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CHANGE OF MONETARY REGIME, CONTRACTS, AND PRICES:
LESSONS FROM THE GREAT DEPRESSION, 1932-1935

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ABSTRACT

In this paper I analyze the process leading to the abandonment of the gold standard in the U.S. in 1933, and the devaluation of the dollar in 1934. I argue that most changes of monetary regime have an impact on contracts. In this specific case, contracts that were written in terms of gold, or “gold equivalent,” were rewritten in paper dollars. Congress did this on June 5 1933, when it abrogated the “gold clause” retroactively. The Supreme Court validated the move in February 1935. The result was a very large transfer of wealth from creditors to debtors. I use daily data on commodity prices to investigate the extent to which these policies contributed to ending deflation. I find that commodity prices reacted strongly to the announcement of policy changes, and to legal procedures involving contracts. These results are consistent with the “change in regime” hypothesis of Sargent.

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1. Introduction

What are the effects of a “change of regime” on key macroeconomic variables, such as prices, interest rates, and economic activity? By “change of regime” I mean a major alteration in monetary policy arrangements. For instance, adopting a currency board, dollarizing, joining a monetary union, abandoning the gold standard, leaving a currency union, and so on. This question – which was tackled by Sargent (1982) in his famous “The end of four big inflations” paper – has become particularly relevant during the last few years, when a number of countries that don’t have a currency of their own have considered reintroducing a domestic money. Discussions along these lines have taken place, from time to time, in countries such as Ecuador, Greece and Italy. (Ecuador uses the U.S. dollar as legal tender, while Greece and Italy are members of the Euro Zone). According to Sargent, if the announcement of the change of regime is credible, macroeconomic variables will react quickly, even before the new regime is implemented.

One of the consequence of changes of monetary regime is that they affect contracts. Consider the case of a country (say, Ecuador) that doesn’t have a national currency, but decides to reintroduce one, the new *Sucre*. At the time of the reform every contract is denominated in dollars. Assume, further, that a few days after the introduction of the new *Sucre*, there is a large devaluation. Debtors would want to discharge their debts in depreciated national currency (the new paper *Sucres*). Creditors, on the other hand, will insist on being paid in USDs, or dollar-equivalent, at the new exchange rate; after all, payment in USD is what the original contrast established. In spite of the importance of this issue, very few studies (if any) have addressed it.¹

In this paper, I analyze the most important “change of regime” in the United States’ monetary history: the abandonment of the gold standard in April 1933 and the official devaluation of the dollar on January 31, 1934. Both of these events took place during president Franklin D. Roosevelt’s first administration.² More specifically, I investigate how this major alteration of the rules of the game, aimed at “ending a big deflation,” affected commodity prices. In order to do this, I use a new high frequency (daily) data set for 1932 through 1935, for the prices of corn, cotton, rye, and wheat.

¹ To be sure, there have been some studies on the consequences of the Euro, dollarization, and the adoption of a currency board. On the adoption of a common currency see, for example, Aizenman (2018). On currency boards and Argentina, Edwards (2010).

² In the United States, the gold standard was abandoned in stages. Although gold holding by the private sector and gold shipments were prohibited in April 1933, the official price of gold was maintained at the historical \$20.67 an ounce for almost nine months. The USD was officially devalued with respect to gold in late January 1934. (See Section 2 for details).

What makes this change of regime particularly interesting is that in 1933 almost every debt contract in the United States was written in terms of gold. That is, contracts had a clause – the so-called “gold clause” – stating that the debtor had to pay his debt in gold equivalent. This clause was introduced in contracts during the Civil War, when two currencies – one backed by gold and one not backed by specie (the “greenbacks”) – circulated side by side. However, since the official price of gold had been \$20.67 since 1834, the gold clause had not been an issue until 1933.

The four specific questions I address in this paper are the following: First, did the *announcement* of the abandonment of the gold standard affect commodity prices, even before the USD was officially devalued? Second, how fast did the legal alteration in contracts affect prices of commodities. Third, what was the impact of the *actual* official devaluation of the dollar, on January 31, 1934, on prices? And finally, how did the legal proceedings related to the abrogation of the gold clause, including the hearings at the Supreme Court, impacted prices during the early months of 1935. The emphasis on commodity prices stems from the fact that these policies were ostensibly undertaken as a way of ending deflation and raising agricultural prices. (Roosevelt, 1938).

The rest of the paper is organized as follows: In Section 2 I provide some background information on the process that led to the abandonment of the gold standard (April 1933) and the official devaluation of the dollar (January 1934). This analysis will help put the empirical investigation in Sections 3 in the proper historical perspective. In Section 3 I analyze the effects of the different policy announcements and policy measures on commodity prices. Finally, in Section 4 I offer some concluding remarks.

2. Change of monetary regime in 1933-35: Historical Background

Before proceeding with the empirical analysis, in this Section I provide some historical background. In Table 1 I present a detailed timeline with the most important economic events from 1933 through 1935.

2.1 From the gold embargo to the gold buying program

On March 6 1933, when he was barely one day in office, President Roosevelt declared a national banking holiday, and implemented a gold embargo. On March 9 Congress passed the Emergency Banking Act, which gave authority to the government to liquidate insolvent banks and to provide

support to those that were viable in the long run. On March 13, banks began to reopen their doors, and the public started to re-deposit cash and gold.³ The gold embargo remained in place.

On April 5, President Roosevelt issued an Executive Order requiring people and businesses to sell, within three weeks, all their gold holdings to the Federal Reserve at the official price of \$20.67 per ounce.⁴ On April 19, during a press conference, FDR announced that the nation was off the gold standard, and that gold exports were prohibited. He stated that the goal was to help the agricultural sector. He said:⁵

“The whole problem before us is to raise commodity prices. For the last year, the dollar has been shooting up [this was a reference to the depreciating pound sterling] and we decided to quit competition. The general effect probably will be an increase in commodity prices. It might well be called the next step in the general program.”

In spite of announcing that the country was “off gold,” no decision was made with respect to the exchange rate. The official price of gold continued to be \$20.67 an ounce, a price that had prevailed since 1834. Since France was on the gold standard, the official USD-Franc exchange rate continued to be fixed; the dollar-pound sterling rate had been fluctuating since September 1931, when the United Kingdom abandoned gold.

On May 12th, Congress passed the Agricultural Adjustment Act (AAA). This legislation authorized the President to increase the official price of gold to up to \$41.34 an ounce.⁶ The objective was to generate “controlled inflation,” and to help farmers by raising commodity prices and by lightening their debts in real terms. The view espoused by supporters of devaluation – including economists Irving Fisher and George F. Warren – was that a higher price of gold would rapidly be translated into higher commodity prices. In spite of the AAA, the official price of the dollar remained at its historical level.

Devaluing the dollar officially, was not straightforward. As noted, most debt contracts – both private and public – included a “gold clause,” stating that the debtor committed himself to paying back in “gold coin.” A dollar devaluation meant that the value of debts subject to the gold clauses would automatically increase, generating generalized bankruptcies and a massive

³ FDR’s First Fireside Chat, delivered over the radio waves on Sunday March 12, helped generate confidence in the government actions towards banks. See Friedman and Schwartz (1963) for a detailed account of this episode.

⁴ Executive Order No. 6102. See Roosevelt (1938), Volume 2, P. 111-114.

⁵ Roosevelt (1938), p. 137. See Hausman et. al. (2016) for a discussion on the farm channel in the U.S. recovery from the Great Depression.

⁶ The Thomas Amendment gave the President three options to help increase commodity prices: devaluing the dollar, remonetizing silver at a ratio of 16 to 1 relative to gold, or to issue up to three billion dollars of non-backed currency or greenbacks.

increase in the public debt. On June 5, Congress passed Joint Resolution No. 10, annulling all gold clauses from *future and past* contracts. The official exchange rate with respect to gold, continued to be \$20.67 per ounce.

One week after debt contracts were changed by Congress, an important international conference was inaugurated in London. The London Conference was supposed to deal with protectionism (tariffs), credit policies, employment, commodity prices, and the possible return of all nations to an “international standard.” On July 3, President Roosevelt sent a cable to the delegates stating that he was unhappy with the direction the discussions had taken. There was too much emphasis on short run exchange rates stabilization and not enough on commodity prices and recovery. He reiterated that the goal of economic policy around the world should be to generate “controlled inflation.”⁷

On Sunday October 22, during his Fourth Fireside Chat the president reiterated that the fundamental goal of the government was to “restore commodity price levels.”⁸ He said that in order to accomplish this goal he was putting in place a “gold buying program.”⁹ The RFC (Reconstruction Finance Corporation) would buy newly minted gold, and, occasionally, gold in the international markets, at arbitrary prices that exceeded the ongoing price in the global marketplace.¹⁰ Although the program was limited in scope, it was expected that by offering higher prices for gold, agricultural prices would increase rapidly. The brain behind this gold buying program was Cornell professor George F. Warren. On October 25, the first day of the program, the RFC paid \$31.36 per ounce of gold, 27 cents above the world price.¹¹ Throughout the gold buying program the official exchange rate remained at \$20.67 per ounce of gold.

On January 31, John Maynard Keynes published an open letter to President Roosevelt in the New York Times. In it he strongly criticized the US exchange rate policy, including the gold buying program supported by Professor Warren. Keynes wrote: “The recent gyrations of the dollar have looked to me more like a gold standard on the booze than the ideal managed currency of my dreams.”¹² In early January 1934, almost coincidentally with the publication of Keynes open letter, the gold buying program was effectively ended.¹³ On January 31, 1934, one day

⁷ See Paslovsky (1933) and Edwards (2017b)..

⁸ Roosevelt (1938), Vol. 2, p. 426.

⁹ In rigor he was expanding greatly a very small gold buying program that had been implemented in late August. See Edwards (2018).

¹⁰ In order to get around the fact that the official price of gold was still \$20.67 an ounce, the RFC paid with its own discounted debentures, which were immediately bought by the Treasury at par. See Acheson (1965).

¹¹ NYT, “First gold buying puzzling to Paris,” November 3, 193, p. 8.

¹² See Edwards (2017b).

¹³ Formally, the program continued through January 1934, but there was only one price change, on January 16 from \$34.06 to \$34.45 per ounce. As I point out below, if I extend the period considered under the program, the results are virtually identical.

after the Gold Reserve Act of 1934 was signed into law, the President set the new official price of gold at \$35 an ounce. The Treasury would buy and sell internationally any amount of metal at that price, in order to settle trade payments. Americans, however, were still forbidden from holding gold. This official price for gold was in place until mid-1971.

2.2 The Supreme Court gold cases

As soon as the dollar was officially devalued, there were legal challenges to the new Gold Act and the Joint Resolution. Creditors asked the courts to require debtors to pay in “gold equivalent,” at the new exchange rate of \$35 an ounce of gold. As a number of cases made their way through the courts system, an increasing sense of uncertainty percolated into the markets. On November 15, 1934, the administration announced that it was asking the Supreme Court to consolidate a number of cases related to the abrogation of the gold clause and to hear them together. According to the administration, this was the only way to reduce uncertainty. The Court announced that it was hearing these cases on January 8, 1935.

Between January 8 and January 10, 1935, lawyers for claimants and for the government argued in front of the Justices. According to the press, the administration lawyers, including the Attorney General, did poorly. Many thought that the abrogation would be declared unconstitutional. This unleashed what the New York Times called a “speculation fever for gold.” (See Edwards, 2018, for details).

The Supreme Court rulings came on February 18. The Justices confirmed, by a 5-4 vote, the constitutionality of the Joint Resolution that annulled the gold clause in private debt contracts. According to the Court, Congress had the power to alter private contracts retroactively, if that was required to run monetary policy. The decision regarding public debt was more controversial and complex. The Court ruled, also by a 5-4 vote, that although the abrogation was *unconstitutional* for public debt contracts, there were no damages, and thus the government did not have to compensate holders of public debt. The Court argument was based on the idea that because of deflation, the same amount of paper dollars that were used to buy the original Liberty Bonds would buy an even greater amount of goods in 1934. That meant, the majority of the Court argued, that investors had not been negatively affected by the abrogation of the gold clause and subsequent devaluation of the dollar. These rulings put an end to the controversies related to the 1933–1935 change of monetary regime in the United States.¹⁴

Most scholars who have studied the Great Depression – including Friedman and Schwartz, Meltzer, Bernanke, Eichengreen, and Romer – agree that this change in monetary policy played a fundamental role in the U.S. recovery. Starting in February 1934, and largely as a consequence

¹⁴ For details of the legal proceedings and the Court rulings, see Edwards (2018).

of the devaluation of the dollar, the U.S. experienced large inflows of gold. These were monetized by the Federal Reserve, with the concomitant increase in the monetary stock. According to Romer (1992, p.781, emphasis added):¹⁵

“Monetary developments were a crucial source of the recovery of the U.S. economy from the Great Depression... The money supply grew rapidly in the mid- and late 1930s because of a huge unsterilized gold inflow to the United States... [T]he largest inflow occurred *immediately following the revaluation of gold mandated by the Roosevelt administration in 1934.*”

2.3 Key dates

As the discussion presented above indicates, there were a number of key dates around the “change of regime” that took place in the United States in 1933–1935. In the empirical analysis in this paper I have focused on six specific and important dates (See the timeline in Table 1 for a more detailed and granular display of important dates):

- April 19, 1933. This is when President Roosevelt announced, during a press conference, that the US was getting off the gold standard.
- June 5, 1933. On this date Congress passed the Joint Resolution that abrogated the gold clauses in private and public debt. The abrogation was retroactive.
- October 23, 1933. This is when President Roosevelt announced that his administration was implementing a “gold buying” program, an initiative that was based on the ideas of Cornell professor George F. Warren.
- January 31, 1934. This is when the dollar was officially devalued with respect to gold. The price went from \$20.67 to \$35 per ounce.
- January 8-10, 1935: During these days the Supreme Court heard the “gold cases.” As discussed above, the administration lawyers did poorly, and many observers believed that the Court would rule against the government.
- February 18, 1935: The Supreme Court ruled that the abrogation of the gold clause for private contracts was constitutional. It also ruled that holders of Liberty Bonds (public debt with the gold clause) were not harmed by the Joint Resolution and that, thus, they did not have to be compensated for losses.

¹⁵ Other scholars who have emphasized the role of the devaluation include Eichengreen and Sachs (1986), Eichengreen (1992), Bernanke (2000), Bernanke and James (1991), Temin (1991), Mundell (2000), and Irwin (2012). It is not possible to do justice to the copious literature on the Great Depression; see, however, Bordo, Choudhri and Schwartz (2002), Bordo and Kydland (1995), Meltzer (2003), De Long (1990), Wigmore (1987), and Calomiris and Wheelock (1998). Friedman and Schwartz (1963) continues to be the basic study on monetary policy during this period. Edwards (2017a) discusses the economic thinking on exchange rates at the time of these policies.

3. Change of monetary regime, contracts, and commodity prices

In this Section I use daily data from January 2, 1932, through December 31, 1935 to analyze the effect of the change in monetary regime on commodity prices. The empirical strategy is as follows: I estimate a number of error correction models for the log differences of prices, where I include six dummy variables for the dates presented above. As noted, the question is to what extent prices of corn, cotton, rye, and wheat reacted to the most important announcements and actual policy implementation. The basic results are subject to a battery of robustness tests, related to specification, covariates included, and time period considered in the estimation.

3.1 Data and preliminary analysis

In Figure 1 I present daily prices for corn, cotton, rye, and wheat for January 2, 1932, through December 31, 1935.¹⁶ The successive vertical lines capture the key dates defined above: 04/19/1933; 06/05/1933; 10/23/1933; 01/31/1934; 01/8-10/1935; and 02/18/1935. As may be seen, throughout this period these four commodities experienced important price increases. Cotton, for example, the commodity FDR was most concerned about, doubled in price between early 1932 and December 1935, from about 6 cents a pound to 12 cents a pound. Price movements, however, were not smooth; day to day changes were quite volatile. There were periods of clear upswings, and periods of price declines.

President Roosevelt, of course, was up to date on the evolution of these (and other) commodity prices. Henry Morgenthau Jr., who at the time was the Governor of the Federal Farm Board, and who would become Secretary of the Treasury, showed the President weekly charts with agricultural prices, exchange rates, financial variables, and the stocks of monetary gold from around the world. In early April FDR had concluded that a “managed currency,” a system advocated by economists such as Irving Fisher and George F. Warren, was necessary to generate a permanent increase in commodity prices. The first step in a “managed currency” regime was an official devaluation of the dollar.¹⁷

3.2 Regression results

In this Section I present the results from a series of “event study” regressions for four commodity prices. As noted, my interest is to investigate four related issues: (a) Did policies announcements affect prices, even before the actual devaluation of the dollar was implemented? (b) Did the abrogation of the gold clause have an impact on prices? (c) Did the official devaluation affect

¹⁶ See the Appendix for data sources.

¹⁷ Fisher (1913, 1920), Warren and Pearson (1930, 1931). See also Tavlas (1997) and Edwards (2017c).

prices? And, (d) did the legal proceedings in front of the Supreme Court regarding the sanctity of contracts have an effect on prices? These questions are related to Sargent's (1982) "change in regime," analysis of inflation.¹⁸ In Sargent's model, economic agents respond to changes in expectations, and alter their habits and decisions in anticipation to what they believe will happen.

3.2.1 *The empirical model*

In order to investigate the short term dynamics of prices during 1932-1935, I estimated number of error correction models of the following form:

$$(1) \quad \Delta \log x_t = \alpha_0 + \alpha_1 \log x_{t-1} + \alpha_2 \Delta \log x_{t-1} + \sum \beta_{jt} DUMMY_{jt} + \sum \gamma_k y_{kt} + \varepsilon_t.$$

In each regression, x_t is the variable of interest: the price of corn, cotton, rye and wheat. The variables DUMMY are "event" dummies that take the value of one if during that day (or during the event window) a policy related to the change of regime was either announced or put in place. In the base regressions, dummies for the 6 events listed above were included. The y_{kt} are other covariates, including changes in bilateral exchange rates, changes in interest rates, and changes in government bonds' prices. See the discussion below for a robustness analysis.

3.2.2 *Results*

The base results are presented in Tables 2 through 5. Four specifications are provided for each commodity; White heteroscedasticity-consistent t-statistics are reported for each equation.¹⁹ In the first equation in each Table, only the six events dummies are included as regressors (in addition to the lagged dependent variables). In equation (2), log changes in the bilateral exchange rates of the dollar with respect to the pound and the French franc are added. This specification allows us to understand whether the change of regime announcements and policies worked their way into prices through channels other than exchange rates. Equation (3) also includes the change in the Federal Reserve Banks' discount rate. Finally, in the last specification (4), the log differential of the price of Liberty Bonds is also included.

Overall, the results are very good and informative. This is particularly the case, considering that these are daily data in log differences. Of course, the results are different for the different commodities; some are affected more than others by specific events and/or covariates. However,

¹⁸ Temin and Wigmore (1990) proposed the "change of regime" hypothesis for explaining the recovery from the Great Depression.

¹⁹ Breusch-Pagan tests indicate that the null of no heteroscedasticity is rejected at conventional levels.

there is a common thread throughout the regressions reported in the Tables 2-5. In general, the results suggest that announcements of change of monetary regime mattered, and impacted commodity prices significantly. Also, the change in the nature of contracts was extremely important. In particular, the legal proceedings surrounding the abrogation of the gold clause in debt contracts had significant effects on commodity prices. At a more specific level, the following insights emerge from Tables 2 through 5:

- The (mere) announcement, on April 19, that the U.S. was abandoning the gold standard, had a positive and significant impact on the price of corn and cotton. The order of magnitude of the effect was large, between 3% and 4% in one day. There is no evidence that the April 19 announcement affected the price of rye or wheat.
- The Joint Resolution passed by Congress on June 5, 1933, retroactively annulling the gold clause from debt contracts, does not appear to have affected commodity prices in a significant way. The coefficients for the dummy are not significant (or only at the 10% level). In some ways, this is surprising, since the abrogation of the gold clause was a fundamental step in the process towards eventually devaluing the dollar and trying to bring deflation to an end. There are a number of possible reasons for this result, which I address in greater detail below.
- The announcement that a “gold buying” program was being launched, on October 24, 1933, had a significant and positive impact on the prices of the four commodities considered in this paper. The point estimates of the corresponding event dummy are between 0.9% for cotton and 5.7% for wheat, and are all significant at conventional levels. The implementation of this program – which, as noted, was the brainchild of economist George F. Warren –, signaled to the public that new measures related to the exchange rate were about to be implemented. As pointed out above, this program was based on the notion that if the price of gold went up, commodity prices would follow swiftly.
- The official devaluation of the dollar on January 31, 1934, appears to have impacted only one commodity price: cotton. The event dummy is insignificant in the regressions for the other 3 commodities. A logical interpretation for this result is that this was not an unexpected event; in fact, it was fully anticipated by the public. After January 15, when the Gold Act, was passed by Congress, there was certainty that the dollar would be officially devalued in the next few days. The only question was by how much the official price of gold was going to be raised.

- The results in Tables 2 through 5 categorically indicate that the legal status of contracts was extremely important during this period. Changes (or the perception of changes) in contracts had a significant impact on the prices of the four commodities studied in this paper. As may be seen, the event dummy for the hearings in front of the Supreme Court are always negative and significant. This is a reflection of how poorly the government lawyers did during the hearings. Indeed, on January 10, 1935, a reporter for the *Chicago Daily Tribune* affirmed that “at least four of the Justices... indicated impatience with the New Deal theory that Congress... can wipe out the gold clause in \$100 billion of contracts.” (For details, see Edwards, 2018). A number of observers had pointed out after the hearings that if the Court rejected the Roosevelt administration arguments, there would be a need to roll the devaluation back, and reinstate the old price of gold, of \$20.67 per ounce. This would have a highly negative effect on prices. The regression estimates in Tables 2 through 5, also show that the actual rulings by the Supreme Court on February 18, 1935, resulted in a positive change in the four commodity prices. By supporting the government policy and the Joint Resolution, the Supreme Court, confirmed that the devaluation of the dollar implemented in January 1934, would stand.
- Finally, the results indicate that the other covariates affected commodity prices in different ways. In particular, there is evidence that changes in the bilateral exchange rates affected the prices of cotton and wheat. At the same time, there is no evidence that either the alteration of the Discount Rate by the Federal Reserve, or government debt prices impacted on commodity prices in a significant fashion. As may be seen, the coefficients for the event dummies are not altered significantly. This indicates that the “change of regime” effect operated in addition to any influence it could have had on market exchange rates or on interest rates.

As reported in Figure 1, during 1933, commodity prices peaked on July 17. Their retreat after that date has been interpreted as evidence that the increase from March through mid-July was solely the result of significant speculative forces. Often the words “speculators” and “speculation” have a negative connotation. In this case, however, they should be interpreted as a situation where economic agents who believed that a “change in regime” was about to take place, tried to take advantage of that fact.²⁰

²⁰ For a discussion along these lines see Sumner (2001, 2015).

3.2.3 The Joint Resolution of June 5, 1933

One of the most interesting results presented above refers to the coefficient for the June 5 Joint Resolution that abrogated the gold clause. As noted, in the sixteen regressions reported, these coefficients were not significant, and in a number of cases had a negative sign. The most plausible explanation is that Resolution was fully expected, and that it was already internalized by the time the resolution was signed into law. The Democratic Party had an overwhelming majority in both chambers, and the parliamentary debate indicated, without any doubts, that the Resolution would be passed.

In this section I investigate whether the *announcement* that Congress would consider the abrogation of a key clause contracts impacted on commodity prices. This happened on May 26, when the Secretary of the Treasury indicated that the White House would ask Congress to alter the nature of debt contracts in the United States. The House passed the Resolution on May 29, and the Senate on June 3. It became effective on June 5. In Figure 2 I present changes in the four commodity prices between May 1 and June 10 1933. The vertical lines are drawn on May 27, one day after the announcement that Congress would address the gold clauses, and on June 5, the day the abrogation became official.

In order to address this issue formally I added an event dummy for May 27 to the error correction regressions. The results obtained, when the basic specification was used, are presented in Table 6. (The results for other specifications are very similar, and are available on request). As may be seen, the event dummies for May 27 are always significant and positive, indicating that the announcement that the nature of contracts would be changed as a further step towards devaluation, resulted in price increases. The point estimates of the May 27 dummy range from 0.4% to 1.2%.

These results, then, indicate that, as expected, the changing nature of contracts did impact commodity prices in an important way. This is reflected by the fact that the three event dummies that are related to the gold clause – the announcement of its abrogation, the hearings in front of the Supreme Court, and the Courts rulings – are significant, have the expected signs, and have rather high point estimates.

3.2.4 Robustness and extensions

The results presented in Tables 2-6 were subject to a number of robustness tests. Some of the most important ones include: (a) The estimation period was reduced, to start in June 1932, just before the Democratic party convention, and to end on June 30, 1935. (b) Two and three days “event windows” were introduced. (c) I defined a merged “event” variable for all announcements related to the change in regime. And (d) I used a dummy variable for the months when the FED

undertook open market operations, instead of the change in the Fed's Discount Rate variable.²¹ In each of these cases the main conclusions reported above were maintained; results available on request.

I also estimated a number of alternative specifications. Among other things, I introduced additional covariates, as a way of making sure that the results reported above are not due to some omitted variables. In particular, the following covariates were added: (a) A dummy variable that takes the value of one when key New Deal legislation was passed by Congress (e.g. AAA, NRA, Glass-Steagall); and (b) a dummy variable that takes into account key political events, such as the presidential election, the February 15 assassination attempt on FDR, the Inauguration of the new administration, and the London Monetary and Economic Conference of June-July 1933. The results obtained when these additional covariates were included (available on request) confirmed the results reported above. Moreover, there is no evidence that, once controlling for other factors (including gold-related policies) either political or New Deal events affected commodity prices. In only one of the regressions is the coefficient for the political events marginally significant.

4. Concluding remarks

The abandonment of the gold standard in 1933, and the official devaluation of the dollar in January 1934, are considered by most historians as defining moments in U.S. economic history. These two policies generated massive capital inflows that were not sterilized by the Federal Reserve. The concomitant increase in the monetary base and overall money supply helped the country recover from the Great Depression. What is less known about this episode is that in order to implement the devaluation it was first necessary to annul the gold clause in debt contracts. This was done by Congress on June 5, 1933 through a Joint Resolution. This measure was seen by many as an outright violation of property rights. To the surprise of many, the Joint Resolution was supported by the Supreme Court through three rulings on February 18, 1935. The rulings were supported by 5-4 votes, with the swing vote being provided by the Chief Justice Charles Evans Hughes.

In this paper I presented a detailed analysis of the process leading to the new monetary regime, officially inaugurated on January 31, 1934, with the final passage of the Gold Act and the devaluation of the dollar. The results from the estimation of a number of error correction regressions using daily data for commodity prices show that FDR's announcements were credible, and elicited price jumps even before the actual price of gold was increased officially. At the same time the results show that the public was deeply concerned about the legal aspects surrounding the change of regime. More specifically, the results reported here show that the

²¹ See Samuelson and Krooss (1969), Volume 4, p. 377.

announcement, on May 26, 1933, that the gold clause would be annulled resulted in a significant positive jump in prices. Similarly, the perception that the government lawyers had done poorly in front of the Supreme Court generated a large and significant decline in commodity prices during the second week of January. This was a response to the belief that if the Supreme Court ruled against the government, the devaluation of the dollar would have to be rolled back.

In their seminal book on the monetary history of the United States, Milton Friedman and Anna Schwartz argue that abandoning the gold standard and devaluing the dollar had an important positive effect for the US economy. According to them, these policies “stimulated capital flow to the United States.” They then add that “the rapid monetary expansion owed nothing to monetary actions other than the rise in the price of gold.” Friedman and Schwartz 1963, p. 699).

However, Friedman and Schwartz argued that abandoning of the gold standard also had a negative side; more specifically, the abrogation of the gold clause was “discourage[ed] business investment.”²² Analyzing in detail whether that was the case is beyond the scope of this paper. It is an important topic for future research. What the research reported in this paper has done is confirm the notion advanced by Sergeant (1882), in the sense that a credible announcement of a change of regime has an immediate impact on important macroeconomic variables, even before the actual structural reforms that institute the new regime are put in place. The key word in the previous statement is, of course, “credible.” As the history of a number of emerging markets, many of them in Latin America, has shown time and again, non-credible announcements tend to have a negative effect, by triggering capital outflows and/or speculation.

²² Friedman and Schwartz (1963, p. 699).

Appendix: Data Sources

A. Commodity Prices

(Source: Daily New York Times)

Closing wholesale cash \$ prices for commodities in the New York Market

Wheat #2 red, per bushel

Corn #2 yellow, per bushel

Rye #2 Western, per bushel

Cotton, middling upland, per pounds

B. Bond Prices

(Source: Daily New York Times)

Fourth Liberty Loan: Liberty bond 4th 4^{1/4}s, 1933-38, issued May 8, 1918, interest paid on April 15, October 15; Closing cash \$ prices for bonds traded in on the Stock Exchange.

C. Exchange Rates

(Source: GFDdatabase)

<https://www.globalfinancialdata.com/Databases/GFDdatabase.html>

D. Events related to Change of Regime and Supreme Court Hearings on Contracts

The New York Times, The Wall Street Journal, The Chicago Tribune, Times of London.

E. Gold Prices

Taken from Warren and Pearson (1935), P. 168-169.

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Table 1: Timeline of most important events leading to the change of Monetary regime, 1933-35**A.- 1933**

March 4	Franklin D. Roosevelt is inaugurated as President.
March 6:	Bank Holiday and gold embargo are declared through Presidential Proclamation No. 2039.
March 13:	Most banks reopen; gold embargo is maintained.
April 5:	Executive Order No. 6102: All gold holdings have to be sold to Federal Reserve.
April 17:	Thomas Amendment is introduced to Senate. Gives the President authority to undertake three specific policies to end deflation: reduce the gold content of the dollar by up to 50%; issue up to \$3 billion in greenbacks; remonetize silver at a ratio of 16 to 1 with respect to gold.
April 19:	President Roosevelt gives 13 th press conference of his Administration. Towards the end he announces that the U.S. is definitely off gold. Metal exports are forbidden.
April 20:	Executive Order No. 6111: All exports of gold are suspended indefinitely. The U.S. is effectively off the gold standard.
April 24:	Secretary Woodin announced that half a billion notes in 2.875% Treasury notes would be issued, with the gold clause. This suggests to many that the gold embargo will be lifted soon.
April 29:	Thomas Amendment passed by Senate 55-35. Several democrats, including Senator Glass vote against it.
May 12:	Agricultural Adjustment Act (AAA) is signed into law. It includes the Thomas Amendment. Newspapers refer to it as "Relief-Inflation legislation." Federal Farm Emergency Relief Act is passed.
May 16:	President Roosevelt sends message to international governments stating that the goal of the London Conference ought to be to stabilize exchange rates.
May 23:	New York State Supreme Court Justice Phoenix Ingraham rules that payments on gold clause debts may be made (and received) in paper dollars.
May 26:	The Government announced that there is a need to have a uniform legal standing with respect to the gold clause. The Administration asks Congress to officially void, through a Joint Resolution, the gold clause both for past and future contracts.

- May 29: The House approves Resolution abrogating gold clauses.
- June 5: Joint Resolution of Congress abrogating gold clauses is passed is signed into law.
- July 21: The House of Commons approved overwhelmingly (131 to 22) a provision that cancelled payment in gold on the World War I debts. This suggests that the dollar will strengthen relative to sterling.
- July 27: The London World Economic Conference comes to an official end without achieving any of the objectives discussed by world leaders during their early discussions.
- August 29: Executive Order No. 6261 authorizes the Reconstruction Finance Corporation to buy newly minted gold at “the best price obtainable in the free market of the world.” This is Phase One of the ‘gold buying’ program.
- October 24: Second phase of gold buying program begins. Prices set by the Secretary of the Treasury and the President, and may deviate from world prices. In addition to buying newly minted gold in the U.S. the RFC will buy and sell gold in the world markets, if needed.

B.- 1934

- January 30 The Gold Act of 1934 is signed into law.
- January 31 A new official price of gold of \$35 an ounce is established.
- July 3 A District Court in New York rules that the abrogation is constitutional. The lawyer for the plaintiff declared that he will appeal to the Supreme Court.
- November 18 The solicitor General asks the Supreme Court to hear for gold cases on January 8, 1935.

C.- 1935

- January 8 – 10 For gold cases are argued in front of the Supreme Court. According to the press the government legal team did poorly.
- January 14-February 17 Markets are nervous, as it becomes clear that the Supreme Court may rule against the government.
- February 18 The Supreme Court finally delivers its rulings. All of them support the government by a vote of 5 to 4.

Sources: The New York Times, The Wall Street Journal, The Chicago Tribune, Times of London.

Table 2: Error correction event studies regression: Corn
(Daily data, 1932-1935)

<i>Eq Name:</i>	Corn 1	Corn 2	Corn 3	Corn 4
C	-0.0009 [-0.502]	-0.0009 [-0.543]	-0.0009 [-0.534]	-0.0009 [-0.506]
LOG_CORN(-1)	-0.0016 [-0.848]	-0.0015 [-0.801]	-0.0015 [-0.811]	-0.0015 [-0.792]
D_LOG_CORN(-1)	-0.1420 [-3.083]***	-0.1450 [-3.146]***	-0.1456 [-3.157]***	-0.1433 [-3.072]***
DUMMY_APRIL19	0.0409 [9.763]***	0.0311 [4.026]***	0.0310 [3.980]***	0.0309 [3.952]***
DUMMY_ABROGATION	-0.0200 [-1.632]*	-0.0187 [-1.592]	-0.0187 [-1.595]	-0.0187 [-1.590]
DUMMY_WARREN	0.0411 [40.900]***	0.0301 [5.065]***	0.0300 [5.045]***	0.0301 [5.044]***
DUMMY_GOLD_ACT	-0.0093 [-0.558]	-0.0106 [-0.746]	-0.0106 [-0.748]	-0.0106 [-0.746]
DUMMY_HEARING	-0.0075 [-4.807]***	-0.0062 [-3.628]***	-0.0063 [-3.631]***	-0.0063 [-2.242]**
DUMMY_RULING_18(1)	0.0076 [5.274]***	0.0079 [5.211]***	0.0079 [5.204]***	0.0078 [5.035]***
D_LOG_POUND_INT	--	0.2679 [1.236]	0.2721 [1.253]	0.2785 [1.278]
D_LOG_FRANC_INT	--	0.2166 [0.989]	0.2159 [0.985]	0.2108 [0.957]
FED_DISCOUNT	--	--	0.0086 [1.520]	0.0085 [1.517]
D_LOG_LIBERTY_INT	--	--	--	0.0055 [0.021]
<i>Observations:</i>	1077	1077	1077	1020
<i>R-squared:</i>	0.030	0.040	0.040	0.040
<i>F-statistic:</i>	4.185	4.445	4.077	3.510
<i>Prob(F-stat):</i>	0.000	0.000	0.000	0.000

White heteroskedasticity-consistent standard errors & covariance. *, **, and *** denote significance at the 10%, 5% and 1% levels.

Table 3: Error correction event studies regression: Cotton
(Daily data, 1932-1935)

<i>Eq Name:</i>	Cotton 1	Cotton 2	Cotton 3	Cotton 4
C	0.0006 [0.809]	0.0005 [0.678]	0.0005 [0.675]	0.0004 [0.476]
LOG_COTTON(-1)	-0.0000 [-0.013]	0.0001 [0.046]	0.0001 [0.049]	-0.0001 [-0.087]
D_LOG_COTTON(-1)	-0.1082 [-1.430]	-0.1210 [-1.606]*	-0.1209 [-1.603]*	-0.1081 [-1.388]
DUMMY_APRIL19	0.0378 [4.070]***	0.0293 [2.882]***	0.0293 [2.885]***	0.0288 [2.664]***
DUMMY_ABROGATION	0.0259 [1.593]	0.0272 [1.620]*	0.0272 [1.620]*	0.0281 [1.685]*
DUMMY_WARREN	0.0220 [12.773]***	0.0089 [2.461]**	0.0089 [2.462]**	0.0081 [2.261]**
DUMMY_GOLD_ACT	0.0203 [1.792]*	0.0186 [2.268]**	0.0186 [2.267]**	0.0186 [2.297]**
DUMMY_HEARING	-0.0089 [-11.963]***	-0.0076 [-9.320]***	-0.0076 [-9.313]***	-0.0030 [-1.372]
DUMMY_RULING_18(1)	0.0077 [10.816]***	0.0078 [10.532]***	0.0078 [10.533]***	0.0079 [10.308]***
D_LOG_POUND_INT	--	0.1502 [1.122]	0.1494 [1.115]	0.1307 [0.976]
D_LOG_FRANC_INT	--	0.3493 [2.698]***	0.3494 [2.698]***	0.3700 [2.883]***
FED_DISCOUNT	--	--	-0.0016 [-0.441]	-0.0017 [-0.485]
D_LOG_LIBERTY_INT	--	--	--	-0.4205 [-2.127]**
<i>Observations:</i>	1222	1222	1222	1153
<i>R-squared:</i>	0.025	0.046	0.046	0.049
<i>F-statistic:</i>	3.959	5.811	5.282	4.850

White heteroskedasticity-consistent standard errors & covariance. *, **, and *** denote significance at the 10%, 5% and 1% levels.

Table 4: Error correction event studies regression: Rye
(Daily data, 1932-1935)

<i>Eq Name:</i>	Rye 1	Rye 2	Rye 3	Rye 4
C	0.0118 [1.044]	0.0125 [1.112]	0.0126 [1.114]	0.0122 [1.079]
LOG_RYE(-1)	-0.0031 [-1.069]	-0.0033 [-1.144]	-0.0033 [-1.145]	-0.0032 [-1.114]
D_LOG_RYE(-1)	0.0575 [1.483]	0.0494 [1.273]	0.0493 [1.267]	0.0529 [1.333]
DUMMY_APRIL19	0.0182 [0.867]	0.0090 [0.433]	0.0090 [0.432]	0.0089 [0.426]
DUMMY_ABROGATION	-0.0019 [-0.165]	-0.0009 [-0.083]	-0.0009 [-0.084]	-0.0009 [-0.084]
DUMMY_WARREN	0.0570 [28.425]***	0.0497 [9.776]***	0.0497 [9.773]***	0.0496 [9.758]***
DUMMY_GOLD_ACT	0.0139 [0.666]	0.0133 [0.692]	0.0133 [0.692]	0.0133 [0.689]
DUMMY_HEARING	-0.0031 [-2.150]**	-0.0020 [-1.275]	-0.0020 [-1.276]	-0.0022 [-0.754]
DUMMY_RULING_18(1)	0.0121 [10.711]***	0.0126 [10.656]***	0.0126 [10.651]***	0.0126 [10.451]***
D_LOG_POUND_INT	--	0.3322 [1.606]	0.3331 [1.607]	0.3383 [1.626]
D_LOG_FRANC_INT	--	0.0847 [0.419]	0.0846 [0.419]	0.0793 [0.391]
FED_DISCOUNT	---	--	0.0018 [0.267]	0.0017 [0.255]
D_LOG_LIBERTY_INT	--	--	--	0.0204 [0.087]
<i>Observations:</i>	1077	1077	1077	1020
<i>R-squared:</i>	0.013	0.022	0.022	0.023
<i>F-statistic:</i>	1.743	2.398	2.180	1.962

White heteroskedasticity-consistent standard errors & covariance. *, **, and *** denote significance at the 10%, 5% and 1% levels.

Table 5: Error correction event studies regression: Wheat
(Daily data, 1932-1935)

<i>Eq Name:</i>	Wheat 1	Wheat 2	Wheat 3	Wheat 4
C	-0.0002 [-0.305]	-0.0003 [-0.422]	-0.0003 [-0.415]	-0.0003 [-0.407]
LOG_WHEAT(-1)	-0.0019 [-0.976]	-0.0020 [-1.014]	-0.0020 [-1.023]	-0.0020 [-0.983]
D_LOG_WHEAT(-1)	0.0843 [1.655]*	0.0751 [1.486]	0.0751 [1.486]	0.0909 [1.830]*
DUMMY_APRIL19	0.0196 [0.908]	0.0090 [0.465]	0.0090 [0.462]	0.0083 [0.421]
DUMMY_ABROGATION	-0.0081 [-1.624]*	-0.0072 [-1.616]*	-0.0072 [-1.618]*	-0.0072 [-1.551]
DUMMY_WARREN	0.0213 [3.302]***	0.0149 [3.128]***	0.0149 [3.121]***	0.0152 [3.195]***
DUMMY_GOLD_ACT	0.0157 [0.777]	0.0154 [0.813]	0.0154 [0.812]	0.0154 [0.805]
DUMMY_HEARING	-0.0070 [-8.515]***	-0.0059 [-5.671]***	-0.0059 [-5.671]***	-0.0055 [-2.463]**
DUMMY_RULING_18(1)	0.0038 [5.109]***	0.0044 [5.487]***	0.0044 [5.481]***	0.0043 [5.359]***
D_LOG_POUND_INT	--	0.4582 [2.785]***	0.4597 [2.790]***	0.4723 [2.854]***
D_LOG_FRANC_INT	--	-0.0185 [-0.105]	-0.0188 [-0.107]	-0.0350 [-0.198]
FED_DISCOUNT	--	--	0.0032 [0.509]	0.0032 [0.514]
D_LOG_LIBERTY_INT	--	--	--	-0.0382 [-0.206]
<i>Observations:</i>	1077	1077	1077	1020
<i>R-squared:</i>	0.015	0.034	0.034	0.038
<i>F-statistic:</i>	1.999	3.708	3.380	3.319

White heteroskedasticity-consistent standard errors & covariance. *, **, and *** denote significance at the 10%, 5% and 1% levels.

**Table 6: Error correction event studies regression: Four Agricultural Commodities
(Daily data, 1932-1935)**

<i>Eq Name:</i>	CORN 6	COTTON 6	RYE 6	WHEAT 6
C	-0.0009 [-0.497]	0.0006 [0.799]	0.0118 [1.049]	-0.0002 [-0.319]
LOG_DEPENDENT(-1)	-0.0016 [-0.850]	0.000000 [-0.001]	-0.0031 [-1.076]	-0.0019 [-0.967]
D_LOG_DEPENDENT(-1)	-0.1407 [-3.044]***	-0.110600 [-1.456]	0.0583 [1.501]	0.0848 [1.664]*
DUMMY_APRIL19	0.0408 [9.731]***	0.0379 [4.081]***	0.0182 [0.866]	0.0195 [0.907]
DUMMY_ABROGATION	0.0186 [1.224]	0.0259 [1.592]	-0.0019 [-0.162]	-0.0081 [-1.618]*
DUMMY_WARREN	0.0411 [40.757]***	0.0221 [12.745]***	0.0570 [28.384]***	0.0213 [34.293]***
DUMMY_GOLD_ACT	-0.0093 [-0.559]	0.0204 [1.794]	0.0139 [0.666]	0.0157 [0.777]
DUMMY_HEARING	-0.0075 [-4.808]***	-0.0089 [-11.957]***	-0.0031 [-2.120]**	-0.0070 [-8.495]**
DUMMY_RULING_18(1)	0.0076 [5.257]**	0.0077 [10.823]**	0.0122 [10.731]**	0.0038 [5.119]***
DUMMY_MAY27	0.0106 [5.737]***	0.0216 [5.416]***	0.0307 [28.120]***	0.0167 [18.176]***
<i>Observations:</i>	1077	1222	1077	1077
<i>R-squared:</i>	0.030	0.026	0.014	0.015
<i>F-statistic:</i>	3.662	3.662	1.724	1.862

White heteroskedasticity-consistent standard errors & covariance. *, **, and *** denote significance at the 10%, 5% and 1% levels.

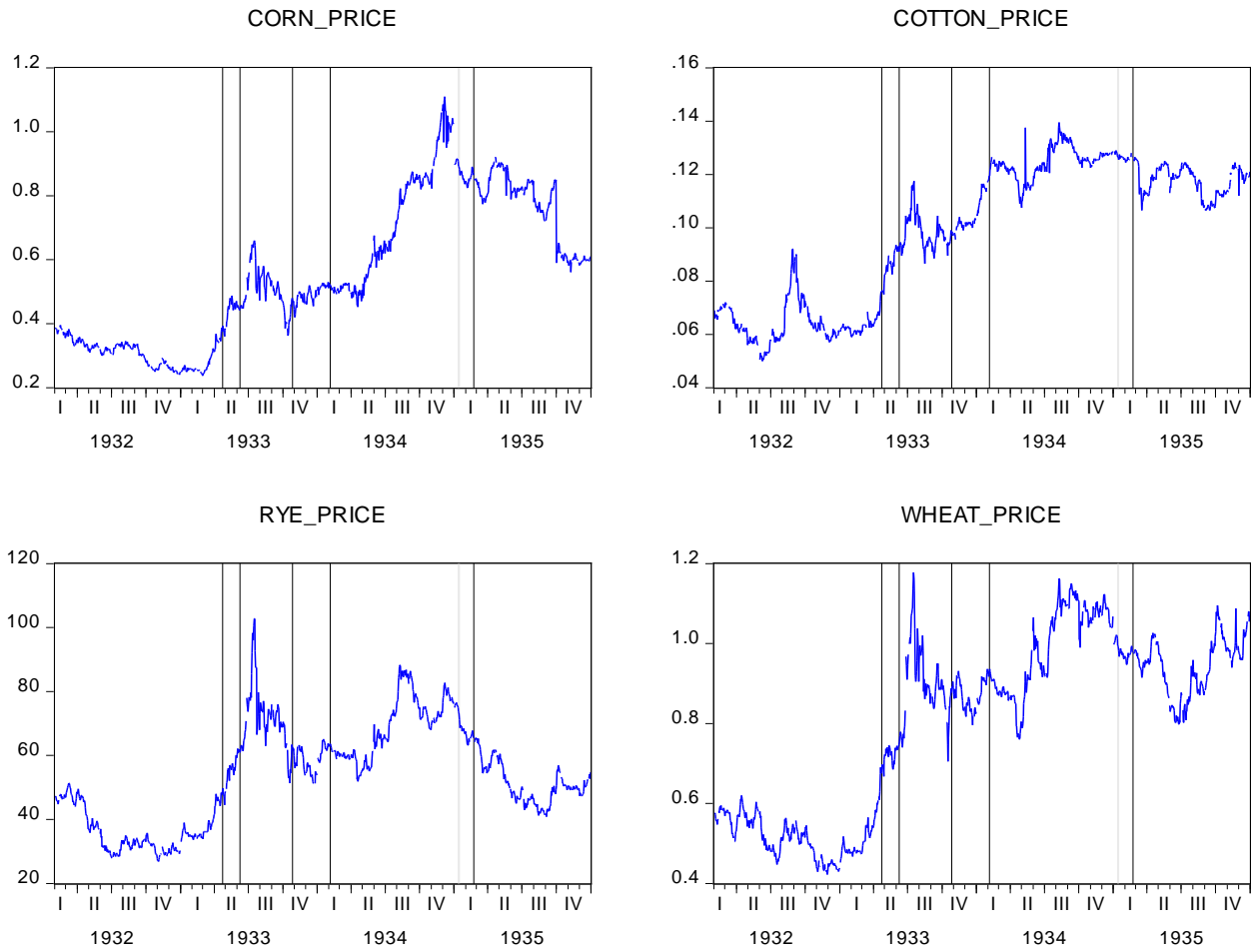


Figure 1: Daily prices corn, cotton, rye and wheat, 1932-1935 (Source: New York Times)

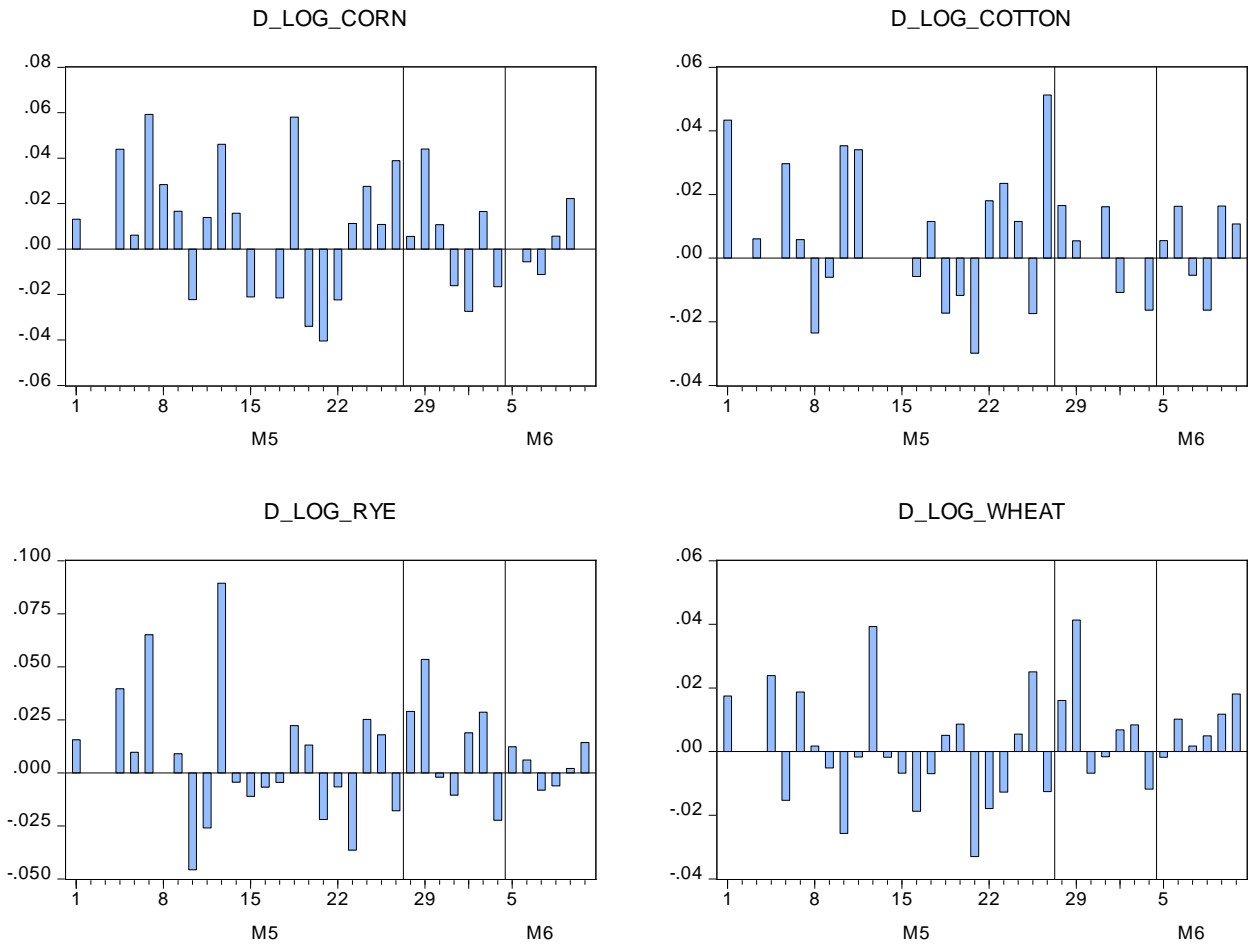


Figure 2: Daily percentage changes in commodity prices, May 1-June 10, 1933 (Source: New York Times)