

# The three modalities of rationality and their contradictions in post-communist consumer credit markets<sup>1</sup>

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## Introduction

In this chapter, we develop three modalities of rationality: substantive, formal and hermeneutic. The first focuses on instrumental action, the second stresses consistency, and the third emphasizes intelligibility. Rational choice theory collapses these three modalities of rationality: to explain any outcome, it assumes that it is the consequence of some successful optimization and once this optimization is modeled we reached final understanding of the outcome. Each outcome then is optimal, results from formal calculation, and presenting them as such reveals their real reasons; each outcome is substantively, formally and hermeneutically rational, all at the same time. Using the case of post-communist consumer credit, we argue that the three modalities are separate and driven by different forces.

## Three modalities of rationality

Weber drew a distinction between formal and substantive rationality (Weber 1978:85). Formal rationality, Weber posited, is the extent to which action happens as a consequence of quantitative and proper calculations. An act can be rational because its structure is consistent, its elements all are pointing in the same direction, none counteracting the others. This consistency is aided by formalization. The power of formalization is precisely that through a mechanical form of simplification it renders certain kinds of contradictions visible. Formal calculation then is a form of rationalization that emphasizes process rather than outcome, it addresses the way decision is being made not the results it achieves.

An act can also be rational because it can promote certain ends successfully. Substantive rationality focuses on results, and refers to the success or failure of economically oriented action to achieve some ultimate objectives be those economic or non-economic such as justice or equality. Weber is unclear whether certain ends lend themselves more to formal rationality than others and if certain kinds of ends (justice, equality) may compound the problems of formal calculation.

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Before the rise of capitalism, Weber argued, formal rationality in the economy and elsewhere (most importantly in the law and bureaucratic organizations) was limited, but under capitalism formal calculation has flourished and formal and substantive rationality have “coincide(d) to a relatively high degree” (109) because competitive markets provide proper prices for calculation. Weber believed that only under capitalism, i.e., under the conditions of “free market struggle,” can formal rationality bloom because only the market can objectively quantify values. For Weber, rational calculation in the economy is a social and historical phenomenon.

Karl Polanyi makes the same distinction between formal (procedural) and substantive (instrumental) notions of the economy. Polanyi, however, is less sanguine about the harmony the two achieves under capitalism. In fact, he contends that in market economies formal rationality grew to the detriment of its substantive counterpart (Polanyi 1957/1992). From our perspective, however, the central point is the same. Formal and substantive rationality do not necessarily go hand in hand. The two can come into conflict in one way or another.

Both Weber and Polanyi understood that rational calculation depends not just on the cognitive capacities and predilections of humans, not just on what each individual does, but on what others do around them, in other words, on how social institutions are configured.

Decades later, Herbert Simon developed his own distinction between formal and substantive rationality but started not from a historical institutional perspective but from the cognitive limitations of individuals. In seeming contradiction to Polanyi, Simon critiquing neoclassical economics observed that empirically, economists take a *substantive* approach to rationality, scrutinizing results only and being preoccupied with their optimality (Simon 1986). Economists have no interest in studying the actual procedure of decision making. They introduce formal rationality into their analysis through a set of assumptions, which most importantly includes full information and the unlimited capacity of processing it. So, is economics the science of formal or of substantive rationality? Simon and Polanyi understand that economics claims to be both without distinguishing one from the other. As far as economics is concerned, formal rationality is the method through which substantive rationality is and must be achieved. What Simon points out and what escaped Polanyi is that the divergence of formal and substantive rationality is not just historically contingent but the two should *always* be treated as empirically distinct. Even in a utopian world of perfect market competition, formal and substantive rationality may diverge for reasons having to do with universal human limitations.

Simon, like Weber, is interested in how people understand their situation. The challenge he had set for economics, a challenge that later behavioral economics took on, is that outcomes and process must be investigated separately; the (supposed) rationality of outcomes is insufficient grounds for describing as rational the processes that led to them. Simon emphasizes that people interpret their world in various ways and have limited capacity to absorb and process information. These limitations are absolute in the sense that they cannot be remedied simply at the cognitive level. Institutions and organizations in particular are necessary to pre-process information so that individual cognition can do its job with satisfactory results (Cyert and March 1992). Just as Weber

and Polanyi, Simon arrives to the conclusion that rationality is social, but from a psychological perspective.

If the rationality of outcome and process merits clear separation, there is a third sense of rationality that is equally distinct. An act can be rational not just because it achieves its goal or because it uses a formal and consistent process but also because it is understandable to us. Hermeneutical rationality is the third and last modality we will discuss. When Weber talks about the ideal type he talks about the “rationalistic” method of sociology. His famous “ideal type” is a model that lays out a “purely rational course of action” (6). This hermeneutic device works by comparing this rational actor model with reality and gains insights from the discrepancies. An action is intelligible to us once we can understand why the actor did what she did, that is we can see it as a rational act.

But just because either the actor can explain his own reasons for doing something or we can understand his conduct the same way, the act is not necessarily formally or substantively rational. Action may not be instrumentally optimal, may not be methodically consistent, and yet may be understandable because we comprehend the causal rules that generate it, even may say, if we were in her shoes, we would have done the same.

Economics and more broadly, rational choice theory, collapses these three modalities of rationality. To explain any outcome, it assumes that it is the consequence of some successful optimization. Once this optimization is modeled we reached final understanding of the outcome.<sup>2</sup> Each outcome, then becomes optimal (given the preferences and constraints of the actor), results from formal calculation, and presented as such reveals their real reasons, that is, each outcome becomes substantively, formally and hermeneutically rational, all at the same time.

The perfect link between rational outcome and formal process denies the possibility of failure when using formal calculations. Coupling rational outcome and rational explanation of behavior excludes any unintended consequences, and leaves no space for outcomes resulting from non-rational processes. The conflation of formal calculation and rational explanation obscures the power (and weaknesses) of the de facto formalization of decision making, overstates consistency and understates uncertainty, ambivalence and ambiguity in real life situations. Moreover, it confuses the rationality of the actor with that of the social scientist, and mistakes the logic of social science for the logic of social reality, the camera for the picture.

We argue that each of the three modalities of rationality – substantive, formal and hermeneutic – develop separately in social life, propelled by different forces and often move in conflicting ways. In the context of the post-communist consumer credit market, substantive rationality compels banks to make profit and increase market share, formal rationality drives them to assess credit applicants with statistical tools rather than informal and ultimately subjective judgment, and hermeneutic rationality implies that they develop a causal understanding of the behavior of their clients. We will demonstrate that these different objectives often contradict each other and banks must negotiate the incongruities of instrumental efficiency, formalization and intelligibility.

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<sup>2</sup> In its descriptive version, rational choice theory claims that all outcomes are rational once we understand the reasons behind them and successfully formalize the process that connects reasons with outcomes. In its normative, more limited, version, rational choice posits that outcomes will be more optimal when they are reached through formalization and the reasons for the action are transparent.

In the next section of the article we will show how the rationalization of post-communist banking has proceeded through contradictions of the three types of rationality. Rationalization, the process of making everything substantively, formally and hermeneutically more rational, has been pushed by economists, international organizations such as the International Monetary Fund (IMF), the World Bank and the Bank of International Settlements, international financial services institutions (Allen et al. 2004) but also by pressures of profit, control, legitimacy and sense making. Achieving all three modalities of rationality simultaneously has been, however, difficult.

### ***Data description***

The aim of our research project was to study credit card markets in transition economies. Our project began in 2002 and it included interviews in more than 90 banks with risk managers in charge of consumer lending, as well as managers in charge of card operations. We also interviewed several bank officers in local branches. While our project also asked about consumer credit in general, it concentrated on credit cards, because those extend an especially risky form of credit: a no collateral, general purpose consumer loan. In this article we will present the results from six East and Central European countries (Russia, Ukraine, Bulgaria, Hungary, Czech Republic and Poland).

The theoretical focus of our inquiry has been how banks handle uncertainty inherent in lending. During our research we observed how banks sought to rationalize the process of assessing credit applicants.<sup>3</sup> We use the formalization of credit assessment to demonstrate the ways the three forms of rationalization clash.

### ***The rationalization of credit assessment***

Banking has always been on the leading edge of rationalization. Banks in their day-to-day business are far from the rich materiality of economic life, which appears to them simply as money. Values are commensurate as all are quantified in monetary terms. Its internal organization is highly bureaucratized and bankers have created and now inhabit a world that is uncommonly suited to rationalization.

Actors in the economy are boundedly rational, but some are less so than others. If any actor is able to keep to the prescriptions of economic theory banks are certainly among them. Banks have the trained staff and IT system to push cognitive limits of rational calculation. Banks even read economic theory and try to use it in their everyday activities building the fit between rational choice theories and economic action from the other side. If banks have trouble negotiating the various modalities of rationality which actor would not?

One of the main functions of banks is to extend credit to companies, non-economic organizations and individual consumers. Doing that, banks must assess the creditworthiness of credit applicants; in effect they have to guess the future performance of their borrowers.

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<sup>3</sup> More information is available on the project web site <http://socsci2.ucsd.edu/%7Earonatas/project/>

## **Rationalization of process: The creation of credit scoring**

Credit scoring is an attempt to rationalize credit assessment in banking. For the better part of the last century, banks relied on the judgment of loan officers to decide if a credit application merited acceptance. The officer had to make a diagnostic decision about the applicant, considering the three Cs, capacity to pay, collateral and character (Lewis 1992). The judgment of the officer rested on his ability of evaluating information, reading and interpreting verbal and non-verbal signs. Lending then was considered more of an art than a science (see Jeacle and Walsh 2002). From the 1940s, banks in the U.S. and elsewhere began to formalize consumer lending to better control the process and cut the discretion of their potentially inept or corrupt employees. Formalization was not the only or even the most obvious route to increase profit from lending. An alternative was to put loan officers on commission and thus reward them for good and hold them responsible for bad decisions. At that time there was and since then there has been no comparison of the effectiveness of a straightforward incentive system and formalization, so there is no evidence for either being more efficient. Formalization did deskill the work of loan officers by replacing experience and skill with a few pages of written rules, but it also released them from responsibility as long as they went by the book. In the pre-formalization age, as a continuation of communist practices, several post-communist banks made lending decisions by committee. The loan officer, whose job was simply to assemble the necessary information, would present the case to a board and the board would then discuss and vote on each case. This practice that had developed in the context of lending to companies was then employed to decide on all credit including small, consumer loans. In Ukraine, for instance, bank regulations prescribed this method until recently. In most banks, there was not a single credit committee, but a hierarchy of committees. Lower committees decided on smaller, higher committees on larger amounts after lower level committees had vetted the case. The committee method is still used in several countries for issuing consumer loans, but only a few banks deploy it as their primary process. In most banks, today, the high level credit committee decides only exceptional cases whenever formal methods and human judgment at the lower levels clash, a point to which we later will return.

The first step in increasing formalization was the introduction of clear-cut rules. These rules set out a list of conditions that the applicant had to meet for a favorable decision. These rules were mostly binary that he either met or not. Most post-communist banks began with such rules in the 1990s when they started consumer lending. While these rules were “qualitative” some of the criteria (such as minimum income, or age) were quantitative with a clear cutoff point establishing a threshold. Rules, as aids of judgment for the individual loan officer or the committee, had been in place from the start. The novelty of these new rules was that they were intended as the final arbiter in the process. Exceptions, of course always existed, and soon banks had rules when to make an exception and rules of exception were added to the standard rules. Yet there were always new exceptions.

The next step was to assign numeric weights to each criterion. Bank officers had a card that assigned points for each factor to be considered depending on the value of the factor. These cards were developed from expert judgment and the numbers simply reflected the importance top risk managers at the bank attributed to various factors. In the end, the officer had to add up the points and make the decision on the basis of a cutoff.

With the rapid advance of technology, these cards migrated to the computer screen and the information about the applicant became converted into a final score by the computer with the help of some spreadsheet program.

The final step in the formalization process was to decide the weights by statistical methods. This process is called credit scoring. Here the data for a large number of clients are processed through a statistical model, usually discriminant analysis or logistic regression (Hand and Henley 1997). Then the resulting weights are used to judge new cases. Periodically – usually twice a year -- these weights are recalculated. Credit scoring largely bypasses the judgment of loan experts except for the selection of the relevant factors, although certain technical details hide human decisions (Rona-Tas forthcoming).

With credit scoring the formalization of lending reaches its final summit. The credit score is an empirically and statistically established probability of an applicant with certain characteristics to behave “well” in the future. Knowing precise probabilities then, in principle, allows banks not only to make a binary, yes/no decision but also to vary the terms of the loan. Banks can calculate the appropriate price (interest) or establish the amount that they are willing to risk with the given probabilities.

Most but not all post-communist banks dispensing consumer credit use some credit scoring methodology. In those countries, the proliferation of credit scoring technology has been the result of various pressures. In all these markets, new bank laws introduced international standards, setting new accounting rules and capital requirements. Soon the privatization of the financial sector brought in large foreign banks, that brought with them new banking practices including credit scoring.

These “best practices” were also promoted by various consulting firms, such as McKinsey and various international financial services companies, such as Visa, MasterCard and Experian. Issuing an international credit card became difficult without following their recommendations. These suggestions, buttressed by countless presentations, brochures and conventions, have always included the advice to formalize credit assessment.

This formalization is sold as necessary for optimal economic results. In fact, the rhetoric implies that formal and substantive rationality are one and an increase in the first will result in a growth in the second. Yet formalization of consumer lending is driven only partially by concerns for better economic outcomes. Formalization has driving forces of its own. There are two such forces: legitimacy (Meyer and Rowan 1977) and control.

Formalization bestows legitimacy on practices both professionally and politically. To use formal procedures that are state-of-the-art, even if those don’t bring best results and even if most users don’t understand their technical details, defends against charges of incompetence or corruption. It also protects banks against political charges of discrimination. In the Central and East Europe, the former are more important as discrimination in lending is not yet a political issue.

Formalization also increases control within the bank. Managers get a better grip on lending if the process is formalized. As a bonus, formalization routinizes and deskills decision making allowing banks to hire from a larger pool leaving loan officers in a weak position vis-à-vis management.

## **Rationalization of outcomes: Pressure to increase profit and market share**

Under communism, banks were under no particular pressure to be profitable or to expand. In fact, banks were simply the organizational tools of the state to move money around in the economy. Banks simply followed the commands of planners. They achieved their goals if they efficiently administered funds to enterprises, government organs or consumers. There was no competition among banks and each enjoyed a monopoly in its niche.

Bank reform completed in the region by the late 1980s and early 1990s transformed accounting practices and created a new organizational structure. In each country, suddenly customers had several retail banks to choose from. Initially, this had little effect on the abysmal quality of financial retail services because banks were more interested in servicing corporate clients and the government than attending to individual consumers. Moreover, in each country the successor of the giant state savings bank sat on most residential accounts leaving little room for new upstarts. This situation has changed only in the late 1990s, as the market for corporate finance began to saturate and real incomes began to rise making retail banking more lucrative. The large foreign banks brought in by bank privatization equalized the playing field in many respects making the retail market more competitive.

The market for retail banking in post-communist Europe in the early 1990s, therefore, had a peculiar structure. On the one hand, it was a brand new market, where all products, with a few exceptions, such as savings accounts and simple bill payment were yet to appear. Few customers ever heard of payroll deposits, bank cards, consumer loans, mortgages, investment services etc., let alone thought of them as something they needed. Consumer credit in particular was very primitive. At the same time, the market already had a highly skewed infrastructure with a single bank having a wide network of branches and the vast majority of residential customers. For most Russians, Sberbank was *the* bank, just as OTP was to Hungarians or DSK to Bulgarians. Moving from the giant to a new upstart was inconvenient and costly, especially for a captive clientele that looked upon new services with incomprehension and confusion if not suspicion. The giants seemed solid and secure. Under these conditions, for the new banks the most important goal was to gain market share. This could be achieved in two ways: they could steal customers from the giant or they could try to bring into the market new customers. It took the deep pockets of foreign banks to revamp these lopsided markets.

Thus, from the beginning banks were looking to achieve not one but two objectives. While they have been trying to produce some profit their main concern has been to grab – or as in the case of the giants to hold onto – market share.

In the consumer credit market, that started to take off after 2000, market share had an even deeper significance. Because consumer loans are small compared to corporate ones, they are not profitable unless they have a large volume. Moreover, a larger market share already attained means more secure and better informed lending. This is because the success of lending depends on the kind of collateral the bank can hold against the loan or the information they can have about applicants (Stiglitz and Weiss 1981). For collateral, the giants had the accounts of most residential clients and those could be held hostage if the borrower failed to pay. For this reason alone, the more customers open

checking or savings accounts, the easier it is for a bank to expand its credit services by selling them to clients they already have. In addition, these accounts provide the bank with information about a credit applicant or about borrowers comparable to him. In fact, in the absence of information sharing, for banks this is the main source of information to decide on creditworthiness. Again, increasing returns reward the big and punish the small. Giants had not just most of the banking public as their customers, but they also had most of the information about the people in the market.

### **Substantive vs. formal rationality**

How does the formalization of credit assessment (formal rationality) affect the substantive goals of profitability and market expansion (substantive rationality)?

The importance of credit assessment is inversely related to the availability of liquid collateral. Accordingly, we found that banks are much more likely to use credit scoring for more risky loans. But does the formalization of assessment increase profitability?

When asked about the profitability of their consumer lending, bankers gave two kinds of answers. First, some pointed out that at this early, market building phase, profitability is not the proper measure of success. In a few years, it may be reasonable to ask this question. Secondly, and more surprisingly, some also reported that their accounting system is unable to establish the profitability of particular branches. Costs cannot be partitioned, they claimed, so it is impossible to say whether a particular operation is profitable or not.

When one looks closer to the way their credit scoring algorithm is set up, one finds that banks do not assess clients in terms of their profitability, but rather, in terms of their payment behavior. The usual dependent variable of their algorithms is whether the client missed a single payment. In the US, many people missing a payment are among the more profitable customers because they pay more interest and can be assessed additional penalties. While defaulting customers are rarely profitable, the vast majority of irregular payers end up paying eventually. Instead of using this crude proxy, banks could simply score applicants on the basis of their predicted profitability but not a single one does that for two reasons. The first has to do with moral values. It would be very difficult to justify rejecting promptly paying customers just because they do not make enough money for the bank. After all, the contract between borrowers and lenders, written or implicitly understood, says nothing about the profit of the bank. The borrower has an obligation to pay the loan back with interest in a timely fashion but he bears no responsibility for the bank's profit. For revolving credit with grace period, those who promptly pay up before the end of each billing cycle and therefore pay no interest are among the least profitable. The second obstacle to calculating profitability of individual accounts has to do with accounting. Banks in the region, again surprisingly, are not set up to process the profitability of each account.<sup>4</sup>

Yet, there is an even harder contradiction between profitability and formal modeling. For models to predict well there must be enough variation on the dependent variable. If the model were to select only profitable applicants, there would be no

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<sup>4</sup> The bank's offers are rarely tailored to the credit assessment of the applicant with no possibility, to lower the interest rate or fees for high scoring customers.



information in the future about those who must be avoided. To get the best formal model and to get the best clientele are two contradictory imperatives. The first requires as many bad clients as possible (as long as they are less than half of the total to achieve maximum variance), the second calls for as few as possible. Especially in the beginning, when banks try to learn about their potential clientele, banks need to make mistakes. Mistakes cost them. Substantive and procedural rationality are at loggerheads.

It is a curious case of mental accounting (Thaler 1985) that banks never see bad loans as a form of market research. Banks happily pay survey firms to ask hypothetical questions about how respondents were to behave had they been given a loan. These surveys can be more costly than granting the loans and observing people's actual response. Yet when it is pointed this out to them, bankers responded that the significance of a higher than normal loan default rate goes beyond its economic cost and brings into question the professionalism of the entire operation threatening the reputation of the bank.

When the volume of cases to assess is small, formalization adds little to profitability. Bankers believe that human judgment is superior in small scale lending provided there are proper organizational guarantees against corrupt or irresponsible officials. Because retail credit services spread from elite clients to the mass market, anonymous, formalized assessment in the early phases of the market is out of the question. Elite markets service a small and special population where statistical methods are bound to fail. To assess the well-to-do and socially visible top tier, banks use more holistic, flexible and network intensive procedures (Guseva and Rona-Tas 2001). They appraise the value of these customers not just in relation to a particular product but with respect to many other considerations: what other business will they bring, will they contribute to the bank's prestige, will they exercise political influence on behalf of the bank etc. And elite clients default they are easy to find and usually have a reputation to uphold. Moreover, few of these high end customers would consider an anonymous, routinized assessment the kind of treatment they deserve. Formalization therefore is not profitable in small, elite markets and only in large, mass markets does it make any sense.

Does the goal of market expansion justify increased procedural rationality? Formalization of credit assessment is unavoidable when banks must judge daily thousands of applications. There are only a finite number of applications a credit officer can process manually in a limited time. Increasing the number of officers creates the need for coordination among them which in turn forces banks to make their process as formal and explicit as possible. Speed and control are two strong reasons for formalization in mass credit markets. But from the fact that mass markets justify formalization does not follow that formalization is best suited to market *expansion*. Market expansion is a *precondition* of scoring. Once there is a large enough market, formalization becomes a strong imperative but until one gets there, formalization is a substantively suboptimal process to follow and not just because the market is small but because it hinders expansion.

Formalization handles the change implied in market expansion poorly because it brings rigidities of various kinds. The formal modeling in credit assessment makes several assumptions. It assumes that the bank knows in advance what the important factors are. Banks do gather more information than they use in their scoring, which lets

them try new variables in the model. But asking too many questions on an application is a sure way of driving potential clients away who will find a long questionnaire both intrusive and time consuming. So banks are stuck with a handful of standard variables. Moreover, modeling assumes that all factors are open to easy and straightforward measurement. In fact, it is assumed that standard demographic variables such as age, education, marital status, occupation etc., as captured by the simplest questions, or past behavior will predict borrowers' future behavior with great accuracy.<sup>5</sup> They do not. Scoring models, while better than chance and when it comes to judging a large number of applicants are somewhat more accurate in the aggregate than human judgment (Grove et al. 2000), predict with considerable error.

Furthermore, credit scoring models suffer from selection bias (Thomas et al. 2002:107-120). The problem is simply that banks can observe payment behavior only for those who already got the loan but not those who they turn down. During market expansion this creates not one but two distortions. First, the models are developed on the basis of those who got the loans but then employed to judge those who applied for it. But even if those who received loans in the past were a good sample of all those who had applied for them, when the market is shifting to incorporate new groups the applicant pool changes. Therefore, in a double slippage, scoring models must draw inferences from accepted applicants of one social group to all applicants of a different population.

The way post-communist banks negotiate the contradictions of substantive and formal rationality is to give on both ends. They are willing to compromise their goals, accepting reduced profit and slowing market expansion, and they also dilute the formality of the process. One example for the latter is that many use scoring as only one, if important input in the decision. Only very few banks use formalization to the point that the vast majority of the cases are decided mechanically by the score. The extreme scores are hard to override but for scores in the bulking middle range less formalized judgment retains its importance. Banks vary in the extent to which they use "manual overrides." All do it for "special" customers, known as VIPs, but they also do it for regular customers. Some banks decide manually as many as 90 percent of all scored applications.

As the top risk managers of one of the largest banks in the region put it:

"Being a risk manager, it is very careful to be pessimistic, and I know that believing only in this (scoring) model could be disastrous. So my approach is that you use as much useful information as possible, ... and try to collect the data that is useful for risk management purposes and apply different approaches when you have the intuition to do that."

In this bank, override is used in 36 percent of the cases. Nine in 10 of these are positive overrides where the applicant would have been turned down by the scoring method but the officer grants the credit nevertheless.

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<sup>5</sup> Experts distinguish between generic or social and behavioral scoring. The first uses socio-demographic characteristics, the other looks at the payment behavior of applicants. At an early stage of the market, very few people have credit history, and the use of generic scoring is impossible. While it is often said that the past actions predict future behavior best, this is not the case when past bad behavior is read to prevent it in the future. In a world where all people who once defaulted on a loan never get another one, past loan default have a 0 correlation with future behavior because everyone who gets a loan must have been good in the past.

Some banks use human overrides not just to get better results but also to improve procedure. While according to the sparse literature,<sup>6</sup> at least in the United States, overrides overall tend to decrease the accuracy of selection and thus influence negatively profitability, if used well, they can improve the prediction model in two ways. Simply by creating larger variation on the dependent variable, they allow banks to get “to know the enemy better.” By letting in people from below the cutoff score also gives the bank a peek at how people below the magic line would have performed had they been let in. If the bank is interested in increasing the number of its (good) clients, it must know if it is worthwhile to lower its cutoff and overrides can be helpful in making this decision. But a bank that systematically documents the reasons for overrides can also obtain valuable information that can be used to improve its scoring model. If the manual reversals of negative decisions bring consistently positive results when they are done for a certain reason, that reason can be included as a new factor in the model or as a rule for manual overrides in the future.

So to achieve better results, larger market and better selection (more profit) the bank must soften formalization and step back from statistical methods and use messier forms of human judgment. To learn, one must relax formalization.

### **Hermeneutic vs. formal rationality**

If in the context of retail lending, substantive rationality focuses on how to make money and increase market share on lending to consumers, and procedural rationality is preoccupied with how to create the most formal and logically consistent models for deciding who should be given the loan, hermeneutic rationality would concentrate on understanding why a particular person is or is not creditworthy. Banks are less concerned about this third form of rationality. Substantive rationality is enforced by market competition and procedural rationality is also driven by the need for legitimacy and control, but hermeneutic rationality does not have such powerful forces behind it in post-communist consumer lending. But would good results not require and the formalized models not capture a refined understanding borrowing behavior? They do but only to a limited extent.

Unlike in post-communist markets, in the United States lenders are obligated to explain their decisions to rejected clients. The original Equal Credit Opportunity Act of 1974 stipulated that the bank must provide *simple and specific* reasons if it denies a loan application. The idea was not just to force the bank to articulate reasons so that they can be scrutinized for discrimination but also to give applicants information about how to mend their ways. Yet it was increasingly clear that U.S. banks were unable to provide such justification using scoring models (Taylor 1979). Soon the Federal Reserve Board admitted that the complex interdependence of various factors in statistical models make it very difficult to provide an explanation that is true, comprehensive and the client would understand. Moreover, banks treat scoring models as secret proprietary information. They are reluctant to reveal how the models work exactly. Tested by court cases, US banks now can comply with this requirement by stating explicitly the cutoff point and telling

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<sup>6</sup> Most of that research is conducted by Fair, Isaac, the largest vendor of scoring methodology and pertain to the US consumer credit market. See also Somerville and Taffler 1995, Chandler and Coffman 1979.

rejected clients on what factor they lost the most points. This is far from providing an explanation.

Banks in post-communist countries are under no obligations to explain their decisions but even if they wanted to, scoring models are not very good at giving insights into credit behavior. In general, statistical models don't explain. They support (or undermine) explanations researchers already have. In the social sciences, we use statistical models to test existing explanations by looking at their empirical implications.

From a hermeneutic perspective, so called "generic scoring models," that look at the relationship between credit behavior and socio-demographic variables and that are used almost exclusively in these markets, are quite simple minded. For instance, most show that better educated people are less risky to lend to even after taking into consideration their superior income. Is it because they live with other educated people who make good money and can help out financially if necessary? Or because they know how to handle money better? Or because they have more job security? Or is it that they are more careful about their reputation? Banks have no idea, nor do they care. In principle, they could try to study default, for instance, by exchanging debt for information with a sample of defaulting clients. Banks never do that because they are not interested in causal explanation, they care only about predictions in the aggregate from a portfolio perspective.

The absence of intent to explain is even clearer in behavior scoring where credit behavior of clients is explained by their similar behavior earlier. They default because they did it before is not much of an explanation.

In principle, banks would use any factor (measure) that would improve their ability to predict payment behavior. What measures are appropriate depends not just on their statistical power of forecasting but also their availability and legitimacy. Various factors are unavailable because asking questions about them would raise privacy and other legal concerns. Hence banks would not ask about health or the applicant's racial or ethnic group. Others are unavailable because people are not good at reporting them and hard to verify (family debt, alcoholism, even income in some countries etc.).

Legitimacy is another issue. Banks cannot ask questions that they cannot justify with some causal story. It would be impossible to ask people their favorite color even if it were an excellent predictor of debt behavior. There must be some plausible causal link between the information solicited and debt behavior. But the causal explanation cannot be overly specific either. If they were, people could challenge them on the grounds of causal validity in their own particular case. Rejected clients could then say that, for instance, "even though I have no college degree, I care about my reputation and I know how to handle money. To accuse me of being irresponsible without true evidence is unfair and unjust." And most people would agree. The problem is that any specific causal argument would imply certain mechanisms that would then posit intervening variables. To the extent to which those are unmeasured, people could claim discrimination. The banks, therefore, must walk a fine line in dealing with causality. They cannot completely jettison it even though their main concern is prediction. But they also cannot be too specific about why they think people might not pay their debts.

Staying at the level of statistical aggregation puts banks in a position where no single person can dispute his own case. The relationship does not hold in any particular person only for the aggregate. Being vague about reasons, – in fact allowing multiple

explanations for linking predictors and debt behavior – gives banks the flexibility that makes it difficult to challenge their decisions.

The formalization and rationalization of deciding about creditworthiness did not much improve our understanding of why some people behave well as borrowers while others don't (Thomas 2000). Formal rationality does not necessarily foster hermeneutic rationality.

## Conclusion

In this paper, we suggested that in the context of post-communist retail credit markets, substantive rationality is propelled by market competition and the need to be profitable and gain market share. Formal rationality, on the other hand, grows because the need for control and legitimacy, and the needs of a mass market (large numbers). And hermeneutic rationality, the least important of the three in this context, is necessary when there is a need to settle disputes. Each modality is driven by different forces.

Substantive rationality is often aided by formal rationality and there are many examples of formalization improving efficiency. But sometimes the two are in conflict. Similarly, substantive rationality often presumes hermeneutic rationality. A rational and deep understanding of why things are the way they are usually helps actors to get better results. But not necessarily. Sometimes actors must choose between more profit and better understanding. And the same is true for the link between formalization and understanding. Formalization is frequently a very powerful tool in revealing the reasons behind things, but in certain cases, formalization can be an obstacle to learning and understanding especially when substantive rationality is paramount. The task is to explain these variations.

## References:

- Allen, Linda, Gayle DeLong, and Anthony Saunders.2004. "Issues in the Credit Risk Modeling of Retail Markets." *Journal of Banking and Finance*, 28:727-752
- Bettelheim, Charles.1975. *Economic calculation and forms of property*. New York: Monthly Review Press
- Chandler, Gary G. and John Y. Coffman.1979. "A Comparative Analysis of Empirical Vs. Judgmental Credit Evaluation." *Journal of Retail Banking*, 1/2: 15-26.
- Cyert, Richard M. and James G. March.1992. *A Behavioral Theory of the Firm*. Cambridge: Blackwell Business
- Elster, Jon.1986. Introduction. In Jon Elster ed. *Rational Choice*. Oxford: Blackwell.
- Grove, William H., David H. Zald, Boyd S. Lebow, Beth E. Snitz and Chad Nelson.2000. "Clinical Versus Mechanical Prediction: A Meta-Analysis." *Psychological Assessment* 12/1:19-30.
- Guseva, Alya and Rona-Tas, Akos.2001. "Uncertainty, Risk and Trust: Russian and American Credit Card Markets Compared." *American Sociological Review*, 66/5:623-646.

- Hand, David J. and William E. Henley.1997. "Statistical Classification Methods in Consumer Credit Scoring: A Review." *Journal of the Royal Statistical Society* 160/3:523-541.
- Jeacle, Ingrid and Eamonn J. Walsh.2002. "From moral evaluation to rationalization: accounting and the shifting technologies of credit." *Accounting, Organizations and Society*, 27:737-761.
- Johnson, Robert W. 2004. Legal, Social, and Economic Issues in Implementing Scoring in the United States. Pp. 5-15 in Lyn C. Thomas, David B. Edelman and Jonathan N. Crook eds. *Readings in Credit Scoring. Recent Developments, Advances, and Aims*. Oxford: Oxford University Press.
- Lewis, Edward M. 1992. *An Introduction to Credit Scoring*. Athena Press, Fair Isaac.
- Meyer, John and Brian Rowan.1977. "Institutionalized Organizations: Formal Structure as Myth and Ceremony." *American Journal of Sociology*, 83/2:340-363.
- Mueller, Gert H. 1982. "Socialism and Capitalism in the Work of Max Weber." *British Journal of Sociology*, 33/2:151-171.
- Polanyi, Karl.1957/1992. "The Economy as Instituted Process." Pp.29-52 in Mark Granovetter and Richard Swedberg eds., *The Sociology of Economic Life*. Boulder: Westview Press.
- Rona-Tas, Akos. Forthcoming. "Credit Assessment as Formalized Vaticination." In Richard Swedberg and Trevor Pinch eds. *Economic Sociology and the Study of Science and Technology*. Cambridge: MIT Press.
- Simon, Herbert A.1986. "Rationality in Psychology and Economics." *The Journal of Business*, 59/4(2):S209-S224.
- Somerville, R.Andrew and Richard J. Taffler.1995. "Banker Judgement versus Formal Forecasting Models: The Case of Country Risk Assessment." *Journal of Banking and Finance* 19:281-297.
- Stiglitz, Joseph E. and Weiss, Andrew.1981."Credit Rationing in Markets with Imperfect Information", *The American Economic Review*, 71/3:393-410.
- Taylor, Winie Faye.1979. *Meeting the Equal Credit Opportunity Act's Specificity Requirements: Judgmental and Statistical Scoring*. Master of Law Thesis, University of Wisconsin, Madison
- Thaler, Richard.1985. "Mental Accounting and Consumer Choice." *Marketing Science*, 4/3:199-214.
- Thomas, Lyn C.2000. "A Survey of Credit and Behavioural Scoring: Forecasting Financial Risk of Lending to Consumers." *International Journal of Forecasting*, 16:149-172.
- Thomas, Lyn C., Jonathan N. Crook and David B. Edelman.2002. *Credit Scoring & Its Applications*. Philadelphia: SIAM (Siam Monographs on Mathematical Modeling and Computation).
- Weber, Max.1978. *Economy and Society*. Berkeley: California University Press