Financial firms and Behaviour in Finance

Abstract

This paper investigates a novel dimension to ‘Behavioural Finance’ by illustrating how financial firms influence financial behaviour and decisions, by agents in the firm, and by agents in financial markets.

Within the firm the paper explores new ideas in the form of a ‘behavioural theory of the financial firm’ (BTFF). The BTFF investigates connections, interactions, and dynamics in creation and use of intangible resources (social and knowledge) in financial firms. This illustrates how social and knowledge resources (such as organisation, culture, expertise) are developed and used to create information and control behaviour at all levels of the firm. It shows how intangibles are used in the transformation of financial capital and its risks in the core financial intermediation role of financial firms (Holland, 2017b, 2018a)

The paper further develops the dynamic dimension to behaviour in finance (or ‘Change framework’) by using a combination of ‘Change’ theory and empirical insights to explore how financial firms exploit change and intangible resources (social and knowledge) to influence and control agents such as customers in financial markets. It uses Merton’s (1995) ‘financial innovation spiral to analyse evolutionary change in financial firms and hence in BTFF variables. Lusardi and Mitchell, (2014) ideas of ‘financial literacy’ are used to analyse the nature of critical choice conditions for customers in markets. ‘Nudge economics’ (Thaler and Sunstein, 2008) is used to discuss how financial firms can influence evolution of the firm in a changing finance system and enhance their control over customer decision behaviour.

The BTFF and ‘Change’ literature are used to argue that financial firms seek to control the same broad class of decisions and behavioural conditions by agents in the firm and by customers in markets. In the case of internal firm agents the aim is to avoid the problems outlined in ‘behavioural finance’. In the case of customers the aim is to use firm wide intangibles to control and exploit the same behavioural problems such as overconfidence, information confirmation bias (search, prefer, interpret), framing and loss aversion identified in behavioural finance (Statman, 1999). The public narrative about improving customer trust post GFC is argued to be a ‘cover story’ disguising a return to historic control.

The above demonstrates that the BTFF, ‘Change’ literature, and ‘Behavioural Finance’ ideas can form a connected conceptual frame. This can be used to explain how financial firms use the internal and external means of behavioural control to create sustainable competitive advantages, to stabilise income, reduce risk, and increase financial value of the financial firm.

Such control over ‘behaviour’ in finance has to be made explicit through improved transparency by financial firms in new reporting mechanisms such as ‘Integrated Reporting’ (<IR>, IIRC, 2013). This transparency can take the form of value creation narrative based on the BTFF, and a change, evolution, and innovation narrative based on ‘Change’ literature and empirical insights. Regulators must use such insights and enhanced transparency to make judgements how far financial firms can go in their manipulation of behaviour in finance in the interests of making profits as well as stabilising firms and the financial system.

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`Introduction`  

Section 2 discusses the motivation for the paper and approach adopted. Research questions concern - How can academics and practitioners understand how financial firms influence behaviour by agents in the firm and customers in financial markets? and How can means such as integrated reporting and enhanced transparency be used to exercise public control over this phenomena?  

Section 3 outlines an embryonic BTFF based on empirical and theoretical narratives (Golden-Biddle and Locke, 2007) and shows the potential for understanding financial firms and their ability to control behaviour in the firm. The analysis provides templates to think how to develop a financial firm <IR> narrative about value creation in the financial firm when using intangibles resources in the transformation of financial capital.  

The embryonic BTFF is intended to provide a means to understand risk and change, learning, design and use of resources in financial firms. The BTFF concerns ideas of strategic dynamics and operational dynamics at all levels in the financial firm in world of growing risk and uncertainty. The BTFF shows connections and interactions between many strategic factors and between these and operational factors in influencing agent behaviour in the financial firms and transforming financial resources. It discusses how combination of intangibles and tangibles are being developed and integrated in financial firm business models and value creation chains (IIRC, 2013). The BTFF shows how, in a world of change and uncertainty, many types of knowledge and social intangible resources can be developed, managed and used in to influence internal behaviour and support the transformation of financial capital and its risks in the financial firm. In this world the financial firm seeks to understand risk and uncertainty. It develops robust corporate governance conditions, explicit strategic aims, and learning capabilities to do this. Thus strategic choices about balance of aims, change oriented boards and top teams, formal learning capabilities, and control systems, are central to the development of adaptive intangibles, and control systems. The latter are essential to create conditions for influence over internal agent behaviour during mobilisation of intangibles to influence customer behaviour and to transform financial resources consistent with financial aims (value and risk). These intangibles and conditions are internal means to influence the use of routines, heuristics and shared knowledge about customers and markets at the level key decision makers such as ‘top teams, middle management, back office, and front office teams. They are internal means to influence behaviour to reduce the negative impact on in-house teams of cognitive phenomena and behavioural problems such as overconfidence, information confirmation bias (search, prefer, interpret), framing and loss aversion identified in behavioural finance (Statman, 1999).  

Section 4 further develops the dynamic dimension to behaviour in finance in the form of an explicit ‘Change framework’ to the BTFF. It uses a combination of theory and empirical insights to explore how financial firms exploit change to influence and control behaviour of agents such as customers in financial markets. This section uses a bank case of evolution, theoretical interpretation of evolution, and ‘nudge
economics’, to explore how financial firms can influence their evolution in a changing finance system by influencing the behaviour of customers in markets. The case analysis and theoretical structure provide examples of the potential for integrated thinking in financial firms about, evolution, innovation and influence over customer behaviour in markets. The section uses Merton’s (1995) ‘financial innovation spiral to analyse evolutionary change in financial firms. Lusardi and Mitchell, (2014) ideas of ‘financial literacy’ are used to analyse the nature of critical choice conditions for customers in markets. ‘Nudge economics’ (Thaler and Sunstein, 2008) is used to discuss how financial firms can influence their evolution in a changing finance system and enhance their control over customer decision behaviour. This provides the means to exploit and control customer choice conditions in the form of cognitive phenomena and behavioural problems such as overconfidence, information confirmation bias (search, prefer, interpret), framing and loss aversion identified in behavioural finance (Statman, 1999). The analysis provides templates to think how to develop a financial firm <IR> narrative how the financial system is changing and how changes in the financial firm fit within this. It provides ideas on how financial firms can report in <IR> on how they control customer behaviour and how this changes over time.

Section 5 discusses how the connected conceptual frame (made up of BTFF, Change framework, and Behavioral Finance) constitutes a dynamic investigative tool to rethink and critically appraise concepts of behaviour in finance. It provides means to think how these activities can be made visible and open to accountability. The section argues that such control over ‘behaviour’ in finance has to be made explicit through improved transparency by financial firms in new reporting mechanisms such as ‘Integrated Reporting’ (<IR>, IIRC, 2013).

The development of a BTFF and the ‘Change framework’ and their use with ‘Behavioural Finance’ ideas in the paper reveals new ways for critical thinking about the role of knowledge and social resources in financial firms. This creates potential to explore many change issues and behaviour issues concerning financial firms.

The connected conceptual frame can be used to explain how financial firms use internal and external means of behavioural control to create sustainable competitive advantages, to stabilise income, reduce risk, and increase financial value of the financial firm.

The connected conceptual frame constitutes a dynamic investigative tool to rethink and critically appraise concepts of behaviour in finance. It provides means to think how these activities can be made visible and open to accountability. For example, such control by financial firms over ‘behaviour’ in finance can be made explicit through improved transparency by the firms in new reporting mechanisms such as ‘Integrated Reporting’ (<IR>, IIRC, 2013). The BTFF and ‘Change framework’ frames emphasise, that given complexity in value creation processes, that much more disclosure is required on how intangibles play a role in changing agent behaviour and decisions and in transforming financial capital and its risks. This transparency can take the form of value creation narrative based on the BTFF. Transparency can take the form of narrative about change, evolution, and innovation based on the ‘Change framework’. Transparency can explain how value creation and innovation activities are achieved through control over agent behaviour
in the firm and in markets. Regulators must use such insights and enhanced transparency to make judgements how far financial firms can go in their manipulation of behaviour in the interests of making profits as well as stabilising firms and the financial system.

2. Rationale for the paper and approach adopted

Section 2 discusses the reason and motivation for the paper and the approach adopted. The paper argues there are major problems in understanding financial firms during ongoing change. In particular there are problems in understanding how financial firms affect behaviour of agents in the firm and financial markets. There The GFC and post GFC regulatory changes have combined with growing importance of intangible resources in the firm, digitalisation, social responsibility and climate change issues; to highlight the dynamic world of change facing financial firms and associated impact on behaviour in finance.

Conventional finance theory, such as financial intermediation theory, also has problem in explaining change and responding to uncertainty in financial firms (Scholtens and Wensveen, 2003). The problems drive the need for a ‘Behavioural theory of the financial firm’ (BTFF) and for this to be used in Section 3 to analyse the role of such firms in influencing behaviour in finance. This paper argues that further theory and literature development is required in the area of change and evolution for financial firms and the finance systems. Section 4 further develops the dynamic dimension to behaviour in finance in the form of an explicit ‘Change framework’ to the BTFF. This can clarify the larger contextual factors driving financial firm behaviour and their impact on the behaviour of others. The BTFF and ‘Change framework’ are used with ‘Behavioural Finance’ ideas to form a connected conceptual frame.

2.1 Need for a connected conceptual framework linking behaviour, context and change.

The history of change, learning and strategic choice in financial firms and the events in the GFC and post GFC period showed how capabilities to respond to change in a connected and integrated way are central to financial firm survival (Holland, 2010). These have been major stimuli to form a conceptual framework. This is required because change in the financial firm (from financial, social, climate change) face many barriers from the existing ‘nature of finance’ (Hendry, 2013; Luyendijk, 2016), and from limitations of finance theory (Scholtens and Wensveen, 2003; Holland, 2018a).

Given these problems there has to be a stronger focus on the whole financial firm, its purpose in finance and wider society, its combined use of intangible and financial resources, their connections and interactions in transforming financial capital, and disclosure on these issues. There has to be an explicit focus on how financial firms use intangible resources to change the behaviour of internal and external agents to achieve financial aims. An integrated and collective approach to these factors can play a positive role in responding to change, overcoming barriers, delivering the financial functions of the financial firm, achieving financial
aims (value, risk) and social responsibility and climate change aims. An integrated approach can minimise the negative role of intangibles in creating barriers to change.

Practitioners recognise the problem of fragmented thinking but argue that it is difficult to develop an integrated approach with so many interacting variables during rapid change (Bogan, Dellner, Haresnape, Langdon, Lake; 2018). Given complexity, they prefer an incremental, adaptive approach to understand how say culture works with expertise and control systems. They prefer to analyse two or maybe three factors together in detail, bringing in lesser insights from other factors, as they develop the analysis and narrative. At times, they ignore other factors or assume they are unchanging. Decisions are based on a narrow range of information sources and analyses focussed on factors of interest. For example, Chen et al. (2014, 2018) showed how bank managers sought a comprehensive understanding of value creation processes during periods of relative stability. However, given complexity in rapid change (pre GFC) bank managers and analysts sought to understand ‘just enough’ about bank business models and change process to create a ‘mosaic’, or big picture. Simon’s (1957) ideas of ‘bounded rationality’ and ‘satisficing’ are relevant in explaining this ‘just enough’ decision behaviour. Management and analysts noticed missing pieces in their information ‘jigsaw’ and searched to create an improved, if incomplete picture. Such ‘mosaic’ formation can be interpreted as a process of sense making (Weick, 1995). In the GFC this approach failed in many financial firms and analysts. This approach also reflects Lindblom's (1959) ‘Science of Muddling Through’. This may be effective when two or three factors are the primary source of the problems, and other factors are stable. If a few factors such as chief executive leadership (dominance and hubris), wealth maximising aims and culture, financial incentives, and a target driven world, dominate the thinking agenda; then the big picture connecting many more factors can be lost and financial risk intensifies.

The above ideas provide the stimulus to develop the BTFF and ‘Change framework’, and to explore connections to ‘Behavioural Finance’ literature. These approaches by themselves will not solve the problems of complexity in financial firm management, behaviour and reporting. Together they may provide a portfolio of conceptual and practical tools to respond to change.

2.2 Approach adopted in the paper

The approach adopted in the paper develops a BTTF and a ‘Change framework’ based on empirical and theoretical sources. The focus is on how knowledge and social resources are created and mobilized in the transformation of financial capital and its risks, how they change through time, and change behaviour of internal and external agents.

The structure of the BTFF is based on an ‘empirical narrative’ derived from field research. The ‘theoretical narrative’ in the BTFF uses literature on IC, management and sociology of finance to interpret field based studies of financial firms (Golden-Biddle and Locke; 2007). The BTFF investigates connections, interactions, and dynamics in creation and use of intangible resources (social and knowledge) in financial firms. This illustrates how social and knowledge resources (such as organisation, culture, expertise) are
developed and used to create information and control behaviour at all levels of the firm. It shows how intangibles are used in the transformation of financial capital and its risks in the core financial intermediation role of financial firms (Holland, 2017b, 2018a).

The structure of the ‘Change framework’ is based on a combination of ‘Change’ theory and empirical insights to explore how financial firms exploit change and intangible resources (social and knowledge) to influence and control agents such as customers in financial markets. It uses Merton’s (1995) ‘financial innovation spiral to analyse evolutionary change in financial firms and hence in BTFF variables. Lusardi and Mitchell, (2014) ideas of ‘financial literacy’ are used to analyse the nature of critical choice conditions for customers in markets. ‘Nudge economics’ (Thaler and Sunstein, 2008) is used to discuss how financial firms can influence evolution of the firm in a changing finance system and enhance their control over customer decision behaviour.

The above approach is consistent with researchers who have argued the need to abandon extant “grand theories”, and adopt a practice-based lens (Nicolini, 2013; Charl de Villiers, et al., 2014; Churet and Eccles, 2014; Dumay, 2012; Dumay and Garanina, 2013; Lodhia, 2015).

The BTFF and ‘Change framework’ are based on field studies in financial firms and these are used to develop ‘grounded theory’ (Strauss and Corbin, 1998) about each specialist firm using ‘bottom up’ or inductive methods. The use of field research in finance reflects Gendron’s at al (2013) call for an academic ‘commitment to research diversity and engage more thoroughly in the examination of finance in action’.


Thus the paper employs a practice based lens to develop a connected empirical narrative (Golden-Biddle and Locke; 2007) as means to provide structure in the BTFF and the ‘Change framework’. Barnett-Page et al (2009) argue that common factors in many related field studies (of financial firms) and events (eg GFC) provide means to match ‘like’ with ‘like’ in comparisons and integration of the studies. The field studies show common themes (Barnett-Page et al, 2009) such as the deep integration and connectivity of knowledge (IC), social, and financial resources in the business models of financial firms and their combined influence on agent behaviour in the transformation of financial capital and its risks. The field studies reveal patterns in financial firm organisation and process, in use of knowledge, and in practices of firm agents in these
contexts. The GFC showed failure of specific knowledge and social based intangibles and their connections in banks and this provides insights into how they should work together (Holland, 2010).

The empirical patterns and practices have a strong relational and dynamic perspective that involves much complexity for agents in teams and organisation (Nicolini, 2013). This recognises that much variation can occur in agent behaviour as they ‘perform’ within apparently stable routines, practices, organisational structure and process, shared knowledge and culture. The performative dimension to taken-for-granted thinking, behaviour and actions by financial firm agents in the stable contexts varies by factors such as individual characteristics and agency, and their positions in hierarchy and teams. Holland et al (2012) also noted that within common structure there was variety in terms of behaviour and knowledge use depending on financial firm factors such as investment policy and philosophy, degree of activity, current conditions, knowledge of customer, recent learning, and portfolio considerations.

The field studies and their patterns and practices are interpreted using a range of literature to create new theoretical narratives (Golden-Biddle and Locke; 2007) as an embryonic ‘behavioural theory of the financial firm’ (BTFF) and as a ‘Change framework’. As a result, the BTFF and ‘Change framework’ have at their core a structured empirical narrative about practices by individual agents in teams in financial firms, and with customers in financial markets. The resulting theoretical narratives in the BTFF and ‘Change framework’ seeks to understand the practices and actions of individuals in financial firm teams and organisation as structured, emergent and creative during change.

The BTFF and ‘Change framework’ outlined in this paper are based on financial firm specific versions for retail banks (Chen et al, 2014) and fund managers (Holland, 2016). It also based on attempts to briefly explore the idea relative to environmental, social and governance (ESG) issues (Holland, 2018c) and to investigate connections to finance theory (Holland, 2017b; 2018a). Holland (2018a) has explored in detail the real world and theoretical linkages between intangible resources and financial resources in financial intermediation in financial firms.

The BTFF and ‘Change framework’ are emergent practice based theories (Nicolini, 2013, 2017) focused on the financial firm as a critical and important corporate change agent in the finance system, real economy, and civil society. They are examples of ‘middle range thinking’ (Laughlin, 1995) positioned between the highly abstract such as finance theory and grounded work directly based on empirical phenomena. The paper does not seek to ‘integrate’ a wide range of ‘practice theories’ in a ‘meta theory’ of financial firms. It has a more modest aim is to incrementally improve explanatory power concerning financial firms, their change, and impact on behaviour, through enhanced connections between empirical findings and relevant theory. This creates capabilities to interact with the ‘Behavioural Finance’ debate.
3. Developing a ‘behavioural theory of the financial firm’ (BTFF)

Section 3 outlines an embryonic BTFF based on empirical and theoretical narratives (Golden-Biddle and Locke, 2007) and shows the potential for understanding financial firms and their ability to control behaviour in the firm. The analysis provides templates to think how to develop a financial firm ‘Integrated Reporting’ (<IR>) narrative about value creation in the financial firm when using intangibles resources to control behaviour and transform financial capital.

The embryonic BTFF is intended to provide a means to understand change, risk, learning, design and use of resources in financial firms. The BTFF concerns ideas of strategic dynamics and operational dynamics at all levels in the financial firm in world of growing risk and uncertainty. The BTFF shows connections and interactions between many strategic factors and between these and operational factors in influencing agent behaviour in the financial firms and transforming financial resources. It discusses how combination of intangibles and tangibles are being developed and integrated in financial firm business models and value creation chains (IIRC, 2013). The BTFF shows how, in a world of change and uncertainty, many types of knowledge and social intangible resources can be developed, managed and used in to influence internal behaviour and support the transformation of financial capital and its risks in the financial firm. In this world the financial firm seeks to understand risk and uncertainty. It develops robust corporate governance conditions, explicit strategic aims, and learning capabilities to do this. Thus strategic choices about balance of aims, change oriented boards and top teams, formal learning capabilities, and control systems, are central to the development of adaptive intangibles, and control systems.

The latter are essential to create conditions for influence over internal agent behaviour during mobilisation of intangibles to influence customer behaviour and to transform financial resources consistent with financial aims (value and risk). These intangibles and conditions are internal means to influence the use of routines, heuristics and shared knowledge about customers and markets at the level key decision makers such as ‘top teams, middle management, back office, and front office teams. They are internal means to influence behaviour to reduce the negative impact on in-house teams of cognitive phenomena and behavioural problems such as overconfidence, information confirmation bias (search, prefer, interpret), framing and loss aversion identified in behavioural finance (Statman, 1999, 2014).

3.1 Overview of the BTTF

*Understand risk and uncertainty.*

Change arises in many guises and creates ‘hard’ risks, effecting financial resources and ‘soft’ risks for intangibles such as expertise in the financial firm. Financial firm agents, especially top teams must seek to understand change and uncertainty, new exposures, and ‘hard’ and ‘soft’ risk faced by financial firms. For example, they seek to understand risks such as those arising with climate change. In the latter case, financial firms can use climate change scenario analysis produced by agencies such as the TCFD (2017) and IPCC (2018) to understand physical risks of climate change, and to assess transition risks caused by the responses...
of governments, regulators, markets and others. They can also use the methods proposed by the TCFD (2017) to analyse how these climate change risks are likely to impinge on their intangible and financial resources, and hence create ‘soft’ and ‘hard risks’.

Create supportive conditions.
Top teams must create supportive corporate governance and top team leadership conditions relative to risk and uncertainty issues and communicate their vision to employees and stakeholders. Events before, during and after the GFC have stimulated development of new ideas about corporate governance and top team leadership conditions in the financial firm. The Walker report (2009), Basel Committee (BCBS, 2015) bank CG guidelines, and De Haan and Vlahu’s (2016) survey of corporate governance in banks, provide insights and evidence into desirable corporate governance conditions in bank and other financial firm boards. The UK FCA (2015) have set out the Senior Manager's Regime in financial firms and expect non-executive directors to have sufficient experience and expertise diversity to provide effective challenge across financial firms. They must be provided with training, support and professional advice to deliver their duties. These matters have to be disclosed to the regulator.

It clear from the GFC and the emergence of climate change risks that good corporate governance and top team conditions alone are not enough. This paper argues that additional conditions are required. These include explicit explanation how financial aims are ‘balanced’ with other aims involving say social responsibility or climate change issues. This proposal coincides with post GFC debate about the purpose of financial firms. This is part of the emerging stream of thought and research promoted by authors such as Kay (2015, 2018,), Pitt-Watson (2018), Davis et al (2006). These authors raise questions about design of financial firms to efficiently and effectively deliver financial products and services to match needs of citizens, customers and finance professionals. They raise concerns about disclosure on such matters.

As a result the choice of aims in a financial firm will have to reflect this wider debate to ensure that the firm is seen as legitimate in society. Financial firms also have to choose their strategic balance of financial value creation aims and risk management aims, and also how balance these with non financial issues. For example, the pursuit of shareholder wealth maximising aims can be ‘balanced’ with sustainability aims in some ways, as suggested in Porter and Kramer’s (2011) idea of ‘shared value’, or the ‘Group of 300’ (2017) (of worldwide investors) view that social and environmental responsibilities have to be recognised.

The strategic combination of corporate governance conditions, balanced aims, and capabilities, form a key part of the financial firm’s ability and willingness to respond to external change, risk and uncertainty.

Create learning conditions and capabilities.

A key lesson to be learned from the GFC is to match the rate of learning and adaption of financial firm agents to external change (Holland, 2010). A structured approach to ‘Learning about learning’ can be investigated by using various empirical and theoretical sources. For example, Pedler et al, (1997), discussed empirical findings and theoretical analysis concerning learning in large organisations. Field studies in
financial firms (Chen et al 2014, 2018; Holland, 2016) illustrate how Top management and Boards learnt how to design and adapt a financial firm to create resources robust for varying circumstances.

Field studies in banks by Harris (2002), Antonacopoulou, (2006), Chivers, (2011), Royal et al (2012) and Holland et al (2012), provide more specific guidance for understanding and actively managing bank learning. They show how top management and front office staff learnt how to develop financial firm organisation and hierarchy (structural capital), the skills and capabilities of their teams and individuals (human capital), and their relationships, brands and reputation with customers and other external agents (relational capital). Holland et al (2012) in a study of Japanese financial firms (Fund managers and Venture capital firms) provide examples of how agent learning and knowledge creation was central to their response to change processes and hence to the way they formed new, valuable and innovative economic processes in financial firms and financial markets. The field studies revealed how Board and Top management teams in ‘Learning organisations’ (Pedler et al 1997) exploited learning, to create and allocate resources to the redesign of existing intangibles in the financial firm. Authors such as Harris (2002) and Antonacopoulou, (2006), also noted many bank problems with learning such as inability to learn from prior errors, and inability to exploit prior knowledge.

The importance of formal learning and knowledge management was demonstrated by Meles et al (2016) in a large cross section study of US banks. They found that;

‘… efficiency in the use of intellectual capital (IC) positively affects the financial performance of US banks…. human capital (HC) efficiency… has a larger impact on financial performance than other IC sub-components. These findings suggest that the development of effective techniques of knowledge management, enabling banks to accumulate the IC necessary to adapt to a constantly changing environment, represents an effective tool of achieving the goals of both bank managers and policymakers’.

More generally, Shih et al (2010) commented; ‘The ability to create knowledge is highly relevant to IC in the banking industry. Companies should define their own robust mechanisms for knowledge creation to improve their ability in knowledge creation. Knowledge creation in banks should focus on the exchange and sharing of information’. Knowledge management in this context is the key to superior value creation and performance relative to competitors. In this respect, Chahal et al (2015) found many supportive relationships between change, learning, new IC formation, competitive advantage and innovation in banks.

Creating change oriented and change sensitive intangibles.

Formal learning capabilities and active learning provide means for strategic choices in a financial firm about individual social and knowledge factors and their positive and negative connections and interactions. They make these choices in their connected business model (IIRC, 2013) to create capabilities to transform financial resources and risks.

Knowledge resources include intellectual capital (IC) (Meritum, 2002) about financial firms and capabilities of teams and individuals (human capital). They involve knowledge of financial needs of customers, of financial transactions, and financial markets. They comprise financial expertise (Preda, 2005) or understanding of pricing mechanisms in financial markets and the role of social intangibles such as brand, reputation, and customer relations in supporting transactions in these markets. They include knowledge of
financial intermediation and risk management at financial portfolio (asset, liability) and financial firm level (Lewis and Davies, 1987). Such knowledge resources created the capability for agents to act in financial firms and in external social contexts concerning customers in markets.

Knowledge resources in financial firms are strategically matched to the external environment: such as customer needs, market conditions, competition, and technology change; and are designed to create a sustainable competitive advantage (SCA) unique to each financial firm (Barney, 1991). The SCA was based on a unique, difficult to copy, combination of knowledge resources and was expected to be dynamic in nature and change with learning and circumstances (Teece et al, 1997). A combination of knowledge intensive intangibles was integrated in financial firm business models and value creation chains (IIRC, 2013) and expected to be the basis for winners and losers to emerge in banks and other financial firms.

The GFC reminds financial firms that the aim should be to avoid complexity and hence the possibility of creating ignorance and inappropriate ‘expertise’. In newly emerging ‘green’ projects and products, and of ‘green’ financing mechanisms, (Pavoni, 2017) argues a conservative policy is required which would involve marginal adaptations to existing products. Mortgage valuations could use information on energy efficiency in houses to forecast lower energy costs, lower expected default, and hence reduce interest charges.

Social resources concern social structures such as financial firm organisational structure and control systems as well as network relations with customers and other external agents. Culture is an important attribute of organisation. Social resources also include agent knowledge of social structures as explicit, or implicit taken for granted knowledge. This involves financial firm IC as structural capital about organisation, and relational capital about networks (Meritum, 2002). These connected social resources contribute to social forces which drive agent action. In Bourdieu’s (1990) terms social resources (as structure and knowledge) concern ‘fields’ representing the structure of relationships in the firm and external networks. They represent agent social capital (denoting connections and networks) and symbolic capital (denoting reputation and prestige) in the field. Social structures and knowledge of these are critical to informing agent action. Social forces arise within the taken for granted, every day nature of social structures or agent ‘habitus’ (Bourdieu, 1990) and play a key role in influencing their actions. Social forces arise from the explicit knowledge shared between many agents about the firm organisation and networks and these drive agent actions.

The development and use of knowledge and social resources in transforming financial capital are mutually reciprocal activities. Bourdieu (1990) argues that habitus is both a structuring structure and a structured structure. On the one hand, it organises and affects agents’ practice and their perception of the field and the way they use their expertise and social and symbolic capital when transforming financial capital and it’s risks. On the other hand, the principles and expertise that agents apply are the product of the interaction of the field, expertise, social and symbolic capital, and financial capital. Financial firm agents’ interactions with customers (on the fund supply and demand side of) in financial markets, and with other team members in the parent firm are combined means to structure habitus, expertise and social and symbolic capitals, which in turn structure information and transacting activities in the social field networks in financial markets and in parent firms.
In more specific terms, Board and Top management teams respond to change and decide on the nature of internal organisation in financial firms. Within the financial firm, organisation factors involve hierarchy (Stein, 2002), cross functional structures, committees, and specialist teams. They include factors such as power, organisational culture (Schein, 1984), and organisational control processes (Cyert and March, 1963). Control systems consist of Management control system (MCS) and Financial Risk control system (FRCS) adapted for the special conditions in financial firms (Power, 2009; Mikes, 2011).

The history of financial firm development during major external change has shown how firms adapted to survive. This required strategic re-organisation and redesign of functions in the financial firm, around new markets for customer needs, financial products, transactions and services. Examples of such change occurred with Commercial banks in 1945-1980 when they combined retail banks with newly developing wholesale banks (Lewis and Davies, 1987). It occurred with Universal Banks in the period 1980-2006 (Holland, 2010) when they combined commercial and investment banks. In a world of climate change, major commercial banks such as RBS and ProCredit Bank have learnt how to re-organize firm structure and control systems around new ‘green’ financial markets and products (RBS, 2018; ProCredit Bank, 2016).

As a result, top management in financial firms have historically made strategic choices to create firm ‘organisation’ and knowledge to promote desirable information and behavioural conditions and processes in ‘decision’ or ‘front line’ teams financial firms dealing with specialist financial transactions (Holland, 2016). The same resource decisions were the basis for top management and boards to make decisions about aggregate financial asset and liability portfolios, their overall risks, value and profitability.

*Mobilise change oriented resources.*

Conventional intangible resources such as organisation structures and management control systems (performance, risk) are used to mobilise other intangibles (expertise, culture) to pursue financial aims (control risks, create wealth) in the financial firm. These are supported by IT and MIS capabilities, and Compliance and Internal Audit functions.

These conventional intangible resources are increasingly being adapted to deal with financial risk issues and climate change pressures. For example, conventional management control systems (MCS) are adapted to connect to financial risk control systems (FRCS) (Mikes, 2011), and sustainability control systems (SCS) (Gond et al, 2012). The adapted control systems are incorporated in new organisation structure and both are reorganised around new customer needs, financial products and markets (OECD, 2016).

Financial firms use these adapted intangibles to exercise authority and mobilise other intangibles (expertise and culture). These are used in combination to develop ‘soft’ and ‘hard’ information about the impact of external change. In more specific terms, new forms of ‘expertise’ are used to create information to create value and manage risk. The information produced from combined use of organization, control processes and expertise is used to enhance production and sale of new kinds of financial firm products to customers (Chen et al 2014; Holland, 2016). Culture acts as an informal control system (Schein, 1984;
ACCA, 2014). It is combined with formal control systems (such as FRCS or SCS) to control bias and manipulation in decisions and in financial reporting (Steer, 2018) at odds with financial aims (value, risk) or sustainability aims. Customer relations are used to enhance the trust and reputation conditions required to transact in new types of investment and financing products and services.

As a result the financial firm mobilise intangibles to support transformation of various forms of financial capital and their liquidity and risk characteristics in a financial intermediation process. It does this to achieve financial aims (value, risk) and other aims concerning social responsibility and climate change sustainability. Holland (2018a) has explored in detail linkages between intangible resources and financial resources in financial intermediation in financial firms.

‘… financial firms use social and knowledge resources to create information, control behaviour, and enhance decision conditions when exploiting financial resources. They mobilise intangible resources to reduce information asymmetry and transaction costs. They do this to enhance liquidity management, diversification, and risk management. This creates conditions for financial intermediation and hence the transformation of financial capital and its risks.’

The adapted intangibles are also used by financial firms to pursue a range of non financial aims as well as financial aims. For example, European Commission (EU, 2011, p. 6), expects firms, including banks and other financial firms to:

‘To fully meet their corporate social responsibility, enterprises should have in place a process to integrate social, environmental, ethical, human rights and consumer concerns into their business operations and core strategy in close collaboration with their stakeholders, with the aim of: maximising the creation of shared value for their owners/shareholders and for their other stakeholders and society at large; identifying, preventing and mitigating their possible adverse impacts.’

3.2 Using the BTFF to understand connections, interactions and integration

A major requirement in a change strategy is to create new levels of integration (or coherent connections and interactions) between groups of intangibles, and between intangibles and financial resources in the financial firm (Chen et al, 2014; Holland, 2016). Chen et al (2014) provide insights into the many connections and interactions between intangibles in retail banks.

‘Many managers and analysts interviewed demonstrated that top management HC ….. could influence many other types of intangibles (e.g. organisational culture and its “tone”, engagement of lower level managers and employees, customer relationships and bank brands).… front line employees or relationship managers who had direct contact with customers could affect RC(relation capital) elements such as customer satisfaction or customer relationships. ….. RC could also affect employee level HC. … manager B4… mentioned that their brand strength (RC) could enhance employee emotional capital (employee level HC as commitment).’

Chen et al (2014) also demonstrate the connection and interactions between intangibles and financial resources in a retail bank and their role in financial intermediation.

‘…interactions….consisted of …. impact of say top management human capital on financial intermediation, financial resources and risk management mechanisms. Managers in banks recognised there was a two-way relationship between intangibles and tangibles. Tangibles acted as the hygiene or necessary factors, which provided the foundation for the bank business model to work.’

The aim is to connect all of the changes in intangibles and their impact on financial resources, in an integrated business model or financial value creation processes. The financial firm response across many areas (such as changes in organisation, culture, expertise, incentives, products, customer relations etc) must be kept simple and comprehensible to managers, employees, customers and regulators (Holland, 2010).
Trang (2016) argues that such co-ordinated and integrated links are essential for enactment of shared firm values in the pursuit of financial aims and newly emerging ESG aims. ‘Understanding .. linkage between strategy, structure and culture is key to top performance. Everyone must be familiar with the company direction, who does what and where as well as the values and beliefs to which employees must stay true….In light of technology and globalization, many banks implement new strategies and structures but ignore the cultural aspects, falsely believing culture will develop itself and align with business needs’

Thus the BTFF highlights the major (strategic and operational) connections and interactions in the financial firm and these are examples of ‘integrated thinking’ as suggested by the IIRC guidelines (2013). The BTFF provides a structure to explain connections on how intangibles are created, and how intangibles and financial resources are managed in a complex value creation process to transform financial capital and risks in desired ways.

The BTFF provides a means to think how boards and top management in financial firms can seek a new value trade off between intangibles, technology and financial resources, and new means to manage risks of combined financial, technology, and intangible resources. Financial firms invested financial capital in the short to medium term to develop new intangible resources and technology capabilities. The expectation was that decisions about intangibles would boost the value of financial capital and improve risk management in the longer term. Thus all forms of resources were seen as ways of investing in and growing each other, and in developing combined resources and firm wide capabilities (IIRC, 2013, Larsen et al., 2015).

The BTTF also illustrates how important connectivity is in financial firms. For example, it can be used to explore how dysfunctional connections and interactions can become a ‘house of cards’ leading to underperformance and possible failure as major unexpected risks emerge. An important way to isolate problem areas is to ‘stress test’ intangibles and financial resources under a range of risky scenarios. For example climate change scenarios such as those provided by the TCFD (2017) and IPCC (2018), could be used for stress testing resource for climate change risks. This can explore how intangibles such as culture can deepen connections between intangibles such as expertise and customer relations. It can investigate how the connections add ‘value’ in financial sense and say a social sense. The ‘house of cards’ can be avoided by using stress test analysis to suggest where to strengthen such connections and interactions so that the desired outcomes can be produced relative to say financial and sustainability aims.

3.3 Using BTFF and ‘Behavioural Finance’ to understand how intangibles affect behaviour in the firm.

In the previous subsections the BTFF demonstrates how governance conditions, choice of aims, and learning capabilities underpinned strategic choices about balance of aims, change oriented boards and top teams, and control systems. These are central to the development of adaptive intangibles and control systems. These intangibles and conditions are internal means to influence the use of routines, heuristics and shared knowledge about customers and markets at the level key decision makers such as ‘top teams, middle management, back office, and front office teams. They are essential to create conditions for influence over
internal agent behaviour during mobilisation of intangibles to influence customer behaviour and to transform financial resources consistent with financial aims (value and risk).

Intangibles such as: organisation, hierarchy, team composition, culture, control systems, shared knowledge and specialist expertise; are internal means to create information and influence behaviour to avoid problems identified in ‘Behavioural Finance’ (Statman, 1999). They are used to reduce the negative impact on in-house teams of cognitive and behavioural problems such as overconfidence, information confirmation bias (search, prefer, interpret), framing and loss aversion identified in behavioural finance (Statman, 1999). The firms use these factors to reduce over confidence and confirmation bias of agents operating in front office teams. They used these factors to reduce errors in risk taking caused by a focus on downside risk and ignore upside opportunities. They use intangibles to avoid framing error such as interpreting ‘that a dollar in the form of dividends from shares of a stock is different in substance from a dollar in the form of the shares themselves when, in truth, the two dollars are different only in frame’ (Statman, 2014). Financial firms sought to develop teams with variety in composition and hence cognitive and psychological outlooks so they could exploit the variety in thinking and exercise control over individuals (Mercier, Sperber, 2011. Holland (2016) provides a fund manager example of how this was achieved"

‘The investment team context, in part, reflected combinations of the personal contexts of individuals and their individual knowledge, skills, experience, and psychological tendencies such as overconfidence, confirmation bias, and framing (Statman, 1999). …

‘Variety in psychological characteristics of individuals (and overconfidence, confirmation, framing), and knowledge have been recognised as problems of reasoning (or irrationality) in individuals (Mercier, Sperber, 2011). They were also the basis for a variety of viewpoints and for robust argument in teams (Mercier, Sperber, 2011). In FM firms, the unique properties of the team context reflected the degree of organisation of team interactions; for high quality argument; for exchanges of information and for joint production of information (active ‘conversations’ in team); and for reaching consensus decisions or for allowing individual choice.’

And
‘…Psychological traits, states and behavioural errors (such as overconfidence and mistaken risk taking) at the level of individuals in teams managing specific funds, were mediated by the degree of control from ‘top down’ investment processes and by organisational factors or properties such as firm wide knowledge.’

And
‘…Psychological traits of individuals in teams were also mediated by FM firm investment policy and type of FM. For example, overconfidence was expected to reduce as one moved from hedge to growth, to value and index funds. The FM firm policy for job security, pay, and degree of autonomy, were similar organisational factors which were used to further alter the individual and team experience. As incentives became riskier and autonomy increased the likelihood of overconfidence errors by individuals could rise, and performance could decline. As FM firm penalties (on individuals and teams) for fund performance failure rose then avoidance of downside risks rose and ‘quasi indexing’ were expected to increase (Holland, 2006b).’

4. Developing a change and evolution framework for financial firms

Section 4 further develops the dynamic dimension to behaviour in finance in the form of an explicit ‘Change framework’ to the BTFF. It uses a combination of theory and empirical insights to explore how financial firms exploit change to influence and control behaviour of agents such as customers in financial markets. This section uses a bank case of evolution, theoretical interpretation of evolution, and ‘nudge economics’, to explore how financial firms can influence their evolution in a changing finance system by
influencing the behaviour of customers in markets. The case analysis and theoretical structure provide examples of the potential for integrated thinking in financial firms about, evolution, innovation and influence over customer behaviour in markets. The section uses Merton’s (1995) ‘financial innovation spiral to analyse evolutionary change in financial firms. Lusardi and Mitchell, (2014) ideas of ‘financial literacy’ are used to analyse the nature of critical choice conditions for customers in markets. ‘Nudge economics’ (Thaler and Sunstein, 2008) is used to discuss how financial firms can influence their evolution in a changing finance system and enhance their control over customer decision behaviour. This provides the means to exploit and control customer choice conditions in the form of cognitive phenomena and behavioural problems such as overconfidence, information confirmation bias (search, prefer, interpret), framing and loss aversion identified in behavioural finance (Statman, 1999). The analysis provides templates to think how to develop a financial firm <IR> narrative how the financial system is changing and how changes in the financial firm fit within this. It provides ideas on how financial firms can report in <IR> on how they control customer behaviour and how this changes over time.

4.1 RBS as a case of change and evolution.

RBS as a major UK commercial bank provides many insights in change and evolution issues. In the period before the GFC, RBS combined commercial bank and investment banks in a universal bank model with global reach. It sought to integrate internal functions of these historic bank forms, reduce duplication, and organise around corporate markets for ‘one stop shop’ supply of securities, loans, foreign exchange and derivatives. RBS had major problems in the GFC with poor leadership, complexity of its organisation and product range (Holland, 2010, 2018b), and was bailed out by the UK government in 2009. Since 2010 it learnt how to downsize, refocus, and re-organise around customers and their markets to serve their needs (RBS, 2014). Remuneration of all staff was linked to customer service. RBS’s focus on customers means they are re-organising around new combinations of internal function and capabilities (technology, product design, back and front office), and customer facing intangibles such as brands and customer relations as well as physical branches. They are reorganising around new combinations of delivery channels made up of ‘soft’ relations with customers in branches, and ‘hard’ relations via technology. They are reorganising around customers to rebuild and influence connected customer states such as trust, customer knowledge and capability to act and choose.

The change in organisation, culture, expertise and behaviour reflected bank and customers experience in the GFC, concerns with social responsibility and climate change, and the need to rebuild trust in banking and other financial firms. For many customers under 40 this was their main experience of financial firms. Much technology change was also concentrated in this age group. RBS and other banks faced serious challenges from the rise of ‘disruptive technology’ (Kan, 2014) such as combinations of social media, ‘smart phones’ and internet. ‘Fintech’ reduced transaction costs of direct financing between individuals and between them and financial firms and eroded bank competitive advantages. Customers sought ethical and sustainable banks that delivered services and products 24/7 through technology and direct contact (Still, 2018).
Since 2014 RBS has further reorganised around the ‘customer journey’ (Fouquier, 2018). This involved understanding the customer route taken to purchase and use different financial products and services over a lifetime. It involved understanding how effective marketing and brand messaging were and why and where customers decided not to transact with the bank. Understanding this was difficult given 24/7 technologically based banking, where customers interacted with the brand, products and channels in unpredictable ways when completing transactions. Customers expected the bank to understand this behaviour and provide them with a safe, slick, and short transaction route.

Bank top teams, back office and front line teams in banks such as RBS had to be proactive in their internal communications, and learn together about changes in expected customer behaviour in digital social networks, and their impact on bank functions and bank agent behaviour. They had to have active internal conversations about the changes and to exchange their insights about these changes. Front office agents in banks such as RBS had to learn where action and change were with customers. They had to find ways to create active conversations with customers, during use of new technology, to learn about new customer behaviour (Chen et al, 2014).

In the RBS case, the bank sought to learn and evolve faster than competition to reflect changing customer behaviour. RBS re-organised internal teams and structures, promoted ongoing co-operation between different specialist teams, and co-ordinated engagement and transacting with customers. They reorganised marketing, product design, technology, back office, and front office teams to meet and collectively reflect and learn about changes in customers and markets. The knowledge acquired concerned changing customer behaviour, choices, needs and ways of serving customers, rather than knowledge about selling products (Nellisen, 2018).

Top management in banks such as RBS also had to invest financial resources in IT for sophisticated back office analysis of large scale data sources on digital social networks, customer use of bank technology platforms, and use of branches. They used this to learn how their customer facing intangible advantages (histories and track records, customer relations and trust, influence over customers, brands, knowledge of transactions and customers) could be adapted and strengthened against such threats (Kan, 2014). This machine based algorithmic ‘learning’ based on ‘big data’ provided numerical models of customer behaviour. This analysis did not explain behaviour. The numerical models were matched with bank agent learning arising from direct contact with customers to arrive at novel insights and support informed decisions. Top teams had to develop new structures and processes connecting back and front office teams to promote knowledge sharing. This involved teams integrating new ideas into customer products, such as new ways of payment, saving, insurance, risk diversifying, and borrowing.

RBS expected that success in learning and using the acquired knowledge would be the basis to rebuild trust with customers and eventually grow income (Fouquier, 2018; Nellisen, 2018). Given the recent history of RBS, scepticism is required about the above narrative. Evidence of success in terms of trust, customer satisfaction, financial transaction activity, and risk management is required. A sceptical stance assumes that RBS and other financial market oriented banks are using ‘big data’, machine learning, and ‘relationship’
learning, to regain major knowledge, trust and inertia advantages with customers lost due to Fintech and the GFC. They intend to use it to structure customer choice conditions to benefit the financial firm and its shareholders first rather than customers.

4.2 Theoretical interpretation of change and evolution in financial firms.

The above empirical insights reveal the evolutionary dimension to change in financial firms and to BTFF ideas. Financial firm change has occurred in the context of larger change processes in the finance system and the latter has an underlying structure. Merton and Bodie (2005) argued that economic functions of the financial system such as payments, intermediation and risk sharing, were stable ‘anchors’ or ‘givens’, and that environmental changes stimulated financial firm learning and evolution towards satisfying these functions.

In this world financial firms such as RBS made strategic choices and co-evolved with many changes in the finance system. Elements of the BTFF evolved together. The decisions to learn, and redesign many aspects of the firm’s intangibles (inter alia, organization, culture, routines, expertise, practices, products, customer relations and customer conditions etc, and their connections and interactions) were embedded in and constrained by the history of each firm, its configuration of practices, and its prior strategic decisions. They were constrained by the history of the finance system and its wider configuration of practices (Nicolini, 2013). Thus the mechanisms of; environmental change, crises, government and regulator interventions, organisational learning (Pedler et al,1997), competitive pressures, and strategic choice (Teece et al, 1997); can be interpreted as primary means by which financial firms such as RBS made choices and evolved over time (Nelson and Winter 1982) in a common institutional setting (Scott, 2001) in the world of finance. They evolved in the direction of Merton and Bodie’s (2005) economic functions of the financial system via a ‘financial innovation spiral’ (Merton, 1995).

The RBS case illustrates the ‘financial innovation spiral’ at the level of the financial firm. In this case, key elements such as technology, intangibles, and financial resources, involved contemporaneous learning and strategic responses, and evolved together. The intangibles included; knowledge, organisational and social resources. These evolved together over time and changed business models and customer conditions. At the same time financial resource elements such as; the forms of financial and information intermediation, associated financial and information products, financial assets and liabilities, and related risk management services; evolved together. They were supported by improved intangibles and technology. In the external world, customer and their product needs, and the wider market for these bank and other financial firm products, also learnt and evolved together over time.

Firms such as RBS with key ‘change oriented resources’ were able to create their own ‘financial innovation spiral’. These resources included experience of managing change and the financial resources to invest in change. They included internal organizing for creativity and innovation by building research skills and incentives (Holland, 2016). They included a presence in all external elements of the finance system and
its ‘financial innovation spiral’ of changing customers, products and markets. This created opportunities to be part of and to gain access to open exchange of ideas in this changing finance system.

In this context the finance system was a “community of practice” (Lave and Wenger, 1991) and a “market for knowledge” (Meusburger, 2009), whereby knowledge of financial firms, customers, products, economies, and markets was created, used, exchanged and shared in a ‘financial innovation spiral’. These knowledge change processes were possible because financial firm agents normally operated within concentrated social networks in geographic territories such as the City of London (Glückler, 2013). The shared geographic space created opportunities over time for observing knowledge used by others and stimulating knowledge creation (Glückler, 2013). It created opportunities for knowledge to be shared, sampled and copied in a form of ‘open source’ innovation (Chesbrough, 2003) whereby financial firms and agents used freely available or observable external knowledge. This arose as collaborative learning by repeat interactions in friendly social networks between agents in financial firms and rival learning by unfriendly imitation and reverse engineering (Glückler, 2013).

In BTFF terms, these ‘change’ sensitive financial firms were able to use their presence in this world to investigate change in the world of finance to understand risk and uncertainty, to learn and to adapt internal intangibles such as organisation, culture, and expertise as well as customer facing intangibles such as relations, trust, customer knowledge, product design, and capability to act. They expected to rapidly adapt these to change and mobilise them to make more effective use of financial resources in the transformation of financial resource and risks than competitors. Financial firms faced problems as new social media technology allowed customers to rapidly exchange information about poor service with this having negative impacts on reputation, risk and profits. However, their rebuilding of their historic control over much of the customer interface created powerful new means to rapidly adapt to such problems and risks. This suggests such technology change is more of an opportunity and not the major risk it is made out to be.

Such ‘change sensitive’ firms expected to deliver new products at lower transaction costs for customers in new financial markets. The subsequent growth of understanding and commodification of the products amongst traders in price dominated markets, was expected to reduce margins, and create incentives for further innovation by banks and other financial firms. The ‘financial innovation spiral’ (Merton, 1995) was therefore expected to follow such cycles through time. However, in terms of Merton’s functional approach (1995), financial functions of the financial system remained stable but financial firms and markets evolved, innovated and varied over time in delivering the functions. The above reflects Scholtens et al (2003) view that understanding evolution of financial institutions conducting financial intermediation should be the focus of research rather than financial intermediation per se.

4.3 ‘Nudge’ economics, customer conditions, and bank control over the innovation spiral.

The evolution of customer choice conditions as part of a ‘financial innovation spiral’ are the subject of much debate and research. Practitioners in financial firms continue to be concerned in public about regaining
trust and demonstrating a socially responsible and ethical outlook (Ethical Finance Conference, 2018). Academics are concerned about conditions of knowledge (‘financial literacy’) and ‘financial capability’ of customers (Lusardi and Mitchell, 2014). These conditions are deeply connected. Trust refers to customers having confidence that banks and other financial firms act fairly when providing products and services and will not exploit the customers and their resources. Trust depends on many factors such as customer prior experience of banks as well as ‘financial literacy’ and ‘financial capability’. High trust over time may lead to lower financial investment in acquiring knowledge. ‘Financial literacy’ refers to ‘peoples’ ability to process economic information and make informed decisions about financial planning, wealth accumulation, debt, and pensions” (p6, Lusardi and Mitchell, 2014). ‘Financial capability’ refers to customers’ ability to act on that knowledge.

However, Banks and other financial firms have always played an active if hidden role in construction of connected customer states such as trust, ‘financial literacy’ and ‘financial capability’ and hence customer choice conditions. This is central to financial firm influencing the ‘financial innovation spiral’ (Merton, 1995) where firms, customers, products, and markets evolve together. The firm has influence but is not in control of the ‘financial innovation spiral’. It can influence financial firm factors, products, and customer choice conditions. A sceptic would recognise the possibility that firms such as banks would use this influence to pursue financial aims alone.

For example, in banks such as RBS, the design and use of digital bank channels and branches are intended to promote bank products and services. They can be seen as employing ‘nudge economics’ (Thaler and Sunstein, 2008). These channels are used to ‘nudge’ customer behaviour towards making ‘better’ decisions concerning their needs by using bank products and services. The algorithm for customer behaviour can be combined with customer specific data to tailor ‘nudges’ of customer behaviour by bank staff in desired directions such as improved loan repayment. Given prior knowledge of behaviour, it can match bank staff to those customers they are most likely to influence. Bringing bank products and services to the attention of customers, acts as a ‘nudge’ to more predictable behaviour, without forbidding the use of other bank services or changing customer incentives. Bank behaviour, brand promotion and associated marketing can also be used to ‘nudge’ or bias the construction of customer ‘financial literacy’ and ‘financial capability’ towards bank products and bank explanations about products. This may reduce the possibility of publicly observable problems such as bank fraud, error, ‘mis-selling’ of say mortgages and loans, and subsequent bad debts. It can avoid situations where banks and other financial firms disguise the interest rate or fee charged or conceal additional costs. The latter positive outcomes are expected to arise when the bank is transacting with customers who are well informed about the bank products and understand what they are buying. These conditions reduce threats to building trust and reputation of the bank. However, the hidden role of banks in constructing ‘financial literacy’ and ‘financial capability’ still puts the bank in a position to control what customers know about financial transactions and their ability to act rationally on that knowledge or to invest in further knowledge. They may encourage customers to substitute growing trust for increased investment in their own human capital or financial literacy and increase their inertia in choice. This can be interpreted as
banks seeking to influence customer conditions (cognitive and psychological) identified in ‘Behavioural Finance’ (Statman, 1999, 2014) in its interests. This would boost overconfidence and information confirmation bias (search, prefer, interpret) towards the bank and its products. It would encourage negative framing and loss aversion with competitors and their products. This can create bank means to ‘nudge’ all transactions from customers (whilst on their lifetime financial transaction journey) towards the bank. In the case of a segment of customers with similar needs and journeys, such bank influencing can increase the expected level of and predictability of transactions and income. Gradual positive ‘drift’ or increase in transaction prices and fees by firms for such relatively ‘captive’ customers can guarantee steady growth in earnings.

Thus the bank can increase its power and reduce the power of customers by exploiting a ‘financial innovation spiral’ (Merton, 1995). They can maximise their power over customers, through design of internal capabilities, customer facing resources, and their influence over customer conditions. This can improve the level and predictability of asset and liability transactions for all customer segments in the bank, hence improving the predictability of the financial intermediation process and bank income. Managing intangibles can play an active role in increasing financial returns and reducing financial risks for financial firms. A policy of innovating with internal intangibles, customer oriented intangibles, and use of financial resources can help the bank to evolve into a less risky and more profitable firm compared to the competition.

Bank use of ‘nudge economics’ will influence the tone and content of <IR>. As indicated in (Holland, 2018b) there is a problem of exercise of power and disclosure bias. Top teams will not have incentives to discuss their use of ‘nudge economics’ to gain a sustainable competitive advantage over customer choice conditions. However, for <IR> to be credible and plausible it will have to reflect the above insights from case and theoretical analysis. In terms of social responsibility, financial firms must openly discuss these issues in <IR> and explain this approach is part of the means to stabilise use of financial resources and financial intermediation. Regulators will have to insist that financial firms use <IR> to explain their active role in the financial innovation spiral, especially ‘nudging’ to influence customer choice conditions.

4.4 Problems in reporting on Innovation.

Innovation is a key element of dynamic interactions in the value creation process. Larsen (2017) reports problems when developing <IRs> to report on bank ‘innovation’

‘…. very few banks provide more than sporadic disclosures around their innovation efforts…. they recognize the need to provide better disclosures as…accounting rules do not currently allow them to reflect the value of innovation. The multi-capital International <IR> Framework provides a useful tool to help banks think about innovation that can lead to increases in financial and intellectual capital in later periods. The main obstacle to providing this disclosure is the inability to establish a causal link between the investment in, for example, IT innovation and the financial results, given the limited data collected and available. The sensitivity of disclosures is also considered to be an issue’

This paper argues that the BTFF and Merton (1995) provide an alternative conceptual tool to help financial firms think about how to create and exploit IC and financial resources. The paper also demonstrates that barriers other than accounting rules arise. Financial firms do not wish to disclose sensitive information on innovation processes or valuable innovations given competitive pressures and a culture of secrecy (Holland,
Barriers arise because banks and other financial firms fear reputational consequences of revealing that economic advantage and innovation relied on controlling customer conditions of trust, knowledge and capability.

There is a problem developing quantitative causal links. However this paper argues that despite this it is possible to develop a structured and plausible <IR> narrative about innovation and how to search for measures for innovation factors. Section 5 argues that using metrics and narrative together can overcome some of the problems of understanding causality. Financial measures and key performance indicators (KPIs) for innovation can be incorporated in the narrative at the appropriate point to create confidence in the innovation narrative and highlight the meaning of the individual metric. The narrative can be based on a plausible theoretical and empirical base to help understand what each metric means.

For example, the financial firm can use Euro measures for investment levels, income changes, and broad levels of change in financial margins for new financial products. KPIs can be used to measure intermediate changes in customer behaviour and conditions arising between financial input and output measures. The technology interface can measure KPIs for customer activity and satisfaction on regular basis. They can relate these to their narrative about finding new ideas, product innovation, and new improved ways of producing and delivering tailored high margin products. They can relate this narrative to the scale of financial resources invested in technology, and in the desired customer choice conditions, products and channels.

Financial firms can also use <IR> to explain the broad nature of ‘innovation’ problems and successes they have experienced in the past and are currently facing and thus signal value relevant information about innovation capabilities. Merton’s (1995) ‘financial innovation spiral’ and the literature on ‘Learning Organisations’ set within a BTFF provide a conceptual frame for financial firms to discuss such dynamic processes. They should be able to use these ideas to discuss their strengths and weaknesses in innovation and to explain why some aspects of their innovation process and of new IC developed for products, customers, selling processes and technology must remain secret, and why other aspects can be reported in the public domain.

They can explain how they use new competitive advantages in their changing resources to create novel information about customers and products. They can explain how they use these advantages to create market imperfections by designing innovative and high margin financial products and services not available to customers through markets. They can discuss how commodification and competition erodes these advantages over time and how the cycle begins again. It is therefore possible to explain broad outlines of the above process and enhance the disclosure of non financial information on the innovation process in <IR>.
5. Discussion – BTFF, ‘Change framework’ and BF - as a combined critical frame.

The development of a BTFF and the ‘Change framework’ and use with ‘Behavioural Finance’ ideas in the paper reveals new ways for critical thinking about the role of knowledge and social resources in financial firms. This creates potential to explore many change issues and behaviour issues concerning financial firms.

The previous sections demonstrate that the BTFF, ‘Change’ literature, and ‘Behavioural Finance’ ideas can form a connected conceptual frame. This can be used to explain how financial firms use internal and external means of behavioural control to create sustainable competitive advantages, to stabilise income, reduce risk, and increase financial value of the financial firm.

The connected conceptual frame constitutes a dynamic investigative tool to rethink and critically appraise concepts of behaviour in finance. It provides means to think how these activities can be made visible and open to accountability. For example, such control by financial firms over ‘behaviour’ in finance can be made explicit through improved transparency by the firms in new reporting mechanisms such as ‘Integrated Reporting’ (<IR>, IIRC, 2013). The BTFF and ‘Change framework’ frames emphasise, that given complexity in value creation processes, that much more disclosure is required on how intangibles play a role in changing agent behaviour and decisions and in transforming financial capital and its risks. This transparency can take the form of value creation narrative based on the BTFF. Transparency can take the form of narrative about change, evolution, and innovation based on the ‘Change framework’. Transparency can also explain how value creation and innovation activities are achieved through control over agent behaviour in the firm and in markets.

The BTTF and ‘Change framework’ show the potential for integrated thinking (IIRC, 2013) about financial firms and their role in influencing behaviour in finance. The BTFF and ‘Change framework’ are academic forms of ‘integrated thinking’. They are proposed as alternative means for financial firm agents and academics to make novel connections to ‘Behavioural Finance’ ideas. They are means to investigate ideas of: how to create and mobilise intangible resources, transform financial capital, and control behaviour of internal and external agents; and to use this to enhance ‘Integrated Reporting’ <IR> (IIRC, 2017).

The BTTF and ‘Change framework’ were also means to think how to ‘stress test’ intangibles (expertise, organisation, culture etc) as well as financial resources. This could provide meaningful and credible information for an <IR> about the ‘robustness’ of behaviour of agents in the firm and in markets, and how this may become dysfunctional leading to contagion in markets and the firm becoming a ‘house of cards’. The latter were conditions present in financial firms and markets just before the GFC.

The joint use of BTFF and ‘Change framework’ with Behavioural Finance in the paper illustrates how combinations of theory and empirical insights can form dynamic investigative tools to rethink concepts in theory and practice. This is an open approach to incorporate and exploit new theoretical and empirical insights as well as developments in practice. These can stimulate research and debate to develop more mature BTFF and ‘Change framework’ as well as Behavioural Finance.
The paper thus demonstrates the potential for constructing a fruitful dialogue between academics developing new theory about financial firms and those practitioners seeking to develop theory and practice in the financial firms. It indicates how academic and practitioners could potentially identify ‘missing’ concepts as seen from each viewpoint. It can aid regulators, policy makers and analysts, when probing and critically appraising the coherence and truthfulness of narratives in financial firm <IR> about, value creation, innovation and attempts to rebuild trust with customers in markets. Regulators must use such insights and enhanced transparency to make judgements how far financial firms can go in their manipulation of behaviour in finance in the interests of making profits as well as stabilising firms and the financial system.

The connections between BTFF, ‘Change framework’ and Behavioural Finance have potential to enhance theory construction in financial firm and financial market research. This could close emerging gaps between fields of practice and academe in these areas. Such critical thinking, exchanges, disclosures and stress testing are the basis for a more “reflexive performativity” based on theoretical models and empirical results that more fully reflect the role of knowledge and social factors in banks and other financial firms (Chen et al, 2014) and their impact on behaviour in finance. They point to how the BTFF, ‘Change framework’ and Behavioural Finance can evolve over time as financial firms change and evolve. These are new ways of ensuring that the study of banks and other financial firms and their <IR> becomes a ‘house with windows’ or a ‘subject which captures the vibrancy and dynamism of financial activities/markets across the globe’ (Keasey and Hudson, 2007).

6. Summary

The paper has developed new ideas about banks and other financial institutions using insights from empirical research, the intellectual capital (IC) debate, and from literature and theory on social structure in firms and networks. The new ideas took the form of a ‘behavioural theory of the financial firm’ (BTFF) and a ‘Change framework’ both based on field work on financial firms and theoretical sources.

The paper discussed how the behaviour and decision context, of individuals in the financial firm and of customers in financial markets, reflected their individual knowledge, skills, experience, as well as the psychological tendencies such as overconfidence, information confirmation bias (search, prefer, interpret), framing and loss aversion identified in behavioural finance (Statman,1999).

The paper analysed, how within the financial firm, these individual characteristics were modified by the purposeful design of the social setting: made up inter alia, of organisation, hierarchy, control systems, teams, and culture (Holland, 2016). They were modified by used of shared intellectual capital about the firm, customers and markets. Financial firms sought to modify the customer social setting or ‘relationships’, and customer transaction setting (branch, digital, and available products and information), and to use this to alter customers choice conditions of trust, financial literacy and decision capability.

These in turn were used to modify individual characteristics (psychological, knowledge, capabilities) in the relationship social setting and transaction context to increase the probability of transactions desired by
the financial firm. Financial firms use the internal and external means of behavioural control to create sustainable competitive advantages, to stabilise income, reduce risk, and increase financial value of the financial firm.

As a result the joint use of the BTFF and ‘Change framework’ illustrated a dynamic investigative tool to understand financial firms and their change processes, and how these play a role in changing the behaviour of agents in the firm and financial markets. This provides a new way of developing ideas of relevance to the ‘Behavioural Finance’ field.

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