability  
(Grant and Keohane, 2005)



The interests of the *median voter* are not aligned with government choices → Demand for local autonomy  
(Alesina and Wacziarg, 2000)



- **Political dissatisfaction**, declining trust in governments.  
Evidence in all advanced democracies and in all levels of the social pyramid (Dalton, 2005)
- *Post-materialism*. Affluent countries experienced a **shift of values** toward better life standards and the rise of new bottom-up forms of **political participation** (Inglehart, 1977)
- *Green consumerism*. Sensitivity to social and environmental protection and concern for a sustainable and healthy lifestyle affect **consumption preferences**  
(Gilg et al., 2005; Tanner and Wölfling Kast, 2003; Fung 2002)



Political responses: **Electoral incentives** to meet changing citizens' needs (Cohen, 2011; Esty and Winston, 2009; Eccles, 2015) – Local regulators



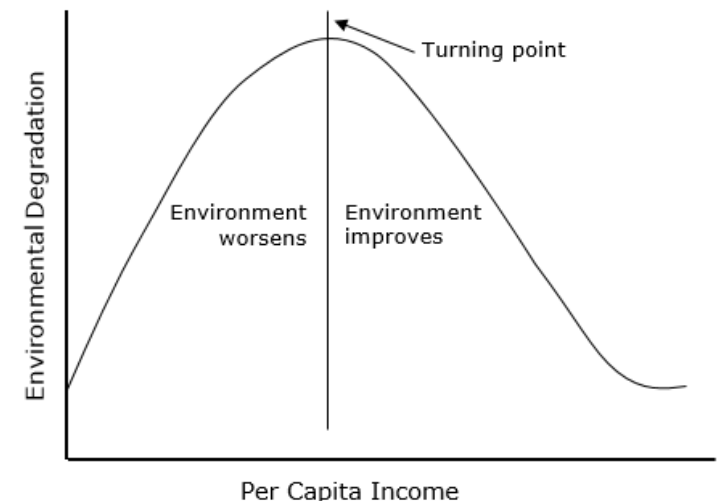
**Policy-makers** crucially influence economic and social transformations (Jackson, 2005; Meadowcroft, 2011)



The **institutional structure** matters in differently translating social needs into policies and business practices - Liberal Market Economies vs Coordinated Market Economies (Hall and Soskice, 2001)



Regulations at all levels address business conduct (e.g. Environmental Kuznets Curve) (Taylor et al. 2005, Antweiler et al., 1998; Frankel and Rose, 2002; Grossman and Krueger, 1995)





# The new global governance



Governance shifted vertically (towards the **local regulators, international institutions**) and horizontally (Academics, Think Tanks, NGOs)

(Esty and Winston, 2009)



*Institutionalisation* of social movements:

anti-globalisation campaigns, green parties and **NGOs** with global reaching **persuasive power threaten brand reputation** (Wapner, 1995; Ruggie, 2007; Fiorina, 2004; Snider et al., 2003).

No clear boudaries between voluntary and mandatory regulation  
(Vogel, 2008)

# Business voluntary initiatives and *private regulation*



Under **competitive pressure**, companies *voluntarily* anticipate tendencies and future regulation to protect **brand reputation**, gain **competitive advantage**, **meet public and private expectations**

(Dunphy, 2011; Nidumolu et al., 2009; Reinhardt, 1999; Bartley 2007)

- Adoption of international certifications – “soft laws” to improve **accountability** and **signal credible commitment** for a “socially desirable” conduct  
(Grant and Keohane, 2005; Bartley, 2007)
- *Corporate Social Responsibility* – to respond to anti-globalisation protests, rethink the role of business in society, leading a “good” globalisation  
(Gjølberg, 2009, Fuller and Tian, 2006; Heal, 2005)
- *Sustainable and Responsible Investments* – mainly to promote **ethical** investments; avoidance screenings  
(Global Sustainable Investment Review, 2014; Renneboog et al., 2008)

# Rethinking the economic paradigm



## Shock of the 2008 financial crisis

- General feeling of distrust: resized optimism regarding markets self-correcting power and financial deregulation  
(Hein and Truger, 2010; Vitols, 2015; Rodrik, 2015)
- Criticisms to risk management practices of financial institutions (compensation schemes favouring risk-taking, little accountability, **short time horizons**)  
(Davis, 2011; Diamond & Rajan, 2009)

*Those of us who have looked to the self-interest of lending institutions to protect shareholders' equity, myself included, are in a state of **shocked disbelief**.*

(Alan Greenspan, Congressional hearing at Capitol Hill 23 October 2008)

*The crisis has thus resulted in a form of creative destruction, where **established paradigms have been critically revisited**, where flawed practices have been exposed and replaced by sounder ones and where new research addressed previously neglected aspects of our societies.*

(Mario Draghi, Speech at Tel Aviv University 18 May 2017)

# Perception of risks and uncertainty



Overall perception of financial and entrepreneurial **vulnerability** to economic distress, environmental turbulences, social inequality and **political crises** (Burnard and Bhamra, 2011; Dunphy, 2011; Mercer, 2015; World Economic Forum, 2017)

## Re-regulation

Need to increase transparency and stability of finance and business

(Hein and Truger, 2010)



Proliferation of national and international financial standards (FSB TCFD, IMF WB FSAP, G20/OECD Principles of Corporate Governance)

Macroprudential regulation

(Davis, 2011; United Nations Environment, 2017)

# Rethinking the business model



## Crisis of CSR

Business voluntary activities not sufficiently responsive to deep turbulences of an economic transition (Googins, 2013; Nieuwenkamp, 2016)

Companies' **survival** needs a rethink of core strategies (Herrera, 2015, Osburg, 2013)



## New frameworks of business:

*Shared Value*: growth opportunities of integrating social benefits in the core business; end the conflict between business and policymakers (Porter and Kramer, 2011)

## Resilience and long-term perspective

*Sustaining Corporation* (Dunphy et al., 2014)

*Sustainable Company* (Vitols, 2015)

## Developing business resilience



Global interconnection increases the propagation of **shocks**. Business resilience is critical (framework of *strategic resilience*) (Christopher and Peck, 2004; Dunphy et al., 2014; Winnard et al., 2014)

- Adaptation to developing markets - redefinition of products and relations (Scholl, 2013; World Economic Forum and Oliver Wyman, 2015)
- Strengthen supply chains - relationships to improve the productivity and resilience of local producers (Christopher and Peck, 2004; Pettit et al., 2010; World Economic Forum and Oliver Wyman, 2015)
- Meet social expectations beyond appearance - extension of *clean* production practices to suppliers and retailers (Dunphy et al., 2014a; Esty and Winston, 2009b; Fung, 2002)
- Risk management approaches embedded in core strategies (Petruzzi and Loyear, 2016)

# Adoption of long-term time horizons



Criticisms to the *shareholder value model* (Vitols, 2011)  
(The goal of business is to maximise shareholder value)



The competitive markets for equity capital imposes excessive **short-termism**  
(Barton and Wiseman, 2014)

Managers and investors are in a trap of *self-reinforcing shortening of time horizons* (Jackson and Petraki, 2011)



«impatient» investors make pressure for short-term results and sacrifice investments (Murphy et al., 1991; Porter, 1992)

Evidence from a survey to business leaders (Bailey et al., 2014)

Extensive empirical literature on the role of **institutional investors** in enhancing managers myopia (cuts in R&D) with opposite evidence  
(Chen et al., 2015; Aghion et al., 2013; Brossard et al., 2013; Eun-Hee Kim and Lyon, 2011; Wahal and McConnell, 2000)

# A change of tendency driven by environmental concern



## Environmental risks raise **investors' concern**:

(Eun-Hee Kim and Lyon, 2011; Harmes, 2011; Kauffmann et al., 2012; Mercer, 2015)

Environmental disasters

Reputation

Environmental regulation



Compromise firms' ability to  
generate future cash flows

Perceived by both morally committed and neutral investors (Ansar et al. 2013)

Market forces accelerate  
business transformation



# Reputational risks



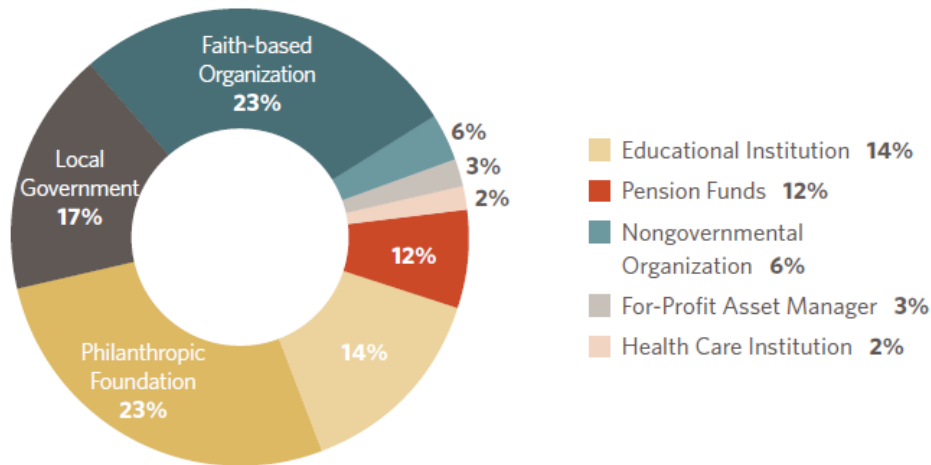
e.g. **Divestment movements** create *organisational stigma*: broad perception of discredit for violating social norms

→ revenues uncertainty

→ changes in conventions of investment decisions

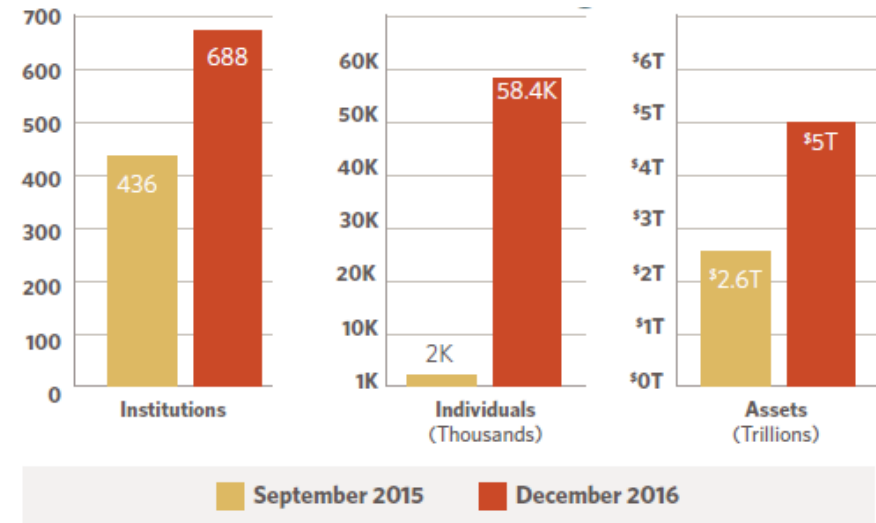
(Ansar et al. 2013)

## Heterogeneity of divesting institutions



(Arabella Advisors, 2016)

## Value of assets held by divesting institutions



## Regulatory risks



e.g. Carbon Bubble: global limits on emissions lead to the depreciation of fossil fuel assets

The **exposure** of European financial institutions to the risks linked to the depreciation of fossil reserves is more than 1 trillion euros (Weyzig et al., 2014)

Investors ask for information about firms' ability to face the **transition** towards a low carbon economy: environmental performance, risks, opportunities and management strategies



Frameworks of **voluntary disclosure**

## Voluntary disclosure as market signal (1/2)

Disclosure reduces investors' unexpected **perception of risks**

Authors	Research question	Results/Contribution	Methodology
Blacconiere et al. (1994)	The market reaction after an environmental disaster (Union Carbide's chemical leak, 1984) increasing the likelihood of stricter environmental regulation	Firms with more extensive environmental disclosure prior to the accident suffered <b>less negative market reactions</b> than companies with less extensive financial report environmental disclosure	Event Study. Analysis of cumulative abnormal returns of 47 US chemical firms providing pollution information in their 10-K report in 1984
Freedman et al. (2004)	Investigate if companies with worse air pollution performance suffer more negative market reactions to the announcement of President Bush's proposal for changes to the Clean Air Act in 1989 than companies with better air pollution performance.	Firms with higher levels of environmental disclosure in their 1988 reports suffered <b>less negative market reactions</b> to Bush's proposal than firms with higher levels of disclosure.	Event study. Analysis of firms' cumulative abnormal returns in a time window around the approval of the Clean Air Act (1989). Data for 112 US firms providing pollution information on the Toxic Release Inventory
Eun-Hee et al. (2011)	The effect of voluntary disclosure on markets reaction when the likelihood of stricter environmental regulation increases	Firms participating to the Carbon Disclosure Project experienced <b>higher abnormal returns</b> when Russia's ratification of the Kyoto protocol made it enter in force	Event study. Analysis of firms' cumulative abnormal returns in time windows around Russia's ratification of the Kyoto Protocol in 2004. Data on 250 firms worldwide

## Voluntary disclosure as market signal (2/2)

### Disclosure increases firms' **market valuation**

Authors	Research question	Results/Contribution	Methodology
Campbell et al. (2003)	Investigating the potential for firm financial reporting practices to affect valuation	Disclosure of private information about environmental liabilities <b>offsets negative market valuation</b> by reducing uncertainty	Balance sheet valuation model. Data for 60 US chemical firms between 1987 and 1992
Cheng et al. (2014)	The relationship between disclosure of ESG performance and firms' market valuation	ESG disclosure reduces capital constraints ( <b>increase access to finance</b> )	Regression analysis of capital constraints (various measures from Worldscope) on ESG performance (as reported by the Reuters Asset4 ESG score). Panel dataset for 2439 global listed companies between 2002 and 2009
Ioannou et al. (2014)	Evaluate the introduction of mandatory disclosure on firms' transparency and on market value	Increase in the level of disclosure <b>positively</b> affects firms' market valuation	Difference-in-Difference, IV. Comparison of market value (Tobin's Q) and transparency (Bloomberg ESG score) between firms in countries adopting disclosure regulation and a control group. Sample starting from 10472 firms worldwide between 2005 and 2012

# Voluntary disclosure and environmental performance

Is disclosure associated to better environmental performance?

Authors	Research question/hypothesis	Results/Contribution	Methodology
Clarkson et al. (2008)	Environmental performance and the level of discretionary environmental disclosures are positively associated	<b>Positive</b> association between environmental performance and the level of discretionary environmental disclosures.	Regression analysis of the environmental performance (proxied by data from the Toxic Release Inventory) on the score of voluntary environmental disclosure (computed from firms' reports based on the Global Reporting Initiative scheme). Data for 191 US firms in 2004
Cho et al. (2012)	Firms with worse environmental performance are more likely to disclose environmental capital expenditure amounts than better performing companies	The choice to disclose is associated with <b>worse</b> environmental performance	Binary logistic regression to tests the relation between environmental capital spending disclosure (from firms' 2004 reports) and environmental performance (from Toxic release Inventory). Data for 119 US firms
Qian et al. (2015)	Changes in carbon disclosure will lead to positive changes in carbon performance	Change in carbon disclosure levels is <b>positively</b> associated with a subsequent change in carbon performance	Regression analysis of the yearly changes in CDP score on yearly changes in CO2 emission intensity. Panel data including 284 worldwide companies in the CDP Global 500, between 2008 and 2012

# Growing emphasis on climate change and on the role of GHG (IPCC 2014) – market signals still effective?

Authors	Research question	Results/Contribution	Methodology
Clarkson et al. 2015	Market evaluation of carbon emissions under the EU Emission Trading Scheme	<b>Negative</b> relation between GHG emissions and market valuation of firms in the EU ETS	Balance sheet valuation model. Dep var: market value of general equity. Ind var: excess carbon allowances under EU ETS (proxy for CO2 emissions). Data for 221 European firms between 2006 and 2009
Matsumura et al. 2014	Firm value is negatively associated with carbon emissions.	<b>Negative</b> relation between firm value and carbon emissions	Balance sheet valuation model and propensity score matching. Dep var: market value of common equity; Ind var: Carbon emissions (from CDP questionnaire). Data for 256 US firms between 2006 and 2008
Baboukardos 2017	Potential benefits of mandatory environmental reporting of firms' market value	Markets valuation of firms is <b>negatively</b> correlated with GHG emissions	Balance sheet valuation model. Dep var: market value of equity 6 months after fiscal year-end. Data for UK firms listed in the LSE in the period 2011-2014

## Further steps (1/2)

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Further investigate the role of **market forces** in driving decarbonisation: the pressure investors impose on firms regarding their «sustainability»

Since the **Paris agreement** has emphasised the worldwide attention on climate change, investors might be increasingly concerned about firms' GHG emissions. Hence:

Hypothesis 1: a **negative** relation exists between listed firms' disclosed GHG emissions and their market value and this relationship has worsened after the Paris Agreement.

Hypothesis 2: the quality/trustworthiness of information disclosed (as reported by ESG scores) matters in **mitigating** firms' negative market valuation of GHG emissions.

## Further steps (2/2)

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Analysis of firms' market valuation through the Balance Sheet Value Model accross 2015

Sample: firms listed in stock indexes in countries that ratified the Paris Agreement (paying attention to countries that adopted GHG mandatory disclosure regulation)

Assessment of firms' yearly ESG score (data available from Bloomberg for the period 2005 – 2016)

To be continued..



# Thank you!

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