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The Bond Market and the Legitimacy of Vichy France

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ABSTRACT

During World War II, the spread between the 3 percent rentes and the Vichy government bonds reflected French investors' perception of the shifting fortunes of war and the willingness of future post-war government to repay the debt issued by the collaborationist regime. Structural breaks in this spread do not always match with the dates of major military events but are more closely related to the political ones, emphasizing the struggle for legitimacy by rival claimants to power.

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KIM OOSTERLINCK

1. Introduction

Recent studies have offered new approaches to identify important military and political news in wartime in the movement of asset prices¹. This paper is based on an original data set of daily bond prices for two issues traded in France during World War II from May 27, 1942 to the end of the war. The only significant difference between these bonds is the issuing government. One was issued by the Third Republic before the war and the other by the Vichy regime. The price differential captures the relative credit risk and should measure the legitimacy of the claimants to govern post-war France and their perceived promises to reimburse each type of debt. This study reveals French investors changing expectations about the outcome of World War II.

2. France and the Second World War²

In Table 1 the political and military events of World War II are sorted by their character (M for military, P for Political) and their impact. (G for global and F for France.) After France's military defeat in June 1940, the French government asked Marshall Henri Philippe Pétain, the French hero of World War I, to create a government that would negotiate an armistice with Germany. As a result, two zones were created: one under German occupation, the other in theory under French rule. A new capital city, Vichy, was designated for the latter. In practice Vichy's collaborationist government remained dependant on Germany. Général Charles de Gaulle refused to accept German control and continued the war from Great Britain. By the end of 1940 de Gaulle had brought several French colonies to his side.

De Gaulle's political legitimacy remained an issue during the war. For Vichy's government, he was a traitor, for the Allies, a military supporter. On September 24 1941, de Gaulle created the Comité National Français (CNF) in order to "have a structure that would bring him closer to the Allied governments in exile in London."³ However the Allies considered the CNF as representing no more than the French troops fighting with the Allied ones. On September 28, 1942, the Soviet Union recognised and offered support to the CNF. Up to 1942, in spite of Vichy's collaboration with Germany, Pétain was viewed as France's legitimate ruler by the American government.⁴ Pétain lost this recognition when the German Army invaded the Vichy zone on November 11, 1942.

¹ See Brown and Burdekin (1999), Davis and Pecquet (1990), Frey and Kucher (2000) Oosterlinck (2000), Willard, Guinnane, and Rosen (1996).

² The narrative is based on Cointet (1993), Cremieux-Brilhac (1975), de Gaulle (1990), Duroselle (1990), Frey and Kucher (2000), Margairaz and Bloch-Laine (1991), Vigreux and Dessirier (1948).

³ Duroselle (1990), p. 398.

⁴ See for instance H. Lottman (1986), p. 60.

On June 3, 1943, de Gaulle created the Comité Français de Libération Nationale (French Committee for National Liberation) in Algiers. This new committee sought to gain the same political legitimacy enjoyed by other Allied governments in exile. Once acknowledged by the Soviet Union, Great Britain and the United States on August 26th 1943, this French government in exile, lowered the probability that the Allies would treat France as an enemy after the liberation. But, this recognition did not solve the legitimacy problem, as the CFLN's authority was only accepted for the liberated French colonies. Thus until the war's end uncertainty about political authority over metropolitan France continued.

Thus, at the war's end, it was unresolved whether France should be allowed to regain its sovereignty immediately or should be subject to an Anglo-American army of occupation to be the real representative of the French nation. Pétain had been designated by the former elected government but had sided with Germany. De Gaulle was on the victorious side but could not claim that he was representative of France, as he had only had a minor role in the government before the war. The resistance organizations that had arisen on French soil could also claim legitimacy. Not surprisingly, on June 6 1944, when the Allies invaded Normandy, de Gaulle was not consulted. On June 26, 1944, the US and British command decided to issue occupation money on French soil, though De Gaulle's protest eventually stopped this project. Finally on July 11, 1944, the United States acknowledged the authority in France of the CFLN, now named the Gouvernement Provisoire de la République Française.

TABLE 1: Key Military and Political Events

Date	Event	Nature	Impact
Sept. 3, 1939	Outbreak of WWII	M	G
May 10, 1940	German invasion of France, Belgium and The Netherlands	M	G
June 17, 1940	Surrender of French army	M and P	G
June 18, 1940	From London, de Gaulle decides to continue the war	P and M	F
July 10, 1940	Pétain head of the French Government.	P	F
June 22, 1941	German invasion of the Soviet Union	M	G
September 24, 1941	De Gaulle creates the "Comité National Français" (CNF)	P	F
December 7, 1941	US enters the War	M	G
September 28, 1942	USSR offers extended support to de Gaulle	P	F
November 11, 1942	German Invasion of the Southern Zone	M	F
November 19, 1942	Russian offensive at Stalingrad	M	G
February 2, 1943	German capitulation at Stalingrad	M	G
June 3, 1943	Creation of the "Comité Français de Libération Nationale" (CFLN)	P	F
July 10, 1943	US invasion of Southern Italy	M	G
August 26, 1943	British, US and Soviet governments acknowledge the CFLN	P	F
June 6, 1944	D-Day, invasion of Allied France	M	G
June 26, 1944	US and British try to impose an occupation	P and M	F

	currency. Project stopped after de Gaulle's protest		
July 11, 1944	Recognition of de Gaulle's authority over Metropolitan France	P	F
May 2, 1945	German capitulation	M	G

3. Market microstructure

The bonds examined in this study were traded on the Paris bourse or stock exchange, which remained open during World War II. Bordeaux, Lille, Lyon or Nantes, were also open after the partition of France, and the Lyon Stock Market saw a dramatic increase in its activity.

During the period under study the Paris Stock Exchange was open Monday to Friday from 12:30 p.m. to 2:30 p.m.⁵. Before the opening of the Stock Exchange, each broker copied his buy and sell orders on a specified form (Koebe, 1944). These forms were then brought to an auctioneer working for the *Chambre syndicale de la Compagnie des agents de change* which announced the proposed prices. Brokers then tried to secure deals for their clients in a sale by auction, called *Débrouillement de la cote*. The auctioneer registered prices, which changed through the day. The *Cote de la Compagnie des Agents de Change* has a complete record of the prices. Although the volume is unknown, the number of price quotations per session gives an idea of the market activity. German reports⁶ indicate the exact volume for some dates. Unfortunately, the available archives do not cover the whole war period.

The outbreak of the war did not bring significant changes to the structure of the bourse, which remained open until the German invasion of Paris in June 1940.⁷ One of the key concerns of the French government was a rapid rise in stock prices because inflation made bonds less attractive.

From June 10 until October 15, 1940 the bourse was closed.⁸ A black market for stocks and bonds emerged in the cafes located near the Stock Exchange. Officially, this long period of closure was intended to allow the French economy to recover from war.⁹ Once the Stock Exchange was reopened, the only assets permitted to be traded were the government *rentes* and the other bonds.¹⁰

With bond prices rising and in anticipation of the equity market reopening, the Government passed a law on February 28, 1941 limiting dividends and requiring the registration of some bearer securities.¹¹ The goal was to register owners of as many securities as possible to control transactions and limit the black market. This measure was accompanied by a new tax on capital gains voted on March 15, 1941.

⁵ See the [Bulletin de la Cote des Agents de Change](#). Before the war the main session was held from 12 p.m. to 2:30 p.m. and an additional session from 2:45 p.m. to 3:30 p.m.

⁶ Archives Nationales, Paris, AJ 40 vol. 832.

⁷ See Colling (1949), p. 391, Andrieu (1990), p. 143.

⁸ It was temporarily reopened from July 30 1940 to August 7 1940.

⁹ *Le Matin*, August 8 1940.

¹⁰ The price and volume of state bonds rose day after day. (Archives Nationales, Paris, AJ 40 vol. 832, 4a, doc. 48, October 21, 1940, Wi VIII, Währung, Kredit, Versicherung)

¹¹ This measure applied the equities issued after March 17, 1941 and to some specified stocks. Originally all stocks should have been registered but widespread public ownership made it impossible.

Trading in stock resumed on March 19, 1941, for 2,169 issues. However, the daily price movements were limited to 3 percent. Still fearing a strong rise in the stock prices, the *syndic* of the Paris Stock Exchange issued a statement stressing the safety of the state bonds.¹² This statement had almost no effect and the fixed income securities prices continued to experience a relative drop.

To reduce transaction cost and limit black market activity the government created the Caisse Centrale de Dépôts et de Virements de Titres (CCDVT) on June 18, 1941, to hold the securities for the brokers and the banks. The new regulation concerned only the equities and this drove up the price of the *rentes*.

On March 21, 1942 *The Economist* published an article entitled "German Europe Bourses in 1941" which analysed the stock markets in occupied countries. The author wrote; "The bourses in occupied countries are almost free markets, and Germany demands that at least the black bourses in France, Belgium and Holland should be abolished. In these countries, control measures tend to increase dealings outside the Bourse. A great number of quotations have become nominal." German reports give some measure of the shift to the black market. In early 1941 daily volume for the *rentes* was between 25 to 30 millions francs. By June market activity had declined and the daily volume ranged from 15 to 18 million francs. For the first week of September 1941, daily volume was approximately 20 millions francs. According to the Vichy Press,¹³ the stock exchange declined to a record low level in November 1942.

Nevertheless on May 31, 1943, the *Journal des débats politiques et littéraires*,¹⁴ noted the success of the latest government bond issue. However, there was little activity elsewhere on the exchange. It was exceptional to see more than 200 or 300 trades a day, even for the most important stocks. The trading in the *rentes* remained limited. In contrast with Paris, the *rentes* were very active on Lyon Stock Exchange.¹⁵

By January 1944, trading was minimal Koebe (1944) observed that for most securities there was only one auction a day. In an effort to obtain the public's hoarded cash, many companies offered seasoned equities for sale in early 1944. The public did not show much enthusiasm for these issues, and the underwriters had to absorb more equities than expected. When Allied bombing increased in April, money that had been hoarded appears to have moved to the bourse as investors feared its physical destruction. This shift may explain the strong upward movement in prices.

By the summer of 1944 trading had encountered many problems.¹⁶ Paris could not easily communicate with the rest of the country, and orders from the provincial bourses were hard to obtain. Paris stock prices took about one day to reach Lyon, and two to four days to arrive in Bordeaux. Furthermore, many sell orders were refused because intermediaries feared that certificates would be destroyed or greatly delayed in transport. Rumors about the creation of an Anglo-American occupation currency brought back inflation fears. The quick rise of buy orders, linked with the diminution of sell orders, led to a very limited market, with frequent intervention by the *Chambre syndicale*.

¹² Archives Nationales, Paris, AJ 40 vol. 832, 4a, doc. 44-45, *Presse Française*, March 21, 1941, Wi VIII, Währung, Kredit Versicherung.

¹³ *Le temps*, November 11th 1942.

¹⁴ "Bourse de Paris", in *Le Journal des débats politiques et littéraires*, May 31, 1943, p. 2.

¹⁵ *Journal des débats politiques et littéraires*, June 19-20, 1943

¹⁶ Archives Nationales, Paris, AJ 40 vol. 832, 4c, doc. 2, July 12, 1944, Wi V/2.

4. Data

The data series were obtained from the Bulletin de la Cote de la Compagnie des Agents de Change de Paris on a daily basis for the period May 27, 1942 to December 31, 1944.¹⁷ Prices for two French long-term bonds traded on the Paris Stock Exchange were collected. Data on these long-term bonds was selected because they are available for the whole wartime period. The first bond was the 3 percent *rente*, a perpetuity or consol, with a 3 percent coupon. The second security was a callable bond, issued on February 25, 1942. With a 60-year maturity and 3 percent coupon it was issued to convert a 4 percent bond originally issued in 1925. The callable feature gave the government the right to repurchase the bond at par at any time after January 1, 1946.

Figure 1 shows the daily prices for both bonds from May 27, 1942 to December 31, 1944. Although their price movements has some similarities, their behavior often changes.¹⁸

¹⁷ I thank M. Douezy for his help and availability when collecting the data at the SBF. The data is available from the author upon request.

¹⁸ See Dessirier (1948) for a general evolution of bond and stock prices.

FIGURE 1: Bond Prices 1942-1944.

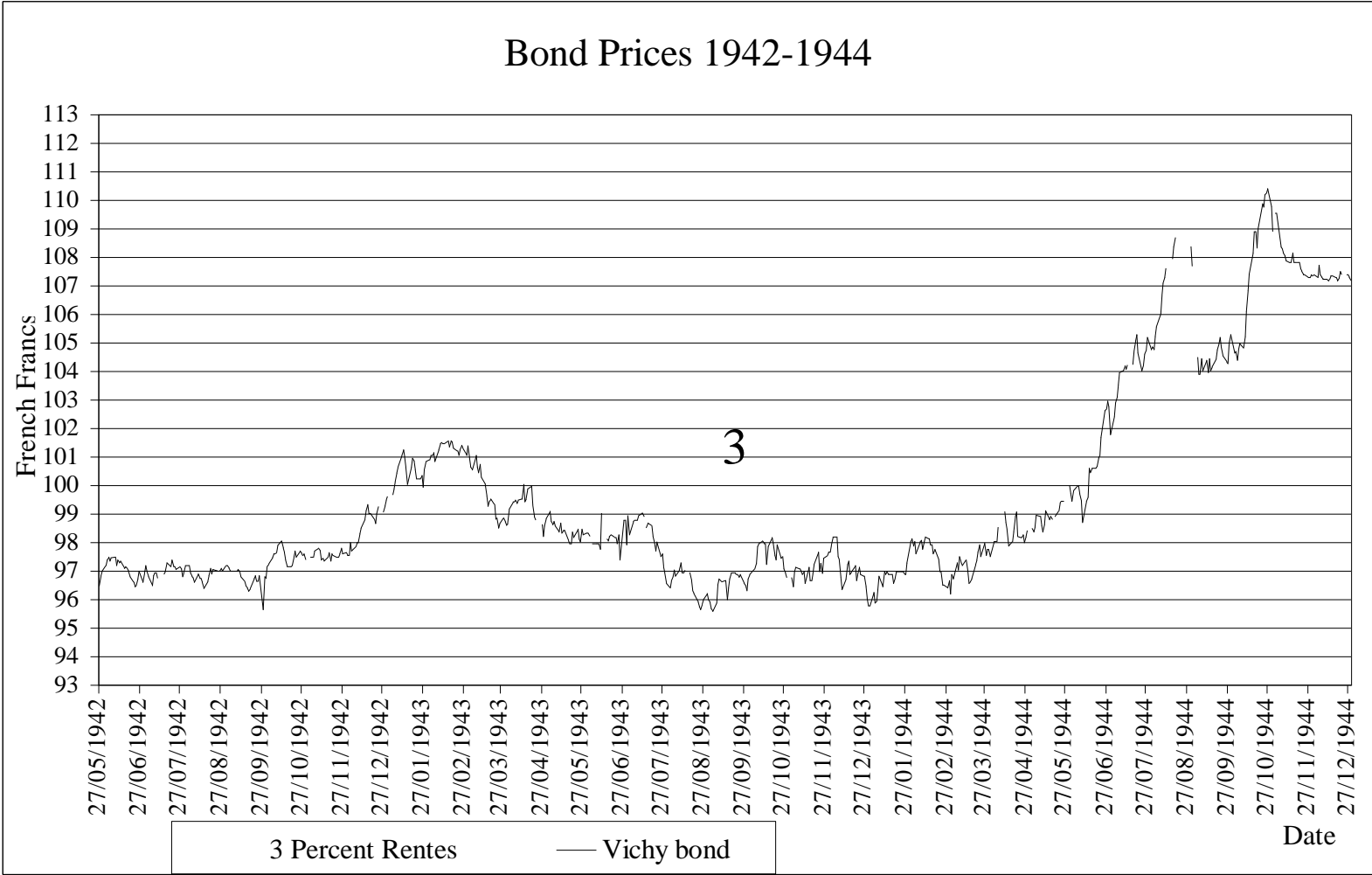


TABLE 2: Fixed

TABLE 2: Fixed Income Securities and Stock Indexes
(Source Dessirier (1948))

Year	Fixed Income Securities Index 1938=100	Stock Index of 275 issues 1938=100
1939	115.7	113
June 1939	117.2	110
1940	112.2	156
1941	134.7	296
1942	142.8	515
1943	143.5	633
1944	146.9	694
1945	149.0	652

The data presented in Table 2 show that both bonds and stocks experienced a dramatic increase in their prices during the war. Several explanations have been proposed to explain this trend.

The director of the bourse, OKVR Scheffer, who had been appointed by the Reichsbank, provided one view to the authorities in Berlin. On September 10, 1941, the Vice-President of the Reichsbank sent Scheffer a copy of an article from the *Berliner Börse Zeitung*. The article questioned the Paris exchange's relevance given the falling volume, and it claimed that the whole market was based on fictitious stock prices. The Vice-President demanded an explanation. Scheffer responded that prices were rising because of inflation and devaluation fears

In its January 17, 1942 issue, *The Economist* reviewed the previous year on the bourse.¹⁹ The author found that: "the plethora of money caused a boom on the Stock Exchange, which was maintained almost through the year. State securities as well as industrial shares were affected by it." However the article also emphasized the importance of political risk: "The investor feels that the currency of his country is eventually bound to be crushed by the burden of a tremendous public debt. The less he believes in the stability of the Vichy regime, the less he feels confident about the future value of government securities and the keener he grows, in spite of all the restrictions, to make real capital investment, that is, to buy industrial shares."

Subsequent students of the Vichy period have blamed inflation and market distortions. Dessirier (1948) stressed the importance of inflation on the market prices given the government's reliance on money creation to finance occupation costs. Sédillot (1979) pointed out that the people could not buy more than limited necessities so they turned to stocks, bonds, and real assets. The French government took advantage of this situation and issued low interest rate bonds.²⁰ Lerner (1954) found a similar pattern for the Confederate dollar price of Southern bonds during the Civil War, suggesting that patriotism was also a reason for the

¹⁹ "Vichy's Finance in 1941" in *Economist*, January 17, 1942

²⁰ See for instance Cathala (1948) Minister of Finance from 1942 to 1944 or De Rochebrune and Hazera (1995), p. 701 and p. 803, Colling (1949) p. 396.

bond price increases. In Belgium during World War II, Oosterlinck (2000) attributed rising bond prices to the scarce investment opportunities in the presence of high inflation

5. Methodology

The approach used in this paper begins with the basic no-arbitrage concept that two identical bonds should have the same value. The bonds I study are nearly identical except for their date of issue. The 3 percent *rentes* were issued in the 19th century and were considered a sacrosanct national obligation. The 1942 bonds issued by the Vichy collaborationist government might not have been honored by a post-war government. At the starting point, May 27, 1942 when the Vichy bond was issued, the prices of the two bonds were equal (96.5 FF).

Subsequent price differences cannot be explained by macroeconomic factors, as both were very large long term bonds with very similar payoffs.²¹ Differences should be due to the fact that the agents did not ascribe the same default risk to the two bonds because they were issued by different governments. Thus, *ceteris paribus*, the price differential should be a pure measure of the "political" risk of default.

Any information suggesting that the bonds would be treated differently would affect their prices. News of war events is obviously relevant: if political power were to change hands, debt might be subject to discriminatory repudiation. During the Revolution, France suspended service on the national debt, ending in a partial discriminatory default in 1797. In the 1940s French investors would have recalled heavy losses from the Soviet Union's repudiation of the Tsarist bonds. The political situation in World War II was fluid. If the Axis was defeated, how the Allies would treat the collaborationist government was unclear. There were multiple claimants to legitimate authority in France. For the investors, the perception of legitimacy was closely linked to the international recognition. If recognition of Vichy was abandoned, its successor could refuse to service its debts. To find what news was the most important, we use a breakpoint methodology to identify key events.

To compute the price difference between the 3 percent and the Vichy bonds, y_t , we assume an equal investment in both bonds. As the bonds have a different payment structure (one paid a coupon twice a year, the other four times a year), we assume that each coupon is reinvested at the current prices. Taxes are not relevant, as the coupons paid on those bonds were tax exempt.

The stationarity of the series is first tested. Perron (1989) showed that a series can exhibit non-stationarity if there is an exogenous structural shock. His methodology is based on the assumption that there is only one possible breakpoint in the series. In order to find where date the break occurs, he suggests three alternative models, allowing respectively for a one-time change in intercept, a one-time change in the slope and a change in both the slope and the intercept. The first model is auto-regressive

$$y_t = \beta_0 + \sum_{i=1}^n \beta_i y_{t-i} + \gamma_s D_{st} + \varepsilon_t \quad (1)$$

²¹ The *rentes* contain an implicit call. The Vichy contains an explicit one. At the time, and as Francois-Marsal (1929) stressed it was considered that "in the case of perpetuity, the State has always the right to proceed to a reimbursement by way of a sinking fund or a conversation, unless otherwise stated at the issue of the bond."

where y_t is the series, ε_t is a white noise and D_{st} is a dummy variable for the structural break that takes the zero value for all observations up to date s and one after date s . Banerjee, Lumsdaine and Stock (1992) developed a sequential test procedure to find possible multiple structural breaks. Willard, Guinnane and Rosen (1996) apply this procedure to determine the major turning points for the Greenback market during the U.S. Civil War. We follow the same two-step methodology. The first step determines 100-day windows in which breakpoints are more likely to be present. The second one searches the windows for the date that has the highest probability of a breakpoint

Windows W_s are defined by:

$$W_s = [y_{s-50}; y_{s+50}] \text{ with } s = 50, \dots, 598$$

We estimate the following equation

$$y_t = \beta_0 + \sum_{i=1}^n \beta_i y_{t-i} + \varepsilon_t \quad (2)$$

with $n = 9$. This value is obtained by following the procedure developed by Perron (1989).²² For each window W_s , we compute the F -statistic $F(s)$ associated with a Wald Test on the omitted variable $D_{s,t}$. The next step is to determine the date s_1^* that maximizes $F(s)$. Once s_1^* is found, we take $W_{s_1^*}$ out of the original sample and search for the next-highest peak s_2^* . The same method is applied to find s_3^* . To determine the relevance of the breakpoints we have followed a procedure developed by Andrews (1993). To pinpoint which date around s_i^* , $i = 1, 2, 3$ is the breakpoint we repeat the procedure but in the fixed windows $W_{s_i^*}$, $i = 1, 2, 3$. Namely, we compute the Wald test on an omitted variable $D_{s,t}$ with $s = s_i^* - 25, \dots, s_i^* + 25$. The date with the highest F -statistic is considered to be the breakpoint date.

6. Empirical analysis and results

The series' descriptive statistics are given in Table 3. The series y_t has a mean value of 1.92FF and a standard deviation of 2.23FF. An ADF test showed that the series is non-stationary. Furthermore, the series does not exhibit normality as indicated by the Jarque-Bera test, and it appears to be bimodal.

TABLE 3: Descriptive statistics for the 3% Rentes, Vichy Bond, and y_t

	3% Rentes	Vichy Bond	Spread: y_t
Mean	101.46	99.51	1.92
Median	100.4	98.03	2.04
Maximum	112.11	110.42	6.69
Minimum	94.89	95.59	-2.1
Standard deviation	4.23	3.55	2.23
Skewness	0.68	1.42	0.04
Kurtosis	2.57	3.88	1.83

²² Willard, Guinnane, and Rosen (1996) use the same procedure and find $n=12$ for their data.

Figure 2 shows the series y_t . From May 1942 to September 1942 it is negative, rising to zero from October 1942 to June 1943. It increased during the next year until June 1944 after which it declined. The higher the probability of victory for the Allies, the bigger the difference between the bonds as the market assumes that there is a higher risk of non-reimbursement for the Vichy issue. Once victory is almost certain in June 1944, the difference starts to decline indicating a belief that all former debt without exception will be repaid. To our knowledge the Gouvernement Provisoire de la Republique Francaise did not give any signal of its intentions on this question. A possible explanation could be investors' reassessment of an Allied military government on French soil. In June 1944 the Allies issued an occupation currency, but De Gaulle's objection forced its withdrawal. After this episode it seemed clear that the chance of having an occupation government in France was lowered.

The negative values indicate that up to September 1942, non-reimbursement of the 3% *rentes* seemed more likely than non-reimbursement of the 1942 issue. To our knowledge, the Vichy government never stated clearly that it would treat these bonds differently. Nevertheless, several elements can explain the investors' preference for the 1942 issue. First, Germany had refused to recognise the Austrian foreign debt after the Anschluss.²³ If they were to impose similar measures in France, the probability was high that they would first repudiate the older debts and not the ones issued by the collaborationist government. Secondly, the series begins just after the appointment of Laval as Prime Minister on April 17, 1942. Laval was known to have stronger Pro-German feelings than his predecessors. The negative values could also be a reaction to 1942 Riom trial of the leading pre-war politicians.

The negative spread ends in September 1942. This change may be due to a political event. On September 19, 1942 the Economist reported that two prominent politicians, Jeaneny and Herriot sent "a protest to Pétain, accusing him of assuming unlimited dictatorship and of wanting to draw France without parliamentary assent into the war against our Allies. Before this both (...) had refrained from any public utterance. (...) If the latest turn of events has forced the heads of the French Parliament to break silence, they must have become convinced that Vichy's new policy can no longer be reconciled even with the letter of Pétain's plenary power."

To more precisely determine the key events for the bond market, Wald tests were performed which were used to produce Figure 3. Table 4 gives the computed lambda values (Andrews, 1993) for the 10 points with the highest F statistics. Six dates are significant breakpoint candidates at the 1% level.

²³ Weitz, J., (1997), p. 229.

TABLE 4 Lambda values

Date	Λ	F-Stat
June 25,1943	1.84	16.83***
September 28,1942	4.22	12.23***
June 30,1943	1.84	11.84***
June 30,1944	2.68	11.19***
January 22,1943	2.21	10.66***
March 25,1943	1.99	10.63***
June 18,1943	1.85	10.42***
June 17,1943	1.85	9.1**
October 2,1944	9.03	8.64**
December 10,1943	1.85	8.3**

With * significant at the 10% level, ** significant at the 5% level and *** significant at the 1% level (Andrews (1993) values).

FIGURE 2: Bond Price Differential yt

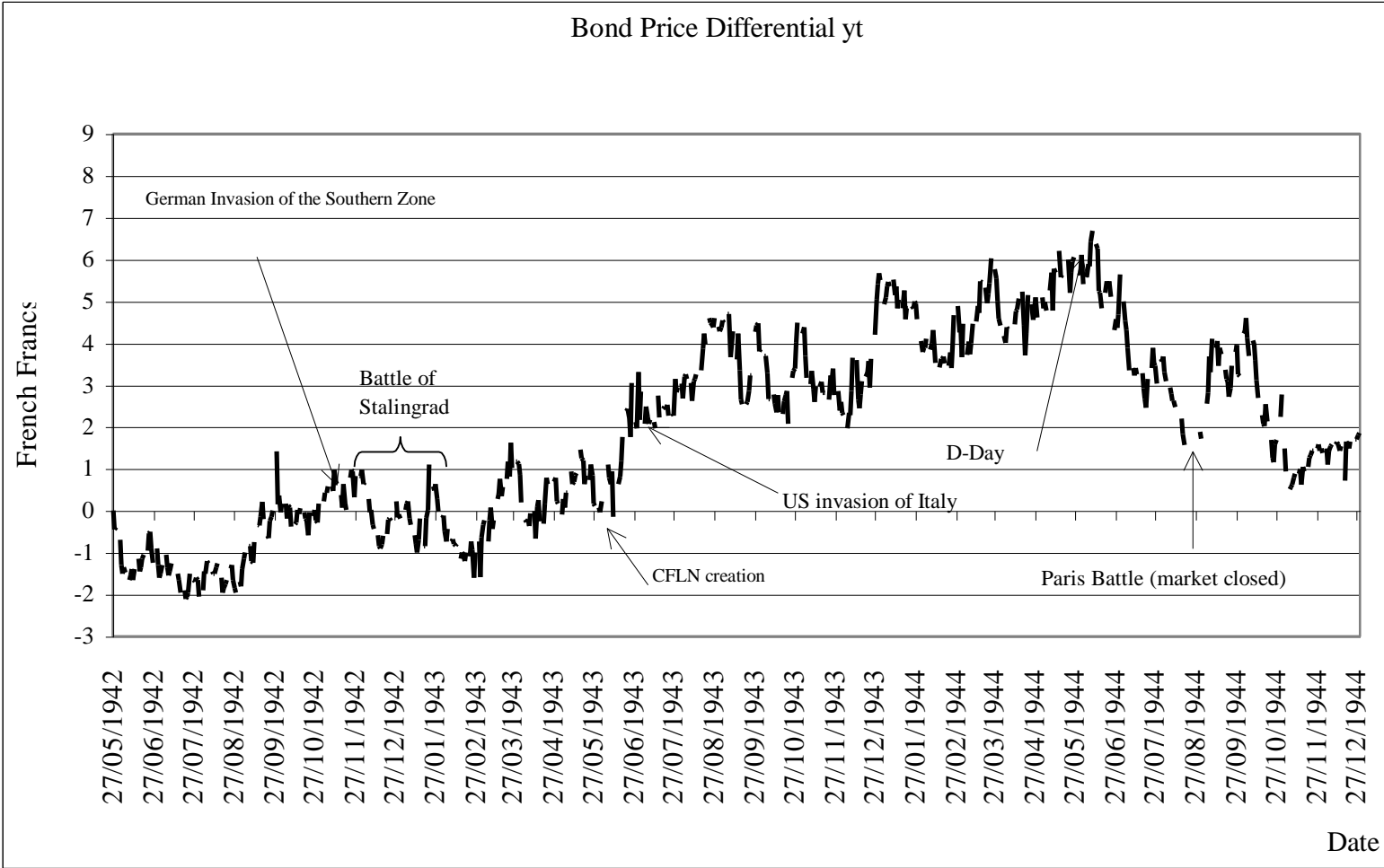
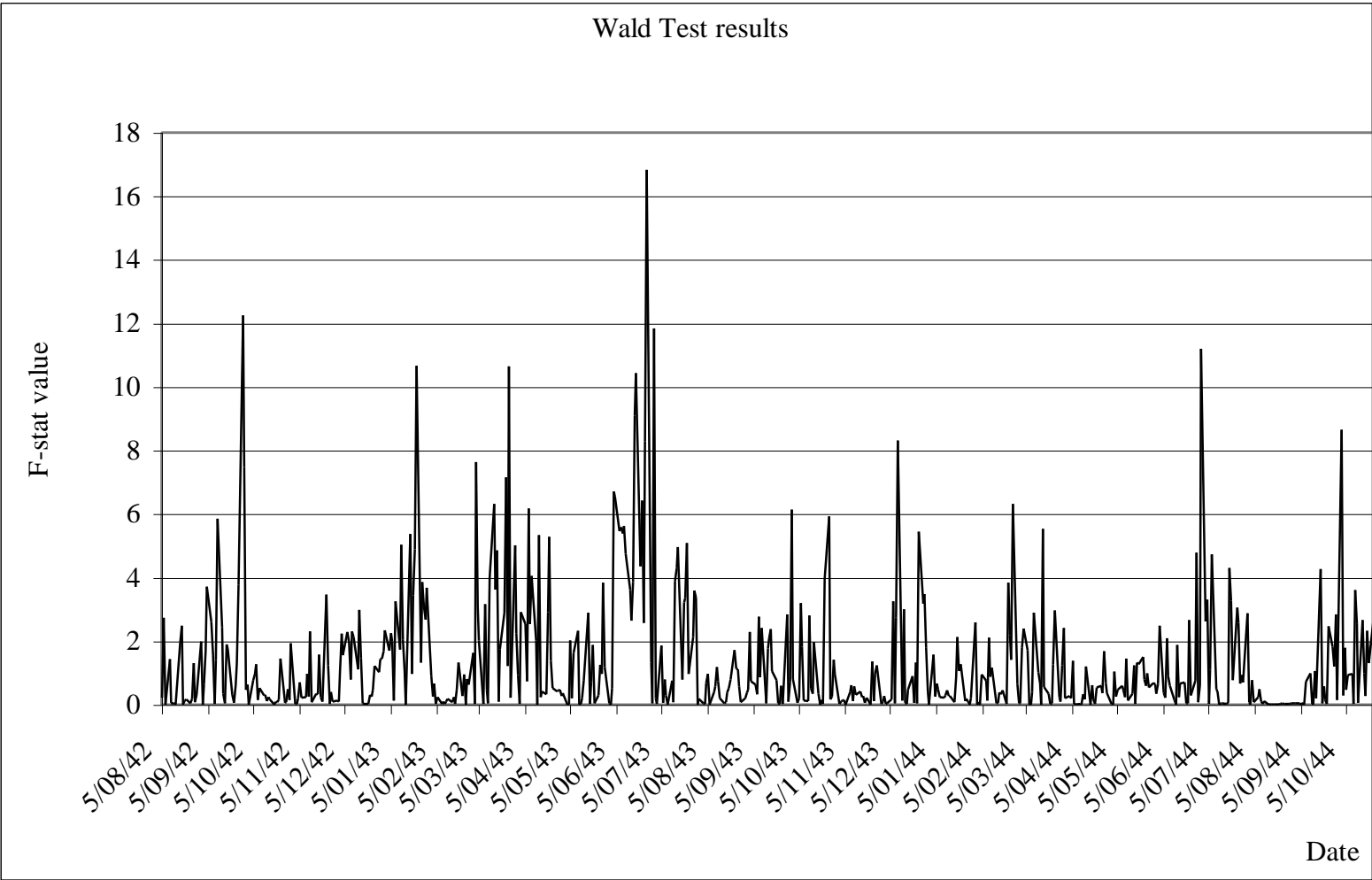


FIGURE 3: Wald Test results



The date with the highest F-statistic is June 25, 1943. The window, W_1 , around that date is April 16, 1943-September 3, 1943. June 30, 1943 and June 22, 1943 fall in this window. The second window, W_2 , is centred on September 28, 1942 and ranges from July 21, 1942 to December 7, 1942. The third window, W_3 , starts on April 21, 1944 and ends on September 8, 1944, with June 30, 1944 as the central date. The next dates (January 22, 1943 and March 25, 1943) cannot be treated in the same way as they overlap with at least one of the previous windows.

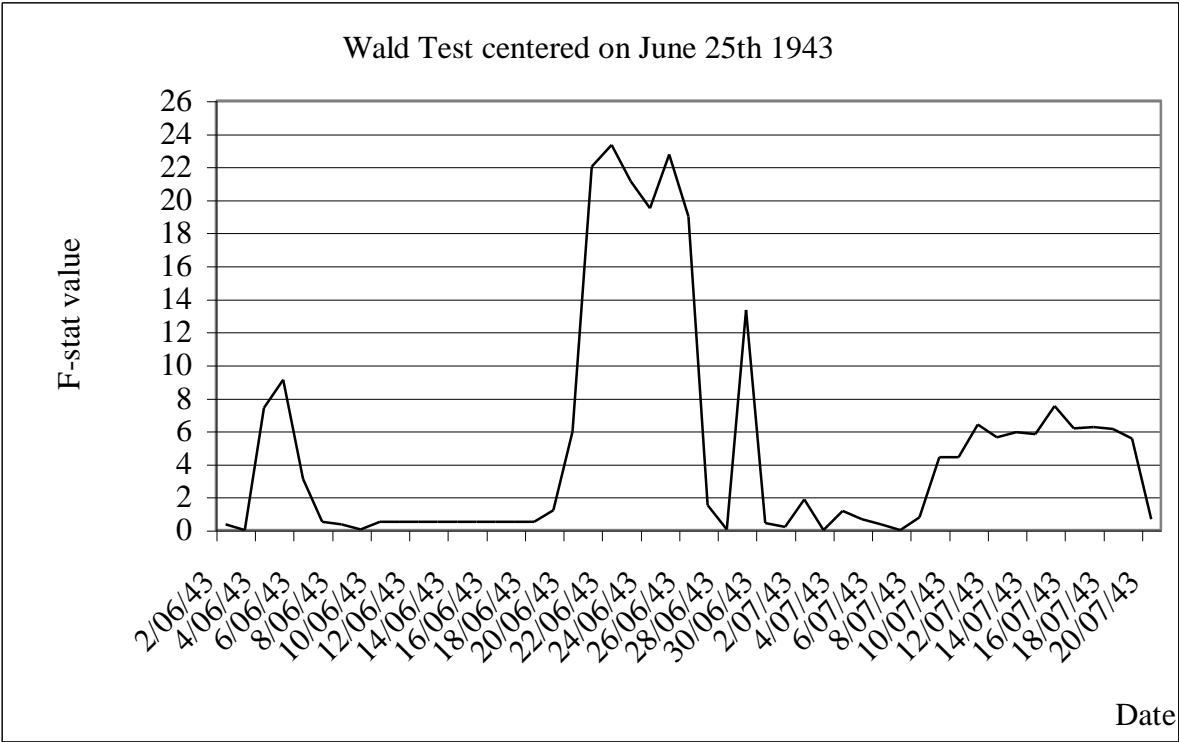
Peak One: June 25th 1943

The important military news in period W_1 was the Allied victory in the Battle of Tunisia on May 12, 1943. After the Allies invaded Sicily on July 10, 1943, Benito Mussolini was removed and replaced by Marshal Pietro Badoglio.

The political scene became more complex on April 17, 1942. A French general, Henri Giraud, had escaped from a German prisoner camp and joined France's "Free" Zone to recreate the French army and resume war. Considered by the US as more reliable than de Gaulle, he immediately received support from the US government. The invasion of French North Africa took place in November 1942. Meanwhile, Vichy was occupied by the German Army. To take advantage of this situation and gain the collaboration of French troops located in North Africa that had remained faithful to Pétain, the US government proposed the creation of a French government in Algeria headed by Amiral François Darlan, a strong supporter of Vichy. In Darlan's eyes, Pétain had fallen because of Germany's invasion of Vichy, and it was his duty to become head of the government. At the same time, General Giraud obtained the command of the troops based in North Africa. As surprising as it may seem now, the U.S. government preferred to give support to followers of Pétain rather than to de Gaulle. On December 24, 1942, Darlan was murdered and Giraud replaced him as head of the government in Algeria. Thus, in early 1943, there were three potential claimants to political legitimacy: Pétain in Vichy, de Gaulle in London, and Giraud in Algeria.

De Gaulle and Giraud joined together to create the CFLN (Comité Français de Libération Nationale) on June 3, 1943. This committee was intended to represent France to the Allies. Its goal was to legitimize French military participation politically. The CFLN appointed officials for finance, transportation, law, education and health, colonies, economics, labor, and information. In its June 3 broadcast, French Free radio declared that the CFLN was recognized by the Allies as representing the will of the nation and the French resistance. The CFLN did not resolve the tension between the two generals. The Soviet Union pleaded for the recognition of the CFLN beginning on June 19, 1943. The governments of Luxemburg, the Netherlands, Czechoslovakia, Uruguay and Yugoslavia had already recognised the CFLN later in the month. Finally on August 26, 1943, Great Britain, the United States and the Soviet Union acknowledged the CFLN's authority for the liberated parts of a non-metropolitan France. The highest value of the F-statistic is reached on June 21, 1943, and it remains high for a long period (from June 18, 1943 to June 25, 1943). Therefore, there is no clear-cut date to consider in this period.

FIGURE 4: Wald test results for W_1



The treatment of debt is of course dependent on political power. All things remaining equal, if the agents reassess their vision of the post war regime, then their judgement about potential reimbursement may also change. Perceptions may have changed because expectations about the probability of an Allied victory changed or there was a change in the expectation of the nature of the post war regimes. The Allied victory in North Africa may have been perceived as a sign that Germany would lose the war and France would recover its freedom under either an Anglo-American occupation force or under a new French government.

On the political side, the importance of the creation of the CFLN must be stressed. De Gaulle emphasized the importance of political recognition if France were to recover its freedom. For Giraud, it was vital to fight on the US side, with political issues being less relevant. The creation of the CFLN emphasizes the importance of the choice between de Gaulle and Giraud. Both French generals had been fighting to be recognised as the sole representative of France among the Allies. Giraud had the support of the US diplomats, who considered de Gaulle as "unsure." Giraud had close links with the Vichy regime; but beginning in March 1943, he began to distance himself. For the Vichy collaborationists, if the Allies won, a government led by Giraud remained a much better outcome than one headed by de Gaulle.

The creation of the CFLN did not solve the conflict between the two generals. On June 17 General Dwight Eisenhower met the two protagonists in order to let them know President Franklin Delano Roosevelt's position. He wanted Giraud to take the command of the French Forces, the North African troops, as well as the troops under de Gaulle's command. The CFLN and de Gaulle refused, opposed to Giraud accumulating political as well as military power. On June 22, a compromise was reached. De Gaulle would keep the command of his

French troops, and Giraud would retain authority in North Africa. The political implication of this event is clear. Support of the CFLN was for de Gaulle and his strong position against the Vichy government. Except for a small time lag, this political turning point fits very well with the statistically identified dates.

Peak Two: September 28, 1942

The military situation in the window around September 28, 1942 does not seem to have influenced the bond price differential. On the Russian front, the German Army had progressed far and reached the Volga, north of Stalingrad, on August 23, 1942. On November 8, 1942, Allied troops attacked French Morocco and Algeria. The Battle of Stalingrad began on November 19, 1942.

On September 28, the Soviet Union and the Comité National Français (CNF) issued a joint statement. The Soviet Union gave the CNF much greater recognition than either Great Britain or the United States had provided. For the USSR, the CNF and thus de Gualle was the only legitimate representative of France among the Allies

FIGURE 5: Wald test results for W_2

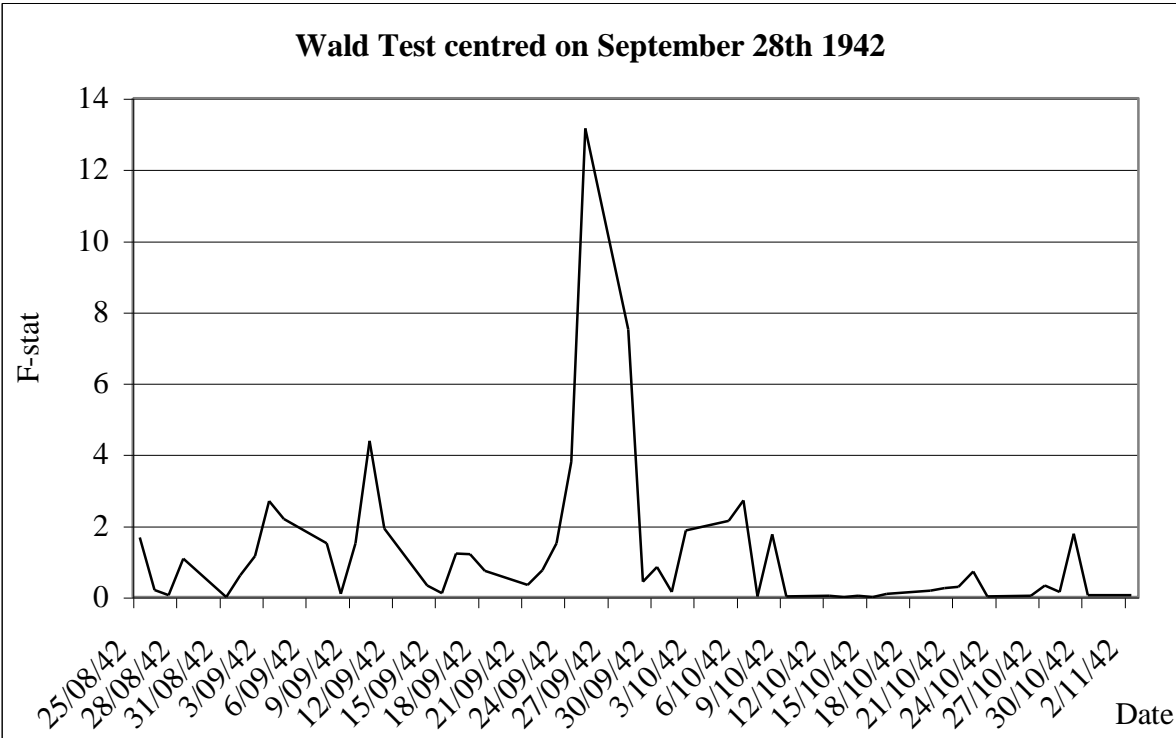


Figure 5 exhibits the results of the Wald F-Test for this period. It appears that there is a single peak on September 28, 1942. No military event and news seems to match this peak. Some investors may have expected the invasion of North Africa. It is unlikely that they knew of Girauds proposal for all Allied attacks to be aimed at southern France. If that information was available to the markets participants then it is highly probable that the German army would also have known. Thus, military news and expectations were decidedly mixed.

A political explanation of the breakpoint is much more convincing. On September 28, the Soviet Union and the CNF issued a joint statement. The Soviet Union gave the CNF much

greater recognition than either Great Britain or The United States had provided. For the USSR, the CNF and thus de Gaulle were the only legitimate representatives of France. This action was a sign that the USSR was ready to extend its support to de Gaulle in the future (Duroselle, 1990). However, the Soviet Union limited its actual support so as not to upset its relationship with Great Britain and the US. This information was spread by Free French radio broadcasts from the BBC in London. In one broadcast, Maurice Schumann discussed the implications of this news for France. He argued that the CNF should be viewed as a representative of France, indicating that France could be considered as an Ally that had never surrendered.

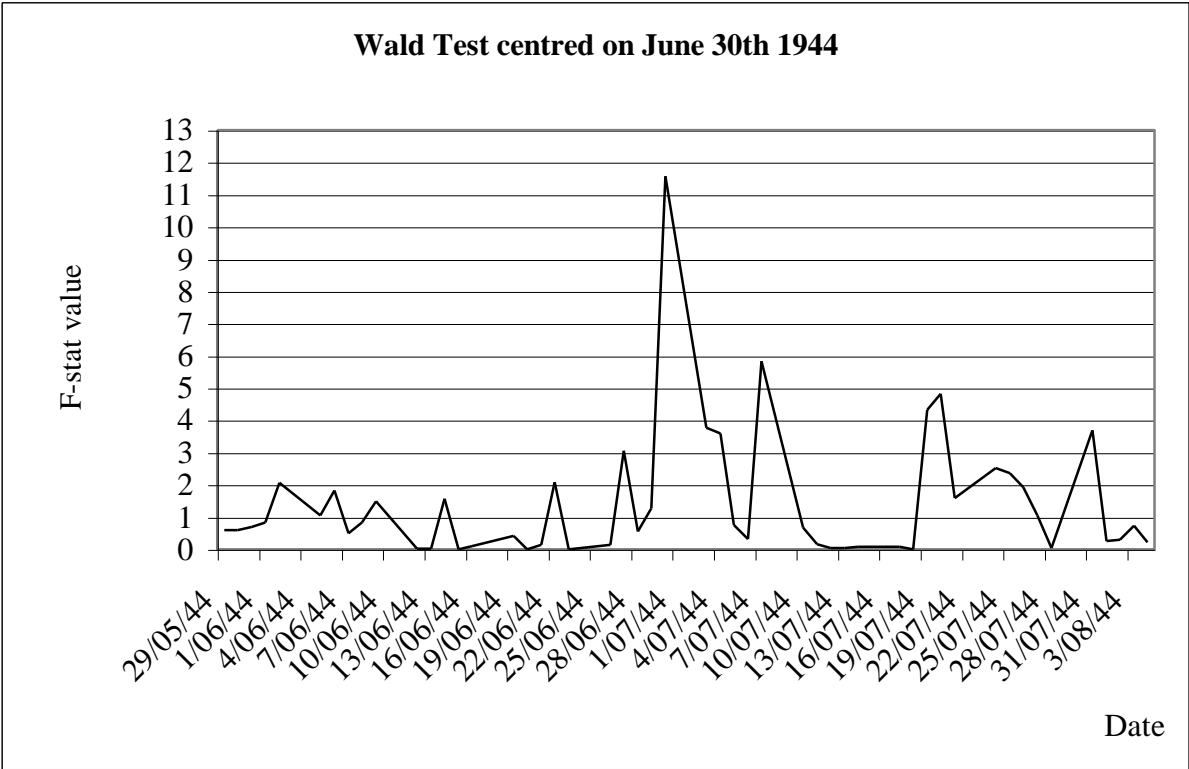
Peak Three: June 30,1944

This window includes a cluster of military events. On June 4, 1944, Allied troops invaded Rome. On June 6,1944 (D-Day), the Allies invaded Normandy. By the end of July, Normandy and Brittany were under Allied control.²⁴ Then on August 24,1944, French troops entered Paris. Political events were also rapidly evolving. On June 3,1944, the CFLN changed its name to GPRF (Gouvernement Provisoire de la République Française). The political meaning of this change was clear. France was about to be liberated from German oppression and the CFLN wanted to make sure that neither the American nor the British Army would occupy troops in France. This fear is not unrealistic, it had been known since 1943, that the US wanted to treat France as an enemy and impose an Allied Military Government of Occupied Territories (AMGOT). This threat gained credence when in November 1943, the US created an occupation currency. De Gaulle protested and received Roosevelt's word that the currency would only be printed for the French Republic. On June 6, 1944, however, the US Army tried to impose an occupation currency with no mention of the Republic. De Gaulle's speech on June 26, 1944 declared that an illegal currency on French territory had been issued. He reported that negotiations with the Allies were ongoing and implied that this issue would be withdrawn soon. De Gaulle's position was strengthened when in June, the Belgian, Polish, Czech, Yugoslavian, and Norwegian governments recognised the GPRF's authority in France. Eventually, the US government recognised the legitimacy of the GPRF on July 12, 1944.

Figure 6 exhibits the results of the Wald F-Test for this period. It appears that there is a single peak on June 30, 1944. This peak coincides with these military and political events. By June 1944 the probability that Germany would lose the war increased. However, the declining differential seen in Figure 1 cannot be explained by Allied victories: if the chance of Allied success grew the differential should increase.

²⁴ On July 20, 1944, Hitler survived an assassination attempt.

FIGURE 6: Wald Test results for W_3



Political events can explain this decline. Before June 1944, many political outcomes were still possible: the creation of the AMGOT, a French government led by the local resistance with a potential communist influence, a French government under de Gaulle or even a new government designated by Vichy's leaders. For the owners of a debt issued by the Vichy government, the chance to be reimbursed varied with the probability of each outcome. The best solution for the debt holders would have been a smooth succession; the worst would be the creation of an AMGOT, unlikely to repay a debt issued by its enemy. De Gaulle was probably perceived as more willing to repay this debt, even if he never acknowledged Vichy. Non-reimbursement would have led to a crisis for French banks, a factor that de Gaulle would surely take into account.

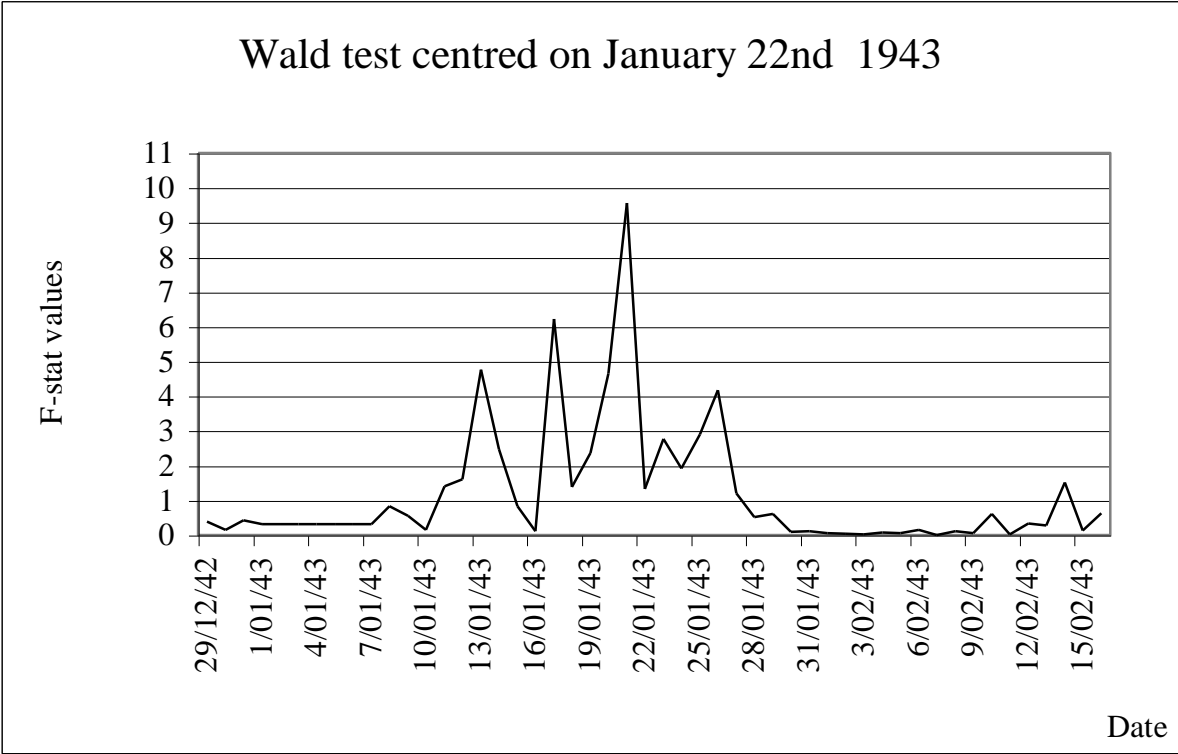
The decline after the breakpoint may thus represent the perception that an AMGOT would not be established. This interpretation is confirmed by the recognition in June 1944 of de Gaulle's authority. His credibility was enhanced by negotiation with the U.S. government and the proposed integration of the resistance forces in the regular French Army.

Peak Four: January 22, 1943

As stressed before, the results in this section should be taken with caution as window W_4 overlaps window W_2 . In this period, December 29, 1942-February 16, 1943 important military and political events occurred. On February 2, 1943, the battle for Stalingrad ended with the German capitulation, although Stalin had already announced victory on January 27. In addition, important Allied victories occurred in North Africa in January and February 1943.

In January, there was a conference in Anfa, Morocco between Winston Churchill and Roosevelt. On January 22 de Gaulle met Giraud and Churchill. On January 26, de Gaulle rejected Roosevelt's proposal to create a joint government of the CNF and the ruling authorities in Algiers, which was under Giraud's control. A joint statement mentioned that the two protagonists would negotiate further.

FIGURE 7: Wald test results on W_4



The highest F-statistic in Figure 7 is for January 21, 1943. This date is close to the victory of Stalingrad. The battle ended formally on February 2, 1943, but Free French radio had broadcasted reports of victory earlier. Notably on January 21, French Free radio announced the liberation of Leningrad. Thus, French investors may have anticipated the Stalingrad victory and reassessed the probability of being reimbursed accordingly.

Political events were also important. The Anfa meeting was a major attempt to reconcile Giraud and de Gaulle. Even if the meeting did not succeed, the joint statement may have influenced investors since it confirmed strong British support for de Gaulle. Lastly, on October 1942, Alfred Pose, the director of the BNCI (Banque Nationale du Crédit) decided to join Giraud and eventually became his financial advisor. According to Lacroix-Riz (1999) this event worried the German administration. In a letter dated January 21, 1943, the French Minister of Finance, Pierre Cathala expressed his fears that Pose's departure could create a crisis of confidence for the Paris banks as that would be exploited by the Allies.

7. Conclusion

This paper investigates the information content of French bond prices during World War II. It shows that agents ascribed different default risks to pre-war and to occupation bonds. Fluctuations in the price differential is a pure measure of the relative credit risk, reflecting key

political and military events. Breakpoints indicate that investors reacted to important unanticipated news. The empirical results identify two important breakpoints that correspond to events that reinforced de Gaulle's claim to be the legitimate French government. The third breakpoint, on June 30, 1944, is linked to news that Allies would not set up a government of occupation.

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