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The Economic Impact of Chapter 11 Bankruptcy versus Out-of-Court Restructuring

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Companies in financial distress and unable to make payments due to creditors often face an important choice: whether to work out an agreement with debtholders to restructure their obligations on more manageable terms, or to enter formal Chapter 11 bankruptcy proceedings to suspend their debt obligations until creditors agree on a reorganization plan.

Two case rulings in 2015 by the U.S. District Court for the Southern District of New York may well have considerable influence on that choice going forward.[1] The Court found certain debt restructurings to be in violation of the Trust Indenture Act (TIA), a Depression-era law intended to protect bondholder rights. Legal experts have suggested that the Court's interpretation of the law creates uncertainty about what restructuring activities constitute a violation of the TIA, potentially increasing the number of companies choosing to pursue bankruptcy instead of out-of-court debt restructuring.

Past studies have aimed to identify the costs incurred by distressed companies choosing Chapter 11 filing or out-of-court debt restructuring. For example, in a survey of multiple cases, a study published in 2008 reported finding that the "direct" costs (that is, the directly measurable out-of-pocket legal costs) to companies entering Chapter 11 averaged 6.5% of their total assets.[2] Many of these costs (such as legal or filing fees) tend to be fixed, making bankruptcy prohibitively expensive for smaller businesses. Since Chapter 11 proceedings typically last more than two years, implying high indirect costs to the company such as forgone revenue or business opportunities.[3]

Out-of-court debt restructuring has been found, on average, to be considerably less costly than Chapter 11, in part because it is generally undertaken by companies experiencing lower degrees of financial distress, but also thanks to the more efficient, streamlined renegotiation process. The methods of restructuring debt vary, but distressed companies with publicly traded bonds (where the TIA applies) often use exchange offers in which they offer new securities with different terms in exchange for the troubled debt. And studies have found that exchange offers involve significantly lower direct costs (the estimates of direct studies range from 0.6% to 2.5% of total assets) and are completed much more quickly (often in less than two months) than restructurings carried out in Chapter 11 proceedings.[4]

Given that Chapter 11 bankruptcy proceedings entail significant legal costs and often protracted negotiations, working out an agreement privately with creditors would seem to be the clearly preferred solution in most if not all cases. In practice, however, asymmetric information between management and outsiders, as well as the existence of multiple lenders—often representing different levels (junior/senior) in the hierarchy of creditors—can complicate attempts at private workouts in the real world, making them more difficult. Hence the need for distressed companies to weigh the pros and cons of out-of-court restructuring and filing for Chapter 11.

Besides increasing direct and indirect costs for businesses coping with financial distress, eliminating the option to restructure out of court could prove costly and would likely increase uncertainty for investors trying to determine which businesses to finance and keep alive. One beneficial effect of the costs imposed by the Chapter 11 process is that they effectively promote a process of self selection in which more efficient and valuable companies then choose out-of-court debt restructuring while less valuable companies choose the (temporary) protection from creditors provided by Chapter 11, with the eventual possibility of liquidation.[5] Such a self-selection process, by enabling companies with greater confidence in their ability to work through their difficulties, provides valuable signals to potential investors that contribute to the restructuring process.[6] And thus to the extent that the two recent case rulings discourage use of out-of-court restructuring, they are likely to reduce the information content of the decision to file. By making it more difficult for debtholders or potential investors to identify distressed companies with significant going concern value, such

1. Marblegate Asset Management LLC v. Education Management Corp. (S.D.N.Y. June 23, 2015) and Meehancombs Global Credit Opportunities Master Fund, LP v. Caesars Entertainment Corp. (S.D.N.Y. Jan. 15, 2015). In the interest of full disclosure, the Milken Institute has received financial support from entities that are both plaintiffs and defendants in these litigations.

2. Hotchkiss, Edith S., John Kose, Karin S. Thorburn, Robert Mooradian, "Bankruptcy and the Resolution of Financial Distress," in: *Handbook of Corporate Finance: Empirical Corporate Finance*, 2008.

3. Bris, Arturo, Ivo Welch, Ning Zhu. "The Costs of Bankruptcy: Chapter 7 Liquidation Versus Chapter 11 Reorganization," *The Journal of Finance*, 61(3) pp. 1253-1303, 2006.

4. Gilson, Stuart C., Kose John, Larry H. P. Lang. "Troubled Debt Restructurings: An Empirical Study of Private Reorganization of Firms in Default," *Journal of Financial Economics*, 27(2) pp. 315-353, 1990. Betker, Brian L. "The Administrative Costs of Debt Restructurings: Some Recent Evidence," *Financial Management*, 26(4) pp. 56-58, 1997

5. Mooradian, Robert M. "The Effect of Bankruptcy Protection on Investment: Chapter 11 as a Screening Device," The Journal of Finance, 49(4) pp. 1403-1430, 1994.

rulings could end up imposing significant costs on businesses and the overall economy.

Measuring Economic Impacts of Bankruptcy and Out-of-Court Restructuring

Although there is substantial literature on the costs of bankruptcy and debt restructuring to individual companies, little work has been done to assess the impact these restructuring options on the real economy. To our knowledge, this study is the first to attempt to quantify and compare the economic effects of bankruptcy and out-of-court restructuring on measures of national economic health such as GDP and employment. Our analysis estimates the effect of both Chapter 11 and out-of-court restructurings on both economic output and employment within the year the restructuring was initiated. To be sure, existing studies have already made it clear that eliminating the out-of-court settlement as an option would be more costly to the distressed companies that might have made use of it. The point of our analysis is to determine the extent to which the scope of the current policy emphasis on bondholder protection should be expanded to include the national economy and, hence, the public interest.

Given that companies that enter Chapter 11 are not hard to identify, the main challenge for such analysis was to find as many (at least in some ways) comparable distressed U.S. companies that restructured their debt outside of the courts. Following a method that was first used in a much cited 1990 study (hereafter Gilson et al.), we used a two-step sampling procedure.[7] For each year between 2007 and 2013, we calculated the three-year change in the ratio of revenue to total assets for all companies on Capital IQ reporting at least \$100 million in total assets in the first of the three years. This threshold was used to increase the likelihood that the company's financial distress would be covered by the financial press while allowing for the reality that companies can and do sell assets during the period of declining revenue.

We focused on the companies whose three-year change in the ratio of revenue to total assets is in the bottom five percent for at least one year. The 614 identified companies were then sorted into three groups: bankruptcy, out-of-court negotiation, and the rest. We used Capital IQ's indicator for bankruptcy and searched Capital IQ, Bloomberg, news and financial reports for evidence of out-of-court restructuring and Chapter 11 filing.[8] At this stage, 175 of the original 614 companies had either filed for Chapter 11 bankruptcy (103 cases) or been identified as having restructured out-of-court (72 cases) between 2007 and 2013.[9]

This firm selection scheme was deliberately based on earnings declines rather than poor stock returns to avoid incorporating the probability of future events—including the method of restructuring and the likelihood of successfully resolving financial distress—that tend to get reflected in stock prices and returns. Focusing on companies with the lowest stock returns would have led to a disproportionate amount of companies in severe financial (or economic) distress, thereby resulting in a selection of firms with the worst expected future restructuring outcomes.

Methodology of Economic Impact Analysis

Our economic impact analysis relied heavily on the Regional Input-Output Modeling System (RIMS II) tables that are published by the Bureau of Economic Analysis.

RIMS II multipliers. These tables allowed us to provide a crude estimate of the national impact of the reduced activity of financially distressed companies on final output and jobs per industry, using the North American Industry Classification System (NAICS).[10] By design, this analysis can identify only the short-term effects of the observed changes. We looked at the overall impact during the year after the bankruptcy filings or out-of-court settlement.

Over the longer term, most of the human capital and physical assets of these bankrupt companies would likely be either redeployed in a restructured entity, a new enterprise, or a currently operating one. Nevertheless, the short- to medium-term dislocations could be substantial. Some potential long-term U.S. GDP growth could be lost as a consequence of regional mismatches between where the human and physical assets of bankrupt firms were located and the other locations that could best redeploy them. And some former workers at bankrupt firms could see a deterioration of their skills to the extent that they may not be willing to accept new employment at a substantially reduced wage. Additionally, the physical assets of bankrupt companies could experience at least partial obsolescence and permanently reduce potential output of the economy.

At the six-digit NAICS level, the database used in our study covers 52 industries. As can be seen in Figure 1, which shows the distribution of the firms across industries, manufacturing, finance, and insurance companies accounted for more than 50% of the bankruptcies while finance and insurance accounted for more than 80% of the out-of-court restructurings.[11]

6. A 1995 study provides support for this dichotomy, finding that companies for Chapter 11 tend to be more leveraged and have worse operating performance. See Chatterjee, Sris, Upinder S. Dhillon, Gabriel G. Ramirez. "Coercive Tender and Exchange Offers in Distressed High-Yield Debt Restructurings: An Empirical Analysis," *Journal of Financial Economics* 38(3) pp. 333-360, 1995.

7. Gilson, Stuart C., Kose John, and Larry H. P. Lang, 1990. "Troubled Debt Restructurings: An Empirical Study of Private Reorganization of Firms in Default," *Journal of Financial Economics* 27: 315-353.

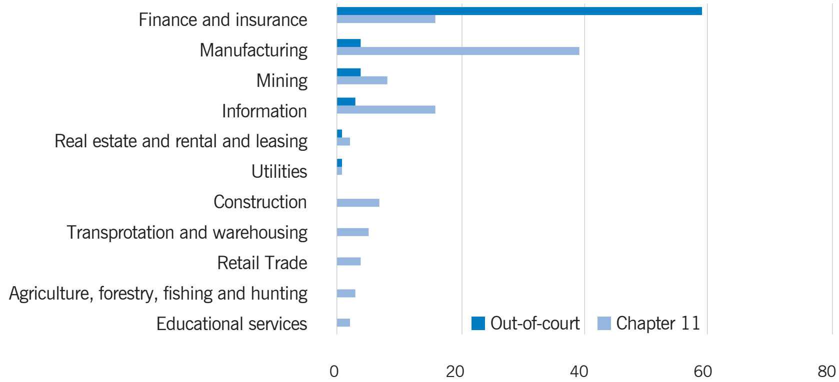
8. Search terms include: covenant, liquidate, liquidation, default, reorganize, reorganization, restructure, restructuring, distress, creditor, bondholder, negotiate, negotiations, renegotiate, renegotiation, out-of-court, exchange offers and debt. Also searched for Chapter 11 for the bankruptcy firms.

9. Overall, the required data is available for 87 firms in bankruptcy and 71 in out-of-court renegotiation.

10. More specifically, national industry specific multipliers are generated using RIMS II multipliers in order to evaluate the industry-level impact of a change in final demand on GDP and employment.

11. Includes companies receiving financing through the Troubled Asset Relief Program.

Figure 1 **Firms' distribution across industries**



Source: Milken Institute

Our analysis relies on final demand multipliers in an attempt to capture both direct and indirect effects of the changes. For a given change in employment or output for a given industry, the multipliers estimate the ripple effects on economic output and employment for other sectors of the economy. For example, a car parts manufacturer going out of business would disrupt the industry supply chain and cause employees to lose their source of income, which would reduce spending in other sectors such as retail and transportation. Hence, it accounts for the inter-industry effect as well as the household-spending effect—that is, the spending of workers whose earnings are affected by the change.[12]

We estimated the change in final demand between the year before the restructuring (bankruptcy or out-of-court) and the year after using two different variables: the decline in total revenues of the industry, and the net loss of jobs.

What We Found

The 175 companies in our sample represented $1.1 trillion in total assets, $316 billion in total revenue, and 865,000 employees prior to the filling of Chapter 11 bankruptcy or the out-of-court negotiation. As seen in Table 1, the 102 companies that filed Chapter 11 experienced a direct loss in revenue of $214 billion (76.5 percent) and 376,000 jobs (57.5 percent), as compared to $11 billion (29.8 percent) and 100,200 jobs (46.9 percent) for the 73 out-of-court workouts for the period 2006 to 2014. This comparison accounts only for the direct costs and, as discussed earlier, one can expect the worst performing companies to file for bankruptcy.

The economic impact analysis of Chapter 11 bankruptcy and out-of-court negotiation relies on changes in companies' sales and employment and on the industry-specific multipliers that capture the ripple effect of these changes throughout the different sectors of the economy. As summarized in Table 2, our findings showed that the Chapter 11 bankruptcy cases have generated an overall loss in output ranging from 1.0 to 2.3% of 2014 GDP, as compared with a maximum loss of 0.3% in out-of-court restructurings. At the same time, between 900,000 and 2.2 million jobs have been lost by the companies filing bankruptcy, while the out-of-court cases have led to a maximum job loss of 307,000 jobs.

In other words, based on our sample, the average company filing for Chapter 11 bankruptcy during the 2006-2014 period experienced losses in revenue and output whose effect on the general economy we estimate to have been as large as $3.9 billion (0.02% of 2014 GDP), including the loss of as many as 21,600 jobs. For the same period, the average out-of-court case appears to have produced national losses of no more than $782 million (0.004% of 2014 GDP) and 4,300 jobs.

Chapter 11 Versus Out-of-Court Restructuring: Comparison of Two Firms

Chapter 11 outcomes range from the liquidation of the filing firm to its reorganization under oversight and jurisdiction of the court. Liquidation results in a loss of employment and revenue for at least a period of time until the divested assets and human capital can be redeployed.

To illustrate the timeline difference between chapter 11 and out-of-court restructuring, we focus on two firms that have successfully restructured their debt under the court and out-of-court; these are Chemtura Corporation and Georgia Gulf Corporation (now Axiall), respectively. Both companies are specialized in chemical manufacturing and marketing. In 2009, Chemtura entered Chapter 11 bankruptcy proceedings and emerged through a restructuring plan by issuing $1.4 billion in new equity to settle outstanding liabilities and resume operations. Georgia Gulf restructured its debt through an exchange of roughly $736 million in senior notes for equity.

12. Our study is a partial equilibrium analysis examining the economic impact in markets that are directly affected.

Table 1 **Direct impact, one year after bankruptcy or out-of-court restructuring**

Output					
Chapter 11			Out-of-court		
Direct impact	*Multiplier*	*Total impact*	*Direct impact*	*Multiplier*	*Total impact*
$214.3B	1.88	$402.5B	$10.6B	1.77	$18.8B

Employment					
Chapter 11			Out-of-court		
Direct impact	*Multiplier*	*Total impact*	*Direct impact*	*Multiplier*	*Total impact*
-375,902 jobs	2.39	897,483 jobs	-100,152 jobs	3.06	306,811 jobs

Source: Milken Institute

Note: Multipliers in this table are a weighted average of multipliers for all industries included in our study.

Table 2 **Total and average national economic impact, one year after the event**

	Output (% of 2014 GDP)		Employment (# of jobs)	
Impact	Chapter 11	Out-of-court	Chapter 11	Out-of-court
National total	(-2.31 to -0.95)	(-0.32 to -0.11)	(-2,225,453 to -897,483)	(-306,770 to -93,259)
National average[1]	(-0.02 to -0.01)	(-0.004 to -0.002)	(-81,671 to -34,442)	(-24,444 to -68)

Source: Milken Institute

Table 3 **Year-over-year employment and revenue growth**

		2007	2008	2009	2010	2011	2012	2013	2014
Chemtura	Employment	6%	1%	1%	-1%	1%	6%	21%	7%
Axiall		-21%	-15%	-22%	13%	-5%	60%	0%	0%
Chemtura	Revenue	9%	8%	4%	5%	2%	4%	9%	12%
Axiall		30%	-8%	-32%	42%	14%	3%	40%	-2%

Source: Capital IQ.

As discussed previously, the firm's complex debtor may be a significant factor when considering the different types of restructuring. In this instance, in addition to $370 million in notes outstanding that needed to be refinanced, Chemtura relied significantly on revolving credit lines from wholesale banks that had to be renegotiated. Georgia Gulf relied less on these revolvers and more on senior notes that could be exchanged.

Table 3 shows that both companies experienced poor employment and revenue growth leading up to 2009. However, the timeline toward recovery is different. Axiall's worst performance occurred the year of the restructuring, but it began to recover, both in terms of revenues and number of employees, in 2010, as seen in Table 3. In contrast, Chemtura emerged from the protection of the US Bankruptcy Code in November 2010, which explains its lagging recovery.

13. Per firm average based on the average change in final demand in each industry.

Concluding remarks

Our analysis shows that Chapter 11 filings had a larger impact on job loss and lost economic output than out-of-court restructurings, on both a per-case basis and overall. Overall, for the period 2007 to 2013, the Chapter 11 bankruptcy cases have generated a loss in output ranging from 1.0 to 2.3% of 2014 GDP, as compared to a maximum loss of 0.3% in the case of out-of-court negotiations. Similarly, between 900,000 and 2.2 million jobs have been lost during the year of the bankruptcies while the out-of-court cases have led to a maximum job loss of 307,000 jobs.

To be sure, there is a clear self-selection bias that stems from the well-known tendency of less profitable and less solvent companies to choose bankruptcy. Yet, this study provides useful benchmarks: it helps quantify the economic cost of removing the choice to pursue out-of-court negotiations. Based on our sample average outcomes, the impact of forcing companies (through judicial decision) to file for bankruptcy instead of letting them restructure their debt could be considerable. Indeed, our estimates suggest an additional loss of output ranging from 0.78 to 1.9% of 2014 GDP and of employment ranging from 250,000 to 732,400 jobs.

Especially in a time of slow growth, it is important to shift the emphasis of the public policy discussion from bondholder protection to the broader concern of general economic growth. Of course, the best solution would be the one that serves the public interest while still offering assurances to bondholders.

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Appendix: Disaggregated results

Industry	Based on change in total revenues				Based on change in total number of jobs			
	Output (million US$)		Employment (# of jobs)		Output (million US$)		Employment (# of jobs)	
	Chapter 11	Out-of-court	Chapter 11	Out-of-court	Chapter 11	Out-of-court	Chapter 11	Out-of-court
Agriculture, forestry, fishing and hunting	-2,991	-94	-32,914	-812	-1,280	-5,840	-14,544	-47,235
Mining	-3,037	148	-10,955	625	-1,859	-101	-7,116	-318
Utilities	-4,365	-128	-8,578	-250	-2,319	-681	-4,547	-1,351
Construction	-5,317	-160	-47,640	-1,448	-1,896	-255	-17,014	-2,316
Manufacturing	-221,045	-772	-836,107	-2,677	-104,393	-31,546	-394,177	-118,185
Wholesale trade	-15,914	-261	-79,098	-1,286	-7,134	-2,482	-35,452	-12,437
Retail trade	-16,115	-456	-214,408	-6,071	-7,219	-1,206	-95,971	-16,229
Transportation & warehousing	-4,740	-204	-43,885	-1,724	-3,604	-1,457	-25,234	-9,777
Information	-12,774	-1,057	-48,961	-4,001	-3,127	-809	-11,190	-2,865
Finance and insurance	-50,795	-12,311	-261,112	-38,484	-6,792	-3,576	-32,798	-14,724
Real estate, rental and leasing	-17,426	-876	-94,885	-4,829	-7,088	-2,381	-38,448	-12,868
Professional, scientific, and technical services	-9,704	-614	-79,071	-4,907	-3,931	-1,131	-32,066	-9,052
Management of companies and enterprises	-7,311	-182	-38,043	-933	-3,307	-910	-17,211	-4,724
Administrative and waste management services	-5,332	-336	-91,549	-6,032	-2,125	-680	-36,233	-11,385
Educational services	-1,712	-79	-31,521	-1,439	-667	-207	-12,279	-3,873
Healthcare and social assistance	-12,081	-564	-128,305	-5,956	-4,800	-1,528	-50,978	-16,286
Arts, entertainment, and recreation	-1,389	-103	-23,717	-1,721	-468	-150	-8,236	-2,632
Accommodation	-1,297	-142	-13,053	-1,406	-536	-174	-5,403	-1,758
Food services and drinking places	-3,944	-321	-71,371	-5,750	-1,637	-528	-29,629	-9,607
Other services	-5,190	-319	-60,829	-3,714	-2,149	-679	-25,203	-7,993
Households	n/a	n/a	-9,451	-444	n/a	n/a	-3,753	-1,197
Total	**-402,482**	**-18,831**	**-2,225,456**	**-93,259**	**-166,330**	**-56,320**	**-897,483**	**-306,811**
Percent of 2014 U.S. GDP	**-2.31**	**-0.11**			**-0.95**	**-0.32**		

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