When the Congress Says "PIP Your KERP": Performance Incentive Plans, Key Employee Retention Plans and, Chapter 11 Bankruptcy Resolution

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Abstract

Bankruptcy Abuse Prevention and Consumer Protection Act of 2005 (BAPCPA) imposed stringent requirements on Key Employee Retention Plan (KERP) adoptions and implicitly favored Performance Incentive Plans (PIPs) in the amended Chapter 11. We use court documents to differentiate between retention versus performance incentive plans, and examine their impact on bankruptcy resolution before and after BAPCPA. We find that PIPs effectiveness in reducing bankruptcy duration and improving operating performance post-Chapter 11 disappears after BAPCPA. We also find that pre-reform KERPs are associated with longer bankruptcy proceedings and lower operating performance. Our findings are consistent with the presence of regulatory arbitrage post-BAPCPA. (100 words)

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When the Congress Says "PIP Your KERP": Performance Incentive Plans, Key Employee Retention Plans, and Chapter 11 Bankruptcy Resolution

1. Introduction

Before the 2005 reform by the Bankruptcy Abuse Prevention and Consumer Protection Act (BAPCPA), firms in Chapter 11 could offer "pay-to-stay" and/or "pay-to-perform" contracts to their managers and employees whose work was deemed crucial for the bankrupt firm. Typically known as Key Employee Retention Plans (KERP) and Performance Incentive Plans (PIP), such bonus packages proposed by the management could be argued for or against by the different claimholders in the bankruptcy court. Prior to BAPCPA the bankruptcy judges generally approved the petitions for retention and/or performance bonuses so long as they did not contradict the "sound business judgment" and were deemed to be a "reasonable" compensation (see, e.g., Suhreptz, 2009). However, during early 2000s, many KERP approvals were heavily criticized for promising large bonuses to managers during highly publicized Chapter 11 cases (see, e.g., Hotchkiss, et al., 2008). For example, in the 2002 Enron bankruptcy, in spite of numerous objections by the Securities and Exchange Commission (SEC) and other interested parties, the bankruptcy judge approved the original retention plan estimated to be worth between $47.4 million to $130 million (The New York Times, March 30, 2002). Similarly, in 2001, Polaroid proposed a KERP of $19 million during Chapter 11 proceedings after having annulled the healthcare benefits of approximately 6,000 of its retirees just prior to its bankruptcy filing (The New York Times December 11, 2001 and December 30, 2001). Given the negative publicity surrounding these and other cases, for the public at large such bonus plans were analogous to self-dealing transactions proposed by irresponsible managers and approved by imprudent judges.

Motivated by the criticism that followed, the US Congress imposed severe restrictions on retention-bonuses when it reformed bankruptcy legislation with BAPCPA.[1] Since October 17, 2005 the amended Chapter 11 requires that retention bonuses fulfill a strict set of conditions that is difficult, if not impossible, to meet in practice: the management needs (i) to convince the court that the retention of the said employee(s) is essential for the survival of the business; (ii) to provide proof of a bona fide job offer of an equal or higher amount from another business, and (iii) to limit such bonuses to ten times the average per-employee pay made to non-management staff during the same year.[2] As in the Dana Corporation's 2006 bankruptcy case, failure to meet these conditions is cause for KERP-like proposals, irrespective of their labeling, to be dismissed by the judge (see for example, The New York Times, September 6, 2006). In contrast, because the new law did not impose any limitations on performance incentive bonuses, the latter were implicitly favored by the 2005 reform.

We conduct an empirical evaluation of the impact of "pay-to-stay" and "pay-to-perform" plans, as well as BAPCPA restrictions concerning retention bonuses, on bankruptcy resolution. To do so, we first use case-specific court documents to establish the presence of a bonus plan during Chapter 11 proceedings. Based on the contract specifics, we distinguish between "pay-to-stay" and "pay-to-perform" plans, which we refer to as KERP and PIP, respectively.[3] Then, using Chapter 11 cases with no such contracts as the control group, we test for the impact of retention and incentive plan adoptions before and after October 17, 2005 when BAPCPA became effective. Our goal is to examine whether there is any evidence that could justify the restrictions that the US Congress imposed on the contracting space for executive pay in a Chapter 11 bankruptcy.

The empirical evidence on the costs and benefits of KERPs during Chapter 11 is limited, that on PIPs is non-existent. Previous academic research examines (i) the evolution of number of KERPs

[1] The 109th Congress passed BAPCPA on March 10, 2005, which the House of Representatives approved on April 14, 2005. The reform was enacted on April 20, 2005 by the president. Chapter 11 specific provisions of the Act became effective on October 17, 2005. BAPCPA also made significant changes to other chapters of the bankruptcy code, but the non-Chapter 11 amendments of the Act are beyond the scope of our paper.
[2] See Appendix Table A1 for the full text of BAPCPA's Section 331 that amends Section 503 of Chapter 11.
[3] It should be noted that these contracts have been offered under various names. A non-exhaustive list of plan names we encountered in court documents includes "retention plan", "employee retention plan", "key employee retention bonus plan", "non-insider retention plan", "senior executive retention plan", "retention incentive plan", "employee retention and incentive program", "key employee retention and incentive target plan", "key employee milestone incentive and income protection plan", "incentive bonus plan", "management incentive plan", "emergence incentive plan", "key employee incentive plan", and "incentive plan", among others.

over time and the characteristics of Chapter 11 cases (Crutchley and Yost, 2008; and Bharath, Panchapegesan and Werner, 2010); (ii) the prevalence of Absolute Priority Deviations (APDs) and Debtor-in-Possession (DIP) financing when KERPs are present (Bharath, Panchapegesan and Werner, 2010); [4] and (iii) whether presence of hedge funds as stakeholders has any impact (among other Chapter 11 case characteristics) on KERP adoptions (Jiang, Li and Wang, 2012). This area of research provides no conclusive evidence as to whether retention schemes are valuable tools for turning around companies in distress or whether they are simply wasteful payouts suggested by self-dealing managers and approved by imprudent judges.

We contribute to the bankruptcy literature by evaluating the impact of KERP and PIP adoptions on Chapter 11 firms' performance before and after BAPCPA became effective. Our contribution is five-fold. First, to the best of our knowledge, we are the first to clearly distinguish between retention versus performance incentive contracts offered to employees of bankrupt firms using hand-collected data from court case documents. We observe that relying solely on keyword searches without going through contract details might misclassify PIPs as KERPs. Second, we examine which Chapter 11 case characteristics observable prior to bankruptcy judge's decision are associated with KERP and/or PIP adoptions and, and whether these were altered after BAPCPA adoption. Third, we examine the impact of KERP and PIP adoptions on Chapter 11 duration. We further breakdown the duration analysis into (i) time between filing and the incentive or retention plan adoption, and (ii) time between plan adoptions and bankruptcy resolution. In contrast to the existing literature, in our regressions we not only account for the presence of these incentive and retention contracts but also for their size (in total amount of dollars as well as dollars per targeted-employee) and coverage (the fraction of employees that were targeted). Fourth, we examine stock reactions around plan adoption dates (albeit with a smaller sample due to data restrictions). Finally, we examine the role of the presence and coverage of KERPs and PIPs on the operating performance of Chapter 11 companies (using non-adopting bankrupt firms as the benchmark). We find that the contracting space for bonus plans in Chapter 11 has changed after BAPCPA.

[4] For a definition of APDs see, e.g., Franks and Torous (1989), and for a definition of DIP financing see Dahiya et al. (2003).

Our analysis of the effects of plan adoptions shows that in the pre-BAPCPA period, relative to Chapter 11 cases with no compensation plans, PIPs were associated with shorter bankruptcy duration whereas KERPs with longer bankruptcy duration. This difference in bankruptcy duration between KERP and PIP cases, however, disappears post-BAPCPA, primarily due to an increase in duration of PIP cases, which join their KERP counterparts in being associated with longer bankruptcy duration than cases with no compensation plans. Our results on the association between KERP and PIP size and bankruptcy duration provide similar, albeit weaker, results.

Our examination of future operating performance reveals that during pre-BAPCPA period both stand-alone KERP and joint KERP-and-PIP cases exhibit better industry-adjusted ROA relative to Chapter 11 firms with no such plans. Moreover, we find that cases that involve a PIP have even higher industry-adjusted ROA than KERP and joint adoption cases. Similar to our findings for bankruptcy duration, post-BAPCPA there is no discernable operating performance difference between stand-alone PIP, stand-alone KERP, joint-adoption cases and cases with no compensation plan. This is primarily due to a decrease in future operating performance of PIP cases following BAPCPA.

Our results also show a significant decrease in the number and the likelihood of adoption of KERPs and a significant increase in the number and likelihood of adoption of PIPs after BAPCPA. Our findings also indicate a decrease in size of KERPs and an increase in size of PIPs, both as a percentage of total assets and plan-amount per employee, after the BAPCPA adoption. This is consistent with firms finding it difficult to meet the new stringent requirements for "pay-to-stay" contracts, and thus replacing them both in number and size with the "pay-to-perform" contracts on which BAPCPA imposed no restrictions. In addition, our findings indicate a higher likelihood of PIP adoption or joint KERP and PIP adoption, and a lower likelihood of KERP adoption in cases of increased creditor control (proxied for by DIP financing and cash collateral). We also observe a negative stock price reaction in the week prior to KERP adoptions (but no reaction to joint-adoptions). These results are consistent with the criticism that KERPs, which arise more often in cases where creditor control is weaker, were proposed by "self-dealing" management at the expense of creditors.

To summarize, our findings are consistent with PIP contracts reducing the direct costs of bankruptcy through shorter bankruptcy duration and improving firm's operating performance prior to

the latest Chapter 11 reform. By trying to suppress KERPs, which were deemed to be "self-dealing" plans proposed by unscrupulous managers, BAPCPA appears to have led to "structural arbitrage". Post-BAPCPA performance incentive contracts appear to have lost their effectiveness, most likely because post-reform PIPs appear to include features of KERPs on which the new version of the law imposes very stringent conditions.

The paper evolves as follows: in the next section we provide an overview of related literature on Chapter 11 bankruptcy, KERPs and PIPs. This is followed by data description (Section 3) and empirical analysis (Section 4). In section 5 we provide discussion or our results together with our conclusions.

2. Chapter 11 Bankruptcy, KERPs and PIPs

2.1. KERP versus PIP contracts pre-BAPCPA

Until the enactment of BAPCPA, there were no legal restrictions on pay-to-stay and pay-to-perform plans in bankruptcy. Motions for such plans were typically filed with the bankruptcy court under, among others, the Code's Section 363(b)(1).[5] The latter gives the judge the power to allow the trustee to use, sell, or lease property for transactions that fall outside the "ordinary course of business", including KERPs and PIPs according to the petitioners. Prior to BAPCPA bankruptcy judges typically approved such requests so long as they met the *sound business judgment rule*. Because the sound business judgment is very broadly defined in practice, KERPs and PIPs were typically approved prior to 2005.

When proposing a KERP to the bankruptcy court the management of Chapter 11 firms often argued that they have already lost some of their key employees due to bankruptcy filing, making it essential to retain the ones remaining in place. For example, Peregrine Systems in its 2002 bankruptcy petitioned that "… although the Debtors' monthly [employee] turnover rate (annualized) was historically 4% to 11%, during August and to date in September the rate of [employee] turnover was

[5] Such petitions are motivated by a number of sections of Chapter 11 code. For example, reference is always made to Section 105(a) that defines the very broad powers of the court, which allows it to "... issue any order, process, or judgment that is necessary or appropriate to carry out the provisions of [Chapter 11]", including decisions regarding extraordinary bonuses.

approximately 36% ...” (U.S. Bankruptcy Court District of Delaware, Peregrine Systems, Chapter 11 case no. 02-12470, page 17), while Drypers Corporation (a year 2000 bankruptcy case) was more precise: “… several officers and other executives have resigned, including the prior chief financial officer, director of information technology, and executive director of marketing. Drypers believes that additional non-executive and executive employees (including sales and operations personnel) may resign because of the uncertainty surrounding Drypers’ business and their future employment status.” (U.S. Bankruptcy Court Southern District of Texas, Houston Division, Drypers Corporation, Chapter 11 case no. 00-39360-H4-11, page 2). Other petitions linked key employees’ presence with going business value, and even the confidence of firm’s customers. For example, in the bankruptcy of ACT Manufacturing Inc. in 2001, the management argued that “… in light of the potential sale of business, it is critical that the Debtors retain various key employees in order to preserve the going concern value of the businesses as well as maintain customer confidence.” (U.S. Bankruptcy Court District of Massachusetts, Western Division, ACT Manufacturing, Inc., Chapter 11 case no. 01-47641-JBR, page 1). In certain KERP petitions the debtors argue for explicit recruitment costs (such as headhunter fees) as well as implicit operational costs associated with bringing the new recruits up-to-speed (U.S. Bankruptcy Court District of Massachusetts, Aerovox, Inc., Chapter 11 case no 269 BR 74).

A typical KERP includes a list of employees or categories of employees to which it applies, the global or individual amounts of the retention bonus (conditional on the targeted key employees staying with the firm), and a payment date. For example, Signal Apparel in its 2000 bankruptcy asked the court to authorize the “… Debtor to pay “stay bonuses” to the following employees (the “Key Employees”): Robert J. Powell, Esq. in the amount of $21,231.00, Gerald Mohamed in the amount of $5,000.00 and Sattie Bansi in the amount of $5,000.00” (U.S. Bankruptcy Court Southern District of New York, Signal Apparel Company, Chapter 11 case no. 00-B-14462, page 3). In other cases, the retention bonuses are a multiple of the salary: “The proposed KERP provides that 13 individuals are eligible to receive a six month bonus with the balance (i.e. 47 individuals) are eligible to receive a 3 month bonus. The total maximum payout for all Key Employees under the Retention Plan (exclusive of the CEO) will not exceed $2,347,411” (U.S. Bankruptcy Court District of Massachusetts, Western Division, ACT Manufacturing, Inc., Chapter 11 case no. 01-47641-JBR, page 5).

In contrast, PIPs tie the payment of bonuses to thresholds of performance that is measured using standard financial ratios such as earnings before interest, taxes, depreciation and amortization to total assets (EBITDA/TA). For example, Westpoint Stevens during its 2003 bankruptcy proceedings asked the court to approve the performance incentives program designed to "… reflect achievements of Company wide levels of EBITDA and cash availability, which are metrics more commonly associated with creditor or lender interests." (U.S. Bankruptcy Court Southern District of New York, Westpoint Stevens Inc., Chapter 11 case no. 03-13532-RDD, page 6). Typically, the management details the conditions required for the PIP to be effective. For example, in the 2003 bankruptcy of Galey and Lord, Inc., the management proposed that "Under the PIP, each Critical Employee in tiers 1 and 2 would be eligible for a bonus based on the Debtors' consolidated EBITDAR [earnings before interest, taxes, depreciation, amortization, and restructuring and bankruptcy related costs and charges] for the 18 month period ending on September 30, 2003. The Debtors would need to achieve a target consolidated EBITDAR of approximately $94.28 million for the relevant 18 month period for these Employees to receive a bonus from an aggregate bonus pool of approximately $297,000, and would need to achieve a target consolidated EBITDAR of approximately $106 million during the 18 month period for these Employees to receive a bonus from an aggregate bonus pool of approximately $1.75 million" (U.S. Bankruptcy Court, Southern District of New York, Galey & Lord, Inc., et al., Chapter 11 case no. 02-40445-ALG, page 5). Prior to BAPCPA, in many cases the debtors proposed, and courts approved, a KERP plus a PIP.

2.2. BAPCPA

A series of large bankruptcy cases involving highly publicized retention bonuses during 2001-2002 led to wide public criticism of bonuses in Chapter 11. In the footsteps of Enron and Polaroid cases already mentioned in the Introduction, additional polemic surrounding executive bonuses in the Global Crossing Ltd. and Kmart bankruptcies in the first half of 2002 appears to have prompted the first legislative proposal on KERPs. During the 107th Congress, the joint bill introduced on July 25, 2002 by senator Richard J. Durbin and representative William D. Delahunt proposed the Employee Abuse Prevention Act (EAPA) with a view "to protect employees and retirees from corporate

practices that deprive them of their earnings and retirement savings when a business files for bankruptcy under title 11, United States Code".[6] Among its goals, EAPA sought to amend Section 503 of Chapter 11 with a view to curb bonus during bankruptcy proceedings. Section 104 of the EAPA (titled "Limitation on retention bonuses, severance pay, and certain other payments") proposed that a new subsection 503(c) be added to Chapter 11. This new article proposed that retention bonuses not be allowed by the court unless (i) the payment is essential for the retention because the insider has a bona fide outside job offer for equal or higher amount of compensation, (ii) the insider provides work that is essential for the survival of the debtor, and (iii) either (a) the proposed transfer is not higher than ten times the average pay of a similar kind made to non-management employees during the calendar year, or (b) if no such payments were made to non-management staff the proposed transfer not be more than 25% of similar payments made to the insider in the previous calendar year.[7] Although the Congress did not approve the 2002 EAPA bill, the negative publicity surrounding KERPs continued as other Chapter 11 cases involving executive bonuses followed.

Three years later, previous efforts, some dating back to 1998, to reform the various chapters of the U.S. bankruptcy code gathered a new momentum under the republican majority and culminated in the legislative process for BAPCPA with the introduction of Senate bill S.256. During the BAPCPA debates, section 104 of the defunct EAPA was introduced (almost verbatim) as an amendment thanks to an initiative of late Senator Ted Kennedy (see for example, New York Times, August 26, 2009). Despite opposition, the Kennedy-amendment tying the approval of KERPs to a series of difficult to meet conditions was adopted. Section 331 of BAPCPA expanded Section 503 of Chapter 11 along the lines described above (for a full text of the added Section 503(c) see Appendix Table A1).

2.3. KERP versus PIP contracts post-BAPCPA

During the Senate hearings, both before and after the passage of the new law, the critics of BAPCPA Section 331 indicated that its provisions would make it all but impossible to maintain key

[6] 107th Congress, Senate bill S.2798 and House of Representatives bill H.R. 5221

[7] Section 104 of EAPA also sought to impose very similar restrictions on severance payments, which are beyond the scope of our paper.

employees who, after a job offer from another and plausibly financially healthier firm, would have incentives to follow their career elsewhere (for example, Congressional Hearing, March 9, 2005; Congressional Subcommittee Hearing, April 17, 2007). For example, bankruptcy judge Christopher S. Sontchi (Delaware Bankruptcy Court) believes that key employee retention plans make sense in spite of being essentially forbidden by Congress (Wall Street Journal, January 27, 2012).

In contrast BAPCPA does not impose such restrictions on PIP, or pay-for-value contracts, where pay is clearly linked to performance benchmarks. As a result, at least initially, debtors-in-possession were tempted to formulate any KERP that they may want to offer as a PIP contract. For example, in a much cited case, the New York Southern District Judge Burton Lifland denied the proposed bonus petition in the Dana Corp bankruptcy deeming it a "KERP" and arguing that "this compensation scheme walks like, talks like, and is a KERP" (The New York Times, September 6, 2006) and is, as such, forbidden according to the new Section 503(c) of Chapter 11 (e.g., DiPasquale and Crowley, 2010). We try to deduce whether such restrictions imposed by the Congress through BAPCPA make economic sense.

2.4. Analysis of KERPs in the academic literature

Even though retention bonuses, performance incentives, and executive compensation in bankruptcy are related concepts they are different in nature and scope. Past academic research, typically focuses only on the executive compensation in bankruptcy (Gilson and Vetsuypens, 1993; Henderson, 2006) and management turnover (Gilson, 1989), leaving out the role of retention and performance bonuses. While the role of PIPs has not been examined at all in the literature, three papers have, to varying degrees, examined the retention plans. Crutchley and Yost (2008) analyze 77 cases involving a KERP during 1997-2002. These authors use LoPucki's Bankruptcy Research Database between 1997-2002 and do a keyword search on Lexis-Nexis to identify KERP adopting bankrupt firms. Crutchley and Yost (2008) find that bankruptcy duration is longer for those firms that have a retention plan, but find no link between KERP presence and post-Chapter 11 stock performance. These authors also provide details on the total KERP size and the number of covered employees for a subsample of 42 firms, but do not use these variables in multivariate regressions as

we do with our larger sample. In an analysis of Chapter 11 bankruptcies over time, Bharath, Panchapegesan and Werner (2010) note that their sample of 157 KERPs is not distributed evenly over time: there is an increase in KERPs over the 1979-2005 period, with the first adoptions appearing in 1988. They analyze the link between presence of a KERP, DIP financing, APDs, and bankruptcy duration. While Bharath, Panchapegesan and Werner (2010) do not find a significant impact of the KERP on bankruptcy duration, they find that presence of the KERP reduces the probability of having an APD in bankruptcy. Crutchley and Yost (2008) and Bharath, Panchapegesan and Werner (2010) do not examine the link between the KERP adoptions and stock price reactions or operating performance, and do not evaluate the potential role of PIPs. Finally, Jiang, Li and Wang (2012) focus on the role of hedge funds in Chapter 11 resolutions. Tangentially, they observe that hedge funds' involvement in Chapter 11 bankruptcies is positively correlated with KERP adoptions. This finding is consistent with a positive value that hedge funds, in their role as activist stakeholders, associate with the adoption of KERPs to retain key employees.

It should also be noted that none of these studies considers the impact the recent legislative changes through BAPCPA may have on Chapter 11 bankruptcy resolution and operating performance of firms in or post-bankruptcy. Furthermore, our search yields a significantly larger number of cases involving a KERP or a PIP then either than Crutchley and Yost (2008), Bharath, Panchapegesan and Werner (2010), or Jiang, Li and Wang (2012). Moreover, we are able to account for the impact of size and coverage of these contracts in our regressions.

The academic law literature on KERPs and PIPs is also scant. Some legal scholars criticize the enactment of the BAPCPA in 2005 by arguing that failed firms will have difficult time retaining key employees, which will affect their ability to continue operating and maximize value (Kuney, 2004; Fishman, 2005; and Harring, 2008). We test the validity of these arguments by comparing the operating performance of bankrupt firms that adopt a KERP or a PIP with respect to those that do not. Other legal scholars predict that the change in the bankruptcy law will just incite lawyers and other restructuring professionals to find other means to retain key employees, through various loopholes that exist in the Code (see Mayer and Caplan, 2006; Rogoff, Sussman and Cohen, 2006). Finally,

others argue that, given the difficulties in designing retention plans in bankruptcy, failed firms might be less likely to file for bankruptcy in the first place (Nickles, 2006).[8]

Past research analyzes several measures of performance in bankruptcy and successful bankruptcy resolution. Those include, but are not restricted to: duration of bankruptcy proceedings, stock returns in bankruptcy, operating performance during and after bankruptcy, and bankruptcy outcome (reorganization vs. liquidation). For a complete review of literature see Hotchkiss et al. (2008). We discuss the literature on performance in bankruptcy where appropriate in the remainder of the study.

3. Data

3.1. Sample construction and distribution of cases over time

The starting point for our sample construction is the Altman-NYU Salomon Center Bankruptcy database which provides a comprehensive list of all large U.S. bankruptcies (with liabilities larger than $ 100 million at Chapter 11 filing).[9] From this database we obtain a list of 1,586 U.S. firms in Chapter 11 over the 20-year period between 1993 and 2011. We start in 1993 because prior to this date EDGAR filings, which we use to double-check on bankruptcies, were not available. We end with 2012, the most recent year for which data are available. This results in 14 years of pre- and 6 years of post-BAPCPA coverage. For each of the 1,586 companies we obtain the SIC code and the last annual financial report filed prior to the Chapter 11 filing. We exclude (i) financial companies (with SIC codes from 6000 to 6999), and (ii) non-financial companies for which the last filed annual financial report was not within 365 days prior to the bankruptcy filing date (iii) private firms (iv) firms without data in the Compustat database. The bankruptcy filing dates in the Altman database were verified using the Public Access to Court Electronic Records (PACER) database that provides access to case summaries, docket entries, and in many (but not all) cases access to either (i) a list of

[8] We refrain from testing these two points as our focus is on a comparative study of KERPs versus PIPs.
[9] http://pages.stern.nyu.edu/~ealtman/Credit%20&%20Debt%20Markets%20Databases.htm

court documents or (ii) actual court documents.[10] If a company filed for Chapter 11 more than once during our sample period, we only keep the first bankruptcy in the sample and discard the later filings.

We eliminate cases if the PACER database did not provide a list of court documents that would have allowed us to establish the presence or lack of retention or incentive plans. The remaining 512 bankruptcy cases, for which PACER provided a case number and a docket containing the descriptive list of all court documents pertaining to the Chapter 11 case, form our main sample. To establish the existence (or lack) of a KERP or a PIP plan we conduct a case-by-case search in the PACER document list, which provides brief descriptions of the court documents, with the following keywords: "retention", "incentive", "employee plan", "KERP", and "PIP". Following this search we found 292 cases (57% of the sample) in which the bankruptcy judge approved a KERP and/or a PIP, and 220 cases (43% of the sample) with no such plan.

Figure 1 presents the annual number of Chapter 11 bankruptcies, together with KERP and PIP plans approved by the courts over our sample period. The distribution of large non-financial Chapter 11 bankruptcies in our sample is bimodal. It starts with just two cases in 1993, passing the threshold of ten in 1996, peaking with 96 cases in 2001, steadily decreases after 2001, passing below 10 in the year in which BAPCPA was approved, with a smaller peak of 42 cases in 2009, only to decrease to 4 the final year. Prior to BAPCPA, KERPs appear to follow a similar pattern. With one KERP case in 1993, the number of approved retention plans increases to seven in 1996, with a maximum of 72 approved cases in 2001, only to decrease to seven in 2004. In contrast, the impact of BAPCPA's strict requirements on KERPs is evident: the number of KERPs remains flat between one and three per year.

The pre-BAPCPA pattern that we observe for KERPs is very similar to the ones observed by Bharath, Panchapegesan and Werner (2010), Crutchley and Yost (2008), and Jiang, Li and Kang (2012). Our parsing through court documents appears to yield a larger number of bankruptcy cases involving a KERP compared to these studies: 217 versus 157 in Bharath, Panchapegesan and Werner

[10] http://pacer.psc.uscourts.gov /usbci.html

(2010) who cover a longer time period;[11] 77 in Crutchley and Yost (2008) whose sample years are subsumed in ours; and 191 in Jiang, Li and Wang (2012). These disparities are due to differences in search algorithms, sample periods, and database sources. For example, in 2001, the peak year of large U.S. bankruptcies in our sample, we find 72 cases where a KERP was approved by the bankruptcy judge, compared to 35 KERPs listed by Bharath, Panchapegesan and Werner (2010), 26 indicated by Crutchley and Yost, and 34 observed by Jiang, Li and Wang (2012).

3.2. Descriptive statistics

The descriptive statistics for our sample are provided in Table 1, in which *D_* prefix denotes indicator variables. Out of our sample of 512 Chapter 11 cases, 34.57% include a stand-alone KERP (*D_KERP*), 8.79% a stand-alone PIP (*D_PIP*), and 13.67% involve joint KERP and PIP adoptions (*D_KERP&PIP*). As can be seen in Fig. 2, the proportion of bankruptcy cases involving a retention and/or a performance incentive plan decreases after the reform (from approximately 64% pre-BAPCPA to 35% after the reform). Of the 385 Chapter 11 cases between 1993-2005, 45.19% were KERPs, 3.38% PIPs, and 15.58% joint adoptions. In contrast, of the 127 cases in our sample post-BAPCPA the fractions of KERPs and joint-adoptions drop to 2.36% and 7.87%, respectively, whereas those involving PIP increase to 25.20%. The observed pre- versus post-BAPCPA differences are statistically significant at the conventional levels in t-tests. These changes are not surprising given the stringent requirements BAPCPA imposed on KERP adoptions. However, these changes do not rule out the possibility that PIP contracts proposed after the reform might have evolved to circumvent, at least partially, the limitations imposed on KERPs by incorporating some of their features.

In Table 1, we also present summary statistics for the observable bankruptcy-related characteristics of our sample. Prior research indicates that prepackaged bankruptcies differ from other Chapter 11 cases in terms of better financial condition at bankruptcy filing and significantly shorter bankruptcy duration (see e.g. Betker, 1995; Tashjian, Lease and McConnell, 1996). As a result, we expect that there would be less of a need to give retention or performance bonuses in pre-packaged

[11] Bharath, Panchapegesan and Werner (2010) cover 1979-2005 and have a total of seven KERP cases prior to 1993. For the years that overlap with our sample period the number of KERP cases in is 143.

bankruptcies. In Table 1, 29.88% of the whole sample involves a pre-packaged reorganization plan (*D_PREPACK*) prior to the bankruptcy filing date. The influence that the stockholders might exert during the bankruptcy proceedings (e.g., Betker 1995) is proxied by the presence of the equity committee (*D_EQCOMM*). In a bankrupt firm the shareholders have an out-of-money option, which may become in-the-money if employees have the incentives to exert the necessary effort. As such, we could expect that the propensity to have incentive and retention contracts would increase in the presence of a committee of equityholders. On the other hand, the latter may hold the management in place responsible for the bankruptcy and may not want to offer retention contracts even if they would be willing to offer performance incentives. We observe that approximately every one in ten bankruptcy case involves a committee defending equityholders' rights, a proportion that drops from roughly 11% before BAPCPA to 4% after the reform. We also control for the presence of debtor-in-possession (*D_DIP*) financing, which increases the influence of creditors in bankruptcy and can have a crucial impact on the decisions taken in bankruptcy (see Dahiya et al, 2003 and Chatterjee, Dhillon and Ramirez, 2004). We observe that 63.73% of cases in our sample get DIP financing. The release of the cash collateral (*D_CASHCOLL*) is observed in 67.65% of the whole sample, with the proportion increasing statistically significantly after-2005. We also observe that in our sample 41.41% of all cases were decided in Delaware (*D_DE*) courts, as opposed to 17% in the New York Southern District (*D_NYSD*) courts. We control for the filing venue (bankruptcy court) as it has been shown to have an impact on bankruptcy proceedings (see Hotchkiss, 1995; Chang and Schoar, 2006). The number of days spent in Chapter 11 (*DAYS*), which is equal to the days between Chapter 11 filing date and the disposition date is on average 471.49 days.[12] *DAYS* is significantly lower in the post-BAPCPA period (338.20 days) compared to pre-reform period (515.80 days), which is also almost five years longer. Our sample consists of large bankruptcy cases: for the filing firms pre-Chapter 11 the average of total assets (TA) is $ 1.75 billion, total liabilities $ 1.72 billion, number of employees 6,686.62. For the sample of firms in our sample, the average leverage ratio (*LEVERAGE*) is 1.10,

[12] For disposition dates missing from PACER database, we used those provided by LoPucki's Bankruptcy Research Database: http://lopucki.law.ucla.edu/index.htm

current assets to total assets ratio is 6.73% and, unsurprisingly, the return on assets (*ROA*) is a negative 26.55%.

In Table 2 we provide additional descriptive statistics for the 247 KERPs and 115 PIPs used in our analysis, to the extent they were available. Even though all U.S. Federal Bankruptcy courts have joined the PACER database as of year 2001, not all cases, nor all documents for a given case, have been scanned and uploaded as of 2012. As a result, the establishment of the presence or lack of a KERP or a PIP based on the descriptive list of court documents in PACER does not guarantee access to the plan-related documents approved by the court. Nevertheless, we could find and download court-approved retention and/or incentive plan documents for 208 cases out of 360 that had a KERP and/or a PIP (127 cases that involved a KERP and 81 cases that involved a PIP, some of which are joint adoptions).[13] We observe that the average size of PIP contracts (*PIP_$*) in our sample is $9.58 million, which is more than twice that for KERP contracts (*KERP_$*) of $4.64 million, a difference that is statistically significant at the 1%-level in a t-test. But the observed difference disappears once we scale the plans by the firms latest reported total assets or sales prior to Chapter 11: *KERP/TA* and *PIP/TA* are on average 0.4% to 0.5% of firm assets or sales, the difference is insignificant statistically.[14] Pay-for-performance plans are larger in their coverage of employees than retention plans: on average 422.7 employees are covered by PIPs (*PEMP*) in contrast to 136.3 employees by KERPs (*KEMP*); 8.13% of employees are offered a PIP (*PEMP/NEMP*) as opposed to 4.21% a KERP (*KEMP/NEMP*); and on average the promised PIP bonus is $ 218.3 thousand per employee (*PIP/NEMP*) compared to a KERP bonus of $ 85.5 thousand per employee (*KERP/NEMP*). The observed differences are statistically significant in t-tests at conventional levels. That said, we find no statistically significant differences on plan related durations: the number of days between Chapter 11 filing and plan adoption is equal to 125.4 days for PIPs (*PDAYS_PRE*) and 106.8 days for KERPs (*KDAYS_PRE*); and the number of days between plan adoption and Chapter 11 resolution are 442.8 days for PIPs (*PDAYS_POST*) and 485.7 days for KERPs (*KDAYS_POST*).

[13] We were able to hand-collect data on the total amount of KERP and/or PIP payout offered in a total of 204 cases (of which 123 are KERPs and 81 PIPs), and data on the targeted number of employees in 201 cases (of which 127 are KERPs and 74 PIPs).
[14] Scaling by pre-filing sales numbers resulted in similar results.

In the next section we conduct a series of analyses to discern the impact, if any, of the adoption of KERP and/or PIP contracts on the efficiency of the Chapter 11 resolution, taking into account the fact that changes might have occurred pre- and post-BAPCPA.

4. Empirical Analysis

The increasing use retention and/or performance incentive plans and the subsequent restrictions imposed on KERPs by the BAPCPA of 2005 calls for a closer examination of the potential effects of these contracts on the efficiency of bankruptcy resolution. To accomplish this, we first examine in Section 4.1 the determinants of KERP and/or PIP adoption. Then, in Section 4.2, we expand the existing evidence by examining the determinants of KERP and PIP contract coverage. In a limited number of Chapter 11 cases the bankrupt firm's stock continued to trade in the market. In Section 4.3, we examine the stock price reaction to KERP and/or PIP adoption decisions by the bankruptcy court. In Section 4.4 we estimate duration models to analyze the effects of KERP and/or PIP adoption on time to bankruptcy resolution. Moreover, we examine whether there are any differences in duration (i) between Chapter 11 filing and KERP and/or PIP adoption, and (ii) between the adoption date and Chapter 11 resolution date. We expand the evidence by incorporating contract coverage variables into the duration analysis. Next, in Section 4.5 we examine whether KERP and/or PIP adoption has any impact on firm operating performance during and after bankruptcy. Finally, in Section 4.6 we examine whether retention and performance plans influence the bankruptcy resolution. In other words, we examine if such plans play a role in whether the bankruptcy ends in reorganization or in liquidation.

4.1. Determinants of KERP and PIP adoptions

First, we examine the determinants of KERP and PIP adoptions by the bankruptcy court. In earlier work, Crutchley and Yost (2008) find that KERP adoptions are more likely in larger bankruptcies, companies with higher employees to assets ratio and in wholesale and retail industries, but less likely with higher pre-bankruptcy market-to-book ratio and higher compensation to sales ratio. In contrast, we examine the determinants of the stand-alone KERP, stand-alone PIP, as well as

joint KERP-PIP adoptions, because the underlying causes of a retention and/or incentive plan adoption may differ. Because these choices are observed to be mutually exclusive in the data but without a clear ordering of the outcomes, we use a multinomial logit model (i.e., a polytomous logistic regression). Specifically, we estimate the following model with robust standard errors to account for the inherent heteroskedasticity of the dependent variable:

$$\begin{cases} \Pr(y_i = j) = \dfrac{\exp(X_i\beta_j)}{\sum_{j=1}^{J}\exp(X_i\beta_j)} \\ \textit{and} \\ \Pr(y_i = 0) = \dfrac{1}{\sum_{j=1}^{J}\exp(X_i\beta_j)} \end{cases} \qquad (1)$$

where, y_i = {0, 1, 2, 3) lists the possible outcomes regarding KERP or PIP adoption, and X_i is the vector of explanatory variables common to all outcomes. Specifically, j = 0 denotes the cases where neither a KERP nor a PIP were adopted and forms the base case of the multinomial logit estimation; j = 1 denotes the cases where only a KERP was adopted; j = 2 cases where only a PIP was adopted; and j = 3 cases where both a KERP and a PIP were jointly adopted. The vector of explanatory variables ***X*** consists of the following variables: *D_PREPACK*, *D_PRENEG*, *D_EQCOMM*, *D_DIP*, *D_CASHCOLL*, *ln(TA)*, *ROA*, *LEV*, *CA/TA*, *D_DE*, and *D_NYSD*, all of which were described above. The expected signs of the coefficient estimates for these variables are as follows. We expect a negative coefficient estimate for *D_PREPACK* since the prepackaged deals result in swift bankruptcy resolution, and hence there is less of a need for a bankruptcy-specific retention or incentive plan. The presence of equityholders' committee, whom in the case of bankruptcy hold a clearly out-of-money option, may make it more likely that a performance incentive contract be given in order to increase firm value over and above what is due to liability-holders (hence a positive sign for *D_EQCOMM* in the PIP cases). It is not clear a priori whether equity-holders committee (*D_EQCOMM*) would push for a retention plan, especially if the KERP is given to a management team that was in place prior to bankruptcy and considered to be responsible for the event. The presence of debtor in possession

financing (*D_DIP*) and the release of the cash collateral (*D_CASHCOLL*) are likely to increase the probability that retention and/or incentive contracts may be given, since both have the effect of increasing financing that is available for the daily management of the firm while in Chapter 11. We account for the bankrupt firm's size with the logarithm of the book value of total assets as reported prior to bankruptcy filing (*ln(TA)*): larger firms are likely to have more divisions and are likely to be more complex, which may increase the need for retention of key employees during bankruptcy. We also account for pre-bankruptcy operating and financial characteristics of the firm by using *industry-adjusted* (i.e., the difference with respect to industry median in that year) return on assets (*ROA*), leverage (*LEVERAGE*), and current assets to total assets ratio (*CA/TA*). We expect that bankrupt firms that have a less bad *ROA* and *CA/TA* are more likely to offer retention and performance incentive plans. Similarly, Chapter 11 firms with higher pre-bankruptcy leverage ratios, which may be seen as an indicator of the prevalence of bondholders during Chapter 11 procedure, are expected to be more likely to adopt a KERP and/or a PIP. Finally, given the preponderance of filings in Delaware (*D_DE*) and New York Southern districts (*D_NYSD*), we control for the possibility that judges in these districts may have a higher leaning for approving KERPs and PIPs.

The multinomial logit results, where the neither-KERP-nor-PIP form the (omitted) base-case, are presented in Table 3. First, we observe that the coefficient estimates of *D_BAPCPA* are negative and statistically significant for KERP as well as KERP-and-PIP adoptions (-3.714 and -1.543, respectively), but positive and statistically significant for PIP adoptions (1.146). These results corroborate what we observe in Fig. 1 and Fig. 2: post-BAPCPA bankruptcy courts were approving pay-for-performance proposals, but were less keen on allowing retention plans, as mandated by the new law. Second, we find that the coefficient estimates for the explanatory variables are mostly in line with our priors. We observe that *D_PREPACK* has a coefficient estimate of -1.307 in the KERP-only case, -1.176 in the PIP-only case, and -1.982 in the cases where both contracts are present, all of which are statistically significant (at 1% level). These estimates (which are not statistically different from each other) suggest the adoption of a retention and/or a performance incentive plan is unlikely in the presence of a prepackaged deal. The relative risk ratio of plan adoption (with respect to the base case of neither retention nor incentive plan adoption, and holding all other explanatory variables

constant) decreases by a factor of 0.2706 (=$e^{-1.307}$) for KERPs, 0.3085 for PIPs, and 0.1378 for joint-adoptions. The coefficient estimate for *D_DIP* is positive and statistically significant (albeit at the 10%-level) only for the joint KERP-and-PIP case. The observed coefficient estimate of 0.620 suggests that the presence of DIP financing increases the likelihood of having a KERP adopted jointly with a PIP: the relative risk ratio compared to the base case of no-KERP or PIP increases by a factor of 1.859 (=$e^{+0.620}$). The coefficient estimate for *D_CASHCOLL* for PIP adoptions is 1.043, which is statistically significant at the 5%-level: the release of the cash collateral increases the PIP adoption's relative risk-ratio by a factor of 2.838. The coefficient estimates for the presence of the equityholders' committee is equal to 0.573 for PIP adoptions, -0.651 for KERP adoptions, and -0.120 for joint-adoptions, but none of which are statistically significant. However, in the presence of equityholders' committee the incidence of PIP-only adoption increases *relative to KERP-only* cases: the test of the equality of coefficient estimates between KERP-only and PIP-only columns is rejected at the 5%-level. This result is in line with the prior that the equityholders' committee would have a preference for performance bonus plans that are more likely to increase the value of the out-of-money option held by the shareholders than retention plans. We also observe that compared to the base case of no incentive or retention plans, KERPs and PIPs are more likely to be adopted in larger bankruptcy cases: the coefficient estimate for *ln(TA)* is equal to 0.3412 for KERP-only cases, 0.421 for PIP-only, and 0.622 for KERP-and-PIP cases, all of which are statistically significant at the conventional levels. The pre-filing return on assets (*ROA*) and leverage (*LEVERAGE*) do not have any impact on plan adoptions, as their coefficients are not statistically significant in Table 3. In contrast, firms that had higher industry-adjusted current assets to total assets ratio prior to bankruptcy adoption are more likely to adopt a KERP: compared to the base case of no incentive or retention plan, the coefficient estimates of *CA/TA* is equal to 2.663 and statistically significant. This finding, when combined with the above results that (i) joint-adoptions are more likely in bankruptcy cases with DIP financing and (ii) PIPs are more likely in cases involving the release of the cash collateral, is consistent with failure cases having more creditor control gravitating towards PIPs whereas those with less creditor control towards KERPs. As such, our evidence is consistent with the criticism that KERPs, which arise more often in cases where creditor control is weaker, were proposed by "self-dealing" managements at the

expense of creditors. Finally, we do not find that filing for bankruptcy in Delaware or New York Southern District courts increases the likelihood of adoption of a retention or performance incentive plan (coefficient estimates are not statistically significant).

Next, we expand this analysis and explore the determinants of KERP or PIP plan coverage using (i) total plan dollar amount to pre-bankruptcy total assets ratio, (ii) the number of employees targeted by the plan to the total number of company employees ratio, and (iii) the logarithm of total plan dollar amount divided by the number of employees targeted.[15] Specifically, we estimate OLS regressions where the dependent variable is one of the three plan coverage variables described above, and where the explanatory variables are those included in vector ***X*** described above. It should noted that in this analysis, given the limited number of observations for which we have plan coverage details, we do not make the distinction between stand-alone KERPs or PIPs versus joint plan adoptions. To accommodate this change we introduce a new indicator variable for performance incentive plans, *D_PIP2*, which is equal to one if a PIP is adopted stand-alone or jointly with a KERP, and 0 otherwise.[16] We use robust standard errors to account for the possibility of heteroskedasticity in our regressions. The results are presented in Table 4.

In column A of Table 4, we examine how plan size as a fraction of pre-filing total assets (*PLAN_AMOUNT/TA*) differs across KERPs and PIPs, after controlling for the other observable bankruptcy characteristics. The base-case are plans involving a KERP. The coefficient estimate of *D_PIP2* is equal to -0.001 but not statistically significant. This suggests that prior to BAPCPA, after controlling for observable bankruptcy characteristics, there is not a statistically significant difference between overall KERP and PIP sizes as a percentage of total assets. In contrast, the coefficient estimate for *D_BAPCPA* is equal to 0.002, which is statistically significant at the 5%-level: post-reform the size of KERPs has decreased by 50% compared to the overall sample average of 0.40% reported in Table 2. At the same time, the coefficient estimate of *D_PIP2*×*D_BAPCPA* is equal to a statistically significant (albeit at the 10%-level) 0.004: this is an 80% increase compared to the sample

[15] We use the logarithm of plan size per employee because in our sample KERPs (PIPs) anywhere from $ 1,200 ($ 1,600) to $ 1.9 million ($ 3.5 million) per employee-covered. As a result the next one thousand dollar per employee has much lower impact as the plan payout per employee increases.
[16] In contrast, indicator variable *D_PIP* used in Eq. (1) is equal to one for stand-alone PIPs, and zero otherwise.

average *PIP/TA* ratio of 0.50%. In fact, post-BAPCPA coverage of PIP is equal to 0.003 (=*D_PIP2*+*D_PIP2*×*D_BAPCPA*) which is statistically significant at the 5%-level. It should be noted that in this regression, where the dependent variable is the plan size scaled by total assets, we also control for the size of the firm using *ln(TA)*, something that may explain the lower statistical significance of 10%-level. In fact, in column (A) of Table 4 none of the other control variables are statistically significant except ln(TA) for which the coefficient estimate is equal to -0.001, statistically significant at the 1%-level.

In column B, we estimate the same specification using the number of employees covered by the plan as a fraction of total employees (*PLAN_EMPS/TOTAL_EMPS*) as the dependent variable. Even though PIPs are larger by 12.9% than KERPs in their employee coverage in the pre-BAPCPA, this observed difference is not statistically significant. Following BAPCPA the employee coverage of PIPs appears to drop by 0.076 (which is the coefficient estimate of *D_PIP2*×*D_BAPCPA*), but again the coefficient estimates are not distinguishable from zero. In the same column, we find that employee coverage of retention and performance incentive plans are smaller in the presence of a prepackaged deal (*D_PREPACK* coefficient estimate is equal to -0.033, which is statistically significant at the 10%-level), with *relatively* higher industry adjusted return on assets (*ROA* coefficient estimate is equal to -0.101, which is statistically significant at the 10%-level), and in plans approved in Delaware courts (*D_DE* coefficient estimate is equal to -0.101, which is statistically significant at the 1%-level), which may be indicative of certain judges' more stringent attitude against large plan coverage.

In column C of Table 4, we regress the average plan amount per employee-covered (*PLAN_AMOUNT/PLAN_EMPS*) on plan characteristics plus *D_BAPCPA* and its interaction with *D_PIP2*. We observe that, pre-BAPCPA there is no difference between average bonus per covered-employee between KERP and PIP contracts: the coefficient estimate of *D_PIP2* is -0.036, which is statistically insignificant. After BAPCPA, the average KERP bonus is lower: the coefficient estimate of D_BAPCPA is equal to -0.026 (statistically significant at the 5%-level) indicating that KERP bonuses decrease by $26 thousand per employee in the program after the reform. This is a 30.41% decrease compared to the overall sample average of $ 85.5 thousand bonus for KERPS stated in Table 1. In contrast, the average PIP bonus increases post-BAPCPA: the coefficient estimate for

D_PIP2×D_BAPCPA is equal to 0.090 (statistically significant at the 10%-level), which suggests that PIP bonus increases by $ 90 thousand per covered-employee after 2005. This is an economically significant 32% increase in PIP bonuses compared to pre-BAPCPA.

The results of Table 4 suggest that before BAPCPA, after controlling for other factors, KERPs and PIPs where similar in their coverage (both as a fraction of total assets and per number of employee in the bonus plan). After BAPCPA retention plans become smaller by roughly 30% whereas performance incentive plans become larger by approximately the same percent. These results are consistent with the managers of failed-firms proposing larger PIP plans when they can no longer afford to propose same order of magnitude coverage through KERP plans.

4.2. Plan adoptions and stock market reaction

Next, we analyze the stock-price reaction to KERP and PIP adoption announcements. While past research focuses post-bankruptcy stock performance (Eberhart, Altman, and Aggarwal, 1999; Goyal, Kahl and Torous, 2003); Dawkins, Bhattacharya and Bamber (2007) note that since early 1990s many firms continue trading while in bankruptcy. We conduct an analysis similar to that by Chatterjee, Dhillon and Ramirez (2004), who find positive significant stock returns at the DIP financing announcements during bankruptcy.

In our sample of 362 Chapter 11 cases in which a KERP and/or a PIP was approved, we could only track 20 in the CRSP database with stock price data past beyond the retention and/or incentive plan adoption date. This, admittedly very small, sample includes 17 KERP-only and three PIP-only cases (and no joint KERP-PIP cases). And unfortunately, it does not include any plan approvals past BAPCPA. As a result, the inferences we can draw, which are limited to the pre-reform period, are very limited.

The lack of a stock price reaction to plan approval announcement would suggest that the stock market participants do not view retention or incentive plan adoption as a development that would have an impact on the bankruptcy resolution. A negative stock price reaction would suggest that stock market participants view KERPs and PIPs as destroying value for the bankrupt company's shareholders. A positive stock price reaction, on the other hand, would indicate that the stock market

participants view the judge's approval of a KERP or a PIP positively. Since such plans cannot be approved without consent of the majority of debt holders, a positive stock price reaction can be indicative of such contracts being value-increasing for the liability holders as well.

Panel A of Table 5 presents the average stock price reactions for the total of 20 approvals. On day +1 with respect to plan adoption, the higher proportion of 17 positives to three negative stock price reactions (column 4 in panel A) is statistically significant at the 1%-level in a non-parametric sign test (column 7). The stock price reactions were obtained using a standard market models that are estimated separately up until 60 days prior to the approval date.[17] We observe an annualized positive and statistically significant at the 1% level (in all three tests that we conduct)[18] stock price reaction of 6.56% on the first day that follows the approval by the bankruptcy judge. While a stock price reaction of -1.83% is observed on day 0, it is not statistically significant (only one of the three test statistics that we report, the Patell z-test, is marginally significant at the 10%-level). The cumulative abnormal returns (CARs) presented in Panel B of Table 5 suggest that the CAR over days one through three that follow the judge's approval is a positive 7.81%, which is statistically significant at the 1% level in all of the three statistical tests that we employ. On the other hand, we cannot reject the null hypothesis that the CAR over days minus one and zero is equal to zero. Not surprisingly, these results are driven by KERP adoptions: we find similar results when we limit the sample to the 17 KERP-only adoptions. To alleviate the concern that a market model's beta may not stable over time as firms get closer to Chapter 11 filing, we re-conduct the stock price reaction analysis using (i) raw returns and (ii) market-adjusted returns. In these additional tests (not reported to conserve space) we obtain quantitatively similar results. Given that there are only three PIP-only adoption cases for which stock price data are available, we do not have meaningful test statistics to comment on.

[17] For these 20 companies the median number of days between bankruptcy filing and KERP or PIP approval is 59 days, with a minimum of 20 days and a maximum of 266 days. This suggests that in 10 cases the market model is estimated only based on the pre-bankruptcy stock return data, whereas in the remaining 10 cases some of the data used in market model estimation is drawn from the bankruptcy period.

[18] We report the results of two parametric and one non-parametric test for the significance of the abnormal returns: (i) the so-called Patell z-test that is based on separate estimates for the individual event standard errors assuming cross-sectional independence (panel A, column 5); (ii) the time-series standard deviation test that allows for crude dependence adjustment (panel A, column 6); and (iii) the non-parametric sign-test (panel A, column 7).

Admittedly, the stock price reaction tests that we are able to conduct are weak due to the very small sample size and the lower liquidity of these companies' shares. Nevertheless, they suggest that, for the few cases that we have data for, the adoption of KERP plans to retain key employees are viewed positively in the stock market. It could be argued that the observed positive stock market reaction is due to increased expectations of more efficient bankruptcy resolution. In the next sections we test whether other dimensions of Chapter 11 cases that involve KERP and/or PIP contracts, such as bankruptcy duration, and firm performance during bankruptcy, are consistent with this conjecture.

4.3. KERPs, PIPs and Chapter 11 bankruptcy duration

Prior empirical research finds that a number of factors, besides the pre-Chapter 11 financial condition of the firm, can influence the duration of bankruptcy proceedings. For example, Dahiya et al. (2003) find that debtor in possession financing (DIP) shortens the time firms spend in bankruptcy while Denis and Rodgers (2007) find that bankruptcy duration decreases with the profitability of the industry. Firm size also appears to be a relevant factor in duration of proceedings (e.g., Bris, Welch and Zhu, 2006; and Morrison, 2007). We posit that if KERPs and PIPs are beneficial in retaining key personnel and motivating them to improve firm's performance, they will help reduce the time firms that adopt these plans spend in bankruptcy. In testing this conjecture, we control for other factors that are found to reduce the direct costs of the proceedings, which can amount to 4% of the pre-filing value of the firm in large Chapter 11 cases (see Warner, 1977; Altman, 1984; Weiss, 1990; Betker, 1997; Lubben, 2000; and LoPucki and Doherty, 2004).

Prior research that analyzes the impact of retention contracts on bankruptcy duration finds either no impact of KERPs on bankruptcy duration (Bharath, Panchapegesan and Werner, 2010) or that KERPs are associated with longer bankruptcy proceedings (Crutchley and Yost, 2008). Our analysis is more complete in that (i) we include stand-alone PIP adoptions as well as joint KERP and PIP approvals to KERP cases, and (ii) we examine the impact of plan coverage on duration.

First, we examine if the existence of KERP and/or PIP contracts has any impact on the duration of Chapter 11 bankruptcy. Specifically, we estimate the following Weibull accelerated

failure-time model, whose coefficient estimates have the same interpretation as a standard semi-log regression model:

$$\begin{aligned}\ln(DAYS_i) = {} & \alpha_0 + \beta_1 D\_KERP + \beta_2 D\_PIP + \beta_3 D\_KERP\ \&\ PIP \\ & + \beta_4 D\_BAPCPA + \beta_5 D\_BAPCPA \times D\_KERP \\ & + \beta_6 D\_BAPCPA \times D\_KERP + \beta_7 D\_BAPCPA \times D\_KERP\ \&\ PIP \\ & + \gamma\, \mathrm{X} + \varepsilon_i\end{aligned} \tag{2}$$

where, *DAYS* denotes the number of days time between Chapter 11 filing and bankruptcy disposition dates, *D_KERP*, *D_PIP*, *D_KEPR&PIP* are indicator variables that are equal to one if only a KERP, only a PIP, or both a KERP and a PIP contract are approved and zero otherwise, respectively. ***X*** is the same vector of control variables as in Eq. (1). The results are presented in Table 6.

We first go over the coefficient estimates of the control variables in the duration models presented in Table 6 to check the validity of our empirical specification. The presence of a prepackaged deal leads to shorter bankruptcies: in Table 6, the coefficient estimate for *D_PREPACK* is equal to -1.143 and statistically significant at the 1%-level. This is not surprising: the fact that a resolution plan is already accepted by the majority of lenders as of the filing date would be expected to reduce time spent in Chapter 11. DIP financing has also a negative impact on time spent in bankruptcy (coefficient estimate for *D_DIP* is equal to -0.161, which is statistically significant at the 10%-level). This is in line with Dahiya et al. (2003) finding that debtor in possession financing (DIP) shortens the time firms spend in bankruptcy. The release of the cash collateral (*D_CASHCOLL*) has a negative coefficient estimate but it is not statistically significant. The release of the cash collateral (*D_CASHCOLL*) would increase the power of creditors in bankruptcy, which could reduce the time-spent in Chapter 11, but this conjecture is not supported in the data. *D_EQCOMM* has a coefficient estimate of 0.275, which is statistically significant at the 5%-level: the presence of equityholders' committee leads to longer bankruptcy. The presence of equityholders' committee might indicate a tendency for deviation from the absolute priority rule, which may lengthen the bankruptcy proceedings. While industry-adjusted leverage and current assets to total assets ratios have no bearing

on bankruptcy duration, firms with higher industry-adjusted *ROA* prior to Chapter 11 filing spend more time in bankruptcy, which is inconsistent with Denis and Rodgers (2007) who find that bankruptcy duration decreases with the profitability of the industry.

We now turn our attention to our test variables in our duration model, focusing first on the coefficient estimates covering pre-BAPCPA period. The results in Table 6 indicate that prior to the 2005 reform KERP-only cases last longer than cases involving neither KERPs nor PIPs. The β_1 coefficient estimate for *D_KERP* (which accounts for stand-alone KERPs) is equal to 0.235, which is statistically significant at the 5%-level. This suggests that, compared to the baseline scenario of "plain vanilla" Chapter 11 (with neither a KERP nor a PIP), the adoption of a stand-alone KERP increases time in bankruptcy by a factor of 1.265 ($=e^{0.235}$). This finding is similar to the finding in Crutchley and Yost (2008). In contrast, Bharath, Panchapegesan, and Werner (2010) find that KERPs have no impact on bankruptcy duration, but their finding could be influenced by their aggregation of PIPs with KERPs if these two types of plans have the opposite effects on bankruptcy duration.[19] This is in fact what we find: the β_2 coefficient estimate for *D_PIP*, which accounts for stand-alone PIPs, is equal to -0.227, which is statistically significant at the 5%-level. In other words, in PIP-alone adoptions prior to BAPCPA, bankruptcy duration lasts 0.797 ($=e^{-0.227}$) times that of a "plain vanilla" Chapter 11. The β_3 coefficient estimate for *D_KERP&PIP,* which accounts for the case of a joint adoption of KERP and PIP prior to BAPCPA is equal to 0.227, which is statistically significant at the 10%-level: a joint plan adoption increases Chapter 11 duration by 1.255 times before the 2005 reform. At the bottom of Table 6, we test for the equality of *D_KERP*, *D_PIP* and *D_KERP&PIP* coefficient estimates. While there is no statistically significant difference between the *D_KERP&PIP* and *D_KERP* coefficients, *D_PIP* coefficient is statistically significantly different from the *D_KERP&PIP* coefficient. These findings indicate that prior to BAPCPA the presence of PIP contracts led to a significantly shorter bankruptcy duration compared to both plain-vanilla cases as well as those involving a KERP, either stand-alone or jointly adopted.

[19] Bharath, Panchapegesan and Werner (2010) indicate that they use the following keywords in LEXIS-NEXIS to identify KERPs: "KERP", "Retention Plan", "bonus plan", "pay-to-stay", "bankruptcy pay", "bankruptcy *bonuses*", "retention bonus", "management *incentive* plan", "MIP", "key employee compensation plan", "KECP", "supplemental *incentive* plan", and "SIP". Search words in italic (emphasis is our own) suggest that Bharath, Panchapegesan and Werner (2010) may have classified some PIPs as KERPs.

Next, still in Table 6, we turn our attention to the post-BAPCPA period. The β_4 coefficient estimate for *D_BAPCPA* is equal to -0.456, suggesting that bankruptcy cases that do not involve a retention or performance incentive plan last shorter by a factor of 0.634 ($=e^{-0.456}$) post-BAPCPA when compared to similar cases pre-BAPCPA. This is most likely a natural a reflection of the fact that we have 12 years of data prior to the reform, but only 7 years of coverage post-reform. When we focus on KERP, PIP and joint-plan adoptions post-BAPCPA (i.e., when we focus on the *D_KERP*×*D_BAPCPA*, *D_PIP*×*D_BAPCPA*, *D_KERP&PIP*×*D_BAPCPA* interactions) we observe positive coefficient estimates for all three of them. The β_5 coefficient estimate of 0.410 for *D_KERP*×*D_BAPCPA* suggests that, post-BAPCPA the Chapter 11 duration in cases where a KERP is adopted has increased by a factor of 1.507 ($=e^{0.401}$), whereas β_6 estimate of 0.711 for *D_PIP*×*D_BAPCPA* indicates an increase by a factor of 2.162 (the coefficient estimate of β_7 for joint-adoptions during post-BAPCPA period is positive but not statistically significant). At the bottom of Table 6, when we test for the equality of KERP, PIP and joint-adoptions post-BAPCPA, we find that the hypothesis of the equality of their durations cannot be rejected. Importantly, these results cannot be explained by the fact that we have a shorter period (7 years) after the reform: we observe an *increase* in the duration of cases involving both KERPs (of which there are a few) but also PIPs.

In Table 7, we extend the duration analysis by splitting the time spent in Chapter 11 into (i) the period between filing and the adoption of a KERP and/or PIP and (ii) that after adoption until resolution. If retention and performance incentive plans affect bankruptcy's efficiency as reflected in its duration, we should see a statistically significant effect after plan adoption, and should no effect prior to judge's approval. More specifically, in Table 7 we present the estimates of Weibull accelerated failure-time model of Eq. (2) after changing the dependent variable to (i) *DAYS* between bankruptcy filing and adoption (column A) and (ii) *DAYS* between adoption until disposition (column B). In these regressions all observations belong to cases that involve a retention or performance plan. As a result the (omitted) base case is that of KERP adoption prior to Chapter 11 reform, whose effects are soaked-up by the constant of the Weibull regression. The coefficient of *D_BAPCPA* is an estimate of the impact of KERP adoptions after the reform. This set-up allows us to test, compared to KERP-only cases before and after BAPCPA, whether (i) there are any differences in duration until PIP-only

or KERP-and-PIP adoptions, and (ii) a stand-alone PIP or a joint KERP-and-PIP adoption shortens the time to bankruptcy resolution once the plan(s) has (have) been adopted.

The results in Table 7 indicate that there are no differences in duration between filing until plan approval between cases in which a KERP or a PIP are adopted individually or jointly: in column A the coefficient estimates for *D_PIP* and *D_KERP&PIP* are not statistically significant. The duration until KERP adoption is not affected by the 2005 reform either: the coefficient estimate of *D_BAPCPA* is not statistically significant. The same observation holds for PIP and joint KERP and PIP cases: compared to post-BAPCPA KERP cases, those involving a stand-alone PIP or a jointly adopted PIP have spells until adoption that cannot be distinguished from each other: in the tests reported at the bottom of Table 7, the null hypotheses that $D\_PIP+D\_PIP\times D\_BAPCPA=0$ and $D\_KERP\&PIP+D\_KERP\&PIP\times D\_BAPCPA=0$ cannot be rejected. We conclude that prior to adoption, there are no discernable differences between retention and performance incentive plans, and this both before and after BAPCPA.

In Table 7, column B, we estimate Eq. (2) with *DAYS* between plan adoption and bankruptcy resolution as the dependent variable. Our results indicate that, prior to BAPCPA, cases in which a PIP is approved last shorter after adoption compared to cases with KERP or joint KERP and PIP. In column B of Table 7, the coefficient estimate of *D_PIP* is equal to -0.597, which is statistically significant at the 1%-level: in the pre-reform period, and compared to the base case of a stand-alone KERP adoption, a stand-alone PIP's approval reduces time between adoption and disposition by a factor of 0.551 ($=e^{-0.597}$), i.e., by almost one half. We find no such difference between cases with jointly adopted KERP and PIP compared with cases where a stand-alone KERP is present: the coefficient estimate for *D_KERP&PIP* is positive but not statistically significant. The same observation holds for the coefficient estimate of *D_BAPCPA*, suggesting that the post-adoption duration of Chapter 11 cases with a KERP is not affected by the reform. At the bottom of Table 7 column B, we also observe that the null hypothesis that $D\_PIP +D\_PIP\times D\_BAPCPA = 0$ cannot be rejected. This suggests that post-reform, post-approval duration of cases with PIPs cannot be distinguished from the post-approval duration of KERP cases prior to the reform. In other words, post-BAPCPA, PIPs cannot be associated with shorter Chapter 11 duration post-plan approval. We

also find that the null hypothesis of *D_KERP&PIP +D_KERP&PIP×D_BAPCPA = 0* cannot be rejected either. These findings are consistent with post-BAPCPA performance incentive contracts being modified to make up for the *de facto* suppression of KERPs to such a degree that PIPs lose their effectiveness in reducing bankruptcy resolution costs (as measured by time spent in Chapter 11 post incentive-plan approval).

The findings of Tables 6 and 7 show that, prior to BAPCPA, the adoption of performance incentive contracts were associated with reductions in Chapter 11 duration. The fact that we no longer observe similar reductions for PIPs post-2005 is consistent with managements of failed firms conducting regulatory arbitrage, i.e., changing the nature of PIP contracts and incorporating KERP features to circumvent *de jure* restrictions imposed on the latter. In fact some of the practitioners suggest that this may be happening (see, for example, New York Times, August 26, 2009). One way to test, albeit in an indirect way, for the possibility that post-reform the PIPs were becoming more KERP-alike, is to investigate the impact plan coverage on bankruptcy duration, which is what we do in Table 8.

In the duration models of Table 8, because we restrict ourselves to failure cases in which a bonus plan was adopted, KERPs form the base-case, and as such their impact on bankruptcy's spell is absorbed in the Weibull regression's constant. In column A of Table 8, the dependent variable is *PLAN_AMOUNT/TA*. In the same column the coefficient estimates of *D_KERP&PIP*, *D_BAPCPA* and their interaction are positive but not statistically significant: there are no differences between stand-alone KERP adoptions and joint KERP-and-PIP adoptions, either before or after BAPCPA. The coefficient estimate of *KERP* (which substitutes for *KERP_AMOUNT/TA*) is equal to -24.902 and statistically significant at 5%-level: a one standard-deviation increase in stand-alone KERP coverage, holding everything else constant, reduces time spent in Chapter 11 by a factor of 0.9016 = ($e^{-24.902\times0.004}$). However, we observe that stand-alone PIPs are more effective in reducing bankruptcy duration pre-BAPCPA: the coefficient estimate of PIP (which stands-for *PIP_AMOUNT/TA* in column A) is equal to -144.409 and statistically significant at the 5%-level. This suggests that a one standard deviation increase in PIP coverage reduces bankruptcy duration by a factor of 0.420 (=$e^{-144.409\times0.006}$). The difference in KERP and PIP coefficient estimates is statistically significant at the 5%-

level (test provided at the bottom of Table 8). In contrast, KERPs and PIPs lose their effectiveness to reduce bankruptcy duration when they are adopted jointly: from the tests conducted at the bottom of Table 8 we observe that *KERP+KERP×D_KERP&PIP* equals 30.311 (statistically significant at 10%-level) and *PIP+PIP×D_KERP&PIP* equals -4.539 (statistically insignificant). We observe a similar effect for stand-alone KERPs and PIPs post-BAPCPA. Even though the coefficient estimates for post-reform stand-alone plan coverage are negative (from the bottom of Table 8: *KERP+KERP×D_BAPCPA* equals -64.662 and *PIP+PIP×D_BAPCPA* equals -16.951) they are not statistically significant. In post-reform joint adoptions KERPs remain to be ineffective in reducing Chapter 11 duration (*KERP+KERP×D_KERP&PIP+KERP×D_BAPCPA +KERP×D_KERP&PIP×D_BAPCPA* equals 38.568, which is statistically insignificant). After 2005 as the size of the PIPs that are part of joint-adoptions increase bankruptcy duration shortens (*PIP +PIP×D_KERP&PIP+PIP×D_BAPCPA+PIP×D_KERP&PIP×D_BAPCPA* equals -114.336, which is statistically significant at the 5%-level).

When we examine plan coverage using the fraction of plan-employees with respect to total employees (Table 8, column B) and average plan amount per covered-employee (Table 8, column C), we obtain results that are, in general, similar to those of column A. In the pre-BAPCPA period increases in stand-alone KERP coverage lead to reductions in bankruptcy duration: a one standard deviation increase in employee coverage or average plan amount per employee reduces bankruptcy spell by a factor of 0.885 ($=e^{-1.825\times0.067}$ and $e^{-0.540\times0.226}$, respectively). During the same period, a one standard deviation increase in stand-alone PIPs' employee-coverage reduces Chapter duration by a factor of 0.938 ($=e^{-0.334\times0.191}$), whereas the effect of PIP amount per employee is negative but not statistically significant. Before the 2005 reform, in joint-adoptions increases in KERP coverage in terms of fraction of employees or amount per employee has no impact on duration. In contrast, for PIPs adopted jointly with KERPs, a one standard deviation increase in amount per employee reduces duration by a factor of 0.316 ($=e^{-1.751\times0.658}$). Post-BAPCPA these observed effects disappear. In tests conducted at the bottom of Table 8, stand-alone or jointly adopted KERPs' coefficient estimates' are negative but statistically insignificant. In the same sub-table, for jointly-adopted PIPs as amount per employee increases, bankruptcy duration actually increases.

These results are indicative of potential efficiency increases in bankruptcy proceedings were due to the adoption of a stand-alone KERPs or PIPs prior to the adoption of BAPCPA, with the impact of PIPs being typically more important. Post-BAPCPA almost all of the observed improvements in bankruptcy duration given plan coverage increases disappear. This is consistent with PIPs becoming more like KERPs after the reform as the latter made it much more difficult to propose retention plans, which were seen as being "self-deailng". In the next section we try to get a better sense of the impact of both types of contracts by comparing the operating performance KERP and PIP adopters with those that do not adopt such contracts.

4.4. KERPs, PIPs and firm operating performance around Chapter 11 bankruptcy

Past research analyzes operating performance of firms filing for bankruptcy in the pre-filing period (e.g. Hotchkiss, 1995; Denis and Rodgers, 2007), during bankruptcy (Kalay, Singhal and Tashjian, 2007) and in the post-bankruptcy period (e.g. Hotchkiss, 1995; Kalay, Singhal and Tashjian, 2007). While Hotchkiss (1995) finds that 40% of firms continue experiencing negative performance after bankruptcy resolution, Kalay, Singhal and Tashjian (2007) find that companies experience some improvements in their operating performance (as measured by EBITDA to total assets ratio) during and after bankruptcy. In this respect, KERPs (PIPs) could yield positive effects by retaining (by giving the right incentives to) key personnel.

To examine whether the adoption of a KERP and/or PIP contract has any impact on firm operating performance, and whether this impact differs in the pre- vs post-BAPCPA period, we regress industry (2-digit SIC-level) adjusted quarterly income before extraordinary items on indicator ("dummy") variables for the presence of the said contracts (i.e., *D_KERP*, *D_PIP*, and *D_KERP&PIP*), post-BAPCPA period (*D_BAPCPA*), the interactions between contract type and post-BAPCPA period, as well as control variables that may otherwise explain quarterly performance, industry dummies (*D_IND*), fiscal-year dummies (*D_YEAR*), and fiscal-quarter dummies (*D_QUARTER*):

$$ROA_{i,t} = \alpha_0 + \alpha_1 D\_KERP_i + \alpha_2 D\_PIP_i + \alpha_3 D\_KERP\ \&\ PIP_i + \beta X_{i,t} + \sum_{n=1}^{N} D\_IND_{n,i} + \sum_{t}^{N} D\_YEAR_{i,t} + \sum_{n=1}^{N} D\_QUARTER_{i,t} + e_{i,t} \quad (3)$$

where the indicator variables for KERP and/or PIP are equal one if the firm has adopted KERP and/or PIP.[20] These indicator variables pick up the difference in the performance that is due to the presence of the KERP and/or PIP contracts over and above the performance of bankrupt firms that have not adopted such contracts, after controlling for other observable factors, industry and time effects. The vector ***X***, includes the control variables *D_PREPACK*, *D_PRENEG*, *D_DIP*, *D_EQCOMM*, *ln(TA)*, pre-bankruptcy *ROA, pre-bankruptcy LEVERAGE*, pre-bankruptcy *CA/TA*, whether the bankruptcy court is located in Delaware (*D_DE*) or New York Southern District (*D_NYSD*). We compute Huber-White robust standard errors to account for the possible heteroskedasticity in our performance metric.[21] The results are presented in Table 10. In order to understand the evolution of the performance, and any impact that the adoption of a KERP and/or PIP might have over time, Eq. (3) is estimated over (i) the bankruptcy period (column A), (ii) bankruptcy period plus the four quarters that follow the disposition (column B), and (iii) bankruptcy period plus the 16 quarters that follow the disposition (column C).

In the operating performance regressions the coefficient estimates for *D_KERP*, *D_PIP* and *D_KERP&PIP* indicate *relative* performance with respect to the base case, i.e., companies without performance-incentive or retention plans in the pre-BAPCPA period. The coefficient estimates for the interactions of *D_KERP*, *D_PIP* and *D_KERP&PIP* with the *D_BAPCPA* variable capture the *relative* impact of such plans with respect to their respective performance in the pre-BAPCPA period.

In Table 10, the coefficient estimates for *D_KERP*, which accounts for stand-alone retention plans before BAPCPA, point to an improvement in quarterly operating performance, but only in the

[20] We run a robustness check by coding our binary variables as equal one starting with the quarter in which the given plan was adopted, and zero otherwise. This yields qualitatively unchanged results. In our main tests we keep our variables coded as described above for two reasons. First, the median number of days in bankruptcy before adoption of KERPs and PIPs is 76 and 93 respectively (less or equal to a quarter), which yield recoding unlikely to affect our results. Second, and more importantly, it is likely that key employees are aware of the type of plan to be adopted prior to its adoption, providing them ex-ante with incentives aligned with the type of the plan.

[21] In two other robustness checks we cluster the standard errors in Eq. (3) by (i) firm only and (ii) firm and year. Both yield qualitatively similar results.

period between the filing date and the 16 quarters following the disposition: in column C, the coefficient estimate for *D_KERP* equals 0.010 (i.e. 1% higher operating performance per quarter) which is statistically significant at the 5%-level. In other words, we observe a 1% higher ROA *relative* to the base case, i.e., relative to the performance of Chapter 11 companies without performance-incentive or retention plans in the pre-BAPCPA period. Although positive, the coefficients associated with the *D_KERP* variable in columns A and B are not statistically significant (they are marginally significant at the 10%-level in a one-sided test).

In contrast, before BAPCPA we find a positive and economically significant effect on operating performance for stand-alone PIPs. During bankruptcy (Table 10, column A) the coefficient estimate of *D_PIP* is equal to 0.040 and statistically significant at the 1%-level. Between the filing date and four quarters following the disposition (column B) the coefficient estimate of D_PIP is equal to 0.033 and statistically significant at the 1% level. Between filing date and the 16 quarters that follow disposition (column C) the coefficient estimate of D_PIP is equal to 0.018 and statistically significant at the 1%-level. These results are indicative of an average 2% to 4% higher ROA per quarter for Chapter 11 companies that adopt a stand-alone PIP relative to those that do not adopt any plan.

Similar to stand-alone KERPs, for the joint adoption of KERP and PIP before BAPCPA, we find a positive effect on operating performance only in the long period between the filing date and the 16 quarters following the disposition (column C of Table 10). Although positive, the coefficients associated with the *D_KERP&PIP* variable in columns A and B are not statistically significant.

Given that KERPs were effectively ruled out by BAPCPA in favor of PIPs, we also test whether PIPs lead to higher operating performance than KERPs: we reject the null hypothesis of the equality of the coefficient estimates for *D_KERP* and *D_PIP*. The coefficient associated with the *D_PIP* variable is significantly higher than the one associated with the *D_KERP* variable, and significantly higher than the one associated with the *D_KERP&PIP* variable (these tests are provided at the bottom of Table 10). So the adoption of PIPs improves operating performance, over and above the cases in which a KERP is approved, in the pre-BAPCPA period.

In the post-BAPCPA the relative impact of compensation plans on operating performance changes significantly. First, note that due to data availability constraints we have no observations with operating performance of KERPs in the post-BAPCPA period, which is why there is no coefficient estimate of the *D_KERP×D_BAPCPA* interaction in our models. The impact of PIPs on operating performance is reduced significantly after BAPCPA. All three coefficients associated with the *D_PIP×D_BAPCPA* interaction are negative and statistically significant. Moreover, the sum of the coefficients for *D_PIP* and *D_PIP×D_BAPCPA* interaction is not statistically significant in either model, consistent with PIPs having no impact on operating performance after BAPCPA was adopted. Finally, in tests reported at the bottom of Table 10, we observe no difference in operating performance of firms with stand alone PIPs and joint KERP and PIP plans.

These results provide yet another layer of evidence suggesting that pre-BAPCPA the PIP contracts improved performance by giving the right incentives to executives and employees of the bankrupt firms. In comparison, during the same period, KERPs have also positive but less important impact on operating performance. This is consistent with KERPs purpose being at least in part "self-dealing" rather than increasing firm value. Our results also suggest that post-BAPCPA the PIPs lost their effectiveness, arguably because PIPs proposed after the reform incorporate some of the "self-dealing" features of now forbidden KERPs.

5. Conclusion

The adoption of BAPCPA in 2005, made it very difficult to use pay-to-stay compensation plans in Chapter 11 and limited the choices of bankrupt firms to the use of pay-for-performance compensation plans instead. In this paper, using a sample of 512 bankruptcy cases, we conduct an empirical evaluation of the impact of KERP (pay-to-stay) and PIP (pay-to-perform) plans, as well as BAPCPA restrictions on retention bonuses, on bankruptcy resolution.

We find that, prior to BAPCPA, PIPs were associated with a shorter bankruptcy duration and better operating performance compared to KERPs. Our results also suggest that post-BAPCPA, PIPs lost their effectiveness, as they no longer have an impact on bankruptcy duration or operating performance after BAPCPA.

In fact, we report a decrease in the number, the likelihood of adoption, and the size of KERPs and an increase in the number, likelihood of adoption, and size of PIPs after BAPCPA. This is consistent with firms finding it difficult to meet the new stringent requirements for "pay-to-stay" contracts after the reform, and thus replacing them both in number and size with the "pay-to-perform" contracts, on which BAPCPA imposed no restrictions. PIPs or joint KERP-and-PIP plans seem to be favored by secured creditors over stand-alone KERPs.

Overall our results suggest that the pre-BAPCPA criticism of KERPs may not have been totally unjustified. Our findings are consistent with the possibility that parties may have found ways to contract around BAPCPA, which is in line the notion of regulatory arbitrage. One could argue that PIPs proposed and approved post-BAPCPA appear to contain some of the similar "self-dealing" features previously contained in KERPs, which became much more difficult to adopt. This is the most plausible explanation as to why the post-reform PIPs are less value maximizing than their pre-BAPCPA counterparts.

Our results have implications both for policy makers and the current debate on retention bonuses in companies that have received U.S. government funds to stay-afloat during the recent financial crisis. In spite of being clearly dominated by PIPs, it is not clear that forbidding KERPs was beneficial for bankruptcy resolution. Our evidence suggests that KERPs exhibit some positive characteristics. Notably, our results suggest DIP lenders favored the joint KERP and PIP adoption over other types of compensation plans, and as much as they favored the adoption of a stand-alone PIP. While the presence of a KERP leads to longer bankruptcies, Chapter 11 duration decreases as KERP payouts per employee increase. Finally, although to a lesser extent than PIPs, KERPs are associated with a positive future operating performance. Consequently, our findings suggest that in trying to reform the bankruptcy procedure, the US Congress did not anticipate the possibility of regulatory arbitrage and may have actually rendered Chapter 11 less efficient by adding too many restrictive conditions on KERPs. We find that post-BAPCPA performance incentive plans' impact on bankruptcy duration and operating performance become more like those of pre-retention retention plans. Importantly, PIPs appear to lose their effectiveness. Out findings suggest that the Congress, despite its best intentions, may have overreached by limiting the range of plans that could be

contracted in Chapter 11 bankruptcy. This decision may have inadvertently rendered Chapter 11 less efficient.

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Figure 1. Frequency of Bankruptcies, KERPs and PIPs

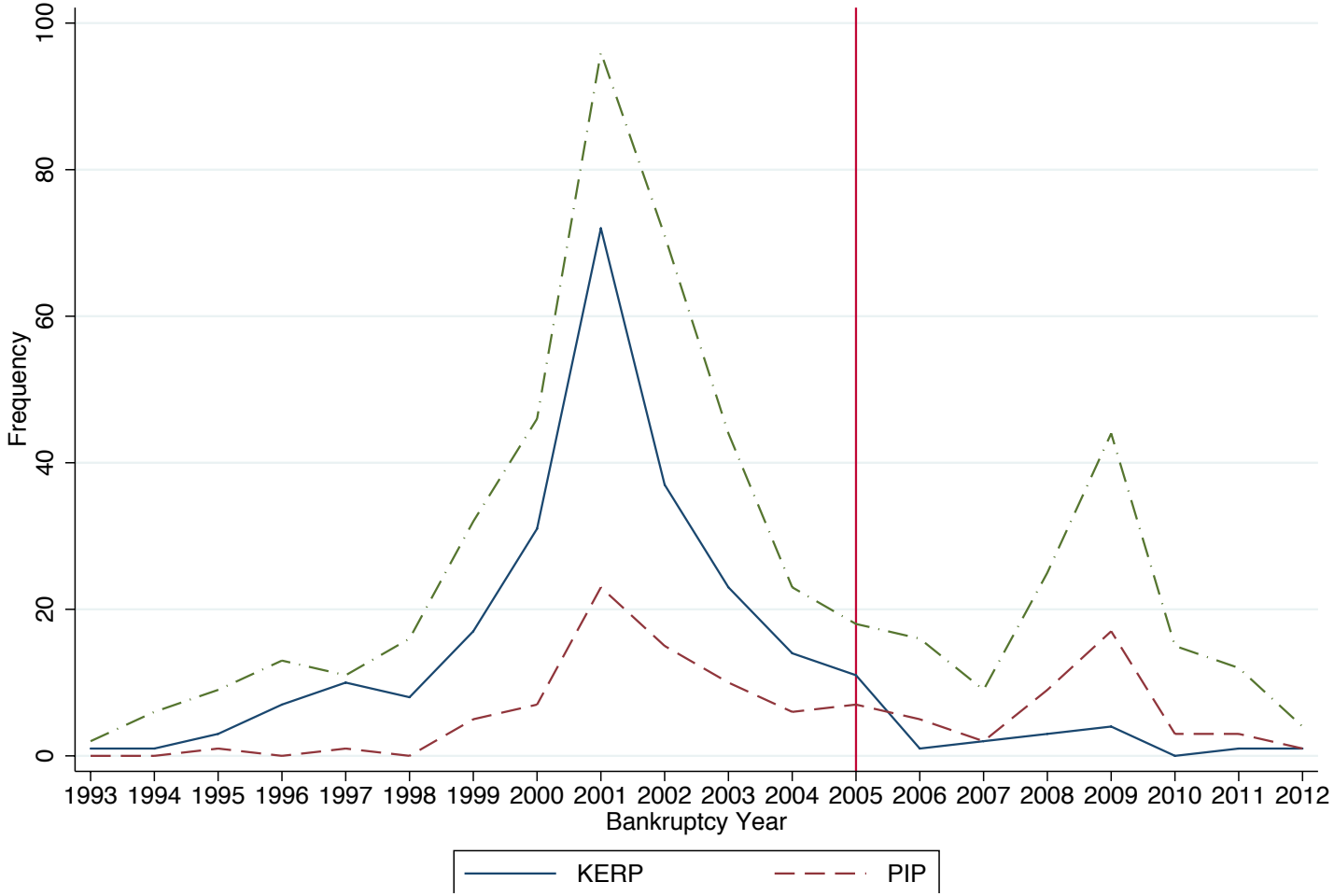

Figure 2. Percentage of KERP and PIP cases

Table 1. Descriptive Statistics for the Whole Sample

This table provides descriptive statistics for the bankrupt firms in the sample, which contains 512 firms that filed for Chapter 11 bankruptcy in the 1993-2012 period with liabilities that exceed US$ 100 million at the date of filing. Bankruptcy-related data were collected from the Altman-NYU Salomon Center Bankruptcy database, the PACER database, Lynn LoPucki's BRD database, and the SEC's EDGAR database. Financial data were collected from the COMPUSTAT database. The prefix *D_* denotes an indicator ("dummy") variable that equals one for the specified category, and zero otherwise. Other variables are as defined in the table. The financial ratios are winsorized at the 5th and 95th percentiles of their distributions to remove large outliers.

Variable Name	Variable Definition	N	ALL	pre-BAPCPA	post-BAPCPA	t-test
Bankruptcy Cases	Number of Bankruptcy Cases	512		385	127	
D_KERP	Stand-alone Key Employee Retention Plan adoption	512	0.3457	0.4519	0.0236	***
D_PIP	Stand-alone Performance Incentive Plan adoption	512	0.0879	0.0338	0.2520	***
D_KERP&PIP	Joint-adoption of KERP and PIP	512	0.1367	0.1558	0.0787	**
D_PREPACK	A prepackaged or prenegotiated bankruptcy case	512	0.2988	0.2883	0.3307	
D_EQCOMM	An equityholders committee present	510	0.0941	0.1120	0.0397	**
D_DIP	Debtor-in-possession financing present	510	0.6373	0.6224	0.6825	
D_CASHCOLL	Cash Collateral present	510	0.6765	0.6276	0.8254	***
D_DE	Delaware Bankruptcy court case	512	0.4141	0.3818	0.5118	***
D_NYSD	NY Southern District Bankruptcy court case	512	0.1699	0.1506	0.2283	**
DAYS	Days to Plan Confirmation	509	471.49	515.80	338.20	***
TA	Total Assets ($ million)	512	1,748.10	1,663.12	2,150.85	
TL	Total Liabilities ($ million)	512	1,721.16	1,401.73	2,689.51	
NEMPS	Number of Employees	511	6,686.62	6,075.81	8,552.99	
LEVERAGE	Leverage ratio	512	1.1022	1.0890	1.1339	
CA/TA	Cash and Short-term Instruments/Total Assets	512	0.0673	0.0651	0.074	
ROA	Return on Assets	512	-0.2655	-0.2732	-0.2423	

Table 2. Descriptive Statistics for KERP and PIP Contracts

This table provides descriptive statistics for the coverage variables for the Key Employee Retention Plans (KERPs) and/or the Performance Incentive Plans (PIPs). The plan coverage variables are defined in the second column of the table. Financial ratios are winsorized at the at the 5th and 95th percentile of their distribution to rule out large outliers. The initial sample contains 356 firms that filed for Chapter 11 bankruptcy in the 1993-2004 period with liabilities that exceed US$ 100 million at filing. Bankruptcy-related data were collected from the Altman-NYU Salomon Center Bankruptcy database, the PACER database, Lynn LoPucki's BRD database, and the SEC's EDGAR database. Financial data was collected from the COMPUSTAT database. All financial data are collected for the last fiscal year prior to the year of bankruptcy filing. *, **, and *** indicate 10%, 5% and 1% significance levels for the t-test (which allows for unequal variances) of the equality of KERP and the corresponding PIP variable, respectively.

KERP and PIP Coverage Variables		**N**		**Mean**	**Std.Dev.**	**Min.**	**Median**	**Max.**
Bankruptcy cases	Number of bankruptcy cases	512						
KERP cases	Number of bankruptcy cases with KERP	247						
KERP_$	KERP amount ($ million) total	123		4.6394	6.6358	0.0227	1.8360	40.0000
KERP/TA	KERP amount total / Total Assets	123		0.0040	0.0040	0.0003	0.0028	0.0144
KEMP	KERP-covered employees	127		136.2598	225.0347	1.0000	47.0000	1285.0000
KEMPS/NEMPS	KERP-covered employees / Total number of employees	127		0.0421	0.0672	0.0011	0.0150	0.2689
KERP/KEMPS	KERP amount total / KERP employees ($ million per emp.)	115		0.0855	0.2261	0.0012	0.0440	1.9010
KDAYS_PRE	Days until KERP adoption after Ch.11 filing	243		106.8066	106.4484	0.0000	76.0000	756.0000
KDAYS_POST	Days after KERP adoption until reorganization or liquidation	241		485.6929	402.0064	0.0000	382.0000	2895.0000
PIP cases	Number of bankruptcy cases with PIP	115						
PIP_$	PIP amount ($ million) total	81	***	9.5803	16.7623	0.0779	2.9780	90.0000
PIP/TA	PIP amount total / Total Assets	81		0.0050	0.0057	0.0002	0.0029	0.0207
PEMPS	PIP-covered employees	74	***	422.6622	947.6225	1.0000	43.0000	5427.0000
PEMPS/NEMPS	PIP-covered employees / Total number of employees	74	**	0.0813	0.1914	0.0003	0.0069	0.7603
PIP/PEMPS	PIP amount total / PIP employees ($ million per employee)	71	***	0.2813	0.6576	0.0000	0.0733	3.4850
PDAYS_PRE	Days until PIP adoption after Ch.11 filing	106		125.3962	115.1920	1.0000	93.0000	910.0000
PDAYS_POST	Days after PIP adoption until reorganization or liquidation	103		442.8350	373.0178	0.0000	357.0000	2168.0000

Table 3. Determinants of KERP and/or PIP Adoption

This table provides multinomial (polytomous) logistic regression model estimates of the determinants of adoption of a KERP and/or PIP in Chapter 11 bankruptcy. The dependent variable is equal to 0 if there is no KERP or PIP, to 1 if a KERP but no PIP was adopted, to 2 if a PIP but no KERP was adopted, and to 3 if both a KERP and a PIP were adopted jointly. The sample contains 512 firms that filed for Chapter 11 bankruptcy in the 1993-2012 period with liabilities that exceed US$ 100 million at filing. Bankruptcy-related data were collected from the Altman-NYU Salomon Center Bankruptcy database, the PACER database, Lynn LoPucki's BRD database, and the SEC's EDGAR database. Financial data was collected from the COMPUSTAT database for the last fiscal year prior to the year of bankruptcy filing. KERP is Key Employee Retention Plan and PIP is Performance Incentive Plan. Prefix *D_* indicates a "dummy" variable that equals one for the described category, and zero otherwise: *D_PREPACK* is for prepackaged bankruptcy cases; *D_EQCOMM* is for the presence of an equity committee; *D_DIP* is for the debtor in possession financing; *D_CASHCOLL* is the release of cash collateral; *D_DE* is for bankruptcy cases filed in the bankruptcy court in Delaware; and *D_NYSD* is for bankruptcy cases filed in the bankruptcy court in the New York southern district. ln(TA) is the logarithm of total assets; *ROA* is the return on assets defined as annual net income divided by total assets; *LEVERAGE* is leverage defined as the ratio of total liabilities and total assets; and *CA/TA* is cash and short term investments divided by total assets. *ROA, LEVERAGE* and *CA/TA* are industry adjusted, i.e., they are equal to the difference between the firm's ratio and the median ratio for its industry. The estimation is conducted with robust standard errors to account for possible heteroskedasticity. The t-statistics for the coefficient estimates are presented in parentheses below the coefficient estimates. *, **, and *** indicate 10%, 5% and 1% significance levels, respectively.

	KERP		*PIP*		*KERP&PIP*				
	(A)		(B)		(C)		(A) – (B)	(C) – (A)	(C) – (B)
D_BAPCPA	-3.714	***	1.146	***	-1.543	***	***	***	***
	(6.13)		(2.97)		(3.77)				
D_PREPACK	-1.307	***	-1.176	**	-1.982	***			
	(4.76)		(2.53)		(4.47)				
D_DIP	0.094		0.753		0.620	*			
	(0.35)		(1.62)		(1.71)				
D_CASHCOLL	-0.165		1.043	*	0.121			**	
	(0.64)		(1.84)		(0.34)				
D_EQCOMM	-0.651		0.573		-0.120			**	
	(1.61)		(0.96)		(0.25)				
D_DE	-0.082		0.300		-0.124				
	(0.31)		(0.66)		(0.35)				

D_NYSD	-0.475		0.325		-0.070			
	(1.28)		(0.57)		(0.15)			
ln(TA)	0.341	**	0.421	**	0.622	***		**
	(2.52)		(2.41)		(3.99)			
ROA (industry adjusted)	0.116		0.085		-0.158			
	(0.26)		(0.10)		(0.25)			
LEVERAGE (industry adjusted)	-0.302		-0.236		-0.065			
	(0.88)		(0.42)		(0.13)			
CA/TA (industry adjusted)	2.663	**	0.936		0.042			
	(2.00)		(0.45)		(0.02)			
Constant	-0.884		-5.953	***	-4.608	***		
	(0.98)		(4.35)		(4.19)			
Number of observations	510							

Table 4. Determinants of KERP and PIP Coverage

This table provides OLS regression estimates for the determinants of plan coverage for Key Employee Retention Plans (KERPs) and Performance Incentive Plans (PIPs) adopted in Chapter 11. The sample contains 512 firms that filed for Chapter 11 bankruptcy in the 1993-2012 period with liabilities that exceed US$ 100 million at filing. Bankruptcy-related data were collected from the Altman-NYU Salomon Center Bankruptcy database, the PACER database, Lynn LoPucki's BRD database, and the SEC's EDGAR database. Financial data was collected from the COMPUSTAT database for the last fiscal year prior to the year of bankruptcy filing. Prefix *D_* indicates a "dummy" variable that equals one for the described category, and zero otherwise: *D_PIP2* is for the adoption of a PIP (either stand-alone or joint with a KERP), *D_PREPACK* is for prepackaged bankruptcy cases; *D_EQCOMM* is for the presence of an equity committee; *D_DIP* is for the debtor in possession financing; *D_CASHCOLL* is the release of cash collateral; *D_DE* is for bankruptcy cases filed in the bankruptcy court in Delaware; and *D_NYSD* is for bankruptcy cases filed in the bankruptcy court in the New York southern district. ln(TA) is the logarithm of total assets; *ROA* is the return on assets defined as annual net income divided by total assets; *LEVERAGE* is leverage defined as the ratio of total liabilities and total assets; and *CA/TA* is cash and short term investments divided by total assets. *ROA, LEVERAGE* and *CA/TA* are industry adjusted, i.e., they are equal to the difference between the firm's ratio and the median ratio for its industry. The estimation is conducted with robust standard errors to account for possible heteroskedasticity. The t-statistics for the coefficient estimates are presented in parentheses below the coefficient estimates. *, **, and *** indicate 10%, 5% and 1% significance levels, respectively.

	PLAN AMOUNT/ TA		PLAN EMPLOYEES/ TOTAL_EMPLOYEES		PLAN AMOUNT/ PLAN EMPLOYEES	
D_PIP2	-0.001		0.129		-0.036	
	(-0.40)		(1.10)		(-0.93)	
D_BAPCPA	-0.002	**	-0.005		-0.026	**
	(-2.09)		(-0.17)		(-2.04)	
D_PIP2×D_BAPCPA	0.004	*	-0.076		0.090	*
	(1.80)		(-0.60)		(1.94)	
D_PREPACK	0.001		-0.033*		-0.013	
	(0.84)		(-1.75)		(-0.29)	
D_DIP	-0.000		0.006		0.021	
	(-0.38)		(0.29)		(0.62)	
D_CASHCOLL	0.000		0.017		-0.035	
	(0.25)		(0.97)		(-1.19)	
D_EQCOMM	0.000		-0.006		0.108	

	(0.52)			(-0.25)		(1.18)
D_DE	-0.001			-0.058	***	0.005
	(-1.53)			(-2.85)		(0.23)
D_NYSD	0.000			-0.019		0.039
	(0.27)			(-0.70)		(0.73)
ln(TA)	-0.001	***		0.005		0.004
	(-2.88)			(0.57)		(0.38)
ROA (industry adjusted)	-0.003			-0.101	*	0.050
	(-1.46)			(-1.79)		(1.07)
LEVERAGE (industry adjusted)	0.002			-0.046		0.030
	(1.27)			(-1.22)		(0.85)
CA/TA (industry adjusted)	-0.001			0.182		0.500
	(-0.11)			(1.64)		(1.47)
Constant	0.008	***		0.032		0.076
	(3.90)			(0.51)		(0.98)
Observations	203			200		185
Adjusted R-squared	0.1994			0.0721		0.0221
D_PIP2 + D_PIP2×D_BAPCPA	0.003	**		0.053		0.054 *
	(2.18)			(1.10)		(1.74)

Table 5. Plan Adoption and Stock Price Reaction

This table provides the analysis of the stock market reaction to the news of adoption of a Key Employee Retention Plan (KERP) and Performance Incentive Plan (PIP) during Chapter 11 for firms whose shares continue to trade after filing for bankruptcy. Our initial sample contains 512 firms that filed for Chapter 11 bankruptcy in the 1993-2012 period with liabilities that exceed US$ 100 million at filing. Of these 362 have adopted a KERP and/or a PIP. Stock price data were collected from the CRSP database, which contains stock returns around plan adoptions for 20 cases (17 stand-alone KERPs and 3 stand-alone PIPs). Abnormal returns are obtained using market models that are estimated with return data prior to Chapter 11 filing. *, **, and *** indicate 10%, 5% and 1% significance levels respectively.

Panel A: Stock Price Reaction around KERP and/or PIP Adoption Dates

Day	N	Mean Abnormal Return	Positive: Negative	Standardized Abnormal Return Test z-score		Time-Series Std. Dev. Test t-statistic		Generalized Sign Test z-score	
-1	20	2.14%	11:09	2.15	**	1.279		0.642	
0	20	-1.83%	9:11	-1.449	*	-1.095		-0.253	
1	20	6.56%	17:03	4.483	***	3.914	***	3.328	***
2	20	-1.13%	11:09	-1.116		-0.677		0.642	
3	20	2.38%	14:06	1.609	*	1.422	*	1.985	**

Panel B: Cumulative Abnormal Returns (CAR) around KERP and/or PIP Adoption Dates

(-1,0)	20	0.31%	10:10		0.496		0.13		0.194	
(+1,+3)	20	7.81%	17:03	***	2.873	***	2.69	***	3.328	***

Table 6. KERP and/or PIP Adoption and Chapter 11 Duration

This table provides time-to-failure (duration) regression model estimates where the dependent variable is *DAYS*, which is defined as days the firm spends in bankruptcy between the filing and resolution (disposition) dates. The sample contains 512 firms that filed for Chapter 11 bankruptcy in the 1993-2012 period with liabilities that exceed US$ 100 million at filing. Bankruptcy-related data were collected from the Altman-NYU Salomon Center Bankruptcy database, the PACER database, Lynn LoPucki's BRD database, and the SEC's EDGAR database. Financial data were collected from the COMPUSTAT database for the last fiscal year prior to the year of bankruptcy filing. Prefix *D_* indicates a "dummy" variable that equals one for the described category, and zero otherwise: *D_KERP* denotes cases where a Key Employee Retention Plan was adopted; *D_PIP* denotes cases where Performance Incentive Plan was adopted; *D_KERP&PIP* denotes cases where both plans were adopted; *D_BAPCPA* denotes cases after October 17, 2005 for which the Bankruptcy Abuse Prevention and Consumer Protection Act is in effect; *D_PREPACK* denotes prepackaged bankruptcy cases; *D_EQCOMM* denotes the presence of an equity committee; *D_DIP* denotes the debtor in possession financing; *D_CASHCOLL* denotes the release of cash collateral; *D_DE* denotes bankruptcy cases filed in the bankruptcy court in Delaware and *D_NYSD* those filed in the New York Southern District. ln(*TA)* is the logarithm of total assets; *ROA* is the return on assets defined as annual net income divided by total assets; *LEVERAGE* is leverage defined as the ratio of total liabilities and total assets; and *CA/TA* is cash and short term investments divided by total assets. *ROA, LEVERAGE* and *CA/TA* are industry-adjusted using the median ratio for the firm's industry. The estimation is conducted with robust standard errors to account for possible heteroskedasticity. The t-statistics for the coefficient estimates are presented in parentheses below the coefficient estimates. *, **, and *** indicate 10%, 5% and 1% significance levels, respectively.

Dependent variable		*DAYS*	
D_KERP	β_1	0.235	**
		(2.24)	
D_PIP	β_2	-0.227	**
		(-2.14)	
D_KERP&PIP	β_3	0.227	*
		(1.94)	
D_BAPCPA	β_4	-0.456	***
		(-3.92)	
D_KERP×D_BAPCPA	β_5	0.410	***
		(2.83)	
D_PIP×D_BAPCPA	β_6	0.711	***
		(3.24)	
D_KERP&PIP×D_BAPCPA	β_7	0.263	

		(1.39)	
D_PREPACK	γ_1	-1.143 (-12.71)	***
D_DIP	γ_2	-0.161 (-1.86)	*
D_CASHCOLL	γ_3	-0.093 (-1.11)	
D_EQCOMM	γ_4	0.275 (2.08)	**
D_DE	γ_5	-0.023 (-0.30)	
D_NYSD	γ_6	0.179 (1.60)	
ln(TA)	γ_7	-0.010 (-0.35)	
ROA (industry adjusted)	γ_8	0.416 (3.12)	***
LEVERAGE (industry adjusted)	γ_9	-0.041 (-0.40)	
CA/TA (industry adjusted)	γ_{10}	0.106 (0.22)	
Constant	α_0	6.719 (30.20)	***
ln(p)		0.430 (10.49)	***
Observations		507	

Pre-BAPCPA Period			
PIP vs KERP duration	$\beta_2 - \beta_1$	-0.462 (-4.40)	***
PIP vs KERP&PIP duration	$\beta_2 - \beta_3$	-0.454 (-3.94)	***
KERP&PIP vs KERP duration	$\beta_3 - \beta_1$	-0.009 (-0.08)	
Post-BAPCPA Period			
PIP vs KERP duration	$(\beta_2 + \beta_6) - (\beta_1 + \beta_5)$	-0.161 (-0.87)	
PIP vs KERP&PIP duration	$(\beta_2 + \beta_6) - (\beta_3 + \beta_7)$	-0.005 (-0.02)	
KERP&PIP vs KERP duration	$(\beta_3 + \beta_7) - (\beta_1 + \beta_5)$	-0.156 (-1.05)	

Table 7. Regressions for Time Until KERP and/or PIP Adoption, and Time Until Chapter 11 Resolution Given Plan Adoption

This table provides time-to-failure (duration) model estimates. The columns (A) and (B) present the time-to-failure model where the dependent variable is days between Chapter 11 filing and the adoption of a Key Employee Retention Plan (KERP) and/or Performance Incentive Plan (PIP). Columns (C) and (D) present the time-to-failure model where the dependent variable is days between a KERP and/or PIP plan adoption date and bankruptcy resolution date. The sample contains 512 firms that filed for Chapter 11 bankruptcy in the 1993-2012 period with liabilities that exceed US$ 100 million at filing. Bankruptcy-related data were collected from the Altman-NYU Salomon Center Bankruptcy database, the PACER database, Lynn LoPucki's BRD database, and the SEC's EDGAR database. Financial data were collected from the COMPUSTAT database for the last fiscal year prior to the year of bankruptcy filing. Prefix *D_* indicates a "dummy" variable that equals one for the described category, and zero otherwise: *D_KERP* denotes cases where a Key Employee Retention Plan was adopted; *D_PIP* denotes cases where Performance Incentive Plan was adopted; *D_KERP&PIP* denotes cases where both plans were adopted; *D_BAPCPA* denotes cases after October 17, 2005 for which the Bankruptcy Abuse Prevention and Consumer Protection Act is in effect; *D_PREPACK* denotes prepackaged bankruptcy cases; *D_EQCOMM* denotes the presence of an equity committee; *D_DIP* denotes the debtor in possession financing; *D_CASHCOLL* denotes the release of cash collateral; *D_DE* denotes bankruptcy cases filed in the bankruptcy court in Delaware and *D_NYSD* those filed in the New York Southern District. ln(*TA)* is the logarithm of total assets; *ROA* is the return on assets defined as annual net income divided by total assets; *LEVERAGE* is leverage defined as the ratio of total liabilities and total assets; and *CA/TA* is cash and short term investments divided by total assets. *ROA, LEVERAGE* and *CA/TA* are industry adjusted using the median ratio for the firm's industry. The estimation is conducted with robust standard errors to account for possible heteroskedasticity. The t-statistics for the coefficient estimates are presented in parentheses below the coefficient estimates. *, **, and *** indicate 10%, 5% and 1% significance levels, respectively.

		DAYS before Plan Adoption (A)		*DAYS* after Plan Adoption (B)	
D_PIP	β_1	-0.431	*	-0.597	***
		(-1.91)		(-2.76)	
D_KERP&PIP	β_2	-0.071		0.046	
		(-0.53)		(0.40)	
D_BAPCPA	β_3	-0.076		0.102	
		(-0.13)		(0.75)	
D_PIP×D_BAPCPA	β_4	0.590		0.209	
		(0.96)		(0.61)	
D_KERP&PIP×D_BAPCPA	β_5	0.180		-0.255	
		(0.28)		(-1.03)	
D_PREPACK	γ_1	-0.409	***	-0.929	***

		(-3.31)		(-5.69)		
D_DIP	γ_2	0.015		0.009		
		(0.11)		(0.08)		
D_CASHCOLL	γ_3	0.183		-0.144		
		(1.43)		(-1.31)		
D_EQCOMM	γ_4	0.248		0.293		
		(1.38)		(1.39)		
D_DE	γ_5	-0.029		0.110		
		(-0.25)		(1.03)		
D_NYSD	γ_6	0.243	*	0.227		
		(1.87)		(1.32)		
ln(TA)	γ_7	-0.085	**	-0.026		
		(-2.25)		(-0.62)		
ROA (industry adjusted)	γ_8	0.361		0.293		
		(1.55)		(1.40)		
LEVERAGE (industry adjusted)	γ_9	-0.103		-0.196		
		(-0.63)		(-1.20)		
CA/TA (industry adjusted)	γ_{10}	0.240		0.377		
		(0.36)		(0.45)		
Constant	α_0	5.335	***	6.678	***	
		(16.20)		(20.60)		
ln(p)		0.245	***	0.303	***	
		(5.46)		(5.97)		
Number of observations		277		274		
D_PIP +D_PIP×D_BAPCPA	$\beta_1 + \beta_4$	0.158		-0.388		
		(0.27)		(-1.52)		
D_KERP&PIP +D_KERP&PIP×D_BAPCPA	$\beta_2 + \beta_5$	0.109		-0.209		
		(0.17)		(-0.92)		

Table 8. KERP and/or PIP Size and Chapter 11 Duration

KERP or PIP size =		PLAN AMOUNT/ TA		PLAN EMPLOYEES/ TOTAL_EMPLOYEES		PLAN AMOUNT/ PLAN EMPLOYEES	
D_KERP&PIP	β_1	0.003		0.216		0.329	**
		(0.02)		(1.57)		(2.53)	
KERP	β_2	-24.902	**	-1.825	***	-0.540	***
		(-2.56)		(-3.09)		(-3.61)	
KERP × D_KERP&PIP	β_3	55.213	***	0.782		0.402	*
		(2.83)		(0.29)		(1.76)	
PIP	β_4	-144.409	**	-0.334	*	-0.061	
		(-2.53)		(-1.91)		(-0.47)	
PIP × D_KERP&PIP	β_5	139.870	**	-0.656		-1.690	***
		(2.39)		(-0.65)		(-3.76)	
D_BAPCPA	β_6	0.104		-0.018		0.197	
		(0.39)		(-0.09)		(0.86)	
D_KERP_PIP × D_BAPCPA	β_7	0.191		-0.286		-0.518	*
		(0.58)		(-0.98)		(-1.73)	
KERP × D_BAPCPA	β_8	-39.760		1.742	**	-0.825	
		(-0.39)		(2.26)		(-0.23)	
KERP × D_KERP&PIP × D_BAPCPA	β_9	48.017		-1.020		-1.482	
		(0.44)		(-0.23)		(-0.23)	
PIP × D_BAPCPA	β_{10}	127.458	**	0.273		-0.014	
		(2.09)		(0.74)		(-0.04)	
PIP × D_KERP&PIP × D_BAPCPA	β_{11}	-237.255	***	1.024		2.259	***
		(-3.27)		(0.94)		(3.44)	
D_PREPACK	γ_1	-0.727	***	-0.774	***	-0.577	***
		(-4.12)		(-4.36)		(-3.16)	

D_DIP	γ_2	-0.189	*	-0.055		-0.175	
		(-1.71)		(-0.47)		(-1.58)	
D_CASHCOLL	γ_3	-0.181	*	-0.233	**	-0.307	***
		(-1.65)		(-2.09)		(-2.77)	
D_EQCOMM	γ_4	0.427	**	0.307	*	0.416	**
		(2.26)		(1.86)		(2.00)	
D_DE	γ_5	0.038		-0.024		-0.028	
		(0.30)		(-0.18)		(-0.21)	
D_NYSD	γ_6	0.124		0.076		0.029	
		(0.97)		(0.53)		(0.20)	
ln(TA)	γ_7	-0.035		-0.064		-0.035	
		(-0.90)		(-1.56)		(-0.90)	
ROA (industry adjusted)	γ_8	0.418		0.176		0.414	
		(1.61)		(0.72)		(1.39)	
LEVERAGE (industry adjusted)	γ_9	-0.128		-0.337		-0.183	
		(-0.57)		(-1.51)		(-0.71)	
CA/TA (industry adjusted)	γ_{10}	-0.034		1.124		-0.158	
		(-0.05)		(1.31)		(-0.24)	
Constant	α_0	7.103	***	7.380	***	7.123	***
		(22.19)		(20.98)		(21.91)	
ln(p)		0.648	***	0.569	***	0.633	***
		(10.40)		(8.95)		(9.53)	
Number of observations		154		161		147	

Pre-BAPCPA KERP and PIP impact on Bankruptcy Duration								
Stand-alone KERP size	β_2	-24.902	**	-1.825	***	-0.540	***
		(-2.56)		(-3.09)		(-3.61)	
Stand-alone PIP size	β_4	-144.409	**	-0.334	*	-0.061	
		(-2.53)		(-1.91)		(-0.47)	
Difference of stand-alone PIP vs KERP sizes	$\beta_4 - \beta_2$	-119.507	**	1.491	***	0.479	**
		(-2.17)		(2.76)		(2.52)	
KERP size in a joint KERP & PIP	$\beta_2 + \beta_3$	30.311	*	-1.043		-0.138	
		(1.72)		(-0.38)		(-0.79)	
PIP size in a joint KERP & PIP	$\beta_4 + \beta_5$	-4.539		-0.990		-1.751	***
		(-0.84)		(-1.03)		(-4.28)	
Difference PIP vs KERP sizes if joint KERP & PIP	$(\beta_4 + \beta_5) - (\beta_2 + \beta_3)$	-34.850	*	0.052		-1.613	***
		(-1.69)		(0.01)		(-4.51)	

Post-BAPCPA KERP and PIP impact on Bankruptcy Duration							
Stand alone KERP size	$\beta_2 + \beta_8$	-64.662		-0.083		-1.364	
		(-0.63)		(-0.18)		(-0.38)	
Stand alone PIP size	$\beta_4 + \beta_{10}$	-16.951		-0.062		-0.074	
		(-1.03)		(-0.18)		(-0.20)	
Difference stand alone PIP vs KERP sizes	$(\beta_4 + \beta_{10}) - (\beta_2 + \beta_8)$	47.711		0.021		1.290	
		(0.53)		(0.05)		(0.38)	
KERP size in a joint KERP & PIP	$\beta_2 + \beta_3 + \beta_8 + \beta_9$	38.568		(-0.320)		-2.444	
		(1.17)		(-0.10)		(-0.45)	
PIP size in a joint KERP & PIP	$\beta_4 + \beta_5 + \beta_{10} + \beta_{11}$	-114.336	**	0.306		0.494	**
		(-2.63)		(1.34)		(2.19)	
Difference PIP vs KERP sizes if joint KERP & PIP	$(\beta_4 + \beta_5 + \beta_{10} + \beta_{11}) - (\beta_2 + \beta_3 + \beta_8 + \beta_9)$	-152.903	**	0.626		2.939	
		(-2.16)		(0.20)		(0.53)	

Table 10. KERP and/or PIP Adoption and Bankrupt Firm Operating Performance

This table provides regression model estimates of determinants quarterly operating performance in Chapter 11 bankruptcy and in the post-bankruptcy period. The dependent variable, *ROA*, is industry (2-digit SIC code) income before extraordinary items divided by total assets. The initial sample contains 512 firms that filed for Chapter 11 bankruptcy during 1993-2004 period with liabilities that exceed US$ 100 million at filing. Bankruptcy-related data were collected from the Altman-NYU Salomon Center Bankruptcy database, the PACER database, Lynn LoPucki's BRD database, and the SEC's EDGAR database. Financial data was collected from the COMPUSTAT database. Prefix *D_* indicates a "dummy" variable that equals one for the described category, and zero otherwise: *D_KERP* is for stand-alone Key Employee Retention Plan (KERP) adoptions; *D_PIP* is for stand-alone PIP adoptions; *D_KERP&PIP* is for joint KERP and PIP adoptions; *D_PREPACK* is for prepackaged bankruptcy cases; *D_PRENEG* is for pre-negotiated bankruptcy cases; *D_EQCOMM* is for the presence of an equity committee; *D_DIP* is for the debtor in possession financing; *D_CASHCOLL* is the release of cash collateral; *D_DE* is for bankruptcy cases filed in the bankruptcy court in Delaware; and *D_NYSD* is for bankruptcy cases filed in the bankruptcy court in the New York southern district. ln(TA) is the logarithm of total assets; *ROA* is the return on assets defined as annual net income divided by total assets; *LEVERAGE* is leverage defined as the ratio of total liabilities and total assets; and *CA/TA* are current assets divided by total assets. All independent variable financial data are collected for the last fiscal year prior to the year of bankruptcy filing. All regression specifications contain industry-, fiscal year- and fiscal quarter-fixed effects. The t-statistics for the coefficient estimates are presented in parentheses below the coefficient estimates. *, **, and *** indicate 10%, 5% and 1% significance levels respectively.

Average Quarterly Industry-adjusted ROA From Filing to:		Disposition		+1 year post-Disposition		+4 year post-Disposition	
D_KERP	β_1	0.012		0.010		0.010	**
		(1.39)		(1.50)		(2.23)	
D_PIP	β_2	0.040	***	0.033	***	0.018	***
		(3.33)		(3.65)		(3.15)	
D_KERP_PIP	β_3	0.007		0.007		0.012	**
		(0.76)		(0.86)		(2.12)	
D_BAPCPA	β_4	0.015		0.019	**	0.011	**
		(1.34)		(2.37)		(2.44)	
D_PIP × *D_BAPCPA*	β_5	-0.045	**	-0.039	**	-0.019	**
		(-2.22)		(-2.50)		(-1.97)	
D_KERP_PIP × *D_BAPCPA*	β_6	-0.060		-0.046		-0.027	
		(-0.91)		(-1.00)		(-0.93)	

D_PREPACK	γ_1	-0.001		0.011	*	0.017	***
		(-0.06)		(1.72)		(4.40)	
D_DIP	γ_2	-0.023	***	-0.022	***	-0.015	***
		(-2.96)		(-3.65)		(-3.90)	
D_CASHCOLL	γ_3	0.004		0.001		0.003	
		(0.55)		(0.25)		(0.78)	
D_EQCOMM	γ_4	0.026	***	0.013	**	0.006	
		(3.78)		(2.25)		(1.62)	
D_DE	γ_5	-0.012		-0.017	***	-0.012	***
		(-1.53)		(-2.75)		(-3.14)	
D_NYSD	γ_6	0.015	**	0.009		-0.001	
		(2.02)		(1.42)		(-0.35)	
ln(TA)	γ_7	0.005	**	0.005	***	0.005	***
		(2.27)		(3.01)		(4.17)	
ROA (industry adjusted)	γ_8	0.035	**	0.020	*	0.020	***
		(2.06)		(1.69)		(2.65)	
LEVERAGE (industry adjusted)	γ_9	0.030	**	0.028	***	0.016	***
		(2.34)		(3.27)		(3.15)	
CA/TA (industry adjusted)	γ_{10}	-0.092	**	-0.087	***	-0.074	***
		(-1.97)		(-2.62)		(-3.69)	
Constant	α_0	-0.097	***	-0.081	***	-0.066	***
		(-5.01)		(-5.51)		(-6.79)	
Number of observations		906		1,433		2,563	
R^2		0.0646		0.0522		0.0444	

Pre-BAPCPA Period							
KERP	β_1	0.012		0.010		0.010	**
		(1.39)		(1.50)		(2.23)	
PIP	β_2	0.040	***	0.033	***	0.018	***
		(3.33)		(3.65)		(3.15)	
KERP and PIP	β_3	0.007		0.007		0.012	**
		(0.76)		(0.86)		(2.12)	
PIP vs KERP	$\beta_2 - \beta_1$	0.028	**	0.023	**	0.008	
		(2.39)		(2.57)		(1.46)	
PIP vs KERP and PIP	$\beta_2 - \beta_3$	0.033	***	0.026	***	0.005	
		(2.64)		(2.68)		(0.357)	
KERP and PIP vs KERP	$\beta_3 - \beta_1$	-0.005		-0.003		0.003	
		(-0.46)		(-0.35)		(0.44)	
Post-BAPCPA Period							
KERP	*NA*						
PIP	$\beta_2 + \beta_5$	-0.005		-0.006		-0.001	
		(-0.29)		(-0.44)		(-0.15)	
KERP and PIP	$\beta_3 + \beta_6$	-0.053		-0.039		-0.015	
		(-0.81)		(-0.86)		(-0.53)	
PIP vs KERP	*NA*						
PIP vs KERP and PIP	$(\beta_2 + \beta_5) - (\beta_3 + \beta_6)$	0.048		0.033		0.014	
		(0.73)		(0.73)		(0.48)	
KERP and PIP vs KERP	*NA*						

Appendix Table A1. BAPCPA Section 331 Amending Section 503 of Chapter 11

SEC. 331. LIMITATION ON RETENTION BONUSES, SEVERANCE PAY, AND CERTAIN OTHER PAYMENTS.

Section 503 of title 11, United States Code, is amended by adding at the end the following:

‘‘(c) Notwithstanding subsection (b), there shall neither be allowed, nor paid—

‘‘(1) a transfer made to, or an obligation incurred for the benefit of, an insider of the debtor for the purpose of inducing such person to remain with the debtor’s business, absent a finding by the court based on evidence in the record that—

‘‘(A) the transfer or obligation is essential to retention of the person because the individual has a bona fide job offer from another business at the same or greater rate of compensation;

‘‘(B) the services provided by the person are essential to the survival of the business; and

‘‘(C) either—

‘‘(i) the amount of the transfer made to, or obligation incurred for the benefit of, the person is not greater than an amount equal to 10 times the amount of the mean transfer or obligation of a similar kind given to nonmanagement employees for any purpose during the calendar year in which the transfer is made or the obligation is incurred; or

‘‘(ii) if no such similar transfers were made to, or obligations were incurred for the benefit of, such nonmanagement employees during such calendar year, the amount of the transfer or obligation is not greater than an amount equal to 25 percent of the amount of any similar transfer or obligation made to or incurred for the benefit of such insider for any purpose during the calendar year before the year in which such transfer is made or obligation is incurred;

‘‘(2) a severance payment to an insider of the debtor, unless—

‘‘(A) the payment is part of a program that is generally applicable to all full-time employees; and

‘‘(B) the amount of the payment is not greater than 10 times the amount of the mean severance pay given to nonmanagement employees during the calendar year in which the payment is made; or

‘‘(3) other transfers or obligations that are outside the ordinary course of business and not justified by the facts and circumstances of the case, including transfers made to, or obligations incurred for the benefit of, officers, managers, or consultants hired after the date of the filing of the petition.’’