

**A QUANTITATIVE ANALYSIS OF QUALITATIVE ARGUMENTS IN A BANK
MERGER**

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"Propaganda, defined as that branch of the art of lying which consists in very nearly deceiving your friends without quite deceiving your enemies."

F.M. Cornford in *Microcosmographia Academia* (1922)

1. Introduction

In finance, motives for bank mergers are studied by statistically analyzing the financial and accounting information of pre-merger and post-merger institutions. Statistically significant improvements in profitability, increases in operating efficiency, rapidly growing interest revenues and fees, more efficient asset management, higher shareholder value, and decreased risk in the post-merger institutions are interpreted as signs of a successful merger; consequently the probable motives of the merger itself. It is likely that such conclusions reveal some of the true reasons behind bank merger, i.e., the arguments within management when evaluating a potential acquisition or considering a merger offer. However, these conclusions fail to uncover the actual arguments and the relationships between these arguments, which were discussed within management in conjunction with the merger.

In this paper, we attempt to quantitatively analyze and compare the relevant merger arguments and the relationship between these arguments as they are revealed in internally and externally available information. We focus on one merger between two universal banks of different sizes that took place during the consolidation of the Scandinavian financial markets in the early 1990s, a period characterized by excesses. Comparing the internal information (information primarily directed towards the employees of the institutions involved in the merger) and the external information (information directed to the media, customers, and others) information, relationships between certain core factors to the merger could be revealed. This information and these relationships could unveil the factual arguments voiced within management in conjunction with this merger.

Since there are natural differences in the externally and internally available information, thus within the merger-related arguments, it is more the similarities and commonalities that are of primary interest. These reveal core arguments voiced in management preceding the merger. To analyze the similarities, causalities in the internal and external information are analyzed using cognitive maps, a method used in political science, management and marketing. Mergers are complex, ambiguous and unstructured processes. Duhaime and Schwenck (1985) argue that managers use cognitive shortcuts in their pre-merger discussions to focus and explain the various questions they face. Since the information provided externally as well as internally are likely to reflect the short-cuts used by management, we could gain an insight into the managerial decision making process.

"A cognitive map is designed to capture the structure of casual assertions of a person with respect to a particular policy domain, and generate consequences that follow from this structure", Axelrod (1976:b). These cognitive maps are made up by concepts and casual beliefs. Concepts can be either causes or effects (e.g. of the merger) and the relationships between these concepts are those casual beliefs that reveal the arguments. For instance, the statement "economics of scale realized (in the merger) improve profitability" includes two concepts and the casual belief linking these. The concepts are "economics of scale realized" and "profitability", where the former is a cause variable and the latter is an effect variable. The casual belief is "improve": the link that connects the cause and effect variables. After analyzing the information available and therein locating information relevant to the merger, the causes, effects and their intrinsic relationships are quantified using matrices. This allows us to rank the various variables that influence merger according their influence on other variables and to infer the arguments relevant to the merger that were used by management. While cognitive map captures concepts and the causative relationships between these concepts, game theoretical analysis only looks at the benefits of choosing between various strategic alternatives.

This friendly merger, preceded by a lackluster bidding war, took place in the early 1990s in Scandinavia. Since the mid-1980s, the financial markets and institutions of this country underwent significant structural changes caused by deregulation, increased foreign competition, and consolidation. Due to the increased consolidation within the financial sector, a handful of large universal banks emerged, all vying to acquire the remaining, much smaller, regional banks. The acquiring bank, STATEBANK, was a partially state-controlled institution with a large client base, a large branch network targeting mostly consumers, and a budding corporate banking area. The target, POLARBANK, was the largest regional bank

with a smaller client base and an excellent branch network that targeted both consumers and large corporate clients. It was considered a very well managed institution courted by all the large banks in the country. Most independent analysts agreed that a merger between these banks would lead to a strong market position for the combined bank.

The structure and content of the external and internal information provided in conjunction with this merger exhibit certain striking similarities. In both cases, the arguments are dominated by the MERGER variable. The central influence of this variable is demonstrated by its significant causative centrality and influence on other arguments. The internal material describes the causes and effects of the merger much broadly and in detail. Yet, the common variables in the external and internal material dominate both information structures, with the sizeable dominance of the MERGER variable. Analyzing the relationships of common variables affecting that variable reveal that the main reason of the merger is the merger itself, i.e., the merger was entered into because the two companies did not have other strategic options. The two most tangible effects of the merger, the acquiring bank taking the name of the target and the target bank's CEO becoming the CEO of the merged bank, could not be picked up by traditional analysis. Since the acquiring bank, STATEBANK was stigmatized by its relationship to its dominating owner, the government, changing its name would reduce that stigma. STATEBANK had recently lost its CEO and by acquiring POLARBANK run by a well-regarded manager, it could resolve its problems with succession.

This introduction is followed by a description of the theory, the data used and the analytical method used. Next, the empirical results are discussed, and the paper is

2. Theory

This section summarizes briefly various theories explaining bank mergers and the influence heuristics might have on complicated cognitive processes.

The body of work analyzing the possible motives of bank mergers is not only voluminous but also growing at a rapidly, which is partly fueled by the recent trend of consolidation in the global financial sector. The analysis of motives is aided by the core character of mergers: banks because of functional restrictions must merge horizontally to expand their customer base and to access new distribution outlets through the acquisition of complementing branch networks. Expanding customer base and complementing and/or completing distribution outlets allow the merged banks to capitalize on economics of scope¹.

¹ Pelzman, S., 1984, Comment on Bank Market Structure and Competition, *Journal of Money, Credit and Banking*, 16(4), 650 – 656

Increased access to customers fuels opportunities for future growth. The increased asset size of the merged bank provides benefits through the coordination of risk management activities². A larger asset base reduces the cost of capital access and acquisition by reducing the bank's borrowing and lending rates. Finally, a larger asset base improves capitalization and thus capital adequacy³. All these arguments: increased customer base, broader branch network, and improved financial strength and capitalization relate more or less to *economics of scope*. *Economics of scale*, however, have not been found to explain mergers. There are several explanations. It is difficult to measure economics of scale in the production of services as banks do not offer a single, well-defined and standardized service, but a portfolio of similar yet complex services that are often inter-related (cross-selling). The only essential benefit from economics scale in banking exists in the field of information technology, particularly when coordinating diverse information processes⁴. Furthermore, banks play an essential function in the financial system their activities, fees, costs, and profits have been heavily regulated and are still regulated. This infringes on managerial freedom to derive merger benefits.

Managers trained in business schools are aware of these arguments, and are likely to use these as basis for the core reasons behind a merger decision. Yet, the complexity of the management of a merger process, the heuristics used to simplify the management of complex decision making processes, and the existence of multiple arguments behind a merger, may lead to a (subconscious) reduction of the arguments, Duhaime and Schwenck (1985) and Sjöberg (1978). Meanwhile, the managerial tasks are further complicated by the internal demands on outside organizational legitimacy, Pfeffer and Salancik (1976). Banks and other service producing organizations cannot demonstrate tangible products externally to seek legitimacy. Here the picture framed internally for external use is crucial, Meyer and Rowan (1977). The intangible character of banking services requires external framing for the internal

² Sinkey, J.F., Jr., 1985, Regulatory Attitudes towards Risk, *Handbook for Banking Strategy*, Aspinwall R.C., and Eisenbeis, R.A. (eds), John Wiley & Sons

³ Koch, T., 1996, *Bank Management*, Dryden, 5th ed.

⁴ Adar, Z., Agmon T., and Orgler, Y.E., 1975, Output Mix and Jointness in the Production in the Banking Firm, *Journal of Money, Credit, and Banking*, 7(2), 235 – 243

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Murray, J.D., and White R.W., 1983, Economics of Scale and Scope in Multiproduct Financial Institutions, *Journal of Finance*, 38(3), 887 – 902

organization process and designs as well. Often the process observed externally or created for external usage are fundamentally different from the actual internal processes. This idiosyncrasy is required to gain external legitimacy, which it cannot function without, Brunson (1990). That is why merger arguments created for external and internal use differ. Focusing solely on one side of the information available fails to reveal a more nuanced and complex relationships and arguments surrounding the merger. That is why the core arguments, common to both the internal and external material could sufficiently reveal the arguments behind the merger.

3. Data and Methodology

In this section, the sources and analysis of the data is described. First, the two sources of data, internal and external material, are described, followed by a description of the coding process. The section is concluded by describing the creation and analysis of cognitive maps.

As internal material, we define information that was spread internally to employees from top management across both institutions and was not spread externally to any extent. After both banks' boards consented to the merger, the information functions of the two banks were coordinated to spread merger-related information within the banks. This material that was spread from the time the boards consented to merge until the merger was legally consummated approximately 8 months after the consent, contains a wide spectrum of merger related causative arguments. As external material, we define information that was provided to customers and the public in the first 12 month of the merger. Since there were no legal requirements for regulatory approval at that time, public filings containing relevant information are not available. Most of the external information collected for this paper was obtained after searches in a database containing press releases, newspapers, investor oriented financial and business journals, and interviews with management. Both the internal and external material was analyzed using a standardized model for text analysis by first dividing it into three large groups depending whether it contained merger-related information, Potter and Wetherell (1987). These three groups were: (a) materials that are likely to contain merger related information, (b) materials that might contain merger related information, and (c) materials that did not contain information. The second step was to reduce the material available by reading through the material a number of times to generate two major groups: (a) material that contained relevant information and (b) material that did not. Ambiguous material was discarded. The third step was coding, which was conducted according to the suggestions in Wrightsson (1976) and Eden, Jones and Sims (1979). In the information

available, both the concepts and the casual arguments were identified. Ambiguous concepts and casual relationships were discarded, i.e., not recorded, since the text analysis and coding was performed solely by the author. This approach was suggested by Zaltman, LeMasters, Heffring, (1982). To further increase reliability and validity, and to reduce errors, this process was repeated a number of times.

In the process of coding concepts and causative associations relevant to the merger were identified. These relationships were identified by causative expressions e.g., “leads to”, “effect”, “means”, “causes”, “generates”. Initially, the internal material contained 78 variables and the external material included 53. The concepts and associations were then analyzed further and reduced to eliminate multiple or inapplicable arguments. Concepts and causative associations that were highly similar, related or synonyms, were reduced by explicitly considering the overall structure and content of the texts, Wrightson (1976). After these reductions and simplifications, the internal matrix included 47 variables and the external 36 variables.

The causative relationships between these variables were then analyzed further using a quantitative method. The causative relationships are depicted as a $n * n$ square matrix; where n equals the total number of variables in the material. The maximum number of causative relationships in the matrix is than $n^2 - n$, since a variable cannot directly cause or be caused by itself. This M-matrix reflects the relationship and direction between the variables. When the relationship between two variables is *positive* – “acquiring a complementing branch network increases productivity”, the two concepts are “complementing branch network” and “productivity” – the corresponding element of the matrix is set to equal 1. “Complementing branch network” is the causative variable and “productivity” effect variable. When the relationship between two variables is *negative* – “acquiring a complementing branch network reduces staffing needs”, the two concepts are “complementing branch network” and “staffing needs” – the corresponding element of the matrix is set to equal -1. Here “complementing branch network” is the cause variable and “staffing needs” is the effect variable. When there is no relationship between two variables, the causative relationship between these is non-existent, and corresponding element of the matrix is set to equal 0, Eden, Jones and Sims (1979).

The relationship between the variables in the M-matrix is analyzed by adding the elements for each row and column. The sum of the elements on each row yields the outdegree measure of an individual variables, i.e., the number of variables influenced by this particular variable, or:

$$(1) \quad \text{Outdegree}_i = \sum_{j=1}^n v_{i,j},$$

where n symbolizes the number of variables in the matrix, i the row number and j the column number. This measure quantifies the causative relationship of one variable. The sum of the elements on each *column* yields the indegree measure of an individual concept, i.e., the number of variables influencing this particular variable, or:

$$(2) \quad \text{Indegree}_i = \sum_{j=1}^n v_{i,j}.$$

This measure quantifies the effect relationship of one variable. By summing the outdegree and indegree of an individual variable, we yield the causal centrality associated with the variable; a higher centrality yields a more prominent role in the explanation of the variable. An additional approach is to analyze the density or the number of causal relationship in the M-matrix by calculating the number of causal relationships and divide this value with the total number of possible relationships. Higher values reveal a more cohesive matrix, i.e., more variables are causative.

$$(3) \quad \text{Density} = \frac{\sum_{j=1}^n \sum_{i=1}^n v_{ij}}{n^2 - n}$$

There are three additional analytical approaches describing the relationship of individual variables in the M-matrix. The first looks at the possibility of feedback loops, Huff (1990). In certain cases, a variable influences other variables, which in turn directly or indirectly influences the first variable. By adding the number of individual feedback loops and dividing this sum by the total number of possible relationships in the matrix, yields the network cohesion index. A higher value for the index suggests a greater incidence of feedback loops and a greater complexity of the relationships within the arguments. By dividing the causative centrality of each variable by the number of possible relationship in the M-matrix, we yield the ego network density of a variable:

$$(4) \quad \text{Ego Network Density} = \frac{\sum_{i=1}^n v_{i,j} + \sum_{j=1}^n v_{i,j}}{n^2 - n}.$$

A related measure is the actor network centrality, which divides causative centrality of each variable by the number of extant relationships in the M-matrix.

4. Empirical results

First the structure of the internal and external information is described and compared with each other. The merger arguments found in the material are then further analyzed to reveal the causations in the material.

4.1 Internal information

After coding and reduction, 47 different concepts were identified, with 160 causal relationships, yielding a matrix density of 7.4%. Table 1 contains the identified variables as well as their in- and outdegrees and cognitive centrality. The most important arguments apart from the MERGER variable are INCREASING THE BRANCH NETWORK (14 causal connections); COMPETITIVE POSITION and THE COMPETENCY OF STATEBANK (13); CUSTOMERS (12); THE SIZE OF THE MERGED BANK, CORPORATE BANKING AREA, DOMESTIC COMPETITION, MARKET POSITION, THE COMPETENCY OF POLARBANK, SERVICES OFFERED, (11); and INTERNATIONAL ACTIVITIES (10).

INSERT TABLE 1 AROUND HERE

The most important variable is the MERGER itself, with a causative centrality of 25. This variable is involved in 7 feedback loops. Approximately 13% of all the causative relationships involve the MERGER variable; 15% of the relationships are causative and 11% of the relationship are effecting. The casual centrality of this variable is depicted in Figure 1, where all the causative- and effect variables as well as feedback variables of the MERGER variable can be found. Most of the causative variables are circumstances that refer to certain characteristics that are expected to contribute to the success of the merged institution. In the internal material, the core arguments for the merger are factors that existing banks are already well known for. Clearly, internally the merger is depicted as a combination of core competencies from both banks. The merger increases the services offered by the banks and thus increased client base, particularly within Corporate Banking. This accentuated by centrality of DOMESTIC COMPETITION as well as MARKET SHARE variables.

INSERT FIGURE 1 AROUND HERE

4.2 External information

After coding and reduction, 36 different concepts were identified, with 93 causal relationships, yielding a matrix density of 7.4%. Table 2 contains the identified variables as well as their in- and outdegrees and cognitive centrality. The most important arguments apart from the MERGER variable are ECONOMICS OF SCALE (10 connections); CORPORATE BANKING AREA, DOMESTIC COMPETITION, MARKET POSITION (9); FINANCIAL RESULTS, INCREASING THE BRANCH NETWORK, PRIVATE BANKING AREA (8); COMPETITIVE POSITION, ASSET SIZE, GAINS FROM THE MERGER, MARKET SHARE (7); and INTERNATIONAL ACTIVITIES (7).

INSERT TABLE 2 AROUND HERE

Externally, the most important variable is the MERGER variable; 18% of the casual relationships involve this variable, 17% of the causative relationships and 19% of the effecting relationships. Unlike the internal relationships, few variables with high causative centrality influence the MERGER variable. The variables causing the MERGER variable are related to the characteristics of POLARBANK; it is possible that externally it is important to underline the importance of the deal not being a merger of equals, but in fact an acquisition. Another important relationship relates to the name of the merged bank: the new bank took the name POLARBANK after the merger. The centrality of CORPORATE BANKING and COMPETITIVE POSITION reflect the importance of these two areas where the old POLARBANK had a significantly more prominent position than STATEBANK.

INSERT FIGURE 2 AROUND HERE.

4.3 Comparing internal and external information

Both the internal and external information collected and analyzed have a similar number of casual relationships. The number of feedback loops is greater in the external material than in the internal material; the network cohesion index is 0.0014 and 0.0012, respectively. Both informational structures are dominated by the MERGER variable, with a 0.269 Ego Network Density internally and 0.344 externally. The causative centrality of this variable is greater externally. In the internal material, there are 35 variables, or 75% of the identified variables that have a direct causative or effect relationship to the MERGER variable; corresponding numbers for the external material are 26 and 73%, respectively. Variables influencing the MERGER variable account for a significant number of the identified relationships: the sum of

their indegree is 120 and outdegree 111 internally, while the corresponding numbers in the external relationships are 62 and 53, respectively. The average causative centrality of a variable in the internal information structure is 3.38 and in the external information structure is 2.58.

There are 23 variables common to the internal and external information, 49% of the variables in the internal material and 64% of the external material are common. 13 of these variables are related to the MERGER variable itself. Variables common to both information structures and variables with relationship to the merger can be found in table 3.

INSERT TABLE 3 AROUND HERE.

The influence of individual variables is greater in the external material than in the internal, because the common variables account for a larger number of relationships there. In both the internal and external material, the casual relationships have a number of core relationships.

4.4 What are the arguments for the merger?

In both the internal and external informational material, the MERGER variable and its causative and effecting relationships dominate the arguments. The common arguments causing the MERGER are THE STRUCTURE OF THE OFFER, INTERNATIONAL COMPETITION, THE COMPETENCY OF POLARBANK, THE BRANCH NETWORK OF POLARBANK, THE PROFITABILITY OF POLARBANK, and THE BRANCH NETWORK OF STATEBANK.

The variable THE STRUCTURE OF THE OFFER is influenced by PRODUCT MIX BETWEEN CONSUMER AND CORPORATE BANKING, QUESTIONS RELATING TO CEO SUCCESSION, DOMESTIC COMPETITION, THE NAME OF THE MERGED BANK, THE COMPETENCY OF POLARBANK, THE BRANCH NETWORK OF POLARBANK, and THE COMPETENCY OF STATEBANK. Externally GAINS FROM NEGOTIATIONS FOR POLARBANK, COMPETING OFFERS, and STATE OWNERSHIP influence this variable. Since these variables influence the MERGER variable as well, the deal must have been structured to reflect these driving arguments. Yet, it is THE MERGER, which seems to drive the merger, apart the need to broaden the expertise of the new bank. In addition, the questions relating to the competitive position influence THE MERGER, a hardly surprising relationship.

Of these variables, THE COMPETENCY OF POLARBANK has a significant causative centrality; it is more central in the internal arguments than in the external arguments. The variable THE COMPETENCY OF STATEBANK only appears in the internal material, but its role there is central and more important than THE COMPETENCY OF POLARBANK. It can be argued that internally, the merger was driven by the competencies of each bank: both the expertise and competency of POLARBANK and STATEBANK were necessary conditions for the merger and its success. The expertise of STATEBANK was within the Private Banking sector, where it had a domineering presence by its control of all the salary payments for public employees. Its presence in Corporate Banking was minimal. POLARBANK had a greater Corporate Banking expertise as well as a well-developed presence in the high net-worth private banking. Complementing expertise is an argument that would fit in nicely with images organizations had to emit to gain external legitimacy in the early 1990s. At that time, popular management literature preached that the expertise of the employees is the greatest asset of the firm and the only road to corporate success. Internally, the respective competencies of each bank were accentuated, probably to appease the employees, who feared redundancies. Externally, however, it is only the expertise of POLARBANK, and in particular in the Corporate Banking area that is mentioned. In fact, it was this unique knowledge that drove for the merger. Incidentally, the variable THE CUSTOMERS OF POLARBANK in the external informational structure is the only variable that identifies a particular group of customers that would be beneficial for the MERGER. Internally, the picture is different, since here it is argued that the merger would influence customers.

In both the internal and external material, THE MERGER would lead to BENEFITS OF THE MERGER, INCREASING THE BRANCH NETWORK, and COLLABORATION WITH THE POSTAL SERVICE. The effects of the merger are obvious: more branches, benefits from eliminating redundancies, and the emergence of economics of scale. STATEBANK has had a long-run collaboration with the Postal Service. Through its presence at every local post office in the country, the bank offered banking services to postal customers. Providing these services generated a significant income for the Postal Service, which saw the merger as a threat. The increased number of branches would reduce the Postal Service's competitive position the local markets, since the customers of the newly merged bank would not depend on local post offices for their banking services. The concept BENEFITS OF THE MERGER is vague, not because it cannot be defined further but because the material does not provide with more detailed description what financial, operational, and strategic benefits the merger could lead. The only clearly defined common benefits are the increased branch network and

the possible change in the collaboration with the postal service. Financial considerations influence the MERGER variable as well. An essential factor here is the profitability of POLARBANK; at that time, it had the highest profitability of all the banks. Internally, the merger would lead to an increased FINANCIAL STRENGTH; however, externally the MERGER would lead to a reduced FINANCIAL FLEXIBILITY, while increased CAPITALIZATION would cause the merger.

The four common feedback loops: DOMESTIC COMPETITION, FINANCIAL RESULTS, QUESTIONS RELATING TO THE CEO SUCCESSION, and THE NAME OF THE MERGED BANK reveal concepts that influence and are influenced by the MERGER. The competitive picture in the domestic market would change with competition becoming fiercer because of the merger. Moreover, the merger is driven by the increased domestic competition. One of the most tangible results of the merger was that the CEO of POLARBANK was designated as the CEO of the merged bank. When the previous CEO of the STATEBANK announced that he has accepted another position as a bank CEO, the board of STATEBANK started to look for a CEO. The CEO of POLARBANK was their top candidate, since he moved to POLARBANK after a very successful career at the STATEBANK. At POLARBANK, he made his mark by reorganizing the operations of the bank that increased profitability, market shares in both the corporate and private banking sector, and shareholder value. The importance of CEO succession is seen both in the internal and external material. By making the CEO of POLARBANK the CEO of the merged bank, QUESTIONS RELATING TO CEO SUCCESSION were solved.

Another tangible result was the name of the merged institution: it took the name of POLARBANK, the name of the target. Both in the internal and external material, it is evident that STATEBANK has long struggled with negative connotation because of its name; the name implied a state-owned institution. Although the controlling shareholder was the state, the current management attempted to shave off this image by selling a small portion of the shares to domestic investors. By changing the name of the merged bank to POLARBANK, the stigma of state ownership could disappear, which would benefit greatly the perception of the firm internationally.

5. Discussion and conclusion

The structure and content of the external and internal information provided in conjunction with this merger exhibit certain striking similarities when it comes to the complexity and structure of the information. In both cases, the arguments are dominated by the MERGER

variable. The internal material describes the causes and effects of the merger much broadly and in detail. Yet, the common variables in the external and internal material dominate both information structures, with the sizeable dominance of the MERGER variable. Analyzing the relationships of common variables affecting that variable reveal that the main reason of the merger is the merger itself, i.e., the merger was entered into because the two companies did not have other strategic options. The two most tangible effects of the merger: the acquiring bank taking the name of the target and the target bank's CEO becoming the CEO of the merged bank could not be picked up by traditional analysis. Since the acquiring bank, STATEBANK was stigmatized by its relationship to its dominating owner, the government, changing its name would reduce that stigma. STATEBANK had recently lost its CEO and by acquiring POLARBANK run by a well-regarded manager, it could resolve its problems with succession.

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TABLE 1

VARIABLE	OUTDEGREE	INDEGREE	CAUSATIVE CENTRALITY	EGO NETWORK DENSITY	ACTOR NETWORK CENTRALITY
The Merger	25	18	43	0.0199	0.1344
Increasing the Branch Network	9	5	14	0.0065	0.0438
Competitive Position	5	8	13	0.0060	0.0406
The Competency of STATEBANK	13	0	13	0.0060	0.0406
Customers	3	9	12	0.0056	0.0375
The Size of the Merged Bank	9	2	11	0.0051	0.0344
Corporate Banking Area	6	5	11	0.0051	0.0344
Domestic Competition	7	4	11	0.0051	0.0344
Market Position	5	6	11	0.0051	0.0344
The Competency of POLARBANK	11	0	11	0.0051	0.0344
Services Offered	2	9	11	0.0051	0.0344
International Activities	1	9	10	0.0046	0.0313
The Structure of the Offer	2	7	9	0.0042	0.0281
Market Share	1	8	9	0.0042	0.0281
Cooperation with the State Postal Service	2	7	9	0.0042	0.0281
Product Mix Between Consumer and Corporate Banking	3	5	8	0.0037	0.0250
Gains From the Merger	2	6	8	0.0037	0.0250
The Name of the Merged Bank	6	2	8	0.0037	0.0250
The Benefits of the Merged Bank	1	6	7	0.0032	0.0219
Private Banking Area	3	4	7	0.0032	0.0219
Financial Results	1	5	6	0.0028	0.0188
The Branch Network of POLARBANK	6	0	6	0.0028	0.0188
State Ownership	4	2	6	0.0028	0.0188
Universal Bank	0	5	5	0.0023	0.0156
High-end Consumer Banking	2	3	5	0.0023	0.0156
Redundancies	0	5	5	0.0023	0.0156
Financial Strength	1	3	4	0.0019	0.0125
Market Analysis	2	2	4	0.0019	0.0125
Employee Advancement	1	3	4	0.0019	0.0125
The Branch Network of STATEBANK	4	0	4	0.0019	0.0125
Attitudes	2	1	3	0.0014	0.0094
Questions Relating to CEO succession	2	1	3	0.0014	0.0094
International Competition	3	0	3	0.0014	0.0094

VARIABLE	OUTDEGREE	INDEGREE	CAUSATIVE CENTRALITY	EGO NETWORK DENSITY	ACTOR NETWORK CENTRALITY
					0.0094
Focused Branch Profiles	3	0	3	0.0014	0.0094
Stability	1	2	3	0.0014	0.0094
Stigma	1	2	3	0.0014	0.0094
Competitive Pressures	1	1	2	0.0009	0.0063
Competing Merger Offers	1	1	2	0.0009	0.0063
Branch Closures	1	1	2	0.0009	0.0063
The Profitability of POLARBANK	2	0	2	0.0009	0.0063
The Size of POLARBANK	2	0	2	0.0009	0.0063
The Size of STATEBANK	2	0	2	0.0009	0.0063
Business Decision	0	1	1	0.0005	0.0031
Anti-Takeover Measures	0	1	1	0.0005	0.0031
New Branch Openings	0	1	1	0.0005	0.0031
The Organization of POLARBANK	1	0	1	0.0005	0.0031
The Organization of STATEBANK	1	0	1	0.0005	0.0031
TOTAL	160	160	320		
Average				0.0031	0.0213
Highest				0.0199	0.1344
Lowest				0.0005	0.0031
Standard deviation				0.0030	0.0206
Median				0.0023	0.0156

Table 1: Merger variables in the internal material, out- and indegrees, Causative Centralities, Ego Network Densities, and Actor Network Centralities. Outdegree measures the causative influence of an individual concept, i.e., the number of variables influenced by this particular variable. Indegree measures the influence exerted on an individual concept by other variables. By summing the outdegree and indegree of an individual variable, we yield the causal centrality of the variable. By dividing the causative centrality of each variable by the number of possible relationship in the M-matrix, yields the ego network density of the particular variable. Actor network centrality divides causative centrality of each variable by the number of extant relationships in the M-matrix.

TABLE 2

VARIABLE	OUTDEGREE	INDEGREE	CAUSATIVE CENTRALITY	EGO NETWORK DENSITY	ACTOR NETWORK CENTRALITY
The Merger	15	17	32	0.0254	0.1720
Economics of Scale	6	4	10	0.0079	0.0538
Corporate Banking Area	5	4	9	0.0071	0.0484
Domestic Competition	3	6	9	0.0071	0.0484
Market Position	5	4	9	0.0071	0.0484
Financial Results	4	4	8	0.0063	0.0430
Increasing the Branch Network	5	3	8	0.0063	0.0430
Private Banking Area	4	4	8	0.0063	0.0430
Competitive Position	3	4	7	0.0056	0.0376
Asset size	3	3	6	0.0048	0.0323
Gains From the Merger	1	5	6	0.0048	0.0323
Market Share	1	5	6	0.0048	0.0323
International Activities	1	5	6	0.0048	0.0323
The Structure of the Offer	2	3	5	0.0040	0.0269
The Name of the Merged Bank	2	3	5	0.0040	0.0269
Increase in Capitalization	3	1	4	0.0032	0.0215
Financial Opportunities	1	2	3	0.0024	0.0161
Competing Merger Offers	3	0	3	0.0024	0.0161
The Competency of POLARBANK	3	0	3	0.0024	0.0161
The Branch Network of POLARBANK	2	1	3	0.0024	0.0161
The Profitability of POLARBANK	3	0	3	0.0024	0.0161
Services Offered	0	3	3	0.0024	0.0161
Organizational Similarities	3	0	3	0.0024	0.0161
Redundancies	0	3	3	0.0024	0.0161
Revenge	1	2	3	0.0024	0.0161
State Ownership	3	0	3	0.0024	0.0161
Gains from Negotiations for POLARBANK	2	0	2	0.0016	0.0108
Questions Relating to CEO succession	1	1	2	0.0016	0.0108
International Competition	2	0	2	0.0016	0.0108
Branch Closures	1	1	2	0.0016	0.0108
The Customers of POLARBANK	2	0	2	0.0016	0.0108
The Branch Network of STATEBANK	2	0	2	0.0016	0.0108
Prestige	1	1	2	0.0016	0.0108
Risk of Unsolicited Merger	0	2	2	0.0016	0.0108
Cooperation with the State Postal Service	0	1	1	0.0008	0.0054
Stigma	0	1	1	0.0008	0.0054
	93	93	186		
Average				0.0041	0.0278
Highest				0.0254	0.1720
Lowest				0.0008	0.0054
Standard deviation				0.0041	0.0281
Median				0.0024	0.0161

Table 2: Merger variables in the external material, out- and indegrees, Causative Centralities, Ego Network Densities, and Actor Network Centralities. Outdegree measures the causative influence of an individual concept, i.e., the number of variables influenced by this particular variable. Indegree measures the influence exerted on an individual concept by other variables. By summing the outdegree and indegree of an individual variable, we yield the causal centrality of the variable. By dividing the causative centrality of each variable by the number of possible relationship in the M-matrix, yields the ego network density of the particular variable. Actor network centrality divides causative centrality of each variable by the number of extant relationships in the M-matrix.

TABLE 3

VARIABLES	DIFFERENCES IN	
	EGO NETWORK DENSITY	ACTOR NETWORK CENTRALITY
Branch Closures	-0.0007	-0.0045
Competing Merger Offers	-0.0015	-0.0099
Competitive Position	0.0005	0.0030
<i>Cooperation with the State Postal Service</i>	0.0034	0.0227
Corporate Banking Area	-0.0021	-0.0140
<u>Domestic Competition</u>	-0.0021	-0.0140
<u>Financial Results</u>	-0.0036	-0.0243
<i>Gains From the Merger</i>	-0.0011	-0.0073
<i>Increasing the Branch Network</i>	0.0001	0.0007
International Activities	-0.0001	-0.0010
International Competition	-0.0002	-0.0014
Market Position	-0.0021	-0.0140
Market Share	-0.0006	-0.0041
Private Banking Area	-0.0031	-0.0211
<u>Questions Relating to CEO succession</u>	-0.0002	-0.0014
Redundancies	-0.0001	-0.0005
Services Offered	0.0027	0.0182
State Ownership	0.0004	0.0026
Stigma	0.0006	0.0040
The Branch Network of POLARBANK	0.0004	0.0026
The Branch Network of STATEBANK	0.0003	0.0017
The Competency of POLARBANK	0.0027	0.0182
The Merger	-0.0055	-0.0377
<u>The Name of the Merged Bank</u>	-0.0003	-0.0019
The Profitability of POLARBANK	-0.0015	-0.0099
The Structure of the Offer	0.0002	0.0012
AVERAGE	-0.0005	-0.0035
STANDARD DEVIATION	0.0019	0.0128

TABLE 3: Variables common to the internal and external information. **Bolded variables** are causative variables both in the internal and external material. *Italicized variables* are effect variables both in the internal and external material. Underlined variables have feedback loops both in the internal and external material. Differences in ego network density and actor network centrality are calculated by subtracting the values in the internal material from the external material. Values greater than 1 indicate a greater influence in the external material.

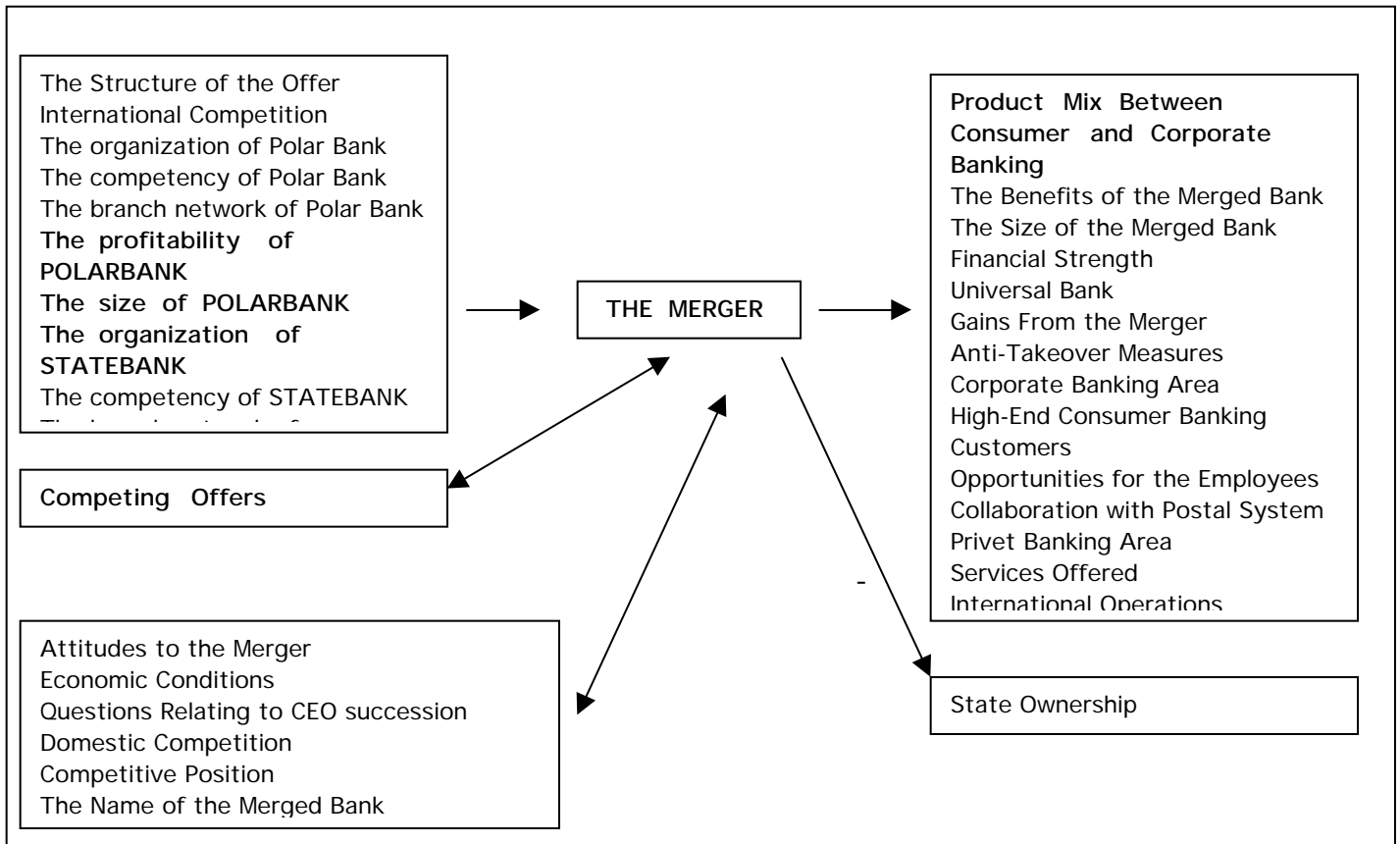


FIGURE 1: Variables influencing directly the MERGER variable in the internal material.

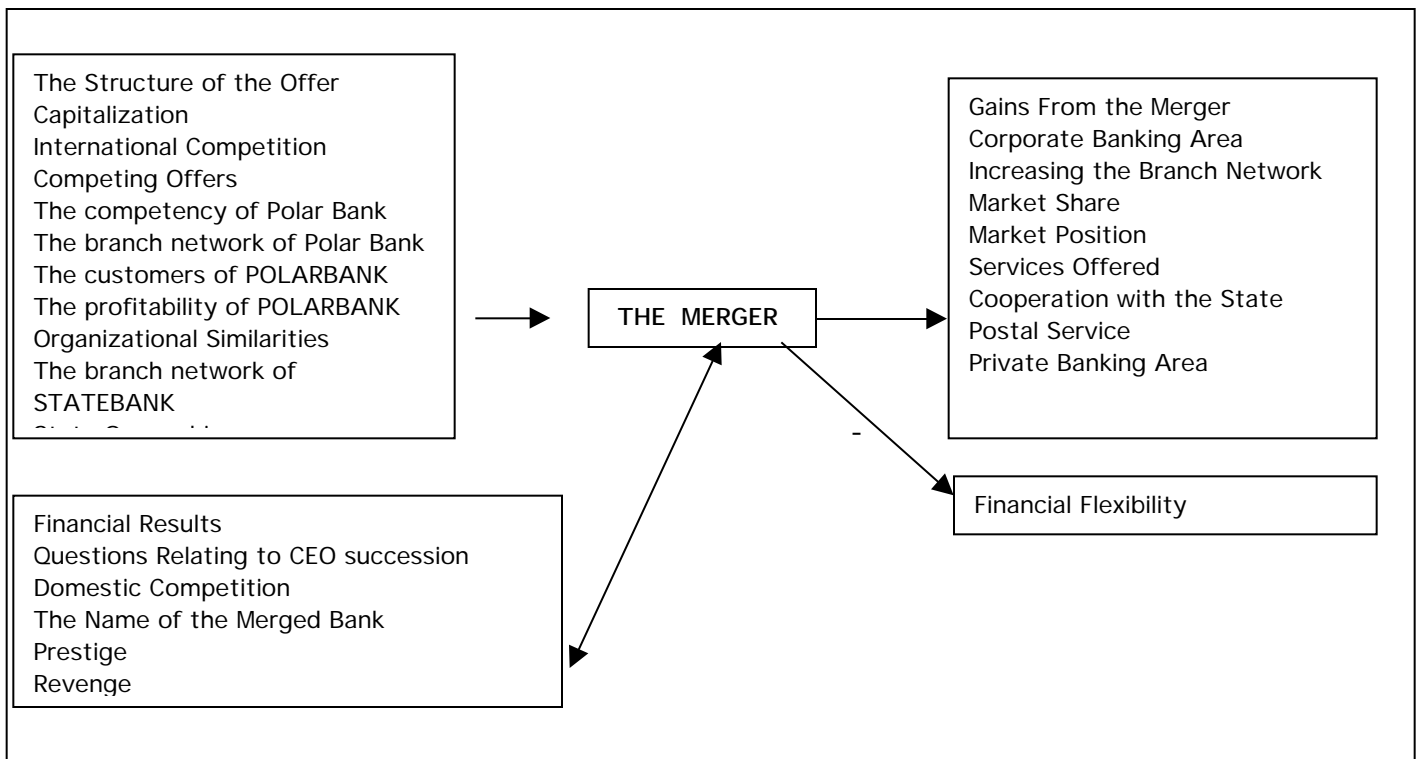


FIGURE 2: Variables influencing directly the MERGER variable in the external material.