Debt Enforcement Around the World

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1. Introduction

Debt is one of the most useful contracts in every economy, since it enables firms to finance investment and individuals to smooth consumption. But, like any other contract, debt needs to be enforced. To enforce debt contracts, societies create a variety of legal mechanisms or institutions that allow lenders to go after a defaulting borrower's income and assets without resorting to violence. Some of the debt enforcement institutions, such as some foreclosure proceedings, do not require courts. However, in the case of firms with multiple creditors, many societies rely on courts to enforce debt contracts, usually through bankruptcy or insolvency procedures[2].

Despite the importance of debt enforcement, insolvency institutions are generally perceived to perform poorly, even in advanced market economies but especially in developing countries. This raises several questions. How poorly do these institutions function? Why do they function poorly? Are there ways to improve them? Are these reform strategies consistent with the other institutions and capabilities of a country?

To address these questions, we study debt enforcement with respect to an insolvent firm in 88 countries. Our empirical strategy is to present insolvency

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[2] We do not address the question of why societies need public regulation of debt enforcement in the first place, rather than leave everything to contract. The usual reason is to stop the grab for assets and the destruction of a viable firm (Jackson 1986). We show that insolvency procedures often fail to do that.

practitioners *in each country* with *the same* case study of an insolvent firm. The firm is a hotel with a given number of employees, capital and ownership structure, value as a going concern and value if sold piecemeal. Each insolvency practitioner is presented with two versions of the case: in the first, going concern value exceeds piecemeal sale value; in the second version, piecemeal sale value exceeds going concern value. The firm is otherwise identical across countries except that the economic values are all normalized by the country's per capita income. In the United States, the firm would correspond to a medium-sized hotel, such as the Charles Hotel in Cambridge, Mass.

We then ask each practitioner to describe in detail how debt enforcement *for these case facts* in his or her country will proceed, step by step. The detailed narratives provided and confirmed by the practitioners tell us which procedure is likely to be used in each country for debt enforcement, and allow us to compute the time and the cost of the chosen procedure, to learn whether the hotel will be kept together or sold piecemeal, and to use all these data to compute the efficiency of the debt enforcement procedure for each country. We also collect detailed data on both legal and economic characteristics of the debt enforcement procedure for our case in each country. We can therefore assess which institutional features are conducive to the economically efficient treatment of assets as well as to overall efficiency – at least in our relatively simple case.

Although comparing debt enforcement against essentially the same business in different countries has many advantages, the case study approach necessarily limits the generality of our results. Most importantly, the hotel we study has one senior secured creditor and a number of unsecured ones. This assumption is key since, under our case facts (but obviously not *always* in reality), the efficient strategy is to turn the hotel over to

the senior creditor, and let him run or sell it, as a whole or in pieces. In other words, the senior creditor has socially correct incentives with respect to the hotel.

Our analysis is organized around the procedures that the respondents say are likely to be used in their countries to address the insolvency of the hotel. There are only three basic procedures used around the world: 1) foreclosure by the senior creditor, which may or may not involve a court, 2) liquidation, and 3) reorganization, which often leads to subsequent liquidation (we call this type of procedure "reorganization first"). Foreclosure serves as an important benchmark since, with only one senior creditor with socially correct incentives, it can at least conceptually achieve the efficient outcome. Because under our case facts foreclosure, which can be a contractual solution with no or minimal court involvement, can address insolvency without formal bankruptcy, the title of the paper is "debt enforcement" rather than bankruptcy or insolvency.

Our main findings can be briefly summarized.

First, looking at the world as a whole, all procedures are extremely time consuming, costly, and inefficient. In our leading case, where the efficient outcome is achieved by keeping the hotel as a going concern rather than selling its assets piecemeal, only 36% of the countries achieve this efficient outcome. Between the transaction costs of debt enforcement, the delay cost of the proceedings, and the loss from reaching the wrong outcome, a worldwide average of 50% of the hotel's value is lost in debt enforcement. The average is 64% when it is efficient to sell the assets piecemeal.

Second, countries vary enormously in the efficiency of their debt enforcement mechanisms. Practitioners in some countries, such as Japan, Singapore, and the Netherlands, estimate that only about 5% of the value of the hotel is lost in the debt

enforcement proceedings. At the other extreme, more than 90% of the value is lost in countries such as Brazil, Turkey, and Angola, according to this analysis.

Third, the variation in the efficiency of debt enforcement procedures is highly systematic. Most important, for each procedure, richer countries are more efficient than poorer countries, and the differences in efficiency are huge.

Fourth, richer countries have a comparative advantage at more complex procedures. In the rich countries, reorganization is more efficient than liquidation, and liquidation is more efficient than foreclosure. In the lower middle income countries, in contrast, the most efficient procedure is foreclosure, followed by liquidation, with reorganization last. This suggests that different debt enforcement institutions might be appropriate for countries at different levels of development (Djankov et al. 2003a, Ayotte and Yun 2006, Gennaioli and Rossi 2006).

Fifth, again for all procedures, there is a clear variation in the efficiency of debt enforcement by legal origin. Specifically, French legal origin countries have the lowest level of efficiency of debt enforcement, while Nordic and common law countries have the highest. This variation is not explained away by per capita income.

Sixth, various specific economic and legal rules are associated with differences in efficiency of debt enforcement procedures across countries. Foreclosure works extremely well with "floating charge" debt securities, when the whole business is pledged as collateral, but poorly when only specific assets can be pledged. This result is consistent with the observation that, under our case facts, the senior creditor has the socially optimal incentives to dispose of the business as long as he can gain control of it in default. We also find, in the same spirit, that the efficiency of foreclosure rises when

the senior creditor is allowed to take collateral in an out-of-court procedure[3]. Turning to insolvency proceedings, we find that legal rules that require the company to suspend operations, or that allow suppliers and customers to rescind contracts while the company is in bankruptcy, reduce efficiency. Moreover, extensive appeal of judicial decisions during insolvency proceeding, and the failure to continue the proceeding during appeal, are both detrimental to efficiency. Although many of these legal rules influence efficiency – and their significance points to strategies for reform – no rule by itself eliminates the significance of per capita income or legal origin as predictors of efficiency.

Seventh, many of the conclusions described above apply not only to the leading version of the case where going concern value exceeds liquidation value, but also to the version where it is efficient to sell the business piecemeal. In this second version, the efficient outcome (piecemeal sale) is eventually achieved everywhere, but the transaction and delay costs still keep the worldwide average efficiency down to 64%. In general, for our case facts, debt enforcement procedures appear to have a bias for piecemeal sale. Per capita income and legal origin remain important determinants of efficiency, and many of the institutional variables that are predictive of efficiency in the basic case, such as the nature of the appeals process, remain important here as well.

Eighth, many countries legally mandate deviations from absolute priority of the secured senior creditor. Such deviations are more pronounced in the poorer countries as well as in the French legal origin countries. As a consequence, looking at debt recovery by the senior creditor as opposed to social efficiency as an indicator of the quality of debt enforcement renders our findings on per capita income and legal origin more extreme.

[3] Franks and Sussman (2006) provide compelling evidence that floating charge debt works extremely well as the basis of foreclosure of small and medium size UK companies.

Ninth, our measures of the efficiency of the debt enforcement procedure are uncorrelated with the creditor rights index of La Porta et al (1997, 1998) and with the measures of information sharing about borrowers from Djankov et al. (2006). On the other hand, the efficiency of debt enforcement is highly correlated with other measures of public sector performance, such as tax compliance, corruption, or infrastructure quality. Debt enforcement looks a lot like other measures of the quality of government.

Tenth, our new measures of the efficiency of debt enforcement are economically and statistically significant predictors of a variety of measures of the development of debt markets across countries, ranging from the ratio of private credit to GDP to more subjective indicators of debt market development.

Our case abstracts from a number of important aspects of bankruptcy, such as complex conflicts among creditors or political considerations. The analysis nonetheless leads to several conclusions relevant for both the evaluation of alternative debt enforcement procedures and suggestions for reform. First, looking across countries, there is no unambiguous superiority of a particular procedure. In the richest countries, attempts at reorganization appear to be beneficial, but they rarely succeed in the poorer countries.[4] In these countries, in fact, there is no evidence of the benefits of a bankruptcy procedure, as opposed to foreclosure, for our case facts. This evidence suggests that discussions of the merits of ch. 7 versus ch. 11 must pay close attention to the circumstances of a particular country, such as its level of development or legal tradition[5].

[4] See also Frank and Loranth (2004) for evidence on ineffective reorganization n Hungary.
[5] See Baird (1986), Baird and Rasmussen (2002), LoPucki (2003) for such discussions for the U.S. An excellent overview of the tradeoffs between ch. 7 and Ch. 11 from the U.S. perspective is in White (1989). Thorburn (2000) presents evidence in support of liquidation in Sweden, while Bris et al. (2006) find support for the proposition that reorganization generates greater asset values in the United States.

Second, the evidence also suggests that debt enforcement procedures are intimately linked to, and borrow from, other legal institutions of a country, with perhaps unintended consequences. For example, extensive appeal is a crucial feature of the French legal system, which may promote justice in some circumstances, but is disastrous in situations such as insolvency where time is of the essence. Likewise, the ability to pledge the whole firm as opposed to specific assets as collateral, which is associated with common law legal systems, dramatically improves the efficiency of foreclosure.

Section 2 of the paper presents our case and the data collection procedure. Section 3 describes how we go from the information collected from insolvency practitioners to data. Section 4 presents the basic results on the time, cost, resolution, and efficiency of the procedures and their fundamental determinants in 88 countries. In that section, we focus on the version of the case in which it is efficient to keep the hotel as a going concern rather than sell it piecemeal. Section 5 looks at the specific structural features of the debt enforcement procedures. Section 6 summarizes two extensions: the version of the case where it is efficient to sell the assets piecemeal, and the consequences of deviations from absolute priority. Section 7 analyzes cross-country determinants of private debt market development, including our new measures of the efficiency of debt enforcement. Section 8 compares our evidence to earlier work on the efficiency of public sector performance across income levels and legal origins. Section 9 concludes.

2. The case study

We collect the data from answers to a survey of insolvency lawyers in 88 countries. Respondents are members of the International Bar Association's Committee

on Bankruptcy. Four rounds of the survey were conducted, in January 2003, 2004, 2005 and 2006, respectively. This paper uses the latest data, benchmarked to January 2006. In total, 344 lawyers participated in the surveys. In 32 countries, bankruptcy judges also filled in surveys. Their answers were used as checks on the lawyers' answers. Conference calls were held with all respondents to verify the data and to resolve disagreements among respondents within a country, most of which arose from misunderstanding the case facts.

The sample covers all countries with income per capita greater than US$1,000 and population more than one-and-a-half million in 2005.[6] It includes 30 high income, 20 upper-middle income and 38 lower-middle income countries. Eight countries are in the East Asia region, 22 in Eastern Europe, 18 in Latin America, 13 in the Middle East, 4 in Africa, 1 in South Asia and 22 are OECD countries[7].

The respondents are presented with a standardized case study of an insolvent firm called "Mirage." Mirage is a limited liability, domestically-owned hotel business located in the most populous city. Mirage has 201 employees and 50 suppliers, each of which is owed money for their last delivery. Five years ago, Mirage borrowed from Bizbank, a domestic bank, and bought real estate (the hotel building), using it as a security for the Bizbank loan. The loan has a 10 year term. Mirage has observed the payment schedule and all other conditions of the loan up to now.

Mirage is founded and owned 51% by Mr. Douglas, who is also the chairman of the supervisory board. No other shareholder has above 5% of the voting power. There is a professional general manager, with no idiosyncratic human capital. The total amount of

[6] The World Bank defines a small state to be one with a population of less than 1.5 million.
[7] The sample covers all countries included in La Porta et al. (1997) except India, Kenya, Nigeria, Pakistan and Zimbabwe. These five countries have income per capita below $1,000.

debt outstanding is set at 136 units. Unsecured creditors (including suppliers, the Tax Authority, and the employees) hold 36 units (26%) as a whole, or 12 units for each group. The balance of total debt is held by Bizbank (74%)—equivalent to 100 units. With only one large secured creditor, Mirage's bankruptcy presents a relatively simple case (although in some countries, this creditor does not have absolute priority).

In the past, Mirage has always turned a profit, covering all costs and regularly paying the loan from Bizbank. The company had projected to continue this performance into the future. However, recently Mirage experienced an unexpected operating loss due to worsened industry conditions. The management expects that, in the next 2 years, Mirage can cover its operating expenses from projected revenues (and so does not need additional cash to operate), but will not make enough money to pay back Bizbank. As a consequence, Mirage is about to default. Bizbank has not seen the new projections yet.

The incentive of all parties but Bizbank and the Tax Authority is to keep Mirage operating as a going concern and avoid piecemeal sale, or delay it in the hope that Mirage's fortunes change. Mr. Douglas wants to keep the firm in operation under his control, but does not care whether current management stays. Minority shareholders want to keep the company as a going concern, because with a piecemeal sale they get nothing. The management of Mirage wants to keep the firm in operation and keep their jobs. The suppliers prefer Mirage to continue operations, as this may make it more likely that they recover the trade credit due, and they want to continue doing business with Mirage. In countries where wages do not have priority over secured creditors, workers want Mirage to continue business, since they may not get paid in full if it is sold piecemeal. In countries where wages have priority, workers still prefer Mirage to

continue operating, since they value their jobs. The Tax Administration will follow the procedure that maximizes its expected recovery rate. Other things equal, the Tax Administration wants Mirage to continue in business, since future tax revenues are lost in a piecemeal sale. Finally, Bizbank will file for the procedure that maximizes its own expected recovery rate net of its costs.

The management of Mirage has full knowledge of the case facts presented above, and therefore has a first mover advantage. Bizbank will observe the payment default by Mirage tomorrow. However, the bank does not know whether Mirage's bad luck is likely to be prolonged. That information will be available only in the Annual Report published in 3 months' time. Shareholders, suppliers, the tax administration and employees will become aware of the situation when they have access to the Annual Report.

With these case facts, we pose two scenarios. Under "Version A," we stipulate that the value of Mirage is higher as a going concern than if sold piecemeal. Specifically, Mirage is worth 100 units as a going concern (equal to the value owed to Bizbank), and 70 units if sold piecemeal (buildings, furniture, etc). Since Mirage is experiencing a temporary downturn, the economically efficient outcome is to keep it a going concern.

Under "Version B," we stipulate that, even though Mirage can just cover its costs over the next two years, it will not recover from its downturn. The value of Mirage is 100 if it is sold piecemeal, and 70 if it continues operating as a going concern. All other characteristics of the case remain the same. The economically efficient outcome now is for the business to discontinue operations and be sold in pieces.

As this description illustrates, our case is relatively simple and abstracts from a number of issues that have been the focus of bankruptcy scholarship in recent years.

First, we focus on formal insolvency proceedings, and ignore informal workouts, which are extremely prevalent (Gilson, John, and Lang 1990, Asquith, Gertner, and Scharfstein 1994). Claessens and Klapper (2005) suggest that such workouts are particularly important in countries with concentrated banking relationships.

Second, the security on which Mirage defaults is straight debt; by assumption we do not allow complex financial structures that can get away from formal bankruptcy. Some of the problems we discuss can be avoided with convertible debt, for example. Recent research suggests that financial contracts indeed adjust to the legal environment (Lerner and Schoar 2005, Qian and Strahan 2006, Gennaioli and Rossi 2006).

Third, we have only one senior secured creditor (along with employees, suppliers and the government who are unsecured), so conflicts among creditors are not a major factor. Indeed, in both versions of the case, the amount owed to the secured creditor Bizbank equals the larger of Mirage's going concern and piecemeal sale value. Under a perfectly efficient bankruptcy procedure, then, Bizbank would just be fully repaid. We chose the numbers in this way to highlight the most basic costs of debt enforcement, which arise even when Bizbank is the residual claimant with respect to the future value of the business. In reality, conflicts of interest among creditors create major complications (Bebchuk 1988, Gertner and Scharfstein 1991, Aghion, Hart, and Moore 1992, Bolton and Scharfstein 1996, Hart and Moore 1998, Stromberg 2000, Berglof et al. 2003).

Fourth, in both versions of the case, we assume that the creditor knows from the start whether piecemeal sale or preservation as a going concern is efficient for Mirage. One argument for court-supervised bankruptcy is that such knowledge is unavailable, and bankruptcy should facilitate the discovery of the efficient way to deal with Mirage.

Fifth, the hotel does not require any additional financing to continue operations – its problem is the inability to pay the outstanding debt.

Sixth, the hotel is small and therefore not important enough for politicians or judges to try to keep it going "in the public interest." Politicization of bankruptcy has also been an important concern (Weiss and Wruck 1998, Lambert-Moglianski, Sonin, and Zhuravskaya 2006, Chen and Schoar 2006).

Seventh, our case facts explicitly rule out tunneling of the hotel's assets during debt enforcement. In the developing countries in particular, tunneling of the firm by the controlling shareholder may present a major problem for creditors, creating pressure for a quick piecemeal sale (Johnson et al. 2002, La Porta and Lopez-de-Silanes, and Zamarripa 2003, Gennaioli and Rossi 2006). This means that some institutional arrangements, such as automatically shutting down a firm during insolvency proceedings, will perform extremely badly under our no tunneling assumption, although such arrangements could make sense if keeping the firm alive encourages the diversion of assets.

3. Data

3a. Procedures

The legal procedures that respondents choose as the most likely option for resolving Mirage's insolvency include foreclosure, liquidation and reorganization. Each procedure can lead either to Mirage continuing operation as a going concern, or to its piecemeal sale (figure 1) below.

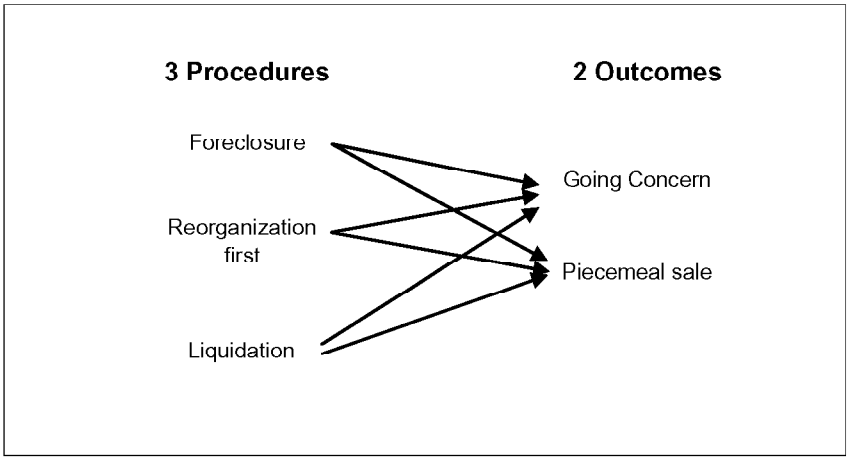


Figure 1: Procedures and Outcomes

Foreclosure is a debt enforcement procedure aimed at recovering money owed to secured creditors. Foreclosure does not protect unsecured creditors, who must rely on separate insolvency proceedings to recover the amounts owed them. In some countries, an insolvent company (or unsecured creditors) can cause a stay of foreclosure proceedings by initiating a reorganization or liquidation procedure, while in other countries, a reorganization or liquidation filing does not stop foreclosure. In the latter case, liquidation procedures may take place in tandem with or after foreclosure.

Foreclosure can be an entirely out-of-court procedure, in which a receiver steers the company to a sale of assets (either piecemeal or as a going concern). Indeed, the appointment of such a receiver can be part of the debt contract. In other countries, a court oversees foreclosure, although it is typically less involved than in bankruptcy. Some countries allow a creditor to take security over an entire business—often known as a "floating charge[8]." Under our case facts, foreclosure under floating charge gives

[8] We use the term "floating charge" when the entire business can be pledged as collateral. Different countries use different terms for this concept, including "enterprise mortgage," "enterprise charge," or "pledge of business." In the UK, "floating charge" can be used more narrowly, for instance by excluding inventory from the pool of pledged assets, but it is still possible to pledge the entire business.

Bizbank socially optimal incentives to dispose of Mirage. In other countries, Mirage as a business is not legally valid collateral, which obviously distorts Bizbank's incentives.

Liquidation is the procedure of winding up a company under court supervision.[9] In principle, it may lead to a sale of Mirage as a going concern, and does not necessarily result in the piecemeal sale of its assets.

Reorganization is a court-supervised procedure aimed at rehabilitating companies in financial distress. A reorganization procedure is not available in all countries. Reorganization protects the company while it attempts to rehabilitate itself; once reorganization begins, creditors generally may not enforce their claims against the company. The current management of Mirage may or may not retain control of the company during reorganization.

In some instances, as is the case with Chapter 7 and 11 proceedings in the United States, liquidation and reorganization are separate procedures. A petitioner must choose between the two. In other countries, there exists a single insolvency procedure and the company may be directed either to the liquidation or to the reorganization "track."

Regardless of the nature of the reorganization procedure, in many countries Mirage may still end up in liquidation after an initial attempt at reorganization.

3b. Responses

We present the two versions of the case to respondents and ask: what happens next? We first ask the respondents to outline the procedures available by law in the case of Mirage, regardless of the procedure that would most likely be followed. We then ask

[9] We consider here compulsory liquidation, where either a creditor files a liquidation petition, or the law requires that an insolvent debtor file the same petition under certain circumstances. Another process, voluntary liquidation not required by law, is outside the scope of our study.

them to indicate the most likely legal procedure to be followed in the case of Mirage—given their experience, their country's laws and the assumptions of the case study. Respondents explain which procedure is chosen and which party—Bizbank, Mirage, or another—selects it. Mirage has a first mover's advantage as management knows it will default. In countries where a debtor can seek relief from enforcement by unilaterally applying for reorganization, the most likely option is for Mirage to initiate a reorganization proceeding, as management wishes Mirage to continue as a going concern. In countries where liquidation and reorganization do not automatically stay foreclosure proceedings and where foreclosure is faster and cheaper than other procedures, Bizbank will initiate foreclosure. In countries where Mirage's financial position (it has negative net worth and is in default) automatically triggers liquidation, liquidation is the most likely procedure.

In the United States, for example, our respondents indicate that Mirage will successfully apply for a reorganization procedure under Chapter 11 of the Code. This is because reorganization imposes an automatic stay on enforcement and offers the best chance of keeping the firm in operation and current management in control. Mirage's first-mover advantage allows it to take this course of action. In the United Kingdom, our respondent reported that Bizbank retains the right to appoint an administrative receiver under a foreclosure measure because its security was granted before the effective date of the Enterprise Act, 2002. Administrative receivership is a procedure that benefits mainly the secured creditor; if the security had taken effect after the effective date of the Enterprise Act, Bizbank would not have been able to appoint an administrative receiver and the company would have appointed an administrator, with the goal of preserving the

company as a going concern. In Greece, commencement of reorganization requires the consent of 60% of all creditors, which must include at least 40% of secured creditors. Reorganization is therefore possible only with Bizbank's consent. Bizbank is unlikely to offer such consent because suppliers to Mirage in reorganization will become senior to Bizbank, prejudicing its own claims. Enforcement of the security right by Bizbank is also possible in Greece, but expensive. Our respondents indicate that liquidation is the most likely choice, and that Mirage is likely to be sold piecemeal.

We also ask respondents to describe how the insolvency process evolves in the most likely scenario under the assumptions of the case. They describe the main sequence of steps and associated time from the moment of filing until the payment of all parties, including the main points of delay such as appeals. In Singapore, for example, there are 8 main steps to the insolvency case. First, Bizbank would issue a formal demand for the monies due under the security, normally within 14 days. Since Mirage is unable to pay, Bizbank would then appoint a receiver to manage Mirage, who would assume control of the business with an objective to sell it as a going concern and recover the debt owed to Bizbank. This step typically takes 4 weeks. Marketing submissions are received and analyzed (requiring 2 weeks), and a marketing program agreed and implemented (5 weeks). Negotiations with interested parties and execution of the contract of sale for Mirage take place (4 weeks), followed by completion of the contract of sale (12 weeks). Unsecured creditors are likely to appeal the matter on the grounds that the sale price is not reasonable, delaying the proceedings by 2 months assuming that there is no real evidence to support their challenge (as under the facts of the case). Funds are disbursed and final reports are prepared (3 weeks).

Respondents predict whether Mirage continues operating as a going concern after the resolution of the case and justify their choice with written arguments. In Italy, for example, reorganization plans may be approved by the court only if 40% of unsecured creditor debt is satisfied in the plan and 100% of secured creditor debt is satisfied in the plan. Since the value of Mirage is exactly equal to the amount owed Bizbank but is not enough to satisfy unsecured creditors, the reorganization plan is not accepted and the firm is automatically sold piecemeal. In the Czech Republic, the administrator is paid more for each sale that is conducted, thus increasing the incentive for piecemeal sale.

Last, respondents estimate the cost of the proceeding borne by all parties. These costs include: court fees, attorney fees, notification fees, publication fees, administrator fees, assessor and inspector fees, asset storage and preservation costs, liquidation/auctioneer fees, government fees/levies, and other fees respondents are asked to describe. In most countries, the largest component of costs is attorney fees.

3c. Main variables

Table 1 defines the variables used in the analysis. Four main variables are recorded from survey responses. First, we document the time to complete the insolvency process. Time covers the period from the moment that Mirage defaults until the resolution of the insolvency proceeding, when all creditors are paid. It includes all delays from disputed claims and appeals that are likely given the assumptions of the case study. Time is not just a rough estimate of the overall duration of the insolvency proceeding; it is estimated by adding up the duration of various stages. Time is reported in years.

Next, we record the cost to complete the insolvency proceeding, expressed as a percentage of the bankruptcy estate at the time of entry into bankruptcy. The bankruptcy estate is the greater of the going concern and piecemeal sale values, which is always 100.

Third, we create a dummy variable for whether the efficient insolvency outcome is achieved. In Version A, the efficient outcome variable is assigned a score of 1 if Mirage continues operating as a going concern upon completion of the insolvency process. If Mirage is sold piecemeal in Version A, the efficient outcome is assigned a score of 0. In Version B, the scoring of the efficient outcome variable is reversed. The variable is assigned a score of 1 if Mirage discontinues operations and is sold piecemeal, and a score of 0 if it continues operating as a going concern. Scoring the efficient outcome is independent of the choice of procedure.

To assess the efficiency of each procedure, we need to know what value Mirage generates during the insolvency process. Recall that we have told our respondents that the company just covers its variable costs. This assumption holds regardless of whether Mirage operates as a going concern during the insolvency process or is closed down.

From these variables, we calculate a measure of efficiency, defined as the present value of the terminal value of the firm after bankruptcy costs, or

$$E = \frac{100 * EO + 70 * (1 - EO) - 100 * c}{(1 + r)^t} \qquad (1)$$

Here EO equals 1 if the efficient outcome is achieved and 0 otherwise, c is the cost and t is the time to complete bankruptcy, and r is the lending rate.

We organize the data by income levels and the legal origin of a country's bankruptcy laws. Legal origin is obtained from a study of the origin of bankruptcy laws. There are four main insolvency legal origins: English, French, German and Nordic. The

results are similar to the general commercial legal origin reported in La Porta et al. (1997, 1998), with some exceptions. For example, the commercial and company laws in Iran, Saudi Arabia, and the United Arab Emirates are based on English laws, but their bankruptcy laws are of French tradition—via France, Egypt and Kuwait, respectively. Although Japan and Korea are of German commercial legal origin, their bankruptcy codes are based on English law. Switzerland, Russia and Bulgaria based their bankruptcy laws on the French tradition; their commercial laws are of German origin.

In addition to the four main variables, we surveyed respondents on priority rules in bankruptcy (see section 6) and on 39 other rules and structural features of the bankruptcy system (see section 5). The latter come from responses to questions on the type of courts with jurisdiction over bankruptcy cases, rules on appeals in bankruptcy, restrictions on available bankruptcy procedures, rules to keep the business operating as a going concern, and information on which participants control the bankruptcy process. Twenty-seven of these questions for which we have adequate answers were coded for the analysis. These variables were verified from the available laws and public information.

4. Basic Results

Tables 2 and 3 present our basic data and results for version A, in which it is efficient to keep Mirage as a going concern. In Table 2, countries are independently divided into three per capita income categories (high, upper middle, and lower middle income) and three categories based on the likely procedure to be used to enforce Mirage's debt (foreclosure, liquidation, and reorganization). Each of the nine cells lists the countries that fall into that cell, and for each country the time and cost of its procedure,

the expected outcome (whether the firm continues as a going concern), and the summary efficiency measure. We also report the average for each income/procedure cell, as well as the average of each variable by income group and by procedure.

Before turning to Tables 2, note world-averages for our key variables. On average, the insolvency of Mirage takes 2.92 years to resolve, costs 14% of the estate, and allows Mirage to continue as a going concern in only 36% of the cases. The world-wide average efficiency measure is 50.68%, which means that half of Mirage's value in lost in debt enforcement. The result that, in our extremely simple case -- with one senior creditor, known going concern and piecemeal sale values, and no tunneling – half the value is lost in insolvency seems to us to be quite striking. The concern about the efficiency of debt enforcement and bankruptcy procedures is evidently justified.

Although the averages look troubling, there is tremendous variation among countries in time, cost and efficiency. In nine countries (all of them rich), insolvency takes less than a year to resolve, but in another nice (mostly poor), it takes more than five years. The costs are not enormous on average, but in seven countries, typically those with very long proceedings, they consume over 30% of the estate, with the dominant cost being attorney fees. In Singapore, Netherlands, and Japan, our respondents indicate that only about 5% of the estate is wasted in debt enforcement. In Romania, Turkey and Angola, only about 5% of the estate is *left*, in present value terms, by the end of debt enforcement. There is thus tremendous variation among countries in the efficiency of debt enforcement proceedings, which suggests the need to dig deeper and understand some of the key determinants of outcomes and efficiency[10].

[10] We use nominal lending rates from the IFC in these calculations of efficiency. We confirmed the principal results using real lending rates as well as a fixed 8% rate for each country.

The most basic findings of Table 2 can be gleaned by looking across averages by procedure and by income. Countries are roughly evenly divided between those most likely to use foreclosure, liquidation, and reorganization to deal with Mirage, with reorganization a somewhat larger category than the other two. Averaging across all countries using a particular procedure, there is no evidence that any one of them is superior to others. Put differently, there is no evidence for Mirage that liquidation is superior to reorganization, or that either is superior to foreclosure. This is particularly interesting since, in our context, foreclosure in theory yields the first best. The question of appropriate debt enforcement rules cannot be resolved at such a broad level.

Looking across income groups, in contrast, enormous differences emerge. The richer countries are vastly more efficient at debt enforcement than the poorer ones. Averaging over all the procedures, the richest countries take 1.8 years to complete debt enforcement, at a transaction cost of 9% of the estate. They keep Mirage operating as a going concern in 70% of the cases, and achieve the average efficiency score of 75.8. The corresponding numbers for upper middle income countries are 3.27 years, 16% of the estate, with Mirage continuing as a going concern in only 20% of the cases, and the average efficiency score of 44.6. Finally, for the lower middle income countries, the time is 3.62 years, the cost is also 16%, the going concern outcome also materializes in 20% of the cases, and the efficiency score is 34 on average. The sharp decline in the efficiency score compared to upper middle income countries comes from higher interest rates in the lower middle income countries. Clearly, per capita income is a crucial determinant of both getting the right outcome and the overall efficiency of a procedure.

There are several potential reasons for the enormous difference – 70% versus 20% -- between the rich and the middle income countries in efficiently preserving *Mirage* as a going concern. One possibility is the difference in administrative or judicial competence, which causes middle income countries to nearly always fail at rehabilitation (Ayotte and Yun 2006). Alternatively, successful rehabilitation may require a good deal of security of Bizbank's property rights, which cannot be guaranteed in middle income countries (Gennaioli and Rossi 2006). If suppliers, customers, employees, current management or Mr. Douglass can lay claims on Mirage assets during rehabilitation (or even tunnel them), Bizbank has a very strong incentive to grab what it can and sell it piecemeal.

Per capita income does not explain everything, however. Some rich countries, such as United Arab Emirates, Israel, France, and Italy, have hugely inefficient debt enforcement. Some lower middle income countries, such as Jamaica and Colombia, do pretty well. Nonetheless, debt enforcement joins the list of many other public, as well as private, activities in which per capita income predicts efficiency.

Per capita income is a strong predictor of both the going concern outcome and efficiency for *every* procedure. The rich countries are the most efficient at foreclosure, liquidation, and reorganization; the upper middle income countries are roughly as efficient as lower middle income ones at foreclosure and reorganization, and sharply more efficient at liquidation. The basic finding is not a procedure composition effect.

A closer look reveals perhaps the most interesting pattern in Table 2. Looking across high income countries, foreclosure is roughly as efficient as liquidation, but reorganization is the most efficient procedure. The main reason is that reorganization preserves Mirage as a going concern 80% of the time, compared to 63% for foreclosure

and 71% for liquidation. Among the lower middle income countries, reorganization is roughly as efficient as liquidation, but foreclosure is the most efficient procedure. These countries almost never manage to save Mirage as a going concern, so speed and lower cost are conducive to efficiency. For upper middle income countries, the most efficient procedure is liquidation. Overall, the best procedures line up along the diagonal, with the richer countries doing better at the more complex procedures.

We revisit these results with more statistical precision in Table 4, but the suggestion is clear. Richer countries have a comparative advantage at the more complex procedures, meaning procedures involving a higher level of public sector (court) intervention. A rich country benefits from trying to rehabilitate Mirage because it raises the likelihood of preserving it as a going concern, a poor country should forget about reorganization since it rarely saves Mirage, and should stick to the quickest and simplest procedure, which here is foreclosure.

Table 3 presents the same data as Table 2, except countries are organized by procedure and legal origin rather than procedure and per capita income. Several results stand out. First, relative to general world patterns, French legal origin countries rely particularly heavily on reorganization of Mirage, and German legal origin countries on liquidation – the latter being a familiar result. None of the four Nordic legal origin countries utilizes foreclosure. The Nordic countries achieve very high efficiency, largely because they always succeed in keeping Mirage as a going concern (and are reasonably fast). Some of this efficiency undoubtedly comes from being rich.

Perhaps more surprisingly, averaging across procedures, common law countries achieve higher efficiency scores than either German or French legal origin countries in

their debt enforcement. The German legal origin countries are more efficient than the French ones in foreclosure and liquidation, but are slightly behind in reorganization. The common law countries are more efficient than French and German legal origin ones at all procedures, although they are only slightly ahead of German legal origin countries in liquidation. The latter clearly have a comparative advantage at liquidation; the common law countries have a comparative advantage at foreclosure.

The immediate reason for the low efficiency of French legal origin countries in debt enforcement is clear from the data: whatever procedure they use, they succeed in keeping Mirage as a going concern in only 20% of the cases. The comparable number for common law countries is 80%. The failure to keep Mirage going is not just a poor country outcome; both France and Italy fail to do so, according to our respondents. Related to this failed effort to rehabilitate, it takes French legal origin countries 3.51 years to complete debt enforcement, compared to 1.88 years for common law countries. There is no difference in the transaction costs of the procedures. These results present a clear finding, but also a puzzle: why do French legal origin countries take so long but still fail to keep Mirage going? We try to shed light on this question in Section 5.

The results of Tables 2 and 3 are summarized compactly in Table 4, which presents cross-country regressions. In the first two columns, the dependent variable is the efficiency of debt enforcement procedure; in the last two columns, the dependent variable is a dummy equal to 1 if Mirage is preserved as a going concern. The independent variables are the logarithm of per capita GDP, legal origin, and procedure types, with common law and foreclosure omitted. In the second and fourth columns, we add interaction terms of procedure types and per capita income.

The results confirm that richer countries have sharply higher efficiency scores and are more likely to keep Mirage as a going concern. Compared to common law countries, French and German legal origin countries are sharply less efficient; Nordic countries are less efficient holding income constant, but this result is not statistically significant. There are no clear differences among procedures in either efficiency or keeping Mirage as a going concern, except in the second regression the coefficient on reorganization is sharply negative and statistically significant. Looking at the interaction terms, we do find support for the idea that reorganization is a better procedure in richer countries, but there are no statistically significant differences between foreclosure and liquidation. These results are supportive of the findings in Tables 2 and 3, except the conclusions about the comparative advantage of alternative procedures are moderated.

5. Structural Characteristics of Debt Enforcement

The results of Section 4 may seem a bit discouraging, in that they suggest that the efficiency of debt enforcement is shaped by per capita income and legal origin – two variables that cannot be quickly changed. In this section, we look instead at a number of structural characteristics of debt enforcement procedures, and ask whether they explain efficiency and its determinants. We then further ask whether such explanatory power remains even holding per capita income and legal origin constant. This may be too tough a test since, as we show below, many structural characteristics of debt enforcement are correlated with per capita income and especially legal origin. Nonetheless, some robust suggestions for improving debt enforcement procedure may emerge as a result.

Panel B of Table 1 presents 27 structural characteristics of debt enforcement obtained from our respondents. We divide these characteristics into five groups: those that pertain to all procedures (there is only one of those), those that pertain to foreclosure only, those that pertain to all bankruptcy procedures (i.e., liquidation and reorganization), those that pertain to liquidation only, and those that pertain to reorganization only. These measures include both economic and legal characteristics of debt enforcement[11].

Table 5 presents the correlations of these characteristics with the logarithm of per capita income, the civil law dummy, and Version A outcomes. We discuss the results by procedure of relevance. In addition, Table 6 shows regressions of Version A efficiency on legal origins, per capita income, and each of the structural variables, organized again by procedure of relevance. We focus on the results in Table 5, but also indicate whether they appear robust to Table 6 specifications.

The only variable that applies to all procedures is the presence of statutory time limits on appeals. These limits tend to be present in poorer countries and are negatively correlated with both keeping Mirage as a going concern and efficiency. This negative correlation disappears once income is controlled for.

The next four variables pertain to foreclosure. The first two – whether Bizbank is allowed the out of court seizure and sale of collateral and whether Bizbank is allowed to enforce its claim in an out of court procedure – are measures of raw creditor power in foreclosure. Both variables are characteristics of common law procedures, and are strongly associated with a shorter time to complete foreclosure, with greater likelihood of keeping Mirage as a going concern, and with higher overall efficiency. The third

[11] Our data for the structural characteristics are almost but not entirely complete, in that we did not obtain usable information for some of the countries from our respondents.

variable, floating charge, measures where Bizbank can by law take the whole of Mirage, as opposed to specific fixed assets, as collateral. This variable too is a characteristic of common law legal regimes, and is associated with shorter time, lower cost, higher likelihood that Mirage is kept going, and higher overall efficiency. The fourth foreclosure variable measures whether unsecured creditors automatically receive what is left over after Bizbank is paid or require a separate procedure. It does not matter for efficiency. Recall, however, that for our case facts, nothing is left over after Bizbank is paid, so this variable may not be so relevant. The bottom line on foreclosure is clear: the common law way of doing foreclosure, which allows floating charge debt contracts and gives the senior creditor enormous rights without much protection of Mirage from courts, works remarkably well for our case facts.

These results may shed light on a puzzling feature of the data. Recall that, under our case assumptions, Bizbank has the socially optimal incentives to deal with Mirage if it can come to control it after the default. Why is it, then, that in Table 2, for both the rich and upper middle income countries, liquidation and reorganization yield higher efficiency than foreclosure? Table 5 suggests a possible explanation: legal restrictions on floating charge debt, which undermine Bizbank's ability to take control of Mirage.

To test this hypothesis, we computed separately the average efficiency of foreclosure for countries with and without floating charge. Our findings are consistent with this hypothesis. In *every* income category, the average efficiency of foreclosure with floating charge is higher than that of both liquidation and reorganization. Under our case facts, floating charge foreclosure indeed comes closest to efficiency, although one must be careful to note that these results might reflect some other benefit of common law.

These results are also broadly consistent with Franks and Sussman's (2006) extremely optimistic empirical assessment of foreclosure with floating charge in the UK.

The next nineteen variables deal with characteristics of bankruptcy procedures. The first variable – whether bankruptcy is handled by a specialized court – shows that such courts are sharply more prevalent in the richer and in the common law countries. The handling of bankruptcy by a specialized court is associated with lower case time, lower cost, higher likelihood that Mirage continues as a going concern, and a sharply higher measure of overall efficiency.

The next six variables deal with specific aspects of the appeal process of bankruptcy proceedings. Three of them measure whether the case proceeds while particular appeals are made; these variables directly capture the scope for delay. Three parallel variables measure whether appeals are heard by the same judge as the one issuing the initial order, or a different judge. These variables as well measure the scope for delay, although less directly. Although these variables are not strongly related to per capita income and legal origin, they do seem to matter for efficiency. In particular, having the bankruptcy case proceed (rather than be suspended) while particular rulings are appealed is strongly related to shorter time and higher overall efficiency. In contrast, having appeals heard by the same judge does not seem to influence time or efficiency, although this result changes with controls in Table 6 below. Again, the message is clear: the management of appeals is crucial for the efficiency of bankruptcy.

The next variable captures the legal requirement that reorganization be attempted before Mirage goes into liquidation. This requirement is more prevalent in poorer and in civil law countries, and is associated with a lower likelihood that Mirage continues as a

going concern and lower efficiency. The next variable, automatic stay, measures whether Bizbank is prevented from enforcing its security when bankruptcy proceedings commence. It is not correlated with our outcome measures. Automatic stay on lawsuits measures whether lawsuits against Mirage are automatically stayed when bankruptcy proceedings commence. Again, it is not related to our outcome measures.

The next six variables reflect the rules governing Mirage operations in bankruptcy proceedings. In some countries, Mirage automatically ceases operations upon commencement of bankruptcy. Not surprisingly, this rule makes it less likely that Mirage survives as a going concern, although the correlation with efficiency is not statistically significant. In other countries, Mirage temporarily ceases operations pending the resolution of bankruptcy. Again, this rule makes it less likely that Mirage ever resumes as a going concern, and is associated with lower efficiency. In some countries, suppliers and customers may rescind contracts with Mirage without penalty upon the initiation of bankruptcy proceedings. This rule, more prevalent in the poorer countries, prolongs the case, prevents Mirage from continuing as a going concern, and is associated with sharply lower efficiency. Some countries restrict dismissals by Mirage. Such restrictions reduce the likelihood that Mirage survives as a going concern, and have an adverse, though not statistically significant, effect on efficiency. Finally, it does not appear to matter whether the management team of Mirage remains in control of ordinary business during bankruptcy proceedings. Again, this battery of variables yields a clear bottom line about what does not work in bankruptcy: measures that disrupt Mirage operations during bankruptcy (which may have some logic to them, such as reduction of tunneling), for our case facts make it less likely that Mirage survives, and therefore reduce efficiency.

The final group of all bankruptcy variables describes the control of the bankruptcy process, and in particular the role of the creditors. It does not seem to matter whether Bizbank has the right to appoint the bankruptcy administrator. However, it seems beneficial for both the likelihood that Mirage continues as a going concern and overall efficiency that Bizbank has the right to dismiss the administrator -- a right more prevalent in the richer countries. Finally, it does not matter whether the administrator is paid based on the market value of the estate.

We have one structural variable that pertains to liquidation only, namely the presence of an "automatic trigger," such as a certain period of non-payment, for liquidation. It is not correlated with efficiency.

Finally, we have two structural variables that deal with reorganization only. It appears beneficial for the cost, the likelihood of survival of Mirage, and overall efficiency, that creditors vote directly rather than in a committee on the reorganization plan. And it does not seem to matter whether the law requires a proof of reorganization prospects before reorganization is attempted.

In Table 6, we revisit these structural characteristics of debt enforcement in a regression format, controlling for both per capita income and legal origin. As we indicated, these may be too many controls but we want to know which characteristics survive. In virtually all regressions, French legal origin continues to exert an adverse influence on efficiency, and per capita income a positive influence. There is no sense in which our structural characteristics kill these enormously powerful effects.

For foreclosure proceedings, Table 6 suggests that out of court seizure and sale of assets, as well as floating charge debt contracts, are conducive to higher efficiency. The

message for foreclosure is clear: for our case facts, letting Bizbank grab and sell Mirage as a business is highly conducive to efficiency.

For our bankruptcy variables, specialized courts lose statistical significance once legal origin and income are held constant. On the other hand, the appeals variables remain significant and some gain significance compared to Table 5. Specifically, the evidence indicates that it is beneficial from the standpoint of efficiency for the bankruptcy proceedings to continue during appeal AND for the same judge who made an initial ruling to hear the appeal as well. These data speak loud and clear that an elaborate appeals process breeds delay. Extensive appeal, and the delay it engenders, might have a fairness justification in a variety of legal disputes, but it is devastating for bankruptcy proceedings, where time is of the essence.

Although some of the interventions in operations lose statistical significance, two remain important. Automatic cessation of operations upon entering bankruptcy is associated with lower efficiency. More strongly, allowing suppliers and customers to rescind contracts is associated with lower efficiency. Although other variables lose statistical significance, the pattern of signs continues to tell the same story as the raw correlations: legal rules that cause Mirage to stop operations are extremely disadvantageous for efficiency under our case facts.

With respect to the remaining variables on creditor powers, the results are more confusing and the coefficients often change signs compared to Table 5. It seems to be undesirable for the creditor to appoint the administrator, and inconsequential to be able to dismiss him – the opposite of the pattern in Table 5. It seems to be desirable from the efficiency point to have proof of reorganization prospects, again in contrast to the results

in Table 5. On the other hand, regression results in Table 6 confirm those in Table 5 that it is beneficial for creditors to vote directly rather than in a committee.

In summary, while there are many suggestive results, there are only three robust bottom lines. First, the best way to do foreclosure is with maximum creditor rights, minimum court involvement, and floating charge debt contracts. Second, a robust strategy for reducing the time and improving the efficiency of bankruptcy proceedings is to circumscribe the appeals process. Third, bankruptcy rules that have the effect of stopping or curtailing the operations of Mirage during bankruptcy are not conducive to efficiency. From the point of view of bankruptcy reform, this is quite a range of useful measures that seem compatible with all levels of development and legal systems.

6. Robustness.

6a. Version B of the Case

Our respondents also answered questions about Version B of the case, in which selling Mirage piecemeal is efficient. We downplay this version for two reasons. First, it was presented to the respondents as a secondary case, so we cannot be sure that they have answered the questions with as much alacrity as those for version A. Second, and more importantly, our instructions were somewhat misleading, in that we told respondents to "now assume that Mirage will not recover from its downturn." As a consequence, the respondents might not have considered the possibility that Mirage lingers on as an inefficient going concern for a long time, and assumed that piecemeal sale is inevitable.

In general, the results for Version B are very similar to those for Version A, with one crucial exception. The efficient outcome of selling Mirage piecemeal is now always

eventually obtained. This finding is not entirely surprising, since in the case facts for Version B, Mirage by assumption cannot recover from the downturn. Despite reaching the efficient outcome, debt enforcement remains highly inefficient. World-wide time and cost averages for ultimate resolution are now 2.85 years and 13% of the estate, compared to 2.92 years and 14% of the estate for Version A. But because the efficient outcome is obtained, world-wide average efficiency rises from 50.68% to 64.14%.

Compared to Version A, Mirage is now more likely to undergo liquidation or foreclosure rather than try reorganization. This shift is particularly pronounced among the richer countries and the common law countries. Richer countries continue to be vastly more efficient at debt enforcement than poorer ones. Among legal origins, Nordic countries are the most efficient, and French legal origins ones are by far the least. The adverse French legal origin effect on efficiency remains highly significant in a regression. At the same time, we "lose" the diagonal result that richer countries are comparatively better at more complex procedures. With no benefit of saving Mirage, there is no efficiency reason to try reorganization even in the countries that can execute it well. Finally, the results for specific structural variables become weaker in the regression context, although the result on appeals remains strong. Overall, the evidence on Version B reinforces the view that debt enforcement looks a lot like other forms of government regulation: it works least well in the poor and French legal origin countries.

6b. Priority

A striking deviation from freedom of contract in debt enforcement proceedings is violation of absolute priority, which is evidently common even in the U.S. (Franks and

Torous 1989, Weiss 1990). In some countries, Tax Authorities, employees, suppliers, or even shareholders by law have priority over Bizbank in their claims against Mirage. Such violations of absolute priority may distort Bizbank's incentive to dispose of Mirage most efficiently, and have adverse consequences for the development of debt markets. La Porta et al. (1997, 1998) use violation of absolute priority as one of the key elements of their creditor rights index. Our respondents provided information on deviations from absolute priority in their countries' laws, and here we examine these patterns. We then use these data to examine an alternative measure of quality of debt enforcement: the payoff to Bizbank rather than overall efficiency.

The raw facts on deviations from absolute priority are striking. In the world as a whole, 55% of countries deviate from absolute priority, while only 45% respect it. Deviations from absolute priority occur in 33% of high income countries, 50% of upper middle income countries, and 74% of lower middle income countries. They occur in no Nordic countries, 25% of English legal origin countries, 52% of German legal origin countries, and 74% of French legal origin countries. In this particular obstacle to debt enforcement, the poor and the French legal origin countries again lead the way.

For a more detailed analysis, we record the order of priority, P, in which claims are paid. If Bizbank, the secured creditor, is paid first out of the proceeds from the insolvency proceeding, then P = 1. If one claimant group—the Tax Authority, workers, suppliers or shareholders—has priority over the secured creditor, ranking Bizbank 2nd in priority, then P = 2. If the secured creditor is ranked 3rd after two other claimant groups, P = 3; if is ranked 4th, P = 4. The recovery rate for the secured creditor is then given by:

$$R = \frac{100 * EO + 70 * (1 - EO) - 12 * (P - 1) - 100 * c}{(1 + r)^t} \qquad (2)$$

The world-wide mean of the priority variable is 1.9. The world-wide mean of version A Bizbank's recovery is 45%, compared to the mean 50.7% for the efficiency measure. In other words, an additional 5% of the estate is lost to the senior creditor, on average, because of violations of absolute priority. The correlation between priority are recovery is -.52[12].

In our data, the correlation between the overall efficiency of debt enforcement and Bizbank's recovery rate is .97. Not surprisingly, the empirical correlates of the recovery rate are essentially the same as those of efficiency. Most importantly, per capita income and legal origin crucially shape both. The structural variables highly correlated with efficiency are also highly correlated with recovery. These results suggest that national priority rules undermine debt enforcement even relative to the dire situation that would exist if priority were respected, especially in the poor and French legal origin countries.

7. Debt Market Development

Do our measures of efficiency of debt enforcement predict the development of debt markets? In this section, following the work of La Porta et al. (1997, 1998) and Levine (1999), we present some basic regressions addressing this issue.

Table 7 presents the now relatively standard specification (La Porta et al. 1997, Djankov et al. 2006) of the determinants of the ratio of private credit to GDP for the 84 countries with available data. Similar to the previous papers, we control for total GDP, GDP per capita growth, inflation, and contract enforcement days (a measure of the overall quality of the legal system). In some specifications, we include the creditor rights

[12] Davydenko and Frank (2005) estimate median bank recovery rates for samples of actual bankruptcies in the UK, Germany and France. Their estimates are 92%, 67%, and 56% respectively, which is not too far from our estimates of 91%, 56%, and 47% for the respective countries.

index and a measure of whether a county has a public or a private credit registry (information sharing). In other specifications, we control for legal origin. The first three regressions include Version A efficiency; the next three include Version B efficiency.

The results confirm the earlier findings that the level of GDP and contract enforcement days are correlated with the ratio of private credit to GDP. Likewise, as in earlier work, both the creditor rights index and information sharing predict the size of the private debt market[13]. Neither GDP per capita growth nor inflation is significant in any specification. Interestingly, in these specifications, there is no statistically significant residual adverse effect of French legal origin on debt market development, although there remains one of German legal origin, as compared to common law. The new measures of efficiency have highly statistically significant positive effects on the private debt to GDP ratio. A 10 point increase in efficiency is associated with a 5.5 point higher ratio of debt to GDP. Since legal origin influences many of the independent variables in these specifications, we cannot properly run instrumental variable regressions, and hence cannot claim that these effects are causal. At least for OLS, however, efficient debt enforcement is strongly positively associated with private debt market development.

Table 8 presents regressions using other dependent variables to measure debt market development, which come from different sources. These include a measure of non-performing loans from the IMF, Moody's rating of financial risk for a country, perceived efficiency of bankruptcy from the World Economic Forum, perceived access to loans, perceived efficiency of credit markets, and perceived soundness of the financial system. In all regressions, we control for contract enforcement days. The efficiency of

[13] See La Porta et al. (1997, 1998), Djankov et al. (2006), and Haselman, Pistor and Vig (2005).

debt enforcement matters across specifications, consistent with the findings in Table 7. These results are also confirmed using recovery rates rather than efficiency measures[14].

8. A Suggested Interpretation

We have presented a range of findings about debt enforcement around the world. Some of these findings have dealt with specific characteristics of foreclosure and bankruptcy procedures that might be conducive to their efficiency. These findings may form a basis for thinking about reform of debt enforcement.

But there is a broader theme that emerges from this paper which we emphasize here, namely the fundamental similarity between debt enforcement and other aspects of public regulation of economic activity. Debt enforcement, like public regulation more generally, is much more efficient in the richer than in the poorer countries. Furthermore, debt enforcement, like public regulation more generally, appears to be more efficient in common law than in French civil law countries (see, e.g., La Porta et al. 1999). Last but not least, in debt enforcement, as in other forms of public regulation, richer countries appear to have a comparative advantage in mechanisms requiring more public supervision (rehabilitation of firms) and poorer countries in mechanisms requiring less (foreclosure). Put simply, debt enforcement is more naturally seen as another kind of public regulation than as an activity specific to corporate insolvency.

One way to see this clearly is by looking at Table 9, which presents the correlations between our measures of efficiency of debt enforcement, the measures of creditor rights and information sharing from Djankov et al. (2006), and a variety of

[14] We also check, using data from Claessens and Klapper (2005), whether higher efficiency of debt enforcement is associated with greater use of bankruptcy. There is a mild positive association, which becomes insignificant once we control for per capita income and legal origin.

updated measures of the quality of government from La Porta et al. (1999), as well as French legal origin and per capita income. The correlations between efficiency of debt enforcement and creditor rights or information sharing are small. On the other hand, the correlations between efficiency of debt enforcement and such diverse measures of public sector performance as tax compliance, corruption, or infrastructure quality are huge.

One way to think about these findings is suggested in Djankov et al. (2003a), who argued that all types of government intervention involve a tradeoff between dictatorship and disorder. Lighter intervention might lead to greater market failures and disorder; heavier intervention might lead to greater scope for abuse of the private sector by government officials, what the authors called dictatorship. For a given country or sector, Djankov et al. (2003a) call the set of feasible pairs of dictatorship and disorder the institutional possibility frontier (IPF). In their framework, richer countries generally have their IPFs closer to the origin, since their higher levels of human and social capital allow for more effective ways of dealing with both dictatorship and disorder.

Djankov et al. (2003a) argue that socially efficient institutions optimize this tradeoff between dictatorship and disorder by minimizing the total social costs of dictatorship and disorder. Since richer countries have their IPF's closer to the origin, they will generally have lower levels of both dictatorship and disorder in equilibrium. Moreover, since richer countries do not face as high a risk of public sector abuse of the private sector, and therefore should optimally choose higher levels of regulation. As a consequence, the transplantation of intervention-heavy mechanisms of public administration from rich to poor countries leads to less efficient outcomes. In particular, in that framework, regulatory strategies inspired by the French legal tradition might travel

poorly to the developing world. Interestingly, Ayotte and Yun (2006) argue in a related vein but in a context much closer to the current paper that more sophisticated debt enforcement procedures might be inappropriate for countries with low judicial expertise.

Cross-country empirical evidence is consistent with these predictions. An examination of objective measures of public regulation, such as the regulation of entry (Djankov et al. 2002), the regulation of labor markets (Botero et al. 2004), and the formalism of the judicial system (Djankov et al. 2003b), as well as of the subjective indicators of the quality of government (La Porta et al. 1999), consistently shows a positive influence of per capita income, and a negative influence of French legal origin, on the quality of government intervention. The current results on the efficiency of debt enforcement, while obtained using a new data collection methodology and covering a new area of public regulation, fit into this broader pattern. Furthermore, the evidence on deviations from absolute priority, which we have interpreted as an indicator of government intervention, also fits into this broader pattern. Consistent with Djankov et al. (2003a), poor debt enforcement reflects poor public administration more broadly, as well as problems resulting from transplantation of interventionist models of social control into developing countries.

9. Conclusion

We have found that debt enforcement around the world is highly inefficient, even in a relatively simple case we consider. The inefficiency comes from high administrative costs and long delays, but also from excessive piecemeal sales of viable businesses, at least judging from our case. The inefficiency seems to be most intimately linked to low

levels of economic development, which probably proxies for poor public sector capacity of a country, and to French legal origin, which probably proxies for excessive formalism of the debt enforcement process. The inefficiency is also connected to some structural aspects of debt enforcement, such as ineffective collateral systems, poorly structured appeals, and business interruptions during bankruptcy. Finally, the inefficiency is a predictor of underdeveloped debt markets, consistent with the view that failures of debt enforcement discourage lending.

The narrative that emerges from these findings is fairly straightforward. Developing countries follow the rich ones and introduce elaborate bankruptcy procedures, presumably designed to save and rehabilitate insolvent firms. In the rich countries, although these procedures are time consuming and expensive, they generally succeed in preserving the firm as a going concern. In the developing countries, in contrast, these procedures nearly always fail in their basic economic goal of saving the firm. The long time and the high cost of bankruptcy notwithstanding, the firm is eventually sold piecemeal. These problems are exacerbated in the French legal origin countries, where the odds of saving a viable firm as a going concern are even lower, presumably because the excessive formalism of bankruptcy procedures only hurts.

Although we must repeat that ours is a very simple case, which abstracts from many important aspects of debt enforcement, the evidence does suggest some strategies for improving the available procedures. Perhaps the most basic message is that poor countries should not use debt enforcement mechanisms that involve detailed and extensive court oversight, since the administrative capacity of their courts may not tolerate such proceedings. Simpler mechanisms, such as foreclosure with no or limited

court oversight, might be preferred. Moreover, in a poor country, less formalistic mechanisms might improve debt enforcement. For example, restricting appeals might shorten the proceedings and improve efficiency. As countries develop, the evidence suggests that more elaborate proceedings, including reorganization, become appropriate. But with debt enforcement, as with so many other aspects of public sector involvement, extensive public sector oversight ahead of public sector capacity generally fails.

We are concerned that debt enforcement reforms might conflict with other legal institutions of a country. In this case, changing some aspects of a procedure without a broader – and possibly infeasible – legal reform might do little for efficiency. For example, debt enforcement appears to be a victim of some structural features of the French civil law system, such as extensive appeals, reversal of priority in bankruptcy, and restrictions on "floating charge". The latter problem is particularly noteworthy since our evidence indicates that foreclosure with floating charge often yields high levels of efficiency, consistent with theoretical predictions for our case facts. These prevailing rules might be rigidly fixed in the legal or political framework of a country because they have broader social objectives than the efficiency of debt enforcement. Having said this, it seems plausible that such rules as restricting appeals in bankruptcy proceedings, moving toward absolute priority, or floating charge debt, can work under civil law. The data show they often do. According to our evidence, many rather small changes in how debt enforcement is organized might have large social payoffs.

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Table 1: Description of the Variables

Panel A: Main Variables

Variable	Description
Foreclosure	Equals 1 if Mirage is most likely to undergo a foreclosure or debt enforcement proceeding under the factual and procedural assumptions provided. Foreclosure is a security enforcement procedure aimed at recovering money owed to secured creditors. It is generally governed by laws separate from bankruptcy law. Foreclosure proceedings do not aim to recover money for unsecured creditors or other claimants, although in some cases any excess funds may be disbursed to other claimants.
Liquidation	Equals 1 if Mirage is most likely to undergo a liquidation proceeding under the factual and procedural assumptions provided. Liquidation is the procedure of winding up a company under judicial supervision. Liquidation results in the dissolution of the legal entity. The underlying busines may be sold as a going concern or piecemeal, generally by auction.
Reorganization	Equals 1 if Mirage is most likely to undergo a reorganization proceeding under the factual and procedural assumptions provided. Reorganization is a court supervised procedure aimed at rehabilitating companies in financial distress. Reorganization proceedings generally provide for a statutory freeze on individual creditor enforcements and specify powers to bind dissenting creditors to a reorganization plan.
Time	The estimated duration, in years, of the time to resolve the insolvency case of Mirage under the factual and procedural assumptions provided. Time measures the duration from the moment of Mirage's default to the closing of the case or, in instances of successful reorganization, to the adoption of a plan and final procedures thereafter.
Cost	The estimated cost of the insolvency proceeding for Mirage, reported as a percentage of the value of the insolvency estate, borne by all parties. Costs include court/bankruptcy authority costs, attorney fees, bankruptcy administrator fees, accountant fees, notification and publication fees, assessor or inspector fees, asset storage and preservation costs, auctioneer fees, government levies and other associated insolvency costs.
Efficient Outcome	Equals 1 if the efficient insolvency outcome is achieved in the case of Mirage, 0 otherwise. In version A, the efficient outcome applies if Mirage continues operating as a going concern both throughout and upon completion of the insolvency process. In version B, the efficient outcome applies if Mirage discontinues operations and is sold piecmeal.
Lending rates	The bank lending rate to the private sector (IFS line 60P.ZF). Line 60P.ZF is defined as the "bank rate that usually meets the short and medium term financing needs of the private sector." In cases where lending rates are not reported in the IFS, we obtain data directly from central banks. *Source: IMF International Financial Statistics online database.*
Legal origin	A dummy variable that identifies the legal origin of the bankruptcy law of each country. The four origins are English, French, German and Nordic.
GDP per capita	Logarithm of gross national income per capita (Atlas method), 2004. Source: *World Development Indicators 2005.*

Panel B: Characteristics of the Insolvency System

Variable	Description
Statutory time limits on appeals	Equals 1 if there are time limits that restrict the duration of any appeal of the judgment by any party. Equals 0 otherwise. Procedure of relevance: all.
Out of court seizure and sale	Equals 1 if the secured creditor may seize and sell its collateral without court approval, judgment or enforcement. Equals 0 if court approval, judgment or enforcement is required to enforce security. Procedure of relevance: foreclosure.
No judgment for enforcement	Equals 1 if the secured creditor may enforce its security either in an enforcement court or out of court procedure, without first obtaining a judgment authorizing it to do so. Equals 0 if a court judgment is required before proceeding to enforcement. Procedure of relevance: foreclosure.
Floating charge	Equals 1 if laws allow a secured creditor to take an entire business as collateral for a loan, including all present and future assets, tangible and intangible, and a changing pool of assets. Equals 0 if available security instruments restrict the secured creditor to taking only certain types of fixed assets as collateral--such as the land or the building--or otherwise do not allow the secured creditor to take the entire business as collateral. Procedure of relevance: Foreclosure.
Automatic distribution of proceeds	Equals 1 if the unsecured creditors automatically receive any surplus funds from the sale of collateral following a foreclosure procedure. Equals 0 if unsecured creditors must initiate separate liquidation or other enforcement proceedings to recover their outstanding claims. Procedure of relevance: foreclosure.
Specialized Court	Equals 1 where the authority with jurisidiction in the case of Mirage is either a specialized bankruptcy court or a specialized bankruptcy administrative authority, 0 otherwise. A specialized bankruptcy court would generally have jurisdiction over liquidation and reorganization, but not foreclosure/debt enforcement proceedings. Procedure of relevance: liquidation/reorganization
Case proceeds on appeal of insolvency order	Equals 1 if the insolvency case is not automatically suspended upon appeal of the order initiating the insolvency process or if the insolvency order cannot be appealed at all. Equals 0 if the case is suspended until resolution of the appeal. Procedure of relevance: liquidation/reorganization.
Same judge for appeal of insolvency order	Equals 1 if an appeal of the initiation of the insolvency case is handled by the same judge supervising the insolvency case. Equals 0 if the appeal is heard by a different judge in an appeals court. Procedure of relevance: liquidation/reorganization.

Table 1: Description of the Variables

Panel B: Characteristics of the Insolvency System (cont.)

Variable	Description
Case proceeds on appeal of liquidation sale	Equals 1 if a sale in liquidation is executed even on appeal of the liquidation order or if the liquidation order cannot be appealed at all. Equals 0 if the case is suspended until resolution of the appeal. Procedure of relevance: liquidation.
Same judge for appeal of liquidation sale	Equals 1 if an appeal of the order to liquidate Mirage is handled by the same judge supervising the insolvency case. Equals 0 if the appeal is heard by a different judge in an appeals court. Procedure of relevance: liquidation.
Case proceeds on claim amount dispute	Equals 1 if the insolvency case is not automatically suspended when a creditor disputes a claim amount or if the claim amount cannot be appealed at all. Equals 0 if the case is suspended until resolution of the appeal. Procedure of relevance: liquidation/reorganization.
Same judge for claim amount dispute	Equals 1 if an appeal of the amount of the claim is handled by the same judge supervising the insolvency case. Equals 0 if the appeal is heard by a different judge in an appeals court. Procedure of relevance: liquidation/reorganization.
Reorganization attempt required	Equals 1 if by law Mirage must first attempt reorganization before proceeding to liquidation. Equals 0 if it is possible for Mirage to enter liquidation first. Procedure of relevance: liquidation/reorganization.
Automatic stay on enforcement	Equals 1 if the secured creditor may not enforce its security against Mirage upon commencement of the insolvency proceedings, 0 otherwise. Procedure of relevance: liquidation/reorganization.
Automatic stay on lawsuits	Equals 1 if lawsuits against Mirage are automatically stayed upon commencement of insolvency proceedings, 0 otherwise.
Automatic cessation upon bankruptcy	Equals 1 if Mirage must automatically cease operations upon commencement of the insolvency proceedings, 0 otherwise. Procedure of relevance: liquidation/reorganization.
Temporary cessation during bankruptcy	Equals 1 if Mirage temporarily ceases operations pending resolution of the insolvency proceeding. Equals 0 if Mirage continues operating as a going concern through the resolution of the insolvency proceeding. Procedure of relevance: liquidation/reorganization.
Contracts may be rescinded	Equals 1 if suppliers and customers may rescind contracts with Mirage without penalty upon the initiation of insolvency proceedings, 0 otherwise. Procedure of relevance: liquidation/reorganization.
Restrictions on dismissals	Equals 1 if Mirage is restricted from dismissing employees upon the initiation of insolvency proceedings, 0 otherwise. Procedure of relevance: liquidation/reorganization.
Fresh loans	Equals 1 if fresh loans for Mirage made during the insolvency proceedings gain priority over other claimants, 0 otherwise. Procedure of relevance: liquidation/reorganization.
Management remain	Equals 1 if management remain in control of decisions in the ordinary course of business during the resolution of the insolvency proceeding. Equals 0 if management is automatically dismissed or must be supervised or seek approval from the insolvency administrator or court for decisions in the ordinary course of business. Procedure of relevance: liquidation/reorganization.
Creditor approves administrator	Equals 1 if the secured creditor may appoint or must approve the appointment of the insolvency administrator. Equals 0 if only the court, the debtor and/or other participants appoint the administrator. Procedure of relevance: liquidation/reorganization.
Creditor dismisses administrator	Equals 1 if the secured creditor may dismiss or must approve the dismissal of the insolvency administrator. Equals 0 if only the court, the debtor and/or other participants appoint the administrator. Procedure of relevance: liquidation/reorganization.
Administrator paid on market value	Equals 1 if the insolvency administrator is remunerated on the basis of the market value of the insolvency estate. Equals 0 if the insolvency administrator is remunerated on the basis of the book value of assets or on a daily rate. Procedure of relevance: liquidation/reorganization.
Automatic trigger for liquidation	Equals 1 if an "automatic trigger" mechnanism can initiative insolvency. An automatic trigger is defined as a set of circumstances -- such as on the period of default or ratio of assets to liabilities -- under which Mirage must by law apply for insolvency proceedings. Procedure of relevance: liquidation/reorganization.
Proof of reorganization prospects required	Equals 1 if Mirage must submit proof of reorganization prospects before reorganization proceedings may commence. Equals 0 if Mirage may commence reorganization proceedings without evidence that the procedure may be successful. Procedure of relevance: reorganization.
Creditors vote directly	Equals 1 if secured creditors vote directly on the reorganization plan. Equals 0 if secured creditors vote in committee or not at all. Procedure of relevance: reorganization.

Table 1: Description of the Variables

Panel C: Other Variables	
Variable	**Description**
Creditor rights	An index aggregating creditor rights, following La Porta et al. (1998). A score of one is assigned when each of the following rights of secured lenders is defined in laws and regulations: First, there are restrictions, such as creditor consent or minimum dividends, for a debtor to file for reorganization. Second, secured creditors are able to seize their collateral after the reorganization petition is approved, i.e. there is no "automatic stay" or "asset freeze." Third, secured creditors are paid first out of the proceeds of liquidating a bankrupt firm, as opposed to other creditors such as government or workers. Finally, if management does not retain administration of its property pending the resolution of the reorganization. The index ranges from 0 (weak creditor rights) to 4 (strong creditor rights). *Source: Djankov, McLiesh and Shleifer (2006).*
Information sharing	The variable equals 1 if either a public registry or a private bureau operates in the country, 0 otherwise. A public registry is defined as a database owned by public authorities (usually the Central Bank or Banking Supervisory Authority) that collects information on the standing of borrowers in the financial system and makes it available to financial institutions. A private bureau is defined as a private commercial firm or non profit organization that maintains a database on the standing of borrowers in the financial system, and its primary role is to facilitate exchange of information amongst banks and financial institutions. *Source: Djankov, McLiesh and Shleifer (2006).*
Private Credit/GDP	Ratio of credit from deposit taking financial institutions to the private sector (IFS lines 22d and 42d) relative to GDP (IFS line 99b). Line 22d measures claims on the private sector by commercial banks and other financial institutions that accept transferable deposits such as demand deposits. Line 42d measures claims on the private sector given by other financial institutions that do not accept transferable deposits but that perform financial intermediation by accepting other types of deposits or close substitutes for deposits (e.g. savings and mortgage institutions, post office savings institutions, building and loan associations, certain finance companies, development banks and offshore banking institutions). Source: *IMF International Financial Statistics database.*
GDP	Logarithm of gross national product (current U.S. Dollars), average 2002 2004. Source: *World Development Indicators 2005.*
GDP per capita growth	Average annual growth in gross domestic product per capita from 1980 - 2004. Source. *World Development Indicators 2005.*
Contract enforcement days	The number of days to resolve a payment dispute through courts. The data are based on the methodology in Djankov et al. (2003) but describe the number of calendar days to enforce a contract of unpaid debt worth 50% of the country's GDP per capita. The variable is constructed as at January 2003. *Source: Djankov et al. (2003).*
Formalism	The formalism index measures substantive and procedural statutory intervention in judicial cases at lower-level civil trial courts. The index ranges from 0 to 7 where 7 means a higher level of control or intervention in the judicial process. *Source: Djankov et al. (2003).*
Bureaucratic delays	An indicator of bureaucratic delays (red tape). Low ratings indicate lower levels of red tape in the bureaucracy of the country. Scale from 0 to 10. The index is published three times per year. The data are the average of the years between 1972 and 1995. *Source: La Porta et al. (1999).*
Infrastructure quality index	Assessment of the "facilities for and ease of communication between headquarters and the operation, and within the country," as well as the quality of the transportation. Average data for the years 1972 to 1995. Scale from 0 to 10 with higher scores for superior quality. *Source: La Porta and others (1999).*
Corruption index	An indicator of corruption in government. Low ratings indicate "high government officials are likely to demand special payments" and "illega payments are generally expected thought lower levels of government" in the form of "bribes connected with import and export licenses, exchange controls, tax assessment, policy protection, or loans." Scale from 0 to 10. *Source: La Porta et al. (1999).*
Tax compliance	Assessment of the level of tax compliance. Scale from 0 to 6, where higher scores indicate higher compliance. *Source: La Porta et al. (1999).*
Non performing Loans (IMF)	Bank nonperforming loans to total loans. *Source: IMF Global Financial Stability Report 2005.*
Moody's rating financial risk	Moody's Weighted Average Bank Financial Strength Index. Constructed according to a numerical scale assigned to Moody's weighted average bank ratings by country. "0" indicates the lowest possible average rating and "100" indicates the highest possible average rating. *Source: IMF Global Financial Stability Report 2005.*
Perceived efficiency of bankruptcy (WEF)	Assessment of the efficiency of bankruptcy law. Scale from 0 to 6, where higher scores indicate higher compliance. *Source: World Economic Forum Global Competitiveness Report (2005).*
Perceived access to loans (WEF)	Assessment of the ease of accessing business loans. Scale from 0 to 6, where higher scores indicate higher compliance. *Source: World Economic Forum Global Competitiveness Report (2005).*
Perceived efficiency of credit markets (WEF)	Assessment of the efficiency of credit markets. Scale from 0 to 6, where higher scores indicate higher compliance. *Source: World Economic Forum Global Competitiveness Report (2005).*
Perceived financial system soundness (WEF)	Assessment of the soundness of the financial system. Scale from 0 to 6, where higher scores indicate higher compliance. *Source: World Economic Forum Global Competitiveness Report (2005).*
Perceived financial system sophistication (WEF)	Assessment of the sophistication of the financial system. Scale from 0 to 6, where higher scores indicate higher compliance. *Source: World Economic Forum Global Competitiveness Report (2005).*

Table 2: Data by Procedure and Income Group (Version A)

Income Group	Foreclosure					Liquidation					Reorganization					*Average by Income Group*	
		Time	Cost	GC	Eff.		Time	Cost	GC	Eff.		Time	Cost	GC	Eff.		
1. High income	Singapore	0.78	1%	1	95.1	Netherlands	1.67	1%	1	94.2	Japan	0.58	4%	1	95.5		
	United Kingdom	1.00	6%	1	90.7	Sweden	2.00	9%	1	81.3	Taiwan, China	0.83	4%	1	93.8		
	Hong Kong, China	1.08	9%	1	86.3	Austria	1.08	18%	1	77.3	Canada	0.75	4%	1	93.2	*Time*	*1.79*
	Australia	1.00	8%	1	84.9	Denmark	3.00	9%	1	74.1	Finland	0.92	4%	1	92.4	*Cost*	*9%*
	New Zealand	2.00	4%	1	80.1	Germany	1.17	8%	0	55.7	Norway	0.92	1%	1	91.8	*EO*	*0.7*
	Kuwait	4.17	1%	0	55.4	Greece	2.00	9%	0	53.5	Belgium	0.92	4%	1	90.8	*Efficiency*	*75.8*
	Slovenia	2.00	8%	0	50.5	Israel	4.00	23%	1	51.4	Ireland	0.42	9%	1	89.9		
	United Arab Emirates	5.12	38%	0	21.5						Korea, Rep.	1.50	4%	1	88.1		
											United States	2.00	7%	1	85.8		
											Portugal	2.00	9%	1	82.3		
											Spain	1.00	15%	1	82.0		
											Puerto Rico	3.79	8%	1	77.4		
											Switzerland	3.00	4%	0	60.4		
											France	1.89	9%	0	54.1		
											Italy	1.17	22%	0	45.3		
	Average	*2.14*	*0.09*	*0.63*	*70.55*	*Average*	*2.13*	*0.11*	*0.71*	*69.62*	*Average*	*1.45*	*0.07*	*0.80*	*81.52*		
2. Upper middle income	Oman	4.00	4%	0	48.5	Botswana	1.33	15%	1	69.7	Mexico	1.83	18%	1	72.6		
	Hungary	2.00	15%	0	46.2	Poland	2.00	22%	1	67.7	Argentina	2.75	12%	0	35.8		
	Panama	2.50	18%	0	41.0	Lithuania	1.67	7%	0	57.3	Costa Rica	3.50	15%	0	25.0	*Time*	*3.27*
	Chile	5.58	15%	0	39.7	Slovak Republic	4.75	18%	1	55.8						*Cost*	*16%*
	Croatia	3.09	15%	0	39.6	Estonia	3.00	9%	0	51.9						*EO*	*0.2*
	Lebanon	4.00	22%	0	29.0	Latvia	3.00	13%	0	48.7						*Efficiency*	*44.6*
	Uruguay	2.08	7%	0	26.7	Malaysia	2.25	15%	0	48.4							
						Saudi Arabia	2.83	22%	0	40.3							
						Czech Republic	9.17	15%	0	34.6							
						Venezuela, RB	4.00	38%	0	13.0							
	Average	*3.32*	*0.13*	*0.00*	*38.67*	*Average*	*3.40*	*0.17*	*0.30*	*48.74*	*Average*	*2.69*	*0.15*	*0.33*	*44.46*		
3. Lower Middle Income	Jamaica	1.08	18%	1	68.0	Syrian Arab Republic	4.08	9%	0	42.9	Colombia	3.00	1%	1	64.8		
	Bosnia and Herzegovina	3.33	9%	1	65.7	Jordan	4.33	9%	0	40.1	Tunisia	1.25	7%	0	56.6		
	Armenia	1.89	4%	0	47.8	Albania	4.00	38%	1	39.7	Thailand	2.67	36%	1	54.9	*Time*	*3.62*
	Sri Lanka	2.17	18%	0	42.7	South Africa	2.00	18%	0	39.3	Algeria	3.50	7%	0	48.1	*Cost*	*16%*
	China	2.42	22%	0	42.1	Russian Federation	3.85	9%	0	38.1	Bulgaria	3.33	9%	0	46.0	*EO*	*0.2*
	Guatemala	3.00	15%	0	36.5	Kazakhstan	3.27	18%	0	29.0	Namibia	1.50	15%	0	45.2	*Efficiency*	*34.0*
	El Salvador	4.00	9%	0	36.2	Egypt, Arab Rep.	4.17	22%	0	28.3	Morocco	1.83	18%	0	41.9		
	Honduras	3.75	8%	0	31.4	Dominican Rep	3.50	38%	0	12.3	Peru	3.08	7%	0	41.8		
	Georgia	3.25	0.035	0	27.5	Brazil	4.00	12%	1	11.3	Iran, Islamic Rep.	4.50	9%	0	29.5		
	Paraguay	3.92	0.09	0	12.5						Serbia and Montenegro	2.67	23%	0	28.3		
											Macedonia, FYR	3.67	28%	0	27.3		
											Indonesia	5.50	18%	0	25.1		
											Belarus	5.75	22%	0	19.5		
											Ecuador	8.00	18%	0	19.4		
											Ukraine	2.92	42%	0	17.5		
											Philippines	5.67	38%	0	17.5		
											Romania	4.58	9%	0	11.0		
											Turkey	5.88	7%	0	6.6		
											Angola	6.17	22%	0	1.2		
	Average	*2.88*	*0.12*	*0.20*	*41.0*	*Average*	*3.69*	*0.19*	*0.22*	*31.24*	*Average*	*3.97*	*0.18*	*0.11*	*31.70*		
Average by Procedure		*2.77*	*11%*	*0.28*	*49.82*		*3.16*	*16%*	*0.38*	*48.30*		*2.84*	*13%*	*0.41*	*52.93*		

Table 3: Data by Procedure and Legal Origin (Version A)

Income Group	Foreclosure					Liquidation					Reorganization					Average by Legal Origin	
		Time	Cost	GC	Eff.		Time	Cost	GC	Eff.		Time	Cost	GC	Eff.		
English legal origin	Singapore	0.78	1%	1	95.1	Botswana	1.33	15%	1	69.7	Japan	0.58	4%	1	95.5		
	United Kingdom	1.00	6%	1	90.7	Israel	4.00	23%	1	51.4	Canada	0.75	4%	1	93.2		
	Hong Kong, China	1.08	9%	1	86.3	Malaysia	2.25	15%	0	48.4	Ireland	0.42	9%	1	89.9	*Time*	*1.88*
	Australia	1.00	8%	1	84.9	South Africa	2.00	18%	0	39.3	Korea, Rep.	1.50	4%	1	88.1	*Cost*	*13%*
	New Zealand	2.00	4%	1	80.1						United States	2.00	7%	1	85.8	*EO*	*0.8*
	Jamaica	1.08	18%	1	68.0						Puerto Rico	3.79	8%	1	77.4	*Efficiency*	*70.2*
	Sri Lanka	2.17	18%	0	42.7						Thailand	2.67	36%	1	54.9		
											Namibia	1.50	15%	0	45.2		
											Philippines	5.67	38%	0	17.5		
	Average	*1.30*	*0.09*	*0.86*	*78.25*	*Average*	*2.40*	*0.18*	*0.50*	*52.20*	*Average*	*2.10*	*0.14*	*0.78*	*71.95*		
French legal origin	Honduras	3.75	8%	0	31.4	Netherlands	1.67	1%	1	94.2	Indonesia	5.50	18%	0	25.1		
	Kuwait	4.17	1%	0	55.4	Greece	2.00	9%	0	53.5	Belgium	0.92	4%	1	90.8		
	Oman	4.00	4%	0	48.5	Syrian Arab Republic	4.08	9%	0	42.9	Portugal	2.00	9%	1	82.3	*Time*	*3.51*
	Panama	2.50	18%	0	41.0	Saudi Arabia	2.83	22%	0	40.3	Spain	1.00	15%	1	82.0	*Cost*	*13%*
	Chile	5.58	15%	0	39.7	Jordan	4.33	9%	0	40.1	Mexico	1.83	18%	1	72.6	*EO*	*0.2*
	Guatemala	3.00	15%	0	36.5	Russian Federation	3.85	9%	0	38.1	Colombia	3.00	1%	1	64.8	*Efficiency*	*39.8*
	El Salvador	4.00	9%	0	36.2	Egypt, Arab Rep.	4.17	22%	0	28.3	Switzerland	3.00	4%	0	60.4		
	Lebanon	4.00	22%	0	29.0	Venezuela, RB	4.00	38%	0	13.0	Tunisia	1.25	7%	0	56.6		
	Uruguay	2.08	7%	0	26.7	Dominican Rep	3.50	38%	0	12.3	France	1.89	9%	0	54.1		
	United Arab Emirates	5.12	38%	0	21.5	Brazil	4.00	12%	1	11.3	Algeria	3.50	7%	0	48.1		
	Paraguay	3.92	9%	0	12.5						Bulgaria	3.33	9%	0	46.0		
											Italy	1.17	22%	0	45.3		
											Morocco	1.83	18%	0	41.9		
											Peru	3.08	7%	0	41.8		
											Argentina	2.75	12%	0	35.8		
											Iran, Islamic Rep.	4.50	9%	0	29.5		
											Costa Rica	3.50	15%	0	25.0		
											Belarus	5.75	22%	0	19.5		
											Ecuador	8.00	18%	0	19.4		
											Romania	4.58	9%	0	11.0		
											Turkey	5.83	7%	0	8.6		
											Angola	6.17	22%	0	1.2		
	Average	*3.83*	*0.13*	*0.00*	*34.40*	*Average*	*3.44*	*0.17*	*0.20*	*37.40*	*Average*	*3.38*	*0.12*	*0.23*	*43.63*		
German legal origin	Bosnia and Herzegovina	3.33	9%	1	65.7	Austria	1.08	18%	1	77.3	Taiwan, China	0.83	4%	1	93.8		
	Slovenia	2.00	8%	0	50.5	Poland	2.00	22%	1	67.7	Serbia and Montenegro	2.67	23%	0	28.3		
	Armenia	1.89	4%	0	47.8	Lithuania	1.67	7%	0	57.3	Macedonia, FYR	3.67	28%	0	27.3	*Time*	*2.91*
	Hungary	2.00	15%	0	46.2	Slovak Republic	4.75	18%	1	55.8	Ukraine	2.92	42%	0	17.5	*Cost*	*16%*
	China	2.42	22%	0	42.1	Germany	1.17	8%	0	55.7						*EO*	*0.3*
	Croatia	3.09	15%	0	39.6	Estonia	3.00	9%	0	51.9						*Efficiency*	*47.8*
	Georgia	3.25	4%	0	27.5	Latvia	3.00	13%	0	48.7							
						Albania	4.00	38%	1	39.7							
						Czech Republic	9.17	15%	0	34.6							
						Kazakhstan	3.27	18%	0	29.0							
	Average	*2.57*	*0.11*	*0.14*	*45.63*	*Average*	*3.31*	*0.17*	*0.40*	*51.77*	*Average*	*2.52*	*0.24*	*0.25*	*41.74*		
Nordic legal origin						Sweden	2.00	9%	1	81.3	Finland	0.92	4%	1	92.4	*Time*	*1.71*
						Denmark	3.00	9%	1	74.1	Norway	0.92	1%	1	91.8	*Cost*	*6%*
																EO	*1.0*
						Average	*2.50*	*0.09*	*1.00*	*77.67*	*Average*	*0.92*	*0.02*	*1.00*	*92.13*	*Efficiency*	*84.9*
Average by Procedure		*2.77*	*11%*	*0.28*	*49.82*		*3.16*	*16%*	*0.38*	*48.30*		*2.84*	*13%*	*0.41*	*52.93*		

Table 4: Determinants of Efficiency and Going Concern, Version A

Independent Variables	Efficiency Version A		Going Concern Version A	
Log GDP per capita	13.407 a	9.724 a	0.154 a	0.123 b
	(1.717)	(2.276)	(0.041)	(0.051)
French legal origin	-19.716 a	-20.051 a	-0.475 a	-0.477 a
	(4.321)	(4.247)	(0.116)	(0.117)
German legal origin	-10.516 b	-11.191 b	-0.342 b	-0.345 b
	(4.900)	(4.673)	(0.143)	(0.146)
Scandinavian legal origin	-2.833	-4.881	0.007	-0.005
	(4.463)	(5.634)	(0.091)	(0.129)
Liquidation	-4.225	-24.727	0.079	-0.011
	(4.227)	(35.877)	(0.110)	(0.838)
Reorganization	1.963	-54.087 b	0.111	-0.396
	(3.987)	(26.004)	(0.081)	(0.566)
Log GDP per capita*Liquidation		2.457		0.011
		(4.240)		(0.096)
Log GDP per capita *Reorganization		6.503 b		0.059
		(3.018)		(0.065)
Constant	-53.098 a	-21.295	-0.727 c	-0.461
	(16.264)	(20.008)	(0.422)	(0.493)
Obs	88	88	88	88
R-sq	0.6437	0.6613	0.4451	0.4495

Note: a=significant at the 1% level, b=significant at the 5% level, c=significant at the 10% level

Table 5: Correlations between Main Variables and Characteristics of the Debt Enforcement Procedure

	Procedure of relevance	Obs	Log GDP per capita	Civil Law	Version A time (years)	Version A cost (% estate)	Version A: firm continues as going concern	Efficiency Version A
Statutory time limits on appeals	All	84	-0.278 a	0.117	0.0280	0.0211	-0.2132 b	-0.2005 c
			(0.010)	(0.291)	(0.800)	(0.849)	(0.052)	(0.067)
Out of court seizure and sale	Foreclosure	24	0.093	-0.573 a	-0.5198 a	-0.4509 b	0.7593 a	0.6422 a
			(0.664)	(0.003)	(0.009)	(0.027)	(0.000)	(0.001)
No judgment for enforcement	Foreclosure	24	0.156	-0.497 a	-0.4184 b	-0.011	0.4971 a	0.3863 c
			(0.466)	(0.014)	(0.042)	(0.959)	(0.014)	(0.062)
Floating charge	Foreclosure	24	0.028	-0.590 a	-0.514 a	-0.4292 b	0.5903 a	0.5705 a
			(0.899)	(0.002)	(0.010)	(0.036)	(0.002)	(0.004)
Automatic distribution of proceeds	Foreclosure	25	-0.110	-0.206	-0.1246	0.0722	0.0079	0.1403
			(0.602)	(0.322)	(0.553)	(0.732)	(0.970)	(0.504)
Specialized Court	Liq/Reorg	63	0.490 a	-0.263 b	-0.276 b	-0.267 b	0.386 a	0.4197 a
			(0.000)	(0.037)	(0.029)	(0.034)	(0.002)	(0.001)
Case proceeds on appeal of insolvency order	Liq/Reorg	63	0.055	-0.131	-0.3565 a	-0.1356	0.1167	0.2712 b
			(0.667)	(0.305)	(0.004)	(0.289)	(0.363)	(0.032)
Same judge for appeal of insolvency order	Liq/Reorg	63	-0.117	0.084	-0.0662	-0.0433	0.0347	0.0246
			(0.360)	(0.514)	(0.606)	(0.736)	(0.787)	(0.848)
Case proceeds on appeal of liquidation sale	Liq/Reorg	63	0.180	-0.140	-0.4175 a	-0.1128	0.2031	0.3567 a
			(0.159)	(0.273)	(0.001)	(0.379)	(0.110)	(0.004)
Same judge for appeal of liquidation sale	Liq/Reorg	63	0.006	0.260 b	0.0512	-0.1363	0.1476	0.1369
			(0.962)	(0.040)	(0.690)	(0.287)	(0.248)	(0.285)
Case proceeds on claim amount dispute	Liq/Reorg	63	0.170	-0.007	-0.2739 b	-0.1598	0.086	0.2855 b
			(0.183)	(0.958)	(0.030)	(0.211)	(0.503)	(0.023)
Same judge for claim amount dispute	Liq/Reorg	63	-0.062	0.074	0.0799	-0.1123	-0.0741	-0.0596
			(0.629)	(0.567)	(0.534)	(0.381)	(0.564)	(0.642)
Reorganization attempt required	Liq/Reorg	60	-0.347 a	0.225 c	0.1589	0.1109	-0.285 b	-0.2293 c
			(0.007)	(0.085)	(0.225)	(0.399)	(0.027)	(0.078)
Automatic stay on enforcement	Liq/Reorg	58	0.071	0.138	-0.0874	-0.1478	0.0454	0.0627
			(0.599)	(0.301)	(0.514)	(0.268)	(0.735)	(0.640)
Automatic stay on lawsuit	Liq/Reorg	60	0.066	-0.051	-0.0044	-0.2415 c	-0.126	0.0858
			(0.619)	(0.696)	(0.974)	(0.063)	(0.338)	(0.514)
Automatic cessation upon bankruptcy	Liq/Reorg	61	0.011	0.014	0.0557	0.0337	-0.2514 b	-0.1395
			(0.935)	(0.916)	(0.670)	(0.797)	(0.051)	(0.284)
Temporary cessation during bankruptcy	Liq/Reorg	61	-0.095	0.108	0.1492	0.072	-0.3277 a	-0.2242 c
			(0.466)	(0.409)	(0.251)	(0.581)	(0.010)	(0.082)
Contracts may be rescinded	Liq/Reorg	60	-0.226 c	0.162	0.3469 a	0.2077	-0.3468 a	-0.3743 a
			(0.083)	(0.217)	(0.007)	(0.111)	(0.007)	(0.003)
Restrictions on dismissals	Liq/Reorg	60	-0.069	0.130	0.1034	-0.1412	-0.2114 c	-0.1119
			(0.600)	(0.324)	(0.432)	(0.282)	(0.105)	(0.395)
Fresh loans	Liq/Reorg	60	0.267 b	0.272 b	-0.191	-0.1911	0.25 b	0.2376 c
			(0.040)	(0.035)	0.1438	0.1436	0.054	0.0675
Management remain	Liq/Reorg	50	-0.117	-0.181	-0.0666	-0.0058	0.0017	0.0443
			(0.417)	(0.208)	(0.646)	(0.968)	(0.991)	(0.760)
Creditor approves administrator	Liq/Reorg	63	-0.015	-0.345	0.0185	0.0395	-0.0453	-0.0847
			(0.909)	(0.006)	(0.886)	(0.759)	(0.724)	(0.509)
Creditor dismisses administrator	Liq/Reorg	48	0.283 b	-0.079	-0.157	-0.1266	0.3495 a	0.3104 b
			(0.051)	(0.595)	0.2865	0.3913	0.0149	0.0318
Administrator paid on market value	Liq/Reorg	63	0.274 b	-0.067	-0.0242	-0.0071	0.0716	0.1338
			(0.030)	(0.599)	(0.851)	(0.956)	(0.577)	(0.296)
Automatic trigger for liquidation	Liquidation	25	-0.142	0.100	-0.1617	-0.1195	-0.1021	-0.1073
			(0.498)	(0.634)	(0.440)	(0.570)	(0.627)	(0.610)
Creditors vote directly	Reorganization	37	0.330 b	-0.124	-0.1374	-0.4055 a	0.5721 a	0.4553 a
			(0.046)	(0.466)	(0.417)	(0.013)	(0.000)	(0.005)
Proof of reorganization prospects required	Reorganization	36	-0.163	-0.152	-0.0616	0.0996	0.1688	0.1002
			(0.342)	(0.375)	0.7212	0.5633	0.325	0.561

P values in parentheses

Correlations are restricted to the relevant procedure

Table 6: Main Variable Averages by Procedure and Income Group, with and without floating charge (Version A)

	Variable	Foreclosure - floating charge	Foreclosure- no floating charge	Liquidation	Reorganization	Average by Income Group
1. High income	*Time*	1.17	3.76	2.13	1.45	1.57
	Cost	5.5%	15.7%	11.0%	6.9%	7.7%
	EO	1.00	0.00	0.71	0.80	0.81
	Efficiency	87.40	42.48	69.62	81.52	79.53
2. Upper middle income	*Time*	3.00	3.45	3.40	2.69	3.21
	Cost	9.0%	15.2%	17.3%	14.8%	15.7%
	EO	0.00	0.00	0.30	0.33	0.27
	Efficiency	47.33	35.21	48.74	44.46	47.70
3. Lower Middle Income	*Time*	2.58	3.33	3.69	3.97	3.65
	Cost	10.1%	13.6%	19.2%	17.7%	16.7%
	EO	0.33	0.00	0.22	0.11	0.18
	Efficiency	47.18	31.81	31.24	31.70	34.31
Total	*Time*	2.10	3.49	3.16	2.84	2.92
	Cost	8.2%	14.8%	16.3%	13.1%	13.5%
	EO	0.54	0.00	0.38	0.41	0.36
	Efficiency	62.67	35.90	48.30	52.93	50.68

Table 7: Structural Determinants of Version A efficiency (1)

	Dependent Variable: Case A efficiency													
	All Procedures	Foreclosure				Liq/Reorg (1)								
	Statutory time limits or appeals	Out of court seizure and sale	No judgment for enforcement	Floating charge	Automatic distribution of proceeds	Specialized Court	Case proceeds on appeal of insolvency order	Same judge for appeal of insolvency order	Case proceeds on appeal of liquidation sale	Same judge for appeal of liquidation sale	Case proceeds on claim amount dispute	Same judge for claim amount dispute	Reorganization attempt required	Automatic stay on enforcement
Independent variable	0.953	13.315	-5.104	9.295	1.840	0.077	14.104	8.425	11.213	14.690	12.353	2.266	6.800	1.882
	(3.443)	(5.068)**	(6.849)	(5.059)*	(3.696)	(6.439)	(4.652)***	(4.606)*	(4.160)***	(5.517)**	(7.192)*	(4.755)	(5.992)	(4.962)
Log GNI per capita	14.01773	7.645	6.843	7.754	7.691	15.610	15.755	15.810	14.676	14.838	14.762	15.533	16.530	16.039
	(1.647)***	(1.935)***	(2.704)**	(2.679)***	(2.625)***	(2.319)***	(1.907)***	(1.977)***	(1.920)***	(1.876)***	(1.934)***	(2.007)***	(2.127)***	(2.070)***
French legal origin	-18.16809	-24.493	-38.892	-27.038	-35.291	-13.747	-11.677	-14.188	-12.241	-18.830	-13.538	-14.343	-16.672	-12.787
	(4.305)***	(6.314)***	(9.115)***	(7.931)***	(6.628)***	(5.602)**	(4.974)**	(5.306)***	(5.333)**	(5.513)***	(4.821)***	(5.516)**	(5.258)***	(5.326)**
German legal origin	-11.53287	-16.474	-24.736	-18.049	-21.856	-9.943	-7.967	-11.593	-9.019	-13.451	-12.237	-9.740	-12.243	-6.989
	(4.872)**	(5.990)**	(8.431)***	(8.807)*	(7.193)***	(5.635)*	(5.043)	(5.025)**	(5.532)	(4.841)***	(5.233)**	(5.454)*	(5.444)**	(5.605)
Scandinavian legal origin	-4.680247	0.000	0.000	0.000	0.000	-4.404	-5.691	-3.391	-0.831	-3.230	-1.923	-3.444	-7.367	-3.720
	5.411253	(0.000)	(0.000)	(0.000)	(0.000)	(6.141)	(5.652)	(6.329)	(5.718)	(6.040)	(4.573)	(6.717)	(5.941)	(6.852)
Constant	-59.33009	-4.947	19.106	-3.850	5.251	-76.046	-90.347	-79.117	-75.283	-68.993	-78.752	-76.698	-82.767	-82.624
	(16.085)***	(18.366)	(28.630)	(28.705)	(26.197)	(19.961)***	(18.967)***	(18.400)***	(18.163)***	(17.630)***	(18.913)***	(18.908)***	(19.896)***	(19.445)***
Observations	84	24	24	24	25	63	63	63	63	63	63	63	60	58
R-squared	0.6472	0.833	0.788	0.803	0.792	0.635	0.675	0.652	0.678	0.680	0.662	0.636	0.654	0.635

Table 7: Structural Determinants of Version A efficiency (2)

		Dependent Variable: Case A efficiency											
	Liq/Reorg (2)										Liquidation	Reorganization	
	Automatic stay on lawsuit	Automatic cessation upon bankruptcy	Temporary cessation during bankruptcy	Contracts may be rescinded	Restrictions on dismissals	Fresh loans	Management remain	Creditor approves administrator	Creditor dismisses administrator	Administrator paid on market value	Automatic trigger for liquidation	Proof of reorganization prospects required	Creditors vote directly
Independent variable	1.906	-8.317	-7.977	-12.249	-3.424	4.992	6.937	-9.441	6.310	-5.080	0.559	12.870	12.664
	(4.541)	(4.616)*	(4.987)	(5.402)**	(4.682)	(4.683)	(5.186)	(4.432)**	(4.783)	(4.633)	(6.445)	(6.297)**	(6.852)*
Log GNI per capita	15.691	15.728	15.407	15.044	15.306	15.213	14.733	14.935	14.546	16.218	12.417	17.553	15.293
	(2.011)***	(1.875)***	(1.915)***	(1.947)***	(1.974)***	(2.107)***	(2.307)***	(1.926)***	(2.521)***	(2.093)***	(4.508)**	(2.311)***	(2.522)***
French legal origin	-13.491	-12.233	-11.559	-11.859	-12.635	-15.268	-15.266	-18.378	-16.461	-14.126	-10.438	-10.394	-14.236
	(5.327)**	(5.192)**	(5.239)**	(5.030)**	(5.398)**	(5.186)***	(5.660)***	(5.049)***	(5.781)***	(5.002)***	(10.411)	(6.259)	(5.113)***
German legal origin	-9.178	-10.700	-10.110	-6.796	-3.689	-11.266	-6.278	-14.878	-8.882	-9.503	-2.529	-12.249	-8.764
	(5.723)	(5.785)*	(5.766)*	(5.487)	(5.810)	(5.602)**	(7.169)	(6.153)**	(7.360)	(4.963)*	(8.690)	(10.233)	(9.543)
Scandinavian legal origin	-3.508	-3.882	-2.730	-3.864	-2.100	-6.429	-0.743	-4.284	-4.840	-5.104	2.622	0.007	-3.539
	(6.567)	(7.441)	(7.268)	(6.193)	(6.647)	(6.342)	(7.049)	(6.038)	(6.644)	(6.214)	(12.512)	(9.519)	(4.940)
Constant	-78.695	-75.679	-73.520	-70.533	-73.359	-74.757	-70.363	-61.887	-65.864	-79.137	-55.905	-100.913	-79.576
	(18.996)***	(17.669)***	(18.220)***	(18.000)***	(18.338)***	(19.028)***	(22.082)***	(19.091)***	(23.811)***	(18.790)***	(39.548)	(23.099)***	(22.692)***
Observations	60	61	61	60	60	60	50	63	48	63	25	36	37
R-squared	0.639	0.649	0.647	0.671	0.628	0.645	0.623	0.662	0.621	0.643	0.551	0.723	0.726

Table 8A: Main Variable Averages by Procedure and Income Group (Version B)

	Variable	Foreclosure	Liquidation	Reorganization	Average by Income Group
1. High income	*Time*	1.76	1.68	1.72	1.72
	Cost	8.7%	7.1%	8.1%	8.0%
	EO	1.00	1.00	1.00	1.00
	Efficiency	81.81	84.76	85.35	83.85
2. Upper middle income	*Time*	3.32	3.22	3.29	3.26
	Cost	13.4%	17.0%	21.0%	16.1%
	EO	1.00	1.00	1.00	1.00
	Efficiency	59.28	63.76	48.77	60.69
3. Lower Middle Income	*Time*	3.53	2.92	4.10	3.53
	Cost	14.5%	11.8%	19.3%	15.4%
	EO	1.00	1.00	1.00	1.00
	Efficiency	52.12	54.78	44.75	50.32
Total	*Time*	2.81	2.65	3.18	2.85
	Cost	12.1%	12.1%	15.4%	13.0%
	EO	1.00	1.00	1.00	1.00
	Efficiency	65.11	66.50	59.69	64.11

Table 8B: Main Variable Averages by Procedure and Legal Origin (Version B)

	Variable	Foreclosure	Liquidation	Reorganization	Average by Legal Origin
English	*Time*	2.14	1.69	2.06	1.97
	Cost	12.1%	11.6%	13.1%	12.1%
	EO	1.00	1.00	1.00	1.00
	Efficiency	76.95	75.88	79.55	77.09
French	*Time*	3.60	3.10	3.54	3.43
	Cost	12.8%	11.5%	14.4%	13.1%
	EO	1.00	1.00	1.00	1.00
	Efficiency	55.34	56.37	55.39	55.68
German	*Time*	2.37	2.98	2.47	2.67
	Cost	10.9%	15.7%	24.5%	15.1%
	EO	1.00	1.00	1.00	1.00
	Efficiency	66.44	66.45	59.00	65.38
Nordic	*Time*		2.06		2.06
	Cost		5.6%		5.6%
	EO		1.00		
	Efficiency		83.13		83.13
Total	*Time*	2.81	2.65	3.18	2.85
	Cost	12.1%	12.1%	15.4%	13.0%
	EO	1.00	1.00	1.00	1.00
	Efficiency	65.11	66.50	59.69	64.11

Table 9A: Priority and Recovery Averages by Procedure and Income Group (Version A)

	Variable	Foreclosure	Liquidation	Reorganization	Average by Income Group
1. High income	*Efficiency*	70.55	69.62	81.52	75.82
	Priority	1.50	1.29	1.60	1.50
	Recovery	68.31	68.10	77.02	72.61
2. Upper middle income	*Efficiency*	38.67	48.74	44.46	44.57
	Priority	2.29	1.50	2.33	1.90
	Recovery	33.15	45.80	37.19	40.08
3. Lower Middle Income	*Efficiency*	41.04	31.24	31.70	34.05
	Priority	1.90	2.22	2.26	2.16
	Recovery	36.78	27.08	27.33	29.76
Total	*Efficiency*	49.82	48.30	52.93	50.68
	Priority	1.88	1.69	2.00	1.88
	Recovery	45.85	45.32	48.27	46.71

Table 9B: Priority and Recovery Averages by Procedure and Legal Origin (Version A)

	Variable	Foreclosure	Liquidation	Reorganization	Average by Legal Origin
English	*Efficiency*	78.25	52.20	71.95	70.20
	Priority	1.57	1.50	1.22	1.40
	Recovery	74.77	49.56	70.31	67.72
French	*Efficiency*	34.40	37.40	43.63	39.82
	Priority	2.36	2.10	2.32	2.28
	Recovery	29.08	33.50	37.91	34.62
German	*Efficiency*	45.63	51.77	41.74	47.81
	Priority	1.43	1.50	2.50	1.67
	Recovery	43.31	48.99	33.77	44.20
Nordic	*Efficiency*		77.67	92.13	84.90
	Priority		1.00	1.00	1.00
	Recovery		77.67	92.13	84.90
Total	*Efficiency*	49.82	48.30	52.93	50.68
	Priority	1.88	1.69	2.00	1.88
	Recovery	45.85	45.32	48.27	46.71

Table 10: Private Credit/GDP Regressions

Independent Variables	Dependent Variable: Private Credit/GDP (average 1999 - 2003)		
GDP	0.0922 a	0.0833 a	0.0872 a
	(0.018)	(0.022)	(0.020)
GDP per capita growth	0.0130	0.0119	0.0107
	(0.012)	(0.010)	(0.010)
Inflation	-0.0008	-0.0009	-0.0013 c
	(0.001)	(0.001)	(0.001)
Contract enforcement days	-0.0849 c	-0.0740 c	-0.0795 b
	(0.046)	(0.045)	(0.036)
Creditor rights index (Djankov et al)			0.1032 a
			(0.030)
Information sharing			0.1993 a
			(0.066)
Efficiency - Version A	0.0055 a	0.0052 b	0.0050 a
	(0.002)	(0.002)	(0.002)
French legal origin		-0.1240	
		(0.105)	
German legal origin		-0.2191 b	
		(0.099)	
Scandinavian legal origin		0.1834	
		(0.152)	
Constant	-1.5224 a	-1.2260 b	-1.7584 a
	(0.525)	(0.568)	(0.485)
Obs	84	84	84
R-sq	0.5492	0.5768	0.643

Note: a=significant at the 1% level, b=significant at the 5% level, c=significant at the 10% level

Table 11: Efficiency and Credit Market Outcomes

Independent Variables	Non performing Loans (IMF)	Moody's rating financial risk	Perceived efficiency of bankruptcy (WEF)	Perceived access to loans (WEF)	Perceived efficiency of credit markets (WEF)	Perceived financial system soundness (WEF)	Perceived financial system sophistication (WEF)
Efficiency - Version A	-0.152 a	0.719 a	0.029 a	0.020 a	0.011 a	0.022 a	0.029 a
	(0.038)	(0.094)	(0.004)	(0.003)	(0.003)	(0.005)	(0.005)
Contract enforcement days	-0.050	0.984	-0.318 a	-0.160	-0.062	-0.084	-0.140
	(1.696)	(4.851)	(0.125)	(0.108)	(0.109)	(0.156)	(0.154)
Constant	16.726	-4.426	4.910 a	3.305 a	3.923 a	4.541 a	3.560 a
	(11.201)	(30.181)	(0.827)	(0.692)	(0.706)	(0.965)	(1.034)
Obs	65	57	73	73	73	73	73
R-sq	0.28	0.499	0.5917	0.4503	0.1565	0.3022	0.453

Note: a=significant at the 1% level, b=significant at the 5% level, c=significant at the 10% level

Table 12: Correlations between Efficiency and Other Institutional Variables

	Efficiency Version A	enforcement days	Log GDP per capita	Creditor rights (Djankov et al)	sharing (Djankov et al)	French legal origin	Formalism	Bureaucratic delays	Infrastructure quality index	Corruption index	
Contract enforcement days	-0.5639 a (0.000)										
Log GDP per capita	0.737 a (0.000)	-0.4268 a (0.000)									
Creditor rights (Djankov et al)	0.055 (0.613)	-0.0359 (0.741)	0.1219 (0.261)								
Information sharing (Djankov et al)	0.1517 (0.161)	-0.0833 (0.443)	0.3014 a (0.005)	0.0000 (1.000)							
French legal origin	-0.4231 a (0.000)	0.213 b (0.048)	-0.239 b (0.025)	-0.3096 a (0.004)	0.0994 (0.360)						
Formalism	-0.5055 a (0.000)	0.436 a (0.000)	-0.4001 a (0.000)	-0.1254 (0.247)	0.0394 (0.717)	0.5365 a (0.000)					
Bureaucratic delays	0.6781 a (0.000)	-0.6103 a (0.000)	0.81 a (0.000)	0.3131 b (0.027)	-0.2392 c (0.094)	0.4935 a (0.000)	-0.5231 a (0.000)				
Infrastructure quality index	0.6552 a (0.000)	-0.5989 a (0.000)	0.8565 a (0.000)	0.22 (0.125)	-0.2719 c (0.056)	0.4073 a (0.003)	-0.4476 a (0.001)	0.9254 a (0.000)			
Corruption index	0.6809 a (0.000)	-0.4809 a (0.000)	0.7931 a (0.000)	0.1084 (0.361)	-0.1818 (0.124)	0.512 a (0.000)	-0.5312 a (0.000)	0.8138 a (0.000)	0.8035 a (0.000)		
Tax compliance	0.5436 a (0.000)	-0.5241 a (0.000)	0.5249 a (0.000)	0.3838 a (0.009)	-0.2597 c (0.081)	0.4723 a (0.001)	-0.5507 a (0.000)	0.6471 a (0.000)	0.6137 a (0.000)	0.5357 a (0.000)	