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# **A Comparative Analysis on Turnaround Alternative Dispute Resolution and Civil Rehabilitation**

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## A Comparative Analysis on Turnaround Alternative Dispute Resolution and Civil Rehabilitation \*

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### Abstract

This study investigates the role of turnaround alternative dispute resolution (ADR) in comparison with Civil Rehabilitation. Large firms and firms with more retained losses are more likely to use ADR than Civil Rehabilitation. Highly leveraged firms tend to use Civil Rehabilitation more than ADR. In terms of performance, firms that use ADR firms have lower leverage, better credit scores and higher quick ratios after debt restructuring than firms employing Civil Rehabilitation. Firms that utilize Civil Rehabilitation reduce assets and employment to a greater degree than ADR firms. Operating efficiency improvement and profitability recovery are the same for both treatments. Neither firms utilizing ADR nor those using Civil Rehabilitation reduce trade credit use. These results indicate that economically and financially distressed firms use ADR to restructure their businesses while avoiding financial collapse in bankruptcy.

Keywords: turnaround alternative dispute resolution (ADR), structured out-of-court workouts, debt restructuring, bankruptcy costs

JEL classification: G21, G23, G32, G33, G34

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## **1.Introduction**

Debt restructuring is costly. The costs consist of direct and indirect costs. Direct costs are charges for legal, accounting and investment banking services. Indirect costs include all other costs related to bankruptcy or debt restructuring such as efforts and time devoted to debt restructuring. Previous studies show that direct costs are significantly cheaper higher for private renegotiation than bankruptcy (Warner, 1977; Ang et al., 1982; Altman, 1984; Stein, 1989; Weiss,1990; Gilson et al., 1990). The time that firms spend in debt restructuring is a proxy for indirect costs. Chapter 11 cases take significantly longer to complete than successful debt restructurings (Gilson et al., 1990). If more of firm value tends to be lost in bankruptcy, insolvent firms with relatively high firm value are more likely to restructure their debt privately (Gilson et al., 1990). On the other hand, the transaction costs for private debt restructuring are documented in Gilson (1997).

Bank lenders play important roles in private debt restructuring. The main bank system was a unique form for private restructuring. Till the end of 1980s, it was widely believed that the main bank system provided a flexible, more effective private alternatives of bankruptcy (Aoki and Patrick, 1994; Hoshi, Kashyap and Scharfstein, 1990). In the late 1990s, several banks that used to monitor borrowers failed themselves, and the main bank is gone (Hoshi et al., 2018). Because financial distress cannot be resolved through private workout initiated by the main bank anymore, Japan reformed its bankruptcy legal system in response to substantial increases of non-performing loans.

Till the later 1990s, mainly the Corporate Reorganization or the Liquidations (bankruptcy) were available to failed corporations. Different from U.S. Chapter 11, the Corporate Reorganization procedure was not a debtor-in-possession procedure. In principle, incumbent managers had to depart the firm, once the Corporate Reorganization proceeded, and a court-appointed receiver operated the firm and worked out a reorganization plan. In other words, incumbent managers experienced large personal costs under the Corporate Reorganization Act. The Liquidation Act of Japan is like filing for Chapter 7 of the Code. Because managers and employees are displaced and in almost all cases equity become worthless, it is perceived that managers have strong incentives to resist Liquidation or Reorganization until the last minute. Moreover, it was very time-consuming to exit from the Corporate Reorganization<sup>1</sup>.

To facilitate faster bankruptcy conclusions, the Civil Rehabilitation Act, an explicit debtor-in-possession procedure, was passed in 2000. Civil Rehabilitation firms spend time in bankruptcy substantially shorter than Corporate Reorganization firms (Xu,2004). Also, a Civil Rehabilitation firm exits faster from bankruptcy than a U.S. firm filing emerging from Chapter 11 in the 1980s. Meanwhile, amid the urgent need for the resolution of non-performing loans, the Japan Association of Turnaround Professionals (hereinafter, JATP) was established with the aim of facilitating out-of-court business

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<sup>1</sup> For example, Eidai Sangyo, which was listed on the Tokyo Stock Exchange, filed for Corporate Reorganization in 1978, its Reorganization plan was approved by the court in 1982, and it accomplished its Reorganization in 1993.

restructuring. In 2004, the Act on Promotion of Use of Alternative Dispute Resolution (Act No. 151 of 2004) was enacted and the Act came into force in 2007. In November 2008, JATP received certification and accreditation under the Special Certification System for Business Rehabilitation Using Alternative Dispute Resolution (ADR), which was established through the enactment and enforcement of the Act on Promotion of the Use of Alternative Dispute Resolution Procedures and the amendment of the Act on Special Measures Concerning Revitalization of Industry and Innovation in Industrial Activities. Around the Global Financial Crisis quite a few publicly traded firms restructured their debt via applying for ADR<sup>2</sup>. Recently, large firms filing for Civil Rehabilitation have been declining in comparison with increasing ADRs<sup>3</sup>.

In this paper, we investigate the roles of the business turnaround ADR, a structured out-of-court workout in business turnaround in comparison with the Civil Rehabilitation procedure, a legal resolution. The business turnaround ADR is an institution that supports prompt business revitalization while aiming fairness and neutrality with an arbitration of neutral experts between a debtor company and its creditors, taking the form of private arrangement. It is said that the ADR procedure is quicker, more flexible and the damage of firm value is smaller, compared to Civil Rehabilitation or other legal

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<sup>2</sup> Structured out-of-court workouts such Schem Arrangement, Restructuring Plan, CVA, StaRUG are used in UK and Germany. Also, there are structured out-of-court workouts for small and medium-sized enterprises supported by the SMERSC (SME Rehabilitation Support Council).

<sup>3</sup> For detail, see TSR report on increasing bankrupt liquidation rates ([https://www.tsr-net.co.jp/data/detail/1201587\\_1527.html](https://www.tsr-net.co.jp/data/detail/1201587_1527.html)).

resolution. Currently we know little about how ADR costs compared with the costs for Civil Rehabilitation. I provide innovative evidence on comparison of business turnaround ADR with Civil Rehabilitation. Large firms, firms with more retained losses, are more likely to use ADR than Civil Rehabilitation. High leveraged firms tend to use Civil Rehabilitation than ADR. For performance, ADR firms have a low leverage, a better credit score and a high quick ratio after debt restructuring than Civil Rehabilitation. Civil Rehabilitation firms reduce assets and employment more than ADR firms. Operating efficiency improvement and profitability recovery are the same. Neither ADR firms nor Civil Rehabilitation firms reduce trade credit use. These results indicate that economically and financially distressed firms use ADR to restructure their businesses without financial collapse in bankruptcy.

The study is organized as follows. In section 2, we review reforms concerning corporate revival since the late 1990s. Section 3 provides descriptions on the ADR and the Civil Rehabilitation Act. In Section 4, we compare firm performance around ADR applications with Civil Rehabilitation filings. Section 5 is summary and policy implications.

## **2. Civil Rehabilitation and ADR**

In this section, we summarize the review about ADR and Civil Rehabilitation in Saruyama and Xu (2025). After the late 1990s, the so called flexible and the efficient main bank system as private alternative to bankruptcy collapsed, whereas legal resolution was time -consuming. To facilitate faster

bankruptcy conclusions, the Civil Rehabilitation Act, an explicit debtor-in-possession procedure, was passed in 2000<sup>4</sup>. Next, we briefly describe the Civil Rehabilitation Act.

### **Civil Rehabilitation**

The Civil Rehabilitation Act is aimed to provide a simplified debtor-in-possession legal resolution and only unsecured financial claims and unsecured trade claims are subject to Civil Rehabilitation proceedings. Different from the Corporate Reorganization Act, in Civil Rehabilitation proceedings, secured claims are treated as "rights of separate execution," and in principle are not subject to restrictions in the proceedings and can be exercised and collected preferentially at any time. Security interests on assets necessary for business continuity are generally prevented from auction by a separate execution agreement or a claim for extinguishment of the security interest, and repayment is sought at the appraised value. Also, Common Benefit Claims such as legal expenses and General Priority Claims like unpaid wages are not subject to the procedure. It was expected that the Civil Rehabilitation Act would provide incentives for managers of distressed firms to "fail fast and resolve quick".

A Civil Rehabilitation plan should be approved by at least one-half of unsecured creditors and

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<sup>4</sup> With the enforcement of the Civil Rehabilitation Act on April 1, 2000, the Composition Law was abolished. The Composition Act had strict requirements for approval at creditors' meetings: more than half of creditors in attendance and three-quarters of the total amount of claims and the court's supervision was eliminated after the procedure, making it difficult to ensure compliance.

the sum of their claims should be more than one-half of the total claims. When there are a few large creditors and many small creditors, this compound rule is favorable to small creditors and decreases the power of large creditors. Moreover, Article 85 (2)<sup>5</sup>,<sup>(5)</sup><sup>6</sup> and Article 155 (1)<sup>7</sup> are also in favor of small creditors. Recently, TDB (TEIKOKU DATABANK.LTD) reported that about 80% of Civil Rehabilitation firms fully repaid small claims. Thus, both in legal texts and in practice, small claims such as trade credits are protected in the Civil Rehabilitation proceedings to enable failed firms to preserve

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<sup>5</sup> If a small and medium-sized enterprise whose major trading partner is the rehabilitation debtor is likely to experience significant hindrance to the continuation of business unless it receives payment of its rehabilitation claim, the court, even before an order of confirmation of the rehabilitation plan becomes final and binding, upon the petition of the rehabilitation debtor, etc. or by its own authority, may permit payment of the claim in whole or part (Article 85 (2) of the Civil Rehabilitation Act, If a small and medium-sized enterprise whose major trading partner is the rehabilitation debtor is likely to experience significant hindrance to the continuation of business unless it receives payment of its rehabilitation claim, the court, even before an order of confirmation of the rehabilitation plan becomes final and binding, upon the petition of the rehabilitation debtor, etc. or by its own authority, may permit payment of the claim in whole or part. (Article 85 (2) of the Civil Rehabilitation Act, <https://www.japaneselawtranslation.go.jp/ja/laws/view/125>)

<sup>6</sup> Where it would be possible to make rehabilitation proceedings progress smoothly by paying small rehabilitation claims promptly or significant hindrance would be caused to the continuation of the rehabilitation debtor's business unless small rehabilitation claims are paid promptly, the court, even before an order of confirmation of the rehabilitation plan becomes final and binding, upon the petition of the rehabilitation debtor, etc., may permit payments of such claims.(Article 85 (5) of the Civil Rehabilitation Act (<https://www.japaneselawtranslation.go.jp/ja/laws/view/125>).

<sup>7</sup> The content of any modification of rights based on a rehabilitation plan shall be equal between rehabilitation creditors; provided, however, that this shall not apply where any rehabilitation creditor who will suffer detriment has given consent or where equity will not be undermined even if the plan otherwise provides for small rehabilitation claims...(Article 155 (1) of the Civil Rehabilitation Act, <https://www.japaneselawtranslation.go.jp/ja/laws/view/125>).

their relationships with suppliers.

### **The Act on Special Conciliation Proceedings for Expediting Adjustment of Specified Debts**

Meanwhile, Japan launched the Act on Special Conciliation Proceedings for Expediting Adjustment of Specified Debts in 1999, to enhance quick private resolutions. A corporate debtor can file for Civil Conciliation for a private workout as a special case of Civil Conciliation Act. After a petition is received, the court shall carry out the conciliation appointing a conciliation committee, which is composed of a chief conciliator and two or more civil conciliation commissioners. The conciliation committee conciliates resolution if the debtor and creditors can agree a workout plan. Even if the creditors do not agree, if the conciliation committee deems it appropriate, a decision in lieu of conciliation (Article 17 decision) may be issued based on Article 17 of the Civil Conciliation Act. Special Conciliation is a hybrid of private workouts and reorganizations supervised by the court. The difference between a conventional private workout and a Civil Conciliation is that a conciliation committee coordinates renegotiations between a debtor and its creditors. A construction company listed in the second section of Tokyo Stock Exchange, petitioned Special Civil Conciliation and reached agreement for debt forgiveness in August 2000 and banks forgave debt of 14.88-billion-yen out of 24.37-billion-yen outstanding loans. The company went bankrupt in 2008, however. Limited to our knowledge, this is the only one case of debt restructuring via the Special Civil Conciliation.

### **The Guideline for Private Debt Workout**

In 2003, a new alternative, the Guideline for Private Debt Workout (hereinafter, the Guideline) was adopted by the Japanese Bankers Association in 2003 to resolve nonperforming loans. Conventional private workout resolution initiated by the main bank died out and it was in need to release survivable firms from excess debt efficiently. Unlike Special Conciliations, the Guideline procedures are totally out-of-court renegotiation led by the main bank. Roughly speaking, expert advisors work out a restructuring plan. If the creditors reach agreement, the plan is implemented. However, there is no evidence that the Guideline is utilized frequently.

### **The Industrial Revitalization Corporation**

In addition to the Guideline, the Industrial Revitalization Corporation (IRC, hereinafter), a was founded based on the Industrial Revitalization Corporation Act with a limited period of validity till 2006. The IRC was a special company funded by the government. The act is aimed at aiding financially distressed companies who intend to revitalize their businesses in cooperation with one or more relevant financial institutional creditors. IRC purchased nonperforming loans from banks, coordinated plans including debt forgiveness, debt equity swaps, management turnover and capital reduction. In principle, shareholders and the management should take responsibility. Following the IRC Act, IRC

should talk with labor unions over employment contracts. Often, IRC acquired shares by injecting new capital or/and by purchased debt's swap to equity. After the plan was implemented, debt and ownership were concentrated to IRC. Upon a certain prospect, it stood out for revitalization, IRC received payment of all receivables, or, sold credits and shares to relevant companies or third parties. In well-known cases of Kanebo and Daiei, IRC became the largest shareholder, and the two companies were acquired by their industrial peers later. During 2004-2006, IRC turned over 41 survivable financially distressed companies (including private firms). Different from private debt restructurings initiated by the main bank, debt forgiveness coordinated by IRC is prorated in proportion with outstanding loans (Koibuchi, 2013).

## **ADR**

In June 2007, IRC was dissolved in accordance with the IRC Act and was transferred to a liquidation company upon completion of the business prescribed. About that time, the Act on Promotion of Use of Alternative Dispute Resolution (hereinafter, the ADR Act) was promulgated in 2004 (Act No. 151 of 2004), and it came into enforcement in April 2007. An Alternative Dispute Resolution (ADR) is an out-of-court civil proceeding designed to resolve civil disputes based on discussion between parties under arbitration, mediation, and conciliation by a fair third party without relying on legal proceedings such as Civil Rehabilitation Act, Corporate Reorganization Law, and Bankruptcy

Law. Based on the ADR Act, a Certified ADR Organization who is certified by the Minister of Justice performs arbitration and mediation as a third party. Likewise, based on the Act on Special Measures Concerning Revitalization of Industry and Innovation in Industrial Activities launched in 2007, a business revitalization ADR operator accredited by the Minister of Economy, Trade and Industry performs arbitration and mediation as a third party in ADR dealing with business revitalization. Business revitalization ADR is an institution that supports prompt business revitalization while ensuring fairness and neutrality with an arbitration of neutral experts between a debtor company and its creditors, taking the form of private arrangement. It was then carried over to the Act on Strengthening Industrial Competitiveness in 2013. Currently, the qualified business operator entity is only JATP.

An ADR restructuring is quasi-prepackaged. It starts with a prior consultation with the JATP to draft a revitalization plan, including current balance sheets, a business plan, and a repayment plan. In addition, if the sponsor is needed for revitalization, the debtor company selects a candidate with the help of financial advisors, etc., and repeats discussions with the candidate on the preliminary revitalization plan. It is necessary to conclude sponsor contracts with the candidate, which are conditional on the approval of certain contents of the preliminary plan. With the preliminary plan, a firm formally applies for ADR.

With the preliminary plan, the debtor company applies for ADR and then the JATP secretariat is to form a review board, and the review board hears from the debtor company. If the board judges

prospect of revival the materials related to the preliminary plan, JATP accepts the application provisionally. Subsequently, the JATP appointments committee points a procedure practitioner candidate. To examine prospect of revival the candidate then holds an interview with the company after scrutinizing the materials. If the practitioner candidate judges feasibility of ADR, formally the debtor company applies for ADR.

Upon official acceptance of the formal application, JATP and the debtor company jointly send a notification of suspension. Notably, different from a "provisional order" of the court in Civil Rehabilitation or Corporate Reorganization to prohibit reimbursement and collection of debts a notice of "temporary suspension of reimbursement" or "stand still" is has no legal binding force. If some target creditors do not comply with it, there is a high possibility of transiting to Civil Rehabilitation or another legal procedure. Unlike Civil Rehabilitation, an ADR plan should be approved by all target creditors.

The target creditors subject to ADR are mainly banks. The scope of debt restructuring that ADR handles is narrower than the Civil Rehabilitation Act, and only unsecured bank loans are subject to the ADR procedures. Trade credits are not subject to ADR proceedings and thus it is expected that an ADR firm will be able to continue its transactions with its suppliers<sup>8</sup>. In 2018, the Act on

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<sup>8</sup> Suppliers might fear risks to extend trade credits to a financially distressed customer in ADR for potential ADR failure. For listed companies that have publicly announced ADR applications, however, there is a concern that if ADR is not successful, suppliers will not be able to receive payment for their accounts

Strengthening Industrial Competitiveness was revised to protect certified small trade creditors when an ADR is converted to Corporate Reorganization or to Civil Rehabilitation.

In Corporate Reorganization, all claims including collateralized claims are subject to the procedure. The rights of secured creditors can also be changed by voting of creditors' meeting. Recently, Corporate Reorganization filings were rare. In 2022, Marelli Holdings, a major automotive parts manufacturer acquired by the US investment fund KKR<sup>9</sup>, applied for Simplified Rehabilitation<sup>10</sup> because its ADR plan was not approved. Given the strong power of small creditors in Civil Rehabilitation, both ADR and Civil Rehabilitation are insolvency resolutions to mainly restructure unsecured bank debt. In this paper, we compare turnaround alternative dispute resolution, a structured out-of-court debt workout procedure in comparison with Civil Rehabilitation.

### 3.Data and sample selection

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receivable. Saruyama and Xu (2025) report a lawsuit between Escon and Hazama, one of its suppliers of condominium construction. Hazama feared potential bankruptcy, and suspended construction based on the contract clauses regarding cases of excess debt.

<sup>9</sup> MARELLI Holding is a global company manufacturing automotive components. KKR Japan acquired Marelli Corporation (formerly Calsonic Kansei Corporation) in 2017 and Marelli Europe S.p.A. (formerly Magneti Marelli S.p.A.) in 2018. The restructuring plan of the failed ADR was transferred in the Simplified Civil Rehabilitation proceeding, and the plan was approved only in 33 days.

<sup>10</sup> This procedure is available when the number of opposing creditors is less than half of all creditors and the amount of opposing claims is less than one-fifth of the total amount of claims. The usual procedure of sending a rehabilitation plan proposal to creditors and obtaining written approval is unnecessary, and the procedure can be completed quickly unless there are objections from creditors. It is the first case for MARELLI Holdings to apply for Simplified Rehabilitation as transfer of the failed ADR in 2022. Following the 2021 revised Industrial Competitiveness Enhancement Act, if more than three-fifths of the creditors on a monetary basis agree to the rehabilitation plan, the restructuring plan negotiated in the ADR will be taken into consideration when moving to legal.

### **Private workouts**

Different from other kinds of private restructuring, identifying ADR firms is straightforward. For most publicly traded firms, an ADR begins or ends with a formal public announcement as well as detailed restructuring information. This study uses the same sampling procedure of an ADR restructuring as Saruyama and Xu (2025). ADR is a form of private renegotiation as alternative mechanisms for dealing with financial distress. A firm is economically and financially distressed if it has difficulties meeting the payments on its debt. We select ADR firms with post-ADR TSR financial data.

In ADR, a financially distressed firm negotiates restructuring loans with lending banks, and a certified ADR organization performs arbitration and mediation as a third party. Like private restructuring in Gilson et al. (1990), the resolution is one or more of following consequences: (i) extend maturity of loans, (ii) reduce required interest or principal repayments on loans; or (iii) replace loans with equity securities (common shares or class shares convertible into common shares).

### **Civil Rehabilitation firms**

For Civil Rehabilitation, we use TSR database on financial data as well as non-financial information for both listed firms and small and medium-sized firms. First, company information on bankruptcy experience is used to identify firms applying Civil Rehabilitation. We select firms with financial data around Civil Rehabilitation. Most firms dropped out from TSR database after filing for Civil Rehabilitation and the required financial data is available for 75 Civil Rehabilitation firms.

This study analyzes a sample of 19 companies that applied for ADR and 75 firms applied for Civil Rehabilitation during May 2007-December 2020. Out of 19 ADR cases, there are three cases of rescheduling without debt forgiveness or debt equity swaps. Information on debt restructuring plans and other relevant data are obtained from the NIKKEI, the NIKKEI FinancialQuest, the NIKKEI ValueSearch, the eol, the companies' disclosure documents.

### **Debt restructuring frequencies**

Most of Civil Rehabilitation filings in the sample is clustered in the years 2008 and 2009 (see Table 1). This is consistent with the timing of the global financial crisis, when one would expect there to be relatively more reported cases of financial distress. Recently, TSR reported that Civil Rehabilitation filings have declined and most firms filed for liquidation<sup>11</sup> because of increases in structured private workouts. ADR applications is clustered in 2009, 2010 and 2020. This is consistent with the timing of the global financial crisis and the COVID-19. This suggests that ADR is increasing its importance in business turnaround. Recently, the Act on Financial Debt Adjustment Procedures for Enterprises to Facilitate Business Recovery (the Early Business Recovery Act) was passed in 2025 and it is to take effect in late 2026 in response to increasing needs for structured private workouts.

### **Summary Statistics**

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<sup>11</sup> For detail, see TSR report on increasing bankrupt liquidation rates ([https://www.tsr-net.co.jp/data/detail/1201587\\_1527.html](https://www.tsr-net.co.jp/data/detail/1201587_1527.html)).

Table 2 shows selected firm characteristics in the latest year before debt restructuring resolution. Panel A shows all firms are deeply financially distressed as measured by the ratio of total liabilities to total assets. The mean (median) ratio of total liabilities to total assets is 1.032 (0.924) for Civil Rehabilitation firms, whereas more than half of unsuccessful ADR firms have total liabilities larger than total assets. The ADR firms are in deep economic distress. On average, the retained losses are 49.1% of total assets. More than half of firms have retained losses of more than 32.5% of assets. This strongly suggests substantial losses or consecutive losses of ADR firms. Retained losses destroy net assets and consequently the mean (median) ratio of liability/assets is 1.002 (0.973). Also, liquidity has dried up till ADR application. Both the mean (median) cash-to-current-liabilities ratio and the mean (median) current ratio (current assets/current liabilities) are below one. In sum, ADR firms have poor financial health due to consecutive or substantial operating losses and potentially default on debt. Likewise, Civil Rehabilitation firms have a unsustainable financial position and poor operating performance as shown in Panel B. The mean (median) ratio of total liabilities to total assets is 1.032 (0.924) for Civil Rehabilitation firms. Most Civil Rehabilitation firms have current ratio and quick ratio below one. The mean ratio of retained losses/assets is not as high as that in ADR firms, however. On average, Civil Rehabilitation firms have been making operating losses like ADR firms. For small ADR firms mediated by SMERSC, about half of are effectively or potentially bankrupt in Honda et al. (2023).

In comparison, the mean (median) book leverage of US firms that are reorganized in Chapter 11 is .657 (.578) in Gilson et al. (2015). The mean (median) EBITDA/Assets is 0.07 (0.08), in comparison with the mean (median) of -.003 (.001) of firms that file for Civil Rehabilitation. The aim of Civil Rehabilitation Act is to provide incentives for managers in economic difficulty to restructure debt fast to avoid liquidation. Also, ADR aims to provide economically viable firms in financial distress to fail fast and resolve quickly. As shown above, most Civil Rehabilitation firms and ADR firms are potentially bankrupt. It remains an unanswered empirical question why Civil Rehabilitation firms and ADR firms are allowed to waste significant time and resources so long but have not undertaken any drastic debt restructuring until they virtually go bankrupt. Also, it remains a puzzle why lending banks do not withdraw loans until such borrowing firms get insolvent.

The mean (median) bank debt ratio measured as the ratio of total loans to total liabilities is .408 (.348) for ADR firms, whereas the mean (median) bank debt ratio is .637 (.494) for Civil Rehabilitation firms. Bank reliance of ADR sample firms is not different from the mean (median) of .40 (.36) in the US firms that successfully restructure debt privately in Gilson et al. (1990). In previous studies, firms that restructure their debt privately are generally larger, as measured by the book value of assets or the number of employees (Gilson et al., 1990; Xu, 2005; Honda et al., 2023). Likewise, ADR firms are much larger than Civil Rehabilitation firms both in terms of employment and assets.

#### **4. Empirical Results**

This section presents a probit regression analysis that relates the choices between a private workout and Civil Rehabilitation that relates the choices to our proxies of relative restructuring costs. The dependent variable equals one if a firm uses a private workout and zero otherwise. A positive coefficient on an independent variable in the regressions implies that firms for which this variable takes on a higher value are more likely to settle with creditors in ADR. Our explanatory variables are firm size in terms of total liabilities, the debt-to-assets ratio measured as the ratio of total liabilities to total assets, profitability measure as the ratio of operating income to total assets, long-term profitability as retained earnings/losses carry forward divided by assets as a proxy for tax shield to offset against the debt forgiveness income.

When a listed company utilizes ADR, shareholders benefit from avoiding delisting and maintaining the liquidity of their shares. Unlike Civil Rehabilitation, ADR debt restructuring is generally carried out with the aim of maintaining the company's listing, thus potentially avoiding the risk of their shares becoming worthless. In a large company, shareholders can use ADR to avoid more losses in bankruptcy. Thus, a large firm prefers ADR to Civil Rehabilitation. According to the standards of the Tokyo Stock Exchange and other stock exchanges, a listed firm that falls into insolvency (liabilities exceed assets), it will be delisted unless it can resolve the issue within one year. Debt forgiveness is a means to avoid delisting. If the leverage exceeds 100% highly, the creditors need to forgive more debt

and it would be difficult for the creditors to compromise. Consequentially, highly leveraged firms are less likely to use ADR.

#### **4.1 Determinants of ADR and Civil Rehabilitation**

Table 3 shows that firms with more retained losses carry forward are more likely to use ADR rather than to file Civil Rehabilitation. Retained losses can be cancelled by income of debt forgiveness and this reduces transaction costs of private debt restructuring. High leveraged firms tend to use Civil Rehabilitation than ADR because it is difficult for creditors to forgive a large fraction of debt to avoid delisting. Large firms are more likely to use ADR than Civil Rehabilitation. We know little about costs for ADR and costs for Civil Rehabilitation. Gilson et al. (1990) report 92 percent of firms in the sample first attempted to settle privately with creditors. Several listed companies and large private companies<sup>12</sup> attempted to use ADR before filing for Corporate Reorganization, Civil Rehabilitation, Liquidation or Chapter 11. If bankruptcy is less costly for large firms, these firms will never attempt to settle privately.

#### **Pre-distress and post-resolution performance**

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<sup>12</sup> E.g., JAPAN Airline, Sanko Steamship and Marelli Corporation attempted to apply ADR but failed.

Now we analyze consequences of debt restructuring. The distress year is defined as year -1, the full fiscal year end immediately preceding filing for Civil rehabilitation or ADR application and debt restructuring year is year 0, the full fiscal year end immediately following Civil Rehabilitation resolution or ADR resolution<sup>13</sup>. Table 4 shows summary statistics of pre-distress firm characteristics for year -3 to -2. Year -2 (-3) is the second (third) full fiscal year end prior to debt restructuring. Both ADR firms and Civil Rehabilitation firms have a sounder financial position in terms of book leverage. I use financial data from year +1 to +3. Year +1 (+2, +3) is the first (second, third) full fiscal year following Civil Rehabilitation resolution or ADR resolution. Post-resolution performance in Table 5 shows that Civil Rehabilitation firms have a much higher leverage than before Civil Rehabilitation, in comparison with a large decline in leverage. Also, there is credit collapse of Civil Rehabilitation firms in terms of TSR credit score. By contrast, the mean leverage of ADR firms is lightly lower than pre-distress and the decline in mean credit score is much smaller than Civil Rehabilitation. The sales asset turnover rises but operating profitability remains poor.

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<sup>13</sup> In most cases, Civil Rehabilitation firms or ADR firms reach resolution within a year. For detail, see TSR's follow-up survey of companies filing for Civil Rehabilitation during fiscal year 2000 to 2015 ([https://www.tsr-net.co.jp/data/detail/1188705\\_1527.html](https://www.tsr-net.co.jp/data/detail/1188705_1527.html)). It is plausible that a firm entering financial and economic distress in year -1 chooses Civil Rehabilitation or ADR and a resolution is reached between year -1 and year 0.

## Comparative analysis

We focus on whether post-resolution performance recovers to pre-distress level. We estimate the following two-way fixed effects DID model to compare the effects of ADR resolution and the effects of Civil Rehabilitation on post-resolution performance relative to pre-distress performance.

$$Y_{it} = \alpha_i + \gamma_t + \beta_1 \text{Post-resolution} + \beta_2 \text{ADR} \times \text{Post-resolution} + \beta_3 \text{Rescheduling} \times \text{Post-resolution}$$

where  $Y_{it}$  is a post-resolution measure of performance for firm  $i$  in year  $t$ . *Post-resolution* is a dummy variable that equals one if it is a full fiscal year after resolution or later and zero otherwise. Year 0 is not included in the post-resolution. *ADR* is a dummy variable that equals one if there is debt forgiveness in ADR. *Rescheduling* is a dummy variable that equals one if bank loans are rescheduled but without forgiveness in ADR. We distinguish rescheduling only from debt forgiveness for ADR. We use book leverage, TSR credit scores, retained earnings (losses)/assets, current ratio, quick ratio as measures for financial soundness. We take natural logarithms of assets, sales, the number of employees to measure downsizing around debt restructuring. To measure debt restructuring, we take natural logarithms of short-term loans, long-term loans and total loans as well as bank reliance measures as the amount of total loans to total liabilities. For operating performance, the asset sales turnover ratio, operating income/assets, EBITDA/assets, operating income/sales and EBITDA/sales are used.

The coefficient  $\beta_1$  on *Post-resolution* represents the difference in the performance of firms between pre-distress and post-resolution. We focus on the coefficient of  $\beta_2$  on the interaction term of

*ADR* with debt forgiveness and *Post-resolution*, which represents the effects of *ADR* with relevant debt forgiveness. If *ADR* with debt forgiveness improves the firm's financial soundness relative to Civil Rehabilitation firms,  $\beta_2$  should be negative in the estimation for book leverage and positive in the estimations for credit scores, operating efficiency, operating profitability and operating margin.

After Civil Rehabilitation, there are increases in liability to assets ratio as the coefficient on *Post-resolution* indicates in Table 6. The main reason is substantial increases in retained losses soon after filing for Civil Rehabilitation. Large special income from discharge of indebtedness<sup>14</sup> were not enough to wipe out increased accumulated losses. In comparison, *ADR* firms wiped out a quite part of accumulated losses and consequently their leverages declined after debt forgiveness. Also, we can see substantial improvement in quick ratio of *ADR* firms after debt forgiveness. It is not the case for firms that only reschedule their debt in *ADR*.

Both *ADR* applications and Civil Rehabilitation filings are publicly announced and ex-post creditworthiness declined. However, ex-post insolvency risks of *ADR* firms with debt forgiveness are significantly smaller compared with Civil rehabilitation. Interestingly, the coefficients on the variable *Rescheduling* $\times$ *Post-resolution* indicates that the effects of *ADR* with debt forgiveness on safety

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<sup>14</sup> TDB reported that the average recovery rate of Civil Rehabilitation is around 15% to 8.6% (e.g., the Survey on recovery rate of Civil Rehabilitation during 2021-2022, [https://www.tdb.co.jp/report/economic/55dof4xb\\_etc/](https://www.tdb.co.jp/report/economic/55dof4xb_etc/)).

indicators are not observed for ADR firms that only reschedule their bank loans. Also, for rescheduling only ADR there is large financial collapse in terms of credit scores. In short, firms use ADR debt forgiveness to avoid loss of creditability. Likewise, Honda et al. (2023) find that cutoff of debt via discharge in indebtedness and debt equity swap improve credit worthiness<sup>15</sup> in comparison with firms that mainly take SMERSC rescheduling measures.

It is widely believed that using ADR can keep reputation to uphold and thus ADR firms are able to continue transactions with suppliers as they used to do pre-distress. We use account receivable/liabilities, account receivable/costs of sales to measure insolvency resolution effects of ADR on reputation for transactions with suppliers. We find no difference in using trade credit post-resolution between ADR firms and Civil Rehabilitation firms. One interpretation is that small creditors are protected in Civil Rehabilitation if fully repaying trade credits is necessary for rehabilitation<sup>16</sup>.

Following insolvency resolution, insolvent firms experience substantial downsizing in assets,

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<sup>15</sup> Debt forgiveness and debt equity swaps are rare for private debt restructuring supported by the SMERSC. Also, debt forgiveness does not reduce bankruptcy likelihoods following debt forgiveness.

<sup>16</sup> Also, it is notable that trade receivables, customer mileage points and lease receivables were protected in JAPAN AIRLINE(JAL)'s Corporate Reorganization. Likewise, Chapter 11 also provides several protections for trade creditors. First, post-petition claims have administrative expense status and pre-petition trade claims of critical vendors could also be paid (Sato, 2025). Critical vendors are creditors whose goods or services are essential to reorganization in Chapter 11. The debtor company or trustee may seek court approval to pay both pre-petition and post-petition debts to such vendors as administrative expenses. Indeed, Sato (2025) reports "Marelli filed a Critical Vendor Motion with the court on June 11, 2025, seeking interim approval to pay critical vendors a total of approximately \$110 million".

employees and sales, as the coefficients on the variable *Post-resolution* indicate in Table 7. ADR firms shrink less than Civil Rehabilitation firms. Rescheduling only ADR firms shrink as much as Civil Rehabilitation firms, however. It can be interpreted as delays in business restructuring following ADR for relatively high costs to reduce workforce<sup>17</sup> following private settlement in comparison to legal resolutions. Moreover, it is costly to finance business restructuring for stand-alone restructuring. Likewise, liabilities, short-term loans, long-term loans and loans are reduced largely following insolvency resolution, as reported in Table 8. In comparison, bank debt of ADR firms is not reduced as much as Civil Rehabilitation firms. Not surprisingly, there are no changes in debt or debt composition in rescheduling only ADR and their reliance on bank debt increase in comparison with cases with debt forgiveness. The recovery for unsecured debt is around 10% in Civil Rehabilitation as mentioned above and one of merits of Civil Rehabilitation is large cutoff on bank debt. It is consistent with the empirical result on choices between ADR and Civil Rehabilitation. In Gilson (1997), firms remain highly leveraged after a private workout, whereas post-Chapter 11 leverage falls by more.

It is believed that business turnaround ADR procedures allow financially distressed

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<sup>17</sup> According to the annual reports, it costed 11.5 billion yen for AKEBONO BRAKE INDUSTRY to restructure its businesses during 2019-2025 after ADR debt restructuring. It is 50.7% of its stock market value or half of money newly raised in issuing new shares after ADR conclusion. During the same time, AKEBONO reduced its 38% of employees by costly early retirement measures. It is quick to work out the ADR plan, but AKEBONO has a long employment cutting journey to go.

companies to fail fast and resolve quickly to minimize damage to business value. In other words, damage to business value is larger for procedures. Now, we use following operating performance measures, e.g., asset turnover ratio (sales/assets), operating income/assets, earnings before interest, taxes, depreciation and amortization/assets or sales, as a proxy for business value. Both Civil Rehabilitation and ADR resolutions improve operating efficiency of insolvent firms in using their assets to generate revenue and there are no significant differences between ADR and Civil Rehabilitation, as Table 9 reports. Also, the ratio operating income/assets recovers to pre-distress level. Avoiding financial collapse in Civil Rehabilitation is a good start for ADR firms to restructure their businesses. However, we find no significant difference between post-restructuring operation performance between ADR and Civil Rehabilitation. The only difference is that post-rescheduling operating income/sales improves more than Civil Rehabilitation or ADR debt forgiveness<sup>18</sup>. Hotchkiss and Mooradian (1997) find that post restructuring operating performance is similar between workouts and bankruptcies for firms with no vulture involvement and post-restructuring performance is better for bankruptcies than workouts in the first year after the restructuring when vultures are involved. Nonetheless, there are still a large fraction of the firms experiencing negative operating income after the restructuring.

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<sup>18</sup> The improved performance in cases where firms only reschedule debt in ADR contrasts with the results of Hoda et al. (2023) who examine that debt forgiveness improve net profits relative to rescheduling.

## Discussions

The findings suggest that there are no one-size-fits-all debt restructuring procedures. In the real world, some firms file for Civil Rehabilitation without private restructuring attempt. It is a choice between a quick resolution and a thorough resolution. Marelli is a good case to illustrate it. In 2022, Marelli attempted to use ADR but failed. Soon, the ADR debt restructuring plan was converted to Simplified Rehabilitation based on the Act on Strengthening Industrial Competitiveness revised in 2021<sup>19</sup> and the company completed its Simplified Rehabilitation within two months<sup>20</sup>. Simplified Rehabilitation is as quick as ADR because it is prepackaged and simple as ADR. However, the quick Simplified Rehabilitation resolution only successfully restructured its unsecured bank debt. The company entered Chapter 11 in 2025. 100% of its secured debt would be discharged and KKR lost control<sup>21</sup>. Marelli said it would receive \$1.1 billion debtor-in-possession financing from its lenders, and the DIP lenders would take ownership of the business once it emerges from Chapter 11, subject to a 45-day

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<sup>19</sup> Even if a ADR fails due to opposition from some creditors, the plan created through the ADR will still be valid as a rehabilitation plan even in a Simplified Rehabilitation process. This procedure allows for the establishment of a rehabilitation plan in a simple and swift manner by omitting the time-consuming process of investigating and confirming rehabilitation claims within the civil rehabilitation process (Article 211 et seq. of the Civil Rehabilitation Act).

<sup>20</sup> A quarter of the ADR attempts have stalled - After 15 years since its founding, Marelli and others are facing hurdles in achieving unanimous agreement; distrust of foreign banks due to perceived lack of transparency also remains (<https://www.nikkei.com/article/DGKKZO63005150Z20C22A7TCJ000/>).

<sup>21</sup> Marelli Initiates Voluntary U.S. Chapter 11, Press Releases 11.06.2025, Marelli (<https://www.marelli.com/en/news/marelli-voluntary-us-chapter-11.html>)

overbid process in which other parties could bid for it. The 45-day overbid process concluded on July 28, 2025. This suggests that restructuring senior debt is required to organize the company in the second bankruptcy, while only unsecured claims are subject to ADR, Simplified Rehabilitation, or Civil Rehabilitation<sup>22</sup>. It is notable that the prepackaged Chapter 11 is as quick as ADR or Simplified Rehabilitation though the debt composition of Chapter 11 firms is more complex. Most importantly, the company said “Marelli does not expect any operational impact from the Chapter 11 process”. Therefore, filing Chapter 11 is the best choice for Marelli.

An overbid process is standard in the Chapter 11 process when selling substantially all as a going concern or significant assets of a debtor, particularly under a Section 363 sale. The overbid process of Chapter 11 procedure is quick, open, transparent and fair to ensure the sale price to be the best possible. The process often begins with a stalking horse, an initial buyer who sets the floor price and negotiates the initial terms. To provide incentives to invest time in due diligence, the court often approves break-up fees or expense reimbursements if a stalking horse is outbid. There are formal rules approved by the court, including minimum overbid increments, often 5% or more over the initial offer, deadline dates, and deposit requirements. Section 363 has become established as a business

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<sup>22</sup> Additionally, reducing liabilities related to retiree health care trust or pension obligation is required to reorganize a distressed company. E.g., General Motors restructured debt that the company owe to its retiree health care trust in Chapter 11 and Japan Airline reduced excess employee pension liabilities in its Corporate Reorganization.

restructuring practice in the United States, especially since the 2000s. Gilson et al. (2015) document that Section 363 can sell distressed companies at a higher price as following. First, it is less legal risky to buy distressed firms supervised by the court. It will increase expected net proceeds by the sale in a court-supervised competitive auction.

Section 363 can be less costly for M&A in distress. Recently, stand-alone debt restructuring was rare. Likewise, most ADR firms are acquired following ADR and thus the ADR procedures are virtually M&As in distress. Revising bankruptcy laws by implementing court-supervised open, transparent, competitive auctions like Section 363 Sale would increase choices for distressed firms. Gilson et al. (2015) point out that M&A in bankruptcy is more likely when the costs of financing a reorganization are greater than financing costs to a potential acquirer. In addition to high refinancing costs<sup>23</sup>, it can be costly for business restructuring even if private debt restructuring is settled less costly. Especially, direct and indirect labor restructuring costs following private debt restructuring are much larger than direct and indirect bankruptcy costs<sup>24</sup>. The Chapter 11 process ensures the final buyer acquires

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<sup>23</sup> Refinancing costs can be expensive following ADR. AKEBONO announced completion of ADR and removal of the note on the going concern assumption in 2024. To repay its ADR debt, however, it borrowed a five-year syndicated 32-billion-yen loan with a 4.62% interest rate. The fees were 1 billion yen and accounted for one-third of annual operating income. Long-term prime rate was 1.8% in 2024 and AKBONO paid risk premium as high as 2.82%. According to its 2024 annual report, the interest rate of its short-term loan was as high as 6.97%. High refinancing costs following the completion of ADR should be counted into costs for private debt restructuring.

<sup>24</sup> See Footnote 17 for labor restructuring of AKEBONO.

assets free and clear of liens, claims, and encumbrances. Likewise, a key advantage of the Corporate Reorganization process is to restructure employment clear and free of labor dispute<sup>25</sup>. In short, the rise in M&A in bankruptcy provides more choices for bankrupt firms<sup>26</sup>.

Chapter 11 was widely viewed as a failure in the first decade, the 1980s. Bankruptcies took years and the business value was damaged<sup>27</sup>. For statutory reform and creative adaptation by

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<sup>25</sup> In many cases, drastic restructurings such as reducing pension liabilities, laying off employees and cutting off labor costs are necessary to increase corporate value. Generally, a firm must prove the necessity, the fulfillment efforts to avoid layoffs such as recruiting voluntary retirees, and the reasonability of criteria for personnel selection (see Saruyama and Xu, 2021). Bankrupt firms are eligible to lay off employees to survive. Also, the costs to avoid layoffs are much cheaper than additional severance pay for recruiting voluntary retirees in nonbankrupt firms. In short, labor restructuring is cash consuming and time consuming. This is the right reason for longer durations of Corporate Reorganization. Corporate Reorganization is powerful to lay off employees. In Japan, it is quite costly in terms of money and time to reduce employees. Nonetheless, labor disputes might occur. However, the court rules that layoffs in Corporate Reorganization after recruiting voluntary retirees are legally valid. For detail, see Japan Airlines Case (Osaka High Court Judgment, March 24, 2016). Thorough labor restructuring also encourages M&A in insolvency because a buyer must prove the necessity, the fulfillment efforts to avoid layoffs, and the reasonability of criteria for personnel selection to lay off overlapped employment. Such labor protection discourages M&A (Dessaint et al., Volpin, 2017).

<sup>26</sup> The rise of M&A in bankruptcy it has blurred traditional distinctions between “reorganization” and “liquidation”. The problem is not liquidation but how to liquidate a bankrupt firm. E.g., it is no problem if the viable core business is split of a bankrupt firm to a new company and the bankrupt firm is liquidated. Bankruptcy procedures are aimed at redeploying assets of a distressed firm efficiently.

<sup>27</sup> Hotchkiss (1995) document that over 40% of firms filing for Chapter 11 continued to experience operating losses in the three years following bankruptcy; 32% reentered bankruptcy or subsequently privately restructured their debt. Also, the continued involvement of prebankruptcy management in the restructuring process is strongly associated with poor post-bankruptcy performance. Likewise, Gilson (1997) addresses that transactions costs discourage debt reductions in out-of-court workouts and one-in-three firms restructuring debt privately subsequently experience financial distress. However, takeovers can facilitate the

bankruptcy practitioners and courts<sup>28</sup>, Chapter 11 procedures take months in the 2020s<sup>29</sup>. Especially, an overbid process connects reorganization value to market valuation: the true value that investors would pay for the business. Market valuations are reliable because the investors need to pay the price. In other words, Chapter 11 is a quick discovery for disputed business value in link to market valuations. Therefore, valuation disputes<sup>30</sup> decrease and the predictability of bankruptcy increases in market-based Chapter 11 (Roe and Simkovic, 2025).

Legal resolutions are outside options of private workouts and thus quick and less costly court-supervised corporate reorganizations would in turn lower the costs of private workouts. Marely's Simplified Rehabilitation suggests that Simplified Civil Rehabilitation can be as quick as ADR. Recently, the Insolvency Division, Tokyo District Court (Civil Division NO.20) started a new quicker

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efficient redeployment of assets of bankrupt firms in Hotchkiss and Mooradian (1998).

<sup>28</sup> Roe and Simkovic (2025) point out following changes helped to speed up business bankruptcy. First, practitioners and courts eventually learned how to use speed-up provisions embedded in the original 1978 Code (e.g., prebankruptcy consent to an already-packaged plan and structural aspects like the potential for a debtor-in-possession lender to play a central role and encourage a speedier process). Also, the 2005 amendments limit the debtor's period of exclusivity to propose a plan and thus prevent delay of resolution.

<sup>29</sup> In 2000s, three years after emergence from bankruptcy as an independent company under a plan of reorganization, 74.7% are still independent entities and 11.3% have refiled for bankruptcy as reported in Gilson, et al (2015). For sales of a going concern, survival rates are 80.0% three years after the sale, slightly higher than for firms that are reorganized.

<sup>30</sup> Equity holders have an interest in high valuations, but it does not make economic sense that equity holders are rescued at expenses of unsecured creditors. This is also a main reason for the collapse of the main bank system.

DIP Corporate Reorganization for Small and Medium-sized Enterprises. It is available for companies with liabilities below 5 billion yen and less damage to business value. Moreover, the Early Business Recovery Act (the Act on Financial Debt Adjustment Procedures for Early Business Recovery) will take effect in 2026. The point is how to quickly discover true business value of a financially distressed firm by linking market valuations to judicially determined value. The evolution of Chapter 11 provides important lessons for statutory reform and adaptation by bankruptcy practitioners and courts outside USA.

## **5. Conclusions**

It is widely believed that the ADR procedure is quicker, more flexible and the damage of firm value is smaller, compared to Civil Rehabilitation or other legal resolutions. It is the first that this study provides innovative evidence on business turnaround ADR in comparison with Civil Rehabilitation. Large firms, firms with more retained losses, are more likely to use ADR than Civil Rehabilitation. High leveraged firms tend to use Civil Rehabilitation than ADR. For performance, firms after ADR have a lower leverage, a better credit score and a higher quick ratio than that after Civil Rehabilitation. Civil Rehabilitation firms reduce assets and employment more than ADR firms. Operating efficiency improvement and profitability recovery are the same. Neither ADR firms nor Civil Rehabilitation firms reduce trade credit use.

The contributions of this paper are as follows: We only know less than 30% of rehabilitation firms survived as TSR reports. This study is the first to compare pre-petition performance with post-conclusion performance using financial data of surviving Civil Rehabilitation firms. We find credit collapse, increases in leverage and increases in retained losses after Civil Rehabilitation conclusion. This analysis on surviving companies undergoing Civil Rehabilitation is essential to investigate the role of turnaround ADR as private alternative of legal resolution. We shed new light on the literature of comparative analysis of structured private workouts and court-supervised reorganizations.

Our results have important implications for business turnaround. First, it is necessary to work out policy measures to provide incentives for economically viable but financially distressed firms to fail fast and resolve quickly. After 2000, the practice of policy measures such as the Civile Rehabilitation Act has proven that it is quite tough to achieve this aim to fail fast. It is required to figure out the factors that enable firms to waste time and resources so long and fail too late. Recently, the revised Corporate Governance Code in 2026 includes a requirement for the board of directors to review whether the company is effectively utilizing its cash reserves. Excess cash and marketable securities in declining firms might allow managers and employees who fear failing will harm their careers to resist downsizing and restructuring fast to adapt to market changes and technology changes. Policy measures reducing free cash in mature firms would enable economically and financially distressed firms to fail fast. Also, legal resolutions are outside options of private workouts and thus quick and

less costly court-supervised corporate reorganizations would in turn lower the costs of private workouts. Marelly's Simplified Rehabilitation, recent adaptation by the Insolvency Division of Tokyo District Court and amendments suggest that Simplified Civil Rehabilitation or Corporate Reorganization can be quicker. The point is how to quickly discover true business value of a financially distressed firm by linking market valuations to judicially determined value. The evolution of Chapter 11 provides important lessons for statutory reform and adaptation by bankruptcy practitioners.

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Table 1 Insolvency frequencies

Year	Civil Rehabilitation	ADR
2007	4	
2008	25	
2009	17	5
2010	4	4
2011	6	2
2012	4	
2013	1	1
2014	6	
2015	1	
2016	3	
2017	1	
2018		1
2019	1	2
2020	1	4
2021		
2022	1	
Sum	75	19

Table 2 Summary Statistics

Variable	ADR firms				Civil Rehabilitation firms			
	Mean	Median	Std. Dev	Obs	Mean	Median	Std. Dev	Obs
Book leverage	1.002	0.973	0.222	19	1.032	0.924	0.424	75
Retained earnings/assets	-0.491	-0.325	0.554	19	-0.191	-0.018	0.450	75
Operating income/assets	-0.103	-0.020	0.164	19	-0.043	0.003	0.139	75
EBITDA/assets	-0.069	0.004	0.176	19	-0.028	0.010	0.142	75
Operating income/sales	-0.325	-0.036	0.937	19	-0.067	0.003	0.339	75
Sales/assets	0.790	0.694	0.622	19	1.171	1.004	0.758	75
Accounts Payable/costs of sales	0.001	0.000	0.005	17	0.086	0.000	0.131	75
Accounts Payable/liabilities	0.066	0.039	0.076	19	0.091	0.074	0.078	75
ln(assets)	17.096	16.919	1.562	19	15.052	14.913	1.385	75
Quick ratio	0.539	0.283	0.901	19	0.507	0.373	0.455	75
Current ratio	0.900	0.715	0.723	19	1.122	0.983	0.750	75
ln(liabilities)	17.077	16.968	1.490	19	15.025	14.868	1.287	75
Loans/assets	0.370	0.294	0.342	19	0.658	0.512	0.525	75
Loans/liabilities	0.401	0.348	0.372	19	0.637	0.494	0.467	75
ln(long-term loans)	12.513	14.990	6.783	19	13.136	13.429	2.637	75
ln(short-term loans)	13.816	15.177	5.114	19	12.422	13.393	3.767	75
ln(employees)	5.246	5.328	1.251	19	4.422	4.454	0.902	75
Employees	392.684	205	585.610	19	135.613	85	270.232	75
Credit score	50.154	49	8.019	13	47.015	48.5	8.960	68
Plants	1.385	0	2.329	13	0.710	0	1.059	69
Branches	6.000	2	11	13	4.485	3	5.071	68

Table 3 Probit Analysis

Retained earnings/assets	-2.197***	-2.297***	-2.210***
	[0.711]	[0.741]	[0.707]
Book leverage	-2.309**	-2.382**	-2.273**
	[0.969]	[0.997]	[0.956]
Operating income/assets	-2.728	-2.888	-2.641
	[1.960]	[2.070]	[1.966]
ln(liabilities)	0.750***	0.780***	0.754***
	[0.180]	[0.197]	[0.183]
Quick ratio	-0.17		
	[0.562]		
Loans/liabilities		0.221	
		[0.510]	
Constant	-11.25***	-11.87***	-11.42***
	[3.071]	[3.321]	[3.079]
Observations	94	94	94
Pseudo R2	0.505	0.506	0.504
Log likelihood	-23.42	-23.37	-23.46

Table 4 Pre-distress Summary Statistics

Variable	ADR firms				Civil Rehabilitation firms			
	Mean	Median	Std. Dev	Obs	Mean	Median	Std. Dev	Obs
Book leverage	0.7773	0.826	0.1403	37	0.897	0.892	0.330	94
Retained earnings/assets	-0.143	-0.107	0.3679	37	-0.073	0.009	0.306	94
Operating income/assets	-0.009	0.011	0.1241	37	0.013	0.020	0.068	94
EBITDA/assets	0.0141	0.0403	0.1214	37	0.030	0.031	0.068	94
Operating income/sales	0.0241	0.0123	0.1831	37	-0.004	0.016	0.122	94
Sales/assets	0.759	0.716	0.542	37	1.271	1.160	0.682	94
Accounts Payable/costs of sales	0.003	0.000	0.013	31	0.080	0.000	0.121	94
Accounts Payable/liabilities	0.084	0.046	0.092	37	0.108	0.081	0.098	94
ln(assets)	17.418	17.171	1.5084	37	14.863	14.865	1.511	94
Quick ratio	0.9663	0.3558	1.4396	37	0.804	0.588	0.874	94
Current ratio	1.5401	1.3314	1.3176	37	1.398	1.076	1.087	94
ln(liabilities)	17.148	17.088	1.515	37	14.698	14.650	1.461	94
Loans/assets	0.438	0.3961	0.3424	37	0.584	0.449	0.527	94
Loans/liabilities	0.5725	0.5106	0.4552	37	0.628	0.533	0.482	94
ln(long-term loans)	14.656	15.661	4.2227	37	12.019	12.930	4.183	94
ln(short-term loans)	12.436	14.898	6.2785	37	11.742	12.567	4.013	94
ln(employees)	5.477	5.366	1.074	37	4.383	4.394	0.949	94
Employees	441.49	213	639.22	37	146.351	80	317.112	94
Credit score	54.933	56	8.5458	30	48.731	48.5	5.866	78
Plants	0.9333	0	1.8557	30	0.641	0	0.953	78
Branches	8.3571	2	12.452	28	4.308	3	5.344	78

Table 5 Post-resolution Summary Statistics

Variable	ADR firms				Civil Rehabilitation firms			
	Mean	Median	Std. Dev	Obs	Mean	Median	Std. Dev	Obs
Book leverage	0.7688	0.7757	0.3053	57	1.322	0.953	1.408	180
Retained earnings/assets	-0.225	-0.098	0.4381	57	-0.711	-0.214	1.632	180
Operating income/assets	-0.017	0.0248	0.2392	57	-0.035	0.001	0.183	180
EBITDA/assets	0.0002	0.043	0.2429	57	-0.019	0.005	0.183	180
Operating income/sales	-0.053	0.029	0.3451	57	-0.141	0.001	0.667	180
Sales/assets	0.890	0.752	0.752	57	1.578	1.324	1.175	180
Accounts Payable/costs of sales	0.002	0.000	0.007	50	0.102	0.000	0.195	180
Accounts Payable/liabilities	0.087	0.059	0.104	57	0.094	0.061	0.107	180
ln(assets)	16.583	16.731	1.5361	57	13.760	13.658	1.311	180
Quick ratio	6.5148	0.6231	17.55	57	1.461	0.996	1.517	180
Current ratio	7.326	1.909	17.727	57	2.447	1.801	2.276	180
ln(liabilities)	16.218	16.524	1.7828	57	13.776	13.635	1.347	180
Loans/assets	0.5511	0.3766	0.5492	57	0.641	0.119	1.771	180
Loans/liabilities	0.6666	0.4304	0.6416	57	0.472	0.095	0.615	180
ln(long-term loans)	11.848	14.789	6.7127	57	7.087	10.299	6.254	180
ln(short-term loans)	8.3558	12.64	7.3032	57	5.490	0.000	5.871	180
ln(employees)	4.9497	5.2832	1.4629	57	3.607	3.714	1.068	180
Employees	308.82	196	368.02	57	79.900	40	253.255	180
Credit score	43.895	44	4.7082	57	34.559	35	8.962	170
Plants	0.9474	0	1.6412	57	0.559	0	0.849	170
Branches	5.7407	1.5	14.27	54	2.291	1	3.384	165

Table 6 DID analysis on safety

	Book leverage	Ctcredit score	Retained earnings/assets	Quick ratio
ADR×Post-resolution	-0.422**	5.381***	0.728***	5.594***
	[0.188]	[1.515]	[0.242]	[1.159]
Rescheduling×Post-resolution	0.42	-10.32***	-0.676	-5.608**
	[0.424]	[3.374]	[0.544]	[2.607]
Post-resolution	0.312*	-12.48***	-0.726***	1.482
	[0.171]	[1.411]	[0.220]	[1.054]
Observations	544	489	544	544
R-squared	0.426	0.684	0.355	0.37

Table 7 DID analysis on downsizing

	ln(assets)	ln(employees)	ln(sales)
ADR × Post-resolution	0.559***	0.413***	0.633***
	[0.104]	[0.131]	[0.134]
Rescheduling × Post-resolution	-0.276	-0.352	-0.585*
	[0.234]	[0.295]	[0.302]
Post-resolution	-1.417***	-0.918***	-1.117***
	[0.0946]	[0.120]	[0.122]
Observations	544	544	544
R-squared	0.946	0.82	0.904

Table 8 DID analysis on debt restructuring

	ln(liabilities)	ln(loans)	ln(long-term loans)	ln(short-term loans)	Loans/liabilities	Accounts payable/liabilities
ADR × Post-resolution	0.236**	2.089***	2.945***	2.029**	0.173**	0.0153
	[0.120]	[0.735]	[0.908]	[0.988]	[0.0827]	[0.0143]
Rescheduling × Post-resolution	0.271	1.908	2.369	-2.294	0.590***	0.00181
	[0.269]	[1.654]	[2.043]	[2.223]	[0.186]	[0.0322]
Post-resolution	-1.290***	-4.487***	-5.585***	-5.727***	-0.244***	-0.00414
	[0.109]	[0.669]	[0.826]	[0.899]	[0.0753]	[0.0130]
Observations	544	544	544	544	544	544
R-squared	0.924	0.634	0.606	0.574	0.61	0.621

Table 9 DID analysis on operating performance

	Sales/assets	Operating income/assets	Ordinary income/assets	Operating income/sales	EBITDA/assets	Accounts Payable/costs of sales
ADR × Post-resolution	-0.0679	-0.0478	-0.0582	0.0395	-0.0564	0.0102
	[0.173]	[0.0573]	[0.0658]	[0.0975]	[0.0595]	[0.0466]
Rescheduling × Post-resolution	-0.211	0.0492	0.0396	0.592***	0.0638	0.000642
	[0.389]	[0.129]	[0.148]	[0.219]	[0.134]	[0.0983]
Post-resolution	0.613***	0.0118	0.0378	-0.074	0.0241	-0.0276
	[0.157]	[0.0521]	[0.0598]	[0.0888]	[0.0542]	[0.0398]
Observations	544	544	544	544	544	526
R-squared	0.542	0.318	0.347	0.377	0.307	0.369