Financial Innovations and Corporate Insolvency

Julian Franks*

and

Oren Sussman**

October 2, 1998

* Corporation of London Professor of Finance at London Business School, and CEPR Fellow.
** Ben Gurion University, and TMR Fellow at the London Business School.

We wish to acknowledge the financial support from the European Union’s Training and Mobility of Researchers Network, Contract No. FRMX-CT960054.

We wish to acknowledge helpful conversations with Professors Ken Klee, Dan Bussel, Harry Rajak, and Sir Gavin Lightman. The paper has been presented at the IFA at the London Business School and a Conference on Corporate Governance in the Former Soviet Union, June 1998, organized by the CIS-Middle Europe Centre at LBS. We wish to thank our discussant John Bonin, and participants including Mark Britten-Jones, David Goldreich, Michel Habib, Jens Jackwerth, Jan Mahrts-Smith and Kjel Nyborg. We are particularly grateful for the insights of Anthony Neuberger.
Abstract
In this paper we develop a theory of financial innovations within the field of corporate insolvency. The theory is motivated by the comparative histories of the US and the UK. In the empirical section we argue that the currently observed institutional differences across the two countries are historically determined. We show how they evolved out of different innovation regimes. UK law was innovated by lenders and borrowers exercising their freedom of contract, while US law was innovated by judges and legislators whose intervention, often, violated contractual agreements. In the theoretical section we develop a formal model that analyzes the potential advantages and disadvantages of the two innovation regimes. The freedom of contract regime preserves the ex ante outlook of the parties, but it is crude and under-refined. Legislative intervention produces more refined procedures, but runs the risk of being politically biased. Our analysis is much affected by the notion that corporate law is, essentially, a set of contractual standards.

Key words: standard contracts, financial innovations, freedom of contract, floating charge, Chapter 11.
Financial Innovations and Corporate Insolvency

1. Introduction

It is well known that the UK and the US have very different legal procedures to deal with insolvent corporations. England has a “tight” procedure, strictly protecting the rights of the debtholders; America has a “soft” procedure which is much more favorable to going concerns. In this paper we explain the origin of these institutional differences, and analyze the dynamic process of innovation. We assign crucial importance to the fact that the English procedure has evolved within a regime of freedom of contract, while the American procedure is a result of legislative intervention. Our broader aim is to reconsider the notion of freedom of contract, both its merits and pitfalls, as an instrument of developing corporate law. The paper contains both an historical section, and a theoretical section where the empirical observations are consolidated into a dynamic model of institutional change.

UK law was developed by lenders and borrowers exercising their right to contract freely. Thus, it was left to the parties to design their own insolvency procedure, and to write it into the debt contract. Eventually, those procedures were standardized into law. The role of the State in this process was relatively limited, largely confined to enforcing the contract as intended by the parties. In contrast, the US Constitution gave Congress the power to legislate a new bankruptcy law. Towards the end of the nineteenth century, a series of large railroad defaults provoked the courts’ intervention. Given the railroads’ great importance in contemporary America, it was claimed that the lenders’ liquidation rights stood in conflict with the public interest. We show how Federal courts innovated new procedures to preserve the railroad, sometimes in blunt violation of freely contracted agreements, and how this bias towards going concerns stayed with the American system to the present day.

This explanation raises the question, why should nineteenth century history have such a strong influence on current financial institutions? We suggest that the answer lies in the need to standardize commercial contracts. Our evidence show that newly innovated legal formulas are more difficult to enforce, because the court must establish the original intent of the parties as expressed by the language of the contract. Such problems do not exist with well-established formulas. Hence, parties tend to use standardized contracts rather
than innovate their own, which makes financial institutions historically determined. Our historical analysis shows that this problem is substantial: when England’s floating charge was innovated in the late nineteenth century, it was often disputed in court. It took English law some thirty years to clarify the formula, eventually making it the bedrock of English corporate insolvency procedure to the present day.

A second question raised by our explanation is why should the legislator intervene on matters such as corporate insolvency that can, in principle, be determined by a contract between the parties. The answer to this question is also related to the idea that corporate law is a set of contractual standards. Since the cost of creating the contractual standard is all borne by the innovating parties, and is not internalized by subsequent generations, contracts developed under a freedom of contract regime tend to be under-refined. After the floating charge was innovated, the English system came to rest with almost no innovation for about eighty years. Hence, the legislator may claim the responsibility for refining contractual standards.

The problem of under-refinement is made more severe by enforcement uncertainty. As described above, the court may fail to understand the language of the contract and refuse to enforce it. Thus, when freely contracting parties innovate a new insolvency procedure, they choose one that provides the right incentive for ex ante effort taking, given the enforcement uncertainty. But, in setting the rule for liquidation, the parties consider the effect on incentives within the innovation period alone, ignoring the fact that once the innovation is standardized, any enforcement risk disappears but the standardized formula remains unaltered. We show that this leads to an overreaction result: starting with a “too soft” insolvency procedure, the parties innovate a “too tight” procedure, as happened in nineteenth century England. Hence, freedom of contract does not guarantee that financial structure is the socially optimal one. Rather, economic conditions at the time of innovation tend to become fossilized into a legal standard.

This under-refinement provides a potential role for the State in the process of developing legal standards: to push the system towards further refinement, and to avoid overreaction. But then, any intervention requires that the State is equipped with additional power. The state may use its power to bias the legal standard in favor of its own political
objectives. We model the political bias using the conflict between ex ante and ex post efficiency. Judges and legislators may favor ex post efficiency, especially if the leading case is a railroad. Hence the US bias towards going concerns.

The analysis provides a policy evaluation of two innovation regimes. The freedom of contract regime preserves the ex ante outlook of the parties, but tends to be under-refined and overreacting. The statutory regime may be more refined but runs the risk of being misused politically. We believe that properly evaluating these tradeoffs is an important challenge facing institutional reformers. It is not just the static consideration of which institution will fare better in certain circumstances, but who should control the dynamic (and probably very lengthy) process of institutional innovation and standardization. Is it the ordinary businessman, short sighted and partial as he may be, or is it some centralized legislative authority that aspires for the common good, but may falter through political bias?

The paper is organized as follows. Section 2 describes the parallel histories of insolvency procedures in both the UK and US, emphasizing the role of freedom of contract in the UK and the judicial-legislative intervention in the US. Section 3 develops a formal model of financial innovation and corporate insolvency, and explores the comparative advantages of the two regimes. Section 4 concludes.

There exists a vast literature on innovations of marketable securities and derivatives; see Allen and Gale (1994) or Duffie and Rahi (1995) for exhaustive surveys. However, little has been written on financial innovations in corporate finance. In constructing such a theory, we touch upon issues mentioned in other contexts. La Porta et. al (1997) recognize that various legal traditions (Anglo Saxon, French etc.) differ by the amount of protection they provide for external financiers, affecting capital structure and other features of the firm. Like them, we recognize the need to address some corporate finance questions within a

---

1 It is noteworthy, though, that the notion of contract standardization is present in the security design literature, but the motivation is quite different than ours: to gain market liquidity and to save on the cost of learning the risk exposure of innovations; See Cuny (1993), and Gale (1992) respectively. See also Sussman (1998a) and (1987b).
broader context. However, their analysis is static nature, and does not address the issue of financial innovations. Greif and Milgrom (1994) emphasize the dynamic and historical dimension in the process of institution formation, but the mediaeval guilds that they analyze are very remote from the reality of the modern corporation. The issue of freedom of contract and the corporation is discussed in Bebchuk (1987), while Schwartz (1997) and Schwartz (1999) address, explicitly, its relation to corporate insolvency procedure. Lastly, there is a substantial comparative literature in corporate finance describing cross country patterns of governance and insolvency law: c.f. Shleifer and Vishny (1997) or Franks, Nyborg and Torous (1996).

2. **History**

The main purpose of this section is to show that the current insolvency procedures in the UK and the US are a result of different innovation regimes. As a first step, we show, that the floating charge was innovated by freely contracting lenders and borrowers, while US equity receivership, the forerunner of Chapter 11, was innovated by judges and legislators sometimes acting against pre-contracted agreements. As a second step, we show that there was a trend towards convergence, but it was blocked by the respective regimes: some English judges thought that the floating charge was a bad idea, but freedom of contract prevented them from interfering. On the other hand, some US contracts had innovated a formula strikingly similar to the floating charge (called a *floating lien*), which was aborted in spite of the judges awareness that the formula reflected the intention of the parties. Hence, our evidence suggests that had the two countries enjoyed the same innovation regime, they would have converged to similar insolvency procedures.

The section includes two comparative histories, each describing the innovation regime, the actual innovation, and then the aborted innovation.

---

2 By the way protect the rights of outsiders. See also Vishny and Shleifer (1994) on politics and corporate organizations.
2.1 The UK

2.1.1 The Innovation Regime: Freedom of Contract

It is well beyond the scope of the current paper to explain how exactly English corporate law adopted the principle of freedom of contract. It is, however, a very modern development related to a series of incorporation Acts that took place between 1855 and 1858, consolidated in the great Act of 1862. It provided England’s first modern corporate law. Before then, English law was actually quite suspicious of corporations in general. An important illustration of this attitude is the notorious Bubble Act of 1720 (repealed only in 1825), that placed severe restrictions on the creation of new corporations.

An important implication of freedom of contract was that each company had to set its own rules. An elegant statement of this policy can be found in the words of Robert Lowe: “the State leaves them [i.e. companies] to manage their own affairs and has no desire to force on these little republics any particular constitution.” Every company had to determine its own internal governance structure, disclosure procedures etc., and write them into the company’s “memorandum” and “articles of association.” Specific transactions were to be regulated by bilateral contracts. Hence, in the early 1860’s, the modern corporation was just an empty shell, and the elaborate corporate scheme, as we recognize it today, was yet to be innovated. The Act of 1862 just created a regime within which the innovation was supposed to take pace. The most important feature of this regime was that it clearly determined who had the power to innovate: the parties involved in each corporation through their everyday business contracts.

2.1.2 Innovation: the Floating Charge

It follows that all matters regarding corporate insolvency were part of the debt contract, or more precisely part of an adjoining document called a “debenture”. The first step was modest, and had to do with the innovation of just one word, ‘undertaking’. The case was

---

3 See Hirshleifer (1987) for an explicit analysis of evolution and law. See also Sussman (1998a) and (1998b).
4 See Gower (1969, Chapters 2-3) for an excellent short history of the English company.
5 The political economy of this episode is nicely described by Hunt (1936), Ch. VI.
6 Quoted by Hunt (1936) p. 135. Lowe was president of the Board of Trade during the 1855 enactment.
7 Roughly speaking, a debenture is a document that fixes the terms of long term, secured corporate debt; see Palmer (1905) p. 243.
heard in the Court of Chancery in 1870. A steamship company, the “Panama, New Zealand and Australia Mail Company, Limited,” incorporated under the Companies Act 1862, issued in June 1866, 1000 “Mortgage Debentures” (£100 each) bearing interest of 6% per annum. The debt was secured via a charge on “the said undertaking, and all sums of money arising therefrom.” On July 1868 the firm defaulted on the interest payments and was wound up shortly afterwards, its ships being sold. Two mortgage holders, holding together only five debentures, argued that they were senior to the ‘general creditors’ of the company because the word ‘undertaking’ refers not only to the company’s income, but also to its fixed capital, including the ships. The general creditors argued that ‘if the directors had wished to give a charge on the ships … they would have used apt words for that purpose.’ Lord Justice Giffard decided in favor of the debenture holders: “I take the object and meaning of the debenture to be… [that] the word ‘undertaking’ had reference to all the property of the company’ not only which existed at the date of the debenture, but which might afterwards become the property of the company”.

Palmer says that “Giffard L.J.’s decision in Panama Co. was one of the greatest practical importance …”. The reason is that it established the possibility of ‘stretching’ the institution of a mortgage, so as to deal with the new circumstances created by the innovation of the corporation. Essentially, it recognized that a mortgage can be placed not only on tangible objects currently owned by the company, but on a class of assets (tangible or not) which will be acquired by the company in the future. Such a broad definition of the mortgage allowed the English company to place all its assets, in case of default, under a single ‘floating’ mortgage. Hence, the current reality where the law of corporate insolvency is basically the law of corporate mortgages, is directly related to the decision made by Giffard in the case of the Panama Co.

Notwithstanding, the security thus created was still very crude. It was refined in a line of cases that came before the courts in the next thirty years or so. We describe here just one of them, the case of the Government Stock Investment Company v. the Manila Railway

---

8 Palmer (1905) p. 265.
9 Obviously, the institution of a mortgage was known to English for centuries; see Jenks (1922), pp. 89-90, 124-126. See also John Evelyn’s Diaries (de la Bedayere (1995)).
Company, which was heard in the House of Lords in 1896. Two important issues were resolved: the relation of fixed to a floating charges, and the exact time and circumstances in which the floating charge ‘crystallizes’ and attaches to specific objects. Since, the word ‘crystallization’ proved helpful in explaining the notion of a floating charge to generations of law students; it can still be found in any textbook of English company law.

The Manila Co. was incorporated in 1888 in order to construct and operate a railway from Manila to Dagupan (in the ‘Philippine Islands’). In 1889 it issued 7300 debentures (£100 each) bearing interest of 6% per annum. To secure the loan, the company charged “by way of a floating security, all its property, whatsoever and wheresoever, both present and future.” The debenture provided for a three months grace period (after default) before the creditors could liquidate the company. On January 1892 the Manila Co. defaulted. After more than three months, still without the debenture holders taking any action to enforce the charge, the Manila Co. borrowed a further £300,000 (the “B” bonds) and mortgaged some fixed assets for that purpose.

The Government Stock-Investment Company (holding some 150 debentures) asked for an injunction that would restrain the Manila Co. from paying interest on the “B” bonds. Eventually, the case went to the House of Lords. The Government Co. recognized the right of the Manila Co. to borrow on a fixed charge as long as the floating charge did not attach. But it argued that since the fixed charge (against the “B” bonds) was issued after the grace period had expired, the floating charge had already crystallized. Hence all the assets in the company were already mortgaged, and could not be mortgaged again. In short, the fixed charge was not valid. On the other side, the Manila Co. argued that “some act on the part of debenture holders is necessary” in order to crystallize the floating charge. Since such act was not taken, the assets were not charged and the mortgage was valid. The case was ruled against the Government Co. creating the precedent that the floating-charge holder had to take some action, such as the appointment of a receiver, in order to crystallize the floating charge.

The Manila Co. case is interesting not only for its own sake, but also because it illustrates the role of the judiciary in a freedom of contract system. Reading the decision, there can be no doubt that the only concern of their Lordships (among them the Lord
Chancellor, Halsbury), were the words of the debenture and the circumstances of the case. They dig into the words of the debenture - “I confess that upon first reading the words … I was impressed … that the appellants’ interpretation was sound; but upon further examination of the language I have come to a different opinion,” says Lord Shad. They conduct thought experiments, putting themselves in the place of the parties ex ante - “any other construction would obviously lead to consequences it is impossible to suppose the parties could have intended,” says Lord Macnaghten. And they wonder about the inherent ambiguity of words - “it is impossible in the construction of any document to exclude the situation of the parties,” says Lord Chancellor Halsbury.

By the beginning of this century, the floating charge had become a common business instrument. It was now mentioned in the Companies Act, 1900, yet without any formal definition. Still, the courts did not feel it was their duty to provide one. Lord Justice Romer in Re. Yorkshire Woolcombers’ Association Limited (1903) says: “The term ‘floating’ is one that until recently was a mere popular term. It certainly had no distinct legal meaning.” He then offers a definition but insists that “I certainly do not attempt myself to give a definition of the term.” Yet, his explanation can still be found in textbooks today. We quote here the less technical, but more colorful explanation of Lord Macnaghten in Illingworth v. Houldsworth and Another (1904): “A specific charge is, I think, one that without more fastens on ascertained and definite property …; a floating charge, on the other hand, is ambulatory and shifting in its nature, hovering over and, so to speak, floating with the property, until some event occurs, or some act is done which causes it to settle and fasten on the subject of the charge …”

Obviously, this reluctance, by the most senior judges of the realm, to advance formal definitions was a matter of principle, not of negligence. It reflected the recognition that a formal definition will fix the meaning of the formula too early and will place some restrictions on the parties’ freedom to contract. This is in spite of the fact that the parties can always avoid the floating charge formula altogether and open a new line of cases, bypassing any precedent laid down by the courts with respect to the floating charge. However, innovations are costly, and formal definitions might prevent the parties from
exercising their right to contract freely. The courts felt it was better to avoid even such minor obstacles to the “natural” course of institutional evolution.

2.1.3 Aborted Innovations

The newly innovated floating charge attracted much criticism. The decision of Justice Buckley in the case of the *London Pressed Hinge Company Limited* (Court of Chancery) is often quoted.10 The details of the case are of little interest here. What matters is that Justice Buckley had very strong views against the floating charge and had “taken the opportunity to look into the case in order to see whether … it is possible to prevent the injustice which is now of frequent occurrence.” Buckley had two points in mind. The first was fairness: “if the company is wound up there is nothing for anyone but the debenture holders.” The second is some frictions in the contracting process. A creditor “may have lent his money or consigned his goods to the company last week, but if he has the audacity to ask for payment and to enforce his legal remedies to obtain it the debenture-holders obtain a receiver … taking his money or his goods.” It seems that the main concern here is about small and short term lenders (such as suppliers) who did not write formal contracts with the firm, and whose low priority in case of default is a result of contracts written by bigger and longer term lenders. Although the supplier had no intention of lending under such a low priority, the cost of innovating a formula that would express his intention was too high. Since the English system allocates rights according to written contracts, it provides little or no protection to the rights of parties with relationships to the firm but which are without formal contracts.11

Irrespective of how convincing Justice Buckley’s arguments are, he himself reached the conclusion that the debenture holders obtained their rights by a lawful and valid contract and thus, “I regret to be driven to [the] conclusion that as the law stands those are the rights of debenture holders.” To be sure, Justice Buckley did not think that freedom of contract was taking English corporate insolvency law in the right direction. But he understood very

10 See also Gloster and Segal (1994).
11 This problem was later recognized for workers in a 1916 Act which gave accrued salaries priority in insolvency, regardless of the wording of the debt contract. In some countries, for example Holland, a fixed amount of the insolvent firm’s value must be paid to unsecured creditors by law. Such laws may be interpreted as an attempt to correct this bias.
well that changing the course of this evolution was beyond his powers and authority, and
that he had no choice but to enforce the contract.

2.2 The US

2.2.1 The Innovation Regime: Statutory and Legal Intervention

While in the UK the power to innovate a new insolvency procedure rested with lenders and
borrowers, in the US it rested with the Federal courts. There are two reasons, both related
to the Federal structure of the United States. Article 1, Section 8 of the 1789 Constitution
states that “the Congress shall have the power … to establish … uniform laws on the subject
of bankruptcies throughout the United States.” Congress, however, failed to pass any
enduring statute until 1898, creating a gap that was to be filled by the Federal courts.

Some Federal judges went so far as to argue that Federal jurisdiction in bankruptcy
prevented the States from enacting their own bankruptcy laws. But this view did not prevail,
and many States did legislate their own laws. However, these laws often could not cope
with bankruptcies of large corporate failures, particularly railroads that crossed State lines.
Hence, such cases were brought to the Federal courts. Eventually, Congress did legislate,
but rather than innovating a new procedure, it refined the procedures devised by the federal
courts, with the bias towards going concerns with the impress of the railroad cases.

2.2.2 Innovation: Equity Receivership

An important milestone in this process concerned the failure of the Wabash Railway in 1884,
described by Dewing (1926) as ‘epoch making’. It was well known at the time that the
railroad was in serious financial difficulty. Just prior to default, the corporation’s
management petitioned the Federal courts to allow the company to appoint two of its own
directors as receivers. Wabash’s lawyers argued that, “as soon as default shall be made, …
supplies, materials, rolling stock, and other personal property will be seized under execution

12 Little is known about the motives of the drafters; although see Madison’s views in The Federalist (1788)
and Warren (1935).
13 Various Acts allowing individual bankruptcy, were passed in response to widespread failures and panics:
in 1800, 1841 and 1867. But were quickly repealed. During the existence of the 1841 Act, 1% of white
males canceled $441 million of debt with creditors receiving 10 cents on the dollar.
14 Wabash, St. L. &P. Ry. Co. v. Central Trust Co. of New York and others, Circuit Court, N.D. Ohio, W.D.
June, 1884 (Federal Reporter, 22).
and attachments, and complainant will be deprived of the means necessary to the operation of said roads.” Further, “the present promise of an excellent crop in the west offers strong hopes that a large revenue will be earned by complainant in the near future.” The court accepted the petition, and charged the receivers to maintain the railroad as a going concern. All attempts by creditors to force a sale of the property were disallowed by the court.

Permitting the company to appoint its own receiver was a violation of the original intention of the parties as expressed in the mortgage. A receiver is an agent of the mortgage holder, appointed after default, for the sole purpose of seizing assets to repay the loan. It is obvious that a receiver friendly to the management, let alone two of the company’s own directors, created potential conflicts of interest. Indeed, the whole motive for the petition was to preempt the lenders from appointing their own receiver. This point was noted in a highly critical paper written in 1887 by the Hon. Judge Gresham. He says: “...it is unusual and novel, to say the least, to entertain a bill filed by such a corporation against its creditors, and at once, without notice, place the property in the hands of one or more of the directors whose management has been unsuccessful. Receivers should be impartial between the parties in interest; and stockholders and directors of insolvent corporations should not be appointed unless the case is exceptional and urgent and then only on the consent of parties whose interests are to be entrusted to their charge.”

Once the threat of liquidation was removed, Wabash managed to renegotiate a highly favorable reorganization plan for the equity holders and some lenders. A joint committee for Wabash and its lenders was formed, and the lenders had to accept sizeable writedowns. Mortgage bonds, which previously bore a 7% coupon, would now receive new 5% bonds, issued under a new mortgage. This effective write down was achieved in spite of the fact that more junior bondholders and creditors retained a [reduced] interest in the firm.

---

15 The company went to the State court first, but the judge directed them to the Federal court.
16 One justification of judicial intervention is that the capital structures of the railroads were very complex. For example, bonds were sold on bits of the railroad thus encouraging competition between creditors and their receiver representatives, and increasing the probability of an interruption of services; see Skeel(199?).
17 In related case, Judge Gresham allowed some Illinois debtholders (of Wabash) to appoint their own receivers.
18 Gresham (1887) p. 119. He removed the company’s receivers from that part of the line under his jurisdiction.
In other words, the proposed plan approved significant violations of absolute priority. To achieve this result, the Wabash management did not hesitate to intimidate dissenting debtholders to the plan of reorganization by threatening inferior terms. In Gresham’s words: “…the boldness of this scheme to aid the purchasing committee, by denying equal rights to all bondholders secured by the same mortgage, is equaled only by its injustice.”

Even more seriously, Gresham describes how the receivers and their friends used their position to change the priority of loans because one of the receivers, with three others, countersigned very large promissory notes held by a particular creditor the Missouri Pacific: “It can be said … that Gould, Humphreys [a receiver], Dillon, and Sage, the four indorsers, constituted a majority of the executive meeting of the Wabash Company at New York, and that they, and perhaps others who controlled the Missouri Pacific, caused the Wabash bill to be filed, intending, …, to have the large indebtedness for which the four indorsers and the Missouri Pacific were liable, made a charge upon the Wabash property prior to the mortgages, …, to the injury of the holdings of senior securities.”

It must be added, though, that in spite of all of his criticism and strong language, Judge Gresham did not think that the reorganization process was fundamentally flawed. To the contrary: “it has frequently been deemed necessary in suits against insolvent railway corporations … to appoint receivers to operate and protect the property pending the litigation.” He and other prominent judges felt that where a vital public interest was concerned, contractual rights could be violated for the purpose of the common good. They did not feel that the corruption surrounding the Wabash default was in any way an inevitable result of the reorganization process. Out of Wabash and other railroad cases, ‘equity receivership’ emerged. Most of the features of Chapter 11 can already be seen in this nineteenth century institution: restrictions on liquidation so as to preserve going concerns, reorganization committees and lengthy renegotiations with substantial write downs of

---

19 There were concerns that reorganization plans discriminated against particular creditors, especially small ones. In 1899, in the Louisville Trust Company v. Louisville, New Albany, & Chicago Railway Company, the Supreme Court concluded that unsecured creditors could not be squeezed out by secured creditors and shareholders. See Skeel (1997).
20 See Gresham (1887) p. 114.
21 See Gresham, (1887) p. 119.
22 See Gresham (1887) p. 119.
secured debt. Another case, Rutherford v. Penn. Midland R.R. (1896) added an additional feature when the court sanctioned the issue of new debt senior to pre-receivership debt, thus innovating the notion of debtor-in-possession financing.

The US process of equity receivership, with further refinements, was extended to all corporations in the bankruptcy act of 1934 described as the “old equity receivership reorganization pressed upon a bankruptcy model with additions.” It was very badly drafted and led subsequently to the Chandler Act of 1938. The Chandler Act provided for two forms of reorganization. Chapter X to regulate large corporations and Chapter XI for small businesses. The first addressed the perceived abuses of the equity receivership. For example, it directed the mandatory appointment of a disinterested trustee, judicial review of the plan, court review of fees and expenses, and SEC monitoring. Chapter XI was much less formal, the debtor was to remain in possession and had the exclusive right to file a reorganization plan. Thus, the procedure initially developed specifically to reorganize railroads and other public services, were subsequently extended to all corporations and provided the basis of Chapter 11 of the 1978 Bankruptcy Reform Act.²³ ²⁴

2.2.3 Aborted Innovation: The Floating Lien

It is instructive to compare how US courts approached the innovation of an instrument closely resembling the floating charge. The case of Mitchell v. Winslow involved a loan for $15000 made in 1839, to be repaid in four years, semi-annually. The loan was secured by a mortgage. The mortgage conveyed as security all the machinery, tools and implements …” which we may anytime purchase for four years from this date and also all the stock which we may manufacture or purchase during said four years.” In 1842, the mortgagors stopped payment and the mortgagee took possession of the property, including the machine tools and stock, and sold it. In the meantime the company went into bankruptcy and Mitchell sued to recover possession. He argued that a lien could not be extended to property acquired after the mortgage had been registered, and thus the property did not belong to the mortgage holder.

²³ The SEC review of plans was dispensed with since it proved cumbersome and costly.
A State judge, Judge Story, refused to give Mitchell title. He concluded that since the mortgage was properly registered, future creditors would have been aware of the mortgage and could not have been misled about the disposition of the assets in the event of default, and therefore the judge refused to give the assignee title. At the heart of Story’s judgement is that since the mortgage was created lawfully, and since no party was mislead, the court should not interfere with the contract. But this freedom of contract approach was later rejected by superior courts, mainly on the grounds of the ‘after acquired property’ rule. It was argued that a mortgage could only be secured on current property, and if new property were acquired, a new mortgage or a supplemental mortgage had to be taken out. The new principle was phrased: “qui non habet, ille non dat” (what he has not, he cannot grant).  

Only with Benedict v. Ratner (1925), was the after acquired interest rule clarified, and floating liens made enforceable. However, soon afterwards the Chandler Act was passed, providing a federal process by which creditors were prevented from taking possession of their assets while a plan of reorganization was being worked out.

We conclude our description with the words of Gilmore (1965): “In England the adjustment of medieval society security law to the needs of an industrialized society was accomplished in an altogether simpler fashion than it was on this side of the Atlantic. The state of almost intolerable complexity which our security law reached by the end of the century was not matched in England. The specialized devices which grew up in this country - the trust receipt, the factor’s lien, the equipment trust, the bailment lease and so on - were American exclusives. English law and American law, in this area, split apart in the course of this century.” Two points deserve special attention. First, that England and America ‘split apart’ in a process that took place at the end of the last century. Second, that the outcome differed not only in procedure but also in style as the American system reached a state of

---

24 English legislation concerning bankrupt railways was sparse and was confined to new procedures for how creditors might agree on a plan of reorganization. There was no coercion on creditors to prevent them from liquidating the railroads. See the Acts 1846 and 1867.


‘almost intolerable complexity.’ We shall return to this point in our following discussion of over and under refinement.

3. Theory
In this section we consolidate the empirical observations of the previous section into a formal theory of innovation and insolvency. The model attempts to address two major issues. The first is a positive one: why did the UK innovation regime, with freedom of contract, end up with a “tight” insolvency procedure, while the US innovation regime, with judicial and legislative intervention, end up with a “soft” procedure. The second issue relates to the social welfare implications of the two regimes.

We show that freedom of contract does not guarantee that the socially optimal contract is standardized. The reason is that the innovating parties fail to internalize the benefits accruing to subsequent parties who use it, and hence, fail to refine the legal standard to the socially desirable level. Moreover, the innovations tends to ‘over-react;’ starting with a ‘too soft’ insolvency procedure, the parties innovate a ‘too tight’ procedure, because they foresee the risk that the courts will ignore the innovation and enforce the original ‘soft’ procedure. As a result, the State may claim responsibility for refining the the legal standard and for avoiding over-reaction. However, giving the State the power to innovate may give rise to the legislator’s political biases. Hence, the trade off between the benefits of refinement against the cost of political biases.

The section is organized as a sequence of nested models, each differentiated from the previous one by an incremental assumption. This structure allows a proper discussion of both the analytical contribution of each assumption, and the historical facts that motivate its introduction.

3.1 The Basic Setting
Consider a discrete-time economy: \( t = 0,1,2, \ldots, ad\ infinitum \). In each period, one penniless entrepreneur (endowed with one project) meets one wealthy financier. Both are risk neutral. Their business spans across several stages and will be over by the end of that period. The intra-period interest rate is zero, while the inter-period interest rate is \( \rho \). The distinction between a period and a stage is a matter of modeling convenience: the parties to the same
contract interact across stages, while contracts and standards evolve from one period to another.

The following is a description of the interaction between the financier and the entrepreneur.

- Stage 1: the project requires an initial injection of capital, $k$. Making some effort, the entrepreneur affects the probability of the project’s success. Let $\pi_t$ denote the (period-$t$) project’s probability of success, and the entrepreneur’s level of effort, interchangeably.
- Stage 2: if successful, the project yields a cash flow of $y$. If it fails, it yields zero. Then, the project may be liquidated or it may be continued to stage 3. The project’s liquidation value is $L$.
- Stage 3: if continued, the project yields some non-pecuniary private benefits, $b$. The private benefits fall into the hands of the entrepreneur, and cannot be transferred to any other party. Private benefits are conditional upon the project not being liquidated. Also, even if the project fails to yield any cash flow in stage 3, the entrepreneur still derives benefits from being allowed to continue.

The entrepreneur’s disutility of effort is represented by the function $f(\pi)$, which has the following properties.

$\pi(1) = f^\prime(0) > 0, \ f^{''}(0) > 0, \ f^{'''}(0) > 0, \ f(0) = 0, \ f(1) = \infty.$

It is also assumed that $L < b$, that is the loss of private benefits due to liquidation is (much) larger than the liquidation value. This assumption is designed to capture the reality of nineteenth century railroads. To see why, one has to go back to the basic interpretation of private benefits. A narrow interpretation is that the entrepreneur’s private benefits reflect the money equivalence of some sentiment of pride, self-indulgence or accomplishment that he derives from being in control of a business. By their very nature, these benefits are not marketable and will be lost if the business is liquidated. A broader interpretation is that private benefits stand for social value that is internalized into an existing corporation, and will be lost in case of liquidation. Obviously, in the late nineteenth century, when railroads were the only means of long distance transportation by land, even a temporary disturbance to operation meant sizable economic loss. For example, the farmers in the agricultural states
relied on the railroads for exports. Crucially, if the losers were geographically dispersed and liquidity short, it would be difficult for them to buy back the lenders’ liquidation rights even if the value lost exceeded the liquidation value. In the formal modeling below we continue with the assumption that the corporation is represented by a single “entrepreneur,” although we interpret the “private benefits” more broadly.

3.2 Observable Effort

Let $\beta$ denote the probability of liquidation, conditional upon failure. Obviously, a high $\beta$ reflects a “tight” liquidation policy that favors the lender (financier) in case of default, while a low $\beta$ reflects a “soft” liquidation policy which favors the borrower (entrepreneur) and preserves, with a high probability, his private benefits. Hence, a high (low) $\beta$ captures the current corporate insolvency law in the UK (US). Much of the analysis below is driven by the tension between $ex \ ante$ and $ex \ post$ efficiency. Hence, it is useful to start with the following benchmark result.

**Lemma 1.** If effort is observable (and verifiable) then: a. $\beta = 0$ ($ex \ post$ efficiency); b. the effort is determined by the equation $f'(\pi) = y$ ($ex \ ante$ efficiency), subject to participation constraints.

Proof: just solve

$$
\max_{\pi, \beta} \pi(y + b) + (1 - \pi)\left[\beta L + (1 - \beta) b\right] - f(\pi),
$$

using $(L - b) < 0$. ■

The motivation for this result is obvious. Since the entrepreneur’s benefit of continuation is greater than the entrepreneur’s benefit of liquidation, liquidation is $ex \ post$ inefficient. If the effort is contractible, then by standard dynamic programming considerations, both $ex \ ante$ and $ex \ post$ efficiency should be preserved. As a result, the project is never liquidated, even if it yields no cash flow. To put it differently, if effort is observable, failure does not signal low effort, just bad luck. Hence, it should not be penalized. Note also that the $ex \ ante$ efficiency condition is just the equality between the marginal cost of effort (in terms of disutility) and effort’s marginal expected product.
3.2 Unobservable Effort

The first step towards the real world is taken by assuming that effort is a “hidden action:” only the entrepreneur observes his own level of effort. We assume that all other variables, including cash flows, are observable and verifiable.

Let $R$ be the repayment to the financier in the event of success. For simplicity, we assume that the revenue from liquidation is negligible, i.e. $L = 0$. The contract problem (which is stationary over time) is:

\[
\text{(3) } \frac{\partial }{\partial \pi} \frac{\partial }{\partial R} \left( y - R + b \right) + \left( 1 - \pi \right) \left( 1 - \beta \right) b - f \left( \pi \right),
\]

\[
\text{s.t.}
\]

\[
\text{(4) } \pi R = k,
\]

\[
\text{(5) } \pi \in \arg \max \pi \left( y - R + b \right) + \left( 1 - \pi \right) \left( 1 - \beta \right) b - f \left( \pi \right),
\]

\[
\text{(6) } \beta, \pi \in [0,1], \quad R \in [0,y].
\]

Equation (4) is the participation constraint, (5) is the incentive-compatibility (IC) constraint, and (6) provides the feasibility constraints. It is obvious that the contract can no longer preserve both ex ante and ex post efficiency, and that some liquidation policy may be required.

It is convenient to solve the contract problem in two stages. First, solve for the optimal $(R, \pi)$ given a certain (arbitrary) liquidation policy, and then solve for the optimal liquidation policy. Denote the value of the first stage by $V(\beta)$. We assume that $V$ is well-behaved as in Figure 1 (see Appendix for more detail about the derivation of the $V$ function). The shape of the $V$ function can be explained intuitively with the aid of Lemma 2.

Lemma 2. A “tighter” liquidation policy will induce the entrepreneur to invest more effort into the project.

Proof: see Appendix.

Hence, the optimal policy should not be too soft. For then, by Lemma 2, the entrepreneur will exert little effort into the project, the financier will foresee the effect and will hold back
his credit, hence the flat segment in Figure 1. Also, the liquidation policy should not be too tough, for then, by Lemma 2, the entrepreneur exerts more effort, but loses the private benefits more frequently because of excessive liquidation. Hence, the optimal contract is some liquidation policy $\beta^*$ that maximizes the $V$ function (see Figure 1).

3.3 Standard Contracts
Adding asymmetric information has carried our analysis a step closer to the real world, for it explains why an ex post inefficient liquidation policy has to be adopted in some circumstances. However, the model of section 3.2 is still quite detached from the reality described in Section 2 for two reasons. First, the model is still a-historic. Parties write down debt contracts, each contract specifying its own liquidation policy, and there is nothing that ties the present policy with past ones. Since in our model the fundamentals are stationary, the system converges to a stationary policy immediately. Had the fundamentals varied along time, the system would have jumped from one policy to another, driven by the fundamentals alone, unconstrained by past policies.

The second reason for the model’s lack of realism is that freedom of contract will guarantee a (constrained) Pareto-optimal liquidation policy and effort exertion. This allocation will be inferior to the one under observable effort, but it is the best possible one under the information asymmetry. The parties understand well enough the incentive constraints, and design contracts that can handle the problem in the best possible way. Definitely, the State can do nothing further to improve their situation. In short, in such a world the best public policy is no policy.

It seems that the very notion of ‘corporate law’ is meaningless in a world where parties to every contract make their own rules de novo, and can do it without any assistance from the State. Hence, we suggest modeling the law as a set of standard contracts, or formulas. An example of a standard contractual formula, is the floating charge or equity receivership. We show how the notion of a standard contract makes both history and State intervention meaningful once again.

We argue that the need to standardize contracts results from the difficulty of communicating, in a clear and unambiguous manner, what the liquidation policy should be. Note that the liquidation policy is modeled as a conditional probability, a number between
zero and one. However, in practice, this policy is expressed as a complicated formula by which control rights are reallocated across states of nature. This formula has to be written down *ex ante* into a contract, to be enforced by the court *ex post*. Essentially, the written contract is an instrument of communicating the formula across states of nature: from the *ex ante* to the *ex post*. One of the lessons that may be drawn from the historical section above is that this communication can be defective.

One reason is quite straightforward. *Ex ante*, the parties have a mutual interest in delivering the message to the court in the clearest possible manner, because extracting the surplus from the transaction depends on their ability to enforce the contract. However, *ex post*, once uncertainty is resolved, this common interest evaporates. The lender would try to persuade the court that the words of the contract imply a very tough liquidation policy, while the entrepreneur would argue that it implies a very soft liquidation policy.\(^{27}\) So, *ex post* sorting out the original intention of the contract by way of questioning the parties about their intentions *ex ante*, may be of little help. Their Lordships’ difficulties of discerning the original intention of the lenders and borrower in the *Manila Railway Co.* illustrate the problem.

Note, however, that the above communication difficulties are confined to newly innovated formulas. Once the innovation is enforced, and the deliberation becomes common knowledge, the ambiguities within the formula disappear, and the formula is standardized. To put it more concretely, the parties in the case of the *Manila Railway Co.* could have argued about what triggers crystallization; but this argument could not have taken place thirty years later after the concept of the ‘floating charge’ had been standardized.

Obviously, this communication problem is somewhat within a legislative regime. For then, understanding the *ex ante* intention of the parties matters much less. The legislator may simply impose his views on the contracting parties.

### 3.4 Innovation Mechanism: Freedom of Contract

We augment the model of Section 3.2. with the following, highly stylized, incremental assumptions. We make a clear distinction between a newly innovated liquidation policy (still

---

\(^{27}\) Needless to say, this is an implication of Hirshleifer (1971).
denoted by $\beta_r$) and a standardized liquidation policy, $s_r \in [0,1]$. Writing the standard into any contract and then enforcing it is costless. In contrast, wording a new innovation costs an amount of $B$ (lawyers' fees)\(^{28}\). In addition, enforcing an innovation is uncertain, and there is a probability $\lambda$ that the court will accept the contract and enforce the new formula, and a probability of $(1 - \lambda)$ that the court will reject the new contract. If the innovation is rejected enforcement falls back on the existing standard. However, once the innovation is enforced, it replaces the old standard: $s_{r+i}$ equals $\beta_r$, conditional upon enforcement. From that point onwards, the new liquidation policy can be contracted and enforced at zero cost.

### 3.4.1 Dynamics

Let $e_r$ denote the effective (ex ante) liquidation policy; namely

$$e_r = \lambda \beta_r + (1 - \lambda)s_r. \tag{7}$$

Solving the program (3)-(6) under conditions of enforcement uncertainty, one can easily verify that the only change in the system is that now $e_r$ replaces $\beta$. It follows that if the parties deviate from the standard, and innovate a new formula, they will set the innovation such that the effective policy satisfies\(^{29}\)

$$e_r = \beta^*. \tag{8}$$

Given equations (7) and (8), it is easy to solve for the innovation itself; see equation (11) below.

But will the parties innovate at all? The answer is yes, if the value of the innovation, net of the cost of innovation, exceeds the value of the standard, namely

$$V(\beta^*) - B \geq V(s_r). \tag{9}$$

Using Figure 1, it is easy to see how condition (9) defines a range $(\underline{\beta}, \overline{\beta})$, out of which an innovation will take place. Hence, we get the following dynamic system:

$$\text{if } s_r \in (\underline{\beta}, \overline{\beta}), \text{ then no innovation takes place, and } s_{r+i} = s_r, \forall i > 0. \tag{10}$$

\(^{28}\) Due to risk neutrality enforcement uncertainty does not place any burden on the innovating parties (see below). Hence, the cost of innovation, $B$, includes "lawyers’ fees’” only. In reality, and in a more elaborate setting, enforcement uncertainty is one of the main deterrents against new innovations.

\(^{29}\) We assume that the effective policy is never constrained by the feasibility condition $\beta \in [0,1]$. 
(11) if \( s_i \not\in (\beta, \overline{\beta}) \), the formula \( \beta_i = \frac{1}{\lambda} \beta^* - \frac{1-\lambda}{\lambda} s_t \) is innovated; further,
\[
\begin{align*}
    s_{t+1} &= \begin{cases} 
    \beta_t & \text{with prob. } \lambda, \\
    s_t & \text{with prob. } (1-\lambda).
\end{cases}
\end{align*}
\]

The system (10)-(11) has a somewhat unusual dynamics. Equation (11) defines a difference equation in the standard
\[
(12) \quad s_{\text{subsequent}} = \frac{1}{\lambda} \beta^* - \frac{1-\lambda}{\lambda} s_t .
\]

While each standard yields the subsequent standard deterministically, the transition of the system from the current to the next standard is Markovian, with a transition probability of \( \lambda \). Hence, transition to a new standard will happen right away with probability \( \lambda \), after one period with a probability \( \lambda(1-\lambda) \), after two periods with probability \( \lambda(1-\lambda)^2 \), and so on.

The process will converge to a stationary point once the motivative to innovate vanishes, namely once the process enters the “absorbing set” \( (\beta, \overline{\beta}) \), which is represented by the shaded square in Figure 2. This is set out below,

**Lemma 3.** Suppose, that \( \lambda > 1/2 \) and \( B > 0 \). The system will converge, with dampened oscillations, into the “absorbing set” \( (\beta, \overline{\beta}) \), around the *ex ante* optimal contract \( \beta^* \).

Proof: immediate.  

The initial points \( s_0 \) and \( \tilde{s}_0 \) in Figure 2, illustrate the non-monotonic relation between initial conditions and the stationary points. This implies an important property of the system: that innovations tend to ‘over-react.’ Technically, the overreaction property is expressed by the fact that the graph of the difference-equation (12) is downwards sloping. To understand why, suppose the economy starts with an initial standard, \( s_1 \), which is ‘too lax’ relative to the optimum, \( \beta^* \). Since the initial conditions lie out of the absorbing set, an innovation takes place. The purpose of the innovation is to tighten-up the liquidation policy.

---

\(^{30}\) There is a possibility of endogenous cycles, which is of limited interest in the current context.
But that is overdone. The reason is that the innovating parties take into consideration the probability that the court will refuse to enforce the innovation, in which case enforcement will fall back on the existing (too lax) standard. Hence, in order to achieve the optimal level of effort by the entrepreneur, the parties have to contract an over-tightened policy. Note that the overreaction is not distorting at the innovation stage because the effective policy is just optimal. However, once it is enforced, it becomes standardized, and from then on it is enforced with a probability one. Since \( s_2 \) lies within the absorbing set, no further innovation takes place, and the system will stay with a standard that is too tight.

Essentially, this is our explanation of how freedom of contract has taken England to an insolvency law that is too tight. Immediately, following the great incorporation acts, the English company was operating under a very lax liquidation policy. The Act of 1862 did not bother to specify any penalty for default because the very intention of the Act was that the parties would do it themselves. And when English lenders and borrowers came to tighten it up, they overreacted, fixing the system into a “too tight” law for the next hundred years.

A more benevolent view of England’s evolution might describe the period prior to limited liability as an initially tight statutory code, that is incorporation with unlimited liability, followed by limited liability with a contract driven receivership code. The latter could be regarded as a much softer code than unlimited liability. This example is intended simply to illustrate how a freedom of contract system could soften an already tight system.

### 3.4.2 Welfare Analysis

Lemma 3 already provides the basic intuition for the welfare analysis of the freedom of contract mechanism. The main advantage of the mechanism is in preserving the *ex ante* outlook of the parties: for the parties themselves write the contract *ex ante*, taking into consideration both *ex ante* and *ex post* efficiency, \( \beta^* \) being the optimal balance between the two. Figure 2 makes it clear that the system is attracted by \( \beta^* \), and if either \( B \) is small, or \( \lambda \) close to 1, the innovation process is likely to end up quite close to \( \beta^* \). But if \( B \) is not small and \( \lambda \) is closer to 0 than 1, the innovation process will end up at a point that is quite remote from \( \beta^* \). Thus, a high probability that the standard will not be enforced (or high costs) by the court, contributes severely to remoteness from \( \beta^* \) and under-refinement.
Crucially, this remoteness from $\beta^*$ reflects some under-refinement in the sense that from a social-welfare point of view it would have been desirable to carry the innovation process one step further, setting the standard closer to $\beta^*$.

To establish the under-refinement argument in a more rigorous manner, we prove the following result:

**Lemma 4.** A standard liquidation policy is a public good.

Proof: Consider a system that has converged to a point, say, $s_2 \neq \beta^*$ within the absorbing set. Obviously, no innovation takes place because

\[ V(\beta^*) - V(s_2) - B < 0. \]

The value of this economy is:

\[ W_{FC} = \frac{1 + \rho}{\rho} V(s_2) \]

where $FC$ stands for freedom of contract. Now suppose a ‘benevolent dictator’ coordinates an innovation $\beta$. Note that there is a probability $\lambda$ that standardization would take place right away, and a probability $(1 - \lambda)$ that it would fail, in which case another attempt will be made, with value $W_{BD}$ and so on, recursively ($BD$ stands for ‘benevolent dictator’). Hence, the value of this economy is

\[ W_{BD} = \left[ V(e_2) - B \right] + \frac{1}{1 + \rho} \left[ \lambda \frac{1}{1 + \rho} V(\beta) + (1 - \lambda)W_C \right] \]

where, $e_2 = \lambda \beta + (1 - \lambda)s_2$.

We can solve $W_{BD}$ out of equation (15):

\[ W_{BD} = \frac{1 + \rho}{\rho + \lambda} \left[ V(e_2) + \frac{\lambda}{\rho} V(\beta) - B \right]. \]

Now, suppose the benevolent dictator sets the innovation at $\beta^*$, where by definition: $V(\beta^*) > V(e_2)$; hence,

\[ W_{BD} - W_{FC} > \frac{1 + \rho}{\rho} \left[ V(e_2) - V(s_2) - \frac{\rho}{\rho + \lambda} B \right]. \]
Clearly, equation (17) might well be positive, especially if $\rho$ ($\lambda$) is sufficiently small (high) while equation (13) is still negative.

The intuition behind the result is straightforward: the innovating parties internalize their own benefits out of the innovation, but fail to internalize the distortions they impose on subsequent generations via the over-reaction mechanism. Note, however, that if the benevolent dictator wants to correct this externality and to restore the (constrained) social optimum, he will have to violate the principle of freedom of contract. For the parties operating under freedom of contract will innovate a liquidation policy such that

\[(18)\quad V' [\lambda \beta + (1 - \lambda) b_2] = 0\]

(namely, by setting $e_2 = \beta^*$), while the benevolent dictator will aim at a policy such that\(^{31}\):

\[(19)\quad V' [\lambda \beta + (1 - \lambda) b_2] + \frac{1}{\rho} V'(\beta) = 0.\]

The difference between the two conditions is obvious: the benevolent dictator discounts the effect of the standard to subsequent contracting parties. As anticipated, the lower is $\rho$, the closer will the benevolent dictator aim for $\beta^*$. Hence, it is not sufficient for the benevolent dictator to subsidize the $B$; for then, the parties still overreact. He will have to innovate and impose the socially desirable contract on the contracting parties.

It is worth recalling that we have interpreted the criticism of Justice Buckley (in the case of the London Pressed Hinge Co.) as an under-refinement argument. Trade creditors typically lend their money with very low priority. But they do not regard this low priority as desirable. Rather, it is a result of the fact that the standard contract of English insolvency law gives the floating charge holder a very high priority. Now, Justice Buckley did not believe that the fact because the floating charge was developed by freely-contracting lenders and borrowers, it is guaranteed that the outcome was socially optimal. Though his argument is badly phrased, we may complete it using the results above. We may also take the argument a step further. English insolvency law was created by lenders, big enough to back their trade by formal contracts. They tended to ignore the rights of small parties for whom
formal contracting is privately too costly. But from a social welfare point of view, it would have been desirable (say) to spread the default risk more evenly across small and big lenders. Justice Buckley volunteered himself for the innovation mission, but then discovered, to his disappointment, that his ‘hands are tied’ by the principle of freedom of contract.

3.5 Innovation Regime: Statutory and Judicial Intervention

The following proposition is trivially valid: if the State could behaved like a benevolent dictator, a command economy could always do (weakly) better than a laissez faire economy because the benevolent dictator could mimic the laissez faire allocation where it achieves Pareto optimality, and improve on it where it fails. The reason why this proposition is of little relevance is, that any policy requires delegation of power to the State, and the State (it is notoriously known) may bias its intervention towards its own political objectives. Our analysis of the legislative regime in the context of US corporate insolvency law follows this common wisdom. The “people of the United States” in their 1789 Constitution gave Congress and the Federal Court system the power to legislate a new bankruptcy law. This policy may be justified on grounds of the under-refinement result mentioned above. Indeed, US corporate insolvency law is much more elaborate and sophisticated compared with its humble English relative; recall Gilmore’s comments cited earlier. On the other hand, it seems that the fact that US law is ‘softer’ with the distressed corporation reflects not just an attempt for refinement, but also some ‘political bias’ in favor of the corporation and the private benefits of particular parties, for example, the debtor’s employees. This political bias was much amplified by the historical coincidence that put railroad cases in front of the Federal Courts.

The statutory legislative regime differs not only in its objective function but also in the way it operates: it relies on the words of judges and legislators, not on commercial contracts. Hence, suppose the legislator has some superior standardization technology: it hires the country’s best legal minds, pay them $G \geq B$ (i.e. more than the individual businessman may pay his own lawyer), but in return receive a formula which is so clear that

---

31 Just differentiate the expression in equation (16) with respect to $\beta$.
32 This delegation of power may be discussed in terms of ordinary incomplete contracts theory *a la* Hart (1995).
it can be enforced without any uncertainty. Obviously, by this assumption alone we eliminate
the whole issue of dynamics from the analysis of this section.

Let us now turn to the formulation of the political bias. We have noted above that
the judges and legislators were biased towards the private benefits. There seem to be two
reasons. First, it is likely that the private benefits represent political interests that have more
electoral power than the holders of the liquidation rights. Hence, the private-benefit bias:

\[
W_{\text{private-benefits}}(\beta) = \frac{1+\rho}{\rho} \left[ \mu(1 - \beta)b + (1 - \mu)V(\beta) \right].
\]

Secondly, the court steps in when the effort-investment is already sunk but the private
benefits may be saved. Even if the court is forward looking, and even if it understands the
effect of softening the system on the efficiency of subsequent contracts (which is highly
questionable), its objective function weighs the ex post efficiency of the current contract,
with the ex ante efficiency of subsequent contracts. Hence, it is ex post biased relative to the
parties who have a purely ex ante outlook. Hence the ex post bias:

\[
W_{\text{ex-post}}(\beta) = (1 - \beta)b + \frac{1}{\rho}V(\beta).
\]

Both these biases can explain why the US innovation mechanism leads to a softer system:

Lemma 5. Both the ex-post and the private benefit bias tend to soften the liquidation policy
(relative to $\beta^*$). The ex-post bias is stronger the higher is the discount rate.

Proof: Just differentiate equations (20) and (21), and verify that the derivative is negative at
the point $\beta^*$.

3.6 A Mixed System
Most real world systems are neither completely decentralized, nor completely centralized, as
assumed above. For example, in the US corporations have been able to avoid the perceived
high costs of Chapter 11 by negotiating pre-packaged Chapter 11s. This process allows the
parties to negotiate a reorganization proposal outside the expensive court administered
process, but to gain court approval of the plan in order to take advantage of the
enforcement provisions of the judicial process. Conversely, in the UK the statutory
authorities have approved legislation requiring priority to be given to particular creditors,
such as employees. In addition, the law has given some recognition to Justice Buckley’s concerns regarding unsecured creditors. Some unsecured creditors may be permitted greater priority if the firm becomes insolvent within three months of the transaction taking place. Finally, England introduced a new insolvency procedure called Administration, under the 1986 Insolvency Act, to fill a perceived gap when a receiver could not be appointed because of the absence of a fixed and floating charge.

For the sake of completeness we discuss, very briefly, a mixed system: the State legislates, but the legislated liquidation policy is voluntary: freedom of contract is preserved. In such a system, freedom of contract acts as a sort of an incentive constraint on the legislator: if the bias is too large, private innovations will undo the legislation. Hence,

Lemma 6. Consider a mixed economy with a private-benefits bias: the legislator’s objective is given by equation (21). Then, the legislated liquidation policy cannot fall below $\beta$. Proof: immediate.

4. Conclusion

In this paper we investigate the evolution of corporate insolvency procedures in the UK and in the US. We believe that the implications of this investigation are relevant beyond the specific institutions studied here.

The notion that the firm is a ‘nexus of contracts’, can be modified in two important ways. First, the firm can be described as a nexus of standardized contracts. Corporate law is an obvious example of contract standardization. Second, standards tend to survive well beyond the circumstances that generated them. Hence, the firm contains a mechanism for innovation, allowing it to adjust and change according to new circumstances. We believe that many aspects of capital structure, corporate governance and the internal organization of the firm may be investigated along the lines suggested in this paper; especially where these institutions have diverged across countries. Indeed, some research about the origin of accounting standards, and the bodies that have shaped them has already begun.

Some of these implications are of a very practical nature. For example, in reforming corporate insolvency law, should we adopt a static view, trying to correct perceived failures
in existing procedures, like the well known suggestions of Aghion, Hart and Moore (1997). Or, rather, should we establish an environment that will foster, select, and standardize the most successful innovation? It is obvious that these questions are even more urgent and critical in countries that have to reform not just one aspect of corporate activity, but rather reformulate their whole corporate structure, such as in Eastern Europe.
References


Cambridge: MIT Press.


The Federalist 42, 1788, The Powers Conferred by the Constitution Further considered from the New York Packet, January 22.


Appendix: the $V$ function

$V$ is a value function for “partial solution” of the program (3)-(6), taking the liquidation policy as given. This partial solution is derived with the aid of Figure A.1, used previously by Suarez and Sussman (1997), where it is discussed with further elaboration.

Differentiating (5) we get

\[(a.1) \quad f'(\pi) = y + \beta b - R.\]

Hence, plotting a counter-clockwise $90^\circ$-rotated graph of the $f'$ function, its origin fixed at the point $y + \beta b$ (the IC curve in Figure A.1), we get the incentive-compatible effort as a function of the repayment. The participation constraint (4) is represented by a rectangular hyperbola (the PC curve in Figure A.1). Since the IC (PC) is concave\(^{33}\) (convex) with respect to the origin, the two curves have, at most, two intersection points. Now, the entrepreneur’s profit is represented by the shaded area in Figure 1 \(\text{[plus a constant } (1 - \beta)b \text{]}\). Hence, in case there are two intersection points, the optimal contract is at the higher-left of the two (see Figure A.1)\(^{34}\). In case the IC and PC curves don’t intersect, the feasibility set (4)-(6) is empty, and the financier will not extend credit to the entrepreneur.

Proof of Lemma 2: A higher $\beta$ will shift the IC curve rightwards, resulting in more effort.

For subsequent use, we calculate, the precise effect of the liquidation policy upon the repayment:

\[\text{(A.2) } \quad \frac{dR}{d\beta} = \frac{-b/f'''}{1/f''' - \pi/R} < 0.\]

The inequality follows from the negativity of the denominator, which is just the difference between the slope, in absolute terms, of the IC and the PC curves (at the point of the optimal contract).

Substituting the partial solution $R, \pi$ into the objective function (3) we get the value $V(\beta)$ for the given liquidation policy; if the feasibility set (4)-(5) is empty (a possibility

\(^{33}\) Since $f''' > 0$, the IC curve is concave with respect to the origin.
mentioned above), in which case we define \( V = 0 \). Obviously, the complete solution to the program (3)-(6), and especially the optimal liquidation policy is at the maximum of \( V \); we denote it by \( \beta^* \).

We assume that the parameters of the problem are such that \( \beta^* \) is a corner solution (see Figure 1). To see that such parameters exist, we explore the properties of \( V \), with the aid of the following expression,

\[
(9) \quad \frac{dV}{d\beta} = \pi[b + \left(-\frac{dR}{d\beta}\right)] - b.
\]

For low \( \beta \)'s, the feasibility set is empty; \( V \) is flat and equals zero. At a certain critical \( \beta \), IC and PC are tangent. At that point, \( V' \) tends to plus \( +\infty \) \( \text{because} \) the IC and PC curves have the same slope and the denominator of (8) tends to zero, from below. As \( \beta \) grows further, the IC curve moves rightwards, and the feasibility set is non-empty, the project is financed and \( V > 0 \). But when \( \beta \) gets close to 1, and for some parameter values, the derivative (9) is negative: if the IC curve is asymptotic to some upper bound smaller than 1, \( dR/d\beta \) is small, the brackets are close to \( b \), and (9) is negative.

---

34 This point has to satisfy the feasibility constraints in (6). Note that these conditions constraint the solution to the square from the origin to point \( y \) on the vertical axis, and point 1 on the vertical axis.
Figure 1: Value of Project to the Entrepreneur
Figure 2: Overreaction
Figure A.1: The Contract

- IC
- PC
- The optimal contract

1
\pi
y
y + \beta b
R
An insolvent firm may decide to file for bankruptcy. Bankruptcy is the legal status of a human or a non-human entity (a firm or a government agency) that is unable to repay its outstanding debts to creditors. Generally, it is initiated by the debtor and imposed by a court order that oversees the liquidation of the company’s assets. Insolvency is a state of financial distress, whereas bankruptcy is a legal proceeding. Types of Insolvency. 1. Cash-flow insolvency. This occurs when the firm or individual theoretically has enough assets to pay off creditors but...