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German Mutual Banks'

Excessive Level of Overdraft Interest Rates

An Analysis Drawing on the New Institutional Economics

Thesis' Booklet

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LIST OF ABBREVIATIONS

A	agent
AG	company limited by shares (Aktiengesellschaft)
BGB	German Civil Code (Bürgerliches Gesetzbuch)
BVR	National Association of German Cooperative Banks (Bundesverband der Deutschen Volksbanken und Raiffeisenbanken)
<i>cs</i>	customer satisfaction
<i>e</i>	effort
E'	marginal revenues
eG	registered cooperative (eingetragene Genossenschaft)
iff	Institute for Financial Services, Hamburg (Institut für Finanzdienstleistungen)
K, K	costs
K', K'	marginal costs
k'	average marginal cost
NIE	new institutional economics
P	principal
PAT	principal agent theory
RREEMM	resourceful, restricted, expecting, evaluating, maximizing man
TAT	transaction cost theory
U	utility
ZEF	Center for Evaluation and Research Councelling, Klagenfurt (Zentrum für Evaluation und Forschungsberatung)
ZEW	Center for European Economic Research, Mannheim (Zentrum für Europäische Wirtschaftsforschung)
α	fixed salary
β	incentive, incentive factor
γ	incentive, incentive factor
ϑ	random variable
μ	random variable

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1 PROBLEM DESCRIPTION AND INTRODUCTION TO THE THEME

The present study focuses on the current topic of overdraft interest rates in Germany. This topic has been a particular item in the German public's spotlight during the years of 2012 and 2013. Further on, in 2013 it became an issue in the 2013 national election campaign. On 15 July 2015 the German Government adopted a law to strengthen the rights of overdraft consumers.

In Germany an overdraft is defined by § 504 (1) of the German Civil Code:

„(1) Ist ein Verbraucherdarlehen in der Weise gewährt, dass der Darlehensgeber in einem Vertragsverhältnis über ein laufendes Konto dem Darlehensnehmer das Recht einräumt, sein Konto in bestimmter Höhe zu überziehen (Überziehungsmöglichkeit), ...“

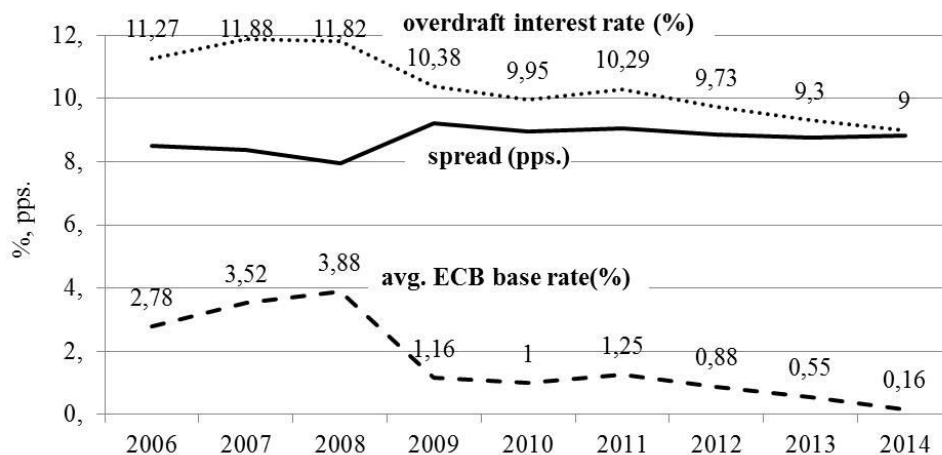
Thus, an overdraft gets two significant features:

1. The loan is linked to a bank giro account and
2. the contracted amount of the loan is limited.

A similar loan is the tolerated overdraft, which is defined by § 505 of the German Civil Code. The account holder is not entitled to a tolerated overdraft but the bank just acquiesce it. A certain kind of a tolerated overdraft is an exceeding of an overdraft limit.

Usually a bank grants an overdraft because of a regular deposit payment like wage or old-age pension. The overdraft limit is related to the level of the regular deposit payment. Normally the limit is two to three times higher than the regular deposit payment. There are no agreements regarding duration and repayment of the overdraft.¹

Comparison between Overdraft Interest Rate of Germany and ECB Base Rate



Source of the data: Statista (2015a) and Statista (2015b).

¹ Cf. Dick, C. D.; Knobloch, M.; Al-Umaray, K.S. & others (2012), p. 1 und 33 p.

Point of departure of the whole debate had been a study of the German Foundation for Product Testing, published in 2012. Although the base rate of the European Central Bank (ECB) is adrift at a historical low for quite some time now, the extent of interest rates for overdraft loans remains at a very high level. It is striking that the level of interest rates in Germany permanently exceeds the average of the euro area.²

On the one hand the calculation of the interest rate is based on refinancing costs. On the other hand other aspects like cost of equity, costs of business operations, premium for risk and profit margin have to take into account. Banks justify the level of overdraft interest rate with maximum flexibility and the high risk, because an overdraft is unsecured.³ But the real loan risk isn't that high. Only 0.3 percent of overdrafts are bad loans.⁴

In 2012 a joint study of Institute for Financial Services (iff) and of Center for European Economic Research (ZEW) that was ordered by the German Federal Department for Nutrition, Agriculture and Consumer Interests was published. This study came to the conclusion that the level of overdraft interest rate was excessive. Indications of that were a low level of overdraft interest rate elasticity and the fact that average level of this interest rate of the euro area was permanently lower than in Germany. The authors of the study came to the conclusion that the course of the high overdraft interest rate was based on imperfect competition on the German market of overdrafts.⁵

Since 2012 there was a huge public criticism of this business conduct. But in 2013, 2014 and 2015 German Foundation for Product Testing had to consider that there was only a marginal increase of this interest level.⁶

The fact is remarkable that from 2012 to 2014 the huge majority of the very expensive banks were mutual banks. In 2015 all banks with an overdraft interest rate of 13 percent or higher are mutual banks. Following the argumentation of iff and ZEW, mutual banks use market imperfections to raise their own profits at customers' charge. In many rural areas mutual banks are in a dominant market position, which makes it even easier to increase the level of overdraft interest rate.

Because mutual banks are cooperative banks the relationship between these banks and their clients is a certain one. On the one hand members of a mutual bank are the owner of the bank. On the other hand the members of the bank are customers of their bank. In contrast to banks

² Cf. Stiftung Warentest (2013), p. 15 und cf. Dick, C. D.; Knobloch, M.; Al-Umaray, K.S. & andere (2012), p. 51.

³ Cf. Dick, C. D.; Knobloch, M.; Al-Umaray, K.S. & andere (2012), p. 57.

⁴ Cf. ibidem, pp. 57 and 80 and cf. Stiftung Warentest (2013), p. 16.

⁵ Cf. Dick, C. D.; Knobloch, M.; Al-Umaray, K.S. & others (2012), 144 p.

⁶ Cf. Stiftung Warentest (2013), p. 14, cf. Stiftung Warentest (2014), 16 p. and cf. Stiftung Warentest (2015), p. 16.

with another legal form the business purpose of mutual banks is to promote their members' goals.⁷

It seems that mutual banks act in contrast to their basic business purpose. This study uses the approach of new institutional economics (NIE) to analyze this aspect. In particular the principal agent theory (PAT) and the transaction cost theory (TAT) are the basis of this study.

⁷ Cf. Klose, H. (1998), 32 p.

2 DELINEATION OF THE RESEARCH DESIGN

Because the mutual banks are not passing on the interest cuts to their clients and because the mutual banks charge excessive overdraft interest rates, this situation can be described as a principal agent conflict. Members of the mutual banks and the customers of the mutual banks are the principals. According to level of aggregation the bank is the agent or the bank employees are the agents.

A first goal of this study is to use models of the new institutional economics to analyze the above described situation. Following these analyses, some hypotheses will be formulated. These hypotheses will be tested with expert interviews. Finally possibilities for a solution in order to moderate the P-A-conflict will be described.

This study uses different methodological approaches to combine their strengths respectively to eliminate their weaknesses. This is a current strategy of applied social researches.⁸ Because of such a combination the perspective becomes wider and the object of this research can be better understood.⁹

Normative and mathematical NIE-models are particularly suitable to generate hypotheses. *K. R. Popper* lined out that hypotheses never should be generated from data. They should be deduced from normative and mathematical models. *K. R. Popper* suggested that hypotheses must be testable and falsifiable. „*Ein empirisch-wissenschaftlicher Satz muss an der Erfahrung scheitern können.*“¹⁰

These are the model assumptions:

- Statements correspond with the limited liberty of value judgement according to *Hans Albert*.
- Statements are subject to falsification, corresponding with the Popper-criteria.
- Methodological individualism is applied.
- Protagonists act as a (limited) rational ‘benefit amplifier’ according to a resourceful, restricted, expecting, evaluating, maximizing man (RREEMM).

The NIE-model-analyses are followed by generating hypotheses and these hypotheses are tested empirically. This leads to an additional qualitative research. Expert interviews test the utility of the models and the hypotheses. The focus of the expert interviews is the company know-how of the experts. Furthermore, suggestions to solve or to reduce the P-A- conflict are worked out.

Consequently, research question is to be:

⁸ Ct. Legewie, H. (nes), p 2.

⁹ Ct. Moschner, B. & Anschütz, A. (2010), p.20.

¹⁰ Popper, K. R. (1994), p. 15.

How can it be explicated on the basis of NIE, that a mutual bank is enforcing excessive interest levels for overdraft loans and what are possibilities for a solution in order to moderate the principal-agent-conflict?

3 MODEL ANALYSES

The NIE-analysis takes place in five steps. Beginning with a combination of general analysis of the competitive situation of overdraft loans and a TAT-analysis it will be shown that the market exhibits deficits. After that four PAT-model-analyses follow.

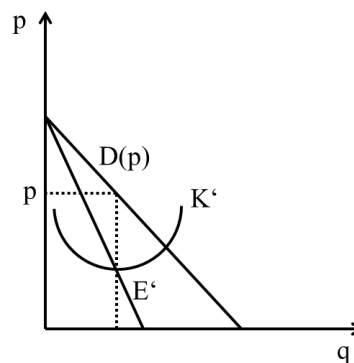
3.1 COMPETITION ANALYSIS AND TAT-ANALYSIS

The market of overdraft loans is imperfect. Banks are able to increase the level of overdraft interest rates because of special product features and because of the fact that overdrafts are part of a pre-defined bundle of goods.

From the TAT point of view there is a kind of specificity, which hinders market and its competition. The fact that a bank and its customer knows each other lead to specificity, which increases, if the customer relationship is a long one. Furthermore there arise substantial transaction costs like change costs, if customers want to switch to another bank.

A kind of these change costs is the transfer of the consumer's recurrent payments, such as direct debits and standing orders. Another change barrier is the fact that a bank change becomes more difficult, if a client uses his overdraft. In total the demand on the overdraft market is rather inelastic. Thus, clients do not switch to a rival bank, even if they think the overdraft interest rate of their current bank is excessive.¹¹ Banks have monopolistic freedom in price setting.

Monopolistic Price Setting



p = price, q = quantity, E' = marginal revenues, K' = marginal costs¹²
 $D(p)$ = demand depending on price

3.2 FIRST PRINCIPAL-AGENT-ANALYSIS: AGENT = BANK, PRINCIPAL = CLIENT

The first P-A-model is quite simple. The bank takes over the role of the agent, the client the role of the principal. Because of changing barriers the agent is in state to implement a hold-up, in

¹¹ Ct. Dick, C. D.; Knobloch, M.; Al-Umaray, K.S. & others (2012), 52 p.

¹² A bank's credit costs are made up of credit handling costs, credit monitoring costs and refinancing costs. More information about that and about the u-shaped marginal cost function is available in: Stoklossa, H. (2010), cf. particularly 81 p.

order to increase the own benefit at the expense of the client. Two senses of a bundle of goods are to reduce transparency and to hide intentions pre-contractually.

3.3 SECOND PRINCIPAL-AGENT-ANALYSIS: MULTI-LEVEL RELATIONSHIPS OF A BANK

The second P-A-model only examines the bank. According to the suppositions of methodological individualism it will not be recognized as independent person any longer. Within the bank a multi-level, complex P-A-relationship materializes. Further on, it constitutes a hierarchical system of coordinates. Hereby the bank owners are the principals and the manager, who defines the levels of interest, is the agent. Bank owners are in state to bring about similar interests with the agent by using an adequate system of stimulations and – if applicable – a clan mechanism. The system of stimulations with variable, performance-related shares is even regulated for the banking sector by labor agreement.

The way a system of incentives works will be shown by the following model:

Assumptions:

- The agent creates the output q and it is defined as $q = e + \mu$. The random variable is named μ . Its average is 0 and its variance is named v . The term for the work effort of the agent is e .
- The principal is not able to control the work effort directly. But he can extrapolate the effort from q . So q can be seen as an indirect and incomplete signal of e . But q is distorted by μ .
- The principal is not able to control the agent directly, so he uses an incentive β . This is a factor and it will be multiplied by q . So the agent is interested in expending q by increasing e . That will lead to a higher wage: $w = \alpha + \beta \cdot q$. The fixed component of the wage is α . In total agent's wage depends on e and μ , but he is just able to control his work effort.

$$w^e = \alpha + \beta \cdot e + \beta \cdot \mu$$

- The utility of the agent is defined as: $U^A = U^A(w^e, e, \mu)$. It depends on work effort, μ and wage. Working effort leads to working burden. Working burden is a kind of utility loss. An utility loss can be seen as a kind of costs. Often the following cost function is used: $K = 0,5 \cdot k' \cdot e^2$.¹³
- The average marginal cost of the work effort is k' . So k' is defined as $k' = K': e$ or $K' = k \cdot e$. Thus, the utility function of the agent is:

$$U^A(w^e, e, \mu) = w^e - \frac{k' \cdot e^2}{2} = \alpha + \beta \cdot e + \beta \cdot \mu - \frac{k' \cdot e^2}{2}$$

¹³ Cf. Dietrich, R. (2003).

Marginal costs = marginal wage leads to the maximum utility. Because the agent is just able to control his work effort, partial derivation of the function has to be created:

$$\frac{\partial U^A}{\partial e} = 0 \quad \text{or} \quad \beta = k' \cdot e .$$

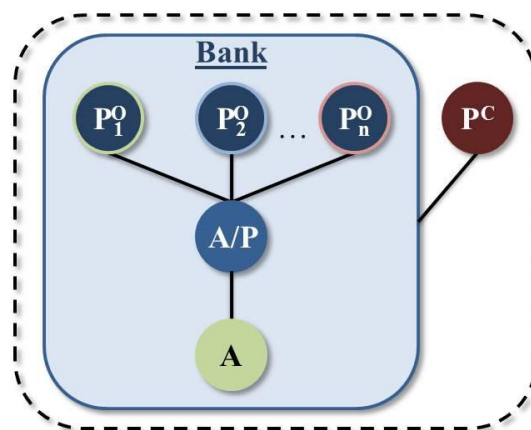
If the agent gets only a fixed salary, it is rational for him to minimise his work effort. But now the principal and the agent have similar interests. This is the case as long as the maximum utility is not reached. If the maximum is reached more work effort leads to a reduction of the utility:

$$\beta < k' \cdot e .$$

3.4 THIRD PRINCIPAL-AGENT-ANALYSIS: RELATIONSHIPS OF FOR-PROFIT BANKING

In the third P-A-model model one and model two will be combined. The agent again is the manager who defines the levels of interest. However, there are kinds of principals now: 1. Bank owners and 2. a client. The bank owners use a multi-level, hierarchical system of coordinates towards the agent, which also includes a system of stimulations and – if applicable – a clan mechanism. The client uses the imperfect market as system of coordinates.

P-A-Relationships of Banking Business: Hierarchy vs. Market



The colours stand for different preferences. Each actor has his own preferences and aspires to utility maximization. P^O = principal and owner in one person; P^C = principal and client in one person; A = agent; A/P = principal and agent in one person.

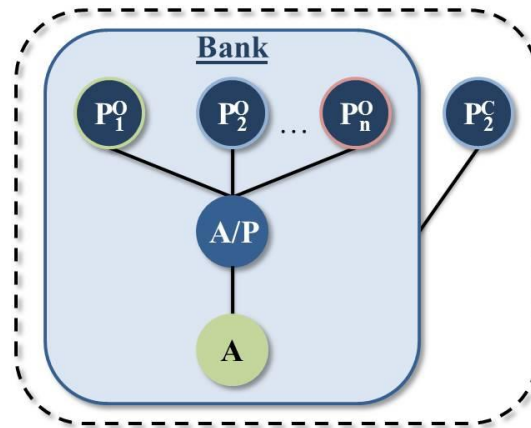
A conflict of loyalty evolves at the agent's. Within the juxtaposition the system of coordinates of the bank owners turns out to be superior. Subsequently, the agent is orientating himself according to the interests of the stronger principals. In this case these are the bank owners. The hold-up can be elucidated well in this constellation.

3.5 Fourth Principal-Agent-Analysis: Relationships of Mutual Banking

In the fourth P-A-model it will be presupposed that it is explicitly about a mutual bank. In order to reduce complexity differentiating between clients with and without mutual shares will be

neglected. Now the conflict of loyalty from the third model omits. Owners and clients share the same interest, the client is owner of the bank at the same time. Thus, in the figure below the second principal (P_2) is shown as a client and as a member. The question pops up why a hold-up can occur here. The mutual bank seems to contravene its subsidy contract.

P-A-Relationships of Banking Business: Mutual Bank



The colours stand for different preferences. Each actor has his own preferences and aspires to utility maximization. P^O = principal and owner in one person; P^C = principal and client in one person; A = agent; A/P = principal and agent in one person.

A possible explanation would be the trade-off within a mutual bank. This exists between market success and the task of member promotion. On the one hand there is a trade-off between market success with members and the task of member promotion but on the other hand market success is a precondition for the task of member promotion.¹⁴

This trade-off indeed founds why mutual banks have to ask a reasonable level of interest, but a hold-up cannot be explained. Mutual banks have to use terms, which secure their existence and which put them in a position to promote their members. Nevertheless there is no reason to have an excessive level of overdraft interest rates.

Established PAT analyses describe that an agent does not act in favor of his principal to shift his own utility. However, in case of mutual banks' excessive level of overdraft interest rates this is not the reason. The agent does not act to the benefit of the bank members but he does not act to his own benefit, too. He is not opportunistic.

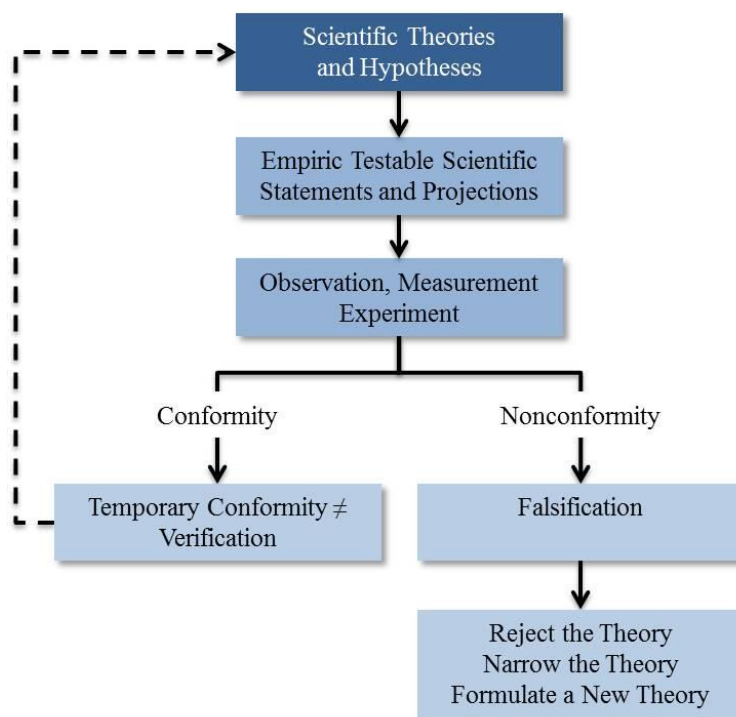
Both systems of coordination—market and multi-level hierarchy—do not prevent the hold-up. These two systems of coordination fail at the same time.

¹⁴ Ct. Ringle, G. (2006), p. 212 and ct. Aulinger, A. (2008), p. 27.

4 FORMULATION OF HYPOTHESES UND TESTS OF HYPOTHESES

Each theoretical model is a simplification of reality. This applies for NIE-models, too. There is always the possibility that model assumptions are too restrictive. This may cause that the outcome of a model is not adequate to be transferred to the real world. Thus, based on the outcome of the NIE-models hypotheses will be formulated and they will be tested empirically. This is a common procedure of applied researches.

Basic Model of empirical Tests of Scientific Theories



Referring to Lauth, B. & Sareiter, J. (2002), p. 98.

Karl R. Popper described the asymmetry between verification and falsification. This means that it is not possible to verify scientific theories. Conformity is only temporary. Only one case of nonconformity leads to the falsification of a theory. This position is known as „Poppers Fallibilismus“¹⁵

4.1 FORMULATION OF HYPOTHESES

Hypothesis 1

Deliberations on model four are based on the assumption that the subsidy contract is still important for mutual banks. Their business purpose to promote their members' goals is not pretextual. Thus, the first hypothesis is:

¹⁵ K. R. Popper pointed out that there are never absolute verifications of scientific empirical statements because there is always the possibility of fallacy.

Even today the subsidy contract of mutual banks still exists.

Hypothesis 2

Furthermore model four is based on the assumption that there is a trade-off between market success with members and the task of member promotion. Thus, the second hypothesis is:

There is a trade-off between market success with members and the task of member promotion.

Hypothesis 3

In model four hierarchy and market fail. Thus, incentive system is too much focused on market success. Thus, the third hypothesis is:

Incentive systems of mutual banks are too much focused on market success.

Hypothesis 4

In model four hierarchy and market fail. Thus, incentive system is too less focused on members' utility. Thus, the fourth hypothesis is:

Incentive systems of mutual banks are too less focused on members' utility.

Hypothesis 5

A possible solution seems to be that a new incentive system is explicitly aligned with members' utility. The question is if it is a realistic option to install such a system. Thus, the fifth hypothesis is:

It is a realistic option and it makes sense to install an incentive system, which includes aspects of members' utility.

Hypothesis 6

Currently the image of the bank branch is bad, it would lead to a competitive advantage, if mutual banks would install an incentive system that is focused on members' utility, too. Thus, the sixth hypothesis is:

An incentive system could lead to a competitive advantage, if it is focused on members' utility, too.

4.2 PROCEDURE OF EXPERT INTERVIEWS AND PROCEDURE OF TESTS OF HYPOTHESES

The chosen experts are human resources managers of mutual banks. Because incentive systems are a main focus of this study, it makes sense to interview human resources managers. Configuration, implementation and realization of an incentive system are elements of the daily business of these managers.

To get in contact with these managers, emails were sent to several member banks of the BVR¹⁶. With these emails it was announced that within a certain period of time a phone call will follow. Reasons for the announced call were to ask the expert, if they agree to be interviewed for a scientific research and to arrange an appointment. Furthermore the content of the research was delineated during the call.

There were two causes, which made it difficult to make an appointment. 1) At the forefront was no contact to the experts. 2) The level of overdraft interest rates is a political issue since 2012 and because of that some experts refrain to be interviewed.

In total it was tried to get in contact with circa twenty human resources managers, finally five managers agreed to be interviewed. The human resources managers of the following banks participated: Volksbank Krefeld eG, Volksbank Kempen-Grefrath eG, Raiffeisenbank eG, Heinsberg¹⁷, Volksbank Mönchengladbach eG, Gladbacher Bank AG von 1922¹⁸.

In March and April 2015 the interviews took place at the administrative buildings of the banks. At the beginning of the appointment a short presentation of the research content generated a knowledge base. After that introduction the interviews started. The interviews were recorded to be documented.¹⁹

Qualitative content analyses of the interview logs were made to test the hypotheses. Therefore the online program ‚*QCAmap*‘ was used. The hyperlink to its webpage is: <https://www.qcmap.org/>. The owners of the copyright are *P. Mayring* and *T. Fenzl*. The program is a joint development of the Alpen-Adria University Klagenfurt, Institute of Psychology, of the Center for Evaluation and Research Counselling (ZEF)²⁰ and of coUnity Software Development GmbH.

¹⁶ = Bundesverband der Deutschen Volksbanken und Raiffeisenbanken = National Association of German Cooperative Banks.

¹⁷ In summer 2015 Raiffeisenbank eG, Heinsberg, merged with Heinsberger Volksbank AG. The new mutual bank is named Volksbank Heinsberg eG. Cf. RP-online (2015).

¹⁸ The Gladbacher Bank AG von 1922 is a member bank of the BVR and it has the legal form of a joint stock company (AG). There are only a few banks with this combination.

¹⁹ The interview logs are the appendixes III to VII of the dissertation.

²⁰ 31.12.2013 the Center for Evaluation and Research Counselling was been dissolved and integrated in the Institute of Psychology.

4.3 OVERVIEW OF THE FINDINGS OF THE EXPERT INTERVIEWS

The following table shows the results of the tests of the hypotheses.

Tests of Hypotheses: Results

No.	Hypothesis	Confirmation
1	Even today the subsidy contract of mutual banks still exists.	yes
2	There is a trade-off between market success with members and the task of member promotion.	yes
3	Incentive systems of mutual banks are too much focused on market success.	no
4	Incentive systems of mutual banks are too less focused on members' utility.	yes
5	It is a realistic option and it makes sense to install an incentive system, which includes aspects of members' utility.	yes
6	An incentive system could lead to a competitive advantage, if it is focused on members' utility, too.	yes

The hypotheses one and two are basis assumptions of the P-A-models. The expert interviews confirm these hypotheses. These results are positive. Otherwise there would be no utility of the P-A-analyzes.

Testing hypotheses three and four leads to different results. These hypotheses are conclusions of the P-A-analyses. There is no system of incentives that hinders agents to utilize market imperfections to charge excessive overdraft interest rates. But it is not possible to point out the reasons of this business conduct.

Agents do not raise their own utility by reducing the utility of the principals. Furthermore they do not increase the utility of the members by decreasing the utility of the clients, because the members are clients, too. A possible cause could be that agents assume the institution bank to be the agent. So they differentiate between bank and members. That means agents charge excessive overdraft interest rates to increase banks' profits. From this point of view the common argumentation of NIE makes sense. Thus, there is no difference between mutual banking and for-profit banking. But this conclusion is in contrast to hypothesis one.

The conformations of the last two hypotheses show that it makes sense to increase a much higher level of consumer engagement. Furthermore it is workable. Mutual banks could gain a competitive advantage, if they are focused on members' utility.

5 REDUCING OF THE PRINCIPAL-AGENT-CONFLICT

To solve or to reduce the conflict an incentive system will be outlined. This system takes members' utility into account explicitly. To describe members' utility the member benefit concept according to *T. Theurl* will be used. Following *T. Theurl* member benefit is divided into three sub-categories: the immediate, the mediate and the sustainable member benefit. The last two aspects correspond with a member's role as an owner of the mutual. The immediate member benefit has a share of 60 percent and is the most important sub-category. It is focused on a member's role as a mutual bank's client. Subsequently, it is advantageous for the system of stimulations to choose from stimulations in the special field of customer satisfaction analyses.

It looks that mutual banks are geared up to their market success one-sidedly. Apart from the huge level of overdraft interest rates fact that overdrafts are part of a pre-defined bundle of goods is not compatible with member utility, too. Package deals reduce transparency and put banks in a position to conduct cross-subsidisations between the good of the bundle. This internal transfer of profit is a so called hidden action. Thus, mutual banks act like for-profit banks. These kinds of conduct do not fit to a bank that safeguards their members' interests.

5.1 COLLECTION OF DATA

Because a mutual bank has a lot of information about the whole population of its members, it is very easy to build a representative sample that is an exact representation of the population. A stratified sampling and a nonprobability sampling are particularly suitable for running member satisfaction surveys.

The stratified sampling is a kind of a random sampling. At first the population has to be divided into homogeneous subgroups. From each group a number of members will be surveyed. These numbers are connected to the subgroup ratios of the whole population. Thus, the total sample is an exact representation of the population. The number of members of each subgroup is defined, but it is a random selection, which members of a group will be surveyed.

This kind of sampling reduces the probability of random errors. Furthermore the random selection obviates manipulation. A disadvantage of the stratified random sampling is that time series analyses are less meaningful. The nonprobability sampling works with a fix panel. So it is better placed to do time series analyses. But because it is not a random sampling, it can be manipulated.

The collection of data should be focused on the immediate member's benefit. The other kinds of member's benefit are connected to the market success. A useful measuring concept of member's

benefit will be described below. Because immediate member benefit is linked to customer satisfaction, the following statements are based on literature of customer satisfaction.

5.2 MEASURING CONCEPT OF MEMBER BENEFIT

Concerning a measuring concept of member benefit the recommendations of the literature of customer satisfaction will be followed. This leads to a subjective and explicit method. Furthermore this method should be feature driven and multidimensional. It should be implemented ex post in order to minimize the amount of inquiry and guarantee a good quality. Besides that, it should only be focused on the realization of customer satisfaction, expectations should be disregarded.

For the moderation of the problem it is suggested to complement the system of stimulations with aspects which reflect the direct member benefit. The construct of members' benefit should be installed separately for each mutual bank in order to take into account the peculiarities. However, it should explicitly reflect the product features of those products which are demanded to the utmost by the respective clients. Next to that, aspects like service quality etc. could also be highlighted.

5.3 IMPLEMENTATION OF A BALANCED INCENTIVE SYSTEM

To outline the effects of a balanced incentive system the thoughts of the second P-A-model are took up and further developed.

Assumptions:

- The incentive β rewards a high sales volume. The new incentive γ rewards a high level of customer satisfaction cs . Thus, the agent has to divide his effort: 1) effort to raise the sales quantity e_q and 2) effort to raise customer satisfaction e_{cs} .

$$e = e_q + e_{cs}$$

- The random variable μ affects the sales quantity. The new random variable ϑ affects the level of customer satisfaction.
- Thus, the agent's wage function is:

$$w^e = \alpha + \beta \cdot e_q + \beta \cdot \mu + \gamma \cdot e_{cs} + \gamma \cdot \vartheta$$

- Now the utility of the agent is defined as: $U^A = U^A(w^e, e, \mu, \vartheta)$.
- Because the agent is not able to influence the random variables, he has to maximize his wage by his effort. He has to allocate optimally his effort to e_q and e_{cs} . The marginal rates of substitution are:

$$GRS_{e_q, e_{cs}} = \frac{\frac{\partial w^e}{\partial e_q}}{\frac{\partial w^e}{\partial e_{cs}}} = \frac{\partial e_{cs}}{\partial e_q} = \frac{\gamma}{\beta} \qquad GRS_{e_{cs}, e_q} = \frac{\frac{\partial w^e}{\partial e_{cs}}}{\frac{\partial w^e}{\partial e_q}} = \frac{\partial e_q}{\partial e_{cs}} = \frac{\beta}{\gamma}$$

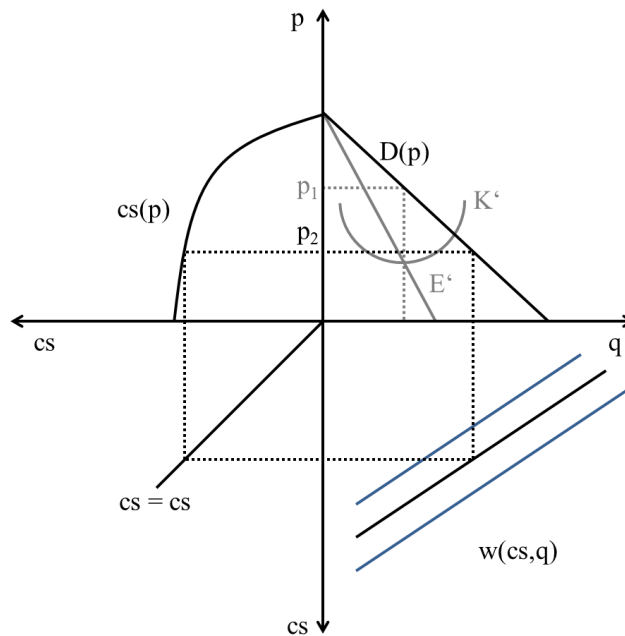
- Thus, the principal is able direct agent's efforts for optimization by modifying β and γ .

The following figure visualizes the mechanics of a balanced incentive system. The first quadrant shows former explained monopolistic price setting. Without a balanced incentive system the profit-maximizing price p_1 will be charged.

The cs-function is lined out in the second quadrant. Customer satisfaction is depending on the price level. Following the literature of *N. Koschate* the relation is negative but not linear. On a high level of customer satisfaction the function is elastic. The elasticity of the function decreases, if customer satisfaction is on a lower level.²¹

The third quadrant is used to transfer the relation of the second quadrant to the fourth quadrant. The agent optimizes his wage in the fourth quadrant. There iso-wage-functions are illustrated. The relation of β and γ determines the gradient of the function. In the present case the relation between β and γ is two to three. This relation is linked to the aspect of member utility of *T. Theurl*. Thus, marginal rates of substitution are constant and the iso-wage-functions are linear.

Effects of a Balanced Incentive System



p = price, q = quantity, E' = marginal revenues, K' = marginal costs, w = iso-wage-function
 $D(p)$ = demand depending on price
 $cs(p)$ = customer satisfaction depending on price

²¹ Cf. N. Koschate (2008), 106 p.

After a trial and error process the balanced incentive system will lead to the illustrated equilibrium. Lower wage levels as well as higher wage levels would not lead to the equilibrium. That means a process of adjustment would start, which ends in the equilibrium with an optimal relation of e_q and e_{cs} .

Because of the fact that the agent has customer satisfaction into account, mechanism leads to p_2 . This price is significant lower than the monopolistic price. The bank does not use market imperfections to optimize profit by decreasing customer utility.

The failure of two systems of domination—market and hierarchy—is prevented. The bank's business conduct is in line its subsidy contract. The P-A-conflict of the fourth P-A-model is reduced.

6 FINAL REMARKS

Finally a short critical appraisal and a delineation of further need for research follow.

6.1 CRITICAL APPRAISAL

Because the analysis is based on NIE, the usual NIE-restrictions apply. Each theoretical model is grounded on assumptions, which make it more calculable and more manageable. Such assumptions build up discrepancies between model and reality.

Real P-A-problems are distinguished by agreements between agents, collusions between agent and neglects of subtasks. These aspects have to take into account by creating and installing an incentive system.

If an incentive system is installed, agents participate in the risks of business. This could lead to a situation that an employment contract is not attractive for risk-averse agents. Thus, implementing an incentive system may bears problem of adverse selection, which is described by *G. A. Akerlof's* example of lemons.²² This is problematic because risk-averse agents fit very well to mutual banks' low-risk business model. Furthermore it may problematic, if the terms of the incentive system are non-attractive for highly qualified agents. Highly qualified agents have a lot of options and are able to find terms, which are more attractive from their point of view.

Another problem of incentive systems is to set a benchmark for good effort. Normally agents are interested in weak goals. This corresponds to one of the main problems of a centrally planned economy.

Bank members are very weak principals. Asymmetric information between agents and principals are particularly great. Hence, the risk of to weak goals is realistic. For that reason it is all the more important that indicators of performance measurement are reliable. One-sided, unbalanced or misleading incentives have to be avoided.²³

If the incentive system is dynamic and the foretime best performance becomes the benchmark, the ratchet effect refers. Agents will realize that a very good performance is disadvantageous for the future, because future requirements of the incentive system will increase. Hence, this could be demotivating and the agents are not willed to give their best.²⁴

Models of the positive PAT are able to handle more complex relationships than models of the normative PAT. But positive PAT is less exact and it is afflicted by the induction problem.

²² Cf. Akerlof, G. A. (1970), 489 pp.

²³ Cf. Göbel, E. (2002), p. 109 and 115 p.

²⁴ Cf. *ibid.*, 107 p.

The expert interviews are afflicted by the induction problem, too. Because there were only a few expert interviews the data have a lack of validity.

Furthermore it has to be stated, though, that the P-A conflict can be moderated if a suitable system of stimulations is introduced. The trade-off between market success and the task to promote cannot be solved. This trade-off lies in the very nature of a mutual bank. Thus, a dramatic fall in overdraft interest rates is not expected, even if a balanced incentive system is implemented.

6.2 FURTHER NEED FOR RESEARCH

- From a scientific point of view it seems to be very productive to apply NIE-analyses to different kind of mutual enterprises and institutions. In NIE-literature mutual relationships are inadequately represented. Questions about interesting mutual issues are:
 - Are incentive systems of other mutual enterprises with large membership bases—e.g. mutual insurances—better related to their legal form?
 - Do differences exist between P-A-conflicts of mutual enterprises with a large membership base and those mutual enterprises with a relative small membership base?
 - The members of some mutual enterprises are clients of these enterprises. Other mutual enterprises have a different constellation. Their members are suppliers of the mutual enterprise. Do these different constellations lead to different kinds of P-A-conflicts?
 - Do different P-A-conflicts and different solutions exist in other countries?
- The third hypothesis was falsified. It was not able to explain, why agents enforce a hold-up. On the basis of NIE a hold-up makes sense, if agents assume the institution bank—and not the members—to be the agent. This argumentation should be tested empirically.
- *“The elementary unit of social life is the individual human action. To explain social institutions and social change is to show how they arise as the result of the actions and interaction of individuals. This view, often referred to as methodological individualism, is in my view trivially true.”*²⁵ Putting this explanation into relation to the argumentation of the previous point leads to the question: Must the methodological individualism be adjusted?

²⁵ Elster, J. (1989), p. 13.

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