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The Efficiency of the Bankruptcy Process. An International Comparison

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Abstract

Failure of projects and firms are an inherent element of growth. Economic growth requires that old activities are phased out to make room for new ones, and that economic resources are reallocated from activities that are no longer profitable. In an economy where most firms are financed by debt to a substantial extent, insolvencies inevitably play an important role in restructuring. Insolvency leads to formal bankruptcy when legal procedures are employed to liquidate the insolvent firm's assets in order to pay stakeholders fully or partially according to a priority established in law or contracts. In some countries legal procedures exist for restructuring as well as for liquidation. In other countries the restructuring of an insolvent firm is handled informally through negotiation.

The economic roles of insolvency procedures are discussed (in Section 2) with an emphasis on dynamic aspects. In discussing the efficiency of insolvency procedures (in Section 3) we distinguish between ex ante and ex post efficiency. Since efficiency ultimately must be evaluated in terms of its dynamic effects, simple efficiency criteria are not easily identified. Formal insolvency procedures in different countries are classified (in Section 4) as more or less creditor or debtor oriented. Legal approaches can also be classified as more or less contractual or statutory. The important interdependence between formal and informal procedures is discussed in Section 5. Thereafter we turn in Section 6 to the empirical evidence on bankruptcy and restructuring in a number of countries with substantial differences in legal approaches to insolvency. We ask in Section 7 what explains the relatively high bankruptcy frequency in Sweden in an international comparison. Is the high frequency an indication of efficiency of procedures or does it indicate that viable firms are forced into bankruptcy unnecessarily?

Key Words: Bankruptcy, Insolvency, Restructuring, Contracting

JEL Classification: G 33, K 22.

1. Introduction

Economic growth requires that old activities are phased out to make room for new ones, and that economic resources are reallocated from activities that are no longer profitable. Failure of projects and firms must therefore be seen as an inherent element of a growth process. This reallocation can occur within a conglomerate, or one firm may disinvest while another one invests in new projects. Insolvency of a firm, in the sense that its stakeholders' claims cannot be fully satisfied, occur if management does not shut down or reduce activities in time, or if large and sudden shocks occur. In an economy where most firms are to a substantial extent financed by debt, insolvencies inevitably play an important role in the restructuring process. In our terminology insolvency leads to formal bankruptcy when legal procedures are employed to liquidate the insolvent firm's assets in order to pay stakeholders fully or partially according to a priority established in law or contracts.¹ In some countries legal procedures exist for restructuring (rehabilitation), as well as for liquidation. In other countries the restructuring of an insolvent firm is handled informally through negotiation. Formal and informal procedures may also be combined in such a way that the formal bankruptcy is made part of an informally negotiated resolution of a firm's distress.

The "infrastructure for bankruptcy" discussed in this paper includes institutions and organizations involved in the formal and informal procedures for dealing with insolvent firms or firms in distress. At the center of the discussion stands insolvency law for firms and the court systems supporting the law, but the bankruptcy infrastructure is much broader. Informal procedures for insolvency are as important as formal law and they necessarily involve banks as the major creditors.

¹ This terminology is common but not general. Sometimes bankruptcy law is used as a term for insolvency law including restructuring law.

Therefore, law and regulation for financial institutions may be considered an aspect of the infrastructure for bankruptcy.

In this paper we address the issue of efficiency of the bankruptcy process focusing on bankruptcy and restructuring law. These laws can be considered one aspect of the “financial architecture” of a country. Since financial systems vary considerably across countries it is possible that the efficient bankruptcy law varies across countries as well.

From banks’ point of view insolvency procedures are one aspect of debt recovery. The procedures for debt recovery include the enforcement of loan contracts through the takeover or sale of assets that have been pledged as security for the loans. Such enforcement requires property registration and effective transfer of property rights.

Other stakeholders than banks are also affected by a firm’s insolvency. Employees, customers, suppliers, the state, and of course shareholders may have a stake and some kind of claim on a firm’s assets. Thus the variety of laws regulating contractual relations among stakeholders interact with insolvency procedures.

Although bankruptcy is not a criminal offense, and debtors’ prisons have been abandoned in most countries, criminal law relating to civil fraud and corruption has a bearing on insolvency procedures. Finally, personal bankruptcy procedures may affect insolvency procedures for firms even under limited liability, because an owners’ personal guarantees may be required by creditors.

While lawyers in their discussion of insolvency law often focus on fairness and equity, economists are concerned with economic efficiency, growth, and business cycle fluctuations. Insolvencies happen everywhere but practices vary with respect to law, informal procedures, effectiveness, and predictability of procedures. Lack of bankruptcies in a country does not necessarily mean lack of insolvency procedures.

Informal work-outs are common and well established in many countries. On the other hand, the existence of insolvency law does not necessarily imply that it has much influence on procedures, and in some countries procedures are neither well established nor predictable. Legal traditions and cultural factors affect the attitude to bankruptcy, and procedures for dealing with insolvency. Political factors affecting objectives of formal law and informal procedures vary across countries and time. Political influences on the banking system, and concentrated ownership of corporations forming strong vested interests can affect the allocation of credit and state subsidies in such a way that insolvency procedures are seriously undermined. We return to all these issues.

We view the bankruptcy process as one part of the more general exit process, which in turn is part of firm and project turnover. This turnover links directly to economic growth as outlined in Chapter 1 of this volume. There, dynamic efficiency was defined as the minimization of the costs associated with two types of business mistakes. One type of cost is the result of keeping “losers” alive too long. The other type of cost is the result of preventing winners from developing. We return to these types of costs below.

The economic roles of insolvency procedures are discussed in Section 2 with an emphasis on dynamic aspects. The concept of efficiency of insolvency procedures is discussed in Section 3. We distinguish between *ex ante* and *ex post* efficiency. Since efficiency ultimately must be evaluated in terms of its dynamic effects, simple efficiency criteria are not easily identified. In Section 4 formal insolvency procedures in different countries are classified as more or less creditor or debtor oriented. Legal approaches can also be classified as more or less contractual or statutory. The important roles of informal procedures are discussed in Section 5. Thereafter we turn, in Section 6, to the empirical

evidence on bankruptcy and restructuring in a number of countries with substantial differences in legal approaches to insolvency. We ask what the data can tell about the design of efficient insolvency law, and in Section 7 we study the great differences in bankruptcy frequencies across countries. We ask whether the relatively high frequency of bankruptcies in Sweden relative to Germany, the UK and the USA is an indication of relatively effective procedures..

2. The Role of Insolvency Law and Procedures²

“Bankruptcy is a collective procedure for the recovery of debts by creditors. It also protects individuals who have become overburdened by their debts.” (Wood, 1995 Preface)

This quote summarizes the very direct functions of bankruptcy and restructuring laws. From a creditor’s point of view bankruptcy law specifies how debt can be recovered from a distressed firm unable to pay all creditors fully. From a debtor’s point of view bankruptcy provides a resolution of claims on the debtor, whose resources thereby can be devoted to new ventures if the law allows the debtor to be relieved of unpaid debt. This important role for debtors is often neglected. It allows the debtor to allocate current available resources to projects based on expected future returns rather than to repayment of old debt. There is a potential trade-off between the debtors’ and the creditors’ points of view, since relieving debtors of responsibility for debt reduces the funds available for creditors.

In the broader perspective of the experimentally organized economy discussed in Chapters 1 and 6 in this volume the role of insolvency law is

² This section is based on Wihlborg and Gangopadhyay, with Hussain (2001)

to contribute to economic growth by maximizing the potential for “winners” to appear and develop. Winners are obviously not easily identified ex ante but insolvency procedures can contribute in two ways. First, by removing “losers” resources are freed up allowing the trial and error process to flourish in the experimental economy. Second, by allowing potential winners in temporary distress from floundering, resources are kept in projects with long term value. We discuss in more detail below how these abstract concepts of efficiency can be made more operational.

From an efficiency point of view, it is obviously important that bankruptcy procedures are speedy and that they provide legal security in the sense that there is predictability with respect to factors affecting the outcome. Without predictability of contracts or law specifying, for example, priority among creditors, conflicts of interest between the debtor and creditors, and among creditors will block efficient resolutions of claims. Expecting such a situation, rational debtors will try to recover loans as soon as they suspect a borrower to be heading for distress. Thus, positive value projects may be prematurely abandoned, if one or more creditors are able to recover loans in order to preempt other creditors’ claims.

It is commonly assumed that procedures are speedy and predictable, while costs of slow and unpredictable procedures are considered transactions costs and, as such, often neglected. In this paper we separate the discussion of law from the discussion of enforcement. When the principles of laws are discussed, it is assumed that enforcement is effective. In developing countries this assumption is obviously far from reality. Also in developed countries enforcement is often deficient. We return to these issues.

In the remainder of this section we first define efficient procedures in a narrow ex post sense as a background for a discussion of the economic role of insolvency procedures. In the following section, the efficiency concept is broadened.

Economic and financial distress

In Table 1, a distinction is made between “economic distress” and “financial distress.” In “economic distress” the net present value of the firm’s assets are negative and from a financial valuation point of view, the firm should be shut down in its present form. The firms in economic distress are the “losers” in the terminology of Chapter 1. It is possible, however, that there are differences in assessment among financial market participants and that physical assets under different management would produce a positive net present value. In these cases, it would be efficient to auction or sell the firm as a “going concern” to new owners that would be able to improve management.

Under “financial distress,” the present value of the expected cash flows generated by the assets is positive but the firm’s debts exceed the present value of these cash flows. Thus, the firm is insolvent but its assets produce a positive value from a social point of view. In this case, debt-reduction and restructuring, possibly in combination with more fundamental restructuring, such as change in control, might be efficient at the time of distress. It is possible that potential “winners” are among the financially distressed firms.

A firm may find itself in financial distress also because of liquidity constraints even if the present value of cash flows from assets exceeds the debts. This situation presumes that the financial system for one reason or another fails in its role of providing liquidity to solvent firms. The remedy might be change of ownership, rescheduling of debt, or liquidity infusion (see also Chapter 4 on venture capital).

The difficulty of designing optimal insolvency procedures is to a large extent caused by information problems and asymmetries of information about the cause of distress. The procedures must be determined ex ante before distress occurs for lenders to be able to evaluate credit risk, and in order to reduce the risk of conflicts of interest. At the time of distress, shareholders and debtors may want to claim different reasons for distress without either party being able to clearly prove its claim. Only for firms with an extremely simple structure of stakeholders would it be possible to resolve conflicts in an efficient manner if no pre-commitments have been made. Thus, without ex ante insolvency procedures firms will tend to remain simple in their stakeholder structure or be organized with the objective of reducing the probability of bankruptcy in for example conglomerates.

Even if insolvency procedures in principle can resolve the problems discussed the efficiency of the procedures will depend on the efficiency of the financial system more broadly. Various market failures in this system can prevent, for example, efficient credit evaluation procedures from developing or may encourage excessive risk-taking. Deposit insurance systems are often considered sources of weak credit evaluation systems in banks. Under these conditions the bankruptcy procedures will not necessarily force economically distressed firm to close and allow financially distressed firms to survive.

Insolvency procedures, should not only resolve a distress situation but the resolution should be accomplished at the lowest possible costs. Altman (1984) and Altman and Vanderhoof (1994) studied direct and

indirect bankruptcy costs in the USA and found them substantial in many industries.³

Table 1, Types of distress in about here

Insolvency procedures in growth and crisis

Insolvency procedures provide only one way to restructure an economy where assets need to be reallocated continuously in response to changes in preferences, technology and human skill. Mergers and acquisitions, internal restructuring within conglomerates, and voluntary closings of firms with associated asset sales offer alternatives in the restructuring process. Thus, insolvency procedures should be seen in the larger context of their contribution to restructuring. In the framework of the experimentally organized economy insolvency procedures contribute to the removal of “losers” and thereby they free up resources for experimentation with potential “winners”.

Insolvency procedures can be the cause of a crisis if economically distressed firms do not shut down, but accumulate losses over time until the banking system and the government no longer find the costs of support bearable. Disincentives for bankruptcy in combination with a politically influenced banking system, and state support of banks and firms contributed to the depth of crisis in some Asian economies according to several observers (see e.g. Pomerleano, 1999, and Hussain and Wihlborg, 1999).

The former socialist economies had and some still have these characteristics.⁴ Disincentives for bankruptcy were initially created by the possibility of government support of formerly state-owned enterprises. Such support is still forthcoming in some transition economies. Even if

³ Direct bankruptcy costs are, for example, lawyers' fees, while indirect costs may be caused by lost sales, or added costs of inputs in a distress-situation. Expected costs of this kind can exceed 10 percent of a firm's value well in advance of distress. Weiss (1997) obtain lower estimates of bankruptcy costs.

⁴ See Gangopadhyay and Wihlborg with Hussain, 2001

this type of support has been abandoned, and modern bankruptcy laws have been instituted, there are disincentives caused by costly, drawn out and possibly corrupt proceedings. Under these circumstances creditors may not find it worthwhile to put a firm into bankruptcy.

An existing crisis may be deepened and prolonged if financially distressed firms are not rehabilitated but are forced to shut down. Similarly, a crisis is deepened, if liquidity problems cause the shut-down of operations in a credit crunch. Widespread financial distress may be caused by a severe macro-economic shock, large exchange rate changes, or increases in interest rates. We certainly observed this type of deepening of a crisis in the hard hit Asian economies, Indonesia, Korea, Malaysia, and Thailand (Hussain and Wihlborg, 1999). Thus the crises may have been deepened both by accumulated economically distressed firms, and firms that became financially distressed in the crises.

There is also strong evidence that the lack of effective insolvency procedures contribute to banking-crisis, and the ability of banks to recover from crisis. Caprio Jr and Klingebiel (1996) study severe banking crises in 69 countries between 1980 and 1995. Crises in 26 countries are studied in more detail with respect to their causes. In a large share of the 26 countries politically influenced lending practices of banks were seen as a contributing cause of the crisis. An inefficient legal framework hindered the resolution of crises in many of them.⁵

3. Ex post versus ex ante efficiency with specific assets

The principle of ex post efficiency stating that if a firm's assets generate a positive net present value, then the firm should continue in

⁵ Debt recovery was hampered by the legal system in the following heterogeneous group of countries with recent banking crises: Benin, the Ivory Coast, Guinea, Madagascar, Senegal, Indonesia, Thailand, Brazil, and Hungary. These observations indicate that a large number of countries with different legal traditions on all continents have insolvency procedures that contribute to or prolong economic crises.

operation, is simple but not easily applied. One reason is that information about the present value of future cash flows and the competence to assess value is not easily accessible and asymmetrically distributed among managers, shareholders and lenders. There are also conflicts of interest among these stakeholders. All information is not voluntarily disclosed. One solution to this problem is to auction the firm or its assets. This solution is applied in many countries without explicit restructuring law. In countries with explicit restructuring laws an independent body with enforcement powers, such as a court, is required in order to come to a conclusion with respect to the value of the firm, and to determine the value-maximizing course of action. One course of action is to allow the current owner to retain ownership. Under an auction system this action would occur only if the owner is able to bid higher than others.

One reason why the present owner may value the firm higher than others is that he or she may have “invested” in, or acquired firm-specific human capital (knowledge). Since this specific knowledge would be lost if the present owner would not be able to remain owner after distress, he or she may value the firm as a going concern higher than others.

Several stakeholders may have invested in specific capital that would be lost if a firm were terminated as a going concern. First, many employees may have skills that would not provide any return if they went to work for other firms. Second, suppliers, customers, the surrounding community, the municipality and the state may have strong interests in the continuation of the particular activity of the distressed firm. All stakeholders with specific assets invested in a firm have a strong interest in the firm’s survival, and actually a willingness to pay for its survival. Thus, they would be willing to reduce their charges for the distressed firm’s use of their services. They would thereby contribute to the survival of productive activities in an efficient manner.

It is possible that employees or the public sector are not able or willing to reduce their charges for their services to the firm. If so, there would be a social good of having a distressed firm survive under the old ownership without risking that the firm could be shut down if it is declared bankrupt and liquidated. Employment considerations in particular have led many countries to favor restructuring over bankruptcy. Wood (1995) observes that legislation favoring restructuring has generally been implemented after severe economic downturns, when the consequences of bankruptcies have been felt. After WWII employment and “job security” considerations have been important and explicit policy concerns. As a result, a number of countries have legislated in favor of rehabilitation and restructuring of distressed firms to discourage bankruptcies.

The specific assets invested in a firm by the public sector or the community in general can also motivate a degree of forgiveness by the public sector when firms face distress. One way of implementing such forgiveness is to put a relatively low priority on tax claims on a firm. Thereby the likelihood that unpaid taxes lead to bankruptcy is reduced. Countries differ in terms of the priority tax liabilities have on bankruptcy. Several countries including Sweden have lowered the priority of tax claims during the last decade.

Insolvency procedures affect economic incentives not only at the time of distress but also at the time various stakeholders enter contracts with the still healthy firm. The probability of, and the procedure for resolution of distress will therefore affect the incentives of various stakeholders to invest in firm-specific assets. Furthermore, the procedures will affect the willingness of different groups of creditors to supply financing. Insolvency procedures that increase the likelihood of firms’ survival in financial distress increase the incentives of stakeholders

to invest in firm-specific capital. If these procedures reduce the expected return of creditors, the supply of financing would decrease, however. Therefore, effective procedures should enable restructuring when profitable, while allowing creditors to claim repayment to the extent possible. Arrangements for security against loans enable creditors to obtain ex ante contractual conditions for repayment.

The importance of ex ante incentives of stakeholders for investments in a firm imply that predictability of insolvency procedures is important. Arbitrariness of court procedures, corruption of judges, and political influences on procedures are common in developing countries in particular. The supply of external financing and investments in specific assets are reduced under these conditions. Thereby, potential “winners” may never get off the ground.

An economic efficiency analysis of these considerations is sensitive to, for example, assumptions about the relation between asset specificity and return on projects, the substitutability between general and specific assets, and the supply of debt financing. Bolton and Scharfstein (1996), and Bebchuk and Picker (1993) ask how risky project choices requiring investment in specific skills are affected by the relative position of creditors and shareholders/managers in bankruptcy. They find that allowing managers/shareholders to retain a stake in the assets in case of bankruptcy (deviation from absolute priority) may enhance ex ante efficiency under limited liability. Frierman and Viswanath (1995) show that deviations from absolute priority can reduce the agency problem between shareholders and lenders. Accordingly, there will be less excess risk-taking. The analyses in these papers favor deviations from absolute priority in bankruptcy. In other words, they argue that debtors should be able to retain a stake in the assets of insolvent firms.

The above arguments are contradicted by analyses concluding that absolute priority increases the supply of financing (Bebchuk, 2000). Gangopadhyay and Wihlborg (2003) show that both specific skill development and the supply of financing increase under stricter procedures favoring creditors. They show that under conditions of credit rationing the mentioned arguments favoring deviations from absolute priority are nullified or reversed.

None of the mentioned papers assign an explicit role to monitoring of debtors with limited liability. Cornelli and Felli (1996) link the incentives to monitor to the position of senior and junior creditors in bankruptcy. Assuming that monitoring is a productive activity they find that neither absolute priority nor a more debtor friendly rule is efficient with respect to monitoring incentives of all creditors. In other words, the issue of the ex ante efficient distribution of assets in bankruptcy remains unresolved even when a rather narrow range of specific assets is considered. What can be said is that ex ante efficiency is enhanced if:

1. Insolvency procedures are flexible enough to allow different types of resolutions for firms with different types of stake-holders.
2. Recontracting is possible for services provided with specific assets.
3. Insolvency procedures are well-defined ex ante. In other words, the rules for dealing with insolvency should not be subject to uncertainty.
4. Insolvency procedures allow speedy resolution of distress.

4. Classifying Insolvency Procedures⁶

It is common to denote insolvency procedures as either creditor-oriented or debtor-oriented. These terms indicate whether the procedures tend to favor creditors or debtors in terms of claims on the distressed firm's assets, and in terms of control over these assets in and after legal

⁶ This section is based on Wihlborg and Gangopadhyay with Hussain (2001)

proceedings for bankruptcy or restructuring. The existence of an easily accessible restructuring law generally implies a degree of debtor orientation since such a law—if it is mandatory-- implies that there is a constraint on the range of contractual solutions to distress situations. Incumbent owners are permitted to retain a stake and control after insolvency. Informal workouts leading to smaller stakes being retained by incumbent owners are thereby hindered. The degree to which restructuring law limits the range of informal contractual solutions depends on the ease of access to the debtor benefits implied by restructuring.

The degree of creditor or debtor orientation is not unambiguous as we shall argue below. A possibly more interesting classification of law from an analytical point of view is the degree to which it enables firms and creditors to negotiate ex ante contracts that will be recognized in formal bankruptcy and restructuring proceedings. A distinction can be made between contractual approaches and statutory approaches to insolvency law. The contractual approach implies that the law enables firms and stakeholders to reach voluntary contractual arrangements that remain valid in bankruptcy. For example, the law may specify a number of arrangements for pledging assets and their priority in insolvency.⁷ The statutory approach implies that contractual arrangements between a firm and its stakeholders are abrogated in insolvency and that special statutes apply in this situation. Firms seeking protection against creditors under Chapter 11 in US insolvency law is an example of this approach. In Ch.11 negotiations among creditors and management determine the position of different creditors in a restructured firm independently of their priority before insolvency occurred.

⁷ Wihlborg (2001) discusses the dynamic efficiency enhancing properties of enabling as opposed to mandatory law.

From an ex post efficiency point of view we want to evaluate whether procedures allow "excessive survival"-or "excessive shut-downs" oriented quite independent of whether control changes hands or not. Survival of a firm is possible even if liquidation is the result of formal procedures, because an insolvent firm's assets can be sold as a "going concern". The assets can even be sold back to the original owners. Furthermore, creditors can agree on a informal work-out prior to bankruptcy with conditions for the owners. Thus, an evaluation of the survival-orientation of insolvency procedures requires that incentives for informal work-outs, and incentives for the sale of assets as a "going concern" are analyzed. These incentives are naturally strongly influenced by the design of formal insolvency law, its application and enforcement.

It would be most interesting to evaluate the orientation of procedures relative to an efficiency-benchmark but for reasons discussed such a benchmark is not easily determined. The "optimal" orientation in any dimension may vary across industries, and the nature of shocks causing insolvency. This variation is in itself an argument for a contractual approach.

We begin by discussing determinants of creditor and debtor orientation, and the recognition of ex ante contracts in formal law. Laws in different countries are also compared. Restructuring law and its different elements is the subject of the next section before presenting evidence on the survival and shut-down orientation of laws in different countries.

Table 2 in about here

Table 2, based on Wood (1995), ranks countries insolvency laws in terms of creditor-debtor orientation. Wood defines a creditor-oriented law as one that recognizes the claims of creditors to the greatest extent in

insolvency. A debtor-oriented law allows debtors to retain a stake and/or control in insolvency although there is no equity left in the firm.

Table 2 rates traditional British law as the most creditor-oriented, and current French law as the most debtor-oriented. The implementation of formal procedures for restructuring (administration) in 1985 and 1986 has made British law less creditor-oriented but it is still rated as marginally more creditor oriented than German, Dutch and Swedish law. Japanese and US laws are rated in the middle as more creditor-oriented than Italian, Spanish, and French law. Most developing countries base their insolvency laws on the law of the former colonial power, while the former members of the communist block seem to have adopted an insolvency law akin to one of the Western European laws.

The main determinants of the degree of creditor-orientation of insolvency procedures are listed in Table 3. Increasing the scope and efficiency of security allows more financing against collateral with greater probability for the secured creditors to keep the claim intact. On the other hand, the stronger the position of secured creditors, the less likely it is that unsecured creditors, employees, and the state will be paid in insolvency.

The existence of a rehabilitation statute or restructuring law reduces or weakens the position of creditors, because debtors are able to seek protection against some or all creditors, and it allows a search for a court-led solution with control and a remaining stake for the debtor. From creditors' point of view restructuring law may have the advantage that debtors have a stronger incentive to maximize the value of the assets even when distress can be foreseen. These incentives depend on the prospects for an informal work-out, however. It is possible that under some circumstances a stronger position of creditors enhances the likelihood of a work-out. We return to this issue below.

If the law allows set-offs in insolvency, then some unsecured creditors have a de facto security in the form of a debt to the insolvent firm.

Recognition of ownership of assets in the possession of the debtor but not formally owned by the same is a controversial issue and ambiguous from the point of view of creditor-orientation. Clearly, if assets in a trust are deemed to belong to the estate of the insolvent firm it increases the funds available for creditors. On the other hand, recognition of ownership to assets in a trust can be seen as recognition of ex ante contractual relations, which is also the principle of recognition of security.

Whether the veil of incorporation and therefore limited liability of shareholders, and protection of directors against personal liability actually protects creditors or not can be debated depending on circumstances, but upholding the protection offered by the veil in insolvency can also be seen as recognition of ex ante contractual relations.

The upshot of this discussion is that increasing creditor orientation as defined above amounts to the increased recognition of ex ante contractual relations after the filing for bankruptcy or restructuring. Thus, strong creditor orientation is consistent with an enabling contractual approach, while debtor orientation is consistent with a statutory approach to formal restructuring.

Table 3 Determinants of creditor orientation in here

The US legal system is very debtor friendly in terms of prospects for rehabilitation under Ch.11, but relatively creditor friendly in other dimensions, and, therefore, in bankruptcy.

Since one objective of insolvency law is to keep viable entities alive the role of formal rehabilitation or restructuring proceedings is particularly interesting. This topic is discussed next.

5. Formal and Informal Restructuring

In Table 3 the existence and design of restructuring law is considered an important determinant of creditor orientation of insolvency law. A number of factors determine the probability that a debtor retains a stake in, and control over a rehabilitated firm. These different factors are listed in Table 4. The factors printed in bold face are considered particularly important for the prospects of the debtor in insolvency, and for the incentives to use restructuring law. A “weak” restructuring law implies that entering proceedings under the law leads to a protective freeze on creditors’ actions but not to any fundamental distortion of creditors’ rights. A “strong” restructuring law in the Tables means that entering proceedings leads to significant erosion of creditor rights with preservation of the debtor’s estate and the debtor’s possibility of survival in control. Thus, a weak (or no) restructuring law strengthens the position of the creditor while a strong restructuring law is considered debtor friendly.

Table 4 here

Most countries—even those with strongly creditor-oriented laws --allow for so called compositions implying a moratorium on the payment of debts and the possibilities for a negotiated restructuring of creditors’ claims. These composition procedures are very rarely used because of requirements for immediate payments of a share of non-secured creditors’ claims (Austria, Brazil, Denmark, Italy, Norway, Sweden and others), or because the debtor must show that insolvency

resulted from misfortune rather than mismanagement (Belgium, Luxembourg).

More debtor-friendly restructuring law has been implemented in recent decades in a number of countries. The French law of 1967 changed the orientation of French law strongly. Chapter 11 of the US bankruptcy code was enacted in 1978. British “administration proceedings” have been possible since 1986. Australia allowed formal restructuring in 1992, while Germany and Sweden have enacted restructuring laws in 1994 and 1996 but the latter two laws are not much different from already existing composition laws. We return to this issue in Section 6.

Among the countries in Table 4 the UK, Germany and Japan have “weak” restructuring laws. A weak law in the sense described has the consequence that the incentives for a debtor to seek protection under the law are relatively weak. It can also be seen in Table 4 that entry into restructuring proceedings is “not easy” in the same countries. In fact the number of restructuring cases in these countries is very small (in the order of magnitude of a few to 10 percent of the number of bankruptcy cases) as will be shown later. One important reason for the small number of cases is that the laws specify that assets be large enough to pay unsecured creditors a certain fraction of their claims. Once insolvency occurs it is rare that there are sufficient assets for this purpose after secured creditors have been paid. Incentives to enter restructuring are also weakened if contractual obligations are not abrogated as in bankruptcy.

Modern French law (*redressement judiciaire* and *reglement amiable*), American law (Chapter 11), Spanish law and Italian law are “strong.” Table 4 shows that in both France and the U.S, it is “easy” for a debtor to seek protection against creditors. The courts will accept

a debtor's application if there is some likelihood that the firm is a viable entity. In Spain, on the other hand, entry is not considered "easy" although the debtor's position is strong once restructuring proceedings have begun.

The laws differ in terms of their protection of various claims on the debtor. In particular, secured creditors are protected in countries with "weak" laws but not in countries with "strong" laws. These differences reflect the objectives of the law. While British law is oriented towards upholding contracts, French law in particular explicitly gives the courts the role of keeping firms in operation, and preserving employment.

The control over the firm in restructuring shifts to the courts or to a person assigned by the court to different degrees. In countries with weak restructuring laws, management loses control. Under Ch. 11 in the U.S., the management retains control, under court supervision. In other countries with "strong" laws, the influence of management is up to the courts and depends on the court's objectives. In France in particular the courts' powers are used to protect employees and the role of the old management is subordinated to this objective.

The differences among restructuring laws reflect not only their objectives but, most likely, the different organizations of financial systems and the rules for banking. Kaiser (1994) observes that American banks are reluctant to get involved in corporate decisions, because they may be held liable for bad advice (lender's liability). There are many alternative sources of financing in the American marketplace in particular, with the result that a corporation's financial structure is often complex with a large number of creditor groups with conflicting interests. A negotiated informal work-out involving

debt-rescheduling or reduction can therefore be difficult to achieve (Baird 1997 a and b). There is always a risk that one creditor demands full, immediate repayment, thus preventing a negotiated settlement. Accordingly, the courts are able to bind dissenters in Ch. 11 proceedings.

German and Japanese financial markets are bank-oriented, and banks are deeply involved in corporate decision making. One bank tends to serve as the “house-bank” and main senior creditor of each corporation. The house-bank is well-informed about the economic situation of the firm, and it can initiate informal work-out negotiations. Therefore the banks determine the treatment of insolvent firms in the vast majority of insolvencies. Also in the UK banks tend to lead informal work-outs although the position of banks in corporate control is weaker than on the continent (see Franks and Sussman, 2000). British banks do not risk liability to the extent American banks do, however.

Rehabilitation proceedings or restructurings have a low success rate in most countries, including France and the U.S. where the proceedings are relatively accessible. Kaiser (1994) presents data for the U.S.A., Germany, France and the U.K. The data for insolvency cases in the U.K. show that around 11,000 cases in 1993 went directly to bankruptcy proceedings, while nearly 3,000 went into restructuring of which around two thirds ended up in liquidation.

In Germany prior to 1999 when the law of 1994 went into effect, composition proceedings were extremely rare. (See Section 7). For all practical purposes firms went bankrupt and were liquidated, or banks organized work-outs. The situation is the same in most countries with conventional composition as the only formal restructuring procedure. The laws in Germany were amended in 1994 to include a limited stay on enforcement of security but these changes have made little difference.

The experiences are similar in Sweden where composition was changed into a “weak” restructuring law in 1996. Data on this issue are presented in Section 7.

In the U.S. the number of cases confirmed for reorganization under Ch. 11 seems to be on the order of magnitude of 10 percent of firms liquidated or applying for reorganization (Wood, 1995). Nearly 20 percent of those filing for Ch. 11 are confirmed for reorganization (Kaiser, 1994). The time between filing and confirmation is counted in years. Thus, the share of insolvency cases that end up in reasonably speedy liquidation is much lower than in Germany and the U.K.

For France Kaiser reports a success rate of about 15 percent of firms entering some kind of restructuring proceedings. The number of such firms seems to be about twice the number in the U.K. If we classify the countries as relatively liquidation- vs. restructuring-oriented based on these observations, Germany is clearly the most liquidation-oriented country followed by the UK.

In both the U.S. and France most firms filing for Ch. 11 or applying for restructuring end up being liquidated but the time it takes to get there is longer. The experience in France is that many of the firms being restructured - often for reasons of preserving employment – return to insolvency after some time. In the U.S., the firms exiting from Ch. 11 seem to survive more often. However, Ch. 11 allows many insolvent firms to live for a year or two, only to end up being liquidated.

In order to evaluate whether restructuring law actually contributes to the survival of viable entities, or only allows economically distressed firms an extended life under legal protection, we have to compare effects of restructuring law with incentives of creditors to contribute to informal work-outs with or without the incumbent management.

6. Stylized facts about bankruptcy and survival

To what extent are financially distressed firms rehabilitated in informal work-outs, and to what extent are economically distressed firms allowed to survive under different insolvency regimes? An efficient bankruptcy system would sort “losers” and potential “winners” in such a way that only the former are closed down. Nevertheless, potential “winners” may go through liquidation in bankruptcy and be purchased by new owners who run the firms under new management. Thus, to evaluate insolvency systems we need to look for firms being closed down in spite of being viable entities, and “loser-firms” being allowed to survive.

In this section we look at empirical evidence in the literature that may have a bearing on the efficiency of different insolvency law regimes. We focus here on industrialized countries. Data for emerging market countries are presented in Wihlborg and Gangopadhyay with Hussain (2001)..

Thorburn (2000) analyzes the results of 300 liquidation cases in Sweden between 1987 and 1991. She finds that in 75 percent of the cases the bankrupt firms survived as “going concerns”. Sweden has a strongly creditor oriented law and allows floating charges like the UK. Restructuring law was and remains inaccessible. The procedure employed by the courts in bankruptcy is “cash auction” of the firms, meaning that the courts take over the insolvent firm and try to sell the whole entity to the highest bidder in a speedy manner. The liquidation of the whole entity is often “pre-packaged” by a lead-bank that has found and organized the financing for a buyer of the firm. It also happens that the buyer is the old owner who obtains a loan from the bank to buy the firm after liquidation. In the latter case, the bank as the secured creditor has organized a

bankruptcy, leaving the firm intact and without liabilities to the unsecured creditors.

Stromberg (2000) argues that the Swedish cash auction system leads to a sale of assets back to the original owner when the bank benefits from this solution, and that the probability of such a sale-back increases with the specificity of the firm's assets. Thus, it seems that the auction system, to a large extent, accomplishes what restructuring laws are designed to accomplish.

The high survival rate of the liquidated entities in these cases is surprising taking into consideration the fact that the data do not cover informal work-outs. No doubt the role of the bank in pre-packaging deals before auctions is crucial in explaining the survival rate. The figures indicate that criticism of highly creditor-oriented insolvency procedures on the grounds that they cause too many shut-downs of firms can be questioned.

Franks and Sussman (2000) present complementary evidence for Britain. They show in a study of three banks' handling of distressed firms that the banks have implemented elaborate informal rescue processes. The majority of distressed firms remain outside formal procedures, and the rate of liquidation does not seem particularly high, when banks remain in control of the insolvency procedure.

Wood (1995) notes that a common observation of bankruptcy lawyers is that the greatest disincentive for informal work-outs of distress situations is the existence of relatively debtor friendly restructuring law. The evidence for Sweden and the UK confirms this observation. Furthermore, there is no evidence that the existence of strong restructuring law (France, U.S.) allows a greater survival rate for financially distressed but viable firms as compared to countries with no or ineffective restructuring laws (U.K., Germany, Sweden). The caveat to be

noted here is that the evidence presented refers to periods with normal economic conditions.

The high survival rate of firms in the Swedish court auction system has been thrown into doubt after the banking crisis of 1991-1993. Most of the data in the cited studies refer to the period before the crisis. There has been much criticism of the Swedish banks' eagerness to liquidate relatively small firms during the crisis. It seems that they (with one exception) abandoned their role as house-banks providing liquidity in hard times, and liquidated many small but viable firms in which owners could not offer additional collateral when asset prices and the value of collateral fell.⁸ The result of the liquidations--once asset prices recovered--was a gigantic transfer of wealth to banks and other firms which obtained the collateral assets of the liquidated firms, as well as a seemingly high rate of shut-downs of viable relatively small entities.⁹ The Penser case is particularly well-known and still in the courts. Nordbanken bought Erik Penser's controlling shares in an insolvent firm during the crisis. At the time, the market value of real estate serving as collateral for loans was low. The banks later sold the real estate at prices far above the prices at the time of insolvency. According to Swedish law, the bank must not profit from the sale of collateral after bankruptcy, but the excess value should go back to the original owners. In the Penser case, the structure of cross-ownership among Penser's firms and the contractual relations among these firms and the banks were very complex and the cause of dispute about the rights to the realized asset values.

⁸There is no hard evidence supporting these statements but there are a very large number of court cases wherein banks have been sued with little success for breach of credit promises.

⁹ The banking crisis in Sweden occurred during a very severe recession with substantial asset deflation. It also happened at a time when stricter capital requirements were imposed on the banks, weakening their incentives to supply liquidity.

The conclusion that may be drawn from the evidence presented so far is that the absence of restructuring law has not hindered the survival of viable firms in financial distress during normal times, and probably speeded up the shut-down of economically distressed firms.

An important question is whether a system with easier access to formal restructuring could function better during crisis periods when the financial system seems to fail in its ability to provide financing to viable entities. Formal reorganization procedures may have the advantage of providing more time for alternative bidders to appear. The cost would be that the life of economically distressed firms may be prolonged as well. It is possible that the only effective remedy against failures of the bankruptcy process is to prevent severe market failures in the financial system.¹⁰

7. Bankruptcy Frequency in Sweden in an international comparison.

In this section bankruptcy frequencies in a number of countries are compared. We focus especially on Swedish bankruptcies during the period 1985-1996 in comparison to the other Scandinavian countries, Finland, Germany, UK, and USA. One objective is to analyze whether there is a relation between frequency of bankruptcy and creditor orientation of insolvency law. A second objective is to study whether relatively high bankruptcy frequencies in macroeconomic crisis periods indicate that bankruptcy law is ill equipped to resolve insolvencies during such periods. We will see that these questions are not easily answered, because bankruptcy data do not mean the same in all countries. The

¹⁰ The role capital requirements play in supplying liquidity in a macroeconomic crisis is another factor deserving research.

differences in data across countries reflect the different procedures leading to liquidation.

We have data for corporate bankruptcies (that lead to liquidation) for the period 1985 to 1996 for the following countries; Sweden¹¹, Norway, Finland, Denmark, USA, Germany and Great Britain. The non-comparability of the data across countries is encountered immediately. For example, it is not possible to distinguish between bankruptcies of legal and natural persons in the Norwegian data. Through 1994 bankruptcies of natural persons are included with bankruptcies of legal persons under the definition “statements missing”. To eliminate confusion, we have chosen to delete the bankruptcies that are included under this definition. This deletion implies that the number of bankruptcies is reduced for Norway in our comparisons. However, the numbers of removed bankruptcies are so small that the results are not affected.

There is another data problem for Germany. The data includes only West Germany through 1993 and thereafter the former East Germany as well. The German data differ also in another sense. Recorded bankruptcies include all petitions for bankruptcy that lead to liquidation. Petitions are not accepted if there are no assets to distribute to creditors, while in other countries there are no such restrictions. A firm that cannot pay any part of the claims on it will not be dealt with by the courts. Thus in an international comparison German bankruptcies are underestimated.

The data for the USA includes filings for bankruptcy under chapter 7 (liquidation) but not Ch 11 bankruptcies, since the latter represent filings

¹¹ The data for Sweden come from Statistiskacentralbyrån, for Finland from Statistikcentralen, for Norway from Statistic sentralbyrå, for Denmark from Denmark statistics, For Germany from Statistisches Bundesamt. Several sources have been used in order to get front statistics for THE U.S.A.. The following sources have been used Bankruptcy Yearbook duck Almanac 1996, a web-based (http://www.law.missouri.edu/lawless/bus_bkr/body_filings.htm) article of Robert M. Lawless (2001) and data from Administrative Office of the United States Courts.

for protection in order to restructure. We discuss data on restructuring below. The UK data includes statistics from England, Wales, Scotland and Northern Ireland (Northern Ireland) and the data capture compulsory liquidations and creditor's voluntary liquidations.

We use two definitions for Sweden¹² in defining the companies; Sweden 1 and Sweden 2. Sweden 1 includes all the legal and natural persons that are registered for value-added tax and/or are employers¹³. Sweden 2 includes only limited liability companies (aktiebolag) and economic associations (ekonomiska föreningar) with employed personnel or with a turnover over 50 000 SEK. Sweden 2 excludes financial companies (banks, insurance companies etc), the state-owned corporations plus the real estate industry. For Finland, the companies included are those that have to pay industry tax (näringskatteskyldiga företag). For Denmark, companies that are registered for value-added tax are included. Thus, it seems that the company definitions are reasonably comparable. The companies in Germany¹⁴ are those incurring fiscal liabilities above a minimum amount. Thus some very small German companies may not be included.

We begin by examining the total number of bankruptcies in Sweden, Norway, Denmark, Finland, Great Britain, Germany and the USA, during the period 1985 to 1996. In Figure 1 and Table 5, we can see how the bankruptcies develop for each country. In order to compare countries we must set bankruptcies in relation to something. Gratzner (2000) chooses to relate bankruptcies to each country's population. We

¹² The numbers for Sweden comes from Statistiska centralbyrån, for Finland from Statistikcentralen, for Norway from Statistic sentralbyrå, for Denmark from Denmark's statistics, For Germany from Statistisches Bundesamt, Several sources have been used in order to get statistics for the USA Office of Advocacy and U.S. Census Bureau.

¹³ When we measure companies by the number of employees, the number of employees as a measurement cannot be directly compared with other measurements of employment.

¹⁴ With a taxable revenue of 20 000 DM between 1985-1987; from 1990 to 1994 over 25 000 DM; and for 1996 over 32 500 DM.

choose to normalize with the number of employees from OECD:s Labour Force Statistics 2001¹⁵. This normalization enables us to divide the firms into size classes later, as well as into industries.

Table 5 here

Figure 1 here

In figure 2, we see how bankruptcies develop for each country and which country/countries that has/have the largest number of bankruptcies per employee (see also Table 6). Sweden has on average the highest number of bankruptcies per employee for the entire period, and the highest number of bankruptcies per employee each year except 1988 and 1989. Bankruptcies peaked in 1992. Norway and Finland are close to Sweden in terms of average bankruptcy frequency. The legal environments in these three countries are relatively similar.

As in Sweden bankruptcies peaked during the crisis in 1992. Norway's banking crisis started a few years earlier and Norway had the highest frequency among the countries in 1988 and 1989.

Table 6 here

Figure 2 here

The development of Danish bankruptcies does not follow the same pattern as the other Nordic countries and the average frequency is half of the other Nordic countries. Bankruptcies peaked in 1993 and the fluctuations seem lower than in the other Nordic countries. The average frequency in the UK is similar to the Danish while it peaked in 1992. The fluctuations seem lower than in the Nordic high frequency countries.

The USA and Germany are the two countries with the lowest bankruptcy-frequencies during the period. We can therefore divide the countries into three groups. Group One, the high frequency group with large fluctuations, includes Sweden, Norway and Finland. Group Two,

¹⁵ We also use number of companies for Sweden, Norway, Denmark, USA and Germany. See below.

the middle frequency group, contains Denmark and Great Britain, and Germany and the USA form the low frequency Group Three.

To test for the statistical significance of differences in average bankruptcy frequencies we use a parametric (one-sided Anova), as well as a non-parametric (Kruskall-Wallis) test.¹⁶ In Table 6 the results indicate rejection of the hypothesis that the countries have an equal frequency of bankruptcy. In Table 7, we use Tamhanes test statistics to make pair wise comparisons. There is no statistically significant difference between Sweden, Norway and Finland. Sweden and Finland have a significantly larger average frequency of bankruptcy than the other countries except Norway. Norway has a statistically significantly larger number of bankruptcies per employee than Great Britain, the USA and Germany. Denmark has a statistically significantly larger average frequency of bankruptcy than the USA and Germany. Great Britain has a statistically significant larger number of bankruptcies per employee than the USA. Thus, the tests support the division of the countries into the three groups mentioned above.

Table 7 here

We have also calculated the frequency of bankruptcies relative to the total number of firms in the countries. We examine the number of companies for the period, year 1985 to year 1996 and relate the number of bankruptcies to the number of companies. In Figure 3, we have used the total number of companies for Sweden1, Sweden2, Finland, Denmark, USA and Germany¹⁷. We do not have the company data for

¹⁶ The null hypothesis is that all countries have an on average an equally large frequency of bankruptcy during the period.

¹⁷ Only for Sweden1, Sweden2 and Denmark have we data for entire period, for the USA from year 1988 and for Finland from year 1989. For Germany, we have for individual years, with two year's intervals (1986 to 1996).

Norway and the UK but for the other countries it makes little difference whether frequency is measured relative to employees or firms..

Figure 3 here

Are there more bankruptcies in countries with strong creditor orientation of insolvency law? The three groupings are not internally similar with respect to creditor orientation of bankruptcy law. Sweden, Norway and Finland have similar relatively creditor oriented laws but UK law is considered even more creditor oriented in Table 2. The USA with its relatively debtor oriented law has the lowest frequency. Denmark's placing in the intermediate group is consistent with Table 2. According to the same table Germany is as creditor oriented as Sweden, while in terms of frequency it is grouped with the USA. Thus, if we are to believe in a relation between creditor orientation and bankruptcy frequency, Great Britain and Germany are outliers. The question is then whether the low observed bankruptcy frequencies for these two countries can be explained by other factors. For example, we have already noted that court procedures in Germany are such that fewer bankruptcies will be recorded for a certain number of liquidations. We return to this issue when considering the frequency of bankruptcies for zero employee firms, and, thereafter, when taking data for formal restructurings into account.

Zero-employee bankruptcies in the data

Companies with zero employees constitute a large share of the companies that went into bankruptcy in Sweden during the period 1985 to 1996. Bankruptcies with zero employees constitute between 60 and 70 percent of all bankruptcies between the years 1985-1996. We ask whether these companies explain the differences among bankruptcy frequencies and why there is such a high frequency of zero employee firms in the data. There are several possible explanations why we find firms going into

bankruptcy having zero employees. Lundberg (1999) lists the following possible explanations:

- Operations are wound down before bankruptcy happens.
- The registration authority, Patent- and registreringsverket (PRV), has requested compulsory liquidation due to the fact that statements have not been submitted to PRV.
- Personnel have been transferred before bankruptcy into another company as an essential part of the reconstruction process. The bankrupt company may be part of a group of companies where the employees exist in a special company consisting of all the personnel and this company will not go into bankruptcy.
- The bankrupt company is included in a group of real estate companies where each piece of real estate lies in a limited partnership or trading company. The employees are in the head office.
- The bankrupt firm is a shell- company that has been created to reduce tax payments.

According to Lundberg shell companies have contributed substantially to the statistics from 1987. If so, there is a high probability that a company is a shell company when a corporation with zero employees goes into bankruptcy. This would mean that tax avoidance could explain the high frequency of bankruptcies in Sweden. Buttwill (2004) estimates that on the average there are around 1000 shell company bankruptcies per year in Sweden. This number would explain around 15 percent of the zero employee bankruptcies. Obviously, incentives for tax avoidance exist in other countries too. Thus, tax avoidance does not seem to explain the relatively high frequency of bankruptcies in Sweden.

Figure 4 here

Unfortunately we have data for zero employee bankruptcies only in Sweden, Norway and Finland as shown in Figure 4. These countries are those with particularly high bankruptcy frequencies. Figure 5 and Table 8 display the relationship between the number of bankruptcies with zero employees and the total number of bankruptcies for Sweden, Norway and Finland for the period 1985 to 1996¹⁸. Norway actually has the largest average share of bankruptcies with zero employees (87 percent), thereafter follows Sweden with 65 percent and Finland with 57 percent. Table 9 shows the results of tests for the significance of the differences between the countries.

Figure 5 here**Table 8 here**

In Sweden the proportion of bankruptcies with zero employees was lower during the crisis period 1991 –1994 when the total the number of bankruptcies was particularly high. These figures do not exclude the possibility that a normal winding up process of firms explain the data. We expect that a relatively large share of firms went bankrupt without having the time to go through a slow winding up process during the crisis 1991-94.

Table 9 here

The data indicate that having a large proportion of bankruptcies with zero employees is not unique for Sweden. It also seems that most of these bankruptcies were legitimate. Thus, they would be often be explained as the final step of a winding down process. In many cases, the firms may have restructured and shifted employees and operations to a closely

¹⁸ For Sweden, we have data for entire period, for Norway from 1987 to 1996 and for Finland from 1989 to 1996. For Norway, it is not entirely possible to separate bankruptcies by individuals from bankruptcies by companies. Up to 1994 do bankruptcies under the term statements missing include individual bankruptcies. We choose to delete those bankruptcies that are included under that term in order to eliminate confusion.

related firm. In other cases, a small firm may never have taken off but from extremely modest beginnings.

Formal restructuring data.

Formal composition is an alternative to liquidation bankruptcies in Sweden, Germany, Finland and USA. Composition is a tool for restructuring of firms' financial structure and operations. In the USA restructuring is formally carried out under Ch 11 of the bankruptcy code. In the UK "administration proceedings" make formal restructuring possible. Germany has had the restructuring law of 1994 in effect since 1999. Sweden made access to formal restructuring marginally easier in 1996. In Section 5 the ease of access to restructuring law in different countries was discussed and it was argued that ease of access implies a degree of debtor orientation of insolvency procedures. Legal obstacles to formal restructuring could take the form of high requirements of the amount of liquid assets left in company (Table 3). The differences across countries are great. Thus, the existence of restructuring law does not tell much about its use and effect on the restructuring process in a country.

In Section 5 some international evidence on restructuring was presented based on Kaiser (1994). It was noted that informal work-outs substitute for formal restructuring in countries with relatively inaccessible formal restructuring procedures. Evidence from Thorburn (2000) was referred to. She reports that 74 percent of the liquidations in her sample of Swedish firms filing for bankruptcy are going concern sales. One quarter of these sales are informally arranged "auction prepacks"¹⁹. Thus liquidations do not generally imply piecemeal liquidation of firms. When

¹⁹ In an auction prepack the rights to the distressed company's core assets have been transferred to a buyer in return for cash. The distressed company must file for bankruptcy since the payment for the rights to the distressed company's core assets is less than the company's liabilities. In order for the prepacks sales agreements to take effect after filing for bankruptcy the contract must be formally approved by all the secured creditors and the bankruptcy trustee.

the liquidation procedure is used as a part of a de facto reorganization, it is accomplished through a combination of private contract (informal procedure) and court based decisions (formal procedure). It can be expected that in countries with very accessible formal restructuring procedures very few informal procedures occur, since the formal procedure offers a degree of protection against creditors.

In Figure 6 the total number of liquidation bankruptcies and the number of formal compositions (ackord) for Sweden are shown for the period 1985-1996. The average liquidation rate²⁰ for Sweden for the period 1985 to 1996 is 99.2 percent. It is clear that formal composition does not offer a strong alternative to informal work-out. If an informal work-out cannot be negotiated, the alternative is liquidation bankruptcy, where in the company can be sold in parts or as “going concern”.

Figure 6 here

In Figure 7, we see the corresponding figures for Germany.²¹ The data indicates the same situation for Germany as for Sweden, i.e. the formal composition is not a real alternative to the liquidation process. The average liquidation rate is 99,7. Obviously, formal restructuring does not explain the low frequency of bankruptcies in Germany prior to the change in law in 1999. For Finland in Figure 8, the situation is slightly different. It seems that formal composition is more of an alternative in Finland than in Sweden and Germany (figure 7). As mentioned, Finland adopted a new reorganization procedure to the bankruptcy code in 1993.

Figure 7 here

Figure 8 here

²⁰ The ratio between liquidation bankruptcies and liquidation bankruptcies plus formal compositions (reorganizations)

²¹ The liquidation process is called Konkursverfahren and the composition process is called Vergleichsverfahren.

For the U.K.²² the liquidation rate is 86 percent. This figure refers to the ratio of formal bankruptcies relative to these bankruptcies plus formal reorganizations under administration proceedings. Franks and Sussman (2000) refer banks' role in informal work-outs in reorganization and liquidation in the UK. They study debt recovery procedures in three major commercial banks and find that only about three quarters of the number of cases either restructured or liquidated go through formal bankruptcy proceedings. If these figures are representative for the UK the frequency of informal work-outs plus formal bankruptcies is similar to the Swedish bankruptcy frequency. We have also noted that in three quarters of the cases of bankruptcy in Sweden the firms continued as going concerns.

One possible interpretation of the figures for Sweden and the UK is that the frequency of informal restructuring of firms, as well as the frequency of bankruptcies leading to shut down of firms, is similar. The difference would then be that Swedish firms being restructured informally are taken through formal bankruptcy proceedings while in the UK they are not. If this interpretation is correct, the status of non-priority claims is resolved through formal proceedings in Sweden, while in the UK the status of these claims is negotiated. This difference could be explained by the relative costs and speed of formal bankruptcy proceedings. The interpretation is also consistent with the observation that both Sweden and the UK have strongly creditor oriented laws relying to a substantial extent on contractual arrangements between lenders and firms.

Figure 9 displays the two main insolvency procedures in the USA; Chapter 7 (liquidation under the bankruptcy code) and Chapter 11 (reorganisation under the bankruptcy code). The USA differs from all

²² Couwenberg (2001).

other countries in our sample. The average liquidation rate in USA is 70,2 percent. Even if liquidation (chapter 7) is the procedure used most often, the reorganisation procedure (chapter 11) is a real alternative. Formal restructuring occurs with greater frequency than in the other countries. Even so frequency of restructuring plus the frequency of bankruptcy appears far lower than in the Scandinavian countries. The latter observation can be made for Germany as well, but in this country the frequency of formal restructuring is as low as in the Nordic countries.

Figure 9 here

The relatively low frequencies of bankruptcy in the USA and Germany are explained by entirely different factors. In the USA the access to formal restructuring reduces incentives for informal work-outs, and makes avoidance of liquidation bankruptcy possible for a large share of distressed firms. Under more creditor oriented law in Germany the bankruptcy and formal restructuring frequency may be kept low because petitions for bankruptcy can be rejected by the courts, if the assets in the bankrupt companies are insufficient to cover the cost of the legal proceedings²³. According to Fialski (1994) and White (1996), this is the case for some 75 percent of petitions in bankruptcy. For the period we investigate an average of 73 percent of the petitions were rejected by the court. This means that in Germany that liquidation procedures generally occurs outside of the bankruptcy procedure²⁴. In addition, filing for bankruptcy in Germany is expensive²⁵. Adjusting the frequency of bankruptcy in Germany for the high rejection rate by the courts, the total

²³ Fialski (1994).

²⁴ White (1996). According to the professor Friedrich Kuebler, "Whenever the costs for the bankruptcy proceedings exceed the assets of the debtor, there will be no bankruptcy; this is now sec. 26 of the Insolvency Code. I think the rationale makes sense: nobody is served, when the remaining assets are absorbed by the costs. These costs would have priority with regard to creditors. If there is no bankruptcy, creditors can go ahead with individual enforcement measures. But in most cases they will not be able to trace any assets worth the enforcement costs and efforts. Thus the court decision based on sec. 26 is normally the end of the story.

²⁵ White (1996).

liquidation frequency reaches an order of magnitude similar to those in Sweden, Finland and Norway.

Looking at the changes in the ratio between liquidation bankruptcies and total formal proceedings we can see that the ratio remains almost unaltered over the time period in the USA (see Figure 10). In Sweden and Germany, on the other hand, the relative frequency of liquidation bankruptcies increased during most of the period. The tendency was broken to some extent in Finland with the strengthening of formal restructuring law in 1993. The average liquidation rate fell from 100 percent²⁶ before 1993 to 92,8 percent. This number indicates that Finnish law remained relatively creditor oriented.

Sweden adopted a new restructuring law in 1996. The average liquidation rate for the period 1997 to 2000 is 99,6 percent and almost identical to the 99.7 percent rate for the eight previous years. In Germany the restructuring law implemented in 1999 seems to have led to an increase in the share of formal restructurings and the total number of firms going through formal procedures. The data is not shown since we do not have sufficient data to draw firm conclusions.

Figure 10 here

To summarize this section we have argued that the large differences between Sweden, Finland, and Norway on the one hand, and the UK and Germany on the other, do not indicate large differences, neither in the frequency of liquidations, nor in the frequency of informal work-outs. Denmark lies in between these groups in terms of bankruptcy frequency. We argue that the large differences represent different uses of court procedures under relatively creditor-oriented laws. The USA stands out as the country with much lower frequency of bankruptcies, higher frequency of formal restructuring, and much lower frequency for the total of the two

²⁶ Couwenberg (2001).

categories. The most important characteristic of US law is the relatively easy access to formal restructuring under Chapter 11. As a result of this access we expect informal work-outs to occur with relatively low frequency in the USA.

8. Conclusion

Economists have long implicitly assumed that institutions need not be considered in economic analyses, because they are either invariant or they adjust to make market transactions costs negligible. This view has changed during recent decades. North (1993) and Olson (1990) have pioneered studies of the role of conventions, law, and political institutions in economic development. Institutions have substantial inertia but there is little doubt that legislation in specific areas can influence economic activity a great deal. In a country with a well-developed legal system with strong enforcement it is likely that a change in bankruptcy law can affect the insolvency process and thereby the process of structural change. Another matter is that the political process in most countries creates legislative inertia in the sense that vested interests tend to have a strong ability to prevent changes in law that affect relative power positions.

In the area of bankruptcy law, attempts to strengthen debtors' position in Sweden and other countries during the 90s by means of stronger legal procedures for restructuring have had very little effect on bankruptcy procedures judging from the data for actual bankruptcies ending in liquidation and formal restructurings. The main reason for this lack of ineffectiveness of formal restructuring law seems to be that access to the formal restructuring procedures have remained restrictive even though the procedures may be debtor friendly when initiated.

The most important insight of the comparison of bankruptcy and restructuring laws in a number of countries is that the existence of

accessible, formal procedures for restructuring does not seem to contribute to more effective restructuring of firms. As a matter of fact, the opposite argument can be made. One reason is that informal work-outs are discouraged when formal procedures for restructuring exists. Another reason is that liquidation in bankruptcy proceedings often turn out to be a procedure for change of ownership of “going concerns”. A third reason is that the statutory approach to restructuring implied by a formal procedure implies an abrogation of contractual terms between a firm and its various creditors.

Effective restructuring in the absence of formal restructuring law requires that bankruptcies are handled with reasonable speed and predictability in courts, and that law enables firms to use assets as security on loan contracts to create an order of priority among creditors with the contractual consent of secured and unsecured creditors. Such contractual arrangements are possible if a variety of enforceable security contracts are made possible by the law.

In this light one can question the wisdom of recent changes in Swedish bankruptcy law that reduces the scope of so-called floating charges as security. There are similar tendencies in other countries to reduce the scope for ex ante contracting and informal work-outs by strengthening of formal restructuring laws. This strengthening of restructuring laws is inspired by the so called Chapter 11 in the USA which enables management in distressed firms to seek protection against creditors. The strengthening of debtors’ position in distress has also been motivated by employment considerations. In our view, these tendencies are often based on the misperception that liquidations in bankruptcy necessarily leads the closing down of firms and the laying off of employees. In fact, enforceable creditor oriented bankruptcy law constitutes a powerful incentive for informal work-outs.

There are dangers as well with powerful creditors. If a creditor has a strong monopoly position in the loan market for small firms, it can use its position to achieve objectives that not necessarily enhance economic efficiency. Furthermore, if there are only a few large creditors, market dynamics does not necessarily induce creditors to adopt efficient procedures for informal work-outs.

During recent years interesting proposals have been developed to deal with the costs involved in bargaining solutions to restructuring. Bebchuk (1990 and 1998) has proposed a “market-based” solution to resolve the valuation problem inherent in restructurings. Stake-holders are given “reorganization rights” and call options on the value of the firm providing the right to buy the “reorganization rights”. The strike prices of options given to different creditors depend on their priority. The underlying principle of the scheme is that no creditor should be made worse off with the option than with the original claim. Thus it is consistent with insolvency law specifying priority or ex ante contracted priority. Further research refining the original proposal has been conducted, for example by Aghion, Hart, and Moore (1992).

In an international comparison Sweden has a relatively high bankruptcy frequency. Almost two thirds of these bankruptcies are for firms with zero employees. We concluded that tax avoiding bankruptcies of so-called shell companies explain a fraction of these bankruptcies but not a large enough fraction to explain differences in bankruptcy frequencies relative to other countries. Another observation was that formal restructurings constituted a very small fraction of bankruptcies in Sweden, as well as in Germany, in comparison with Finland, the UK and the USA. We argued that the large differences in the frequency of formal bankruptcies plus restructurings between Sweden, Finland, and Norway on the one hand, and the UK and Germany on the other, do not indicate

large differences the frequency of liquidations, nor in the frequency of informal plus formal work-outs. Instead, the differences represent different uses of court procedures under relatively creditor-oriented laws. The USA stands out as the country with much lower frequency of bankruptcies, higher frequency of formal restructuring, and much lower frequency for the total of the two categories.

If our interpretation of the data is correct, the risk of losing potential winners as a result of inefficient insolvency procedures would be greater in the USA than in Sweden and other countries with strongly creditor oriented laws. The loss of potential winners would be caused primarily by excessive survival of “losers”. This survival implies that resources are not made available to new potentially winning ventures.

One consideration that has been neglected is the size distribution of insolvent firms. The vast majority of firms in the bankruptcy data are small while most assets are tied up in large firms. It is well known that there are very few large bankruptcies in Sweden and many other countries. Many firms are simply “to big to fail” and kept outside the bankruptcy mechanism by means of various forms of artificial aid. In the US on the other hand no firm is too big to be restructured under Chapter 11.

References

- Aghion, Philippe and Patrick Bolton (1992), "An Incomplete Contracts Approach to Financial Contracting," *Review of Economic Studies*, 59(3), 473-94.
- Aghion, Philippe, Oliver Hart, and John Moore (1992) 'The Economics of Bankruptcy Reform', *Journal of Law, Economics, and Organization* 8:523-46.
- Altman, Edward I. (1984) 'A Further Empirical Investigation of the Bankruptcy Cost Question', *Journal of Finance* 39:1067-85.
- Altman, Edward and I. Vanderhoof (1994) 'Losses to Bankrupt Firms' Bondholders', in Edward Altman (ed.) *The Financial Dynamics of Insurance Industry*, Irwin Professional: Toronto.
- Baird, Douglas G. (1997) 'The Hidden Virtues of Chapter 11', *Chicago Working Paper in Law and Economics* No. 43, March.
- Bebchuk, Lucian A. (1990) 'A New Approach to Corporate Reorganizations', *Corporate Law and Economic Analysis*, Cambridge University Press: Cambridge.
- Bebchuk, Lucian A. (1998) 'Chapter 11', *The New Palgrave Dictionary of Economics and the Law* Vol.1:219-24.
- Bebchuk, Lucian, A. (2002), "Ex Ante Costs of Violating Absolute Priority in Bankruptcy," *Journal of Finance*, 57(1), 445-60.
- Bebchuk, Lucian Arye and Randal C. Picker (1993) 'Bankruptcy Rules, Managerial Entrenchment, and Firm Specific Human Capital', *Chicago Law and Economics Working Paper* No.16.
- Bolton, Patrick, and David Scharfstein (1990), "A Theory of Predation Based on Agency Problems in Financial Contracting," *American Economic Review*, (1990), pp94-106
- Buttwill, Klas (2004), "Does Sweden Have too Many or Too Few Bankruptcies Compared to EU Countries, Norway and the USA? Ratio Working paper No 56, The Ratio Institute, Stockholm
- Caprio Jr, Gerard. and Daniela Klingebiel (1996) 'Bank Insolvencies: Cross Country Experience' *World Bank Policy Research Working Paper* No.1620.

- Cornelli, Francesca and Leonardo Felli (1996) 'Ex Ante Efficiency of Bankruptcy Procedures', *European Economic Review* 41,3/5:475-85.
- Couwenberg, Oscar (2001), "Survival Rates in Bankruptcy Systems: Overlooking the Evidence", *European Journal of Law and Economics*, 12, pp. 253-273.
- Fialski, Heiko (1994) "Insolvency law in Federal Republic of Germany," In Centre for co-operation with the economies in transition, *Corporate Bankruptcy and Reorganization in OECD and Central and Eastern European Countries*, OECD, pp. 21- 32.
- Franks, Julian and Oren Sussman (2000) 'The Cycle of Corporate Distress, Rescue and Resolution: A Study of Small- and Medium-Sized UK Companies', *London Business School Working Paper* No306.
- Frierman, Michael and P.V. Viswanath (1994) 'Agency Problems of Debt, Convertible Securities, and Deviations from Absolute Priority in Bankruptcy', *The Journal of Law & Economics* Vol.37(2) October.
- Gangopadhyay, Shubhashis and Clas Wihlborg (2001) 'The Impact of Alternative Bankruptcy Rules on Risky Project Choice and Skill Formation under Credit Rationing' (2003), *LEFIC Working Paper*, Copenhagen Business School.
- Gratzer, Karl (2000), "Konkurs och kriminalitet i ett jämförande perspektiv under 1900-talet", Working paper, *CeFin Research Report Series*, October, Södertörns högskola, Huddinge.
- Hussain, Qaizar and Clas Wihlborg (1999) 'Corporate Insolvency Procedures and Bank Behavior: A Study of Selected Asian Economies', *IMF Working Paper* No.99/135.
- Kaiser, Kevin M.J.(1994) 'Prospects for Reorganization within European Bankruptcy Law', *INSEAD Working Paper* No.95/94/FIN.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert W. Vishny (1997a) 'Law and Finance', *Journal of Political Economy*, Vol.104:1113-55.
- La Porta, Rafael, Florencio Lopez-De-Silanes, Andrei Shleifer and Robert W. Vishny (1997b) 'Legal Determinants of External Finance', *The Journal of Finance*, Vol.LII, No.3, July.

- Lawless, Robert M. (2001) "The Relationship Between Nonbusiness Bankruptcy Filings and Various Basic Measures of Consumer Debt" <http://www.law.unlv.edu/faculty/rlawless/busbkr/filings.htm>
- Lundberg, Per-Ivan (1999), "Vad säger oss konkursstatistiken?" in Gratzer, Karl och Hans Sjögren (eds), *Konkursinstitutets betydelse i svensk ekonomi.*, Södertälje, Gidlunds Förlag, pp. 127-129.
- North, Douglass (1990) *Institutions, Institutional Change, and Economic Performance*, Cambridge University Press: Cambridge.
- Olson, Mancur (1993) 'Dictatorship, Democracy, and Development', *American Political Science Review* No.87:567-76.
- Pomerleano, Michael (1998) 'The East Asia Crisis and Corporate Finance: The Untold Story', *World Bank Working Paper* No.1990.
- Posner, Richard. A. (1992) *Economic Analysis of Law* (4th edition) Little Brown: Boston, Toronto, London.
- Strömberg, Per (2000) 'Conflicts of Interest and Market Illiquidity in Bankruptcy Auctions: Theory and Tests' *Journal of Finance* 55:2641-92.
- Thorburn, Karin S. (2000) 'Bankruptcy Auctions: Costs of Debt Recovery and Firm Survival', *Journal of Financial Economics* 58(3):337-68.
- Weiss, Lawrence A. (1990) 'Bankruptcy Resolution: Direct Costs and Violation of Priority of Claims', *Journal of Financial Economics* Vol.27(2):285-314.
- White, Michelle J.(1996),"The Costs of Corporate Bankruptcy: A U.S. – European Comparison," in Bhandari, Jagdeep S. and Lawrence A. Weiss, ed., *Corporate Bankruptcy: Economic and legal aspects*. New York, Cambridge University Press, pp. 467 – 500.
- Wihlborg, Clas (2001), "The Role of Enabling and Mandatory Company Law for Financial System Efficiency" in Eliasson, G. and N. Karlson (eds), *The Limits of Government; Policy Competence and Economic Growth*, Transaction Publishers, New Brunswick
- Wihlborg, Clas and Shubhashis Gangopadhyay (with Qaizar Hussain) (2001) 'Infrastructure Requirements in The Area of bankruptcy', *Brookings-Wharton Papers on Financial Services*, Brookings: Washington DC

Wood, Philip R (1995), *Principles of international insolvency*, London,
Sweet & Maxwell.

Table 1. Types of distress and efficient action at the time of distress (ex post efficiency)

	Definition	Action
Economic distress	The net present value of assets is negative under any management team	Piecemeal liquidation of assets
	The net present value of assets is positive under a different management team	Sale of assets as a “going concern” to enable a change of management
Financial distress	The present value of cash flows is positive but it is lower than the value of claims by non-shareholders	Debt reduction in combination with restructuring and/or ownership change, if value of assets thereby can be enhanced
	Liquidity-problem	Debt-rescheduling, Liquidity-enhancement

Table 2: Creditor/Debtor Orientation of Corporate Insolvency Law Based on Wood (1995)

Scale: 1= Most pro-creditor
10= Most pro-debtor

1. Former British colonies except S. Africa and Zimbabwe
2. England, Australia, Ireland
3. Germany, Netherlands, Indonesia, Sweden, Switzerland, Poland
4. Scotland, Japan, Korea, New Zealand, Norway
5. United States, Canada except Quebec
6. Austria, Denmark, Czech and Slovak Republics: S. Africa, Botswana, Zimbabwe (all three Dutch-based);
7. Italy
8. Greece, Portugal, Spain, most Latin American countries**
9. Former French colonies, Egypt, Belgium and Zaire
10. France

No insolvency law: Liberia (many Arab countries)

Not classified: Russia, Belarus, Ukraine, Khazakstan

*Orientation by explicit law disregarding implementation through the court system

**Except Paraguay that protects security interests strongly.

Table 3. Determinants of high degree of credit orientation

Wood (1995)

1. Wide scope and efficiency on bankruptcy of security and title financing (retention of title, factoring, leasing)
2. Weak corporate rehabilitation statutes
3. Insolvency set-off enables reciprocal unsecured creditor to be paid ahead of other unsecured creditors
4. *Ownership of assets in the possession of debtor is recognized (e.g. trusts)
5. *veil of incorporation and protection of directors against personal liability

*These determinants are ambiguous from creditors point of view, but creditor-orientation by these determinants can be seen as the recognition of explicit and implicit contracts between the firm and various stakeholders. (See text.)

Table 4. Characteristics of restructuring law in selected countries

Constructed based primarily on Wood (1995)

	UK	France	Japan	USA	Germany	Spain
Easy entry based on restrictions on remaining assets	no	yes	no	yes	no	no
Debtor incentive to commence proceedings	director liability cannot be invoked					director liability for failure to initiate proceedings
Freeze on executions and liquidation proceedings	yes	yes	yes	yes	yes	yes
Stay on enforcement, use of secured assets	stay but blocking power of holder of floating charge	stay and priority falls behind employees and state	stay with protection of secured creditors	stay with adequate protection	limited stay	stay on enforcement
Stay on title financing	stay with practice favoring security	as above	as above	as above	as above	as above
Impact on rescissions (counterparties' right not to deliver to insolvent firm)	no	yes	yes	yes	no	yes, after employees, state
Disclaimer and abandonment powers by administrators	no	yes	party	yes		
Avoidance of pre-commencement preferences	yes	yes	yes	yes	yes	yes
Replacement of mgmt/power of supervisors and creditors committees	yes, insolvency practitioner	yes court	yes receiver	no		up to "interventores"
Financing of rescue	priority on un-encumbered assets	priority after employees and state	N/A	priority with adequate protection		
Scope of rehab.plan	open procedure protecting security	court powers protecting employees	court powers subject to votes within classes of creditors	court can bind dissenters		80% of debts
Summary evaluation* Score in Table 5	weak 3	strong 10	weak 3	strong 8	weak 1	strong

- Weak=protective freeze on creditor action but no fundamental distortion of creditor rights.
Strong= significant erosion of creditor rights with preservation of debtor's estate and possibility of survival

Table 5. Average number of company-liquidation-bankruptcies for the respective country, together with skewness and kurtosis, for the period 1985-1996.

Country	Number of observations (n)	Average number of company-liquidation-bankruptcies	Std	Skewness	kurtosis
Sweden	12	11 256**	5 575	0,601	-1,046
Norway	12	2 720**	1 050	0,01	-0,95
Finland	11	4 346**	1 762	0,480	-1,272
Denmark	12	2 395**	650	-0,147	-0,907
USA	12	37 634**	6 300	0,454	0,062
Germany	12	14 053**	5 476	1,093	0,288
Great Britain	12	16 249**	4 698	0,679	-0,279

For the mean values, it is a two-sided t-test.

*Significant at a 5 % significant level

**Significant at a 1 % significant level

Table 6. Average number of company-liquidation-bankruptcies in relation to total number of employees, for the respective country for the period 1985-1996.

Country	Number of observations (n)	Average number of company-liquidation-bankruptcies per employee	Std	Test statistic
Sweden	12	0,0030**	0,0016	F-value 20,46*
Norway	12	0,0015**	0,0006	
Finland	11	0,0023**	0,0011	
Denmark	12	0,0010**	0,0003	X ² -value 67,7**
USA	12	0,0008**	0,0002	
Germany	12	0,0004**	0,0001	
Great Britain	12	0,0005**	0,0002	

The F-value is for a one-sided ANOVA test of equal means.

X²-value is for a Kruskal-Wallis test of equal medians

*Significant at a 5 % significant level

**Significant at a 1 % significant level

Table 7. A summary of Tamhane's test for a pairwise comparison of the different countries' frequency of bankruptcy for the period 1985 – 1996.

The country that has a significantly larger average frequency of bankruptcy	Significance level	
	0,01	0,05
Sweden >	Great Britain USA Germany	Denmark
Norway >	USA Germany	Great Britain
Finland >	USA Germany	Denmark Great Britain
Denmark >	USA Germany	
Great Britain >	USA	

Table 8. On average share of company-liquidation-bankruptcies with zero employees in relation to total number company-liquidation-bankruptcies for the respective country, together with skewness and kurtosis, for the period 1985-1996

Country	Number of observations (n)	Average share of company-liquidation-bankruptcies with zero employees in relation to total number company-liquidation-bankruptcies	Std	Skewness	Kurtosis
Sweden	12	0,65**	0,04	0,102	-1,357
Norway	10	0,87**	0,05	-0,346	-0,840
Finland	8	0,57**	0,06	0,979	-0,652

For the mean values, it is a two-sided t-test.

*Significant at a 5 % significant level.

**Significant at a 1 % significant level.

Table 9. A summary of Tamhane's test for a pairwise comparison between the countries Sweden's, Norway's and Finland's share of company-liquidation-bankruptcies with zero employees for the period 1985 – 1996.

The country that has a significant larger share of bankruptcies with zero employees	Level of significance	
	0,01	0,05
Sweden >		Finland
Norway >	Sweden Finland	

Figure 1. Total number of company-liquidation -bankruptcies for the respective country and year.

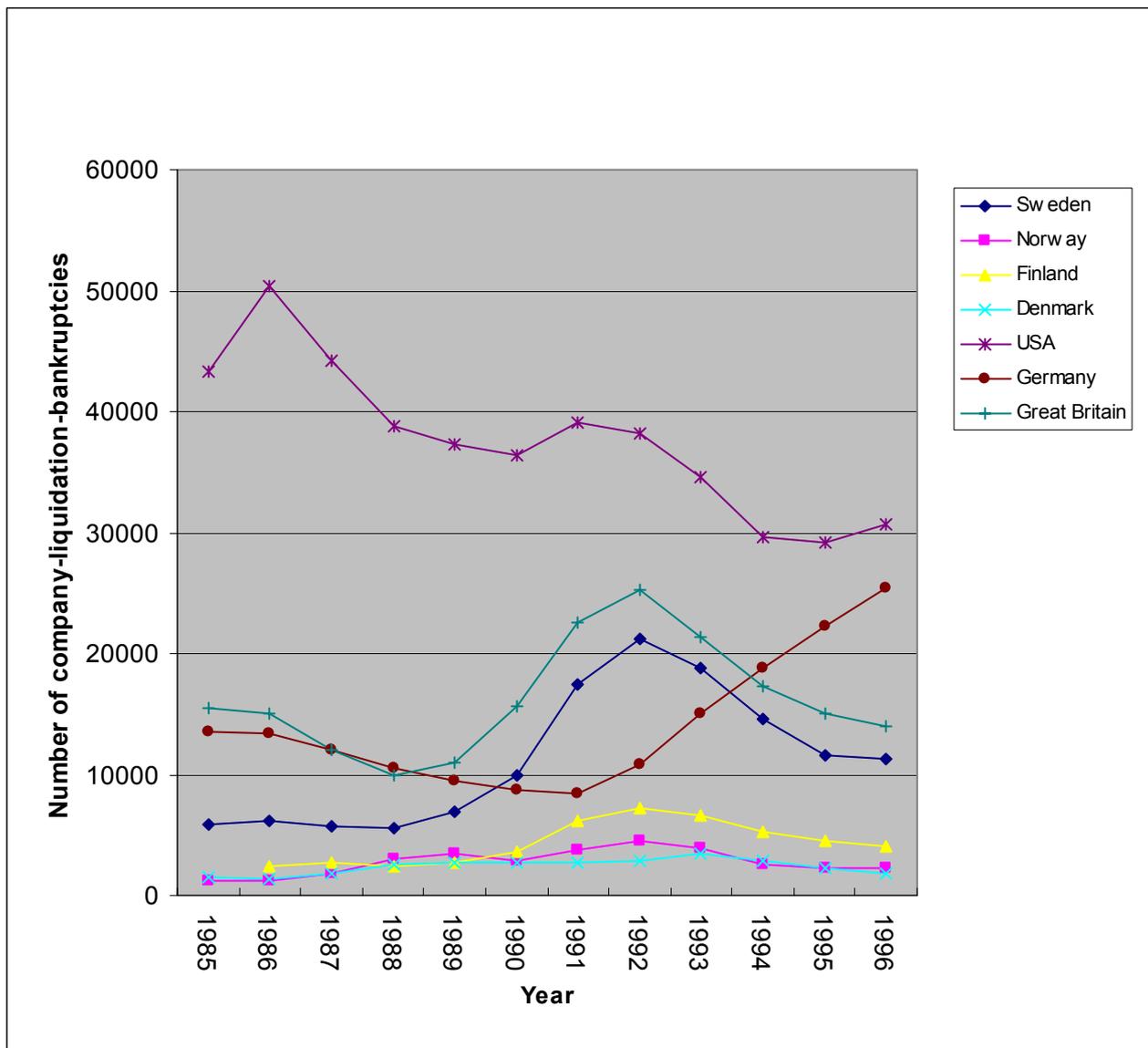


Figure 2. Total number of liquidation bankruptcies in relation to total number of employees for the respective country and year.

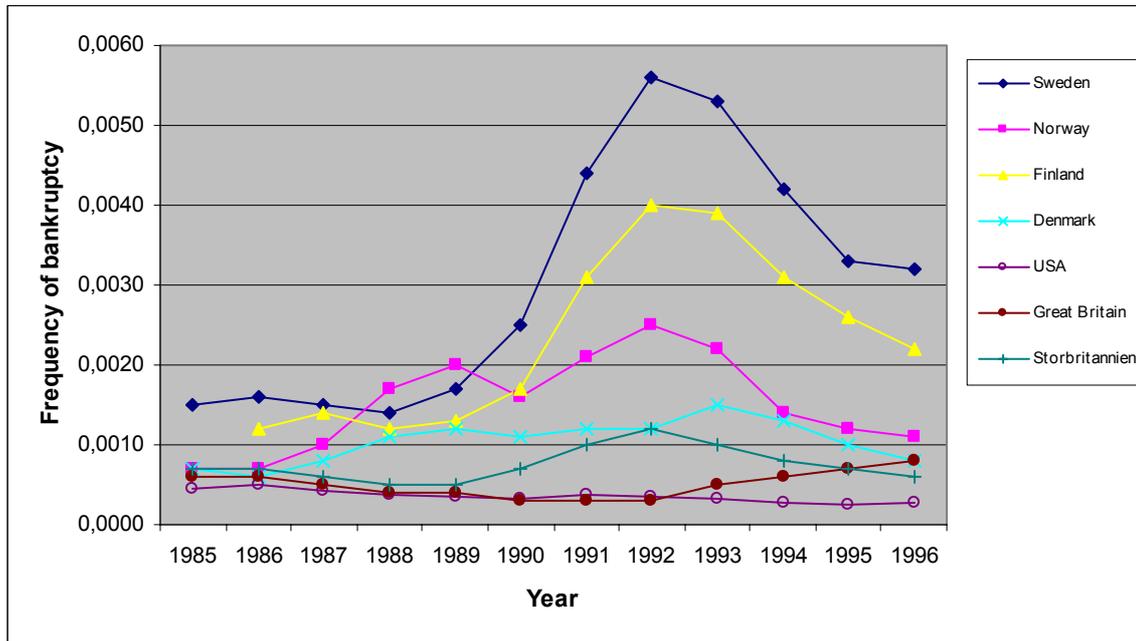


Figure 3. Total number of company-liquidation-bankruptcies in relation to total number of companies for the period 1985 till 1996

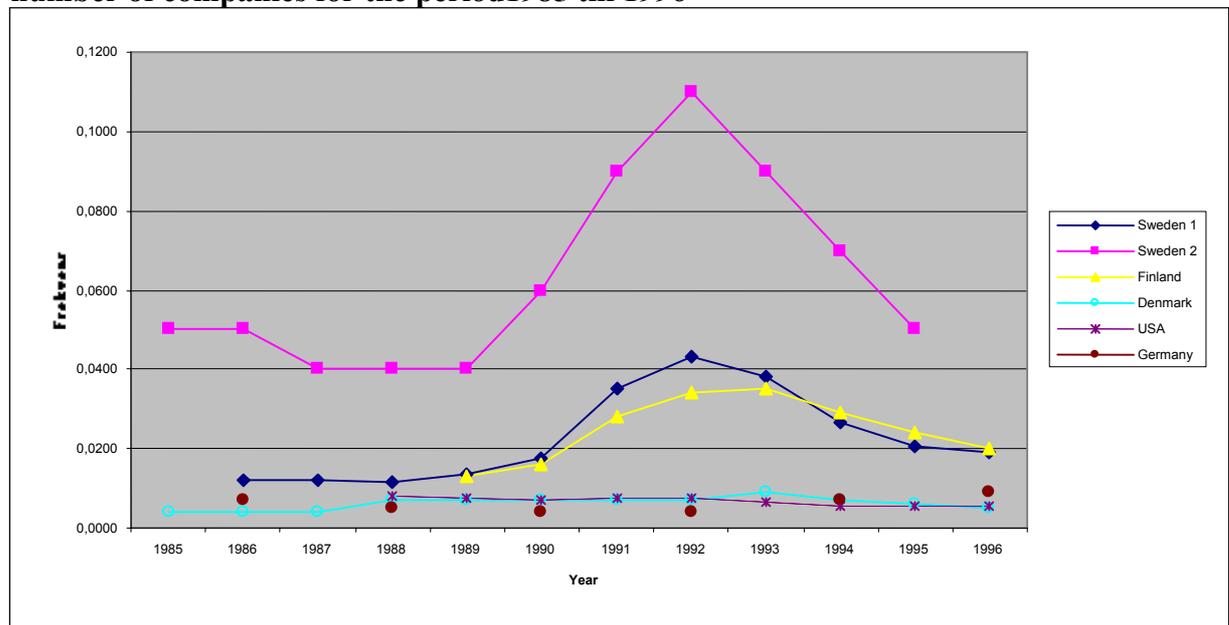
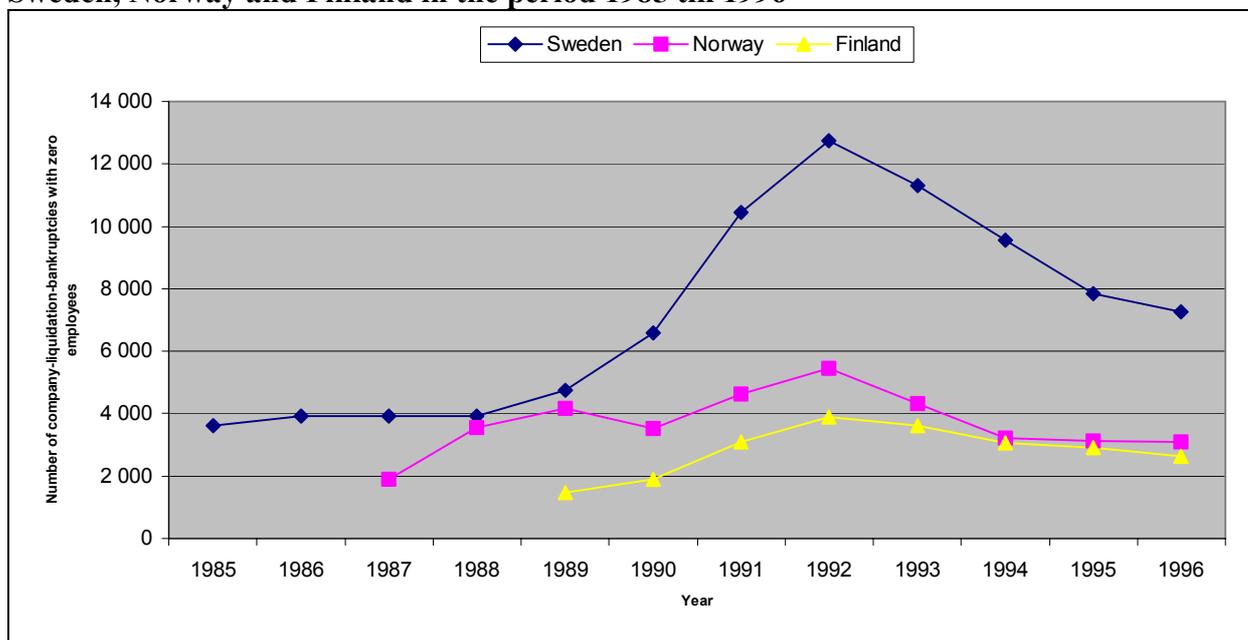


Figure 4. Number of company-liquidation-bankruptcies with zero employees for Sweden, Norway and Finland in the period 1985 till 1996



Figur 5. The relationship between company-liquidation-bankruptcies with zero employees to total number of company-liquidation for Sweden, Norway and Finland during the period 1985 till 1996

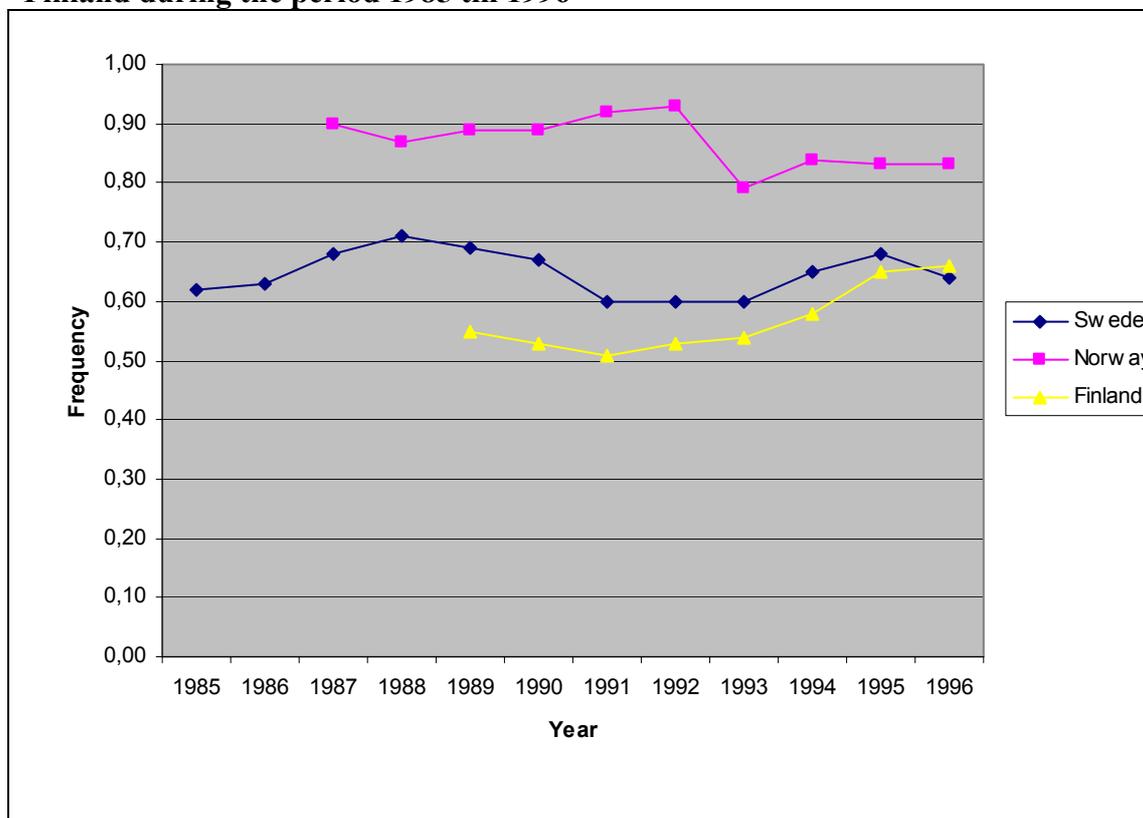


Figure 6. Total number of liquidation bankruptcies and formal composition for Sweden during the period 1985-2000

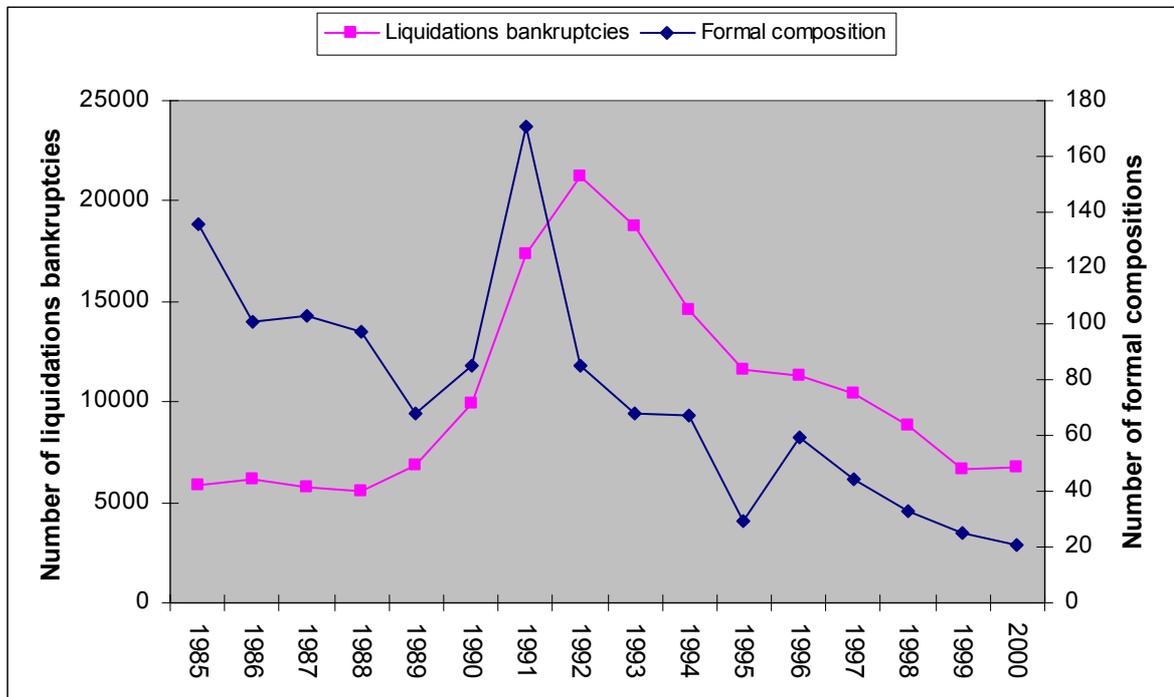


Figure 7. Total number of liquidation bankruptcies and formal compositions in Germany for the period 1985-1998.

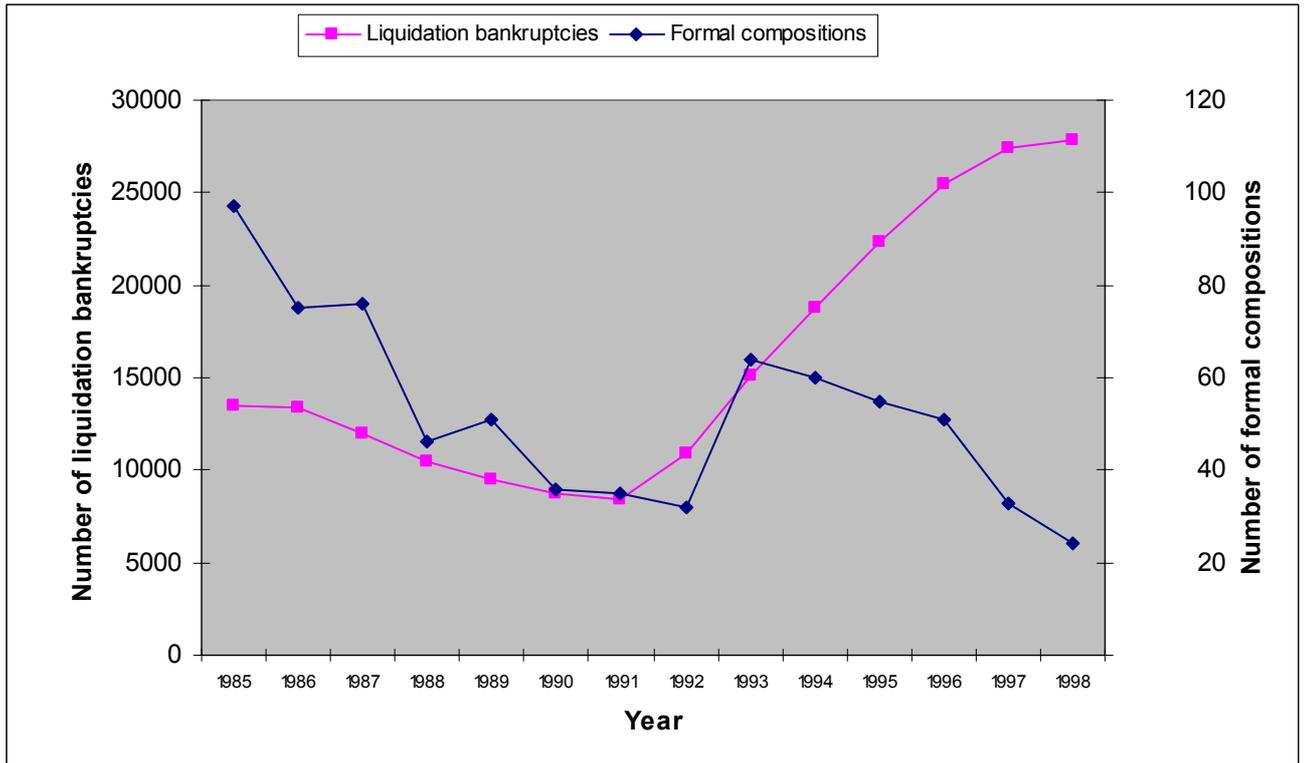
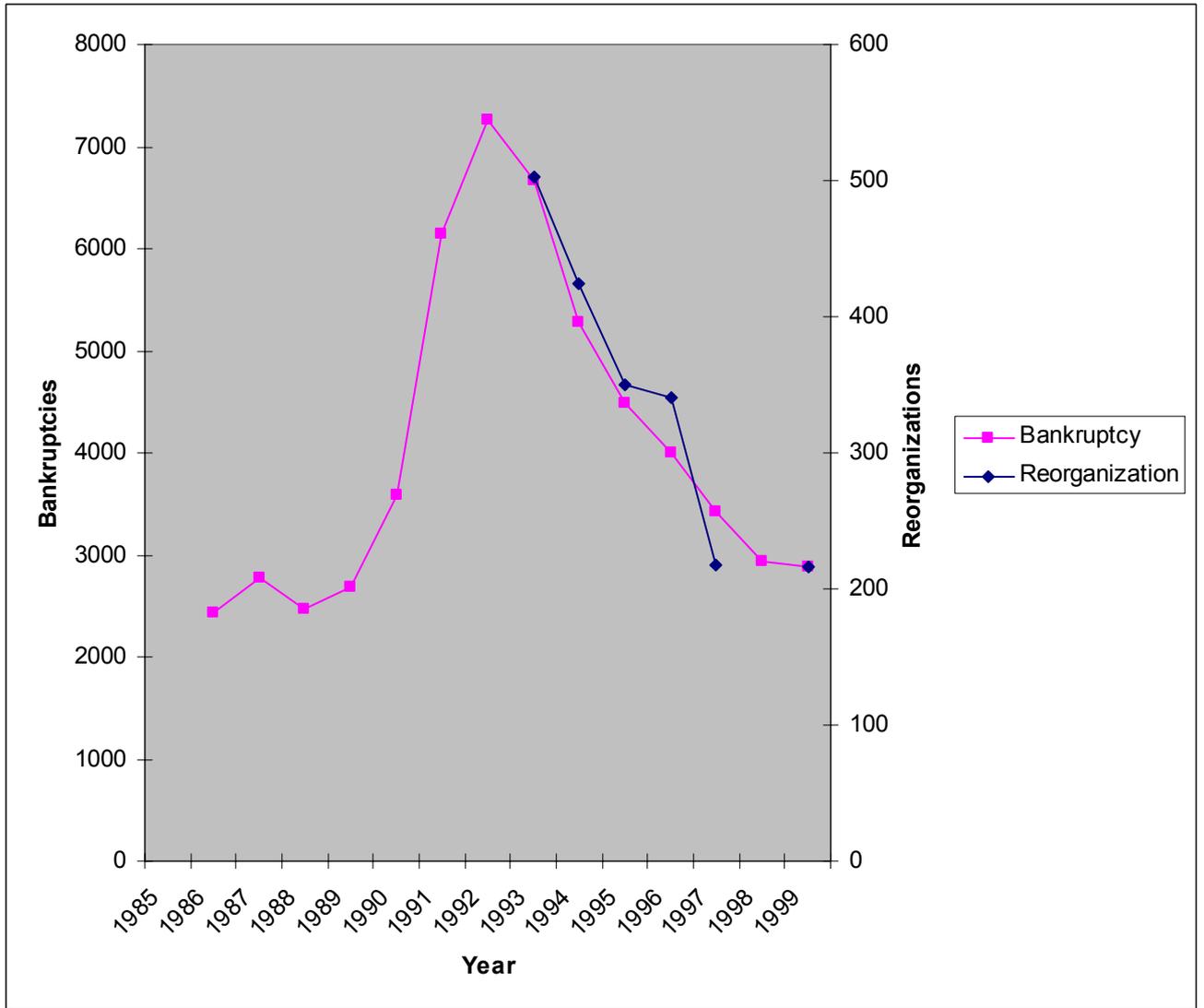


Figure 8. Total number of bankruptcies and reorganizations in Finland for the period 1985-1996



Source: Statistikcentralen and Sundgren (1998)

Figure 9. Number of chapter 7 and chapter 11 petitions in USA during the period 1985-2000.

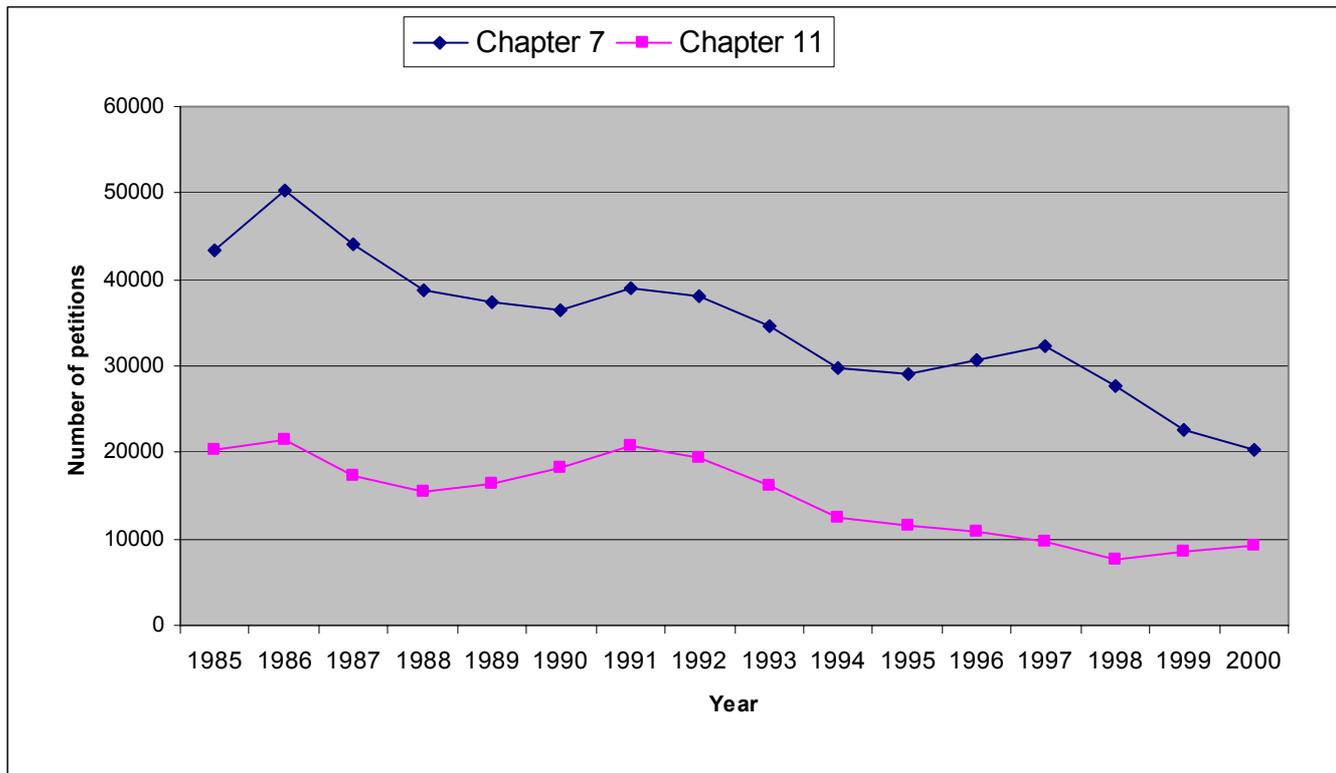


Figure 10. Number of formal company-liquidation-bankruptcies per formal composition/reorganization in Sweden, Germany, Finland and USA during the 1985-2000.

