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Organizationâ€™s Strategy versus Capability Institutionalization in highly interactive systems

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Abstract

This paper deals with the issue of strategic capability development and emerging industry structures. In industries that are shaped by interactive organizations, cooperation and interaction is seen as an important source for capability development. In this paper, we focus on the case of banks.

We assess and quantify capabilities in different organizations of a single, but highly interactive industry and link them to firm individual firm's success. Based on capability endowments and development and success rate, we attempt to discuss three aspects in industrial dynamics:

Do successful banks learn and strategically develop capabilities on an organizational level? Is there an element of co-evolution of capabilities into 'critical capability clusters' that are re-sponsible for the success or failure of firms? And is there evidence of a capability institutionalization in such an industry with high firm inter-action intensity and frequency? We find that success seems to be more a function of a (dynamic) capability of adjusting existing capability endowments to short-term market sentiment, rather than to develop particular routines based on organizational strategy formation.

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We assess and quantify capabilities in different organizations of a single, but highly interactive industry and link them to firm individual firm's success. Based on capability endowments and development and success rate, we attempt to discuss three aspects in industrial dynamics:

- Do successful banks learn and strategically develop capabilities on an organizational level?
- Is there an element of co-evolution of capabilities into "critical capability clusters" that are responsible for the success or failure of firms?
- And is there evidence of a capability institutionalization in such an industry with high firm interaction intensity and frequency?

We find a strong influence of institutional factors and regional practices on the de-facto capability development within single organizations, which is a strong sign for a process of institutionalization. However, we could see few linkages of capabilities to success. Success seems to be more a function of a (dynamic) capability of adjusting existing capability endowments to short-term market sentiment, rather than to develop particular routines based on organizational strategy formation.

Key Words: Capabilities, Industry Structure, Institutions, Organizations, Financial Service Industry

INTRODUCTION

The interaction of institutional settings, industry systems and a single organization's strategy is a topic frequently discussed in industrial dynamics and industrial organization literature. Thereby, the line of argument generally reaches out from an organizational view, moves on to the observation of unit-to-unit or company-to-company interaction, to co-evolution and finally clusters formation.

This paper takes a slightly different perspective, by looking at an already existing industry (system) wherein the firms are highly interactive. We choose the financial service industry, where a high interaction and an accompanying state regulation lead to a strong institutionalization and standardization of practices and routines. The financial system as it presents itself today is shaped by close interaction of the different competing members (i.e. the banks) both on their refinancing side (interbanking market), as well with respect to their activities (trading, syndicated lending etc). The interaction of banks, particularly large banks, shapes to a large extent the competitiveness and the structure of that industry. For this cooperation, joint routines and comparable to identical processes are a key element for cooperation (Demsetz, Strahan 1997). Before this background, we are primarily interested to see, how individual organization deviate (successfully or unsuccessfully) from these standards and what coupling implication this may have on organization, institutions and systems.

Some actuality from the research can also be derived when linking the discussion to the financial crisis of the post-2007 years. Many observers of the financial service industry raised the question of how it was possible that almost the whole system run for the identical (and identically mispriced) risks. One answer to this question rapidly boils down to the strategy level of the involved organizations, but also to the that almost all major banks had launched comparable products, started to compete for the same market niches on an international scale and lacked a great deal of the required risk management capacities to address this risky and still over-crowded segment of structured credit transactions.

The paper starts by providing some background, including a brief re-visiting of the relevant literature and an overview of the banking industries' characteristics. Then, we outline our theory that leads to three industry hypothesis. We test these hypotheses for the banking context and drill down to elements such as the development of risk management functions, routines and ultimately capabilities. This drill-down

serves as the start of the discussion section. We conclude by revisiting our main arguments based on the empirical evidences and by pointing also at the managerial implications of our results.

BACKGROUND

Starting with the literature on resource based view and capability and keeping in mind the ongoing debate on a still (partly) lacking fundament in terms of micro-foundations, capabilities are still a somewhat artificial construct. This is exemplary true in the financial service industry, where only little research exists on capabilities in the academic sense of the word. Mehra (1996) as is pointed out in more detail later developed an interview-based list; however this list is frequently challenged as his capabilities represent more a functional view of the banks, in which practice areas capabilities must be rooted. We therefore ground our arguments on a notion of “capability outcomes”, which - in the simplest terms a fraction of firm heterogeneity - is a quite real and observable element. We thus can see how individual firms and teams collaborate, and of how this collaboration gets institutionalized in fixed routines beyond firm boundaries that become not only generally acceptable, but much more a sort of “industry standard”. Thus, there are two types of capabilities developed within an interacting system: Those that get institutionalized and those that differ with respect to other firms and that – over time – result in arguments for routine based competitive advantages.

When explaining the heterogeneity in firm’s competitive positions the resource based view is a strong theoretical framework (Penrose, 1959; Wernerfeld, 1984; Barney, 1991; Teece et al., 1997; Kor & Mahoney, 2003). Resources are at the heart of the resource-based view (RBV). They are those specific physical (e.g., specialized equipment i.e. the technological infrastructure), human (e.g. expertise in credit risk assessment), and organizational (e.g., superior credit approval transactions) assets that can be used to implement value-creating strategies (Wernerfeld, 1984; Barney, 1986; Barney, 1991). As such, resources form the basis of unique value-creating strategies and their related activity systems that address specific markets and customers in distinctive ways, and thereby lead to competitive advantage (Barney, 1986; Barney, 1991; Collis, 1994; Collis & Montgomery, 1995). Capabilities are one special type of resource, in its very basic economic definition simply a set of routines (Nelson & Winter, 1982), in the strategic context, however often a concept of routine and collective knowhow-based advantage that is difficult to

copy. This makes them an appealing research objective. However, we lack currently not only an accepted measurement system for capabilities, but also a concept for how and where they are developed. Such measurement systems and foundations cannot be found in case studies only, but must be industry-wide acceptable (or at least comparable).

In an industry-wide such context, the capability discussion has to focus on accepted standards and their resulting logic on routine development. Accordingly, there have been first attempts to provide base-sets of capabilities for distinct industries. One example here (that we will further elaborate on) is provided by Mehra (1996), who analyzed the banking industry and derived, based on industry interviews and after expert panels, a set of critical capabilities for that distinct industry. This traditional framework is based on the fact that firms vary in their resources and capability endowments and that such differences may affect competitive advantage and disadvantages. Thereby, it focuses on an industry perspective, respectively an industry specific capability set. Holding the capability set fixed, the perspective can move from the internal organization of the firms in this industry to the market structures and exogenous effects on the evolution of the capabilities beyond intra-firm learning. This approach allows emphasizing the strategy effect on industry structure and strategic positioning within that structure (Henderson & Cockburn, 1994), but to complement these findings, as we observe and measure capabilities' output and try to track their effects back towards either roots of learning or external market effects. We thereby take an organizational and empirical stance rather than an economic and formal modeling one (Barney, 1991; Peteraf, 1993).

From an organizational stance, the focus of such a development links to the debate of the development of capabilities. Building on the recent debate about the micro-foundations (e.g. Abell, Felin, Foss 2009) however does not resolve yet the questions on how they impact macro-structure or whether micro-structures do have an impact at all. Furthermore, the properties of these micro-foundations remain somewhat vague as well. Is it only individual action and should collective constructs be banned from this? The one certain link is that given the basic co-existence of resource-based and capabilities approaches as well as the literature on learning and individual actions is the internal coherence of the different theories. So, independent of the focus on capabilities or on their underlying, the basic logic of these concepts has to apply accordingly. Explicitly, there need to be arguments based on resources, concepts of learning and assembling

different techniques and ultimately the definition and implementation of routines that can form the basis for strategic capabilities that one day may account for a part of firm heterogeneity in the market. However, even under abundant resources, high creativity and experience and a fruitful cultural of learning, individuals are not free to deviate from their industrial context when making decisions. This can be illustrated well for regulated firms, and even more so when leaving the sphere of firms with a distinct research culture in favor for more service or trading oriented cultures.

Banks – their organization – and the limits to individual commitment

Worldwide, banking has become a relatively commodity-style service. Broadly speaking, the basic function of a banking firm is financial intermediation, whereby its core product is making loans and accepting deposits. In the European and Asian tradition, these loans were granted, refinanced with customer's deposits and kept on each bank's own books. Hence, the growth potential of a singular firm was restricted by its access to customer deposits (and some other minor sources of refinancing). Profitability was in this sense a function of size and the efficiency of operations to transform deposits into loans. The organization followed the function by grouping its services into three main businesses and reporting segments: The customer-front with the outlets, the treasury for internal funding allocation and risk management, and the "Street-side" that cares for the engagement in the market with other banks, where it acquires funding to cover the gaps from retail customer deposit and lending.

As in many other service industries the processes were accompanied by technological change both in distributing and settling transactions, as well as in calculating and assessing risks mathematically, this did not only alter the industry structures, but also cleared the roads for innovations in the financial service industry. One of the most important innovation (measured by its impact on industry structure) in the banking industry has been to securitize loans, allowing a bank that had apparently superior competence in risk management or loan administration to grow more rapidly, even though its resources or abilities in winning customer deposits was less developed (Jacobides, 2005). On the other side, the market allowed, facilitated by securitization, also smaller banks to place their excess liquidity (from deposit surpluses over granted loans) to benefit from higher interest rates as they borrowed their cash or re-financing means to other firms in the market. Regulators supported this trend by providing clear incentives (mainly reduced equity requirements) for the use of more disintermediated business models when supported by sophisticated market risk models. These changes have provided the industry with a wide array of opportunities for competitive differentiation and have led to a significant increase in the degree of competition in this previously regulated and largely uniform industry (Cacciatori & Jacobides, 2005). This shift in competitive emphasis has mainly occurred, due to regulatory protection and other collective imperfections, which previously provided sustainable advantage in this industry, but now are slowly fading away. Consequently,

market participants increasingly deem the accumulation and development of valuable resources to be the most durable source of competitive advantage in the banking industry.

Definitions and constructs

We start from the basic assumption that learning can be measured and illustrated by decomposing capabilities and tracking capabilities development and correlations over time. However, learning in the narrow sense does not seem to occur in the banking industry over the observed period of time. Quite contrary, the capabilities' outcome hints at a strong notion of mere adaptation to the environment, given the standing in each banks prior period. There is no reflection of these responses that would form a learning effect in the narrow sense of the word and there are no evidences for a concentration of any of the banks on some kind of capability based core competences, as they all converge along their innovative, risk management, capital adequacy and market commitment towards a homogenous setting, despite relatively high variation at the onset of the measuring. We attribute this convergence to exogenous factors, mainly the cost of liquidity that shifted the industry apparently from a modest dynamic market to a high velocity environment. Accordingly, we recognize Eisenhardt and Martin's work on the nature of capabilities under these shifting markets (Eisenhardt & Martin, 2000) when defining the constructs.

INSERT FIGURE 1 ABOUT HERE

Authors such as Walter (Walter, 1989; Walter & Smith, 1997) or Mehra (1996) identified critical resources that formed the critical capabilities to differentiate and to nurture, in order to win strong competitive positions. Ingo Walter (1989), who is an acknowledged authority on the banking industry, has identified a set of eight key capabilities/skills which provide competitive advantage in the financial services industry. Based on the input from industry expert interviews, Mehra (1996) extended that initial list of eight and recast into 10 key resources which provide sustainable competitive advantage in the banking industry. These are: (1) Management Quality and Depth, (2) Franchise, (3) Asset/Credit Quality, (4) Technological Expertise, (5) Placing Power, (6) Adequacy of Capital Base, (7) Resource Management/Efficiency, (8) Innovation, (9) Risk Management, and (10) Information Asymmetries.

When looking at this list, especially organizational scholars might be puzzled as most of these variables do not correspond to the expected routine-based perspective. The variables are mainly strategic factors for success, which can be explained by the research set-up as pursued there. A number of executives participated in looking for capabilities as base for their firm's success. Starting from this observation, we decided to use the approach that is broadly grounded in its industry as a starting point nevertheless. However, we redefined the notions slightly, by treating the "capabilities" as capability outcomes. In other words, we acknowledge that bank managers see these variables as their capability-grounded elements for success. The organizational capability behind may be a classical firm distinct processes that allows, e.g. to align each firms resources more neatly with respect to improving asset and credit quality.

The individual action behind the scenes that leads to the implementation of such a routine and the continuous selection of "good" credit contracts is thereby the key action underlying the capability process

and constituting the micro-foundation. In this, the micro-foundation can even more easily be linked to the outcome of a category-style capability.

THEORY

It is from our perspective not necessarily to drop these environmental issues all too much when walking towards the micro-level. To start with, we might think about circumstances where few routines and no capabilities can evolve or where routines evolve that cannot transform into (heterogeneous) capabilities. So, the list of capabilities tells us more about the banking practice notion of capabilities and hence the soil upon which micro-foundations for capabilities is to fall, then about capabilities from an organizational definition point of view.

The managers in the 1996 study saw few to none differentiation potential in organizational routines. When interviewing managers in 2009 this has not changed much. In the process of this research process, a number of interviews have been conducted with bank executives with respect to risk management “capabilities”. Similar to the interviews that Mehra (1996) conducted, the answers tended very much towards output-variables and measurement scales to determine the desired levels of output, e.g. the maximum of assets that can be lost with a certain probability (value-at-risk). Processes and routines were rarely on the top-management agenda and either left to the middle manager who implemented the risk measures organizationally, or even to external consultants. This behavior resulted in the observation that most banks did not actually develop their proprietary capabilities in many of the fields Mehra’s sample seemed to refer to. For instance, risk management is in most banks fairly comparable. Today, effectively all leading banks have set up a special organizational unit that keeps track of all risk management issues of a bank. So, first of all, the team and scope to develop the task into a capability is artificially narrowed. This can be explained mainly by external factors such as legal and quasi-legal regulatory requirements in collecting, storing and evaluation risk-relevant data. Second, within the risk units, risk assessment routines have started to follow in form very much the required IT functions. In parallel, compliance processes followed both the legal and the IT rules therefore effectively restrict flexibility and innovation in this crucial banking function for the sake of a standardized routine across the industry. This tendency of standardization goes along with a shortage of experienced personal and raises the need for external consultants.

Proprietary capability development becomes hence almost impossible, basically due to the micro-foundations and the micro-foundation environment. An anecdotal evidence for this can be seen in the fact that when comparing the leading European banks' risk management system, every bank will present basically the same (e.g. OliverWymann) slides, simply re-colored according to the different firm logos.

As indicated, we see a strong trend that not necessarily the individual interaction is the key element in the micro-foundations for capability development, but the environment of in which these individual actions are taken. This seems at first glance to support the point made in the contextual emphasis of extant work (and definitions) in the capability literature, which tends to imply that the external is the source of routines (and their derivations such as capabilities) (Baldwin & Clark, 1992; Rosenblom & Christensen, 1994; Helfat et al., 2007). Nevertheless, there are a number of strong theoretical arguments stressing that more meaningful progress can be made by considering individual-level and choice-related matters as source of origin (Felin & Foss, 2009). This type of "micro" explanation provides more robust theoretical solutions (Coleman, 1990). Therefore, we propose that a central aspect is not so much whether the explanatory onus may be placed on environmental conditions or rather on individual choices, but that the context of individual choices matters when capabilities shall be developed that are relevant, i.e. that have a measurable outcome when explaining industry heterogeneity.

Such a contextualization of individual choices in industry-distinct worlds allows explaining how collective, unintentional and automatic process decision can exist and interact with a strategic management dimension that imputes actions to expectations and beliefs and choices rather than inevitabilities. Especially when departing from the research community, this might well be a perspective that matters fairly more than abstract capability concepts on their own that often cannot be conceptualized by management in a organizational theory-way as indicated by the capability set turned out in Mehra's discussed approach.

When looking at these rules for automated decisions, it makes sense to use an industry as the object of analysis. Different capability studies exist already on many industries, studies (McGrath, Macmillan, & Venkataraman, 1995) and focus on particular capabilities, in order to uncover the underlying reasons for differences in those capabilities. Furthermore, one has to track these capabilities over time, in order to differ from the impact of any individual managerial actions and the overall standardized changing bounda-

ries of the industrial context. We tracked these effects empirically for the banking industry and analyzed variances and capability development paths for successful and less successful institutions over the past years.

METHOD

When quantifying capabilities, the overall sum within a firm can be defined as the efficiency with which a firm uses the inputs available (e.g. resources and R&D expenditure) and how these inputs are converted into a desired output (e.g. the development of innovative technologies or the bottom line of the firm). Hence, capabilities are an ‘intermediate transformation ability’ (Helfat, 1997) between resources (i.e. inputs) and objectives.

From a point of measuring these intermediate transformers, we can clearly assess input and evaluate the total output at firm level. The problem normally is to detect the various variables that may influence and mediate the transformation process within the ‘black box’ of the firm and to combine detected variables with a valuation tag that shows the degree of influence of a single capability on the total output. Existing literature that attempted to open this black box focused mainly on detecting the sensitive variables within the transformation process and provided both sector (e.g. R&D on a national level as in Archibugi and Coco (2005)) as well as industry specific approaches (e.g. as herein relevant Mehra (1996)) to add to the discourse. However, previous research has also emphasized that it is not sufficient to examine resources and capabilities in isolation – complementarities should also be considered (Helfat, 1997) just as the effect of the respective environment (Kogut & Zander, 2003). When using outside measures that give credit to these respective environments, it is a simple approach to benchmark against competitors (Collis & Montgomery, 1995). This is also the preferred method applied in practice when assessing developed routines. Figure 2 gives an overview of near-market or competitor benchmarks for the different capability outcomes.

INSERT FIGURE 2 ABOUT HERE

As we see, both capabilities as well as output measures are always defined industry specific, but do not really take into account the special capability notion within the firms. This clearly means from the point of research logic that we cannot focus on any bank's idiosyncratic routines and management processes to optimize either expected loss estimation or tier-1-steering. We make this remark, in order to point out that the power of explanation of the results will similarly be restricted to an industry effect and may not capture slight differences in management due to more or less suitable definition of the routines that are used to bolster the capabilities. However, this never has been the objective in this paper. Contrary, we want to hold these routines (respectively the idiosyncratic part) constant, in order to focus on the effects of external environment or internal learning evidence and gain distinct knowledge on this aspect of an industry's capabilities and more broader also its market dynamic.

As a basis for the empirical analysis and the quantification of the capability, performance and mediating facture measures as depicted in Figure 2 we traced the annual report figures for the 24 largest banks (by means of function of total assets and market capitalization)that are following similar business model over the last ten years. Thereby be relied on data retrieved via Worldscope database or from Thomson ONE Banker for balance sheet and income statement numbers, for stock price volatilities we relied on DataStream while calculating all EPS estimates and EPS estimate dispersion on basis of IBES data. This sample of universal banks has then been split up in successful and unsuccessful banks (based on the mean success over the last ten years) and into banking system clusters (European, Anglo-Saxon and Asian banks). Additionally, it has to be noted that we adhered on ratios for measuring capability outputs in order to assure comparability between different banks and to circumvent a potential bias coming from mere size effects.

INSERT TABLE 1 ABOUT HERE

RESULTS

The first step in data analysis encompasses the descriptive statistics as depicted in table 1. A first glance shows that we have not been successful in identifying data for each entity and capability dimension over the full period of 10 years. The missing data is mainly due to the fact that the sample also includes Chinese banks for which the data availability, especially for the earlier years, is quite low. The table furthermore provides some first insights about distributions, which indicates that some capability dimensions are not normally distributed (due to skewness or point distribution) implying that we have to be careful when applying certain statistic methods.

Against this background we analyzed the sample with respect to equality of means between different years, geographical clusters or bank success. Table 2, that provides the according statistics for different banking system clusters, depicts an ambiguous situation. Whereas performance in terms of EBIT seems to be very different in the three clusters, there is no clear pattern with respect to capability outputs. Even though there are some clear differences between the clusters, the data shows only little evidence that there is a clear capability structure for different banking systems. These results lead to the conclusion that there seems to be an industry wide homogeneity with respect to capabilities even when comparing different time periods or financial intermediation system, as for example the European vs. the Anglo-Saxon system. The same finding holds, if we compare the capability outputs along different time period, but not when comparing successful vs. not successful periods for all banks in the sample.

INSERT TABLE 2 ABOUT HERE

Table 3 depicts the situation for differences in capability outcomes with respect to success. For eighty percent of the capability dimensions we see differences in mean output levels. A mere coincidence between the different levels can be neglected due to low correlation levels (based on a nonparametric test due to non-normal distribution of capability outputs) between the definition of success and the particular capability measurements. Especially the capabilities that are linked to the question how efficient resources, be it human resources or capital as a main input factor for banks, are deployed seem to be signif-

icantly different between the two success groups. However, it is not very surprising that there has to be some differences in capabilities when analyzing success in terms of EBIT while adhering to approach that aims at tracking capabilities based on outputs of the respective capabilities.

INSERT TABLE 3 ABOUT HERE

These findings call for regression analysis (even though we are aware that some basic assumptions may be violated to some extent) in order to determine whether the performance level of banks can be depicted as a function of capability outputs. The overall model works at on an accurate level as it is able to explain the performance variance by about seventy percent while adhering to six capability dimensions and the dummy variable that determines whether a bank had a successful year or not (1 = successful, 2 = unsuccessful). Also multicollinearity and heteroscedacity are on reasonable low level, which indicates a relative robust model. The coefficient for each factor that has entered the model as depicted in table 4 seems to be explainable based on mere business logic. Quite interestingly there are two capability dimensions that entered the model that are heavily depending on the regulatory environment, namely risk weighted assets and leverage. The former is already due to regulation for a long period of time, whereas the later has already been subject for regulation as a result of the recent financial crisis (e.g. Switzerland). This finding contributes to the idea, that individual action and subsequently capability development is to some extent restricted by the (regulatory) environment. For an industry like the banking sector that is known as being subject to stark regulation this has strong implications on the existence and management of idiosyncratic micro-foundations. Re-running the regression analysis for different system clusters even lead to R-squared values of ninety percent and more, but has the downside of a more limited sample size, higher multicollinearity, and given the fact of non-normal distribution, we have to be careful by accepting such prima facie excellent values. This finding, however, is to some extent contradictory to the earlier perception with respect to homogeneity of capabilities and micro-foundations. It seems that on the level of different financial intermediation system there are distinct capability dimensions that have an impact on the competitors' success.

INSERT TABLE 4 ABOUT HERE

The last step in our data analysis is therefore dedicated to the attempt of tracing learning or reconfiguration effects on the basis of capability evolution. From an empirical stance we run an autocorrelation analysis, which depicts the impact of former capability level on following capability outputs. Thus learning or managing effects should be revealed by a certain level of autocorrelation within an entity, as the evolution of capabilities has the theoretical notion of path dependency. However, our sample shows only small levels of autocorrelation and only ambiguous structural patterns are observable on an intra-firm level. The empirical analysis thus shows only little evidence for learning effects within each of the twenty-four entities over the period of ten years, whereas it has to be noted that there are differences in level of autocorrelations between entities, although they are all not significant in a mere statistical sense.

In order to further illustrate the non-evolutionary pattern, we tested the stability of the findings by analyzing the banks on an individual basis. As an illustrative case, we plotted the results for UBS (as an unsuccessful bank) and Banco Bilbao Vizcaya Argentaria SA (BBVA as a successful bank) graphically based on the capabilities that have been identified by the regression model for European banks. We plotted the fitness function in terms of EBIT and EBIT/Assets (secondary scale) as well as the 10 capability dimensions (primary scale) by using the level of 1999 as a reference value in order to illustrate the development over time. Furthermore, we assumed a equal distribution of capabilities along the dimension in our starting point.

INSERT FIGURE 3 ABOUT HERE

INSERT FIGURE 4 ABOUT HERE

Apparently, The EBIT has been increasing almost continuously until 2006/07 before declining sharply in the following years. The EBIT/Asset, however, shows a more or less sideward movement and stays on a decent level around its initial value. This indicates that the increases in EBIT had been primarily due to a mere increase in assets in a very advantageous market conditions (i.e. cheap money within the bank and

from market, and excessive founding opportunities) and only secondarily due to strategic decisions with regards to shaping unique capabilities. The overall trends do not really decouple despite increased size, which is a good sign for the quality of the variables for organizational or competitive analysis. In the time during (and after) the crises the two banks show distinct patterns with regard to capability output, especially when focusing on capital adequacy and Management, whereas risk management seems to be stable through the cycle. The former addresses some major issues for the crises, whereas the later indicates that shortfall in risk management, which had an importance role throughout the crises, might not be tracked adequately when relying on capability outputs. Analyzing the graphs reveals three additional evidences. First, peaks of capabilities and performance seem to have some time lag. Based on the charts this lag seems to be about two years, but further research would be needed in order to provide a robust estimation. Second, BBVA seems to be more successful in increasing resource efficiency, while UBS is clearly lagging behind. This, however, is only one part of the story, because UBS initial efficiency level in 1999 was much higher than BBVA's. This raises the question if efficiency that in the banking industry heavily relies on an efficient deployment of human resources can get too high, which would be the case when e.g. assets per employee pass over a certain threshold leading to complexity that cannot be accordingly managed anymore. Third, capabilities seem also to shrink over time, which could e.g. be a result of de-learning in the sense of substitution of individual action by team results and/or routinization, but can also be an effect that has to be seen against the background of best practices in vibrant markets.

The results as well as the two illustrative cases are exemplary for the problem of capabilities in general and for the application to a regulated and market driven industry such as banking in particular. First, capabilities are hard to fit towards an industry-wide standardized set of "hard" output measures. Second, there seems to be a strong trend towards unification of micro-foundations, and thus harmonization of outcome variance, especially in banks. In other words, there is little evidence for an active, strategic process of learning or routinization on the micro-level that might bolster the process of a co-evolution of capabilities. What is observable at the high-end is a mere and fluctuating adaptation to short cycle swings in the environment. However, capabilities or their micro-foundations must be observable on this level as well, should they claim the term "strategic". We attribute this adaptation bias to the fact that either there is virtually no corporate learning routine yet embedded in bank strategies and consequently no focus on a

capability based management in place, or the market in which the banks operate. The lack of an ability to from routines and enhance corporate learning must be found on the micro-level, as the discussion section outlines.

DISCUSSION

Matching capability theories with output-oriented empirical evidence often yielded ambiguous results in the past (Hoffmann & Mattig, 2009). From an organizational perspective, the conclusions have been at best mixed when it came at whether there are really learning effects (with generative variation, internal selection, replication and – most importantly – retention at work). From a theoretical angle, the capability-picture is rather clear, however. Routinization apparently can be diffused, even though information is correctly scanned, evaluated and problem solving mechanisms incorporated. This clearly challenges the theories of capability cycles (Helfat & Peteraf, 2003) and more detailed cognitive intensity in the knowledge evolution cycle (Zollo & Winter, 2002) and hints more towards a responsive system of capabilities, and not so much of a “learning” system with some degree of a reflective feature. The underlying (learning and routinization) mechanisms that forms capabilities can be conceptualized literally as routines for variation (including imitation and experimentation), selection, and retention, which are ingredients to a system of evolutionary learning (Helfat & Raubitschek, 2000; Zollo & Winter, 2002). This theoretical consensus raised in a first step questions on how exactly dynamic capabilities affect firm performance and lead to the increased application of empirical research into the nature of capabilities. This shift opened doors for new problems in research policy. First and foremost, the issue of capability measurement had to be addressed. Second, a formal model for capability evolution needed to be developed. Third, it needs to be clear what the basis and key elements (or in other words micro-foundations) of such a model for capability evolution should be, before learning and routinization is moved into the focus of analysis. This routinization, we argue, is the basis for an institutionalization of capabilities in an interacting system.

Our research contributed to this last point mainly and set-out the broader guidelines for an (industry-specific) model for capability evolution. Finally, it addressed the issue of capability measurement under the expectation of either existing or missing micro-foundation by looking at perceived outcomes per attributed capability. This allowed us to look at the foundations backwards and in line with established liter-

ature. Furthermore, we had – with the micro-foundations and the organizational model of capability evolution – a concept at hands to explain why and whether capability-outcomes were relevant for industry outperformance or not.

In our industry study, we decided to move backwards. We started from the firm heterogeneity on performance level and tried to link this empirical to outcomes of assumed strategic banking capabilities. As this direct evidence was scarce, we moved on towards theoretically looking for micro-foundations of these capabilities. On the level of micro-foundations of banks, our research provided two main statements: The first is an argument that micro-foundations need to reach beyond individual's decision and interaction of individual's decision that have the potential of forming routines (and later capabilities). In this, the concept has to include also the environment in which decisions are taken and the scope to which decisions can be taken. The second relates these exogenous boundaries of individual decisions to the evidence we have for the banking industry. The relationship between boundaries of decisions and management decision on different hierarchical levels is depicted in figure 5. For the banking industry, one could identify one general boundary condition, which is legal and regulatory compliance. Within this macro-condition, bank strategies and risk profiles are defined by the top-management, forming a second order condition that effects midlevel management and in-field teams alike, comparable to other industries. A special factor, however, is the strong influence of the market interface that we located at the middle management. Here, the in-field team results and the emerged routines are matched against best-practice processes from other banks (often by external consultants) and very much transaction motivated market or trading data. These exogenous measures are used to adjust the maximum value at risk for each business segment, and with this, it moderates almost all capability-relevant aspects such as the resources and the capital that can be used, the risk management efforts that must be taken or the asymmetry that is allowed (against the benchmarks of competitors). Hence, middle management is a key loophole for micro-foundations to develop into capabilities. Against the background of standards, legal or market driven industries, hence, seem to “narrow down” towards a reduced set of strategic capabilities.

INSERT FIGURE 5 ABOUT HERE

However, even without this, decision taking and routine development is constraint very much already at the lowest end of the organization. Here, not only compliance issues, but also a continuous market-price benchmarking adds to cost pressure. Furthermore, the trading-based culture turns out to yield few emphasizes on group-routines, but much more on individual task completion. The firms seem to operate as a framework, in which most employees pursue their own objectives with little sense for the overall strategy. This could well be motivated by their incentives, which, however was not in focus here.

In summary, we see that against the background of compliance, market cost constraints and maybe culture little efforts in individual decisions and team interaction for routine formation. Where routines emerge on the low level, it gets scrutinized at the middle management level where it is benchmarked against a relatively homogenized industry-consent. Process innovation can thus rarely survive beyond this hierarchical level when becoming strategic and even less be diffused throughout the organization. However, on this same mid-level function, we find the strongest impact on capability outcome as well. This means that once, an initiative survives this stage its implementation becomes much more likely. An anecdotal evidence for this is that those firms who did best in the aforementioned secondary credit crisis (Credit Suisse, Deutsche Bank or HSBC) did not have very different risk measurement techniques or assessment processes, but had a person on mid-level management who decided to get out early. Is this a capability or personal intuition? We would certainly say that it was an individual decision and – together with the boundaries that allowed the implementation of the action – a micro-foundation of organizational success. This example also showed that not all decisions must automatically end up as capabilities, despite of having a temporary impact. With respect to the broader set of capability-based outcome in bank heterogeneity, this urges us to focus on time series. As a consequence, sole individual decisions loose part of their influence on stable routines, capabilities or long-term outcomes. Thus, the micro-foundational element of context for decisions moves all the more into the center of the focus.

CONCLUSION

When looking at the various capability endowments and the (co-)evolution of those capability endowments in firms in a highly interacting industry, we encountered a number of puzzles: A success-related observation of capability outcomes within an organization could only rarely and certainly not on a systematic level be identified. Companies in the observed type of industry seem clearly not to develop capabilities based on an organizational (single firm) strategy. Developments within organizations remained mostly random.

Co-evolution to “critical capability clusters” in the industrial setting also remains scarce. For instance, when comparing successful and unsuccessful firms and their associated capability clusters, we could not make out a systematic development over time for the successful firm. However, we found partly evidence for a clustering relevance for unsuccessful firms, which at least may indicate that a lack of co-evolution of capabilities threatens firm’s positions in the financial service industry over time.

The most interesting results were clearly on “institutionalization” of certain capability patterns that hold across the industry. However, this institutionalization of capabilities (or underlying industry routines) was clearly not a function of organizational development, but moved with the variance in external conditions that the banks were exposed to. For this, however, we had to broaden the concept from a narrow individual decision focus, towards a decision space made of individuals and their constraining environment, hinting at a number of important mediating factors, such as regulation and competitive market structure, or the role of governance and the process of strategizing. The key element here, however, seems simply to be the variance of market conditions. Hence, the key capability of banks seems to be to adjust its routine set rapidly to adapt to changing conditions. This observation can be made not only on single organization level, but on industry level. Although frequent and fast adaptation to the environment certainly is an interesting capability, the lack effective learning and the lack of relevance of learning to bank success may have distinct practical implications when setting legal rules and routines for the institutionalization of industry practices.

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APPENDIX 1 - TABLES AND FIGURES

Figure 1 – Definitions and Characteristics of the different Constructs

	(Dynamic Capabilities)	Routines	Micro-foundations
Definition	Specific organizational and strategic processes (e.g. product innovation, strategic decision making) by which managers alter their resource base; traditionally routines to learn routines	“Ways of doing things” (Nelson & Winter, 1982, p. 165) or “ordered sets of actions” (Pentland & Rueter, 1994, p. 489) . Cohen and Bacdayan (1994), on the other hand, suggest that routines are “patterned sequences of learned behavior involving multiple actors who are linked by relations of communication and/or authority”	The source of routines (and their derivations such as (dynamic) capabilities). In the notion of Felin and Foss (2009) mainly factors on the individual level, whereas capability theory sees its routines more rooted in exogenous factors. We use a broad definition that includes individual actions, but focuses more firmly on the context of such actions
Heterogeneity	Commonalities (i.e. best practices) with some idiosyncratic details	Commonalities (i.e. best practices) with few idiosyncratic details	No collective heterogeneity with respect to context variables for industries, but with respect to individual decisions
Pattern	Depending on market dynamics, ranging from detailed, analytic routines to simple, experimental ones.	Comparable to capabilities: Depending on market dynamics, ranging from detailed, analytic routines to simple ones. Often less experimental	Unstructured pattern grouped into individual factors, governing factors and environmental aspects that allow the emergence of routines
Outcome	Depending on market dynamics predictable or unpredictable (Eisenhardt & Martin, 2000)	Depending on markets and individual choices. Relatively predictable and measurable	Depending on individual choices (Felin & Foss, 2009) and their foundations
Competitive Advantage	Competitive advantage from valuable, somewhat rare, equifinal, substitutable, and fungible dynamic capabilities	Low competitive advantage in itself, unless made valuable by the “users” and developed over time. Communication, execution and more broadly governance mediate success	From a strategic point of view more available resources (including personal qualities in teams) and a supportive environment
Evolution	Unique path of development followed by the firms learning mechanisms such as practice, codification, mistakes, and pacing	Path followed in the sense of best practice application, however, less unique than dynamic capabilities. Routines can be (exogenously) implemented as well	No path of development, but an unstructured set of factors that can form the basis for allowing forming and implementing routines. Can be actively governed

Figure 2 - Capabilities, Measures and underlying theory

Capability	Measure	Theory
1. Management	- Cost Income Ratio (CIR) - Cost Income Ratio Growth Rate	Hess, Grimes and Holmes (2009), Cebenoyan and Cooperman (2005), Berger and Humphrey (1997)
2. Franchise	- Market Share (Total Assets) - Market Share (Total Loans)	De Jonghe and Vennet (2008)
3. Asset Quality	- Risk Weighted Assets Per Total Assets	Cebenoyan and Strahan (2004), Yuk-Shee, Greenbaum and Thakor (1986)
4. Technological Expertise	- Delta Total Assets Per Employees - IT and other Expenses Per Total Assets	Archibugi and Coco (2005), Hauswald and Marquez (2003)
5. Placing Power	- Total Loan Growth Rate	Demsetz and Strahan (1997)
6. Adequacy of Capital Base	- Loan Loss Reserves Per Total Loans - Tier 1 Capital Ratio	Cebenoyan and Strahan (2004)
7. Resource Management	- Total Assets Per Employee - Total Loan Per Employee - Operating Income Per Assets - Average Weighted Cost of Capital	Berger and Humphrey (1997)
8. Innovation	- Commissions and Fees from Placement Growth Rate	Hauswald and Marquez (2003), Helfat and Raubitschek (2000),
9. Risk Management	- Non Performing Loans Per Total Loans - Loan Income Per Total Loan - Stock Price Volatility - Leverage Ratio	Cebenoyan and Strahan (2004), Berger and Humphrey (1997), Demsetz and Strahan (1997), Osborne and Zaher (1992)
10. Information Asymmetries	- Delta EPS to Estimated EPS - Estimated EPS Dispersion	Cebenoyan and Strahan (2004)
Fitness Function		
Performance	- Earnings Before Interest and Tax (EBIT) - EBIT Per Total Assets - EBIT Growth Rate	-
Mediating Factors		
Competition	- Herfindahl-Hirschman Index within Industry	Mattig and Menz (2008)
Governance	- Herfindahl-Hirschman Index within Bank	Mattig and Menz (2008)

Figure 3 – Graphical Example: Banco Bilbao Vizcaya Argentaria SA

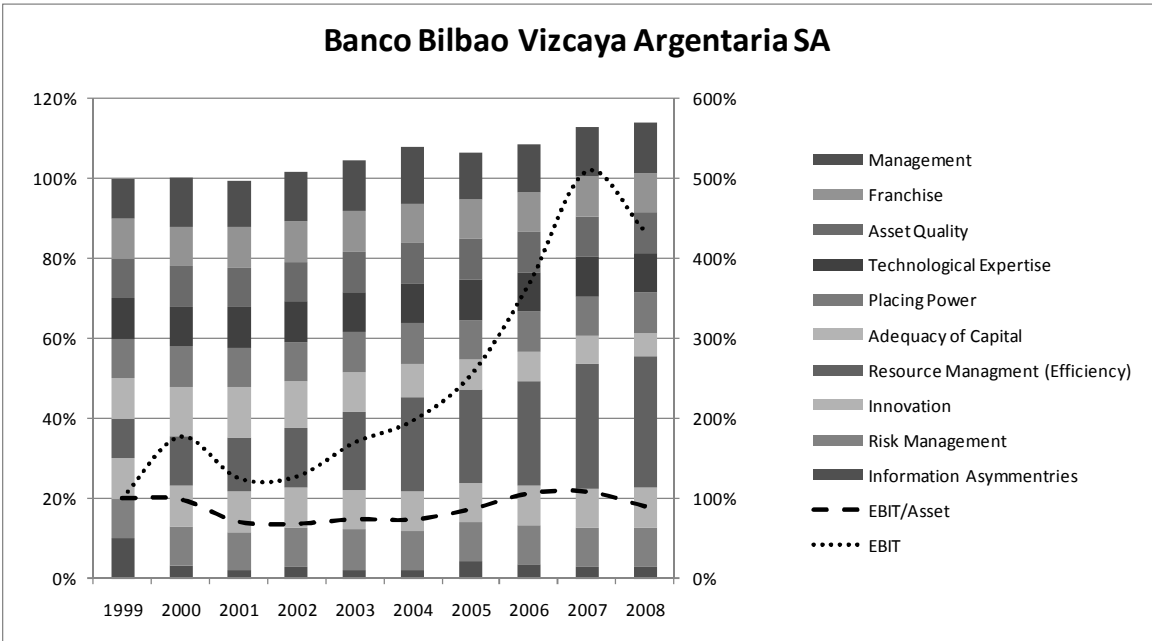


Figure 4 – Graphical Example: UBS AG

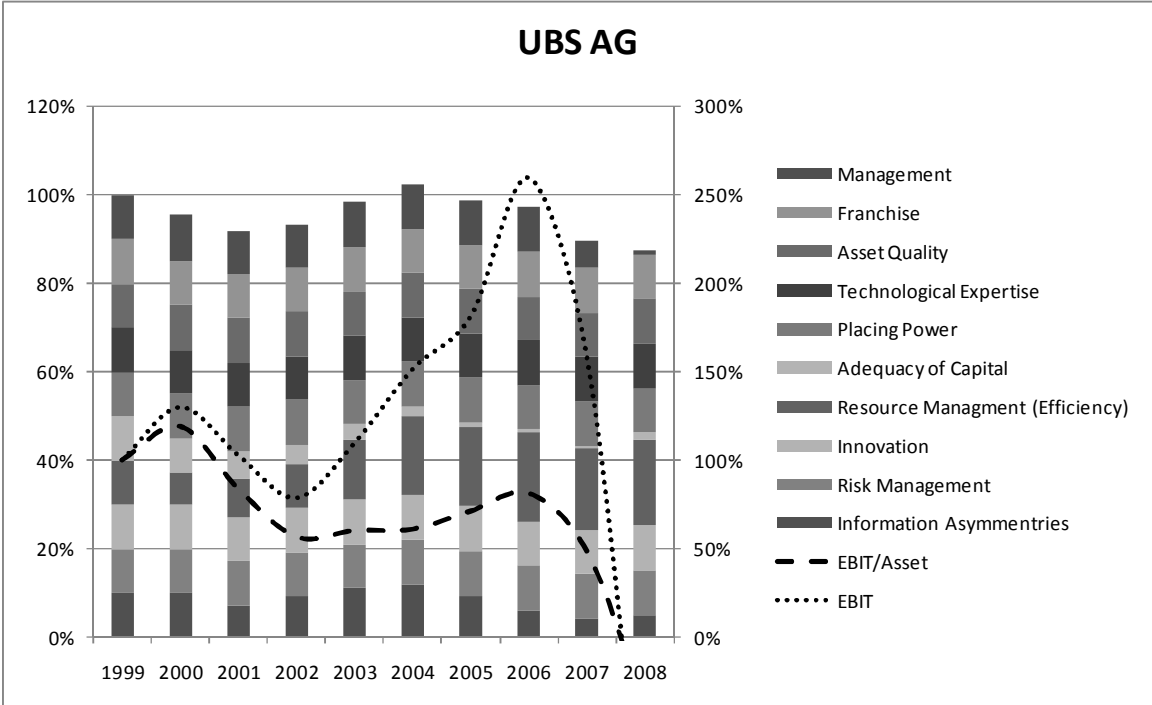


Figure 5 – Development and Interorganizational Dynamics in Banks

(Based on the discussions in Mehra 1996 and Hoffmann, Mattig, 2009)

Industries that are driven by legal and regulatory constraints and sensitive to short-term market swings seem to suffer from a „narrowing“ of firm capabilities to market standards. The nature of the microfoundations (i.e. individual decision as well as boundaries) seems to be a critical element in this process.

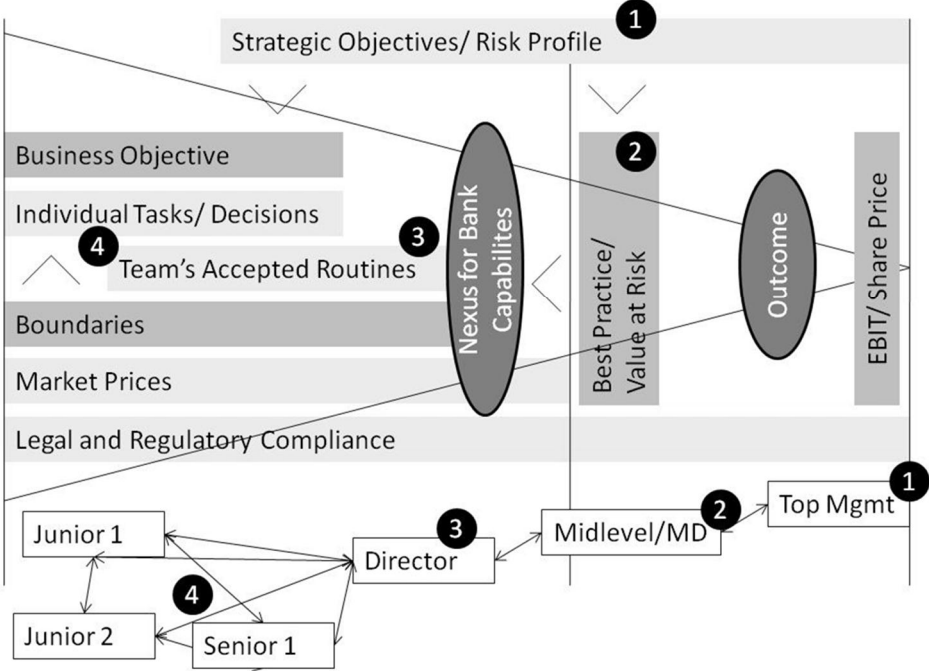


Table 1 – Descriptive Statistic of the Sample

Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Cap1_Mgmt_CIR	226	.3109	6.6223	.727682	.4761608	9.303	.162	108.231	.322
Cap1_Mgmt_CIR_GrowthRate	226	-6.5443E-01	4.7936	.058448	.4214100	7.823	.162	77.340	.322
Cap2_Fran_AssetsMarketShare	240	-	.0963	.041667	.0204680	.070	.157	-.281	.313
Cap2_Fran_LoanMarketShare	240	-	.1248	.041667	.0209397	.472	.157	.908	.313
Cap2_Fran_AssetMarketShare_GrowthRate	203	-2.5656E-01	1.7840	-2.226827E-03	.2162083	4.264	.171	27.675	.340
Cap3_AssetQual_RWAPerAssets	202	.0288	.8438	.468761	.1706887	-.278	.171	-.748	.341
Cap4_TechExp_DeltaAssetsPerEmployee	192	-3.7020E-01	1.9860	.119151	2.053676	4.073	.175	35.357	.349
Cap4_TechExp_ITandOtherOpExpensesPerAssets	223	-4.0000E-04	.0488	.005432	.0076918	2.943	.163	10.640	.324
Cap5_PlacingPower_Loan_GrowthRate	202	-5.6184E-01	2.0400	.157656	.2736165	3.209	.171	18.625	.341
Cap6_CapitalAdeq_LoanLossReserveperLoans	219	-	.1865	.026963	.0205835	4.341	.164	26.974	.327
Cap6_CapitalAdeq_Tier1Ratio	182	5.7800	13.9000	8.398407	1.4574056	1.235	.180	1.783	.358
Cap7_ResMgmt_AssetsPerEmployee	206	1.8921E+06	3.7906E+07	1.058283E+07	7.6019880E+06	1.150	.169	.676	.337
Cap7_ResMgmt_LoanPerEmployee	215	.8458	14.2160	4.631641	3.2125020	1.411	.166	1.096	.330
Cap7_ResMgmt_OperatingIncomePerAssets	227	-	.0798	.030671	.0135390	.741	.162	1.440	.322
Cap7_ResMgmt_WtdAvgCostOfCapital	184	.4673	17.0141	3.008249	2.0763130	3.802	.179	20.022	.356
Cap8_Innovation_CAFGrowthRate	206	-4.7675E-01	2.9510	.179829	.3480825	3.421	.169	21.238	.337
Cap8_Innovation_LoanIncomePerNetLoans	192	-6.7880E-01	1.9310	.033801	.2809232	2.779	.175	14.908	.349
Cap9_RiskMgmt_Leverage	219	.8999	.9946	.953084	.0205618	-.527	.164	-.343	.327
Cap9_RiskMgmt_NonPerformingPerPerformingLoan	226	-	.4076	.019512	.0305511	9.380	.162	116.328	.322
Cap9_RiskMgmt_StockPriceVolatility	169	15.7289	66.4203	28.211683	8.8721529	1.597	.187	3.103	.371
Cap10_InfoAsym_DeltaExpEPSActEPS	205	-6.0000E-01	332.7200	15.089317	39.3781375	4.388	.170	25.023	.338
Cap10_InfoAsym_ExpEPSDispersion	206	.0328	3.9117	1.613102	1.0414838	.161	.169	-1.362	.337
Performance1_EBITA	219	-4.7095E+04	41549.0000	11154.159010	10268.8313343	-7.36	.164	6.582	.327
Performance2_EBITAsset	219	-1.9092E-02	.0360	.012840	.0077285	-.593	.164	1.987	.327
Performance3_EBITGrowthRate	195	-6.9005E+00	78.7284	.431605	5.7110351	13.401	.174	184.797	.346
MediatingFactor1_Governance	163	.1366	1.0000	.365184	.1774081	1.485	.190	2.161	.378
MediatingFactor2_Competition	240	.04706	.06226	.0521461	.00458259	.984	.157	-.151	.313

Table 2 – Differences in Capabilities in dependence of Region (ANOVA)

		ANOVA														
		Regio Code 1					Regio Code 2					Regio Code 3				
		Sum of Squares	df	Mean Square	F	Sig.	Sum of Squares	df	Mean Square	F	Sig.	Sum of Squares	df	Mean Square	F	Sig.
Cap1_Mgmt_CIR	Between Groups	5.127	9	.570	1.765	0.08	2.049	9	.228	2.100	0.04	1.158	9	.129	2.388	0.03
	Within Groups	32.268	100	.323			6.506	60	.108			1.940	36	.054		
	Total	37.395	109				8.556	69				3.098	45			
Cap1_Mgmt_CIR_GrowthRate	Between Groups	5.821	9	.647	2.889	0.00	2.176	9	.242	1.837	0.08	.291	9	.032	1.362	0.24
	Within Groups	22.392	100	.224			7.897	60	.132			.855	36	.024		
	Total	28.213	109				10.074	69				1.146	45			
Cap2_Fran_AssetsMarketShare	Between Groups	.001	9	.000	.416	0.92	.001	9	.000	.260	0.98	.005	9	.001	1.046	0.42
	Within Groups	.034	100	.000			.020	60	.000			.026	50	.001		
	Total	.035	109				.020	69				.031	59			
Cap2_Fran_LoanMarketShare	Between Groups	.005	9	.001	2.459	0.01	.001	9	.000	.221	0.99	.012	9	.001	3.018	0.01
	Within Groups	.021	100	.000			.025	60	.000			.021	50	.000		
	Total	.026	109				.026	69				.033	59			
Cap2_Fran_AssetMarketShare_GrowthRate	Between Groups	.422	8	.053	1.341	0.23	.858	8	.107	1.485	0.18	.229	8	.029	2.737	0.02
	Within Groups	3.542	90	.039			3.900	54	.072			.334	32	.010		
	Total	3.964	98				4.758	62				.563	40			
Cap3_AssetQual_RWAPerAssets	Between Groups	.084	8	.009	.307	0.97	.185	9	.021	1.009	0.44	.046	8	.006	1.422	0.23
	Within Groups	2.718	89	.031			1.119	55	.020			.119	29	.004		
	Total	2.802	98				1.304	64				.165	37			
Cap4_TechExp_DeltaAssetsPerEmployee	Between Groups	.960	8	.120	1.948	0.06	.389	8	.049	3.849	0.00	.222	7	.032	3.738	0.01
	Within Groups	5.541	90	.062			.682	54	.013			.187	22	.008		
	Total	6.501	98				1.071	62				.409	29			
Cap4_TechExp_ITandOtherOpExpensesPerAssets	Between Groups	.000	9	.000	.264	0.98	.000	9	.000	.427	0.92	.000	9	.000	.788	0.63
	Within Groups	.010	96	.000			.002	60	.000			.000	37	.000		
	Total	.010	105				.002	69				.001	46			
Cap5_PlacingPower_Loan_GrowthRate	Between Groups	1.371	8	.171	2.328	0.03	1.490	8	.186	2.230	0.04	.198	8	.025	.990	0.46
	Within Groups	6.624	90	.074			4.510	54	.084			.774	31	.025		
	Total	7.995	98				6.000	62				.972	39			
Cap6_CapitalAdeq_LoanLossReserveperLoans	Between Groups	.006	9	.001	5.558	0.00	.001	9	.000	2.595	0.01	.014	9	.002	1.196	0.33
	Within Groups	.011	93	.000			.002	60	.000			.048	36	.001		
	Total	.017	102				.003	69				.063	45			
Cap6_CapitalAdeq_Tier1Ratio	Between Groups	23.188	9	2.576	.917	0.51	14.444	9	1.605	2.224	0.03	17.156	8	2.145	.611	0.76
	Within Groups	219.081	78	2.809			39.696	55	.722			70.223	20	3.511		
	Total	242.269	87				54.140	64				87.379	28			
Cap7_ResMgmt_AssetsPerEmployee	Between Groups	1.875E+15	9	2.083E+14	4.748	0.00	3.486E+14	9	3.873E+13	4.174	0.00	4.440E+14	8	5.550E+13	.452	0.88
	Within Groups	4.081E+15	93	4.388E+13			5.474E+14	59	9.277E+12			3.069E+15	25	1.228E+14		
	Total	5.956E+15	102				8.959E+14	68				3.513E+15	33			
Cap7_ResMgmt_LoanPerEmployee	Between Groups	131.592	9	14.621	2.727	0.01	46.620	9	5.180	1.871	0.07	92.645	8	11.581	.386	0.92
	Within Groups	536.223	100	5.362			166.157	60	2.769			779.968	26	29.999		
	Total	667.815	109				212.777	69				872.614	34			
Cap7_ResMgmt_OperatingIncomePerAssets	Between Groups	.003	9	.000	1.704	0.10	.004	9	.000	3.329	0.00	.001	9	.000	3.523	0.00
	Within Groups	.017	100	.000			.008	60	.000			.001	37	.000		
	Total	.020	109				.012	69				.002	46			
Cap7_ResMgmt_WdAvgCostOfCapital	Between Groups	26.647	9	2.961	4.545	0.00	20.017	9	2.224	2.590	0.01	115.218	5	23.044	1.289	0.31
	Within Groups	54.717	84	.651			47.231	55	.859			339.602	19	17.874		
	Total	81.364	93				67.247	64				454.820	24			
Cap8_Innovation_CAFGrowthRate	Between Groups	4.133	9	.459	4.368	0.00	2.176	9	.242	3.029	0.01	1.513	8	.189	2.143	0.06
	Within Groups	9.566	91	.105			4.310	54	.080			2.824	32	.088		
	Total	13.699	100				6.486	63				4.337	40			
Cap8_Innovation_LoanIncomePerNetLoans	Between Groups	1.711	8	.214	2.315	0.03	1.621	8	.203	3.755	0.00	.294	7	.042	3.136	0.02
	Within Groups	8.315	90	.092			2.807	52	.054			.322	24	.013		
	Total	10.026	98				4.428	60				.616	31			
Cap9_RiskMgmt_Leverage	Between Groups	.000	9	.000	.105	1.00	.003	9	.000	.733	0.68	.002	9	.000	.553	0.82
	Within Groups	.024	100	.000			.032	60	.001			.014	29	.000		
	Total	.024	109				.035	69				.017	38			
Cap9_RiskMgmt_NonPerformingPerPerformingLoan	Between Groups	.006	9	.001	3.161	0.00	.001	9	.000	.924	0.51	.024	9	.003	.684	0.72
	Within Groups	.020	100	.000			.004	60	.000			.142	36	.004		
	Total	.025	109				.004	69				.166	45			
Cap9_RiskMgmt_StockPriceVolatility	Between Groups	513.907	9	57.101	1.278	0.26	2262.654	9	251.406	2.158	0.04	20.061	2	10.031	5.508	0.05
	Within Groups	4199.647	94	44.677			5474.942	47	116.488			9.105	5	1.821		
	Total	4713.553	103				7737.596	56				29.166	7			
Cap10_InfoAsym_DeltaExpEPSActEPS	Between Groups	89.123	9	9.903	2.752	0.01	3927.703	9	436.411	.470	0.89	104985.613	7	14997.945	3.764	0.01
	Within Groups	349.089	97	3.599			55662.340	60	927.706			79693.116	20	3984.656		
	Total	438.212	106				59590.044	69				184678.729	27			
Cap10_InfoAsym_ExpEPSDispersion	Between Groups	7.924	9	.880	1.577	0.13	3.245	9	.361	.676	0.73	6.277	7	.897	1.293	0.30
	Within Groups	54.143	97	.558			31.992	60	.533			14.563	21	.693		
	Total	62.067	106				35.237	69				20.840	28			
Performance1_EBITA	Between Groups	2.929E+09	9	3.254E+08	10.085	0.00	5.393E+09	9	5.992E+08	4.696	0.00	1.056E+09	9	1.173E+08	3.878	0.00
	Within Groups	3.227E+09	100	3.227E+07			7.655E+09	60	1.276E+08			8.771E+08	29	3.025E+07		
	Total	6.155E+09	109				1.305E+10	69				1.933E+09	38			
Performance2_EBITAsset	Between Groups	.001	9	.000	2.300	0.02	.002	9	.000	6.278	0.00	.001	9	.000	3.594	0.00
	Within Groups	.004	100	.000			.002	60	.000			.001	29	.000		
	Total	.005	109				.005	69				.002	38			
Performance3_EBITGrowthRate	Between Groups	11.788	8	1.474	2.298	0.03	13.797	8	1.725	8.120	0.00	1180.883	8	147.610	.717	0.87
	Within Groups	57.702	90	.641			11.468	54	.212			4939.960	24	205.832		
	Total	69.490	98				25.265	62				6120.844	32			
MediatingFactor1_Governance	Between Groups	.332	8	.041	1.732	0.11	.437	9	.049	2.925	0.01	.254	7	.036	.821	0.58
	Within Groups	1.580	66	.024			.730	44	.017			1.149	26	.044		
	Total	1.911	74				1.166	53				1.403	33			
MediatingFactor2_Compensation	Between Groups	.002	9	.000	2.726E+31	0.00	.001	9	.000	6.834E+31	0.00	.001	9	.000	8.866E+31	0.00
	Within Groups	9.376E-34	100	9.376E-36			1.428E-34	60	2.380E-36			7.862E-35	50	1.572E-36		
	Total	.002	109				.001	69				.001	59			

Table 3 – Differences in Capabilities in dependence of Success (ANOVA)

ANOVA						
		Squares	df	Mean Square	F	Sig.
Cap1_Mgmt_CIR	Between Groups	2.658	1	2.658	12.315	.001
	Within Groups	48.356	224	.216		
	Total	51.014	225			
Cap1_Mgmt_CIR_GrowthRate	Between Groups	1.796	1	1.796	10.540	.001
	Within Groups	38.161	224	.170		
	Total	39.957	225			
Cap2_Fran_AssetsMarketShare	Between Groups	.000	1	.000	.871	.352
	Within Groups	.100	238	.000		
	Total	.100	239			
Cap2_Fran_LoanMarketShare	Between Groups	.002	1	.002	3.909	.049
	Within Groups	.103	238	.000		
	Total	.105	239			
Cap2_Fran_AssetMarketShare_GrowthRate	Between Groups	.392	1	.392	8.710	.004
	Within Groups	9.051	201	.045		
	Total	9.443	202			
Cap3_AssetQual_RWAPerAssets	Between Groups	.177	1	.177	6.217	.013
	Within Groups	5.680	200	.028		
	Total	5.856	201			
Cap4_TechExp_DeltaAssetsPerEmployee	Between Groups	.074	1	.074	1.753	.187
	Within Groups	7.982	190	.042		
	Total	8.056	191			
Cap4_TechExp_ITandOtherOpExpensesPerAssets	Between Groups	.000	1	.000	.051	.821
	Within Groups	.013	221	.000		
	Total	.013	222			
Cap5_PlacingPower_Loan_GrowthRate	Between Groups	1.067	1	1.067	15.258	.000
	Within Groups	13.981	200	.070		
	Total	15.048	201			
Cap6_CapitalAdeq_LoanLossReserveperLoans	Between Groups	.003	1	.003	6.744	.010
	Within Groups	.090	217	.000		
	Total	.092	218			
Cap6_CapitalAdeq_Tier1Ratio	Between Groups	2.098	1	2.098	.988	.322
	Within Groups	382.352	180	2.124		
	Total	384.450	181			
Cap7_ResMgmt_AssetsPerEmployee	Between Groups	5.790E+14	1	5.790E+14	10.483	.001
	Within Groups	1.127E+16	204	5.524E+13		
	Total	1.185E+16	205			
Cap7_ResMgmt_LoanPerEmployee	Between Groups	118.607	1	118.607	12.088	.001
	Within Groups	2089.909	213	9.812		
	Total	2208.516	214			
Cap7_ResMgmt_OperatingIncomePerAssets	Between Groups	.003	1	.003	20.704	.000
	Within Groups	.038	225	.000		
	Total	.041	226			
Cap7_ResMgmt_WtdAvgCostOfCapital	Between Groups	36.971	1	36.971	8.948	.003
	Within Groups	751.955	182	4.132		
	Total	788.927	183			
Cap8_Innovation_CAFGrowthRate	Between Groups	2.297	1	2.297	20.786	.000
	Within Groups	22.541	204	.110		
	Total	24.838	205			
Cap8_Innovation_LoanIncomePerNetLoans	Between Groups	.333	1	.333	4.286	.040
	Within Groups	14.741	190	.078		
	Total	15.073	191			
Cap9_RiskMgmt_Leverage	Between Groups	.005	1	.005	11.165	.001
	Within Groups	.088	217	.000		
	Total	.092	218			
Cap9_RiskMgmt_NonPerformingPerPerformingLoan	Between Groups	.003	1	.003	3.640	.058
	Within Groups	.207	224	.001		
	Total	.210	225			
Cap9_RiskMgmt_StockPriceVolatility	Between Groups	47.063	1	47.063	.596	.441
	Within Groups	13177.073	167	78.905		
	Total	13224.136	168			
Cap10_InfoAsym_DeltaExpEPSActEPS	Between Groups	6629.387	1	6629.387	4.345	.038
	Within Groups	309700.707	203	1525.619		
	Total	316330.094	204			
Cap10_InfoAsym_ExpEPSDispersion	Between Groups	1.672	1	1.672	1.546	.215
	Within Groups	220.689	204	1.082		
	Total	222.361	205			
Performance1_EBITA	Between Groups	3.544E+09	1	3.544E+09	39.548	.000
	Within Groups	1.944E+10	217	8.960E+07		
	Total	2.299E+10	218			
Performance2_EBITAsset	Between Groups	.004	1	.004	90.487	.000
	Within Groups	.009	217	.000		
	Total	.013	218			
Performance3_EBITGrowthRate	Between Groups	128.641	1	128.641	4.005	.047
	Within Groups	6198.848	193	32.118		
	Total	6327.489	194			
MediatingFactor1_Governance	Between Groups	.121	1	.121	3.899	.050
	Within Groups	4.978	161	.031		
	Total	5.099	162			
MediatingFactor2_Competition	Between Groups	.000	1	.000	.442	.507
	Within Groups	.005	238	.000		
	Total	.005	239			

Table 4 – Regression Model Summary

Model	Coefficients ^a									
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
(Constant)	-.084	.028		-3.015	.003					
Cap3_AssetQual_RWAPerAssets	.023	.003	.737	6.545	.000	.615	.570	.400	.294	3.401
Cap6_CapitalAdeq_LoanLossReserveperLoans	-.113	.031	-.247	-3.624	.000	-.076	-.359	-.221	.800	1.250
Cap7_ResMgmt_OperatingIncomePerAssets	.231	.042	.416	5.475	.000	.645	.502	.334	.647	1.545
Cap9_RiskMgmt_Leverage	.094	.028	.353	3.376	.001	-.419	.337	.206	.342	2.924
Cap9_RiskMgmt_PriceVolatility	.000	.000	-.167	-2.672	.009	-.157	-.273	-.163	.952	1.050
Cap10_InfoAsym_DeltaExpEPSActEPS	.000	.000	-.221	-3.128	.002	-.038	-.315	-.191	.750	1.333
SuccessfulYear	-.002	.001	-.162	-2.616	.010	-.252	-.267	-.160	.975	1.026

a. Dependent Variable: Performance2_EBITAsset