

Financial Contracting and re-rating experience, the cases of whole make, claw back and other wise ordinary callable bonds*

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Abstract

Existing empirical work supports the notion that make whole and claw back bonds are explained as methods to resolve the underinvestment problem. We suggest that if these provisions genuinely resolve the underinvestment problem then make whole and claw back provision bondholders should share in the benefits from the resolution of the underinvestment problem through more frequent credit upgrades and/or less frequent credit downgrade when compared to a similar sample of otherwise similar ordinary callable bonds. We find evidence that make whole call provisions genuinely alleviates the underinvestment problem but the claw back provision seems to resolve the underinvestment problem at the expense of bondholder's wealth.

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In recent years many bond indenture agreements have included two new provisions, the make whole and the IPO claw back provision that refine the circumstances upon which a bond can be redeemed prior to maturity. The make whole call provision requires the firm to pay a call price that represents the present value of all future coupon and principal repayments determined by a discount rate set as the yield on a similar maturity Treasury bond plus a fixed spread. This implies that the firm has little incentive to refinance its debt due to a change in the level of interest rates. Similarly the claw back provision reduces the incentive to refinance in order to save on interest costs by allowing the firm to call debt only from the proceeds of an equity issue.

Goyal *et. al.* (1998) and Nayar and Stock (2008) find evidence that these provisions are justified by alleviating agency problems such as the underinvestment problem that is often present for firms with risky prospects and debt in its capital structure. Yet while this work shows that stockholders can benefit from the use of these provision it is not clear whether bondholders do. This paper addresses this gap by investigating the subsequent re-rating experience of make whole and claw back provision bonds and compares this experience to similar, otherwise callable bonds.

This work is of interest because we now understand that if a bond contract term appears to benefit shareholders *ex post*, it can well be the case that bondholders can anticipate these benefits and expropriate them in the initial terms of the bond contract. For example, as it is well understood from Kraus (1973) that interest rate uncertainty is not a valid reason for callable bonds since any potential expropriation of wealth by re-issuing lower coupon bonds is anticipated by bondholders through higher initial coupon rates and call prices. One question that we address is whether the make whole and claw back provisions genuinely resolve the underinvestment problem or can they been seen as an attempt to exploit bondholders in a zero sum game? Our insight is that if agency costs explanation holds true then subsequent re-rating of make whole and claw back bonds should be dominated by more upgrades and less downgrades that ordinary callable bonds. If the zero sum game explanation holds true, then subsequent

re-rating experience should be no different, or indeed worse, than ordinary callable bonds.

We find interesting differences in the use of make whole and claw back provision bonds. Make whole bonds are most often used for investment grade bonds whereas claw back bonds are used for bonds rated below investment grade. Moreover ordinary callable bonds are most frequently issued by financial firms whereas make whole and claw back bonds are most frequently issued by industrial firms. Importantly, we find that claw back bonds tend to have more upgrades and fewer downgrades than ordinary callable bonds. In contrast claw back bonds tend to have less upgrades and fewer downgrades than comparable ordinary callable bonds. In other words, we find evidence that make whole call provisions genuinely alleviate the underinvestment problem but the claw back provision seems to resolve the underinvestment problem at the expense of bondholder's wealth.

In the next section we will review the literature and develop our hypothesis. In section II we will select our data. We will conduct our analysis of the re-rating experience of make whole and claw back provision bonds in Section III and determine if the experiences of make whole and claw back bonds are significantly different than ordinary callable bonds. We confirm these results through a variety of robustness checks. Finally section IV concludes.

I. Literature on Agency Cost Explanations of Callable Bonds

In this paper we examine the re-rating experience of make whole, claw back and otherwise ordinary callable bonds in an attempt to determine whether these bonds represent a genuine solution to the underinvestment problem. Firms that have good growth prospects also suffer from asymmetric information. While they know the projects are "good" they have difficulty in convincing bondholders, as bondholders will perceive that the project also has higher risk. As a result the firm must pay higher interest costs than they "should" given the quality of the project. Once the project has proven itself, bondholder's benefit at the expense of stockholders, as they will continue to enjoy high coupon rates even though risk is now revealed to be

modest. This reduces the benefits that flows to the shareholders and weakens the incentive to invest.

The literature suggests that three types of call provisions can resolve the underinvestment problem, the classic call, make whole and claw back call provisions. A classical call option empowers the issuer to take advantage by repaying the debt in advance when market yields decline. In the case that interest rate deteriorates, the classical call option settlement amount is less than what the fair value of a debt would have been absent the call option. Following Kraus (1973) finance has largely rejected interest rate uncertainty as an explanation for call provisions since in an efficient market gains to shareholders via refinancing at lower interest rates would be anticipated and expropriated by bondholders in the terms of the initial call provision.

Instead call provisions are supposed to exist because of agency problems such as the underinvestment, asymmetric information and asset substitution problems. More to the point, to resolve the underinvestment problem, classic callable bonds can be called once the value of the project being finance via callable bonds is revealed. If this explanation holds then callable bonds should experience more upgrade and less downgrade credit events as the positive attributions of projects being finance is subsequently revealed.

While a wealth of empirical research suggests that agency explanations as a whole can explain the use of call provisions (see Thatcher 1985, Mitchell 1991, Kish and Livingston 1992, Boreiko and Lombardo 2008), Crabbe and Helwege (1994) finds that confounding effects of maturity, default risk and varying trends in the popularity of call provisions makes it impossible to empirically verify if any of the specific agency problems can explain the use of ordinary call provisions. Moreover several authors provide explanations why firms can employ a sub optimal call policy. Specifically firms might delay call provisions due to transactions costs incurred when calling (Mauer 1993), wealth transfers resulting from temporary capital structure changes (Longstaff and Tuckman 1994), or simply because a sub-optimal call policy is employed (King and Mauer 2000). In any event Crabbe and Helwege (1994) are unable to find any evidence that callable bonds reduce the underinvestment problem. Specifically when controlling for credit risk, maturity and trends in the use of call

provisions they find that callable bonds are no more likely to be upgraded or downgraded than non-callable bonds.

With a make-whole call provision, the call price is not determined by a price schedule. Instead as Collin-Dufresne and Goldstein (2001), Collin-Dufresne *et. al.* (2001) and Gottesman and Roberts (2007) note make whole provisions have a call price determined by discounting the bonds remaining contractual cash flows at a specified low spread over a likely treasury rate. Therefore the call price floats inversely with Treasury rates. If exercised, the make-whole call price is calculated as the maximum of par value or the present value of the bond's remaining payments. A primary benefit of make-whole call provision relative to the classical call provision is that the floating call price virtually eliminates the incentive for the firm to call when interest rates drop. Thus, interest rate risk that bondholders are exposed to via the call option is significantly reduced. With reduced risk, bondholders should demand less compensation for their short position in the option.

Make-whole call provisions have become quite common in corporate debt over the past ten years.¹ Mann and Powers (2003) suggest that the make-whole call is useful for firms that anticipate a need for restructuring and financial flexibility in the future, without any dependence on low economy-wide interest rates. Specifically, make-whole calls are included not for refunding but for flexibility to restructure by avoiding a tender offer. Powers and Tsyplakov (2004) use a structural model to examine whether make-whole call provisions are fairly priced at origination. The call provision cost is calculated as the callable bond yield minus the equivalent non-callable bond yield, producing an incremental yield attributable to the make-whole call provision. They conclude "...that make-whole call provisions at origination have been mispriced and that issuing firms have been paying too much for the financial flexibility that the call provision provides". However Mann and Powers (2003a) and Power and Tsyplakov (2004) see little opportunity for arbitrage opportunities due to the incompleteness of the corporate bond market. Without arbitrage opportunities, there is no obvious mechanism that will drive down the at-issue incremental yield of make-whole call provisions.

Make whole provisions can alleviate the underinvestment problem because it separates the incentive to call a bond to achieve interest cost savings from calling a bond to avoid the underinvestment problem. Specifically the firm can call the entire bond issue only at a call price determined by a yield that is set at predetermined spread above a similar maturity treasury yield. This means that as interest rates decrease, the call price increases so there is little room for coupon costs savings due to interest rate changes. The firm is free to take on risky projects in the assurance that if the project subsequently proves itself, the firm can call the bond at prices consistent with the general level of interest rates and so avoid expropriation of some of the benefits of the now proven project by the bondholders. Therefore we expect that make whole bonds will experience unusually positive re-rating experience than otherwise similar bonds because make whole bonds will be used by firms needing to good finance projects subject to the underinvestment problem

According to Fridson (1993) equity claw back provisions started to appear in high yield offerings in 1992. The clauses allow issuers to remove some parts of their issues, with capital raised from equity financings, despite ordinary call limitations. Particular claw back provision terms vary by factors such as the premium associated with the redemption, the percentage of principal amount that may be redeemed under the claw back and the length of time subsequent to the bond's offering in which the claw back is effective.

Bonds with claw back provisions are also thought to alleviate the under investment problem. Generally, asymmetric information problems become less severe when a new project commences via equity investment as the good future earnings prospects of the firm are revealed. This investment decision can cause a wealth transfer from the shareholders to the bondholders as bondholders benefit from a reduction in credit risk but still enjoy a high coupon rate set when information asymmetries were high. This can lead investment inefficiency because managers will wish to avoid this wealth transfer and so will be reluctant to accept profitable projects requiring new equity financing. Claw back provisions make it possible for issuers to mitigate wealth transfers that result from a reduction in information asymmetries surrounding equity offerings as the firm can repurchase a portion of old high coupon bond issues at relatively low prices. Therefore bonds that contain claw back call provisions should

on average experience unusually good re-rating experience as subsequent to issue firms with claw back provisions should issue equity, thereby reducing reliance of debt in the firms capital structure, to finance valuable projects.²

Goyal et al. (1998) argue that claw back provisions are designed to soften problems of underinvestment that are a result of changes in a firm's information environment when the firm issues new equity. Consistent with this hypothesis Goyal et al. (1998) find that firms most likely to suffer from the underinvestment problem, specifically unregulated and private firms with more intangible and less liquid assets, are the most likely firms to issue claw back bonds.

In summary we find that there is no empirical evidence that ordinary callable bonds relieve the underinvestment problem. However, we find that the theoretical justification for refining the call provision via make whole and claw back clauses is to relieve the underinvestment problem. If indeed the make whole and claw back provisions alleviate the underinvestment problem then bondholders as well as shareholders should benefit. This suggests to us that we can use ordinary callable bonds, that is callable bonds without a make whole or claw back provision, as a control variable to detect whether the make whole and claw back provision bonds genuinely resolve the underinvestment problem. Specifically, we suggest that bonds that contain make whole call provisions should on average experience more upgrades and less downgrades than bonds employing ordinary call provisions as subsequent to issue, firms with make whole provisions should on average have more projects that subsequently prove to be valuable. Similarly, bonds that contain claw back call provisions should on average experience more upgrades and less downgrades than bonds employing ordinary call provisions as subsequent to issue firms with claw back provisions should issue equity, thereby reducing reliance of debt in the firms capital structure, to finance valuable projects.

II. Data selection

We use the Mergent® Inc's Fixed Investment Securities Database (FISD). This database consists of detailed cross sectional information on issue characteristics of all bonds that the National Association of Insurance Commissioners had on their books

as of January 1, 1995, and all bonds that they bought up to and including May 27, 2008. Each of the 232,507 bond issues is identified by the issuer's and the issue's CUSIP number and includes information on the maturity date, offering date, rating date, rating, rating type, offering amount, industry code, and details of call features including call feature type, call dates and prices.

From FISD, we select all bonds that belong to the industrial, financial, and utility industries while we eliminate Treasury and all Yankee bonds. Therefore our sample contains only US domestic corporate bonds. We further cull the sample by deleting bonds that has less than five years to scheduled maturity from the offering date. Barnea, Haugen, and Senbet (1980) argue that short-term bonds are equally capable of resolving agency problems and information asymmetries as callable bonds so including short-term bonds would confound the evidence of whether make whole and claw back provisions can resolve the underinvestment problem. On examining these domestic corporate bonds for rating type we find that Fitch concentrates on financial industry bonds. Since this could bias our results we eliminate bonds rated by Fitch only. Duff and Phelps do not rate many bonds within each rating category, so we decide to drop bonds rated by Duff and Phelps only as well. However, we consider all Standard and Poor's and Moodys rated bonds because they rate a large number of bonds in all industry categories. Of these we only keep those with a rating date within one year of the offering date to ensure that the bond under study has the same rating it had on the date it was offered. As the results using Moodys and Standard and Poor's ratings are similar we report the results when using Standard and Poor's for the sake of brevity.³

From this initial selection of bonds we select three sub samples, the make whole, claw back and ordinary callable bond sub samples. The make whole sub sample consists of bonds from the above selection that have make whole call provision but do not contain a claw back provision. Similarly the claw back sub sample consists of bonds that contain a claw back provision but do not contain a make whole provision. Finally the ordinary callable bonds have call provisions but do not contain make whole or claw back provisions. We also delete all ordinary callable bonds of firms that have make whole or claw back bonds. This help ensure that the otherwise callable bond sample can act as a control sample since make whole and claw back provisions are

supposed to resolve the underinvestment problem for the firm. Finally we eliminate all bonds that do not contain a call provision of any type because the resulting sample meeting all of the previous (and subsequent) restrictions is too small.⁴

Crabbe and Helwege (1994) note that the use of call provisions vary through time so to ensure that there is no difference in the trend in the use of make whole, claw back and otherwise callable bonds we plot the number of bonds by offering year and call provision type for industrial bonds in Figure 1. This figure shows that prior to the 1995 offering year the database is dominated by otherwise callable bonds except for a single spike of make whole bonds in 1989. In contrast, from 1995 onwards a fairly large number of bonds of each type are issued in each year. As the distribution of offering dates by call provision type is so different prior to 1995 than in subsequent offering years we think that the use of bonds issued prior to 1995 will produce a trend bias to our results so we decided to include only bonds that were offered in 1995 or later in our final sample.

<<Figure 1 about here>>

These selection procedures leave a total sample of 15,323 callable bonds consisting of 3,827 make whole, 3,179 claw back and 8,317 otherwise callable bonds. Tables 1, 2 and 3 reports the details of the make whole, claw back and otherwise callable sub samples.

<<Table 1, 2 and 3 about here>>

We make three observations concerning our sample. First examining the sub samples of bonds by industry, we note that while the make whole and claw back bonds are dominated by the industrial category, the otherwise callable bonds are dominated by the financial industry. Moreover the utility industry is almost absent for the claw back provision bonds. In contrast all type of callable bonds are well represented in the industrial category. Since utility bonds are subject to high regulatory risk that is in large part absent in industrial bonds, and the risks associated with financial bonds are different than the risks associated with industrial bonds we think it best to concentrate our study of the use of different call provisions by examining the industrial bond sub

sample as then we are more confident that the results will be due to the use of the call provision rather than the difference in the industry category.

Second we examine the sample by credit rating. It is notable that for industrial bonds, the average make whole call provision bond has a rating of BBB+ and the average claw back provision bond has an average rating of B+, one whole credit rating category higher and lower respectively than the typically BB+ rated otherwise callable bond. It is gratifying to note that except for the generic AA credit ratings the granularity of the otherwise callable industrial bond data is very fine. This means that even when we refine the sample by shades of credit ratings we are able to find a reasonable sample size, approximately 30 or more, of the otherwise similar callable bonds to act as a control sample for virtually all shades of credit ratings.

Third, we examine the sub samples by maturity. We note that otherwise callable bonds have an average maturity of 15 years, which is higher than the 14 and 9 years average maturity for make whole and claw back provision bonds respectively. However Bali and Skinner (2006) note that the average maturity of corporate bonds typically declines with the credit rating and evidently much of this difference in average maturity is accounted for by the differences in average credit rating. For example, examining the average maturity for the B rating, otherwise callable bonds typically have a much lower average maturity of 11 years that is much closer to the 9 years average maturity for both the make whole and claw back provision B rated bonds. Overall the sample that we select appears capable of providing the data necessary to statistically test to see whether the re-rating experience of make whole and claw back provision bonds are different than similar credit rating, industry and maturity but ordinary callable bonds.

III Empirical Results

Our objective is to determine whether the use of the make whole and claw back provision bonds genuinely resolve the underinvestment problem. We think that if these provisions accomplish this then bondholders as well as shareholders will share in the benefits. Specifically the resolution of the underinvestment problem should not only result in improved earnings prospects for the firm but also improve the credit

rating of the bonds, as more valuable projects will be accepted. Wider economic events can swamp the positive re-rating effect, but still if these provisions are resolving the underinvestment problem then bonds employing these provisions if not enjoying more upgrade events then they should at least enjoy less downgrade events than otherwise similar ordinary callable bonds.

To determine if the upgrade and downgrade frequencies for make whole and claw back bonds are different than the upgrade and downgrade frequencies for otherwise callable bonds we use the very general χ^2 goodness of fit test as specified below.

$$\chi^2 = \sum (f - F)^2 / F \quad (1)$$

Let f be the frequency of an event in a target sample and F is the theoretical frequency for the entire sample. For example, let f be the frequency of upgrade events, both upgrades and not upgrades, for make whole bonds. Under the null hypothesis that the number of upgrades is independent of whether the bond is make whole or otherwise callable, the theoretical frequency of upgrades events F calculated as

$$F = (\text{sum of upgraded bonds}) \times (\text{number of make whole bonds})/n + (\text{sum of upgraded bonds}) \times (\text{number of otherwise callable bonds})/n + (\text{sum of bonds not upgraded}) \times (\text{number of make whole bonds})/n + (\text{sum of bonds not upgraded}) \times (\text{number of otherwise callable bonds})/n$$

where n is the number of bonds in the sample. Test statistic (1) compares the squared difference in the theoretical frequency of an event F , upgrades and not upgrades in our example, to the actual frequency of say make whole call provision bonds f . This statistic is distributed chi-square with a number of degrees of freedom of 1 and we reject the null hypothesis for large values, Senedecor and Cochran (1989)⁵. We apply this test four times for each credit rating to test whether make whole or claw back provision bonds have the same frequency of upgrade or downgrade events as otherwise similar ordinary callable bonds.

We examine the re-rating experience of our sub samples of make whole, claw back and otherwise callable bonds in Tables 4 and 5. In the first four columns, Table 4 reports the total number of bonds and the number of bonds of each call provision type by initial rating. Initial ratings are reported by shade of credit rating and are also aggregated by broad rating category and by investment grade or below investment grade status. The remaining nine columns report the number of bonds of each call provision type that upgrade, downgrade and confirm the existing rating as of the next re-rating event subsequent to the initial rating.

Table 4 provides the raw data to conduct the statistical tests the results of which we report later in Table 5. Table 4 is also helpful in interpreting the importance of the subsequent results as it highlights the concentration in absolute terms of different types of call provisions in particular credit ratings. For example, of the approximately 2,200 the make whole call provision bonds approximately 1,700 are concentrated in the A and BBB broad rating categories whereas for the approximately 3,000 claw back provision bonds, 2,300 are in the broad B rating class and more than 1,000 of these are in the B- rating sub category. If these types of call provisions do in fact resolve the underinvestment problem then we would expect to see the results more clearly for these rating categories. In contrast the otherwise callable provision bonds are much more evenly distributed throughout the rating categories so that we have a reasonable number of bonds that acts as a control sample for virtually all ratings.

<<Table 4 and 5 about here>>

Table 5 enables us to interpret in relative terms the absolute numbers reported in Table 4. First looking at the difference in credit rating by investment grade as opposed to below investment grade, we find that make whole bonds originally rated investment grade have a higher incidence of upgrades and a lower incidence of downgrades than otherwise similar ordinary callable bonds. These observed differences are significant at the 1% level and surely do not merely occur due to chance. Make whole bonds originally rated below investment grade have a higher incidence of upgrades but a higher incidence of downgrades than otherwise similar ordinary callable bonds but these differences are not statistically significant and so can occur merely due to chance. In contrast, claw back provision bonds have a higher

incidence of downgrades for below investment grade bonds and this difference is statistically significant at the 1% level. All other results are statistically insignificant.⁶ In summary we find that by aggregating credit risk at this very crude level, it appears that make whole call provision bonds do in fact experience unexpectedly good re-rating experience for that grade of bond most frequently associated with make whole bonds and claw back bonds experience unexpectedly poor re-rating experience for that grade of bond most frequently associated with claw back bonds. The next step is to look at these results when using finer controls for credit risk.

Looking at the broad rating categories, highlighted in bold in Table 5, we find that A rated make whole bonds have a significantly higher probability of upgrading and a lower probability of a downgrading and BB rated bonds have a significantly higher likelihood of an upgrading event than otherwise similar callable bonds. Counterbalancing this is the finding that B rated bonds has a significantly higher likelihood of a downgrading event. We do note that the A and BB rated make whole bonds represent more than 40% of the make whole sample size and so is very much larger than the sample size of B rated bonds. Therefore the overall re-rating experience for make whole bonds is in accordance with resolving the underinvestment problem. Nevertheless we also note that for BBB rated bonds, representing nearly 50% of all make whole provision bonds, there is no significant difference in the re-rating experience that otherwise callable bonds. Therefore while we find evidence that supports the notion that make whole resolve the underinvestment problem, the evidence is not compelling.

The evidence by broad rating category re-enforces the notion that claw back bonds do not genuinely resolve the underinvestment problem. Specifically, for BBB and B rated bonds, claw back bonds have a significantly higher frequency of downgrading and a lower frequency of upgrading than otherwise similar callable bonds. Counterbalancing this somewhat is the finding that for CCC rated bonds claw back bonds are significantly more likely to upgrade than otherwise similar callable bonds. However as B rated claw back bonds are 80% and CCC rated claw back bonds are only 10% of the sample of all claw back bonds the overwhelming evidence supports the finding that claw back bonds do not genuinely resolve the underinvestment problem.

Finally delving into the results by shades of credit rating we find the above results are re-enforced. For A and BB- rated bonds we find evidence that make whole bonds have a higher upgrading and/or a lower downgrading likelihood than otherwise similar callable bonds. There are two cases where we find countervailing results, specifically A- and B ratings, but again at these shades of ratings the make whole provision bond sample is modest. Meanwhile for all shades of the BBB rating class, by far the most frequent initial rating for make whole bonds, there is no significant evidence that the re-rating experience of make whole bonds is different than otherwise similar ordinary callable bonds. We conclude that the re-rating experience for make whole bonds is in accordance with genuinely resolving the underinvestment problem for at least some of the more popular ratings for make whole bonds.

For claw back bonds the re-rating experience confirms that these bonds do not genuinely resolve the underinvestment problem. For all shades of the B rating class we find strong evidence that claw back bonds have a higher downgrading and/or a lower upgrading frequency than otherwise similar callable bonds. As this rating class represents nearly 80% of all claw back bonds we are convinced that claw back bonds do not genuinely resolve the underinvestment problem. However for CCC rated bonds there is some hope that claw back bonds can resolve the underinvestment problem as CCC+ and CCC- bonds have a significantly higher likelihood of an upgrading event but the modest sample size of CCC rated bonds does cloud the importance of this finding.

IV Summary and Conclusions

In this paper we examine the re-rating experience of callable bonds to see if the re-rating experience of make whole and claw back provision bonds is different from the re-rating experience of otherwise callable bonds.

Existing empirical work supports the notion that make whole and claw back bonds are explained as methods to resolve the underinvestment problem. For make whole bonds, stockholders appear to benefit from higher earnings subsequent to the issuance of make whole provision bonds. For claw back bonds, firms that are more likely to

have problems with under investment are more likely to issue claw back bonds. However if these types of callable bonds do in fact resolve the underinvestment problem, then bondholders should also benefit, otherwise the supposed benefit to the stockholders can represent a redistribution of value from bondholders with no improvement in the value of the firm. We suggest that if these provisions genuinely resolve the underinvestment problem then make whole and claw back provision bonds should share in the benefits from the resolution of the underinvestment problem. Specifically as the firm will be encouraged to accept positive net present value projects, make whole and claw back provision bonds will be more likely to upgrade and less likely to downgrade than otherwise similar ordinary callable bonds that do not employ these provisions

We find evident that at least weakly supports this theory for make whole bonds, but rather strongly refute this theory for claw back bonds. Specifically when we control for credit risk by broad rating and shades of credit ratings, we find no evidence to support the underinvestment theory for that rating class that dominates the issue of make whole provision bonds. However for those rating classes that are secondary to the issues of make whole bonds we find a significantly higher likelihood that make whole bonds will upgrade and/or a significant lower likelihood that make whole bonds will downgrade than otherwise similar callable bonds. Therefore we conclude there is at least some evidence that supports the notion that make whole bonds genuinely resolves the underinvestment problem.

We find evidence that rather strongly rejects the notion that claw back bonds genuinely resolves the underinvestment problem. Specifically when we control for credit risk by broad rating and shades of credit rating, we find that claw back bonds are significantly more likely to experience a downgrade and are significantly less likely to experience an upgrade event than otherwise similar ordinary callable bonds for the rating class that overwhelmingly dominates the issue of claw back bonds. We conclude that the evidence supports the notion that claw back bonds do not genuinely resolve the underinvestment problem. Instead claw back bonds appear to involve a redistribution of value from bondholders to stockholders.

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Table 1

Sample Characteristics of Make Whole Call Provision Bonds

This table reports the sample characteristics of bonds that contains a Make Whole call provision but does not contain an IPO claw back provision. All bonds are of at least five years to maturity, are rated by Standard and Poors within one year of the offering date and have been offered from 1995 to 2008. This sample does not contain Yankee or government bonds.

Rating	Industrial		Financial		Utility		Total Sample	
	Number	Maturity	Number	Maturity	Number	Maturity	Number	Maturity
AAA	27	20.76	9	13.47	14	16.36	50	18.21
AA+	5	20.49	3	21.73	1	29.98	9	21.96
AA	46	17.58	23	17.24	6	17.84	75	17.50
AA-	47	15.64	26	12.79	33	17.86	106	15.63
A+	168	16.32	65	13.21	39	13.56	272	15.18
A	206	17.49	52	15.61	106	16.14	364	16.83
A-	221	13.56	80	14.88	89	15.77	390	14.33
BBB+	316	15.43	119	12.81	180	14.87	615	14.76
BBB	434	14.22	201	11.82	180	14.78	815	13.75
BBB-	333	12.66	142	10.12	141	15.07	616	12.63
BB+	150	10.11	17	10.65	52	15.36	219	11.40
BB	98	8.84	7	10.03	20	10.01	125	9.10
BB-	50	8.67	1	6.57	13	11.23	64	9.15
B+	27	10.51	2	22.06	11	8.42	40	10.52
B	28	8.41	1	6.92	9	11.15	38	9.02
B-	13	8.63	3	7.36	3	9.04	19	8.49
CCC+	6	10.02	0	0.00	0	0.00	6	10.02
CCC	3	8.51	0	0.00	0	0.00	3	8.51
D	1	6.88	0	0.00	0	0.00	1	6.88
Grand Total	2179	13.93	751	12.58	897	14.97	3827	13.91
Avg. Rating	BBB+		BBB+		BBB+		BBB+	

Table 2

Sample Characteristics of Claw Back Provision Bonds

This table reports the sample characteristics of bonds that contain a claw back provision but does not contain a Make Whole call provision. All bonds are of at least five years to maturity, are rated by Standard and Poors within one year of the offering date and have been offered from 1995 to 2008. This sample does not contain Yankee or government bonds.

Rating	Industrial		Financial		Utility		Total Sample	
	Number	Maturity	Number	Maturity	Number	Maturity	Number	Maturity
A-	3	10.19	0	0.00	0	0.00	3	10.19
BBB-	3	9.94	0	0.00	0	0.00	3	9.94
BB+	40	8.71	1	10.04	1	9.23	42	8.75
BB	89	8.88	11	10.06	5	9.63	105	9.04
BB-	207	8.78	15	7.82	6	9.23	228	8.73
B+	518	8.98	46	8.60	16	9.30	580	8.96
B	780	8.97	24	8.86	24	9.17	828	8.98
B-	1029	8.96	24	8.89	25	9.53	1078	8.98
CCC+	202	8.35	8	9.84	5	8.59	215	8.41
CCC	61	8.37	0	0.00	6	8.94	67	8.42
CCC-	22	7.99	0	0.00	0	0.00	22	7.99
CC	5	7.54	0	0.00	0	0.00	5	7.54
C	1	6.56	0	0.00	0	0.00	1	6.56
D	2	6.75	0	0.00	0	0.00	2	6.75
Grand Total	2962	8.89	128	8.81	87	9.27	3179	8.89
Avg. Rating	B+		BB-		B+		B+	

Table 3

Sample Characteristics of Otherwise Callable Bonds

This table reports the sample characteristics of bonds of firms that do not also have a bond that contains a make whole or claw back provision but are otherwise callable. All bonds are of at least five years to maturity, are rated by Standard and Poors within one year of the offering date and have been offered from 1995 to 2008. This sample does not contain Yankee or government bonds.

Rating	Industrial		Financial		Utility		Total Sample	
	Number	Maturity	Number	Maturity	Number	Maturity	Number	Maturity
AAA	95	13.73	317	16.27	40	27.77	452	16.75
AA+	0	0.00	224	15.34	0	0.00	224	15.34
AA	14	27.07	532	15.23	12	25.44	558	15.75
AA-	27	25.59	535	13.07	14	30.36	576	14.08
A+	44	19.04	505	14.42	36	28.83	585	15.66
A	428	19.67	2255	15.98	38	33.65	2721	16.81
A-	35	22.49	411	18.95	36	33.90	482	20.32
BBB+	39	25.28	319	17.93	44	33.83	402	20.38
BBB	82	21.04	369	16.75	47	27.57	498	18.48
BBB-	65	23.97	258	14.62	25	33.96	348	17.75
BB+	58	17.51	46	22.59	8	31.89	112	20.62
BB	45	13.19	39	16.32	404	7.16	488	8.45
BB-	107	12.22	18	18.84	7	19.23	132	13.50
B+	170	11.00	12	18.28	11	18.36	193	11.87
B	206	11.24	12	12.97	6	7.77	224	11.24
B-	179	10.37	13	13.30	3	9.84	195	10.56
CCC+	64	8.62	1	7.02	4	17.29	69	9.10
CCC	40	10.74	0	0.00	1	19.16	41	10.95
CCC-	11	9.86	0	0.00	0	0.00	11	9.86
CC	3	7.04	2	5.98	0	0.00	5	6.61
D	1	5.92	0	0.00	0	0.00	1	5.92
Grand Total	1713	15.62	5868	15.86	736	17.20	8317	15.93
Avg. Rating	BB+		A		BBB-		A-	

Table Results 4

This table reports the re-rating experience as of the next re-rating event of 7,237 bonds. All bonds are industrial bonds, of at least five years to maturity and are rated within one year of issue by Standard and Poors. None of these bonds are Yankee bonds. The total number of make whole MWT, claw back CBT and otherwise callable OCT bonds are reported by broad rating category (in **bold**), by shades of rating grades, by investment grade IG and below investment grade BIG. In addition, the number of bonds that received an upgrade U, downgrade D and remained the same rating S for each type of bond is also indicated. For instance, the number of AA rated (by broad rating) make whole bonds that received a downgrade in the next rating event was 26.

	Total	MWT	CBT	OCT	MWU	CBU	OCU	MWD	CBD	OCD	MWS	CBS	OCS
AAA	122	27	0	95	0	0	0	9	0	24	18	0	71
AA	139	98	0	41	3	0	0	26	0	7	69	0	34
AA+	5	5	0	0	0	0	0	4	0	0	1	0	0
AA	60	46	0	14	1	0	0	10	0	2	35	0	12
AA-	74	47	0	27	2	0	0	12	0	5	33	0	22
A	1105	595	3	507	26	0	11	113	3	316	456	0	180
A+	212	168	0	44	2	0	2	25	0	3	141	0	39
A	634	206	0	428	12	0	4	47	0	303	147	0	121
A-	259	221	3	35	12	0	5	41	3	10	168	0	20
BBB	1272	1083	3	186	106	0	16	218	2	32	759	1	138
BBB+	355	316	0	39	22	0	5	77	0	7	217	0	27
BBB	516	434	0	82	39	0	4	69	0	10	326	0	68
BBB-	401	333	3	65	45	0	7	72	2	15	216	1	43
BB	844	298	336	210	59	38	25	63	91	45	176	207	140
BB+	248	150	40	58	23	6	8	20	11	13	107	23	37
BB	232	98	89	45	23	10	7	30	26	9	45	53	29
BB-	364	50	207	107	13	22	10	13	54	23	24	131	74
B	2950	68	2327	555	8	287	92	24	609	106	36	1431	357
B+	715	27	518	170	6	62	30	8	151	30	13	305	110
B	1014	28	780	206	1	82	33	12	208	43	15	490	130
B-	1221	13	1029	179	1	143	29	4	250	33	8	636	117
CCC	409	9	285	115	3	75	18	0	66	21	6	144	76
CCC+	272	6	202	64	2	45	8	0	49	14	4	108	42
CCC	104	3	61	40	1	22	10	0	15	6	2	24	24
CCC-	33	0	22	11	0	8	0	0	2	1	0	12	10
BELOW	13	1	8	4	1	3	1	0	1	3	0	4	0
IG	2638	1803	6	829	135	0	27	366	5	379	1302	1	423
BIG	4216	376	2956	884	71	403	136	87	767	175	218	1786	573
TOTAL	6854	2179	2962	1713	206	403	163	453	772	554	1520	1787	996

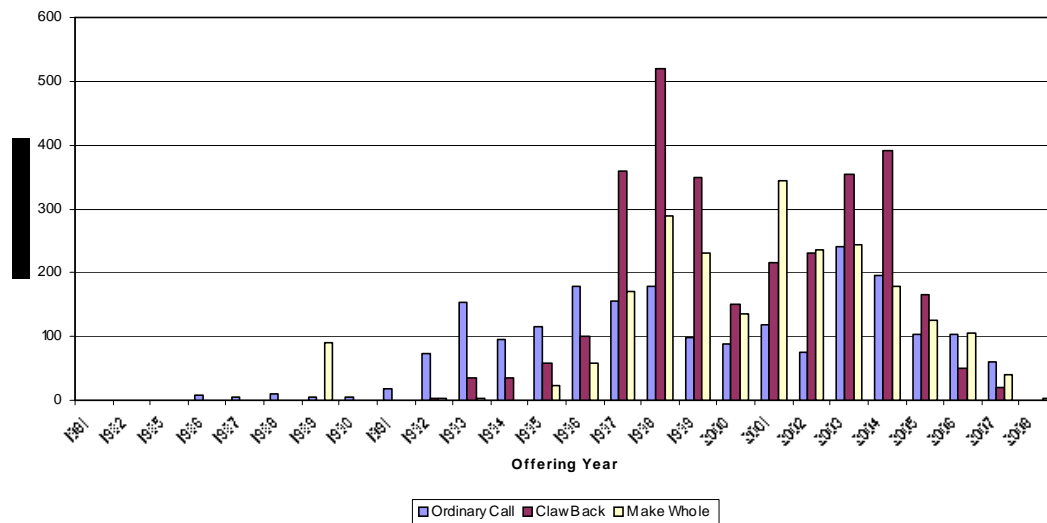
Table Results 5

This table reports the re-rating experience as of the next re-rating event of 7,237 bonds. All bonds are industrial bonds, of at least five years to maturity and are rated within one year of issue by Standard and Poors. None of these bonds are Yankee bonds. The percentage of make whole MW, IPO claw back IPO and otherwise callable OC bonds that received an upgrade U or downgrade D in the next re-rating event is reported by broad rating category (in **bold**), by shades of rating grades, by investment grade IG and below investment grade BIG. For instance, the percentage of AA rated (by broad rating) make whole bonds that received a downgrade in the next rating event was 26.53.

	MWT	CBT	OCT	MWU	CBU	OCU	MWD	CBD	OCD
AAA	1.24	0.00	5.55	0.00	0.00	0.00	33.33	0.00	25.26
AA	4.50	0.00	2.39	3.06	0.00	0.00	26.53	0.00	17.07
AA+	0.23	0.00	0.00	0.00	0.00	0.00	80.00	0.00	0.00
AA	2.11	0.00	0.82	2.17	0.00	0.00	21.74	0.00	14.29
AA-	2.16	0.00	1.58	4.26	0.00	0.00	25.53	0.00	18.52
A	27.31	0.10	29.60	4.37**	0.00	2.17	18.99***	100.00	62.33
A+	7.71	0.00	2.57	1.19	0.00	4.55	14.88	0.00	6.82
A	9.45	0.00	24.99	5.83***	0.00	0.93	22.82***	0.00	70.79
A-	10.14	0.10	2.04	5.43**	0.00	14.29	18.55	100.00**	28.57
BBB	49.70	0.10	10.86	9.79	0.00	8.60	20.13	66.67**	17.20
BBB+	14.50	0.00	2.28	6.96	0.00	12.82	24.37	0.00	17.95
BBB	19.92	0.00	4.79	8.99	0.00	4.88	15.90	0.00	12.20
BBB-	15.28	0.10	3.79	13.51	0.00	10.77	21.62	66.67*	23.08
BB	13.68	11.34	12.26	19.80**	11.31	11.90	21.14	27.08	21.43
BB+	6.88	1.35	3.39	15.33	15.00	13.79	13.33	27.50	22.41
BB	4.50	3.00	2.63	23.47	11.24	15.56	30.61	29.21	20.00
BB-	2.29	6.99	6.25	26.00***	10.63	9.35	26.00	26.09	21.50
B	3.12	78.56	32.40	11.76	12.33***	16.58	35.29***	26.17***	19.10
B+	1.24	17.49	9.92	22.22	11.97*	17.65	29.63	29.15***	17.65
B	1.28	26.33	12.03	3.57*	10.51**	16.02	42.86***	26.67*	20.87
B-	0.60	34.74	10.45	7.69	13.90	16.20	30.77	24.30*	18.44
CCC	0.41	9.62	6.71	33.33	26.32**	15.65	0.00	23.16	18.26
CCC+	0.28	6.82	3.74	33.33	22.28*	12.50	0.00	24.26	21.88
CCC	0.14	2.06	2.34	33.33	36.07	25.00	0.00	24.59	15.00
CCC-	0.00	0.74	0.64	0.00	36.36**	0.00	0.00	9.09	9.09
BELOW	0.05	0.27	0.23	100.00	37.50	25.00	0.00	12.50	75.00
IG	82.74	0.20	48.39	7.49***	0.00	3.26	20.30***	83.33*	45.72
BIG	17.26	99.80	51.61	18.88	13.63	15.38	23.14	25.95***	19.80

The stars indicate the results of the test that the upgrading or downgrading experience of make whole or claw back bonds are difference that the otherwise similar callable bonds where *** indicates 1% significance, ** indicates 5% significance and * indicates 10% significance.

Offering Year Distribution by Call Provision Type



1 Approximately 20% of the issues in the Merrill Lynch 1-5 Year Government Corporate Index have make-whole call provision.

2 A logical issue is whether claw backs deliver positive value to issuers, while subtracting value from bond investors by reducing their ability to lock in attractively high interest rates. In challenge of common sense, Fridson (1998) report that a team of underwriters made an effort to present claw backs as a benefit to bond investors, on the basis that they gave issuers an incentive to raise equity with a result to improve their credit quality. A close look at claw backs confirms that the market treats claw backs as net reductions of value for which bond investors have to be compensated.

3 The results when using Moodys ratings are available from the authors' upon request.

4 The resulting sample of straight bonds was 390, far smaller than make whole, claw back and otherwise callable samples that are 2,179, 2,962 and 1,713 respectively.

5 See Senedcor and Cochran, pages 76-79 and pages 210- 212 for details.

6 While the incidence of downgrades is significantly higher (at the 10% level) for claw back bonds rated above investment grade, Table 4 reveals that the sample size is very small, only 6 claw back bonds are rated above investment grade, so we do not rely on this conclusion.