The Impact of Secured Transactions Reform on Corruption in Lending: Incorporating Pillars of UCC Article 9 to Bosnia and Herzegovina

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ABSTRACT

Torn by war, Bosnia and Herzegovina (BiH) struggles with economic development because of prevalence of corruption in all aspects of society. One aspect of corruption that has not been well documented, but is evident, is private corruption in lending. For example, banks are receiving bribes by businesses in order to receive loans. This is just one of many ways they engage in private corruption and other have been documented as well. Empirical evidence suggests that, *inter alia*, lack of effective secured transactions law is major reason for corruption in lending. Analysis of current BiH laws has revealed a serious notion of discouraging the use of movables as devices for securing loans. On the other hand, the United States Uniform Commercial Code Article 9 (UCC 9) is considered the most developed secured transactions act in the world. Therefore, the main purpose of this research is to estimate what effect would incorporation of elements of UCC 9 have on private corruption in lending in BiH. Effect was estimated by using game theory. Namely, series of sequential move games were played and then analyzed. Results of these games indicate that incorporation of elements from UCC 9 would have detrimental effect on private corruption in BiH. However, while these results are encouraging, the possible reform should be approached with care, otherwise results could be counterproductive.

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TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

LIST OF ABBREVIATIONS

APG	Association for Protection of Guarantors
ASBIH	Agency for Statistics of Bosnia and Herzegovina
BiH	Bosnia and Herzegovina
CBBIH	Central Bank of Bosnia and Herzegovina
KM	Convertible Mark (National currency of BiH)
LEP	Law on Executive Procedure
LOL	Law on Leasing
LOR	Law on Obligatory Relationships
LRSIMS	Law on Registered Security Interests in Movables and Membership Shares
PMSI	Purchase money security interest
RBE	Registry of Business Entities of Bosnia and Herzegovina
ST	Secured Transactions
TI BiH	Transparency International Bosnia and Herzegovina
UN	United Nations
UCC 9	Article 9 of Uniform Commercial Code

INTRODUCTION

"You were in jail?"

"Only for a few days. Bribery."

"Bribery. Who did you bribe?"

"No, the problem was I hadn't bribed anyone. They were very upset."

(Fischer, 1992, p. 46)

Bosnia and Herzegovina (BiH) is certainly in the beginning stages of establishing state identity and transitioning to market economy. Ravaged by devastating war in 1990s that was stopped by international intervention in 1995, BiH still seems to struggle with major issues. But the issue that seems to resonate with the majority of its citizens unanimously, is widespread corruption in most aspects of society (Dlouhy, 1999, p. 98). The latest data collected by Delegation of European Union for Fight against Corruption reveals that every third citizen of Bosnia and Herzegovina considers corruption to be the greatest issue in this young economy (Bljesak.info, 2011).

Devine and Mathisen (2005, p. 8) indicate that Bosnia and Herzegovina as a part of Yugoslavia had already seen its share of corruptive activities prior to war. They observed that corruption was a part of the local culture, where citizens would often bribe officials in order to speed up bureaucracy (2005, p. 8). The prevalence of corruption in post-war BiH was first observed in July 1997 by Robin Cook, who at that time was Foreign Secretary of United Kingdom, when he asserted that the elected government had been avoiding regulating customs and shutting down black markets (Chandler, 2002, p. 103 – 104). Peter Sorensen, the European Union Special Representative to BiH, stated that corruption is negatively affecting economic development and rule of law in this young economy (Bitno.ba, 2011). A report by the US General Accounting Office in July of 2000 stated that crime and corruption had become endemic to all aspects of BiH society (Chandler, 2002: 105). Dlouhy (1999, p. 103)

identified three major factors as the foundations of deep roots of corruption in Bosnia and Herzegovina: nationalist parties that have secured political power, long term exposition to extreme regimes and lack of rule of law and judicial system. Transparency International (TI BiH) constantly places Bosnia and Herzegovina on low levels (between 91st to 94th places out of 182 ranked countries) and explicitly states that the country has not made any progress against corruption in public and private sector in last four years (TI BiH, 2011). Most prominent sectors that are plagued by corruption in Bosnia and Herzegovina are finance and bank, tax and government sector (Singer, 2000, p. 33).

The war completely destroyed the judicial system in Bosnia and Herzegovina and that the judges that remained are deeply entrenched in communist mindset (Dloughy, 1999, p. 101). Most of the vacant positions were filled either by inexperienced judges or judges working closely with the criminal underground (Dloughy, 1999, p. 101). In period between 1998 and 2000, UN approved Judicial System Assessment Program ran a research that pointed that judges were often 'not independent' (Devine and Mathisen, 2005, p. 22). The same UN program noted that judges tend to work for personal gain (Devine and Mathisen, 2005, p. 23). TI BiH identified judicial system as the fourth most corrupt institution in BiH (Devine and Mathisen, 2005, p. 23). Bisogno and Chong (2002, p. 64) state that poverty rate in BiH was 27.3 percent with an upward trend and all things considered this is a rather modest approximation.

Singer defines Bosnian economy as a combination of the worst characteristics of free market and dark legacy of communism (2000, p. 33). He argues that Bosnia and Herzegovina cannot be a healthy economy simply because there is no 'true banking system' and that banks that do operate still use outdated methods and have a monopoly on financial transfers (Singer, 2000, p. 33).

However, BiH established the Central Bank of BiH (CBBIH) in 1997 (Law on the Central Bank of BiH, 1997). In May 2012, governor of CBBIH, Kemal Kozarić stated that currently there are 29 commercial banks (21 international bank) in Bosnia and five of those banks control 70 percent of the market (Bljesak.info, 2012a). Barth et al. (2009, p. 366 and p. 386) concluded that corruption in bank lending is correlated with high market concentration. Kozarić stated that the banking sector and national currency are stable because of the existence of currency board[1] (Bljesak.info, 2012a). Powers of the Central Bank are severely limited since Bosnian national currency Convertible Mark (KM) is fixed (pegged) to the value of Euro. Coskun and Ilgun (2009, p. 57) indicate that central bank does not have authority with regards to currency. They continue that since 1997 there has been a 769 percent increase in loan segment of banks business capping at 14,5 billion KM (2009, p. 60).

Coskun and Ilgun (2009, p.59) state that the financial system of BiH is dominated by banks and nonbank sector is almost non-existent in the context of providing the financial services and does not imply that other possibilities do not exist. This is further supported by findings of the Central Bank of BiH (CBBIH) which state that leasing and factoring are young industries in BiH that are just starting to take roots (2012). For example, out of eight leasing companies currently operating in BiH, seven are operated by banks which means that majority of income from leasing contract goes to banks (CBBIH, 2012). Therefore, the importance of bank sector for BiH economy as a source of external finance can definitely be noted.

On the other hand there is an increased trend of inability to repay loans, especially where a 'guaranty' has been used as a security device (Capital.ba, 2010). One particularity of BiH system is that 'guarantors' are jointly and severally liable for the obligations of debtors (Association for Protection of Guarantors, 2012, p. 1). According to Aida Cikić, a

[1] Governor used the term here to describe central bank, as defined in the Law on the Central Bank of BiH, Article 1.

spokeswoman in Bosnian parliament, there are more than 150 thousands defrauded guarantors in BiH that do not enjoy any legal protection (Bljesak.info, 2012b). Since regulation that would protect guarantors does not exist it is unclear how can they protect themselves against abuse (APG, 2012, p. 1 and p. 3). Considering that more and more people are unable to repay loans this will certainly have a negative effect on income of banks in BiH. This is reflected in the fact that banks in BiH have reported loss of 124 million KM in 2011 (Biznis.ba, 2012). 'Guaranty' is used a major security device for loans in BiH (APG, 2012, p.4). On the other hand, it is unclear how banks should secure the loans they are extending, since Law on Registered Security Interests in Movables and Membership Shares (LRSIMS) in BiH discourages the use of movables to secure loans and real property is considered in limited supply since population is poor. Current laws that 'control' and 'frame' the current lending sector in BiH are inadequate for current market environment. All these statements indicate that a 'gap in the legal system' that prevents market from developing exists. In the absence of a developed market, banks (who are businesses with profit maximization being their central principle) are trying to fill this gap by engaging in corruption. Specifically, since current legal framework with special regards to secured transactions of BiH is lacking, in absence of alternative strategies banks are engaging in corruption with third parties, either as 'corruptee' or 'corrupter'.

A situation where lending sector is growing (Coskun and Ilgun, 2009, p. 62) and population is increasingly poorer, seems like an unity of opposites. Barth et al. argue that impartial courts and enforcement have a tendency to reduce corruption in the bank lending sector (2009, p. 386). One important tool for fighting corruption would be incorporation, in some way or another, the principles from the US Article 9 of Uniform Commercial Code (UCC 9). Since bank lending is positively correlated with economic growth (Coskun and

Ilgun, 2009, p.62), BiH should focus on improving that segment of the market in order to reduce the gap and principles behind UCC 9 could be an important tool for that

The aim of this research is to estimate the effects of a possible reform of the Secured Transactions in BiH, based on principles from UCC 9, on corruption in lending using series of sequential move games and analyzing responses of different agents by designing incentives. Specifically, the prevalence of corruption in credit sector is indicative of market trying to calibrate itself and secured transactions reform would reduce this gap by providing the market players with alternative and more economically efficient strategies than engaging in corruption in order to gain access to credits and financing.

In the first chapter legal framework of BiH will be analyzed. By doing this legal limits of the current credit market in BiH will be identified. This is of crucial importance to establish the conditions that limit possible strategies for the banks to play. The chapter will continue by detailing the solutions and building blocks of UCC 9 in order to establish possible 'limit breaks' that could enable liberation of the market and constrains of banks' strategies. In second Chapter importance of credits for developing economies will be analyzed. This chapter will provide for economic incentives of banks to engage in corruptive behavior as well as the definition of corruption in current economic literature will be detailed. Third Chapter will provide for the game theory model established by the information from first and second Chapters as well as series of sequential games between different agents on the market and analysis of important findings.

CHAPTER 1 – LEGAL FRAMEWORK

1.1 Current Secured Transactions Laws in Bosnia and Herzegovina

Current laws in BiH do not recognize unitary term of 'secured transactions' as it is generally accepted, especially in UCC 9. However, the term 'secured transactions' will be used to describe general umbrella of laws that will be identified in the third paragraph. The importance of analysis of current regulatory framework of BiH in the field of secured transactions lies in the necessity of determining the framework under which the current market operates. These laws directly influence what strategies are available, first to banks and consequently to other market players. Since banks' corruptive behavior can be explained by the available strategies, it can be deduced that choice of engaging in corruption is purely rational. Current limitations of economic theory assume that market players operate under bound rationality. By establishing that corruptive behavior is affected by the strategies available to market players as an extension of regulatory framework, a bridge has been built that will enable the economic analysis of strategies and strategy-defining framework by extension.

The laws in force are the frames of the market. There are several laws in BiH that encompass the area of legislature that could be put under the general umbrella of secured transactions law; in other words – contrary to the US – BiH has a non-systematized law of secured transactions, with fragments scattered in more pieces of legislation . Before engaging into discussion about the specifics of these laws, the issue of terminology must be addressed first. Specifically, the word *'pledge'* in common law terminology represents a secured transaction which is created by transfer of possession on the collateral either to the creditor or to a third party. However, in Croatian, Bosnian and Serbian (official languages of BiH) word *'zalog'* is equal to what UCC 9 knows as *'security interest'* in a broad sense and *'pledge'* is strictly speaking named as *'ručna* zaloga'. What might cause confusion is that in practice

those terms are used inconsistently and there is no agreement on how to translate these terms to English. For the purpose of consistency and with special regard to the security interest under UCC 9, word *'zalog'* will be translated as *'security interest'*.

Current laws in BiH that deal with secured transactions are: Law on Registered Security Interests in Movables and Membership Shares (LRSIMS), Law on Relations of Legal Ownership and Basic Principles, Subject and Bearers of the Right of Ownership (LRLO), Law on Executive Procedure (LEP) , Law on Obligatory Relationships (LOR) and Law on Leasing (LOL). On a special note, analysis of these laws has uncovered inconsistency and overleap between these laws and application is certain to cause severe discomfort to judges, lawyers and especially general public and having a single act in vein of UCC 9 could reduce this 'distress' as will be discussed in section 2.1.

In brief terms, the contents of these acts are as follows. First, the law that is of utmost importance to the discussion at hand is the LRSIMS. This law will be focus of analysis of current BiH secured transactions legislature. LRLO mostly defines ownership and rights on personal and real property and addresses the issue of using real property in mortgage transactions. LEP deals with situations when assets are repossessed by government officials and provides in Article 74 what happens with rights of secured creditors. LOR defines in what way contracting parties must behave, or more specifically what the rights of contractual parties with regards to each other are. It should be noted that usage of receivables or similar intangibles as security devices is not explicitly forbidden by any of the current laws. However, an analysis of BiH insolvency laws determines that creditor enjoys no protection if "unusual security devices" were used as collaterals if the bankruptcy trustee determines so (Marić and Dizdarević, 2011: 75).

According to the current BiH legislation, collaterals can be used in loan contracts or primary securities contracts in order to secure receivables of domestic and international

natural and legal persons (Article 2 LRSIMS, 2002). Article 3, paragraph 1 of LRSIMS defines that security interest can be gained in (1) movables and (2) membership shares of a legal person (2002). Article 4, paragraph 1 of the same law defines that movables that can be used as collateral are those that have specifically identifiable characteristics, excluding boats and planes (LRSIMS, 2002). However, Article 66 LRLO expands that security interest can be gained on rights (1998). In the Article 4 of the LRSIMS concept of movables is expanded to cover both individual and groups of assets (2002). Paragraph 2 of the same article defines that movables that the potential debtor is not currently owner of can be used as collateral, but security interest in collateral does not attach until debtor becomes the owner (2002).

1.1.1 Attachment and perfection or registration or what?

There are two phases in process of creation of a security interest – attachment, which UCC 9 recognizes as making the contract and perfection, which according to UCC 9 in most cases is done by filing a financing statement. These concepts will further be built upon in section 1.2 of this paper. However, it is crucial to identify these, since LRSIMS, as it is suggested in the language of the law, considered making this differentiation. This is best reflected in Article 10 of LRSIMS which makes a clear distinction between terms *'upisana zaloga'* and *'registrirana zaloga'*. In the absence of a literal translation, these words mean *'attachment'* and *'perfection'*. In its current 2002 revision, the difference between attachment and perfection compared to registration is not clear and it is rather confusing to laymen. Since LRSIMS is going to be analyzed through the sphere of UCC 9, terms 'attachment' and 'perfection' will be used instead of registration.

When it comes to attachment of the security interest, as it is understood by UCC 9, the current law comes to its first inconsistency. First of all, creditor and debtor must have a contract identifying the movable with a detailed description and confirming that debtor allows that security interest will be attached in favor of creditor (Article 7 LRSIMS, 2002). However,

the contract is not enforceable and security interest does not attach immediately as provided in UCC 9. Parties must perfect the security interest in the county registry (Article 10 LRSIMS, 2002). Paragraph 1, Article 10 of LRSIMS (2002) provides that security interest does not attach until the day of entry in the local registry court, i.e. date of perfection as it is understood by UCC 9. While the requirement of registration of rights in a movable certainly is a right move against the existence of secret rights in assets, this would imply that attachment and perfection (in sense UCC 9 provides) occur at the same time. It is not clear why is it necessary to disallow immediate attachment of security interest. According to the same provision with addition of Article 9 of the same law, only creditors can do this (2002). Articles 36 to 48 deal with this registry system and don't make it explicitly clear in what way the information is being recorded, collected and then presented to general public. This complicated process of attachment and perfection of security interest may cause severe confusion if creditor wants to repossess the collateral in case of debtor's default.

Person providing the movable used as collateral does not have to be the same person enjoying the loan given by the creditor (Article 9 LRSIMS, 2002). While the similar approach is certainly available in other legal systems, banks have recognized this particular provision in a way that will be described in section 1.1.3 of this paper, in order to circumvent limitations of the market.

For the purpose of priority – the day when the local registry court received formal request for registering security interest will be considered the day of attachment (Paragraph 3, Article 10 LRSIMS, 2002). Article 11 of LRSIMS provides for a system of priority based on the date of the entry in to the local registry (i.e., first in time, first in rights) (2002). When observing these legal provisions from the point of view of a bank, they do not have any incentive to allow for usage of movables since their rights are not clearly defined. The dates of the loan contracts and collateral agreements do not play a role.

In order to further complicate this bureaucratic procedure, according to Article 17 of the same law, if movable that has been used as collateral ceases to exist, as a result of being merged to another movable of the debtor - in order to gain security interest again, creditor together with debtor, or court asked by creditor and debtor must send an official requirement to local registry court to record this 'new' security interest (2002). If personal property becomes a fixture on a real property, creditor must ask for mortgage on the real property in amount of value of the movable at the moment of it becoming a fixture (Article 18 LRSIMS, 2002). It is not clear what happens if value of collateral had not been recorded at the moment when it became a fixture, and LRSIMS does not prevent debtors in attaching the collateral to real property or require them to inform the creditors.

1.1.2 Abandoned 'floating lien'

Concept of a floating security (in the US known as floating lien or the tandem of fixed and floating charges in England) is a rather interesting approach to the way security interest in an asset can be gained. Basically, this interest 'floats' over assets of debtor and does not prevent every-day operations of the debtor. Rights of the creditor are protected even without knowing what concrete specific assets the collateral is made of during the existence of the security. This concept will be further built upon in Chapter 1.2 where UCC 9 will be analyzed.

Analysis of current BiH legislature indicates that at least at some period, transplantation of floating lien was considered. According to current BiH laws security interest can be gained on groups of movables, such as machinery and inventory, which make up one economic group, but they must be individually recorded on a list (Article 4 LRSIMS, 2002). This list becomes a crucial part of the loan contract. However, it is implied that security interest is gained over the assets as whole.

If this was actually the case, a lot of businesses would be able to use this somewhat conceptually similar notion and banks would be protected. Although, before accepting this concept in BiH, banks would have to invest in learning how to 'police' debtor's affairs in order to secure their interests. In reality, Article 34 of LRSIMS completely eliminates any incentive for banks or any creditors to allow for such collateral. According to this provision, if a sale of groups of assets from Article 4 is considered, court designed officials must write down every individual asset irrespective to the already existing list. In continuation, Article 34 provides this as of that moment debtor is unable to 'remove' these assets at all, effectively forbidding the sale. This 'prohibition' must be recorded in the registry (Article 34 LRSIMS, 2002). Considering that this effectively negates the benefits of the floating lien, it would be easier to avoid the additional complication especially with already identified issue of attachment of security interest. However, the language of Article 34 suggests that originally this was not intention of the drafters. Rather, it seems that during the drafting process they have abandoned the idea of a 'floating lien' and omitted paragraphs of Article 34.

1.1.3 Issue of guaranty vs. suretyship in BiH and does it really matter

So far, the analysis of the legal provisions their language have revealed a note of discouragement to use movables as collateral. Complex bureaucracy and uncertainty of protection for secured creditors, clearly disable, or at least make more expensive and risky, most of the strategies available to banks. Furthermore, 21 out of 29 banks currently operating BiH are international banks coming mostly from developed economies (Coskun and Ilgun, 2009, p. 62). Most of these economies have clear regulations with regards to use of collaterals. Therefore, considering that banks are rational market players that engage in competition with each other they must find a solution in order to ensure functioning of the market.

One specific corollary issue present in BiH with regards to secured transactions financing practices is the problem of 'guaranty.' As visible from the previous paragraph ways how to secure a loan are rather limited and as a result of that banks are turning to those solutions that are not strictly clear in the eyes of the law like suretyship and guaranty. Guaranty and suretyship in general are considered rather weak security devices and are mostly used as an additional layer of protection. Clarkson et al. (2006, p. 574) suggest that under the US law, guaranty is "(…) a promise to answer for the debt or default of another." They isolate that major difference between suretyship and guaranty is that surety bears *primary* liability, whereas in guaranty guarantor is only *secondarily* liable (2006, p. 574). Primary liability in suretyship is that "the creditor can demand payment from the surety from the moment that the debt is due (Clarkson et al., 2006, p.574). Furthermore, what Clarkson et al. identify as primary liability is more commonly known as joint and several liability. Suretyship and guaranty are therefore crucially different in their function. Although word *"žirant"* or *"jamac"* are literally translated as *"guarantor"* in English, functionally (at least as they are now used) they mean *"surety"*.

As already mentioned, person providing the security for a loan does not have to be the same person enjoying the loan given by the creditor (Article 9 LRSIMS, 2002) and nothing in the law prevents unrestricted resort to sureties. Banks in BiH use so called 'split' contracts, where separate contracts are signed by the creditor and debtor and by creditor and surety (APG, 2010, p. 1). And while the person acting as surety actually thinks they are signing a contract where their rights are protected, in reality they become jointly and severally liable for the obligations of the debtor (APG, 2010, p. 1). Banks have been observed witholding suretyship contracts from sureties, meaning that they never receive the copy of the contract they signed (APG, 2010, p. 2).

Considering that people in Bosnia do not have a lot of experience in dealing with this particular issue, even if accurate definitions existed people still do not know their basic rights (for example, that they can limit the amount or duration of suretyship and that they can ask for reimbursment from debtor). APG explicitely claim that banks operating in BiH engage in corruptive practices with individuals and companies whose only purpose is to find further victims for these types of contracts(2010, p. 3). They continue by stating that in most cases victims of this kind of behavior are employees of companies that engage in such behavior by banks (2010, p.3). And in these cases, 'split' contracts provide that employees salaries are automatically 'leaned on' - i.e. missed loan payments are taken directly from the account of the employee when they receive salary (APG, 2010, p.3). However, before accusing banks of anything it should be denoted that current laws seem to severely limit the operating area for banks as analyzed in previous paragraphs. Assuming banks are rational market players that need to engage into competition and earn market rents, then banks have economic incentives to engage in such behavior. If strictly observing the function of described behavior, it is reminiscent of a situation where businesses are using receievables as collateral. Since the salary of an employee is considered a basic right that has to be fullfiled by employer, due to lack of alternative solutions, banks are 'tapping' into this area by mitigating the risk of borrower's default to surety in order to not being forced to exit the market.

1.2 Unyielding Pillars of Uniform Commercial Code Article 9

It is important to analyze the solutions to the issue of using movables as collateral offered by the US approach with regards to developing economies, since Article 9 of the Uniform Commercial Code of the United States (UCC 9) is often considered the most developed secured transactions act in the world. UCC 9 is the brainchild of two important U.S. legal scholars – Grant Gilmore and Allison Dunham (Warren and Walt, 2007, p. 19). In their intent to sort out historical and categorical mess of laws that were dealing with security

devices, Gilmore and Dunham noticed that there are similarities between different kinds of financing transactions and therefore chose to create a unified code that would cover all secured transactions, but would provide different rules for different types of transactions (Warren and Walt, 2007, p. 19). As the essence of this code, Gilmore and Dunham envisioned a functional approach (Warren and Walt, 2007, p. 19). Today, it is generally accepted that Article 9 brought a major evolution of the US laws on secured transactions and has served as a template for many other systems (Warren and Walt, 2007, p. 20). This short analysis of some of the pillars of UCC 9 will provide evidence to point out the economic factor that this type of solution will provide incentives for banks accepting the use of movables as security devices and as a consequence of this transaction costs will be reduced. By providing for a clear system of security devices and anticipation of future advances in doing business, solutions of Article 9 could de-incentivize market players in BiH to engage in corruption.

So, what is it that makes UCC 9 so unique compared to other legal systems? Tajti (2002, p. 95) identifies UCC 9 as "repository of many efficient credit-enhancing mechanisms" and as a system in itself. He considers that transition economies - when faced with a secured transactions reform, tend to face difficulties in implementation (2002, p. 94). The reason for this, according to Tajti is, *inter alia*, the prevalence of system-oriented thinking (2002, p. 94). And considering his identification of UCC 9 this approach to their potential reform would offer a bridge between two fundamentally different systems (Tajti, 2002, p. 95). Fleisig and de la Pena (2003, p. 21) identify four key elements that legal reform of secured transactions in transition economies should have: creation (attachment), priority, publicity (registration) and enforcement. The language of their proposal suggests that they have based this analysis on UCC 9. Coogan (1959, p. 845) goes on to comment that greatest contribution of UCC 9 is blurring the lines between different security devices used in different financial transactions

and highlighting the perseverance of points on those lines that serve distinguishing the functions as originally intended by Gilmore and Dunham.

While the current BiH legislature offers a clear definition of collaterals as already discussed, UCC 9 opts for a broader, seemingly limitless, approach. The umbrella definitions of different collateral devices under UCC 9 are covered by § 9-102(a) (12), § 9-102(a) (34), § 9-102(a) (42), § 9-102(a) (44) and § 9-102(a) (48), *inter alia,* and entirety of § 9-102 provides for various definitions used in code (UCC 9, 2003). Collateral is generally defined as personal property or fixtures that has security interest attached and may be of tangible or intangible nature (UCC § 9-102(a) (12), 2003). For example, § 9-102(a) (44) defines goods as "all things movable when a security interest attaches." This approach exemplifies the notions of Gilmore and Dunham of having functionality to provide for ever-evolving economy and devices that may be created in this evolutionary process. It could be said that this system is more action-orientated or active with regards to the economy and society in general, rather than reaction-orientated or reactive. If legal system is undeveloped, such as BiH is, it is clear that having this evolutionary system would significantly increase speed of legal process instead of reacting on every new idea in the society by stopping and determining the best course of action.

1.2.1 Interplay of attachment and perfection

Another significant difference in these two systems is the already mentioned issue of terminology with 'security interest'. As already mentioned current law in BiH that deals with collaterals on personal property LRSIMS does not provide for definition of 'security interest'. The definition provided in UCC § 1-201(b) (35) (2003) is crucial for 'enabling' the functional approach to the collateral issue, since it enables courts to analyze what was the intention of parties rather than just applying the law to collaterals provided by the system as seen in BiH legislature. Security interest is defined in UCC Article 1 and is used for entirety of UCC

opposed to just using it in context of collaterals and definition is following: "(…) interest in personal property or fixtures which secures payment or performance of an obligation (UCC § 1-201(b) (35), 2003)." This definition is crucial in the context of attachment of security interest.

Warren and Walt argue that creation of security interest is rather easy under current UCC revision (2007, p. 22). UCC § 9-203(a) provides for the moment of attachment of security interest to a collateral used for transaction "(…) when it becomes enforceable against the debtor with respect to the collateral (2003)." Black's Law (2009) defines filing as "a particular document (…) in the file of a court clerk (…)." While this definition is rather broad, filing under UCC 9 can easily be classified as sending of financing statement or form to the authority provided by UCC 9 in order to perfect. Weiler suggests that in most cases location of filing is the office of the Secretary of State and rarely county clerk's office (2006, chap. 3). Clear establishment of a time frame when attachment occurs can already be noticed, compared to the confusion of current BiH legislature. Coogan identifies that debtor has to have rights in the collateral in order to transfer them to a secured party, written agreement has to exist, value has to be assigned by the secured creditor and public notice has to be given in order to obtain protection of the secured creditor in the sense of enforceability (1959, p. 847-848). UCC § 9-203 (b) provides for additional conditions among those named by Coogan that amount to description of collateral and provisions on use of securities (2003). Going further with the notion of an active rather than reactive system, Warren and Walt suggest that UCC Article 9 recognizes the evolution of how business is done, especially with regards to increasing globalization of the markets (2007, p. 22). This is best exemplified by them noting that term "writing" has been replaced by the term "recording" in the relevant provisions of UCC 9 (2007, p. 22). Comparing this with Coogan's identification of need of existence of a written agreement in 1959, the evolution of UCC with regards to technological change can

clearly be established. Coogan further noted that this agreement needs to be signed (1959, p. 848), whereas current revision provides that it needs to be authenticated enabling the use of technological means of identification, such as an electronic signature (Warren and Walt, 2007, p. 23).

It is rather clear that this provides additional flexibility to UCC 9. In a recent US state case *O & G Leasing, LLC, et.al. v. First Security Bank* (2011) plaintiff filed for protection against defendant in a Chapter 11 bankruptcy situation and one of venues of defense was a claim that security interest did not attach. Specifically, defendant argued that security agreement did not provide for detailed description of collateral and thus no attachment occurred (*O & G Leasing, LLC, et al. v. First Security Bank*, 2011). Weiler (2006, chap. 3, para. 2) suggests that ordinarily if detailed description exists in the security agreement it will be enough to satisfy filing of the financing statement condition. However, the court decided when it comes to this particular claim that description serves to parties in order to identify the collateral and that this is not a proper reason to challenge the claim, especially since a security agreement existed, meeting of minds and proper filing occurred (*O & G Leasing, LLC, et.al. v. First Security Bank*, 2011). While this case is certainly not groundbreaking, it clearly provides the evidence of the level of flexibility provided by UCC 9 when it comes to attachment of security interest.

Going back to the BiH legislature and uncertainty of even the attachment of a security interest, this simple case could potentially have a different outcome. This discussion brings us to the notion of perfection of security interest that was already identified as one of the pillars of UCC 9. Further on in Chapter 2 the importance of perfection will be discussed in the context of importance of a clear system of priorities for banks operating in transition countries. Clarkson et al. identify perfection as "(…) legal process by which secured parties protect themselves" in the context of a collateral with regards to third parties (2004, p. 545).

In most cases perfection is achieved by filing a financing statement (UCC § 9-312(a), 2003); the other three methods of perfection being transfer of possession over the collateral, control (e.g. accounts) and – in a few exceptional situations – automatic perfection. Going back to Coogan's notions filing a financing statement satisfies the publicity condition. While there were serious discussions and numerous cases that analyzed the limits of what may be considered a financing statement, UCC §9-521 now provides for a uniform form (colloquially named UCC-1 and UCC-3 Forms), that is rather simple and may be accomplished electronically (further exemplifies the active nature of UCC 9) (Clarkson et al., 2004, p. 547; Weiler, 2006, chap. 3).

1.2.2 Brotherly relation of purchase money security and floating lien

Concept of floating lien is so deeply rooted in the core of UCC 9, insofar that UCC 9 is sometimes called the "floating lien" statute (Gilmore, 1963, p. 1334). Coogan identifies the floating lien as "(…)creating a lien which *floats* [italics added] over all of [debtor's] assets (1959, p. 850)." In effect this would mean that creditor that has the status of a 'floating lienee' would have monopoly over all the assets of the debtor, effectively prevent other creditors for extending any loans since they would face uncertainty. Therefore, drafters of UCC 9 together with representatives of the industry created purchase money securities. These two concepts complement and support each other, but like two brothers, there often exists an unspoken rivalry between them. Gilmore (1963, p. 1333) states that the US legal system has transcended from the doctrine that forbids transfer of rights on the things that are not owned to a more practical approach that allows for transfer of all future property, especially considering impact on the business community

In addition to other methods of perfection, UCC 9 provides what is commonly known as automatic perfection – perfection that occurs at creation without any additional filing (UCC § 9-103). This basically enables super-priority. However, Schwarz (2006, p. 3) suggests that

automatic perfection may create a priority issue since legal provisions are rather subtle and make it difficult to determine if automatic perfection occurs or filing is necessary. He identifies automatic perfection as a compromise between banks and drafters of UCC 9 (2006, p.2). Practices of banks with regards to perfect sales of loan participations were to be reflected in this particular provision (Schwarz, 2006, p. 3).

The most common security interest where automatic perfection exists is called *purchase money security interest* (PMSI) (Clarkson et al., 2004, p. 550). According to Clarkson et al. (2004, p. 550) PMSI are created in a situation where seller or creditor enables purchase of goods, *inter alia*, by agreeing to extend a credit to the buyer or debtor. Meyer (2002, p. 152) provides that PMSI can be obtained only for goods and software, but not for intangibles. He goes on to say that PMSI are created when creditor gives a loan that enables borrower to obtain the collateral (2002, p. 152). The definition of PMSI are provided in UCC § 9-103. For example, § 9-103 (b) (1) provides that security interest in goods is PMSI "(…) to the extent that the goods are purchase-money collateral with respect to that security interest (2003)." PMSI when created provide super-priority to the purchase money creditor with regards to first-to-file approach (Meyer, 2002, p 165). The explanation for this super-priority is simply the economic incentive to break monopoly of the first-to-file creditor and enable the borrower to obtain additional secured loans (Meyer, 2002, p. 165).

Coogan (1959, p. 850) goes as far as calling the 'floating lien' most controversial part of the UCC 9. Gilmore expands this definition to cover future assets as well (1963, p. 1334). He expressed the concern that allowing for this lien would result in no protection for claims of unsecured creditors (1963, p. 1335). However, Gilmore stood behind his brainchild and provided that in order to prevent aforementioned possibilities law should provide protection for potential borrowers seeking to encumber all of their assets by forbidding them in doing so (1963, p. 1335). He addresses the concerns of the critics by providing a simple arithmetical

problem: "(…) when a $1.000 loan is secured by $100.000 worth of assets, the secured creditor gets $1.000, not $100.000 (Gilmore, 1963, p. 1336). However, appropriate limitations need to be in place in order to avoid injustice specifically priority on purchase money security interests (Gilmore, 1963, p. 1336 and p. 1337). This is meant specifically breaking the monopoly power of the lien creditor, so that borrower can use the collateral for additional secured loans as mentioned. Meyer comments that in case of priority dispute between a PMSI holder and a lien creditor, PMSI that are perfected by filing prior or under 20 days to borrower receiving the collateral have priority over lien creditors (2002, p. 192).

Irrespective of shortcomings identified by Schwarz, speaking in economic terms both floating lien and PMSI would mostly eliminate transaction costs between market players and enable efficient allocation of resources (where resources are loans provided by bank). Considering the low economic level of BiH, a system where banks could secure their loans by providing PMSI for businesses to expand their operation could potentially revitalize the entire industry. On the other hand, if floating lien was incorporated banks would have to police the borrowers. However, considering that 21 out of 29 banks in BiH are international and come from developed economies as mentioned, this policing would have a positive effect on the behavior of local businesses. At this point this is just an assumption, and considering the priority of this research is to establish effects of UCC 9 on private corruption in BiH, it would be more appropriate to leave it for further research.

CHAPTER 2 – ECONOMIC FRAMEWORK

So far the analysis of legal framework – the current 'market conditions' in BiH, has enabled understanding of the current environment banks are currently operating under. Furthermore, since majority of banks in BiH are of international origin as already mentioned in the previous chapter, the analysis of the solutions offered by the American system in the form of UCC 9, helps understanding the backgrounds of said banks. This does not imply that these banks are well versed in UCC 9 because most of them come from continental European countries, but rather indicates the level of development of economy and banking sector these banks usually operate in. Before proceeding with the analysis of economic factors that influence behavior of banks, it is important to connect the notions of credit and economic growth. In recent year, there is a lot of backlash against the system of constant borrowing. Notwithstanding, access to finance in the form of credit is the basis of most economies and the only viable way for developing countries to conquer their path to completely developed economy.

2.1 Access to Credit and Economic Growth

Freedman and Click identify access to credit sources as one of the major reason why developing countries have not been able to achieve stable economic development (2006, p. 279). They continue on by stating that financial systems in those countries are not able to use savings in an efficient way as source of potential loans (2006, p. 279). Moreover, Hassan, Sanchez and Yu in their study used domestic credit provided to the economy as a proxy for financial development (2011, p. 89). They have come to a conclusion that there is positive effect of credit provided on economic growth (2011, p. 90). The results of their study are consistent with previous evidence of such relationship in studies by King and Levine from 1993 and Levine, Loayza and Beck from 2000 (Hassan, Sanchez and Yu, 2011, p. 89). Their results are consistent with neo-classical growth models (2011, p. 89). When considering the

implications of these results on BiH, it is important to note that Hassan, Sanchez and Yu discovered that developing economies in Europe and Central Asia have seen economic growth as a result of financial development and consequently credit provided (2011, p. 99).

The most common form of collateral in developing economies is real property and banks usually avoid alternatives such as cash flow or receivables to serve as collaterals (Freedman and Click, 2006, p. 282). Furthermore, the value of assets that serve as collaterals must often be up to 150% value of the actual loan given (Freedman and Click, 2006, p. 282). For these reasons, small businesses turn to their friends and families in order to obtain funding or the necessary collateral to engage in economic activities (Freedman and Click, 2006, p. 282). In BiH this causes severe issues, especially considering the high poverty and unemployment rates (27.6%) and can severely stunt economic growth (ASBIH, 2011) . And since the amount of loans available is positively correlated with increasing number of deposits in banks (Freedman and Click, 2006, p. 282), this raises the concern on the current growth of the banking system in BiH. As already discussed in the introductory part since 1997 credit sector in BiH has increased over 700 percent (Coskun and Ilgun, 2009, p. 60). Levine (1997) suggests that financial systems (and conversely banks as an integral part of them) have five basic functions in order to promote economic activity:

- intermediating trade and risk management,
- allocating financial resources to the parties who value them most,
- monitoring and controlling corporations and management,
- mobilizing savings to serve financial growth, and
- promoting the exchange of goods and services by extending loans (p. 691)

The US is recognized as the country with most developed banking system and highest amount of secured loans and deposits (Freedman and Click, 2006, p. 284). Could this be because secured transactions reform enabled people to use numerous means of collaterals resulting in

increased market activity? Bank centric systems have served well the old and established economies of Europe such as Germany and United Kingdom. However, is it possible that the US market based approach could allow for faster development of transition economies. Going back to Levine's functions of the financial systems, it can be speculated that if these functions were fulfilled economy could grow and develop. Furthermore, prevalence of banks, at least in European developing economies, makes banks perfect vehicles to deliver such a systematic change.

According to Freedman and Click (2006, p. 289) loan sharks and microfinance organizations are not uncommon in developing countries and they tend to charge very high interest rates. They continue by stating that loan sharks have been observed charging up to 50% and microfinance organizations up to 20% interest rates (2006, p. 289). They suggest that banks fail to serve the need of the market in some way and people are desperate enough to seek finance in these 'alternative' venues (2006, p. 289). This suggests that there is a lot of room for improvement of the current markets and that unmet market demand exists. Clearly, this brief analysis establishes the importance of credits for all transition economies and conversely BiH. Without adequate access to this form of financing, transition economies seem to be doomed to a vicious cycle of market restrains and ever-increasing poverty of their respective citizens and financial systems are unable to fulfill functions defined by Levine.

2.2 Inadequacy of Bank Supervisory Agencies in Transition Economies

One tool used for reducing public corruption of banks is establishment of supervision agencies. However, when it comes to private corruption the question of adequacy of these agencies arises. Supervisory agencies have been established in BiH and they are Banking Agency of the Federation of BiH, Banking Agency of the Republic Srpska and to some extent the Deposit Insurance Agency of BiH (Coskun and Ilgun, 2009). Beck, Demirguc-Kunt and Levine (2006, p. 2157) claim that in countries with undeveloped governmental institutions,

strong bank supervision tends to increase corruptive practice of banks. They state that supervisory agencies are easily corrupted by politicians (2006, p. 2157). Park (in press, p. 19) concludes that increasing bank supervision on its own would be ineffective for developing economies.

Beck, Demirguc-Kunt and Levine suggest that private monitoring of loan system could be a solution, no matter the increased costs of information and enforcement (2006, p. 2157). Putting aside regulation of banks by supervisory agencies, UCC 9 provides strong incentive for private parties to engage in policing of loans and provides them the right of self-help. Again, the already discussed system of perfection of all security interests in UCC 9 provides a good platform for such solution without too much interference in the operating forces of the market. Integrating this solution to the BiH lending sector could move enough pieces to establish an operating market with less corruption. And considering that high quality of legal and judicial system tend to reduce corruption (Venard and Hanafi, 2007, p. 496); this solution may be the appropriate one. Therefore, this empirical evidence suggests that bank supervision and regulation may not be a viable solution for the developing countries.

2.3 Relationship of Corruption and Bank Lending and Implications for BiH

Generally accepted interpretation of the word corruption is *the abuse of public office for private gain*, referring to corruptive practices of political officers. Dininio and Orttung refer to the well accepted definition of corruption given by Nye:

> Corruption is behavior which deviates from formal duties of a public role because of private – regarding (personal, close family, private clique) pecuniary or status gains; or violates rules against the exercise of certain types of private – regarding influence (2005, p. 503).

This definition conveys the concept of "*public corruption*" rather well, however, corruption of the political officers is only one side of the problem. With increasing growth of private sector in developing economies numerous possibilities arise where private officials or companies will either be the *'corrupter'* or *'corruptee'* (Rose - Ackerman, 2007). Argandona (2003, p. 263) suggests that this type of corrupt activities are a serious problems for developing economies especially because they result not only in high financial costs, but high legal and social costs as well. He identifies that major social cost is long term cultural change, where this behavior will be accepted as a social norm (2003, p.263). Considering that profit maximization is central principle of companies, Rose - Ackerman raises an important question. She wonders if it is easier or harder for companies to control corrupt activities (2007). This question conveys the notion that due to profit maximization and in absence of defined legal constrains, companies are more likely to engage in corrupt activities in order to 're-calibrate' market situation. Argandona identifies that these corrupt activities take form, *inter alia,* of bribery, extortion, solicitation and illegitimate misuse of information (2003, p. 255). Therefore, the definition of corruption will be expanded to cover *the abuse of market conditions (lack of adequate regulatory conditions) by private officials for private gain* and will be referred to what is commonly referred in international law as "*private corruption*" (UN, 2004).

Numerous studies indicate that financial crisis occur, *inter alia*, as a consequence of corruptive practices (Park, in press, p. 2). Barth et al. in their study state that banking system easily falls prey to corruption especially in transition economies as a direct result of lack of legal framework and effective judicial system (2007, p. 361). According to Venard and Hanafi, quality of financial markets is positively correlated with banks issuing more loans (2007, p. 492). Park ascertained that quality of loans in a market is negatively affected by presence of corruption (in press, p. 19). He explicitly states that economic growth can be

hampered by low quality of loans (in press, p. 19). Similarly, Dininio and Orttung state that in developing economies, corruption is reduced as the country develops economically (2005, p. 528). A study by Treisman (1999) explains that economic development is responsible for up to three quarters of variance in corruption indices (as referred in Dininio and Orttung, 2005, p. 504). Considering that banks provide substantial amount of financing to economies in general (Beck, Demirguc-Kunt and Levine, 2006, p. 2132), it is of crucial importance to analyze why the banks engage in corruptive practices and what could be the possible policy solution to that issue. According to Park (in press, p. 19), evidence of corruption in banking sector is anecdotal at best. And considering Park's implications, the development of a transiting economy may well depend on the availability and quality of loans. Similarly, referring to studies by Mauro (1997), Wei (1998) and Kaufman (1999), inequality and poverty are direct consequences of stunted economic growth caused by corruption (as referred in Dininio and Orttung, 2005, p. 500). It is, therefore, staggering to notice the distinct lack of academic work in this sphere of economy.

2.4 Economic 'Enablers' that Motivate Banks to Engage in Corruption

Banks in transition economies engage in private corruption out of two reasons - fear of more corruption later on and trying to capitalize on current rents and simply because there are options to do so (Venard and Hanafi, 2007, p. 483 and p. 495). Barth et al. assert that corruption is related to misuse of creditors' rights (2006, p. 362).

Park identifies one of the ways banks are engaging into public corruption, namely banks have been observed bribing politicians in order to gain legal lenience, especially in transition economies (in press, p. 2). However, Dininio and Orttung hypothesize that incentives of public officials to ask for bribes are reducing with growth of the economy, since their salaries tend to increase as well (2005, p. 504). What is rather interesting, however, is that banks and other financial institutions tend to adapt to the regulatory framework of the

country they operate in (Venard and Hanafi, 2007, p. 495). Considering this information, incentive of banks to engage in corruptive behavior in undeveloped economies with regards to legal system is evidently present.

According to Barth et al. imply that information sharing and public registry systems are crucial in order to reduce private corruption (2006, p. 362). In a situation where banks don't have information on the quality of borrowers (specifically, their ability to pay back their loans), they tend to reduce the amount of loans available to small and medium enterprises and general public (Freedman and Click, 2006, p. 293). The importance of perfection under UCC 9 immediately comes to mind as a potential tool for providing for such publicity, especially considering its simple yet effective approach as already mentioned in first Chapter. Freedman and Click discuss that customers in order to get loans anyway, engage in corruption with bank clerks (2006, p. 362). And in most cases, the most efficient strategy is negotiating 'illicit commissions' in form of bribery (Barth et al., 2006, p. 362).

Freedman and Click (2006, p. 290) cite underdeveloped legal framework as one of the major reasons for low credit activity. They identify, *inter alia,* inadequacy of collateral laws as a major concern (2006, p. 290). According to Safarian, Fleisig and Steinbuks the most common reason why loans are denied to businesses in transition economies is the inadequacy of collateral (2006). Their formulation implies they were referring to secured transactions rules in general. Enforcement of loan contracts in developing countries is often rather expensive and can take up to several years before creditors can actually claim the assets of defaulted borrower (Freedman and Click, 2006, p. 290). Considering this, it is only rational to assume that in order to establish normal operations on the markets, banks are forced to search for solutions that may not be ethical or legal and engage into private corruption.

Another venue of distress for banks in developing economies is the lack of a system that enables repossession and sale of collaterals without intervention of courts (Freedman and

Click, 2006, p. 291). Safarian, Fleisig and Steinbuks (2006) cite BiH as having regulation in place that enables enforcement of loan contracts in eighteen days if agreement and proof of registration are submitted to the court. However, what they fail to comment on are the obscure legal provisions about attachment and priority that were discussed in previous Chapter. On the other hand, Alexander suggests that UCC 9 enables, *inter alia*, self-help repossession (1975, p. 893). He continues by stating that state actions with regards to repossession are inflexible and slow (1975, p. 924). Although Alexander's comments are on the US system, a general economic incentive can be extrapolated. Self-help repossession utilized by creditors would provide for more incentive to approach the repossession more efficiently and quickly. If repo-agencies were used as an intermediary agent for repossession, their incentive to earn money from their business would further ensure that repossession is done quickly and efficient as possible. Since, court bailiffs have to be utilized in BiH and economic development, salaries and poverty are rather indicative as already mentioned in Introduction, it can be concluded that these bailiffs do not have a lot of incentive to effectively repossess the collaterals. For comparison, same process takes up to seven days in the US system (Freedman and Click, 2006, p. 291). And while it may seem that eighteen days is relatively short time comparing to aforementioned several years of enforcement, it must be stated that BiH courts have little or none expertise in such issues. Freedman and Click argue that nonexistence of central registry is a major gap in the system that severely hampers loan business (2006, p. 291). While the UCC 9 provides for more functional filing solution in most cases, the necessity of a centralized system that would enable public access to information is still indicative.

Another reason of instability in the banking sector of developing economies is the lack of clear system of priorities in bankruptcy laws and the protection of secured creditors (Freedman and Click, 2006, p. 291). Similarly, the existence of automatic stay in bankruptcy can severely influence bank's decision on whether to give loans on collaterals other than real

property in developing economies (Freedman and Click, 2006, p. 291). Marić and Dizdarević (2011, p. 74) in their analysis of BiH insolvency laws determine that there is no automatic stay in bankruptcy if the loan has been issued more than sixty days prior to declaration of bankruptcy. However, insolvency trustee has final word in this regard (Article 25, LRSIMS). Considering the already mentioned regulation of collateral use in BiH, banks are not left with a lot of options when determining what movables to use and still be protected by law, so their choice of bank suretyship and potential misuse of it seem like a rational choice by a rational agent.

The economic 'enablers' that influence banks to engage in private corruption in the developing economies can now clearly be identified in the following list:

- grabbing market shares
- lack of reformed secured transaction law
- ineffective judicial system
- non-existence of system of priorities of secured creditors in relation to bankruptcy.

All these 'enablers' are hypothesized to increase transaction costs and decrease the possibility of using movables and completely eliminating use of receivables as collateral. The most efficient solution for the bank is either to leave the market or try to compensate for market irregularities by engaging into private corruption. The notion of efficiency, for the purpose of this paper is Posner's view of efficiency which states that efficiency is maximization of wealth – maximizing the value of everything created and consumed. Because of presence of 'enablers' banks are faced with uncertainty of lending money. Since they need to lend money in order to earn money, banks will choose the market strategy that will maximize their gains and engage in private corruption. On the other hand, elimination of 'enablers' would reduce the need for corruption since maximizing the profits would be possible otherwise.

CHAPTER 3 – METHODOLOGY AND RESULTS

Using game theory to analyze the effects of certain laws is a recent trend in the field of economics and law. The concepts in game theory are valuable in estimation of economic impact of certain legal provisions, since law in general create different payoffs for different players. Therefore, the use of game theory to estimate the effects of Secured Transactions reform on a part of real economy is more than appropriate. Estimated effects will be presented by series of sequential move games using backward induction as a mean to determine the Nash equilibrium. Firstly, games under current market conditions (without secured transactions reform) as determined in Chapter 2 and 3 will be analyzed and it will be shown that incentive to engage into private corruption is greater than engaging in a cooperative game. It will be shown that in subsequent games, incentive design of strategy payoffs will result in evasion of moral hazards and solution that maximizes the wealth of all players will be achieved, without making any of the players strictly worse off.

3.1 Description of Games Played and Analyzed

The players on the current credit market in BiH are faced with limited strategies as a result of inadequate legislature as already analyzed. Tapping into 'market rents' is impossible because current laws discourage lending based on usage of movables and receivables as collateral and real property is considered in limited supply in BiH.

Players of the game are identified as banks and businesses since private corruption is considered and empirical evidence suggests that banks and businesses are engaging into this behavior. In lack of market regulations, there is no incentive for players to extend trust to each other. Therefore players enter into a form of 'involuntary negotiation' as an only available strategy instead of leaving the market to determine the best outcome for each player. This type of negotiation is made possible by the current gap in the system. This gap is identified as

private corruption and is result of presence of economic enablers identified in the Chapter 2.3.2.

Three types of sequential move games will be played and they will be represented in the extensive or tree form. Each type of sub-game will approach the issue of private corruption first in the short-term loans and then in the first year of long-term loans. The logic behind this will further be built upon in section 3.2.

First two types will be a Default and a Bargaining game between Bank and Borrower, where players are faced with current market restrains. In order to avert these restrains, Borrower will try to incentivize Bank to extend the loan by offering a bribe. This is a simple game that is common in many systems and represents the notion of the market to try and establish the efficiency in any means possible. Afterwards, the effect of including secured transaction law will be observed on this basic game.

Third game is rather specific to BiH. It is based on a type of fraudulent behavior that is currently not prohibited by law and results in making banks and borrowers better off at the expense of making the third party worse off by less as defined in Chapter 1.1.3. Simply said, it is a game where market players engage into private corruption to gain a Kaldor-Hicks improvement otherwise unavailable. This game will be called Conspiracy game..

3.2 Defining the Constrains of the Games

Before proceeding it is crucial to determine some of the current constrains in the form of average statistics in BiH with regards to games being played. The most crucial value is the average loan amount in BiH extended to businesses. Although this information should be public, actual information is not available whatsoever.

However, latest statistics available indicates businesses in BiH have taken up to 6.94 billion KM of short and long term loans (CBBIH, 2010, p.84). Total size of private sector by number of companies in BiH for 2010 was 21.341 (RBE BiH, n.d.). Out of that number

19.382 were limited liability companies, 1.546 sole proprietorships and 413 corporations (RBE BiH, n.d.). As already mentioned there are 29 banks operating in BiH and law requires them to be corporations. Excluding them from these businesses nets 21.312 companies in BiH that are eligible to get loans. Since banks tend not to disclose name and number of clients they serve in BiH, the number of companies using loans for their businesses is not actually known. However, Beck, Demirguc-Kunt and Maksimovic (2008, p. 478) in their econometric analysis have come to a result that on average 41 percent of private sector is using external sources of financing. This includes all sources of external financing. However, Coskun and Ilgun state that the financial system of BiH is dominated by banks and nonbank sector is almost nonexistent (2009, p. 59). It is therefore, safe to assume that banks are the only external source of financing available in BiH. In absence of more accurate number of bank clients this approximation will be used. That would mean that 8.738 businesses are taking loans from 29 banks in BiH. Data suggests that ratio of long-term to short-term loans is 60/40 (CBBIH, 2010, p. 85). Following this same logic that would mean that out of 8.738 businesses 5.243 are taking long term loans and 3.495 are taking short term loans. Since short and long term loan rates are exactly the same in BiH, as mentioned, that would mean that average (both short-term and long-term) loan amount for businesses in BiH is 794.239 KM. For purpose of simplicity, when analyzing extensive game forms, value of 794,2 (without denoting the currency) will be used instead and average loan amount will be identified as LOAN.

The next logical step is to determine the average yearly interest rate in BiH for 2011. Fortunately, this data is available to public and is 7,84 percent (CBBIH, 2010, p.89). It should be noted that data provided by CBBIH specifically states that interest rate for both short and long term loans for businesses is 7,84 percent (RATE) (CBBIH, 2010, p.89). Furthermore, data from CBBIH suggests that on average the duration of a long-term loan is 10 years, where the duration of a short-term loan is 1 year (CBBIH, 2010, p. 84).

In order to get accurate representation of interest earned for banks for both short and long term loans, amortization schedules of loans need to be developed. Amortization schedule is a tool that describes periodic payments of loans. Loan installments are made in such way that most interest is paid off in the beginning payments. As the time goes and more payments are made, the amount of interest paid reduces and the borrower is paying more and more principal. The amortization schedule for an average short-term loan in BiH can be seen in Table 1 and for long-term loan can be seen in Table 2 (both tables are on next page). From this analysis it stems that total average interest earned for a short term loan is 34.121 KM. On the other hand, long-term loan is supposed to last for ten years. In order to simplify this, it will be assumed that decisions made at the start of a game last for one year. Therefore, it is not assumed that loan implicitly lasts for one year, rather that strategies of players in case of long-term loans will be observed for the first year only. It is commonly known in banking industry, that most loans that are going to be defaulted on, happen in the first year of the loan contract. It is therefore safe to assume that after first year moral hazard of a default is significantly reduced. However, analyzing long-term positions in loan contracts can be a suggestion for further research. On average, in first year of a long-term loan borrower will pay approximately 60.319 KM. This value is important since it is the average wealth gained for the bank if it decides to lend money. Again, these value will be shortened to 34,1 for short-term loans and 60,3 for long-term loans and they will be denominated by SINT and LINT respectively.

Other important statistic is the average bribe paid in BiH and that is 433 KM respectively (Bitno.ba, 2011). They will be represented by BRIBE with value of 0,4. Since currently there are no punishments for private corruption, in order to control for possible existence of such punishment - average of lowest and highest fine provided by law for other situations will be used and that is 5.500 KM (min. 1.000 and max. 10.000 KM) (Article 65,

Law on Banks of BiH, 2003). The variable will be called FINE and value of 5,5 will be assigned.

Table 1. Estimated amortization schedule for a short-term loan in BiH

Payment	Monthly Payment	Principal Paid	Interest Paid	Remaining Balance
1	69.010,09 KM	63.822,62 KM	5.187,47 KM	730.177,38 KM
2	69.010,09 KM	64.239,60 KM	4.770,49 KM	665.937,78 KM
3	69.010,09 KM	64.659,29 KM	4.350,79 KM	601.278,49 KM
4	69.010,09 KM	65.081,73 KM	3.928,35 KM	536.196,75 KM
5	69.010,09 KM	65.506,94 KM	3.503,15 KM	470.689,82 KM
6	69.010,09 KM	65.934,91 KM	3.075,17 KM	404.754,91 KM
7	69.010,09 KM	66.365,69 KM	2.644,40 KM	338.389,22 KM
8	69.010,09 KM	66.799,28 KM	2.210,81 KM	271.589,94 KM
9	69.010,09 KM	67.235,70 KM	1.774,39 KM	204.354,24 KM
10	69.010,09 KM	67.674,97 KM	1.335,11 KM	136.679,26 KM
11	69.010,09 KM	68.117,12 KM	892,97 KM	68.562,15 KM
12	69.010,09 KM	68.562,15 KM	447,94 KM	0,00 KM
Totals	**828.121,05 KM**	**794.000,00 KM**	**34.121,05 KM**	

Table 2. Estimated amortization schedule for a long-term loan in BiH

Payments	Yearly Total	Principal Paid	Interest Paid	Remaining Balance
Year 1 (1-12)	114.796,97 KM	54.477,30 KM	60.319,67 KM	739.522,70 KM
Year 2 (13-24)	114.796,97 KM	58.905,19 KM	55.891,78 KM	680.617,51 KM
Year 3 (25-36)	114.796,97 KM	63.692,97 KM	51.104,00 KM	616.924,54 KM
Year 4 (37-48)	114.796,97 KM	68.869,90 KM	45.927,07 KM	548.054,64 KM
Year 5 (49-60)	114.796,97 KM	74.467,61 KM	40.329,37 KM	473.587,03 KM
Year 6 (61-72)	114.796,97 KM	80.520,29 KM	34.276,68 KM	393.066,74 KM
Year 7 (73-84)	114.796,97 KM	87.064,93 KM	27.732,04 KM	306.001,81 KM
Year 8 (85-96)	114.796,97 KM	94.141,52 KM	20.655,45 KM	211.860,29 KM
Year 9 (97-108)	114.796,97 KM	101.793,29 KM	13.003,68 KM	110.066,99 KM
Year 10 (109-120)	114.796,97 KM	110.066,99 KM	4.729,80 KM	0,00 KM
Totals	**1.147.969,71 KM**	**794.000,00 KM**	**353.969,71 KM**	

The empirics and evidence found in the analysis of the current legislature provides enough support for the assumption that transaction costs in BiH are high. Transaction costs (TC) will be represented by the cost of contract between bank and the borrower, and the cost of bureaucracy. In order to reduce the bias of the UCC 9 evolved principles that are specific to the US and some of possibilities issues identified by Schwarz (with special regards to automatic perfection), transaction costs will be represented as a percentage of average loan amounts, where 1 percent will stand for high transaction costs and 0,5 percent will represent low transactions costs. Therefore, total transaction costs in unreformed system will be 2 percent or 15.885 KM (15,8) and will be referred upon as MAX TC. On the other hand, total

transaction costs in reformed system will be 1 percent or 7.942 KM (7,9) and referred to as MIN TC. By controlling for this, transaction cost reduction can be observed irrespective to current legal discussions on the nature of automatic perfection and level of economic development of the US. Setting this boundary is crucial for the model since the game is going to be played based on the estimated reform of the system and estimated impact of usage of movables and receivables on private corruption will be observed more accurately.

The incentive of a business to get loans is to earn more money through investments. Otherwise, businesses would have no economic incentive to borrow. There is currently no information available on what are realistic returns on investment in BiH. However, CBBIH identifies that 2010 in BiH saw 1,6 percent increase in industrial production (2010, p.15). They state that this value can be considered relatively accurate indicator of movement of private sector (2010, p.15). This is an indication that private sector is growing in BiH and companies are seeing at least some return on investment. McMillan and Christopher (2002, p.156.) state that return on investment in transition countries averages on 15 percent. Therefore, in the absence of actual data and with an indication that businesses in BiH have return on investment, it is safe to assume that the average return on investment (ROI) in BiH is 15 percent. ROI in general is expressed as a percentage, since general equation of return on interest is *ROI = (Gain from Investment – Cost of Investment)/Cost of Investment*. By solving the equation where ROI, and Cost of Investment are known gain from investment in a short-term loan and a long-term loan in first year can be calculated. Cost of investment is generally accepted to be the cost of the money or the interest paid on the loan and that means SINT and LINT values. Therefore, gain from investment from a short-term loan will be 39.239 KM and will be determined as SINV, whereas gain from investment for a long-term loan in one year only will be 69.367 KM and will be called LINV. These values will again be shortened to 39,2 and 69,3 respectively.

Table 3. Description and values of variables used in further games.

VARIABLE	EXPLANATION	VALUE
LOAN	Average loan amount to business	794,2
SINT	Interest earned on a short-term loan by the bank	34,1
LINT	Interest earned on a long-term loan in first year of the loan	60,3
BRIBE	Average bribe paid in BiH	0,4
FINE	Hypothetical fine	5,5
MAX TC	Hypothetical transaction costs in unreformed system	15,8
MIN TC	Hypothetical transaction costs in reformed system	7,9
SINV	Hypothetical gain from investment from a short-term loan in BiH	39,2
LINV	Hypothetical gain from investment from first year of a long-term loan in BiH	69,3

3.3 Analysis of Default and Private Bribe Games

The purpose of this subset of games is to indicate the basic relationship between the bank and the borrower under the current law on using movables as collateral. As already determined in Chapter 1, legal system in BiH with regards to collateral is severely lacking. As a direct consequence of this, bank and borrower have limited strategies to play. This is a standard trust game, an example of the dynamic game. It will be solved (as well as all further games) by using method of backward induction.

3.3.1 Games 1 to 5: bank v. borrower in BiH without reform of secured transactions

The conditions of the following game are following:

- Borrower's payoff in case they return is loan is calculated by *SINV-MAX TC* for short-term loans and *LINV-MAX TC* for long-term loan.
- Borrower's payoff in case of default is calculated by *LOAN-MAX TC* since it is not known what will they do with loan money.
- Bank's payoff in case of return of the loan is *SINT* for short-term and *LINT* for long term.
- Bank's payoff in case Borrower defaults is *–(LOAN+SINT)* in short-term loan and *–(LOAN+353,9)* in long run (353,9 is taken from Table 2 and is total interest earned in full

duration of the loan – in case of default bank loses everything not just interest for the first year).

Figure 1. Default game with a short-term loan where Borrower defaults.

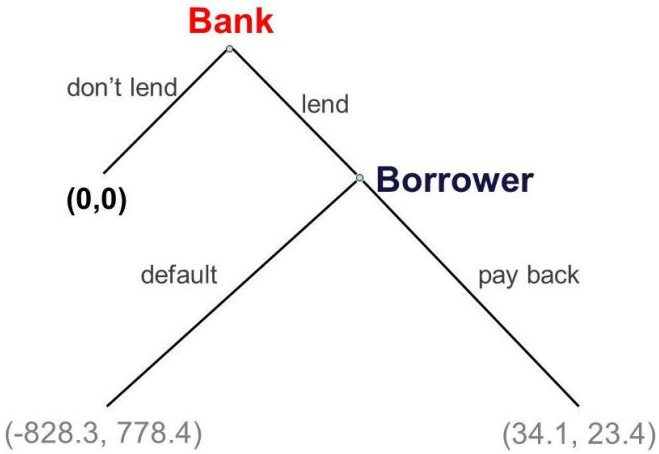
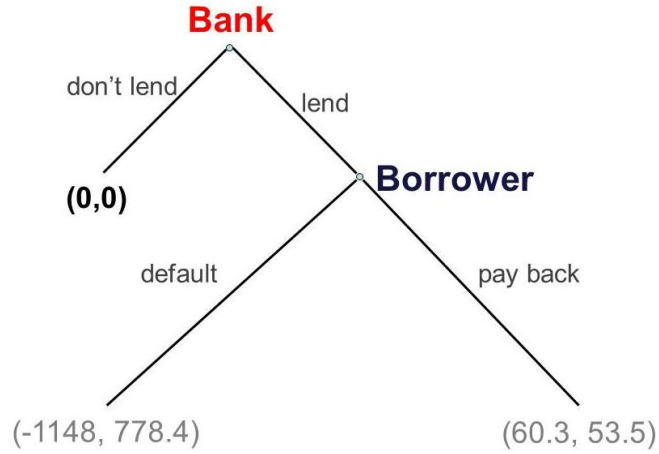


Figure 2. Default game in first year of the long-term loan where Borrower defaults.



In Figures 1 and 2, the strategies of the Bank are either to lend or not to lend to the borrower. Current laws do not provide enough protection for the Bank and Bank does not know or trust Borrower. Bank then proceeds to analyze the best outcome for the Borrower. If the Bank extends the loan to Borrower and Borrower decides to pay back the loan, Bank will earn maximum of 34,1 for the short-term loan and 60,3 for the interest in first year of the long-term loan. On the other hand Borrower will earn 23,4 in short-run and 53,5 will be gained in the first year of the loan. In the case of default, current laws do not provide enough protection for the Bank and as seen in Chapter 2.1 usage of movables is discouraged, while using receivables as collateral is not provided in law whatsoever. Therefore, Borrower can easily

disappear with the 778,4 from the short-term loan or in the first year of long-term loan. In the absence of secured transactions reform and inability to somehow secure the loan, the option of Borrower to choose to default the loan, strictly dominates the strategy to pay back the loan. In anticipation of this, Bank will not lend money and both players will have zero gain. This incentive to default on the loan can be named as a moral hazard.

On the other hand, economic theory suggests that market players will try to find the efficient outcome otherwise. Therefore, Borrower will try to incentivize the Bank by offering a bribe in order to get the loan and will proceed with analyzing Bank's possible moves. The payoffs for short-term loan and first year of the long term loan are presented in Figures 3 and 4. Under current legal and market framework, without any security of the loan extending bribes will not help reaching an efficient solution, since Borrower's strategy to bribe the Bank and still default on both short and long-term loans strictly dominates the strategy of paying back the loan under bribe. Therefore, Borrower will choose not to bribe and face the original game from Figures 1 and 2.

Figure 3. Private Bribe for a short-term loan.

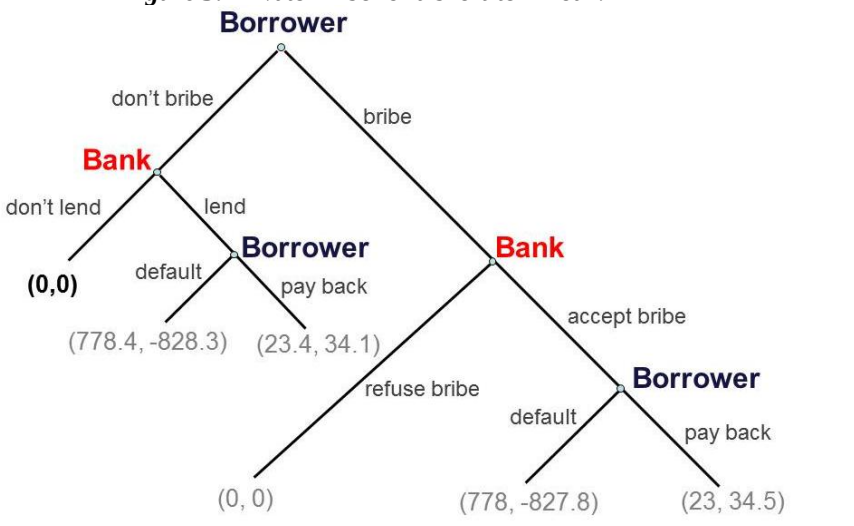
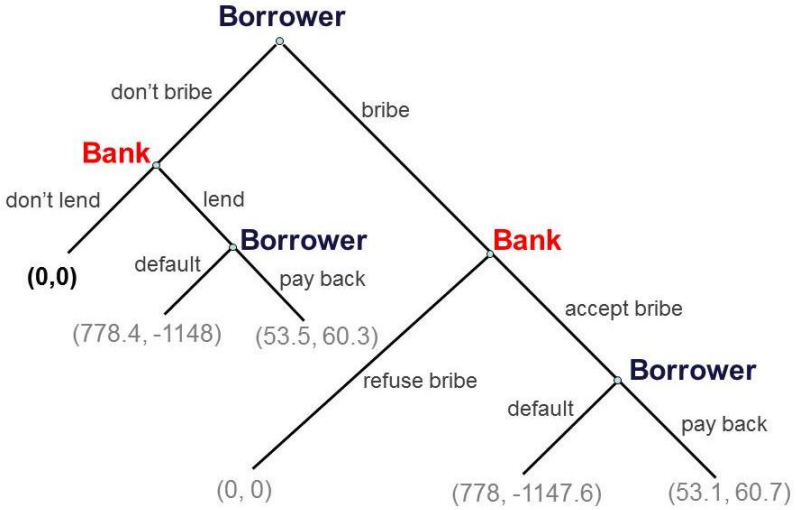
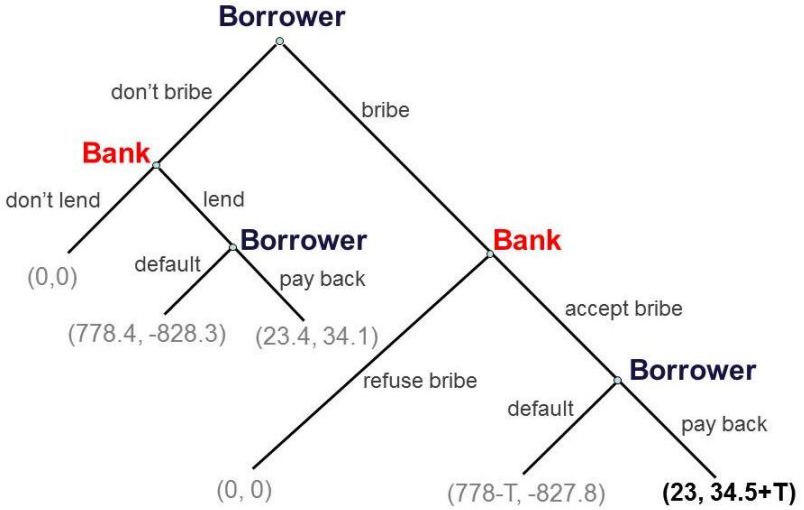


Figure 4. Private Bribe game in the first year of a long-term loan.



A possible alternative here is the assumption that Bank knows and trusts the Borrower from the previous engagements. If system so far did not allow for establishing such relationships, the only possibility is to assume that Banks have been engaging in private corruption, namely nepotism and extending loans to personal friends as identified by Argandona. However, considering the rather high incentive of Borrower to default in games from Figures 3 and 4, the value of this trust has to be rather high. And it is rather hard to put a specific value on the trust. Therefore, since empirical evidence suggests high levels of private corruption in lending in BiH and bank lending is primary source of external finance as mentioned, it is safe to assume that when faced with high moral hazard of defaulting on a loan, banks will extend 'trust' T to the borrowers that they know. If this was to occur, banks could give loans and ask for bribes in return. However, trust is a scarce resource and can be extended to so much people. An example of this trust-bribe game can be seen in Figure 5 on the following page. However, this is just a hypothetical example for a possibility and not a result. Bank will have trust T in the Borrower that they will not default on the loan, meaning payoff of default would be reduced by trust T. Because Borrower knows that T has been given, Borrower proceeds by repaying the loan and trust T.

Figure 5. Example of bribe game when T has been extended.



3.3.2 Games 6 and 7: bank v. borrower in BiH with reform of secured transactions

Before proceeding it is crucial to amend the conditions of the game, since now it is assumed that secured transactions (ST) reform took place and the initial game in the system assumes perfect integration of the game. Therefore, rules have changed and are following:

- Transactions costs are now low, meaning MIN TC
- Use of collateral in form of some type of movable or receivable is now valid and acceptable solution since ST reform established rights. Effective value of collateral should be equal to LOAN.
- Cost of enforcement (ENF) exists and is given a value of 10 (1000 KM). In case of a reform if Bank starts the ENF, ENF are charged directly to Borrower
- Borrower's payoff in case they return is loan is calculated by *SINV- MIN TC* for short-term loans and *LINV- MIN TC* for long-term loan
- Borrower's payoff in case of default is *LOAN - MIN TC – COLLATERAL - ENF*
- Bank's payoff in case Borrower returns the loan is *SINT* for short and *LINT* for long-term
- Bank's payoff in case Borrower defaults is *COLLATERAL–(LOAN+SINT)* in short-term loan and *COLLATERAL–(LOAN+353,9)*

Figure 6. Private bribe game after ST reform for the short-term loan.

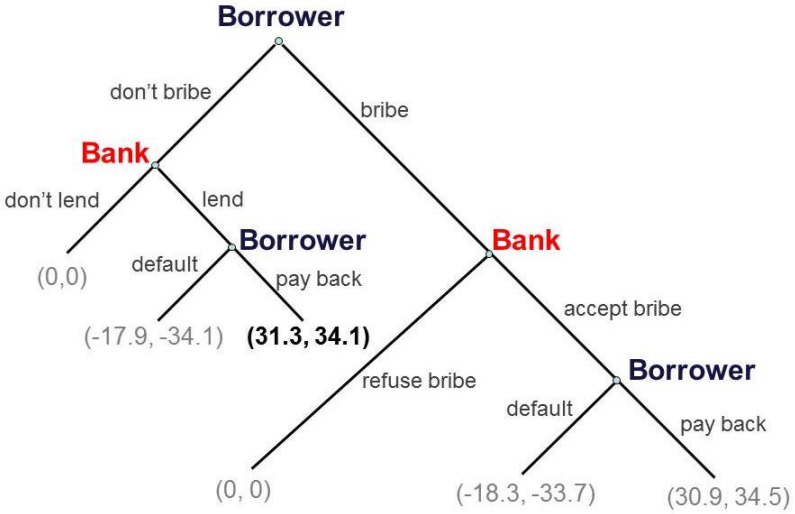
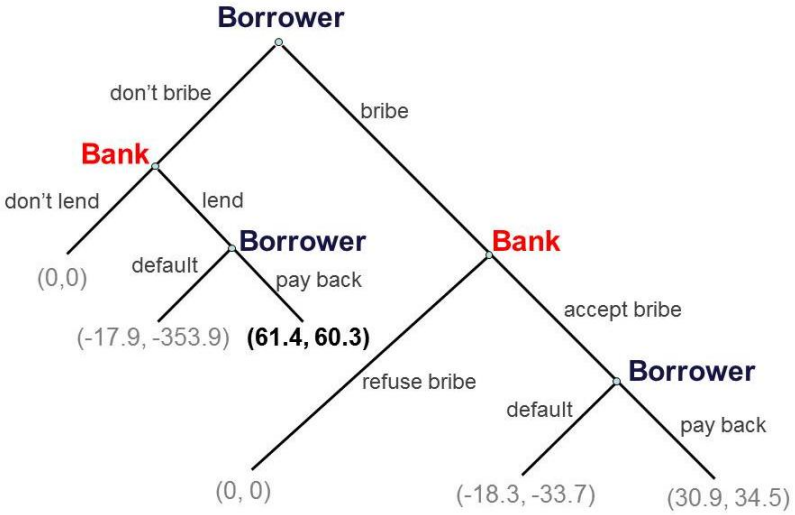


Figure 7. Private bribe game after ST reform for first year of the long-term loan.



In Figures 6 and 7 it is clearly seen that there has been a substantial change in the payoffs of the games. The most crucial change is the allowing the use of movables and receivable as collateral. Value of the collateral is set to be at the value of the loan. The nature of use of receivables as collateral is of particular interest here. In the US banks usually extend loans to businesses based on either some sort of movables and receivables. Especially, considering the start-up companies that have limited access to funding, use of future cash flows (receivables) is of particular value. This notion by itself opens an entire new possibility of analysis of secured transactions with regards to economic growth. In this case, it is easy to assume that if business plans of start-ups are sound, banks would be more eager to extend the loan. On

comparison, banks in continental systems (including BiH) when considering start-ups they tend to analyze their ROI on its own. Considering that use of receivables is not covered by many continental systems, this notion of using ROI to interpret business plans is rational. However, this approach limits the growth of the market to the extent that it favors only those with high ROIs. This is further reflected in the fact that the US is the world center of entrepreneurial activity opposed to the continental systems.

Going back to discussion of collateral use, considering what has been written in Chapter 2, namely that assets that serve as collaterals must often be up to 150% value of the actual loan given (Freedman and Click, 2006, p. 282), this serves to further prove that in systems without clearly reformed secured transactions, loan providers (banks) are trying to overprotect.

Considering the payoffs in Figures 6 and 7, it can be clearly seen that Borrower's strategy of paying back the loan strictly dominates all other possible strategies. Therefore, when Borrower is considering the possible moves, since need for bribe has been reduced by the implementation of secured transactions law, Borrower continues to analyze what are possible strategies for the Bank. At this point, Bank has an option of either lending or not lending. If Bank lends money to the Borrower, since secured transactions law is in place, Bank will anticipate that Borrower will pay back the loan, since otherwise Borrower would face loss. Considering that this will be the moves of subsequent games, in anticipation of this Borrower will choose not to bribe, which will be answered by Bank lending and finally Borrower will choose to pay back in both short-term game and first year of a long-term game. Therefore, Nash Equilibrium will occur at lend and pay back meaning that Bank will have payoffs described in Figures 6 and 7. However, since movables or receivables are now used, Bank now has incentive to police the behavior of Borrower with regards to their actions as is provided by secured transactions reform based on UCC 9. This is an rather important

consideration for any future games in this scenario. This finding is consistent with notions of private monitoring of loan system as Demirguc-Kunt and Levine (2006, p. 2157) have suggested. Considering Posner's view on efficiency as wealth maximization, it can be seen that outcome maximizes total wealth of both players without making anyone else worse off.

3.4 Analysis of Conspiracy Game

Conspiracy type of game is rather specific for BiH market and is the situation rather well detailed in the "Manual for protection of guarantors' rights in Bosnia and Herzegovina (Association for Protection of Guarantors' Rights, 2010)." As already discussed in Chapter 1.1.3 and Introduction there are around 200 thousand people that are estimated victims of this and similar behavior.

The conspiracy game has two players as well. However, according to what is currently happening in BiH, there are passive victims to this game that due to combination of lack of knowledge and fear of losing their jobs always suffer the consequences.

Second player, in this particular case Borrower, is the one that wants the loan and per results of Figure 1 is not able to get the loan by normal means. Because of a serious gap in the system, Bank and Borrower are able to engage in conspiracy to capitalize on the rents and maximize their gains. In terms of economic theory, Bank and the Borrower are seeking for a potential Kaldor-Hicks improvement. Borrower then continues to solicit other passive victims into being sureties for future loans. The crucial point is following - Bank has different contracts with Borrower and victims – victims are named jointly and severally liable for the debt. For services rendered Borrower earns an illegal commision. As described in the "Manual for protection of guarantors' rights in Bosnia and Herzegovina" victims of this behavior are often employees of Borrower.

In order to ensure obedience and passivity of the victims, victims must sign that they will receive their salary on the account opened in the same bank where Borrower has the

account. In these particular cases, this is the Bank that is the player in the game. In case of default, which will occur per results from Figure 1, Bank has protected itself by automatically taking the monthly salaries of victims directly from their accounts. Since the current legislation allows for this behavior and people are not acquainted with their rights they continue on repaying the loan as if it was their own fault and out of fear of not losing their jobs. Considering the rather high official unemployment rate of 27.6% as mentioned in Chapter 2, their fears may be founded.

3.4.1 Games 8 and 9: bank v. borrower in BiH without reform of secured transactions

Conspiracy games are rather specific and they have following conditions:

- Illegal commission (COMMISION) is 1% of LOAN or 7.942 KM (7.9).
- Bank's payoff in case of Conspiracy scenario is *SINT-COMMISION* for short-term and *LINT-COMMISION* for long term loan.
- Borrower's payoff in case of Conspiracy scenario is *LOAN-MAX TC+COMMISION*.
- Passive victims suffer the loss of the bank described before, and therefore in case of default bank has no loss. Passive victims are considered to be "tools" for mitigation of risk and are not presented in the payoff.
- Passive victims enjoy no protection or rights and cannot recover.

Figure 8. Conspiracy game without ST reform for a short-term loan.

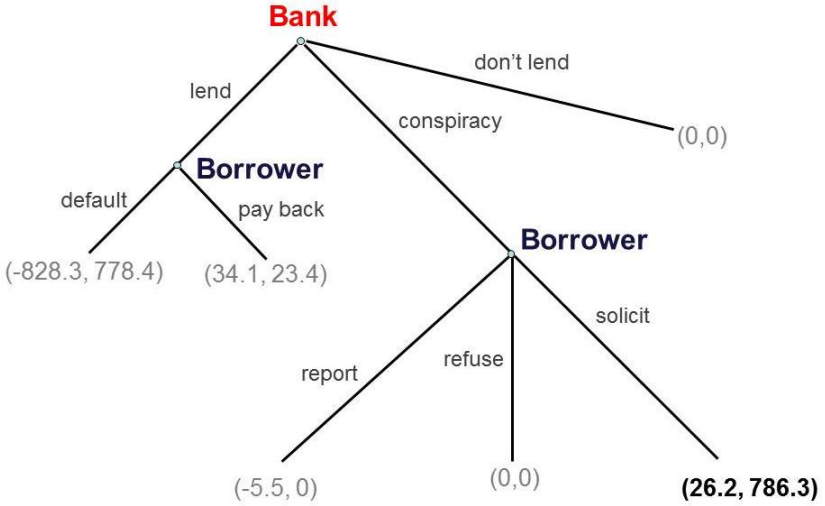
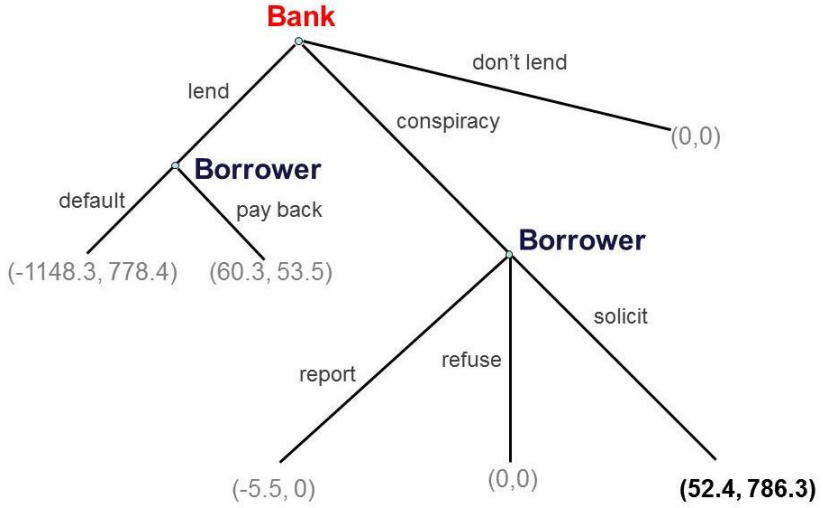


Figure 9. Conspiracy game without ST reform for the first year in the long-term loan.



Since Bank is operating in situation established by Figures 1 and 2, banks in BiH have developed the 'unusual conspiracy game' as described in introductory part of this section and described in details in Chapter 1.1.3. Due to lack of regulation, Banks have developed another strategy venue. Bank proceeds to analyze the strategies of Borrower in order to solve conspiracy. Borrower's strategy of engaging into conspiracy and soliciting victims strictly dominates all other strategies at this level of the game. In anticipation of this Bank will offer the conspiracy deal, whereas Borrower will proceed to choose the best strategy.

It can be concluded that in the absence of collateral system when faced with high transaction costs Bank and Borrower will engage into the private corruption game of Conspiracy in order to capitalize on market rents, which are otherwise unavailable as shown in previous games. This finding supports the general economic theory that market will find a way of reaching efficiency and is consistent with findings on corruption. Maximization of profit for both players will occur in the sub game where Conspiracy is met with acceptance of it and gaining illegal commission.

3.4.2 Games 10 and 11: bank v. borrower in BiH with reform of secured transactions

Games 10 and 11, represented in Figures 10 and 11 will be using conditions set in the Games 6 and 7, namely the presence of MIN TC, collateral in undetermined form that has value of LOAN, cost of enforcement (ENF) exist and are 10 . Other important conditions are:

- Borrower's payoff in case they return is loan is calculated by *SINV- MIN TC* for short-term loans and *LINV- MIN TC* for long-term loan.
- Borrower's payoff in case of default is *LOAN - MIN TC – COLLATERAL – ENF*.
- Bank's payoff in case of return of the loan is *SINT* for short and *LINT* for long-term.
- Bank's payoff in case Borrower defaults is *COLLATERAL–(LOAN+SINT)* in short-term loan and *COLLATERAL–(LOAN+353,9).*

In case the ST reform based on UCC 9 occurs in BiH, the Conspiracy game payoffs would substantially change for all the parties. First of all, defining the rights and enabling the use of suretyship in its intended form as a weak security device instead of primary way to secure a loan, would disable the possibility of using victims for leveraging risk on them. Secured transactions reform would specifically disable the Conspiracy tree. However, in order to analyze it in a game and show that it is more efficient to lend money now, the payoff of the Conspiracy tree will resort to use of collaterals as a normal lending game will.

Figure 10. Conspiracy game for a short-term loan after ST reform.

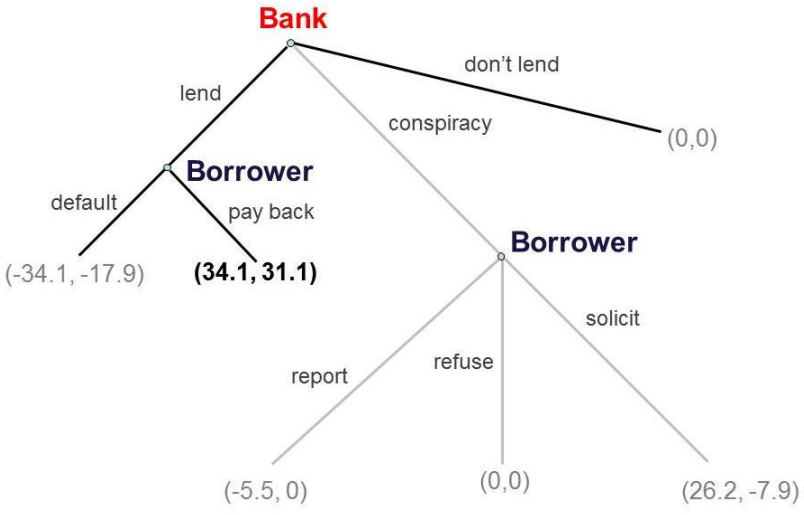
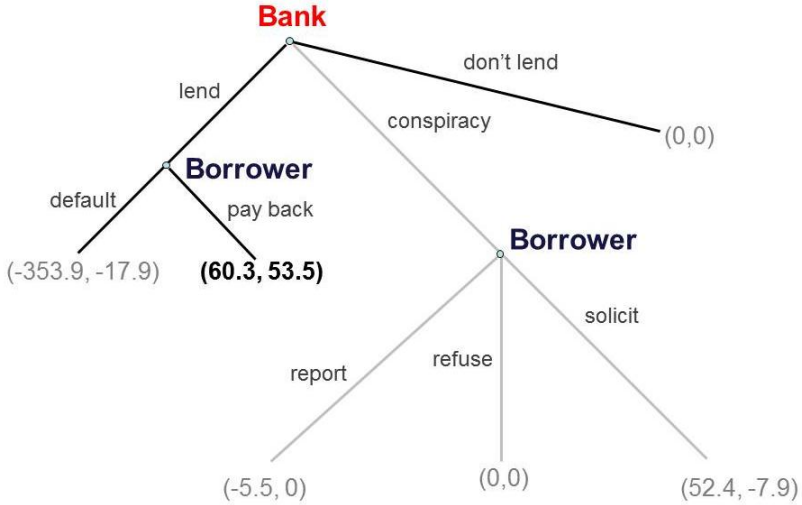


Figure 11. Conspiracy game in the first year of a long-term loan after ST reform.



If Conspiracy tree was not disabled by secured transactions reform, Bank would proceed to analyze the payoffs of Borrower for each specific situation. Bank would determine that Borrower's strategy to pay back the loan if loan has been lent, strictly dominates all other strategies available to the Borrower. Bank in anticipation of Borrower choosing the dominant strategy, would choose to give the loan to the Borrower. Borrower would than proceed to pay back the loan. The payoffs of short and long-term loan games do not differ in choice of strategy. By moving to this position, both players have reached their maximum wealth and no other strategy profile offers a better payoff for each player. In case of a reform of secured transactions based on UCC 9 in BiH, Bank and Borrower would choose strategies 'lend' and 'pay back' respectively. This is a situation where Posner's view on efficiency is satisfied because total wealth is maximized and sub game perfect equilibrium has been reached. Since Conspiracy tree only existed in the first place as an attempt of the market players to tap into unmet demand of the market, ST reform that effectively 'created' a market eliminated the need for it. In this sense, there is enough evidence to conclude that ST reform in BiH and similar developing countries would at least reduce the need for engaging in private corruption.

3.5 Ultimate game

By introducing the secured transactions reform in the current system in BiH, 'economic' enablers for corruptive behavior have been reduced to some extent, considering the limitations of the model. By assuming that analysis of previous games is accurate, the original trust game move game would now turn into a continuous lending game where both players automatically and always choose the most efficient solution if they know the protection and security provided by the reform. This continuous game can best be described by Figures 12 and 13.

Figure 12. Continuous lending game between Bank and Borrower for a short-term loan.

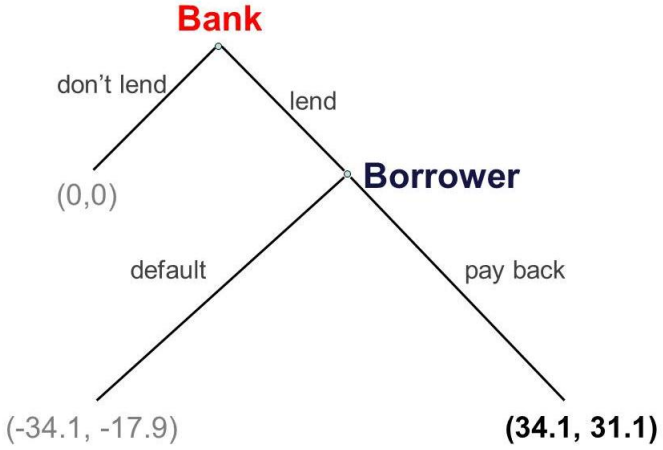
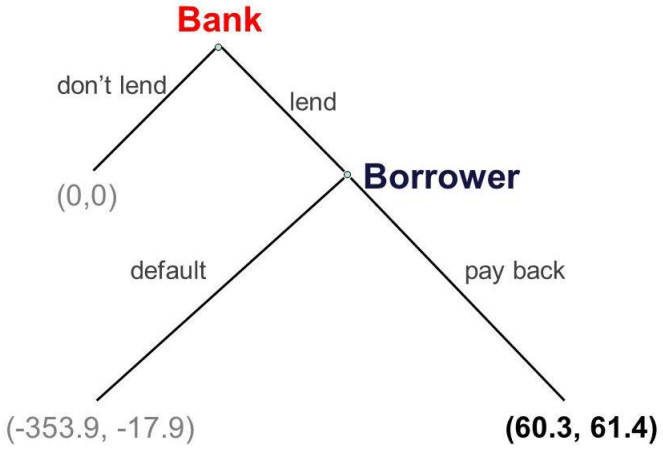


Figure 13. Continuous lending game for the first year of a long-term loan.



CONCLUSION

The main goal of this research was to try and find a possible tool that could be used for reducing private corruption in BiH that banks and businesses are currently engaging in. Sufficient empirical evidence suggests that main reasons why these agents of the market are engaging in private corruption are lack of proper regulation and existing market restraints and that in these conditions they are trying to capitalize on the market by any means possible. Analysis of current legal framework in BiH has revealed that current laws that are considered to fall under the general umbrella of secured transactions are severely lacking and that they actively discourage use of movables as collateral.

When trying to determine what this tool for reducing corruption could be, UCC 9 and its unitary approach to the secured transactions stood out as a beacon in the night, especially since UCC 9 is considered the most developed secured transactions act in the world. Results from all sequential games analyzed in third chapter of this research suggest that in presence of an act similar in vein to UCC 9, the need for engaging in private corruption would dissipate. Therefore, it is safe to conclude that the main question of this particular research has been adequately answered. However, primary assumption of the games that operated under reformed secured transactions was that transition from unreformed system to a reformed one went seamless, smooth and society accepted it. The immediate question that arises from this is - what would happen in reality?

The general rule of thumb is, when in doubt reflect on the nature and our natural habitat. When an individual is trying to combine two exotic species of orchids in order to grow one rarer and more beautiful than the ones before, by using aggressive approach where two delicate flowers are attached to each other, this will only result in decay and the original beauty of the orchids will be lost. However, if that individual chooses the right time and right parts of the orchids to merge and then proceeds to slowly, carefully and patiently care for the

development of the new orchid, the results could be magnificent. It would be the same with secured transactions reform in BiH. If such reform was done rashly or even worse, if the system was simply transplanted from somewhere else, the results would be defeating. Considering the fragile state of BiH economy, together with poverty and unemployment, of its people this would not be a wise approach. However, carefully selecting from UCC 9 what to incorporate in the possible secured transactions reform in BiH and then slowly build the system could have potentially significant positive impact on the entire BiH society. UCC 9 has not been written in one night and is a product of many years of case law and tradition of the US economy. In this vein, not even all solutions would be applicable to our society. For example, considering the utility of self-help repossession system in the US, even if such solution would be more efficient than system of court bailiffs in BiH, applying this concept to the war-torn and destroyed country such as BiH could be disastrous. Especially considering the amount of destruction of property endured by the population in the war. If someone would come to their homes to take 'their' property, people would certainly consider that an invasion on their freedom and their reaction could be catastrophic.

On the other hand, if a device similar to PMSI would exist in BiH, consider the impact on the businesses and economy. Not only would private corruption be reduced, but gates of prosperity could open and economic development would take significant boost. As described in the second chapter, banks are an important factor of BiH economy, since options to get external financing otherwise are limited. In similar notion, if attachment and perfection of security interest were not so crudely designed in BiH legislature, flexibility of these concepts as understood by UCC 9 could serve to resolve many priority issues in bankruptcy cases in BiH. And as identified in the research, this process currently can take up to ten years. It is not hard to ascertain the incentives of market agents to extend bribes and engage in public and private corruption to avoid this slow process and grease the wheels of bureaucracy.

If there is a careful reform of secured transactions done in BiH, these banks would not only serve as sources of external financing for the economy, but because of incentive to police your debtors they could become the driving force of private supervision and ease the burden of complex bureaucracy in BiH. In this sense, law would serve the purpose of being 'market creator' or 'market frame' as it was hypothesized in this research, while market players would proceed to find the most efficient outcome. However, this could enable banks to become powerful agents of society and the role of state could be diminished. But that is a venue for another research.

What is the alternative for the problem of corruption in BiH society, that is so prevalent that has infiltrated all aspects of life in BiH as identified in introduction? If there is no reform, private corruption will just continue to rage even more. Considering that 'fools' are, hopefully, limited in supply, at some point there will be no one willing to pay for bribes or to engage in behavior of misusing passive victims as described in the first chapter. What would happen at this point? This would doom BiH to a vicious cycle of increasing poverty where financial systems would be parasites that leech on the carcass of what once could have been a modern and developed economy. While the proposed solution could certainly help avoiding this worst case scenario at the expense of possibly giving banks a more powerful role in BiH society, one cannot wonder but to ask is it worth it. All things considered, the answer is definitely yes since action is usually preferable to slowly waiting to disappear. Are we ready for such a systematic change to our thinking and accept the functional approach to the assessed issues? Well, that remains to be seen.

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