

IS IT BETTER TO FORGIVE THAN TO RECEIVE?

AN EMPIRICAL ANALYSIS OF THE IMPACT OF DEBT REPUDIATION*

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Abstract

This paper examines the consequences of large-scale debt relief in order to examine theories of debt overhang and the costs of financial distress. An analysis of this episode also is relevant to current debates over debt restructuring policies towards countries that have recently experienced sharp currency devaluations, in particular the 1997 Asia crisis and the Argentine “pesofication” of debt contracts in 2001. When the U.S. went off the gold standard and devalued the dollar with respect to gold, the government declared that the courts would no longer enforce gold indexation clauses that were contained in virtually all long-term private and public debt contracts. If the gold clauses had been enforced, the debt burden of borrowers would have increased by the extent of the devaluation, which was 69 percent. I examine asset price responses to the Supreme Court’s decision to uphold this effective debt forgiveness. Equity prices rise, but more surprisingly, the debt relief also leads to higher prices for corporate bonds (all of which contained gold clauses). In contrast, government bonds with gold clauses fall in value. These responses suggest that the benefits of eliminating debt overhang and avoiding bankruptcy for private firms more than offset the loss to creditors of some chance of trying to recover the additional 69 percent. Consistent with large costs of debt overhang and distress, in the cross section, stock and bond prices rise more the closer the firm is to bankruptcy. The results suggest that in these circumstances it is indeed better to forgive than to receive. The paper also discusses the policy merits of an across-the-board debt restructuring with other approaches, such as asset management corporations, as responses to financial crises.

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“At the end of every seven years, you must cancel debts....Be careful not to harbor this wicked thought: ‘The seventh year, the year for canceling debts, is near,’ so that you do not show ill will toward your needy brother and give him nothing.” -- Deuteronomy 15:1,9

Following the inflation during the Civil War, almost all long-term financial contracts in the U.S. came to include a “gold clause” which effectively indexed to gold the value of the payments to creditors. This clause protected creditors against devaluation of the dollar since they could demand payment in gold or the equivalent value of gold in nominal dollars if the price of gold were to rise during the life of the contract. On June 5, 1933, Congress passed a Joint Resolution nullifying gold clauses in both private and public debt contracts. One legal authority has remarked: “In legal history there is probably no other statute of a purely private-law character which has engendered such enormous financial changes...” (Nussbaum 1939, pp. 358-9).

The abrogation of gold clauses was a key part of Roosevelt’s “first hundred days,” providing the foundation for much of the New Deal policies directed at reflating the economy including the departure of the U.S. from the gold standard. Although the Supreme Court struck down most of Roosevelt’s early New Deal programs, the Court upheld the government’s ability to alter financial contracts by refusing to enforce gold clauses. Given that the price of gold rose from \$20.67 per ounce to \$35 per ounce when the U.S. officially devalued in 1934, the abrogation of these clauses was tantamount to a debt jubilee.

While episodes of debt repudiation and debt forgiveness have a history ranging back to ancient times, the abrogation of the gold clause during the Great Depression provides an unusual opportunity to investigate theories of debt overhang and costs of financial distress. Unlike earlier

episodes, detailed information on asset and commodity prices, as well as on macroeconomic variables, is available. In addition, the financial stakes were substantial. Roughly \$100 billion (nominal) of debt with gold clauses was outstanding during this period. If the gold clause had been enforced, the debtors' burdens would have risen in proportion to the extent of the devaluation or 69 percent. Since nominal GNP was between \$55.6 billion and \$72.2 billion between 1933 and 1935, a \$69 billion increase the debt burden could have caused mass bankruptcy. While the gold standard and Roosevelt's New Deal economic policies have received much attention and have been extensively debated, I have been able to find no empirical studies of the gold clause abrogation and its consequences.¹

When the constitutionality of the Joint Resolution was challenged, there was great uncertainty about what the Supreme Court's decision would be. The announcement of the landmark 5-4 decision upholding the government's ability to abrogate these clauses had a large impact on the markets. This permits us to isolate and measure the effect of the debt relief on equity holders and debt holders and on different types of firms to test various theories of debt overhang and the costs of financial distress (e.g., Fisher 1933, Jensen and Meckling 1976, Myers 1977, Cutler and Summers 1988, Bernanke and Gertler 1989, Weiss 1990, Shleifer and Vishny 1992, Lamont 1995, Kiyotaki and Moore 1997, and Andrade and Kaplan 1998). The costs and benefits of debt forgiveness for developing and transition economies have been hotly debated mostly at the theoretical level, and this episode can allow us to evaluate the case for debt relief empirically (e.g., Easton and Gersovitz 1981, Sachs and Huizinga 1987, Krugman 1988,

¹ The only sustained discussions of the gold clause abrogation that I have found in the post-war literature are Manne and Miller (1975), McCulloch (1980), U.S. Gold Commission (1982), Dam (1983), and Green (1986). Friedman and Schwartz (1963) also briefly discuss it.

Eichengreen and Lindert 1989, Sachs 1989, Bulow and Rogoff 1990, Claessens 1990, Kenen 1990, and English 1996).

In addition to illuminating a major event in U.S. financial and legal history, studying the effects of the gold clause abrogation will help to address a key issue within the debt overhang and financial distress literature: Is it better to forgive than to receive? In other words, can all parties -- debtor and creditors -- be made better off by a coordinated debt forgiveness? Typically, repudiation is thought of as a transfer from bond holders to the equity owners of a firm. If the costs of distress are sufficiently high, a partial debt forgiveness, which helps to avoid the costly bankruptcy state and mitigates investment distortions of debt overhang, can increase the expected payments to the bond holders while also making the equity holders better off.² In addition, there may be macroeconomic effects of massive bankruptcies so that a debt forgiveness could have a positive overall effect even if it results in a redistribution between debtors and creditors. The data that I examine below will attempt to address such issues.

This historical episode has significant implications for recent experiences with devaluation and debt restructuring in emerging markets. In 2001 and 2002, the actions of the Argentine government to “pesofy” debt contracts during the crisis are almost exactly parallel to what the US did during the Great Depression. In December of 2001, Argentina broke its “currency board” arrangement that maintained a one-to-one link between the peso and the dollar,

² See Jackson (1986) and Gertner and Scharfstein (1991) on free-rider and coordination problems among debt holders that may complicate private Pareto-improving debt renegotiation in bankruptcy and Dewing (1941) and Warren (1935) on bankruptcy procedures during the 1930s. Kroszner and Strahan (2001) examine how the law discourages creditors from taking “active” roles during distress to avoid a formal declaration of bankruptcy: Creditors who become involved in a firm’s operations before bankruptcy may be subject to “lender liability” (they may have to pay damages for losses that others sustain) and equitable subordination (they may have senior claims subordinated).

and the peso plunged in value. Most debt contracts were denominated in dollars, but debtors were now receiving revenues in sharply devalued pesos. Thus, debtors' real debt burden rose dramatically. The Argentine government responded by the "pesofication" of debt contracts, that is, declaring that debt obligations denominated in dollars could be repaid in pesos at a more favorable rate than the market value of the peso.³ The legality of this across-the-board abrogation of debt contracts was challenged, and in 2003 the Argentine Supreme Court declared the "pesofication" illegal.⁴ The remedy is still under negotiation.

During the Asia crisis in 1997, numerous countries that had pegged the value of their currencies to the dollar experienced sudden sharp devaluations. The extent of the fall of the value of these currencies was of similar magnitude to the decline in the value of the dollar in the 1930s. Many private sector debt contracts in these countries were written in dollars rather than the local currency, so the real value of their debt burden rose after the devaluations. None of these countries, however, undertook an across-the-board restructuring of dollar-denominated debt contracts. Numerous firms did go into bankruptcy, and (partly) government-sponsored asset management companies such as KAMCO in Korea arose to restructure the bankrupt firms and non-performing loans.⁵ I will discuss the alternative responses to debt-devaluation crises in more

³ Unlike in the US, the Argentine government engaged in "asymmetric" pesofication in which different types of debtors were treated differently; for example, smaller borrowers were able to repay their dollar-denominated debt obligations at a more favorable peso exchange rate than larger borrowers.

⁴ The decision on March 5, 2003 cited the US gold clause decisions and extensively examined the precedent value of one of those cases *Perry v United States* (No 532; 294 US 330), which I analyze below.

⁵ In response to the Savings & Loan crisis in the US during the late 1980s, the US government created the Resolution Trust Corporation to the non-performing assets on the books of failed Savings & Loans but did not engage in an across-the-board debt restructuring (see Kroszner and Strahan 1996).

detail below.

The next section explains in more detail what gold clauses were, their widespread use, and their legal treatment before the Great Depression. The following section then describes the U.S. departure from the gold standard and the important role that the gold clause nullification played. I then examine the lawsuits which constitute the “gold clause cases,” the expectations about the outcome of the cases, and the Supreme Court decision on February 18, 1935. The next three sections describe hypotheses, data, and results on the consequences of the abrogation. The results suggest that the markets anticipated high distress costs if the gold clauses would have been enforced. Robustness checks in the penultimate section reinforce the implication that it indeed can be better to forgive than to receive. I conclude with a brief overview of the results, implications for recent experiences with devaluation and debt restructuring, and directions for future research.

I. Gold Indexation Clauses and their Legal Treatment

Contractual provisions protecting creditors against debasement and fluctuations in the value of monetary units have a long history in the western world, extending back at least as far as medieval trade fairs (Nussbaum 1939, Chapter VI). The gold clause, which effectively indexed payments to the price of gold, was the most common form of debasement protection. Gold clauses were found most frequently in long-term obligations, such as mortgage deeds, leases, and bonds, and typically defined the repayment obligation in gold coin or the equivalent amount based on the weight and fineness of gold coin at the time the contract was signed. During periods of monetary turmoil, however, even short-term contracts would include gold clauses.

Gold francs, gold lire, and gold marks appeared frequently in bills of exchange in the early part of the twentieth century.

While gold clauses have been used around the world, they were much more common in long-term contracts in the U.S. than elsewhere. The Greenback inflation and the post-bellum popularity of “free silver” views led gold clauses to become ubiquitous in mortgages and bonds, both public and private. Liberty Loan bonds issued during WWI were required by statute to include a gold clause, and all other long-term government debt issued until 1933 included gold clauses. Gold clauses became standard in long-term corporate bonds in the late nineteenth and early twentieth centuries, and virtually all long-term corporate debt outstanding in the early 1930s contained gold clauses (Macaulay 1938; Friedman and Schwartz 1963). In the sample of corporate bonds trading on the New York Stock Exchange in 1935 that I describe below, all contained the gold clause. Mortgage instruments often included such clauses but they were not as frequent as in long-term bonds. Of the roughly \$168 billion of public and private debt outstanding in the 1933 to 1935 period, estimates were that more than \$100 billion (par value) of these obligations contained gold clauses (see the government’s “gold clause” brief in Kurland and Casper 1975; Nussbaum 1939; Green 1986).

Prior to the 1930s, courts in the U.S. had consistently upheld the validity and enforceability of the gold clause. In the so-called Legal Tender Cases⁶ following the Civil War, the Supreme Court established the constitutionality of Congress’ ability to authorize the issuance of paper (unbacked) money and make it legal tender in the payment of debt (see Dunne 1960).

⁶ *Knox v. Lee* and *Parker v. Davis* (12 Wall.; 79 US 457; 1871) and *Juilliard v. Greenman* (110 US 421; 1884).

Bronson v. Rodes (7 Wall. 229; US 1868) and *Trebilcock v. Wilson* (12 Wall. 687; US 1871), however, clearly established the right for private parties to contract around the use of legal tender to discharge debts and include contractual provisions requiring payment in gold or silver or in the equivalent value thereof. Undoubtedly, these decisions help to account for the widespread adoption of the gold clause in long-term contracts.

II. Departure from Gold and the Abrogation of the Gold Clause during the 1930s

The first step in the departure from the gold standard was taken as part of Roosevelt's declaration of the banking holiday on March 6, 1933 (see, e.g., Dam 1983, Eichengreen 1992, and Friedman and Schwartz 1963). Not only were all banks to be closed temporarily, but they also would not be permitted to pay out or export gold coin or bullion. The Emergency Banking Act passed on March 9 clarified the President's power to issue such a declaration, and the next day Roosevelt extended the ban on gold payments and exportation beyond the banking holiday. The Emergency Banking Act also provided the legal basis for the Secretary of Treasury to require that all gold coins, gold bullion, and gold certificates be exchanged for legal tender at face value. In early April, Roosevelt issued an executive order mandating the surrender of gold to the Treasury and the Federal Reserve Banks. Private holding of gold for any other purpose besides ornamentation or industrial use was effectively prohibited until this directive was revoked in 1974.

Despite these actions, the value of the dollar in international gold and foreign exchange markets was little changed for roughly a month. Although gold had begun to flow out of the U.S. in early 1933, the drain stopped after Roosevelt's inauguration (Wigmore 1987; Eichengreen

1992). Roosevelt and his new Secretary of Treasury gave public assurances the gold standard was safe, and the markets appeared to believe that the restrictions on gold holding and the gold market would be only temporary. Gold flowed rapidly into the Federal Reserve System for the next month, and the ratio of gold stock to the money supply was the highest that it had been since 1914 (Eichengreen 1992; Friedman and Schwartz 1963).

The exchange rate of the dollar to that of gold bloc currencies, such as the French franc, did not begin to fall until mid-April, when Roosevelt's public support for the gold standard began to waver and debate on the Thomas Amendment to the Agricultural Adjustment Act began (see Chart 1). An executive order of April 20 extended the gold embargo and expanded it to include any person or institution dealing in foreign exchange, not just the banks. The Thomas Amendment (section 43 of 48 Stat. 31), among other things, explicitly permitted the President to devalue the dollar with respect to gold. The Agricultural Adjustment Act including the Thomas Amendment was passed on May 12. Roosevelt, however, chose not to make an official change in the gold content of the dollar. The dollar continued to be legally defined as containing 25-8/10 grains of 9/10 fine gold, as it had since the Gold Standard Act of 1900 (31 Stat. 45), implying an official price of gold of \$20.67 per ounce.

Following these actions, the value of the dollar in the international gold and foreign exchange markets declined sharply. This de facto devaluation was part of the administration's overall plan to boost commodity prices in an attempt to revive economic activity. The gold clause, however, complicated the plan to use devaluation to promote recovery. Holders of debt with gold clauses would begin to demand an increase in the nominal value of their payments. If the gold clauses were enforced, the administration's policy would increase the real debt burden

of borrowers and induce bankruptcies, in part defeating the purpose of raising commodity prices.

There are close parallels between this episode and the recent sharp devaluations of Asian currencies with respect to the dollar. As Chart 2 illustrates, the so-called Asian crisis currencies fell between 30 and 70 percent in 1997 and 1998. These countries had large amounts of debt denominated in dollars, so the external debt to GDP ratios in many of these countries more than doubled, far exceeding 100 percent in some cases (IMF 1999). In 2002, the Argentine peso declined roughly 70 percent following the end of its currency board arrangement (see Chart 3).

During the 1930s, almost all long-term corporate debt and many mortgages included the gold clause, and the administration and Congress realized that this problem could not be ignored. In order to avoid increase in real debt and burden of increasing bankruptcies, the administration obtained from Congress a Joint Resolution issued June 5, 1933 declaring the gold clause “against public policy” and unenforceable in the courts. The Joint Resolution (48 Stat. 112) states:

...[E]very provision contained in or made with respect to any obligation which purports to give the obligee a right to require payment in gold or a particular kind of coin or currency, or in an amount in money of the United States measured thereby, is declared to be against public policy; and no such provision shall be contained in or made with respect to any obligation hereafter incurred. *Every obligation, heretofore or hereafter incurred, whether or not any such provision is contained therein or made with respect thereto, shall be discharged upon payment, dollar for dollar, in any coin or currency which at the time of payment is legal tender for public and private debts...*” [italics added]⁷

⁷ There was a vote on an amendment to the Resolution concerning whether it would apply only to new contracts (“hereafter”) or be applied retroactively to all existing contracts (“heretofore”), and I plan to examine the relation between the legislators’ votes and the economic interests of their constituencies

During the summer of 1933, the world market price of gold had risen to more than \$30 per ounce. The Roosevelt administration, however, wished to see the dollar price of gold increase further. To this end, Roosevelt directed the Treasury and the Reconstruction Finance Corporation to engage in major domestic and international gold purchases (Jones 1951; Blum 1951; Dam 1983). Although there was a high degree of volatility in the gold market during this period, the market price of gold did rise to more than \$34 per ounce by the end of the year. It was during this period that Keynes wrote to Roosevelt, characterizing his management of the foreign exchange value of the dollar as appearing like “a gold standard on booze.”

In mid-January of 1934, Roosevelt requested statutory authority to devalue the dollar by more than would be possible under the Thomas Amendment and to create a permanent fund at the Treasury to intervene in the gold and foreign exchange markets to stabilize the value of the dollar. The Gold Reserve Act (48 Stat. 337) was signed on January 30 and on the next day Roosevelt officially reduced the gold content of the dollar to 15-5/21 grain 9/10 fine gold, which set the official price of gold at \$35 per ounce. The government enjoyed a large accounting windfall from the official revaluation, and \$2 billion of the “paper profits” was allocated to the Treasury’s exchange stabilization fund to enforce the official price.

III. The Gold Clause Cases

The official devaluation of the dollar by 69 percent with respect to gold naturally led holders of instruments containing gold clauses to sue to receive payments based on the original gold value of the dollar. Although numerous suits were filed, four eventually made it to the

in future work.

Supreme Court and constitute the “gold clause cases.” Two involved private contracts and two involved government contracts.

The first of the private contract suits, *Norman v. Baltimore and Ohio Railroad* (No. 270; 294 U.S. 240), concerned an interest payment to a holder of a thirty year gold bond issued by the railroad in 1930. The bond stipulated that the payment of principal and interest “will be made...in gold coin of the United States of America of or equal to the standard of weight and fineness existing on February 1, 1930.” Mr. Norman C. Norman requested that the B & O Railroad make his February 1, 1934 coupon payment in either gold or the equivalent amount in legal tender, that is, 69 percent above the nominal amount. Norman sued in NY state courts, lost, and appealed to the Supreme Court, which granted a writ of certiorari to hear the appeal on October 8, 1934.

The other private contract suit also involved a railroad bond. The St. Louis, Iron Mountain & Southern Railway Company had issued a thirty year gold bond maturing on May 1, 1933, stipulating that it would pay the holder upon maturity “One Thousand Dollars gold coin of the United States of the present standard of weight and fineness.” The company declared bankruptcy in March, 1933. Bankers Trust, the trustee for the bond holders in the bankruptcy, filed a petition requesting that the obligations to the bond holders include the increased nominal amounts as required by the gold clause. The Reconstruction Finance Corporation, also a creditor of the firm, and the federal government filed a countermeasure denying the validity of the gold clause. The District Court decided in favor of the government. The Supreme Court agreed to hear an appeal on November 5, 1934, consolidating *United States v. Bankers Trust Co.* (Nos. 471, 472) with *Norman*.

Concerning federal obligations, a holder of a Fourth Liberty Loan gold bond that had been called for redemption in 1934 sued to receive \$16,931.25 for his \$10,000 bond (*Perry v. United States*, No. 532; 294 U.S. 330). The other federal contract case involved the appropriate rate for the compulsory exchange of gold certificates for paper money. The Treasury exchanged the gold certificates on a dollar-for-dollar basis for new notes. A Mr. Eugene Nortz objected and sued to receive the nominal equivalent of the (market) gold value of his certificates at the time he exchanged them in January 1934 (*Nortz v. United States*, No. 531; 294 U.S. 317). These cases had been heard in the U.S. Court of Claims, the forum in which suits against the government occur, and the Supreme Court agreed to review the cases on November 19, 1934.

The cases were argued together before the Supreme Court from January 8 to 11, 1935 and received front page *New York Times* coverage. Attorney General Homer Cummings, who argued the case for the government, predicted “chaos” if the gold clause were upheld (*NY Times*, 1/10/35, p.1). The Justices asked many “pointed questions” of Cummings, and Chief Justice Hughes’ question about precisely where the power of the government to alter its obligation to Liberty Bond holders came from was characterized in the headline as “a Bombshell to the Government” (*NY Times*, 1/11/35, p.1). The article continued that the “barrage of questions from the bench...seemed to indicate that some members of the court were in grave doubt as to the constitutionality of the abrogation laws and resolutions.” The *Commercial and Financial Chronicle* (1/12/35, p. 176) dismissed the government’s case as resting primarily upon “irrelevant emotionalism.” Although “it would be unwise to undertake to forecast” the decision, the *CFC* found the scepticism of the Justices showed for the government’s arguments “encouraging.” The tone and nature of the questions, as well as the nature of Cummings’

response, led many observers to increase their expectations that the abrogation resolution would be declared unconstitutional.⁸

Roosevelt showed some concern that the decision would be adverse to the government. According to the diaries of Secretary of Treasury Henry Morgenthau, Roosevelt and some of his advisors considered trying to destabilize the gold market, which had held steady at \$35 per ounce since the Gold Reserve Act, in order to suggest to the Supreme Court and the public the extent of the chaos that might occur if the government lost (Blum 1959, pp. 125-31). Morgenthau “argued harder and more intensely than...ever before” against this policy and characterized this meeting as “one of the most unpleasant hours” since coming to Washington. Roosevelt pressed Morgenthau “very very hard, arguing all the time for the political effect.” Morgenthau effectively threatened to resign and the next day Roosevelt relented and dropped the idea.

Morgenthau did, however, have to intervene heavily in the foreign exchange markets during January 1935 to maintain the official parity (Blum 1959, pp. 129-30). As the *Economist* noted (2/2/35, p.245): “Before the hearing [that is, the argument before the Supreme Court] it had been assumed that the Court would uphold the Government’s case; but after reading the Government’s argument there was a sudden shift of opinion.” Considerable speculation arose that the Supreme Court would find the abrogation unconstitutional and effectively force the government to revalue the dollar upwards. The markets began to push the dollar higher, but Treasury made large purchases of French francs and British sterling and successfully prevented the dollar from appreciating significantly.

⁸ Appendix Tables 2A to 7A examine the asset price movements during the dates of the Supreme Court argument. See section VII below.

Such great attention was focused on the gold clause cases that the Supreme Court took the unprecedented step of officially announcing after its regular Saturday meeting on February 2 that no decision would be forthcoming on the following Monday. The Court made a similar announcement on February 9. Delay was interpreted as bad for the government's case: "The announcement [that no decision would be made on the Feb 11th] strengthened opinion in the markets that the decision when it came might be adverse to the government" (*NY Times*, 2/12/35).

Silence after the February 16 meeting of the Justices led the markets to anticipate (correctly) a decision on the following Monday. The front page headline of the *New York Times* on February 18, 1935 read: "Capital Tense, Expects Decision on Gold Today....Leaders are Confident But There Is No Indication of What the Supreme Court Will Decide." The article describes the extent of the uncertainty surrounding the decision: "...there is no way of forecasting what the decision will be either generally or specifically....Until the decision is actually read in open session by a justice of the court, any statement or forecast as to what it might be is a guess and nothing more" (p.2).

At noon, Chief Justice Hughes read the 5-4 majority opinion. The majority found that abrogation of the gold clause was constitutional under the powers granted to Congress in Article I, section 8, of the Constitution "to coin Money, [and] regulate the Value thereof." The majority also took seriously the government's concern about the dire economic consequences of enforcing the gold clause: "It requires no acute analysis or profound economic inquiry to disclose the dislocation of the domestic economy which would be caused by such disparity of conditions in which, it is insisted, these debtors under gold clauses should be required to pay \$1.69 while

respectively receiving their taxes, rates, charges and prices on the basis of one dollar of that currency.”

Concerning government obligations in *Perry*, the majority found that the government had violated the Fourteenth Amendment, adopted following the Civil War, which states that “the validity of the public debt of the United States, authorized by law,... shall not be questioned.” The majority, however, found that the plaintiff had not been harmed by the abrogation because they did not “show that in relation to buying power he has sustained any loss whatsoever” and any increase in nominal payments to him would “constitute not a recoupment of loss in any proper sense, but an unjustified enrichment.” The practical effect of the decision thus was to permit the repudiation of the gold clause since, while morally wronged, bond holders were not injured. The majority similarly found that Mr. Nortz was not harmed in gold certificate case.⁹

Justice McReynolds, in a strident and emotional dissent, decried that “the Constitution is gone” and compared the actions of the government in these cases to those of “Nero in his worst form.” The minority expressed “shame and humiliation” at the majority’s decision and found the consequences of the decision upholding repudiation “abhorrent.” With the sanctity of private contracts now eliminated and the government effectively repudiating its obligations, the dislocation of the domestic economy could be much greater in the long run than any possible short run disruptions due to gold clause enforcement.

The decision dominated the front pages of the popular and business press in the U.S. and

⁹ While the soundness of the majority’s decision will not be explored here, it generated a substantial debate among legal scholars during the 1930s (see, e.g., Dawson 1935, Dickinson 1935, Hart 1935, and Nussbaum 1939). More recent commentators such as Dam (1983) have endorsed Hart’s (1935, p. 1956) view of the Court’s reasoning with respect to the government obligations: “Few more baffling pronouncements, it is fair to say, have ever issued from the United States Supreme Court.”

Europe and led to a sharp reaction in the financial and commodity markets. “Court Backs Government on Gold; 5-4 for Bond Payment in New Dollar; Business Surges Forward, Stocks Rise” reads the *NY Times* front page headline which covered stories in the four right columns (2/19/35, p.1). Trading in stocks and bonds immediately following the decision jumped to levels that had not occurred in months.¹⁰ I now turn to analyze the markets’ response in detail.

IV. Hypotheses

To assess the impact of the gold clause abrogation, I will examine price changes in five markets: equity, corporate bonds, government bonds, commodities, and foreign exchange. Hypotheses about debt overhang, bankruptcy costs, and contractual uncertainty have different implications for how the prices will respond (see Table 1). Note that all of the corporate bonds in my sample and government bonds issued before 1933 include the gold clause, but government bonds issued after March 1933 did not include the clause. Also note that since the Treasury was intervening to peg the price of gold at \$35 per ounce, caution must be exercised in interpreting the foreign exchange data.

Debt to Equity Transfer Hypothesis: Abrogation of the gold clause was simply a transfer from debt holders to equity holders. This would imply a decline in the value of corporate bonds and government bonds with the gold clause. In contrast, equity prices should rise, and the rise of

¹⁰ “At 12:04 ½ p.m. Monday, the Dow-Jones news ticker flashed throughout the country the Supreme Court decision upholding the abrogation of the gold clause...the security and commodity markets broke into tremendous activity at rising prices....Everywhere in the financial community, crowds were clustered around the news tickers. When the tidings appeared, the Street was galvanized into action” (*Wall Street Journal*, 2/19/35, p.1). The Chief Justice gave a formal summary of the decision at the beginning of his remarks in order to avoid misinterpretations that could arise from reading a lengthy opinion.

individual stocks should be proportional to the extent of the debt relief, that is, to their leverage.

Contractual Uncertainty Hypothesis: The decision may have generated uncertainty about the ability of private parties to write and enforce long term contracts.¹¹ This should result in higher contracting costs and higher cost of capital for firms in the long run. Equity prices should decline. Bonds should also decline since there is a new constraint imposed on the bond contracts. The decision was construed broadly to render unenforceable most types of indexation provisions to protect bond holders against inflation (McCulloch 1980), so bond holders were forced to bear the risk of a rise in the price level.¹² The decline should affect both government and corporate bonds since the decision introduced uncertainty about repayment for all long-term contracts. Given the weaker ground for allowing future abrogation of government contracts, however, the reduction in risk premia (increase in price) may be greater for the corporate than the government bonds.¹³

Higher Expected Inflation Hypothesis: Abrogation would allow the government to pursue a more inflationary monetary policy and, perhaps, devalue the dollar further. Commodities futures prices should rise and the value of the dollar should fall. Since indexation was now effectively outlawed, bond prices should decline to reflect an increase in the expected inflation

¹¹ Note that a 5-4 Supreme Court decision in 1934 upheld the right of individual states to impose temporary moratoria on farm foreclosures by creditors (*Home Building and Loan Association v. Blaisdell et al.*), so uncertainty about long-term contract enforcement existed before the gold clause cases (see Alston 1984).

¹² The Joint Resolution was repealed only in 1977 (McCulloch 1980).

¹³ Alternatively, the Supreme Court decision might have *reduced* uncertainty to the extent that the markets had already taken into account the possibility that the government could intervene in private contracts. The decision may have clarified what types of interventions would be permissible and that they were narrowly limited to the Article I, section 8, powers of Congress to regulate the value of money.

premium in interest rates. This will affect both gold and non-gold bonds. Besides the effects of the transfer, it is unclear how equities would be affected by higher inflation in this period.¹⁴

High Distress Costs and Debt-Deflation Hypothesis: If the costs of bankruptcy and distortions of investment incentives of debt overhang are sufficiently large, then enforcement of the gold clause could have reduced the expected payments to corporate bond holders. This occurs when the anticipated benefit of enforcement of the gold clause, which would raise nominal payments to bond holders by 69 percent times the expectation of a decision upholding enforceability, must be more than offset by the expected reduction of payments to bond holders due to the costs of bankruptcy and distorted investment incentives. In other words, a “debt relief Laffer curve” exists and firms would have been on the downward sloping part of the curve (Krugman 1988 and Sach 1989).¹⁵

Under this hypothesis, corporate bond prices should rise upon announcement of the decision upholding abrogation. Equity prices also should rise since bankruptcies are being avoided. The equity and bond prices of firms with greater likelihood of distress (that is, lower rated and highly leveraged firms) should increase more upon the announcement of the decision than for firms that would have been unlikely to have been pushed into distress by the decision (that is, highly rated and low or no debt firms).

¹⁴ In the post-WWII period, inflation has been negatively correlated with stock returns and real activity (e.g., Fama 1981).

¹⁵ If both debt and equity could be made better off by debt relief, the question arises as to why this was not done through voluntary renegotiation. First, free riding problems among different classes of claimants could thwart an agreement (see Gertner and Scharfstein 1991 and Jackson 1986). Second, even if there were no free rider problems, a general abrogation of this clause could have economized on transactions costs by avoiding having so many firms go through bankruptcy to achieve the same end.

If bankruptcy costs are the key, then government bonds, where bankruptcy costs are not an issue, should not have been affected by this aspect of the decision. Government bonds with the gold clause, however, should see their value decline, since their holders lost a chance of repayment in gold value without an offsetting change in bankruptcy costs.

In addition to the distress costs that affect individual firms, there could have been an external effect of massive bankruptcies and distorted investment incentives induced by a decision adverse to the government (e.g., Fisher 1933, Jensen and Meckling 1976, Myers 1977, Bernanke 1995, and Lamont 1995). The two-year long recovery of the economy might have been stopped and a severe crisis could have arisen as individual firm bankruptcies led to further waves of failures of financial intermediaries and to broad financial and economic collapse. By avoiding some probability of this debt-deflation “doomsday” scenario (that is, avoiding a re-run of the 1931-1933 banking crises), the riskiness of all instruments, including government bonds, would have gone down. This would imply a reduction in risk premia (higher prices) for government and private debt, so government debt without the gold clause would rise in value along with the corporate debt. Also, reducing the probability of financial collapse might have led to higher expected prices (lower the likelihood of a collapse of monetary velocity) and to lower expected value of the dollar in the foreign exchange markets.

V. Data

To determine the impact on equity holders, daily stock price data on the days surrounding the Supreme Court’s decision were collected from the *NY Times*. The initial sample includes all New York Stock Exchange firms which traded on February 18th. I then calculate returns as the

change in the closing prices from the previous trading day (Saturday, February 16th) to the 18th, divided by the closing price on the previous day. Since not all NYSE stocks trade every day, and many more than usual traded on the 18th, returns for some stocks could be calculated only over longer periods. In the empirical work reported below, I use only those firms which traded on both the 16th and 18th, so all of the returns are one-trading day returns. This avoids complications that arise when including infrequently traded stocks and when calculating multi-period returns.¹⁶ Also, using only the one-day returns helps to ensure that the price change is reflecting new information in the market on the 18th rather than information that may have cumulated over a number of days for an infrequently traded stock.¹⁷

I use the same procedure to calculate one-day returns for bonds traded on the NYSE on February 18th. Unlike the equity sample, where I have only one observation per firm, the bond return sample includes multiple bonds issued by the same company. All of the corporate bonds in the sample contained a gold clause.

The Moody's Manuals then supply data on various firm characteristics including: the total amount of debt outstanding for each firm, book value of assets, and whether the firm is in receivership or bankruptcy reorganization. The coupon, maturity date, security, and rating of individuals bonds also come from the Moody's Manuals. CRSP has monthly stock returns for the NYSE from which I obtain standard deviations of the monthly returns for the 1933 and 1934 as a measure of firm volatility. I also use the monthly CRSP data to estimate beta from a market

¹⁶ The results reported below do not change if I do include the roughly 100 NYSE firms that traded on the 18th but not the 16th.

¹⁷ Brown and Warner (1980 and 1985) also emphasize the benefit of narrowing the event window to avoid contamination by other news events.

model, using the value-weighted market portfolio, for each NYSE firm for this time period.

CRSP also provides SIC industrial classifications for the NYSE firms.

The *NY Times* provides prices on government securities and identifies which government securities did and did not have gold clauses (2/19/35). Commodity prices, both spot and forward, and foreign exchanges rates are obtain from the *NY Times* and *Commercial and Financial Chronicle*.

VI. Results

Stock Prices: Table 2 compares the means for the February 18, 1935 equity returns for firms with different probabilities of being affected by the decision. Since the Supreme Court decision is effectively a debt forgiveness equivalent to 69 percent of the value of a firm's outstanding debt, the stock price reaction should be directly related to the firm's indebtedness under the transfer hypothesis. Also, if costs of financial distress are significant, the impact of this debt relief should be particularly great for firms that would have been likely to have been pushed into financial distress by enforcement of the gold clause.

The first line of Table 2 compares the returns for firms which had no long term debt outstanding at the time of the decision with firms that did. Interestingly, roughly half of the NYSE firms had no debt in 1935 (see Holderness, Kroszner, and Sheehan 1999). Returns for firms with debt is 5.0 percent whereas firms without debt have returns of 3.5 percent and the difference is statistically significant. Also, among the firms with debt outstanding, lower rated firms (that is, firms more likely to experience bankruptcy) have higher returns than firms with higher ratings. Firms with bonds rated A or better, for example, experience returns 2 percentage

points below firms with lower ratings, and the difference is statistically significant. These results are consistent with both the transfer hypothesis and the high bankruptcy costs hypothesis.

Table 3 regresses the one-day equity return on a variety of firm characteristics. Since smaller firms are often more volatile than larger firms, I include total assets as a control variable. I also include a series of industry indicators to try to absorb any price movements that could have been due to “industry specific” information rather than the gold clause decision. In all specifications, leverage (debt to debt plus equity) is positively and statistically significantly associated with return. Controlling for leverage, a high Moody’s rating leads to lower returns and both coefficients are statistically significant. As another measure of expected probability of bankruptcy, I included a measure of firm volatility (the standard deviation of the monthly stock price returns during 1933-1934). High volatility is also associated with higher returns on this day. Finally, since my debt relief proxies may simply be proxying for high beta firms, I included each firm’s beta estimated from the market model described above. The beta coefficient is positive and statistically significant but the coefficient on leverage remains positive and statistically significant.

Bond Prices and Interest Rates: Corporate bond prices rose on the decision date an average of 0.89 percent. The rise is consistent with an economically significant role for high bankruptcy costs and debt deflation. Table 4 compares the mean returns for bonds with different likelihoods of being affected by the decision. The first line compares investment grade bonds (Baa and above) with non-investment grade or unrated bonds. The highly rated bonds rise 0.37 percent but the lower rated bonds rose by 1.59 percent. Bonds of firms in default or in receivership also experienced higher returns and all of the differences are statistically significant.

Table 5 gives a more detailed break down of returns by Moody's rating, again showing that lower rated bonds experienced greater gains than more highly rated ones. Where bankruptcy costs were likely to be greatest, the decision abrogating the gold clause appears to have had the greatest positive effect on bond prices.

Table 6 regresses the change in the price of the bond on a variety of firm and bond characteristics. Since the volatility of the bond price for given changes in interest rates will be related to the time to maturity of the bond and the coupon rate, I include those in the regression as controls.¹⁸ Once again highly rated bonds are found to have lower returns and bonds in default have higher returns. When both measures are put in together, the effect of the investment grade rating is little changed but the effect of default becomes small and statistically insignificant. The final column of Table 6 include industry indicators for firms whose industry I could identify and again the results are robust.¹⁹ These results imply that the spread between high rated and lower rated bonds, sometimes referred to as the default premium, was reduced upon the announcement of the decision.

Tables 7 contains prices and returns of long-duration government securities ("bonds") and Table 8 contains the equivalent information for shorter-maturity issues ("notes"). Panel A of each table lists Treasury securities with the gold clause and Panel B lists Treasury securities which did not contain a gold clause. Treasury securities with the gold clause fell in value and the

¹⁸ Alternatively, I have used the "duration" of each bond instead of maturity and coupon rate and the results are unchanged.

¹⁹ Note that I have to hand-match the abbreviated names of firms from the NYSE bond tables with those in the CRSP data to obtain the SIC classifications. Many of the NYSE bonds are outstanding for firms not traded on the NYSE or for which the abbreviation was so obscure that it could not be matched.

issues without the gold clause rose in value. These results suggest that, when there was little chance of default, the transfer effect was important because the gold Treasuries fell in value. Since the holders of the non-gold Treasuries were not directly affected by the decision, the increase in their prices suggests that the decision caused a decline in interest rates.²⁰ The average rise in prices for the non-gold Treasury bonds, however, is much smaller than those for the corporate bonds (0.20 percent versus 0.89 percent). This also suggests that the rise in the corporate bond prices may have had some component related to bankruptcy costs that was not part of the change in the Treasury bonds.

As noted below, the decision appears to have led to an increase in expected inflation so this would not account for a decline in interest rates. Also, the contemporary business press suggested that the decision would provide a boost to business activity by relieving uncertainty, so expected demand for borrowing would have increased. Clearly, this result is not consistent with an important role for increasing contractual uncertainty following the decision. Interest rates might have fallen generally because the decision reduced the chance of massive bankruptcies and complete financial collapse. Future work will attempt to investigate whether the differences in the decline in interest rates implied by the Treasury and corporate bonds can be used to estimate the expected costs and likelihood of complete financial collapse versus the firm-specific component of bankruptcy costs.

Commodity Prices and Foreign Exchange: Tables 9 and 10 provide information on the response in the commodity and foreign exchange markets. Both cash and futures prices rose,

²⁰ The higher prices for the non-gold Treasuries could suggest that there had been some concern about a default by the government on even its non-gold obligations.

with cash prices rising roughly 1 percent and futures prices over the next year rising by about 2 percent. The value of the dollar also fell in the foreign exchange market by roughly 0.50 percent. These results are consistent with the higher expected inflation hypothesis. Since bond prices rose (interest rates fell), however, the increased in expected inflation appears to be more than offset by other factors, such as the avoidance of bankruptcy costs at both the individual firm and economy-wide levels.

VII. Robustness of the Results

An important concern about the results reported above is that the asset movements I document might be due to other factors besides the gold clause decision. To address this issue, I consider two robustness checks.

First, I examine the asset price movements during the Supreme Court argument dates. As noted above, the Justices began to ask tough questions suggesting deep scepticism about the government's case. Since the government had won the cases in the lower courts, the market's prior expectation was that the government was very likely to prevail. The questions from the bench on January 10 and 11, however, led the market to revise downward the probability that the abrogation would be upheld.

This reduction in the likelihood of debt relief, thus, should have exactly the opposite impact on asset prices as the Supreme Court's decision to upholding gold clause abrogation on February 18, 1935. Appendix Tables 2A to 6A examine the stock market and bond market returns on January 10 and 11, 1935, the key dates during which the Justices' questions raised serious doubts about the government's case. These tables run the same tests as in Tables 2 to 6,

except that the Appendix tables use the early January data.

As Appendix Tables 2A to 6A show, the asset price movements are exactly the opposite of those on February 18, 1935. Both the equity and bond prices fall. Firms that are closer to financial distress experience sharper declines in their equity and bond prices than do firms with higher credits ratings and firms with little or no debt outstanding. These results are consistent with the high distress and debt-deflation hypothesis. In addition, they suggest that the results obtained on the Supreme Court decision date are not due to some omitted factor but can be interpreted as shedding light on issues of debt relief.

As a second robustness check, I searched for another date during this period on which there was a large stock market movement but no information about the gold clause. Such a date would provide a benchmark for determining whether the cross-section results are simply an artifact of a large market movement or due to information about debt relief. On December 28, 1934, the stock market rose 4 percent (the only other date within six months of the Supreme Court decision on which the market increased by more than 3 percent), but the *NY Times* articles had no apparent explanation for the sudden “enthusiasm.”²¹ There was no discussion of the gold clause in the newspaper between December 27 and December 29, 1934. I collected the equity returns on December 28, 1934 and performed the same tests as in Tables 2 and 3.

On this date, there was no statistically significant difference in equity returns for firms with and without debt or between indebted firms with investment grade and non-investment grade ratings. In addition, after controlling for the market beta, neither leverage nor investment

²¹ The *NY Times* reported that the market had declined sharply the previous day due to tax-related end-of-year selling. There did not appear to be any particular piece of positive news that would send prices higher across the board.

grade rating had a statistically significant impact on returns in the regression specifications in Table 3. These “null” results suggest that the cross-sectional relations documented above are not due to some omitted factor that may be present on dates of high equity returns but can be interpreted as providing information about the impact of debt relief on asset prices.²²

VIII. Conclusions

The evidence presented above is consistent with the “high distress costs and debt-deflation” hypothesis. The debt repudiation that was the practical effect of the gold clause decision increased the value of both debt and equity, and firms with greater likelihood of experiencing financial distress had the greatest increase in the value of their securities. These results suggest that models emphasizing debt overhang and the costs of financial distress can have empirical relevance for evaluating policies of debt relief for both firms and nations.²³

In future work, I would hope to examine the long-term effects, if any, on the use of long-term bonds in the capital structure of U.S. corporations. The political economy of exchange rate regime shifts and debt relief, both during the Great Depression and in other periods, also merits further study.²⁴ This work will help to shed light on the costs of financial distress and the importance of debt overhang for corporate and macroeconomic performance. The results here

²² I am also investigating the impact of both the US announcement that it will abandon the gold standard in 1933 and the UK announcement that it will abandon the gold standard in 1931.

²³ This paper does not address the issue of moral hazard problems that arises when debt relief policies are anticipated.

²⁴ Berglof and Rosenthal (1998) and Bolton and Rosenthal (1999) focus on the political economy of the bankruptcy laws and bail outs (see also Kroszner and Strahan 1999 and Kroszner and Stratmann 1998 and 2000 on the political economy of financial regulation). Irwin and Kroszner (1999) investigates aspects of the political economy of the New Deal.

suggest that in the circumstances of the 1930s it is indeed better to forgive than to receive.

Such results have important policy implications for the most effect way to respond to crises that involve significant debt restructuring. Quick, across-the-board approaches such as what the US did during the 1930s did appear to be effective with little long-term negative consequences. This experience may not be applicable to other countries. Argentina, for example, has been criticized for its “pesofication” because the action implies, as the dissenting judges in the US Supreme Court decision said, a lack of respect for the rule of law, with negative long-term consequences for both public and private Argentine debt markets. Alternative methods of responding to crises, such as government-sponsored asset management companies tend to involve fewer questions about contract enforcement but can be painfully slow to move forward with the restructuring, as in Japan. Future work on the debt-devaluation effects on the Asia crisis countries and Argentina, for example, will help us to understand whether a US-style across-the-board restructuring would be an appropriate crisis response in other countries.²⁵

²⁵ Kroszner and Samphantharak (in progress) explore the debt-devaluation consequences of the Thai baht in 1997. See Calomiris, Klingebiel, and Laeven (2003) for an overview of restructuring mechanisms.

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Chart 1: U. S. Dollar Exchange Rates, January 1933 - December 1936.

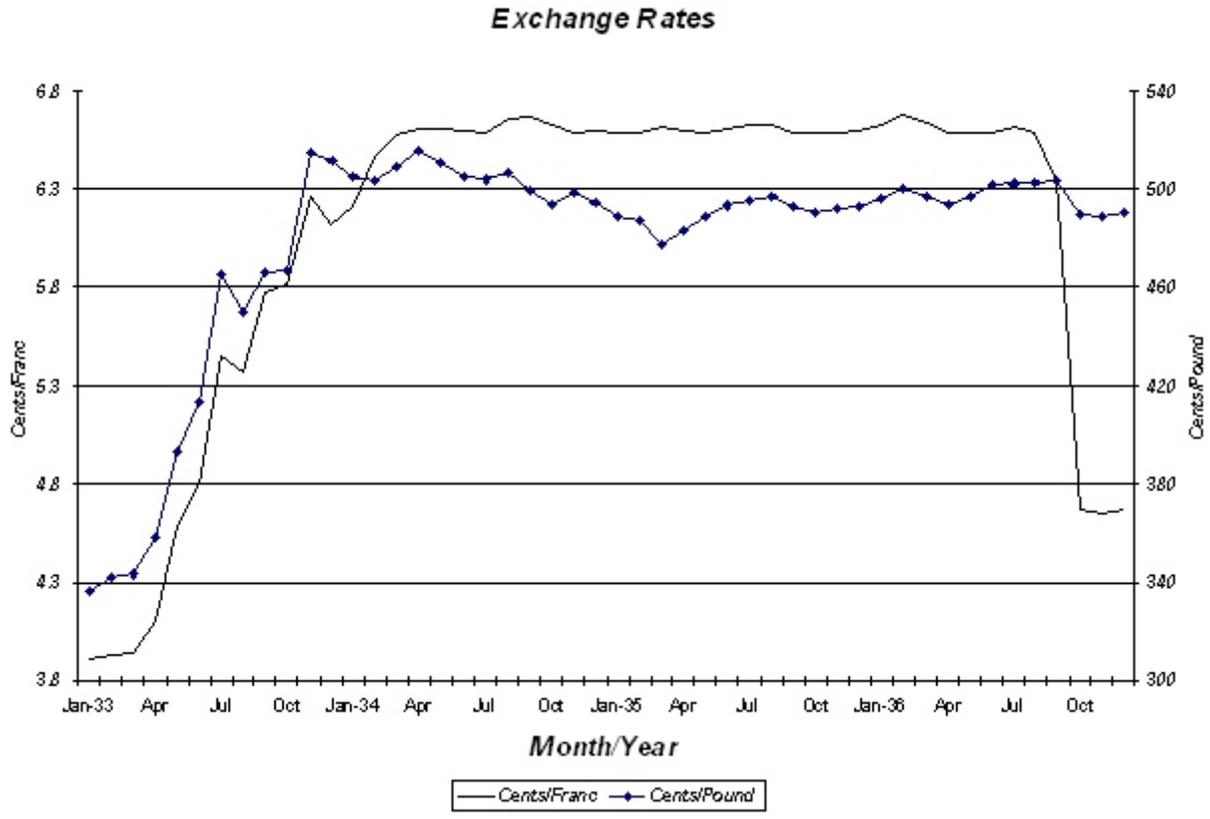


Chart 2: Bilateral U.S. Dollar Exchange Rates for Selected Asian Economies
 In U.S. dollars per currency unit; logarithmic scale; January 5, 1996 = 100. Source: IMF.

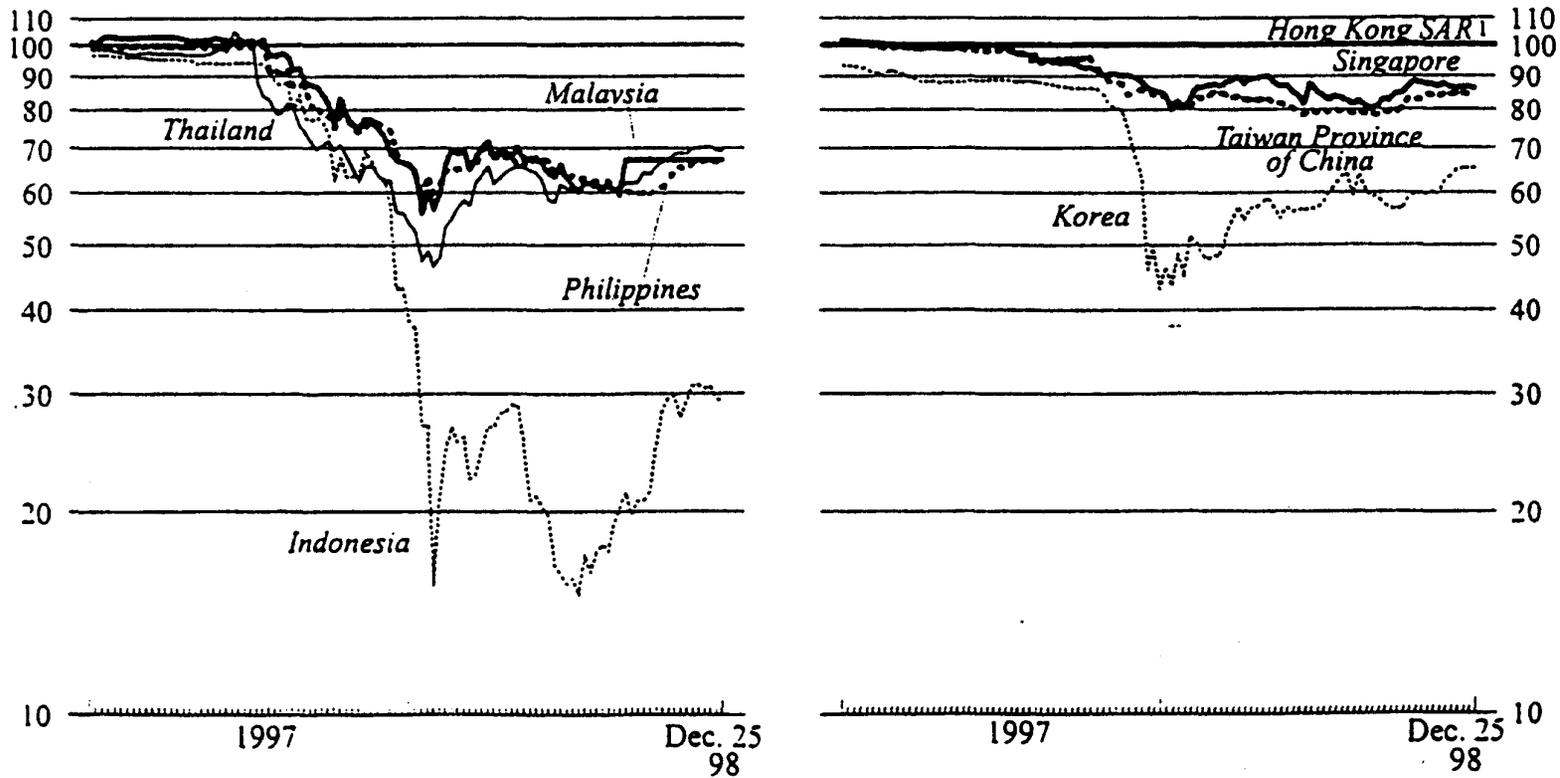


Chart 3: Decline of the Argentine Peso after the Currency Board Collapse in December 2001

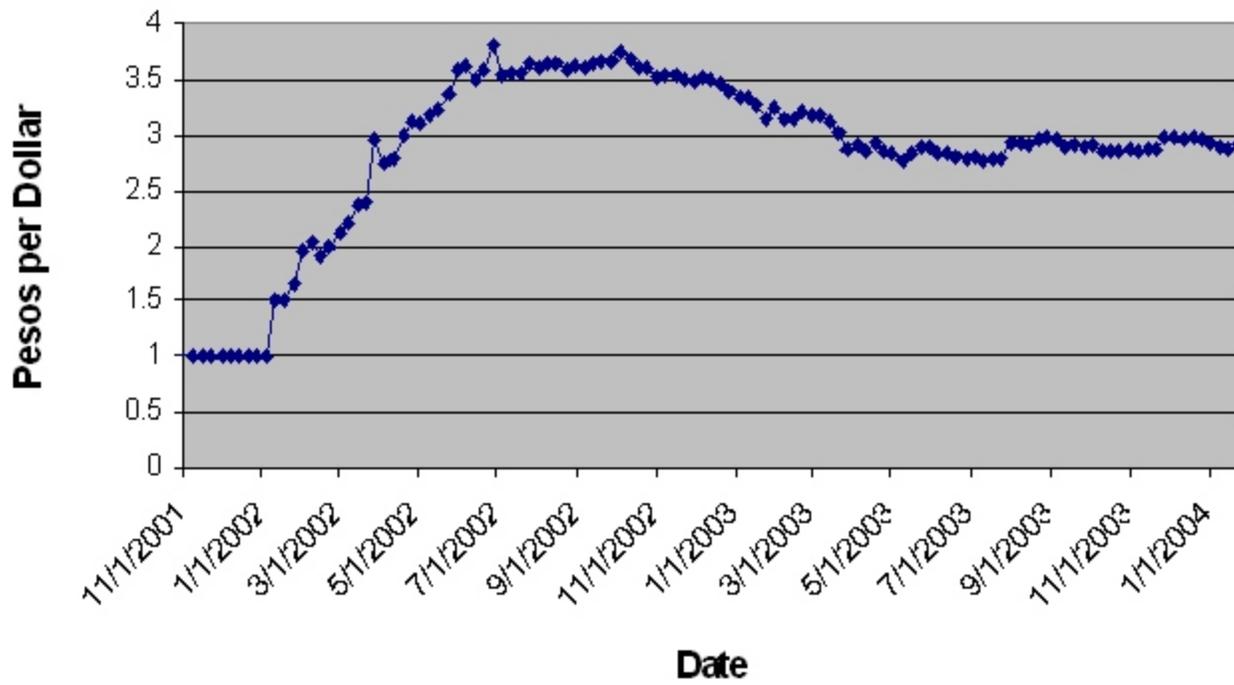


Table 1: Implications of Alternative Hypotheses for Asset Prices when the Supreme Court Decision Upholds Gold Clause Abrogation

	<i>Transfer from Debt to Equity</i>	<i>Contractual Uncertainty</i>	<i>Higher Expected Inflation</i>	<i>High Distress Costs and Debt- Deflation</i>
Equity Prices	Higher	Lower	?	Higher*
Corporate Bond Prices (with Gold Clause)	Lower	Lower	Lower	Higher*
Government Bonds with Gold Clause	Lower	Lower	Lower	Lower
Government Bonds without Gold Clause	0	Lower	Lower	Higher
Commodities Futures Prices	0	0	Higher	Higher?
Foreign Exchange Value of the Dollar	0	0	Lower	Lower?

* This hypothesis implies that firms closer to distress (such as firms with lower debt ratings and higher leverage) experience a greater increase in their equity and bond prices than do other firms.

Table 2: Comparison of Means Tests for Equity Returns of NYSE-traded Stocks upon the Supreme Court Announcement of the Gold Clause Decision, by Debt Status and Rating.

Return is the one-day equity return on February 18, 1935, and its mean is 0.041. Sample includes all New York Stock Exchange firms for which return data and firm characteristics are available. The total number of observations is 420. The number of observations of “yes” or “no” are in brackets below the mean. T-statistic is for the difference of means test in that row. Sources: New York Times (stock prices), Moody’s Manuals (firm characteristics).

	<i>Mean Return if No</i>	<i>Mean Return if Yes</i>	<i>t-statistic</i>
Any Long-Term Debt Outstanding?	0.035 [n=214]	0.050 [n=196]	-4.06
Investment Grade Rating? (Only for firms with debt outstanding)	0.053 [n=102]	0.046 [n=95]	1.19
Rating Aaa, Aa, or A? (Only for firms with debt outstanding)	0.054 [n=151]	0.035 [n=46]	2.67

Table 3: OLS Regressions of Equity Returns of NYSE-traded Stocks upon the Supreme Court Announcement of the Gold Clause Decision on Leverage and Control Variables.

The dependent variable is one-day equity return on February 18, 1935, and its mean is 0.041. Sample includes all New York Stock Exchange firms for which return data and firm characteristics are available. Standard errors in parentheses. Sources: New York Times (stock prices), Moody's Manuals (firm characteristics), CRSP (monthly equity returns and industry classifications).

	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.033 (0.002)	0.022 (0.015)	0.016 (0.020)	0.020 (0.019)	0.003 (0.015)	-0.004 (0.014)
Leverage (debt to equity + debt)	0.039 (0.005)	0.029 (0.008)	0.039 (0.012)	0.023 (0.012)	0.016 (0.008)	0.014 (0.007)
Assets in millions (coefficient x 10 ⁶)	-	0.296 (0.381)	0.466 (0.488)	0.878 (0.477)	0.807 (0.392)	0.838 (0.372)
Investment Grade Rating (Moody's Baa or better)	-	-	-0.013 (0.006)	-	-	-
A, Aa, or Aaa Rating (Moody's)	-	-	-	-0.038 (0.008)	-	-
Std Dev of Equity Returns (monthly avg.)	-	-	-	-	0.130 (0.030)	-
Beta (est. from market model)	-	-	-	-	-	0.015 (0.002)
Includes Industry Indicators?	No	Yes	Yes	Yes	Yes	Yes
Number of observations	420	420	197	197	420	420
Adjusted-R ²	0.10	0.15	0.20	0.27	0.19	0.23

Table 4: Comparison of Means Tests for Bond Returns of NYSE-traded Bonds upon the Supreme Court Announcement of the Gold Clause Decision, by Rating and Default Status.

Return is one-day bond return on February 18, 1935, and its mean is 0.89 percent. Sample includes all New York Stock Exchange firms for which return data and Moody's information are available. The total number of observations is 253. The number of observations of "yes" or "no" are in brackets below the mean. T-statistic is for the difference of means test in that row. Sources: New York Times (bond prices), Moody's Manuals (firm and bond characteristics).

	<i>Mean Return if No</i>	<i>Mean Return if Yes</i>	<i>t-statistic</i>
Investment Grade Rating?	1.59 [n=125]	0.37 [n=128]	5.35
Bond in Default on Principal or Interest?	0.75 [n=206]	1.92 [n=47]	-3.89
Company in Receivership?	0.83 [n=216]	1.75 [n=37]	-2.72

Table 5: Bond Returns for NYSE-traded Bonds upon the Supreme Court Announcement of the Gold Clause Decision, by Rating.

The mean return is one-day bond price change in *percent* on February 18, 1935 for bonds in the given ratings category. Sample includes all New York Stock Exchange firms for which return data and Moody's information are available. Sources: New York Times (bond prices), Moody's Manuals (ratings).

<i>Moody's Rating</i>	<i>Mean Return</i>	<i>Number</i>
Aaa	0.072	13
Aa	0.011	25
A	0.160	32
Baa	0.707	58
Ba	1.860	37
B	1.182	30
Caa	3.321	9
Ca	1.227	3
Not Rated	0.453	46
<hr/>		
Total	0.893	253

Table 6: OLS Regressions of Bond Returns for NYSE-traded Bonds upon the Supreme Court Announcement of the Gold Clause Decision.

The dependent variable is one-day bond return in *percent* on February 18, 1935. Its mean is 0.89 percent and std dev is 1.70 percent. Sample includes all bonds traded on the NYSE for which Moody's information is available. Standard errors in parentheses. Sources: New York Times (bond prices), Moody's Manuals (firm and bond characteristics), CRSP (industry classifications).

	(1)	(2)	(3)	(4)
Intercept	1.887 (0.986)	0.980 (1.008)	1.886 (0.987)	0.305 (1.541)
Investment Grade Rating (Moody's Baa or better)	-1.092 (0.204)	-	-1.054 (0.227)	-1.391 (0.297)
Default on Principal or Interest (1 if yes)	-	0.737 (0.285)	0.117 (0.305)	-0.264 (0.681)
Log of Number of Years to Maturity of the Bond	0.166 (0.120)	0.178 (0.125)	0.164 (0.120)	-0.080 (0.141)
Coupon Rate of the Bond (in percent)	-0.189 (0.156)	-0.154 (0.164)	-0.196 (0.157)	0.119 (0.256)
Includes Industry Indicators?	No	No	No	Yes
Number of observations	243	243	243	135
Adjusted-R ²	0.11	0.03	0.11	0.17

Table 7: Returns on Treasury Bonds upon the Supreme Court Announcement of the Gold Clause Decision, for Treasury Bonds with and without the Gold Clause.

	<i>Maturity Dates</i>	<i>Percent Change</i>	<i>Net Price Change</i>	<i>Closing Price on Feb 18</i>	<i>Volume (in 1,000s)</i>	<i>Reported Yield-to- Maturity</i>	<i>Estimated Duration</i>
<i>Panel A: Bonds with Gold Clause</i>							
Liberty 4 1/4s 3d called	33-38	-0.19%	-0.18750	101.10	1680	..	0.37
Liberty 4 1/4s	33-38	-0.24%	-0.25000	102.97	156	..	0.37
Liberty 4 1/4s	32-47	-0.21%	-0.21875	102.95	88	..	4.03
Liberty 3 1/2s	32-47	-0.24%	-0.25000	103.97	834	..	4.08
Treasury 3 3/8s	40-43	-0.12%	-0.12500	105.88	707	2.11	5.78
Treasury 3 3/8s	41-43	-0.21%	-0.21875	105.78	501	2.27	6.59
Treasury 3 1/8s	46-49	0.03%	0.03125	104.43	334	2.68	10.24
Treasury 3s	51-55	0.00%	0.00000	103.80	204	2.75	14.00
Mean for Gold Clause Treasuries		-0.15%	-0.15234				
<i>Panel B: Bonds without Gold Clause</i>							
Treasury 3 1/4s	41	0.09%	0.09375	105.37	37	2.23	5.39
Treasury 4 1/4s-3 1/4s	43-45	0.18%	0.18750	104.37	53	2.63	7.66
Treasury 3 1/4s	44-46	0.12%	0.12500	104.31	64	2.66	8.53
Treasury 3s	46-48	0.15%	0.15625	102.44	177	2.67	10.06
Fed Farm 3s	47	0.19%	0.18750	101.33	113	2.72	10.06
Home Owner Loans 2 3/4s	49	0.35%	0.34375	99.94	475	2.78	11.58
Fed Farm 3s	49	0.31%	0.31250	101.71	159	2.81	11.44
Treasury 3 1/8s	49-52	0.21%	0.21875	103.48	347	2.77	12.36
Home Owner Loans 3s	52	0.25%	0.25000	102.05	553	2.81	13.42
Mean for Non-Gold Clause Treasuries		0.20%	0.20833				

Source: New York Times, February 19, 1935.

Notes: Only bonds with trading volume of at least 20,000 are reported. Percent change is the net price change divided by the opening price on February 18. Yield-to-Maturity is reported in the New York Times. Duration uses the mid-point of maturity dates and adjusts yields using Cecchetti (1988).

Table 8: Returns on Treasury Notes upon the Supreme Court Announcement of the Gold Clause Decision, for Treasury Notes with and without the Gold Clause.

<i>Face Interest Rate on Note</i>	<i>Maturity Date</i>	<i>Percent Change</i>	<i>Net Price Change</i>	<i>Closing Price on Feb 18</i>	<i>Total Outstanding (1,000,000s)</i>	<i>Reported Yield-to-Maturity</i>	<i>Estimated Duration</i>
<i>Panel A: Notes with Gold Clause</i>							
3.000%	Jun-35	-0.1533%	-0.15625	101.7813	417	..	0.29
2.875%	Apr-36	-0.0605%	-0.06250	103.2500	559	0.01	1.10
3.250%	Aug-36	-0.0898%	-0.09375	104.2813	365	0.26	1.43
2.750%	Dec-36	-0.1197%	-0.12500	104.2813	360	0.36	1.75
3.000%	Apr-37	-0.0596%	-0.06250	104.8750	502	0.69	2.05
3.250%	Sep-37	-0.0591%	-0.06250	105.6875	817	0.98	2.42
2.625%	Feb-38	-0.0599%	-0.06250	104.3438	278	1.11	2.86
Mean for Gold Clause Treasury Notes		-0.0860%	-0.08929				
<i>Panel B: Notes without Gold Clause</i>							
2.500%	Mar-35	0.0309%	0.03125	101.0625	528	..	0.04
1.625%	Aug-35	0.0000%	0.00000	101.1563	354	..	0.45
2.500%	Dec-35	-0.0306%	-0.03125	102.2500	418	..	0.78
1.125%	Jun-36	0.0619%	0.06250	101.0938	686	0.27	1.28
1.500%	Sep-36	0.0615%	0.06250	101.7500	514	0.36	1.51
3.000%	Feb-37	0.0896%	0.09375	104.6875	429	0.60	1.91
3.000%	Mar-38	0.1487%	0.15625	105.2500	455	1.24	2.89
2.875%	Jun-38	0.1193%	0.12500	104.8750	618	1.36	3.15
2.500%	Sep-38	0.1508%	0.15625	103.7813	597	1.40	3.37
2.125%	Jun-39	0.1529%	0.15625	102.3438	1294	1.55	4.11
Mean for Non-Gold Clause Treasury Notes		0.0785%	0.08125				

Source: New York Times, February 17 and 19, 1935.

Notes: New York Times did not report trading volumes for Treasury Notes. Percent change is the net price change divided by the midpoint of the closing bid and asked prices on Feb 16. Net price change is difference of the midpoint of the closing bid and asked prices on Feb 16 and Feb 18. Yield-to-Maturity is reported in the New York Times. Duration adjusts yields using Cecchetti (1988).

Table 9: Change in Futures and Cash Prices of Commodities upon the Supreme Court Announcement of the Gold Clause Decision.

	<i>Contract Expiration Date</i>					<i>Cash</i>
	<i>March 35</i>	<i>May 35</i>	<i>July 35</i>	<i>Sept 35</i>	<i>Dec 35</i>	
Coffee No. 7	2.33%	3.35%	2.59%	2.54%	2.67%	0.00%
Coffee No. 4	NA	1.78%	2.05%	1.48%	1.25%	0.00%
Sugar No. 1	0.51%	0.99%	1.46%	0.47%	0.69%	0.00%
Sugar No. 3	NA	1.24%	0.97%	0.95%	0.46%	0.00%
Cocoa	0.98%	1.15%	0.94%	0.73%	0.89%	1.87%
Rubber	3.59%	3.59%	3.59%	3.54%	3.47%	3.57%
Silk	2.16%	2.88%	3.25%	2.88%	NA	2.08%
Copper	2.20%	2.42%	2.30%	2.27%	NA	0.00%
Wheat	NA	1.28%	2.07%	2.55%	NA	1.99%
Corn	NA	3.04%	2.94%	2.76%	NA	2.82%
Cotton	1.37%	1.44%	1.52%	1.53%	1.53%	1.19%
Barley	NA	3.16%	2.27%	2.74%	NA	NA
Mean Price Change	1.88%	2.19%	2.16%	2.04%	1.57%	1.23%
Std. Dev.	0.94%	0.93%	0.81%	0.93%	1.03%	1.25%

Source: New York Times, February 18 and 19, 1935, and Commercial and Financial Chronicle, February 23, 1935.

Notes: Include futures prices if at least 5 contracts were traded. NA indicates insufficient volume or no contract traded. Volume figures are not reported for cash prices or for wheat, corn, oats, and barley futures. In some cases, cash prices may not correspond to exact specification of commodity traded in the futures contract (exact matches are available for coffee).

Table 10: Change in Foreign Exchange Value of the Dollar upon the Supreme Court Announcement of the Gold Clause Decision.

	Close on Feb 18	Close on Feb 16	Net Change	Percent Change
British Sterling	\$4.892500	\$4.872500	\$0.020000	0.41%
German Marks	\$0.403500	\$0.401300	\$0.002200	0.55%
French Francs	\$0.066375	\$0.066025	\$0.000350	0.53%

Source: New York Times, February 17 and 19, 1935.

Notes: Prices are the value of foreign currency in dollars and are based on closing rates.

Appendix 1A: Summary of Asset Price Changes upon Supreme Court Announcement of Its Decision to Permit Abrogation of the Gold Clause, February 18, 1935.

Equity Prices	Higher*
Corporate Bond Prices	Higher*
Government Bonds with Gold Clause	Lower
Government Bonds without Gold Clause	Higher
Commodities Futures Prices	Higher
Foreign Exchange Value of the Dollar	Lower

* Firms that are closer to distress, that is, firms with lower debt ratings and higher leverage, experience a greater increase in their equity and bond prices than do other firms.

Appendix Table 2A: Comparison of Means Tests for Equity Returns of NYSE-traded Stocks DURING THE SUPREME COURT ARGUMENT ON THE GOLD CLAUSE, by Debt Status and Rating.

Return is the equity return from the close on January 9, 1935 to the close on January 11, 1935. Its mean is -0.034 and standard deviation is 0.031. Sample includes all New York Stock Exchange firms for which return data and firm characteristics are available. The total number of observations is 416. The number of observations of “yes” or “no” are in brackets below the mean. T-statistic is for the difference of means test in that row. Sources: New York Times (stock prices), Moody’s Manuals (firm characteristics).

	<i>Mean Return if No</i>	<i>Mean Return if Yes</i>	<i>t-statistic</i>
Any Long-Term Debt Outstanding?	-0.030 [n=223]	-0.038 [n=193]	2.42
Investment Grade Rating? (Only for firms with debt outstanding)	-0.049 [n=104]	-0.026 [n=89]	-4.58
Rating Aaa, Aa, or A? (Only for firms with debt outstanding)	-0.043 [n=148]	-0.022 [n=45]	-3.62

Appendix Table 3A: OLS Regressions of Equity Returns of NYSE-traded Stocks DURING THE SUPREME COURT ARGUMENT ON THE GOLD CLAUSE on Leverage, Rating, and Control Variables.

The dependent variable is the equity return from close on January 9, 1935 to close on January 11, 1935. Its mean is -0.034 and standard deviation is 0.031. Sample includes all New York Stock Exchange firms for which return data and firm characteristics are available. Standard errors in parentheses. Sources: New York Times (stock prices), Moody's Manuals (firm characteristics), CRSP (monthly equity returns and industry classifications).

	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	-0.031 (0.002)	0.009 (0.013)	-0.026 (0.015)	-0.022 (0.015)	0.023 (0.013)	0.027 (0.013)
Leverage (debt to equity + debt)	-0.014 (0.005)	-0.037 (0.007)	-0.022 (0.010)	-0.020 (0.011)	-0.028 (0.007)	-0.027 (0.007)
Assets in millions (coefficient x 10 ⁶)	-	0.733 (0.316)	0.936 (0.390)	0.839 (0.406)	0.394 (0.327)	0.334 (0.316)
Investment Grade Rating (Moody's Baa or better)	-	-	0.017 (0.005)	-	-	-
A, Aa, or Aaa Rating (Moody's)	-	-	-	0.010 (0.006)	-	-
Std Dev of Equity Returns (monthly avg.)	-	-	-	-	-0.094 (0.027)	-
Beta (est. from market model)	-	-	-	-	-	-0.010 (0.002)
Includes Industry Indicators?	No	Yes	Yes	Yes	Yes	Yes
Number of observations	416	416	193	193	416	416
Adjusted-R ²	0.02	0.15	0.25	0.21	0.17	0.20

Appendix Table 4A: Comparison of Means Tests for Bond Returns of NYSE-traded Bonds DURING THE SUPREME COURT ARGUMENT ON THE GOLD CLAUSE, by Rating and Default Status.

Return is bond return from the close on January 9, 1935 to the close on January 11, 1935. Its mean is -0.88 percent. Sample includes all New York Stock Exchange firms for which return data and Moody's information are available. The total number of observations is 243. The number of observations of "yes" or "no" are in brackets below the mean. T-statistic is for the difference of means test in that row. Sources: New York Times (bond prices), Moody's Manuals (firm and bond characteristics).

	<i>Mean Return if No</i>	<i>Mean Return if Yes</i>	<i>t-statistic</i>
Investment Grade Rating?	-1.83 [n=113]	-0.05 [n=130]	-5.92
Bond in Default on Principal or Interest?	-0.21 [n=204]	-3.16 [n=39]	9.06

Appendix Table 5A: Bond Returns for NYSE-traded Bonds DURING THE SUPREME COURT ARGUMENT ON THE GOLD CLAUSE, by Rating.

The mean return is the bond price change in percent from close on January 9, 1935 to the close on January 11, 1935 for bonds in the given ratings category. Sample includes all New York Stock Exchange firms for which return data and Moody's information are available. Sources: New York Times (bond prices), Moody's Manuals (ratings).

<i>Moody's Rating</i>	<i>Mean Return</i>	<i>Number</i>
Aaa	0.126	17
Aa	0.202	24
A	0.276	30
Baa	-0.367	59
Ba	-0.888	35
B	-2.947	26
Caa	-4.438	7
Ca	-3.787	6
Not Rated	-1.167	39
Total	-0.878	243

Appendix Table 6A: OLS Regressions of Bond Returns for NYSE-traded Bonds DURING THE SUPREME COURT ARGUMENT ON THE GOLD CLAUSE.

The dependent variable is the bond return in *percent* from close on January 9, 1935 to close on January 11, 1935. Its mean is -0.88 percent and std dev is 2.48 percent. Sample includes all bonds traded on the NYSE for which Moody's information is available. Standard errors in parentheses. Sources: New York Times (bond prices), Moody's Manuals (firm and bond characteristics), CRSP (industry classifications).

	(1)	(2)	(3)	(4)
Intercept	1.106 (1.428)	2.579 (1.290)	1.526 (1.321)	0.194 (3.016)
Investment Grade Rating (Moody's Baa or better)	1.830 (0.310)	-	0.923 (0.319)	1.718 (0.516)
Default on Principal or Interest (1 if yes)	-	-3.419 (0.406)	-2.845 (0.446)	-2.165 (0.692)
Log of Number of Years to Maturity of the Bond	-0.479 (0.167)	-0.388 (0.157)	-0.395 (0.154)	-0.369 (0.248)
Coupon Rate of the Bond (in percent)	-0.331 (0.229)	-0.379 (0.213)	-0.281 (0.212)	-0.659 (0.320)
Includes Industry Indicators?	No	No	No	Yes
Number of observations	234	234	234	135
Adjusted-R ²	0.16	0.26	0.28	0.33

Appendix Table 7A: Returns on Treasury Bonds with and without the Gold Clause DURING THE SUPREME COURT ARGUMENT ON THE GOLD CLAUSE.

	<i>Maturity Dates</i>	<i>Percent Change</i>	<i>Net Price Change</i>	<i>Closing Price on Jan 11</i>	<i>Volume (in 1,000s)</i>	<i>Reported Yield-to- Maturity</i>	<i>Estimated Duration</i>
<i>Panel A: Bonds with Gold Clause</i>							
Liberty 4 1/4s 3d called	33-38	0.28%	?0.18750	?101.10	?1680	..	0.37
Liberty 4 1/4s	33-38	0.39%	0.25000	102.97	156	..	0.37
Liberty 4 1/4s	32-47	0.18%	0.21875	102.95	88	..	4.03
Liberty 3 1/2s	32-47	0.69%	0.25000	103.97	834	..	4.08
Treasury 3 3/8s	40-43	0.27%	0.12500	105.88	707	2.21	5.78
Treasury 3 3/8s	41-43	0.27%	0.21875	105.78	501	2.36	6.59
Treasury 3 1/8s	46-49	0.63%	0.3125	104.43	334	2.75	10.24
Treasury 3s	51-55	0.42%	0.00000	103.80	204	2.81	14.00
Mean for Gold Clause Treasuries		0.39%	0.40625				
<i>Panel B: Bonds without Gold Clause</i>							
Treasury 3 1/4s	41	-0.09%	?0.09375	?105.37	?37	2.36	5.39
Treasury 4 1/4s-3 1/4s	43-45	-0.12%	0.18750	104.37	53	2.74	7.66
Treasury 3 1/4s	44-46	-0.24%	0.12500	104.31	64	2.77	8.53
Treasury 3s	46-48	0.00%	0.15625	102.44	177	2.79	10.06
Fed Farm 3s	47	-	-	-	-	-	10.06
Home Owner Loans 2 3/4s	49	0.35%	0.34375	99.94	475	2.91	11.58
Fed Farm 3s	49	0.00%	0.31250	101.71	159	2.98	11.44
Treasury 3 1/8s	49-52	-0.06%	0.21875	103.48	347	2.89	12.36
Home Owner Loans 3s	52	-0.13%	0.25000	102.05	553	2.98	13.42
Mean for Non-Gold Clause Treasuries		-0.04%	-0.039063				

Source: New York Times, January 12, 1935.

Notes: Only bonds with trading volume of at least 20,000 are reported. No trading was reported for the Fed Farm 3s of '47. Percent change is the net price change divided by the opening price on January 11. Yield-to-Maturity is reported in the New York Times. Duration uses the mid-point of maturity dates and adjusts yields using Cecchetti (1988).