Institutional Influences on Decision Making: The Case of Bank Lending to Small Businesses in the U.S. and Vietnam

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Abstract

This research explores the question of how institutional factors influence business decision making. We conducted in-depth interviews with twenty-six bankers in Vietnam and the U.S. Our results suggest that the development of market institutions has a strong influence on managers' frequency use of rational versus subjective decision making approaches. In developed countries, the presence of a large data base and a reliable legal system facilitates bankers' choice of rational decision making. In the absence of effective market institutions, bankers have no choice but to rely extensively on personal heuristics and biases to make loan decisions. In this situation, heuristics and biases were used intentionally and consciously in decision making process. Two strategies to minimize bias errors – controlling and learning strategies – were used extensively by Vietnamese bankers.

Keywords: Decision making, bank financing, Vietnam

1. Introduction

Since Simon's seminal work (1957), organizational scholars have recognized that managers are "bounded rational", and that decision making is often short of a purely rational model (e.g., Keh, Foo, and Lim, 2002; Nonaka & Takeuchi, 2011; Sarasvathy, 2004; 2001). A number alternatives to rational decision making have been proposed, including sense making (Weick, 1979), goal construction (March, 1982), and heuristics and biases (Tversky and Kahneman, 1974). While these alternatives relate to each other, heuristics and biases (or judgmental models) were seen as a more direct complement of, and some time substitute for, rational models. Current studies have examined this issue at the organizational and individual levels, leaving the institutional context under-explored. The use of a rational or a judgmental approach in decision making is presented as a matter of organizational and/or individual choices, assuming a presence of strong market institutions (Nonaka & Takeuchi, 2011). People use their heuristics and biases unconsciously and are not aware of errors associated with their judgments.

These conclusions may not hold in the absence of effective market institutions that ensure a stable business environment with readily available data. Little research has been done on the influence of institutional contexts on decision making. Our core idea is that the development of market institutions facilitates the use of rational decision making models by creating public information channels and ensuring consistency in the business environment. In the absence of such institutions, managers are consciously forced to use heuristics and biases. What is involved in such conscious judgmental modes, in comparison to rational models? How do managers, consciously using heuristics and biases, minimize judgmental errors? Answering these questions is important in understanding how and why people adopt a particular management approach. If decision making approaches (and management approaches in general) are influenced by national culture and individual cognition processes, as much of the current literature has argued (Hofstede and Bond, 1988; Keh, Foo, and Lim, 2002; Sarasvathy, 2004; 2001), then there is little hope of changing them. If these approaches are also influenced by institutional factors, then developing institutions could trigger significant changes in management. A person's choice may be greatly influenced by his/her cultural values, but it could also be an adaptive mechanism necessary to survive in a specific institutional context. Exploring these issues could open new strategies in transferring management best practices across national borders.

Using qualitative interviews with American and Vietnamese bankers, we explore how institutions influence the choice of rational versus judgmental approaches in decision making, and how managers minimize errors when consciously using heuristics and biases. The United States and Vietnam represent two extremes of institutional development, allowing us to easily examine the influence of institutional factors on decision making processes. We choose bank lending to small business as our research setting because making bank loan decisions requires both rational and judgmental approaches (Binks and Ennew, 1998; Berger and Udell, 1995; Frame et al., 2001; Le and Nguyen, 2009).

2. Theoretical background

2.1. Risk, uncertainty, and the roles of institutions

Both mainstream economic theory and studies of business management in transition economies do not distinguish risk and uncertainty (Child and Tse, 2001; Guseva and Rona-Tas, 2001; O'Connor, 2000; Sturrud-Barnes, Reed, and Jessup, 2010). The argument has generally been that the actor can always reduce uncertainty to calculable risk by forming subjective probability judgments, ignoring institutional differences across nations.

In Knight's (1957) seminal work, risk comprises objective probabilities of future events that the decision-maker can calculate, based on a known distribution of outcomes across a group of past events. Uncertainty, on the other hand, is a situation where these probabilities cannot be assigned in a meaningful way (Langlois and Cosgel, 1993). "[When] there is *no valid basis of any kind* for classifying" (Knight, 1957: 225); into homogeneous groups, an actor must resort to "estimates". Risk and uncertainty differ in: 1) the possibility of classifying and homogenizing instances; and 2) the possibility of assigning objective probability of future events (Guseva and Rona-Tas, 2001; Langlois and Cosgel, 1993). Risk is therefore more predictable than uncertainty.

Three conditions are needed to reduce uncertainty to risk. First, there needs to be a reasonable similarity across cases. In lending to private small businesses, this means that previous borrowers must be categorized, so that current applicants can be evaluated relative to a previous set. The success or failure of known small businesses and their past behavior can then be used as an indicator of current applicants' future behavior. This requires a high level of standardization, and the existence of credit information institutions that can gather, collate and verify such data. Secondly, there needs to be a reasonable expectation of similarity over time, which requires an environment of relative stability. This means the expectation that past experience of small business behavior is likely not to differ from present (or future) behavior. Thirdly, there needs to be a substantial number of past observations to ensure the reliability of the probability calculation.

The first two conditions can be provided by appropriate institutions. For example, in virtually all developed countries, commercial banks can rely on other banks, auditing companies or relevant governmental agencies to collect, verify and standardize information about their customers. The large number of private businesses that have operated over time, allows banks to develop a reliable calculation of probability of applicants' behavior. Banks are then able to calculate risk; they can then factor this risk into their loan pricing. Since banks in these countries are able to reduce uncertainty into calculable risks, they can use rational decision making models.

Unfortunately, such institutions have not yet begun to operate effectively in some transition economies, including Vietnam. It is extremely difficult for banks in such countries to reduce uncertainty into more quantifiable risk (O'Connor, 2000; Nguyen, Le, and Freeman, 2006; Le and Nguyen, 2009). In this

context, guidance provided by Western textbooks and consultants on rational risk management techniques is of limited utility.

Private small businesses are a relatively new phenomenon in these countries, and bank lending to them is even more recent, so the requirements of i) stability, ii) comparability and iii) an adequately large database of past loans are hard to attain. Yet banks in transition economies still have to make loan decisions. How they do this is a question that remains largely unanswered. We turn to the heuristic and cognitive bias decision making literature for possible answers.

2.2. Heuristics and Biases in Business Decision Making

Since Simon's seminal work (1957), organizational scholars have acknowledged that managers are "bounded rational", and thus decision making is often short of the purely rational. Practical reasons for not applying a purely rational model of decision making include: 1) high costs of such a process (Simon, 1979); 2) differences in individual managers' cognitive processes (Keh, Foo, and Lim, 2002); 3) information processing limits of the decision-makers (Schwenk, 1996); 4) differences in values and resources of the decision-makers (Sarasvathy, 2004; 2001).

A number of deviations from rational decision making processes have been proposed by both organizational and psychological researchers, such as sense making (Weick, 1995), goal constructing (March, 1982), and heuristics and biases (Tversky and Kahneman, 1974). Heuristics and biases are judgmental rules, cognitive processes, and subjective assessments people use in making decisions. While related to the concepts of sense making (Weick, 1979) and goal ambiguity (March, 1982), heuristics and biases is more directly complement to, and sometime substitute for, the purely rational decision making process. We use the terms judgmental approach and heuristics and biases interchangeably.

Tversky and Kahneman (1974) identified a number of heuristics and biases that people tend to use when making decisions, especially under uncertainty. These heuristics and biases were categorized into representativeness, availability, adjustment and anchoring. The biases and heuristics directly relevant to this study are presented in more details in Table 1.

Developed under laboratory conditions, this theory of heuristics and biases has gained empirical support (Keh et al., 2002; Simon, Houghton, Aquino, 2000). While all decision-makers apply heuristics and biases to some degree (Tversky and Kahneman, 1974), individuals differ in the extent to which they use rational or heuristics and biases models.

Organizational researchers have begun to study factors underlying different decision making processes (i.e., rational versus heuristics and biases). A number of entrepreneurship studies point to the differences in individual cognitive processes (Keh et al., 2002; Simon et al., 2000; Sarasvathy, 2001; 2004; Storrud-Barnes et al., 2010). These studies find that entrepreneurs use heuristics and biases more frequently than non-entrepreneurs in making decisions. In larger organizations, however, these individual differences might be constrained by organizational systems and culture. For example, McNamara and Bromiley

Table 1: Descriptions of Some Biases and Heuristics (based on Tversky and Kahneman's, 1974)

Types of biases	Descriptions	Examples in bank lending
Representativeness	If object A resembles (or similar to) B, then the probability that A originates from B is judged high	If an applicant appears to be similar to the stereotype of successful borrowers, the probability of successful loan with this applicant is judged to be high.
Insensitivity to prior probability of outcomes	People do not take into account the base rate frequency	Bankers do not take into account the base rate of successful borrowers in the total population of firms
Insensitivity to sample size (or law of small sample)	People ignore the fact that small sample deviates more than larger sample from the population parameters	Bankers draw conclusions on an applicant's credit worthiness based on their own personal experience or small number of people's opinions
Misconceptions of regressions	People ignore the fact that one's performance deviates around the mean (or regression toward the mean)	Bankers give too high weight for recent applicant's performance without being aware that this performance deviate up and down around the mean
Availability	Biases due to the retrievability or effectiveness in the search set of instances	Bankers assess an applicant's credit worthiness based largely on the instances they can remember about the applicant and/or data they can easily search for on the applicant.

(1997) studied how bankers assess risk in commercial lending, and found that individual cognitive factors are often over-powered by organizational factors. From a cultural perspective, Hofstede and Bond (1988) suggested that Westerners are more analytical and have a lot more concern for objective truth. Asian people, on the other hand, are concerned more about virtue, and their thinking is more synthetic. This suggests that western managers might use heuristics and biases less than their Asian counterparts. To our knowledge, very little research has directly examined the role of culture on use of heuristics and biases, in

contrast to rational approaches.

Studies on the influence of institutional factors on managers' cognitive processes are also few. From Knight's distinction between uncertainty and risk, one can suggest that the development of market institutions facilitates the rational approach by providing a mechanism for the development of data for quantifying risk. In the absence of effective mechanisms to gather, standardize, and provide information constrains personal and organizational choices for decision making. In these conditions, people use heuristics and biases consciously because they have little choice, contradicting the common characterization of the unconscious nature of heuristics and biases in the literature (Keh et al., 2002; Tversky and Kahneman, 1974).

2.3. Bank lending to small businesses

Banks face high risk in lending to small business (e.g., Blackwell and Winter, 2000; Le and Nguyen, 2009). To mitigate these problems, banks approach small businesses differently than they do larger clients. Several researchers (e.g., Jankowicz and Hisrich, 1987) provide a summary of categories banks use when deciding to extend credit to small businesses, the '5 Cs of lending': Character, Capacity, Capital, Collateral, and Conditions. While an applicant's financial capability, available collateral, and profitability could be more objectively assessed, his or her standing on the first two 'Cs' is often said to largely depend on the intuitive judgment of the individual bank-lending officer. Some well-known techniques that banks use to cope with problems of lending to small businesses have been documented. These include taking ample collateral, developing long term relationships with borrowers, credit scoring, and pricing for risk.

Notwithstanding all of the above, the current literature has not sufficiently examined the conditions for effective uses of rational versus judgmental decision making processes. This becomes a serious shortcoming when we examine the issue in the context of transition economies like Vietnam. In such countries, banks face greater uncertainties, stemming in part from: the more volatile and immature business environment, the lower level of regulatory oversight, and the shear pace with which the economy is growing from a relatively low base point. Despite the fact that bankers are among the least risk-taking and the most "intended rational" professionals, they may not be able to be as rational as they would like in the absence of developed market institutions. We explore this thesis in the subsequent sections of the paper.

3. Overview of the banking and small business sectors in Vietnam and the U.S

3.1. The United States

Over the last 30 years the banking environment in the United States has changed dramatically. Government regulations have changed at the state and federal level and the result has been a consolidation and reorganization of the way banking services have been delivered. The number of banks has decreased significantly (Petersen and Rajan, 2002), and technology in the form of everything from ATMs to the Internet has facilitated the emergence of new ways of delivering all financial products including small business financing. Nevertheless small businesses remain depend-

ent on banks for external funding, in the absence of access to broader public capital markets.

Historically small business banking in the United States was handled by local relatively small banks. In making loan decisions, these banks often relied on relationship lending (Berger and Udell, 2002). With bank consolidation the number of small banks has decreased. Today, the number of U.S. banks totals about 8,350, a significant decline from 14,146 main bank offices in 1934. Larger banks have entered the small business lending market utilizing technology and impersonal means for assessing creditworthiness. Credit scoring utilizing established credit agencies and conducted at a central loan processing location remote from the small business location has gained a greater role in the credit granting decision.

Use of credit scoring is possible in the United States because of an established credit rating system. This system created in the 1950's, provides a foundation based on established practices for evaluating creditworthiness. A significant step in the development of the credit reporting system was made in 1965 when Credit Data Corporation (CDC), using a large volume of information supplied by several California banks, organized the first nationwide, computer-based credit bureau (Guseva and Rona-Tas, 2001). Today, there are three nationwide repositories of credit histories in the United States: Experian, Trans Union, and Equifax. Each of the three credit-reporting systems maintains about 190 million credit files. Two billion pieces of data are entered monthly into their records, and about 1 billion credit reports are used annually in the U.S. (Association Credit Bureau, Inc. 2001).

In sum, with the recent trend of consolidation, the spread of credit reporting, and the development of statistical methods for credit scoring, bank lending to SMEs in the U.S. became less embedded in social relations. While relationships between borrowers and bankers remained important (Berger and Udell, 2002), credit decisions based on personal judgment and trust are increasingly giving way to those made on the basis of rational calculation. In this vein, the U.S. appears as an ideal environment for bankers who wish to adopt a rational decision making process.

3.2. Vietnam

The banking sector in Vietnam is in its nascent stage. Before "*Doi moi*" policy (1986), it was a centrally-planned, mono-banking sector, which lent primarily to state-owned firms. Over the last twenty years, the banking sector in Vietnam has changed considerably to a relatively more complex and market-oriented financial sector, comprising multiple participants. The sector has been dominated by six State-Owned Commercial Banks (two of them were partially equitized by April 2011), which accounted for around 50% of the credit by 2010. These banks are complemented by 37 Joint Stock Commercial Banks, and five wholly foreign owned banks (source: State Bank of Vietnam).

As in other transition economies, banks in Vietnam have relatively short history of commercial based lending. State-owned commercial banks, which dominate the sector, have not been fully market-oriented. Joint stock banks, on the other hand, are newly estab-

lished, with most in operation for less than 15 years. As the governing body of the sector, the State Bank of Vietnam is still incapable of supervising and providing information to commercial banks. A World Bank study (WB, 2003) showed that SBV has neither well-designed, systemic reports required of commercial banks, nor does it provide reliable and updated information. This situation remains, although almost ten years have passed by.

The Vietnamese banking sector also has a high rate of non-performing loans (NPL) in the SOCBs. As of December 2003, the four state-owned commercial banks had an aggregate VND 23 trillion in non-performing loans (equivalent to US$1.5 Billion); or twice their capital base, 15% of total credit in the economy, and the equivalent of 5% of Vietnam's GDP (IMF, 2003). After ten years, the bad debt of the whole banking system by February 2012 stood at more VND85 trillion (over US$4 billion), or 3.4 percent of total loans as of last October, up from 2.2 percent in 2010, according to the State Bank of Vietnam. Up to 50 percent of the debts are in default (VnnNews.net). Such NPL levels limit the capacity and willingness to extend new credit to the private sector.

Underlying all of these problems is a continuing lack of transparency and limited availability and quality of data within the financial sector. While the Credit Information Centre (CIC) is designed to collect, verify, and standardize information, bankers in Vietnam are extremely wary of providing and getting information from it (Nguyen, Le, and Freeman, 2006). They worry that providing financial information would result in attempts by rivals to lure away their best customers. Without standardized and shared information, however, bankers cannot hope to accurately calculate risk in lending to private businesses. This challenge is further amplified by the high start-up and failure rates and lack of corporate governance in private firms in recent years (Nguyen et al., 2006).

The circumstances in Vietnam are not conducive for risk calculation in lending to small business. Not only do bankers in Vietnam have little experience with commercial lending, but the lack of cooperation among banks prevents the formation of institutions needed for reducing uncertainty to risk. In addition, instability of economic policies seriously undermines confidence in predictions of the future based on past observations – a foundation of bankers' rational decision making models.

4. Field methods

4.1. Research design

We chose to study bank lending to small business because loan decisions often involve both rational calculations and judgments (Frame et al., 2001; Le and Nguyen, 2009; Petersen and Rajan, 1994). This helps us to isolate the influence of institutional factors on a person's tendency to use rational versus judgmental approaches. We also chose two extremes of institutional development for our study; Vietnam and the U.S. represent very low and very high levels of institutional development, respectively.

A qualitative interview-based study is the most appropriate methodological approach for an exploratory research project of this kind.

Firstly, the topic (the use of rational versus heuristic and biases models in bank lending to small businesses) and one of two countries (Vietnam) are understudied. Secondly, we would like to collect rich descriptions of the decision making process and better understand where, how, and how much a rational or heuristics approach comes in. As Tversky and Kahneman (1974) noted, people may use heuristics unconsciously, so the in depth interview allows us to follow respondents' streams of thoughts, and to probe with relevant questions to uncover possible use of implicit techniques.

4.2. Sample

The interviewees were credit officers and relevant senior managers (Head of Department or above) of banks currently operating in Vietnam and the U.S., all of which have been lending to private small businesses. These credit officers and managers were directly involved in their banks' small business lending activities. We directly contacted senior managers of the banks (mostly the Heads of Credit Departments or Brach Managers), briefed them on the nature of the research, and requested interviews with those personnel directly involved in small business lending. Every manager we contacted agreed to participate in the interviews and/or set up interviews with relevant bank officials. These interviews were conducted in the period between December 2006 to June 2007. In Vietnam, our sample consisted of 8 credit officers and 7 senior managers from 8 banks. All of these bankers were working at the headquarters or braches in Hanoi and Ho Chi Minh City. Our U.S. sample consisted of 10 bankers who were working for 7 banks in the Colfax, Spokane, and Pullman areas, Washington State. Table 2 provides an overview of the interviewee characteristics of our sample.

To supplement our interviews with bankers, we also interviewed a senior official of State Bank of Vietnam (SBV), a staff member of the Credit Information Centre (SBV), and a formal staff of the Banking Training Centre in Vietnam to better understand government's policies and services that are available to banks. In the US we met with officials of the District Office of the U.S. Small Business Administration. These interviews also helped validate our findings based on interviews with bankers.

4.3. Data collection

The interviews were semi-structured. The questions contained in the research tool were largely open-ended. The first section contained questions that sought to shed light on each bank's history of lending to private small businesses. The second section of the interview tool focused on the specific methods used by the bank to glean and analyze sufficient information to make a loan decision. The third section focused on how banks interact with their private SME borrowers, and how they supervise the loans. Interviewees were encouraged to elaborate on challenges that they face in the lending process and give specific examples of how they overcome these challenges, in order to better 'flesh out' the answers given. Throughout the process, new insights or findings were put on subsequent interviews for discussion and to generate feedback loops for our data analysis. We

Table 2: Field Sample

	Length of interview (minutes)	Position	Industry Experience (year)	Gender	Bank	Location	Ownership
1.	40	Manager	10	Female	Agriculture Bank	Hanoi	State
2.	60	Officer	5	Male	Agriculture Bank	Hanoi	State
3.	50	Manager	10	Female	Asia Commercial Bank	Hanoi	Private
4.	60	Officer		Female	Bank for Investment and Development (BIDV)	Hanoi	State
5.	50	Officer	5	Female	BIDV	HCMC	State
6.	60	Manager	15	Female	Bank of Industry and Commerce (Incombank)	Hanoi	State
7.	40	Officer	2	Female	Incombank	Hanoi	State
8.	50	Officer	3	Male	Incombank	HCMC	State
9.	40	Officer	4	Male	Incombank	HCMC	State
10.	60	Officer	4	Male	Military Joint Stock Bank	Hanoi	Private
11.	40	Officer	3	Male	Saigon Industrial and Commercial Bank	HCMC	Private
12.	60	Manager	6	Male	VN Int'l Commercial JS Bank (VIB)	Hanoi	Private
13.	60	Manager	4	Male	VIB	Hanoi	Private
14.	60	Manager	20	Female	Bank of Foreign Trade of Vietnam (Vietcombank)	Hanoi	State
15.	30	Manager	7	Male	Vietcombank	Hanoi	State
16.	75	Manager	20	Male	American West	Colfax	
17.	40	Manager	30	Female	Bank of America	Pullman	

	Length of interview (minutes)	Position	Industry Experience (year)	Gender	Bank	Location	Ownership
18.	50	Manager	32	Male	American West	Pullman	
19.	40	Officer	12	Female	Washington Mutual Fund	Pullman	
20.	70	Manager	32	Male	Bank of Whitman	Pullman	
21.	50	Manager	29	Male	Wells Fargo	Pullman	
22.	60	Officer	15	Male	SBA	Spokane	
23.	40	Manager	34	Male	Sterling Saving Bank	Spokane	
24.	40	Manager	35	Male	Bank of America	Spokane	
25.	30	Officer	15	Male	US Bank	Colfax	

stopped our interviews in each country when there were no substantial new concepts emerging. This provided us with confidence that the resulting explanation accounts for most of the reported behavior in the sample.

Two bi-lingual authors (with Vietnamese as first language) conducted the interviews with Vietnamese bankers, in Vietnamese. The interviews with American bankers were conducted in English by a team of one American and one of the bi-lingual authors. Notes were transcribed nearly verbatim within 24 hours of the interviews. The interviews with both Vietnamese and American bankers lasted from 30-75 minutes with an average of 51 minutes. Field work resulted in about 240 pages of hand written notes. We also collected banks' available and relevant documents, such as loan application forms and policies and procedures.

4.4. Data analysis

Data analysis proceeded as follows. First, we had the interview notes with Vietnamese bankers translated into English by an independent business researcher. This translation was then cross-checked by two bi-lingual authors. Any inconsistency was discussed and reconciled. Then, based on the literature and general interview notes, we developed detailed categories and descriptions of rational and heuristics and biases models for every step of the process from collecting, analyzing data to making decision. Please refer to Table 3 for details.

Each author and a graduate student who was not part of the study used these descriptions to review every interview. For each interview, we noted the presence of each category, either rational or judgmental. We then compared our reviews, and any inconsistency

was discussed until we agreed. Reliability of the four coders (three authors and a graduate student) in identifying categories was roughly ninety percent. Integrating these reviews allowed us to construct Table 3. We conducted simple Chi-square test to detect possible differences between Vietnamese and American bankers in their use of rational versus judgmental approach to loan decisions (Table 4).

5. Findings

5.1. Different decision making approaches

Previous studies have extensively focused on the use of judgmental versus rational models of decision making at the stage of processing or analyzing the information (Busenitz and Barney, 1997; Keh et al., 2002; Simon et al., 2000; Tversky and Kahneman, 1974). They studied how people differ in analyzing the same set of data or situations that were presented to them. Our data suggest that the use of these models were apparent in all stages of making decisions: i.e. how people collect information, analyze the information, and make decisions. We present our findings in different stages of this process. Table 3 summarizes the findings.

Collecting information. A rational approach would require people to collect information on the base rate of the outcome (prior probability), with sufficient history (regression toward the mean), and from a larger sample (law of large sample). The information collected needs to have high validity (good predictor of the outcome) and reliability (everyone can agree upon), while not necessarily highly available or easy to retrieve (availability bias). In the context of bank lending to small businesses, bankers need to identify a set of good predictors for loan success, and collect reliable information on these factors. Over the years, banks in the U.S. have developed a protocol, including standardized types (and sources) of information that help predict probability of loan success for small businesses, especially for new applicants. These include three-year tax returns, credit scores, and financial statements of the company, resume of the owner(s) and key managers, and necessary legal documents. To verify the applicants' business plans, industry data on market, competition, and financial indicators are also useful. Our US bankers believed, either implicitly or explicitly, that these types of information are reliable because they are objective and can be easily verified. Since the country's databases contain millions of businesses' credit scores, tax returns, and financial indicators over the years, a particular borrower's indicators can be easily compared to a much bigger sample (e.g., through a statistical model). These types of information facilitate a rational approach in making loan decision.

On the other hand, bankers also collect softer types of information on their new applicants. These soft types of information include direct interviews and interactions with the applicants (firm owners or key managers), visits and observations of the firm premises, reference to third parties (vendors, neighbor, commune officials, other banks, industry experts, etc.), and bankers' personal experience. These types of information are subjective in nature and have a high potential for

Table 3: Cross Site Display Table Relating V.N and U.S Bankers to the Decision Making Models

	VN (15 respondents)	**US** (10 respondents)
Data Collection Rational	**46**	**43**
Tax return/ Credit reports	0	9
Financial statements and documents (audited)	10	10
CV of the owners	0	5
Legal documents	10	2
Business plans and industry/ market data	13	6
Other professional agencies' data	14	5
Reliable source for checking data is assumed available	0	6
Data Collection Judgmental	**60**	**16**
Interviews & interactions with applicants	11	4
Visit and observe the premises	13	2
Reference other parties	13	4
Personal experience and relationships	10	5
Data reliability not assumed	14	1
Data Analysis Rational	**0**	**13**
Use of statistical techniques (large sample, impersonal)	0	7
Objective interpretation based on statistical results	0	6
Data Analysis Judgmental	**38**	**5**
Check data consistency	13	0
Use rules of thumb	14	2
Subjective determination on factors' weights	11	3
Decision Making Rational	**4**	**27**
Based largely on the result of quantitative model, impersonal	0	8
Based on applicant's current capability and commitment	3	6
Standard loan structure	1	7
Success loan is a measure of performance	0	6
Decision Making Judgmental	**31**	**8**
Based on subjective assessment	11	3
Concern on developing the applicant capability	6	4
Customized loan structure for individual applicant	3	0
Success relationship is the measure of performance	11	1

personal bias. Table 3 presents frequency counts of number of U.S. and Vietnamese interviewees who recognized the use of each type of information.

As presented in Table 3, on average, U.S. bankers used public and objective information far more frequently than their Vietnamese counterparts. Collecting these types information is part of their banks' "protocol" or standard procedure in making loan decisions. As one banker noted: "We consider it [collecting these types of information] a standard practice". In contrast, none of Vietnamese bankers reported the use of tax return, credit scores, and applicant CVs. Instead, Vietnamese bankers demonstrated a higher frequency in their use of subjective information, such as interviews, observations, experience, and third party's personal opinions. Lacking objective information, Vietnamese bankers rely extensively on these subjective data, and thus much of their effort was put on collecting these data. While all U.S. bankers also reported some use of subjective data, they tended to view such data as an add-on or supplement for more important hard data they already collected.

There was a notable difference between the U.S. and Vietnamese bankers in their attitude toward the credibility of data sources. The U.S. bankers tended to implicitly assume a high credibility of the information sources, including subjective data. Many of them did not even think about questioning the reliability of these sources, but instead focused on the substance of the data. Vietnamese bankers, however, questioned all information they collected, including more objective data such as legal documents or financial statements. This quote from a Vietnamese interviewee illustrates this point:

"Company's registration documents have the name of the firm owner and their registered businesses. We need to look beyond these documents to find who the real owners and what their actual businesses are."

This reflects the common assumption of the rational and judgmental decision making approaches. Rational approach assumes reliability of the data, and would not work if this assumption is violated. Judgmental approach does not assume that, and indeed, part of the judgment managers need to make is how reliable each piece of data is. This notion of judgmental (or heuristics and biases) model of decision making has not been reported in previous research.

Analyzing information. A pure rational approach in bank lending to small business would have a straightforward objective: predict the probability of loan success. The data analysis would be done through some sort of standard and analytical procedures, involving statistical modeling with objective, large-sample data. The importance of each factor (reflected in the models) would be decided by historical data, not by the bankers themselves. With such a procedure and model, the results should be self-explanatory on the probability of loan success. Our data show that U.S. bankers used these components of the rational analysis model much more than Vietnamese bankers (Please see Table 3 for details). Specifically, 7 (out of 10) U.S. bankers recognized the use of standardized procedure or some statistical model in analyzing the data,

while none of Vietnamese bankers reported the use of such models. One Vietnamese banker commended on this when he was asked:

"We are trained to use some models like that. But in our situations [low reliability and availability of data], the results were just artificial, not useful."

On the other extreme, a pure judgmental approach to data analysis appears to be much more complex and non-standardized. Bankers often have to give their subjective assessment on the legitimacy, capacity, benevolence and commitment of the borrowing firms. As discussed in the previous section, even legal documents can be misleading regarding even the true identity of the firms (i.e., who the firm's true owners and what its actual businesses are). Data on firm capability, benevolence and commitment to the project are even more subjective and require more personal judgment. The analysis in this situation is less about predicting probability of success, but more about making sense of who the firms are, what they have, how trustworthy and committed they are. The procedures were largely non-standardized, self-designed by the bankers, and subjective. They often involved the judgment of the consistency of the data, the use of rule of thumb, reference to the relationships bankers have with the sources of data for interpretation.

While all interviewees reported some use of judgments in the data analysis, Vietnamese and American bankers differed greatly in the extent they utilized such approach. For American bankers, their judgments were used only as a supplement to their rational calculations based on other objective data. As several American bankers told us: "The paper work [objective data] need to add up", or "We are past the time when I can make a loan decision that my colleague may not make. Things are pretty standardized these days". In most cases, judgments were used when the applicants were "at the edge" (close to the cut-off points). In contrast, the judgmental approach was used as a substitute for a rational approach, and was the driver of the data analysis for our Vietnamese bankers. Any rational calculation or model was just "cosmetic and theoretical", which made the recommendations or the loan decisions "look legitimate and rational". A number of so call biases and heuristics were used extensively and deliberately. For example, Vietnamese bankers spent a great deal of time evaluating the consistency of the data collected from different sources. Data that have reasonable level of consistency from unrelated sources got more weight. Similarly, these bankers evaluated the certainty of key elements in the applicant's business plan. If, for instance, an applicant demonstrated that s/he had some "sure" customers, this would greatly increase the chance of getting a bank loan. The weight of each factor was not determined by large sample, historical data, but by bankers' judgments on a case by case basis. These weights were determined less by how strong they influenced the outcomes (successful loans), than by how "sure" they are to happen, and by whether they are substantiated by unrelated sources.

Making the decision. At the final stage, a banker with a rational approach would make

his/her decisions based largely on the quantitative model (cut-off point). Personal relationships play a little role. The key measurement of performance is successful loans, and the focus is on applicants' capabilities to manage the loans. This description fits well for the 8 American bankers, and does not fit well for the Vietnamese bankers (See Table 3). While several American bankers acknowledged that they took into account personal relationships with applicants, only one banker recognized that personal relationships play significant role in making decisions. Others all pointed to the fact that the "numbers need to make sense and add up on paper", that "all I can do to help is to ask for more data, so I can make the case stronger". Here are some quotes from American bankers that reflected their attitude toward and use of personal relationships.

"No, it [trust and relationship with applicant] does not play a role here. I'm sorry but that is the practice."

"Well, relationship does play a role in increasing loyalty. I do help people around. If a client had a bad time, I can write a letter asking for an exemption from the policy. Sometimes it works, sometimes it doesn't. … With high level of staff turnover these days, it is hard to rely on trust."

Vietnamese bankers, in the interviews, did not recognize the direct influence of personal relationships on decision making, either. The main reason was that they need to submit the recommendations or decisions to credit committees or higher levels of management. Personal relationships were not a "rational" factor in such recommendations. However, since the decisions are made by subjective assessment of the applicant's capability, based largely on subjective data, personal relationships should potentially and indirectly influence the whole process.

We noted, however, a key difference between American and Vietnamese bankers in their measure of performance. A basic measure of performance for American bankers was successful loans, while for Vietnamese bankers, it was successful business relationships. This leads to a very different reporting and follow-up procedure on non-performing loans. Vietnamese bankers rarely reported a first loan to a borrower as non-performing after it was overdue. What they often did was to review if this overdue was because of "external factors" [not because of the borrowers' intention]. If that was the case (also based on bankers' judgments), the due date could be extended, or a new loan may be issued to "help" the borrower to recover. After about three rounds, the borrower can be categorized as successful or non-successful case, depending on his/her ability to pay back all the loans. A non-performing loan could be a learning experience (for both borrower and bankers) for the next loan. Therefore, they did not report non-performing loans in its traditional sense. Instead, they report non-performing borrowers, referring to those who could not pay back after a number of loans.

To test if the frequency counts of rational and judgmental approaches are different between Vietnamese and American sample, we integrated behaviors in Table 3 to create Table 4. We then calculate average frequency of each approach per banker and conducted a simple Chi-square test. The result shows that

Table 4: Chi-Square Test of the Decision Making Models between VN and US Bankers

	VN (15 respondents)	US (10 respondents)
Rational approach	**50**	**83**
Data Collection	46	43
Data Analysis	0	13
Decision Making	4	27
Judgmental approach	**129**	**29**
Data Collection	60	16
Data Analysis	38	5
Decision Making	31	8

* Note: Chi-square test for average individual's use of two approaches is significant (X^2 = 4.93, p<.05).

American bankers tended to use the rational approach more frequently, while Vietnamese bankers reported more frequent uses of judgmental approach (X^2 = 4.92, p<.05).

We have reported different patterns between American and Vietnamese bankers in collecting and analyzing data, and making loan decisions. Our American bankers used some combination of judgmental and rational models, with rational approach as the driver of their decision making process. Their personal judgment is used as a supplement to the rational processes, and only in rare cases becomes an important factor (e.g., when applicants were on the edge or too close to cut-off point). On the other hand, our Vietnamese bankers have no choice but to rely extensively on their personal judgments in making loan decisions. Their final reports may look rational with numbers and calculations, but the key factors behind all these are subjective and judgmental. In the end, these numbers and calculations are only "theoretical", "cosmetic", but helpful in making their reports look "rational and legitimate".

What emerges from our data is that with developed institutions, banks in the U.S. have choices of how rational they want their decision making processes. Bigger banks tend to have more standardized and impersonal processes than local, smaller banks. Therefore, bankers in local, smaller banks have more latitude to combine rational and judgmental approaches. In Vietnam, however, all these personal and organizational factors are suppressed by the under-developed institutions. It does not matter how big the banks are or how entrepreneurial the bankers are, they all have to rely extensively on judgmental approaches.

The current literature suggests that people use their heuristics and biases unconsciously. On the contrary, we observed our Vietnamese bankers using these biases deliberately. They were aware, to a large extent, of the dangers inherent their judgmental approaches. They just do not have other choices. They had to find ways to minimize their judgmental errors. Without a large, reliable database and sophisticated statistical models, how exactly did they do it?

5.2. Minimizing Judgmental Errors

While American bankers used judgment to some extent, the availability of macro data, firm data, and sophisticated analysis models helps minimize their judgmental errors. This rational approach appeared is a strategy to minimize judgmental errors. This alternative is simply not available for Vietnamese bankers. Being aware of the dangers of judgmental models, Vietnamese bankers developed their own distinctive response strategies. Two notable strategies - Controlling and Learning – emerged from our study. These strategies were not used as extensively and systematically by American banks. Table 5 summarizes key points of these two strategies.

Controlling Strategy. In the absence of market institutions, macro and firm data are not available, laws are not effectively enforced, and the professional agencies are in their nascent stages. In this situation, Vietnamese bankers were uncertain of the firm benevolence and capability as well as of the project-s' success probability. Regardless of how

Table 5: Strategies to Minimize Judgmental Errors

Strategies	Descriptions
Controlling	Look for controllable factors, e.g., collateral, "sure" customers, or borrowers' own money put in the project. Conservative evaluation of collateral values and projects' returns. Close monitoring of the projects' progress and the use of the loans. Select clients: existing clients on other services; reputed clients; partners of reputable organization (e.g., VCCI, MPDF).
Learning	Solicit information from unrelated sources. Look for consistency, not necessarily the means, to judge. Break a big loan into smaller ones. Experience with a loan is used as learning inputs for the next loans. Allow a finite (three) number of loans before reporting non-performing loans. Regular and extensive interactions with the owners/managers of borrowing firms. Consult clients on business and management.

much data they had and how experienced they were, their judgments were subject to serious errors. Thus, rather than focusing on predicting the success probability of the loans, Vietnamese bankers tended to focus on what they can control to make the loan successful, or to minimize the loss should the project fail.

First, collateral was strictly required for any private small business applicants. A common form of collateral is the applicants' real-estate assets, such as their houses or buildings. Collateral were then carefully checked for legal, liquid status and conservatively valued. Since property rights law in Vietnam is not clear, many residents do not have proper legal documents for their real estate assets. Requiring collateral effectively excludes many qualified borrowers. Nevertheless, collateral was the bankers' safety net and they would not trade it off for uncertain gains. The following two quotes from Vietnamese bankers illustrate our point:

"We have to get a hold of collateral. Normally their collateral are their real estate assets such as houses. It is very difficult to evaluate these houses' value. In addition, few houses have 'pink books' [legal document]."

"This borrower insisted on getting a loan, and wanted to use the imported goods [from the loan] as collateral. I asked him to use his house as collateral. He did not agree. I said: 'If you believe in your business, then we might believe in that too. If you don't, why should we'. So I refused to lend to him."

Second, some banks selected clients to approach who: 1) were existing clients of the banks on other services (account, money transfer, etc.); 2) were reputed businesses, such as those who won government or business association prizes (e.g., Red Star, Vietnamese high quality products); and 3) were partners of reputated organizations, such as Vietnam Chamber of Commerce and Industry (VCCI) and Mekong Private Sector Development Facilities (MPDF). While there was no guarantee that these firms would make the loans a success, one interviewee commented: "These firms have proven history". If firms had 'sure customers' for their proposed business plans, their chance of getting loans was improved considerably.

"There was a firm in Bat Trang [a handicraft village] who had orders from foreign customers. They were poor in many other management aspects, but we decided to help them."

(A state-owned bank manager)

Third, Vietnamese bankers often followed a close and expensive monitoring process. The bankers were supposed to regularly visit their clients (from every 10 days to every month), check on the progress of the projects as well as the use of the loans. Just take two examples of a close and expensive monitoring process that one bank applied for some of its private clients.

"We have now developed a two key system. The firm has one key for their inventory, and we have another. If they sell or do anything with the goods in the inventory, they will need both keys. Thus, we follow their business closely."

"I have to check all the receipts and ensure they fit with the loan applications. In one case, the loan was granted to the firm to import con-

struction steel. I visited the firm. The owner showed me the steel and said everything was on schedule. I checked closely the steel's import code, and it did not fit with that in the loan application. It turned out that he used our loan for other purposes."

The controlling strategy, by itself, has limitations. Banks could hold collateral, but they do not wish to become virtual 'pawnshops'. Neither do they have adequate resources to become too involved in lenders' day-to-day businesses by applying close monitoring processes. Similarly, selecting clients meant excluding the vast majority of potential clients. Applying this strategy means seriously limiting the number of loans to be granted to private firms. However, under high uncertainty and potential serious errors of subjective judgments, Vietnamese bankers would hold on to the controllability rather than success probability of a loan. They prefer acceptable loss to uncertain gain.

Learning Strategy. The second strategy is continuously learning about the clients and business projects which the loans were used for. Without a reliable and extensive database, bankers' judgments on a client and its business plan(s) were subjective to both 'small sample' and 'availability' biases. We observed a number of techniques being used by Vietnamese bankers to cope with this situation.

The first common procedure was to solicit information from unrelated sources. Any piece of sensitive information, such as firm collateral value, real businesses and owners, levels of honesty and integrity, was collected from at least three unrelated sources. The bankers did not study Granovetter's (1985) "strengths of weak ties" or Burt's (1990) "structural holes". However, they were aware that related sources often provide confounded information and the consistency among them did not have any value. In contrast, unrelated sources provided independent views of the firm. Therefore, if a firm got consistent evaluation or information from unrelated sources, the information was believed to be more reliable. On the other hand, if unrelated sources provide inconsistent information, bankers have more work to do. They either need to consult more sources if possible, or make their own judgment. If bankers could not get information at a satisfactory level of consistency, they returned to controlling strategy.

"I often have to look for information from different sources, such as firm owner's neighbor, the commune's government officials, tax officials, or customers and suppliers. If they [sources of information] know each other, I have to look for other sources."

(A joint stock bank's officer)

"We are developing some sort of guide book where we suggest common sources for each type of information our bankers should consult. In the book, we remind our bankers to look for unrelated sources of information."

(A joint stock bank's manager)

Another tactic was to break a big loan into smaller ones and grant one small, short-term loan at a time. During the first loan, for example, bankers interacted intensively with the firm to evaluate how well the firm managed the loan and kept their promise. Experience on each loan was used as learning inputs for the

next loan. This was also a common practice that banks did not report non-performing loan right away if the first and second loans were overdue.

"We would investigate if these loans were overdue due to external factors or due to the owners' lack of cooperation [largely judgmental]. If they were due to external factors, we usually extend the due date or grant another loan to help".

However, to avoid escalation of commitment, banks often set a limit of three loans in a row. If the borrower could not meet the due date after the third loan, banks would take some legal action (e.g., selling collateral, impose a fine) and report it as non-performing loan. This first hand experience was valuable learning, but one interviewee noted: "Usually the first and second loan was no problem. But just when we felt comfortable, some of the borrowers might become less cooperative".

The bankers also reported extensive interactions with firm owners/ managers before and during the loan period. These interactions, formally and informally, helped them learn more about the firm business and people. During these interactions, bankers and managers developed personal relationships, shared ideas and information, and some became trusted friends. Bankers often advised the firm owner(s)/managers on how to make good business plans or to apply best management practices. Several interviewees recognized that they did not only look for qualified clients, but also developed them.

This was largely a 'learning by lending' process, rather than 'learning then lending' as commonly seen in the U.S. A downside of this process is that learning was strictly embedded in individual or small team of bankers, making it hard to share even within a single bank.

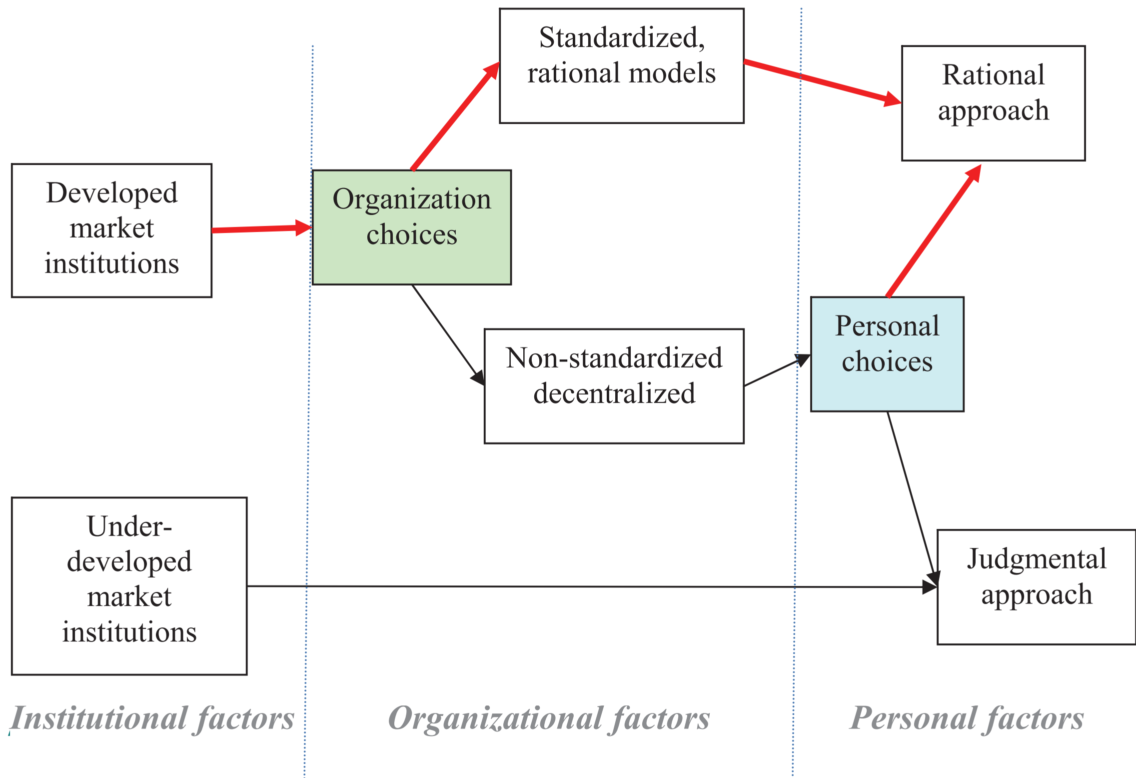
The Controlling and Learning strategies we have reported by no means can comprehensively help bankers avoid bias errors. However, they demonstrate the bankers' deliberate use of heuristics and biases in making loan decision, and their awareness of potential errors. In the Vietnamese context, these strategies help reduce errors, allowing bankers to make loan decisions under uncertainty with controllable loss.

5.3. Generalization

Figure 1 presents the multi-level model of rational versus judgmental decision making that has emerged from our study. The model includes three groups of factors that influence a manager's choice of rational or judgmental model: institutional, organizational, and personal. It proposes that developed institutions are preconditions for organizational choices (standardized, rational procedure or more non-standardized, decentralized procedure), and organization's decentralization policies are pre-conditions for individual choices of decision making models. In the absence of developed market institutions, organizations and individuals have no choice but rely extensively on judgmental model. Thus, heuristics and biases are consciously used, absent what are often thought to be preconditions for rational approaches.

We develop two propositions below, accenting the linkages between: 1) institutional development and the choice of decision making models; and 2) institutional development and the effectiveness of the decision

Figure 1: Theoretical Model of Decision Making



making models.

Institutional development and the choice of decision making models. Previous studies have proposed that the choices of judgmental decision making models are influenced by either individual cognitive processes (Busenitz and Barney, 1997; Keh et al., 2002; Simon et al., 2000; Sarasvathy, 2001; 2004) or by organizational factors (McNamara and Bromiley, 1997). Our model suggests another set of factors – institutional development. As our data indicated, in the absence of market institutions, firms are operating under high uncertainty, rather than risk (Knight, 1957). With the lack of standardization, stability, and reasonably large number of observations, managers could not apply highly rational models. They are forced to use their judgments in making decisions. As the institutions develop, organizations and individual managers have more choices in using rational models. Therefore, we propose:

Proposition 1: *In the early stage of transition economies, the under-development of market institutions overpowers organizational and personal preferences for rational decision making models, and forces them to use heuristics and biases extensively. In the later stages, an accumulation of macro and firm data, coupled with more certain regulatory environment improves the possibility of using rational models for firms and individual managers.*

Decision making effectiveness.

Organizational scholars tended to believe that rational models often are time-consuming and expensive (Busenitz and Barney, 1997; Keh et al., 2002; Simon et al., 2000; Simon, 1979; Sarasvathy, 2001; 2004). In contrast, judgmental models are believed to be "highly economical and usually effective" (Tversky and Kahneman, 1974, p.1131). This could be true from a societal point of view, over a long period of time. From an organizational point of view, however, our data suggest a different result. When developed institutions are already in place, rational models are actually much more economical, while heuristics and judgmental approaches are more expensive and time consuming. In contrast, judgmental approaches are more appropriate under uncertainty simply because they are the only choice managers have. As Tversky and Kahneman (1974) suggested, heuristics and biases contained potential serious systemic errors. Thus, to be "highly economical and usually effective", they need to be used together with controlling and learning strategies. Therefore, we proposed:

Proposition 2: Rational models are more effective when the country's market institutions are developed. In contrast, conscious judgmental models, accompanied by controlling and learning strategies, are more effective in minimizing personal biases' errors when the country's market institutions are under-developed.

6. Discussions and conclusion

In this paper we addressed the question of how a country's institutional development influences managers' decision making processes. We conducted interviews with Vietnamese and American bankers on how they made loan decisions to small businesses, who are new to the banks. Our result suggests that the development of market institutions decides how much choice organizations and individuals have in their decision making approaches. Specifically, developed institutions are preconditions for organizational and individual choices in their decision making models. We also found that – in the absence of rational models – managers could focus on controllable factors (controlling strategy) and/or learning processes (learning strategy) to minimize their judgments' errors. Our research contributes to the current literature in several aspects.

First, previous studies discussed the use of rational versus judgmental decision making model largely as individual or organizational choices (Busenitz and Barney, 1997; Keh et al., 2002; Simon et al., 2000; Simon, 1979; Sarasvathy, 2001; 2004; McNamara and Bromiley, 1997; Nonaka and Takeuchi, 2011), assuming a presence of developed institutions. These studies argue that the choice of more judgmental models (biases and heuristics) is largely unconscious, especially at the individual level (Tversky and Kahneman, 1974). Our result suggests that these organizations' and individuals' choices only exist in the presence of developed market institutions. In the absence of developed institutions, individuals and organizations have no choice but to use their best judgments in making decisions. Here, heuristics and biases are used consciously and intentionally. This new category of decision making style – conscious use of

biases – deserves more attention from organizational researchers.

Second, the current literature on rational versus judgmental approaches focuses mainly on the analysis and decision making stages, leaving the data collection stage unexplored. Our study suggests the use of decision making models is also reflected in different patterns of data collection driven by data availability. People with more rational approach tend to collect public, objective, verifiable data with large samples. In contrast, people with more judgmental approach would tend to collect private information and others' judgments, through their own information networks. In our case, the availability and perceived credibility of the data appeared to be more important than personal style in choosing which data sources to go to.

Third, organizational and psychological scholars tended to believe that a judgmental model, though dangerous, is more economical and effective, while rational model is more expensive and time-consuming. This could be true if we stand at the societal level of analysis, over a long period of time. However, if we approach from organizational or individual level, with a specific time, our result suggests that the opposite could be true. With developed institutions in place, our American bankers believed that rational models were actually faster and more economical than conscious judgmental models. The key benefit of judgmental models, however, is the adaptive benefit that helps organizations survive under uncertainty. Without necessary data, our Vietnamese bankers would not be able to make any loan decision if they rely extensively on rational models. Their heuristics and biases allow them to make loan decisions, gather and store the data of these loan performances for future use of rational models. In this vein, their judgments not only are supplement or substitute for rational models. They also facilitate the development of rational models.

Finally, our research uncovers two strategies to minimize judgmental errors under uncertainty. In the current literature, using more rational approach appears to be the only way to avoid or to minimize judgmental errors. This advice would be of limited utility where a rational approach is not possible. Our Vietnamese bankers consciously used judgments with controlling and learning strategies to minimize the errors. While these strategies by no mean are ideal, they appear to be helpful for our Vietnamese bankers.

Our research offers several managerial implications. As we have stated, in the absence of developed market institutions, a rational models of decision making is of limited utilities. Thus, instead of forcefully learning about risk calculation and management techniques, bankers in Vietnam should learn to develop information network, qualitative data collection and analysis skills, and controlling and learning strategies. Over time, data on these judgment-based loans should be gathered, categorized, and standardized for future application of rational models. Bankers in developed countries, on the other hand, also make decisions under uncertainty when they lend to borrowers in new industries. In these cases, they may not be able to rely extensively on rational models, but to use more of their

judgments. The controlling and learning strategies learned from Vietnamese bankers could be helpful in minimizing their judgmental errors.

For policy makers in Vietnam and other transition economies, business decisions can be made without strong institutions, but this may carry important consequences. Judgmental decisions are slow, embedded, and subject to serious errors. The costly process of gaining new business partners implies a slow market expansion and growth for business firms.

The importance of judgmental models and their potential to substitute for rational models has particular relevance for organizations, especially those in transition economies. In these economies, firms face extreme uncertainty. This limits their ability to rationally collect, analyze data and make decisions. These firms are, therefore, forced to rely extensively on their judgments as a substitute for rational calculations. Heuristics and biases are used, consciously and intentionally, to facilitate transactions between firms, to serve as a firms' interim solution in the transition from a planned system to a market economy, and to create initial data for collection, classification, and standardization for future use of rational models. In time, firms in transition economies may learn to be more rational. If they do, they will do so based on the lessons from their current judgmental business decisions. In our conflict-riddled world, the presence of heuristics and biases is good news indeed.

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