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## Mapping a Sustainable Finance System

Background paper to the 2nd Multinational Knowledge Brokerage Event on finance, being held on 14th & 15th May 2013 in Brussels.

**Keywords:** finance system, sustainable economy, investment, savings, credit allocation

### Summary

This paper presents some of the finance systems thinking that was developed in the RESPONDER Multinational Knowledge Brokerage Event (MKBE) in May 2012, organised by The Finance Innovation Lab and University of Surrey. It should be read in conjunction with the Prezi presentation available online at [http://prezi.com/qnts2jev\\_add/responder-finance-system-map/](http://prezi.com/qnts2jev_add/responder-finance-system-map/)

It then outlines some of the main critiques of the current finance system that have developed in the aftermath of the 2008 financial crisis and will be developed further at the forthcoming 2<sup>nd</sup> RESPONDER MKB workshop on Changing the Finance System to enable a Transition to a Sustainable Economy, being held in Brussels on 14<sup>th</sup> & 15<sup>th</sup> May 2013. This workshop will review of what sort of investments will be required in order to deliver a transition to a sustainable economy, and reduce pressures to consumption of fossil fuels, energy and depletion of natural resources in order to create a framework for identifying the key research questions and policy solutions required to create a the finance system which can facilitate the transition.

### The RESPONDER Journey: Aims and Desired Outcomes

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The RESPONDER project aims to promote sustainable consumption by exploring novel ways of knowledge brokerage between science and policy in the five policy-areas of food, housing, mobility, ICT, and finance. The main objectives are to help improve the management of potential political, social and economic contradictions of sustainable consumption with economic growth, bridge the gap between science and policy, and foster mutual understanding between the “pro-growth community” and the “beyond-growth community”. Participatory systems mapping as the core methodology serves as the basis for systematizing empirical findings, questioning various model assumptions, analysing the effects of different policy options and identifying new research questions in the respective policy areas.

“Changing the Finance System to enable a Transition to a Sustainable Economy” is the 2nd RESPONDER Multinational Knowledge Brokerage Event (MKBE) focusing on finance and its role in economic growth and sustainable consumption. As such, it serves as an arena for debate between policy-makers and researchers working on different aspects of finance, and aims to explore open research questions and emerging policies with regards to its potential to foster sustainable consumption in Europe and arrive at a useful impetus for effective policy development. In the course of the event, in a dialogue-oriented atmosphere, we will have a closer look at the role that the finance system plays in the transition to a sustainable economy.

This background paper outlines the event context, setting out some of the findings from the 1<sup>st</sup> MKBE on The Role of Household Savings and Debt in a Sustainable Economy, held on May 24/25, 2012 in London, and demonstrating how the 2nd event will build on those findings.

# 1 Where does the money go - a basic outline of the finance system

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## 1.1 Finance system mapping from RESPONDER workshop May 2012

The transition to a sustainable economy can only be achieved by the mobilisation of huge amounts of investment to change our infrastructure, technologies and enable us to live fulfilling lives without the levels of consumption of natural resources that society currently has. Many of the barriers facing the mobilisation of this sustainable investment exist in the way the finance system currently operates and allocates capital. In order to identify the best policies to address these barriers one has to start with a basic understanding of the finance system itself.

In the first RESPONDER Knowledge Brokerage event on finance, The Role of Household Savings and Debt in a Sustainable Economy held in London on May 24<sup>th</sup> and 25<sup>th</sup> 2012, a group of experts in sustainable finance from across Europe worked on system maps to explore the most important interactions. This paper builds on that work, which focused on how savings generated by households are allocated as credit and investment by financial institutions. The map created at the workshop was then developed by The Finance Innovation Lab into a presentation in Prezi format, which can be seen using the online link below:

[http://prezi.com/qnts2jev\\_add/responder-finance-system-map/](http://prezi.com/qnts2jev_add/responder-finance-system-map/)

## 1.2 The flow of savings into credit and investment

In this very simplified model we take households as the starting point, then it is possible to see a number of different loops of finance that gradually overlap to create the full finance system. Firstly, households spend money on the consumption of goods and services, creating jobs, profits for companies, and income for those who carry out the jobs. Second, a high proportion of household income goes on paying for housing costs, whether renting or paying a mortgage, finally some money is accumulated in the form of savings. As an aside, it is worth noting that much of the cost of housing is in the form of interest payments for the debt taken on to purchase such an asset.

The next step is follow where the savings go in the system. Broadly speaking, some is placed in a bank or mutual savings institution in the form of an instant access account that can be drawn down at any time. The other form of saving is more long term and goes into pensions, mutual equity funds or other assets that cannot be accessed easily and are commonly there for funding retirement income. Some analysis of how this distribution is difference across EU countries was can be found in the background paper to the May 2012 workshop (Hewett, 2012). Much of this long term saving capital is managed by large institutional investment companies, such as pension funds. The question that is at the heart of the RESPONDER project is where does this accumulated capital then get allocated by the banks and institutional investors?

## 1.3 Banks and lending

Banks lend some of their balance sheet back to the productive economy in working capital for business.

They also lend a great deal to finance the purchase of domestic and commercial property. As property prices rise, the propor-

tion of lending to this sector has increased. Such lending is less risky for the banks, than lending to businesses as it is usually secured against the asset itself. If a homeowner defaults on their mortgage, the bank owns the house. If a business goes bankrupt and defaults on a loan, there may be very little value left in the business for the bank to recoup.

Finally, particularly in the years leading up to the crash of 2008, increasing amounts of bank lending was to other financial institutions, much of it for speculative purposes. The Liikanen Report on the structure of EU banking highlighted the growth of financial trading in banks across Europe as a proportion of total assets (Liikanen, 2012). In the UK the trend was particularly pronounced. Not all banks could do this, of course, and it is only the big international banks that have retail, commercial and trading activities, that have expanded the financial markets in this way. The same banks also receive implicit government subsidies as they are 'too big to fail' (Liikanen, 2012). Co-operative banks, mutually owned and local savings banks only lend for property purchase, to individuals or businesses.

However, bank lending is not entirely dependent on the deposits on their balance sheet. Private banks in fact can create credit themselves, and some argue that when this credit creation grows too fast it sows the seeds for a future crash (Werner, 2012). In the run up to the 2008 crash, banks did increase their leverage and created a credit boom, which only served to increase the amount of lending to non-productive sectors such as property and financial trading (Bezemer, 2012).

#### **1.4 Long term savings, institutional investors and equity markets**

Longer term savings are more commonly invested in equity or shares in companies or tradable debt such as corporate or government bonds. Some of this will be direct ownership, but far more is through intermediaries such as pension funds, equity fund managers, who are often advised by consultants housed in large investment banks. The interests of the saver are governed by a fiduciary duty, whereby the manager of the saver's money, such as a pension fund, is bound by law to ensure the best interests of the saver are upheld. Over time the way this has been measured has evolved into making the best returns over increasingly short periods of time, typically every quarter. This has been delivered by increased trading activity in shares and bonds. Technology has accelerated this so that trading many deals of equity are now taking place in a matter of milliseconds, aided by sophisticated computer algorithms designed to anticipate small price fluctuations with high volume trades. Equity investments are less about the underlying value of the company in which the shares are held and more about the short term price fluctuations of a marketplace. Managers of those companies are then forced to make their decisions, not based on long term prospects of investment and returns over years, but based on perceived impact on short term share price. This short termism has been well documented by the Kay Review in the UK (Kay, 2012) and a new European Commission Green Paper on Long-Term Financing of the European Economy (European Commission, 2013).

## 2 What we would like the finance system to do – summary of critiques developed after financial crisis of 2008

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The finance system above evolved before the 2008 crash, and in spite of this major failure, is largely in the same shape as before. In the five years that have followed there has been much criticism of the financial sector, and now the beginnings of a coherent critique which, if taken forward, could transform the finance system into one that serves society, the wider economy and the environment better. Below we pick up three major arguments that are challenging the old financial market orthodoxies:

- There is too much speculation and trading and a need for more focus on long term finance
- Banking should return to its core function of intermediation between savers and businesses
- The finance system is ‘institutionally fossilist’: blind to risks of climate change and opportunities of clean technology, thus misallocating capital on a vast scale and creating a ‘carbon bubble’

### 2.1 More investment, less speculation

Technology and investment culture have combined to create a financial market that is more and more short term in nature. Speculation is not a new phenomenon, and can never be outlawed. Indeed the financial markets do need to be liquid, so any investor can withdraw funds when they want to. The problem is that if speculation becomes the dominant market characteristic then the interests of the savers and businesses are not served as well as those intermediaries who are simply managing other people’s money. Professor John Kay was commissioned by the UK government investigate this problem in the City of London and he has been scathing in his criticism of the way financial markets have served the wider economy. In particular he highlights a fundamental conflict of interest between the incentives facing most asset managers, to compete with each other for contracts over very short time frames and the interests of businesses they invest in and the savers, with whose capital they invest. (Kay, 2012) Ex-Vice-President of the USA, Al Gore, now Chair of an investment fund himself, has highlighted similar issues. In a recent speech to the London based responsible investment group, Share Action, he described the investment system as ‘functionally insane’ because of its over reliance on short term benchmarks (Share Action, 2013)

The European public interest group, Finance Watch, summarised the problem by calling for more investing and less betting inside financial markets. Their report goes on to define the difference between investors who ‘share the fate of the issuers, focussing on fundamental value and stewardship ... they win or lose with the success of the underlying project’ and speculators who ‘focus on price movements – in any direction – and the behaviour of other speculators’ (Finance Watch 2012). The European Commission have now published a green paper on Long Term Financing of the European Economy, and the Financial Transaction Tax proposal is also aimed at the problem of short-termism (European Commission, 2013).

Short-termism is likely to result in misallocation of capital generally, but it is a particular problem for the transition to a sustainable economy, as natural resource depletion and climate change are inherently long term issues. Any future economic costs of investing in environmentally damaging activities are routinely ignored by investors for sound rational reasons. Removing the short term bias from financial markets will not, on its own, steer the levels of capital required towards the sustainable economy. But it

is hard to see how such mobilisation of capital could be possible until markets are forced to take a longer term view.

## 2.2 Banking should focus on intermediation and productive lending

Another major theme that has emerged in the post-crisis analysis of finance is that banks had become too big, with the credit expansion that has been allocated to the wrong parts of the economy. Banks which were ‘too big to fail’ were able to take excessive lending risks on property and financial trading, in the knowledge that an implicit subsidy from the state existed. A by-product of this expansion was that traditional retail banking and lending to business had become less important for the profits of financial institutions. As with the story of short-termism above the incentives of banks were in conflict with those of the wider economy. The response of policymakers at national and European level has been to push for separation of investment and retail banks, but even this will mean some ‘too big to fail’ subsidies still remain.

A number of academics have pointed out the damaging effect of a concentrated banking sector with a small number of players, linking this explicitly to the risks of credit expansion. Papers from Richard Werner of University of Southampton argue why there are diseconomies of scale for banking and the wider economy – the bigger banks get the more detached from the real economy and potentially damaging they become (Werner, 2012). Werner argues that the German banking system, with its many local savings banks, has been far more resilient to the financial crisis than other EU partners. Dirk Bezemer, from the Institute of New Economic Thinking (INET) presents similar analysis. Bezemer uses data from the US and other countries to show how the rise in unproductive lending to real estate and financial speculation is often a precursor to economic downturns. Housing bubbles in Ireland, Spain, the UK and the US were all part of the build up to the 2008 crash (Bezemer, 2012) Thorsten Beck from Tilburg University has also studied international data from 1980-2007 and concluded that where financial sectors focused on intermediation, rather than financial trading there were benefits to the economy as a whole, in contrast to where the opposite happened and there was no economic benefit (Beck et al, 2011).

As above, a more diverse banking sector focused on intermediation and productive lending is not a route to a sustainable economy, but evidence from the sections of the banking industry that do emphasise sustainability, the member of the Global Alliance of Banking on Values (GABV) do use this model of finance and have demonstrated their commercial success since 2007 in contrast to the mainstream banking sector still struggling (GABV, 2012).

## 2.3 Finance institutions should integrate the value on ecological risks and opportunities

Focusing on carbon emissions and climate change, there is mounting evidence that the finance system is, to use a phrase from Michael Liebreich of Bloomberg New Energy Finance, ‘institutionally fossilist’. Put simply there are a number of systemic problems in the way financial institutions decide how to allocate capital that bias then against low carbon and clean energy investments (World Economic Forum, 2013).

The biggest of these problems is the way in which fossil fuel companies are valued in the market, creating a potential ‘carbon bubble’. Analysis from the Carbon Tracker Initiative, but now picked up by Standard & Poors, HSBC and Nick Stern, has shown that the present value of fossil fuel investments is based on the assumption that all the fossil fuel reserves owned by coal, oil and gas companies will be used, generating future revenues for investors. However if all of these reserves were used, then global climate change would accelerate to an average temperature increase of at least 6 degrees Celsius, with catas-

trophic damage to the planet, and consequent economic losses (Carbon Tracker Initiative, 2013). Another initiative in France has applied this analysis to start working out how an investment portfolio should look to be consistent with keeping global warming to a 2 degree increase. Their focus is on the need to create methodologies that properly account for the long term carbon risk in investments in fossil fuel, but alongside this to design better policy incentives in the tax and regulatory frameworks to encourage or even require investors to take a more long term outlook with the money that they manage (2 Degree Investing Initiative, 2013).

### 3 Where is policy intervention needed?

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In order to build on this knowledge and focus on where policy interventions should be prioritised, further mapping sessions in the workshop 'Changing the Finance System to enable a Transition to a Sustainable Economy' on 14<sup>th</sup> & 15<sup>th</sup> May 2013 will focus on what type of investments are needed and which parts of the financial system can best accelerate them.

#### 3.1 Where is the investment needed in the transition to a sustainable economy?

Many different types of productive investments are required in order to deliver a transition to a sustainable economy, and reduce pressures for consumption of fossil fuels, energy and natural resources. They will span across aspects of the economy, from energy supply, transportation, reducing demand for energy in buildings, through to changing food and agricultural systems. Some of these topics are subject to other parts of the RESPONDER project. There will also be different types of investment need, from expanding existing technologies such as onshore wind, to building completely new infrastructure, such as offshore renewable or carbon capture and storage pipelines. Some will be major projects requiring large capital investors, others might be more decentralised such as improvements in energy efficiency in buildings. Still more will need innovations in technology that are not even on the market yet. The first task will be to map these investment needs onto the finance system to see if the current system could be capable of delivering the scale of investment needed.

#### 3.2 Which parts of the finance system need to change to accelerate that investment?

The next task will be to review of the types of investments above and consider where any extra finance could come from to deliver the scale required. In doing the workshop will draw out questions for future research and identify pressure points in the system map that could help change the financial flows in the sustainable direction. Such as:

- What are the biggest barriers to scaling up finance?
- Are new financial products or business models required?
- Would restrictions on some existing financial business models help?
- Can existing financial products (eg mortgages, pensions etc) be steered towards sustainable goals?
- What policy interventions might help facilitate these changes?

### 3.3 Systems mapping methods being used in the workshop

In order to build on this background paper and that of related Knowledge Units, there will be two system mapping sessions in the workshop designed to explore in more detail the needs on the finance system that a transition to a sustainable economy will place, and consequent policy and research questions that arise.

In the first session three groups will discuss what part of the finance system will be required in order to deploy investment in the different technologies and infrastructure changes across energy supply, sustainable mobility and reducing energy demand.

#### **Breakout sessions – finance needs of the sustainable economy**

*1. Energy supply*

Many different energy supply investments will be required to deliver the transition to a sustainable economy. These will include large offshore renewables, transmission and network infrastructure, carbon capture and storage, decentralised renewable electricity (eg solar roofs), biomass heat and innovations in new technology.

*2. Sustainable mobility*

The types of investment needed in mobility will include public transport networks, clean vehicle technology, communications technology, redesigning urban infrastructure to promote sustainable modes, clean fuels.

*3. Reducing energy demand*

To cut energy demand in the economy major investment will be needed in insulation of housing and commercial buildings, product innovation in appliances and greater efficiency in manufacturing processes, amongst other things.

The groups will identify the most important lever points in the system and pull out any key research needs or priority policy issues to address. At the end of the session, the groups will rotate to review how the finance system needs may be different across the three areas.

The second session, on Day 2, will start with these annotated maps and examine the priority areas identified on Day 1 in more detail. In particular, the aim will be to identify policy interventions that could address the issues and concerns identified on day 1. At the end of this process the aim will be to identify some areas of policy change that should be integrated into EU policy dossiers on financial regulation and banking reform. These points will be put directly to a panel of policy makers and influencers.

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