BANKING PANICS AND BUSINESS CYCLES: DATA SOURCES, DATA CONSTRUCTION, AND FURTHER RESULTS

by

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7.2.4

Abstract

Banking Panics and Business Cycles

This report is the appendix to Gorton (1987). Details of the data sources are described here, as well as procedures used to construct the data. Virtually every series used in Gorton (1987) for the National Banking Era is constructed in some way. Further results testing the robustness of the results in Gorton (1987) to data definition and construction are presented. Further results on functional specification are presented. No original results are contradicted. This report is not meant to be read separately or to stand on its own.

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I. INTRODUCTION

The first four sections of this paper, Sections II-V, provide the sources for the data series used in Gorton (1987), and briefly describe the interpolation and estimation procedures used to construct data. Virtually every series used in Gorton (1987) for the National Banking Era is constructed in some way. Most of the data for this period are from the Comptroller of the Currency Reports. Section VI discusses the estimation procedures used in Gorton (1987). The general issue of robustness is discussed. A variety of difficulties prevent most of the usual econometric specification tests from being applicable, but some tests are reported. One way of addressing the issue of robustness, albeit primitive, is to simply try a variety of other functional specifications. Sections VII-X contain these further results for each of the three sample periods studied in Gorton (1987), i.e., 1870-1914, 1870-1934, 1914-1972. These sections also report on robustness of the results with respect to numerous data specifications. Since all the data are constructed, and sometimes single variables are constructed in many different ways, there are literally thousands of possibilities. The results reported here focus on what seem to be sensitive constructions.

The final section concludes with a summary of the results with respect to robustness of functional form and data construction. Basically, none of the original conclusions are changed. These conclusions are briefly reassessed in the final section.

This paper does not repeat analyses or explanations of Gorton (1987) and it is not meant to be read separately or to stand on its own. It should be viewed as a lengthy appendix.

II. DATA FOR NATIONAL BANKING ERA

While the hypotheses studied in Gorton (1987) concern the behavior of the currency-deposit ratio over the whole cycle, not just at downturns, the focus is on banking panics. Consequently, frequent data points are of paramount importance. In addition, data must not be (unnecessarily) smoothed, by averaging, or interpolating, for example. Panics, however dramatic, were short-lived events and will appear as "outliers," so the information they contain must be preserved. For these reasons, the Comptroller of the Currency *Reports* for the National Banking Era are the basic source of information. Alcorn (1908) is useful for understanding the Comptroller *Reports*.

Friedman and Schwartz (1970) give quarterly estimates of all commercial bank deposits from 1867-1907. These were not used because the *a priori* expectation was that for the purposes of the Gorton (1987) study they had been excessively smoothed. This expectation was confirmed. (Compare the results of Tables 27-34 to the results in Gorton (1987).) Also, the Friedman and Schwartz data ends in 1907, thus omitting the 1914 panic. Finally, since panics were short-lived affairs an extra observation per year was desirable.

The first Comptroller call date was October 1863. From 1864-69 banks reported to the Comptroller four times a year. From 1870-1913 they reported five times a year. In 1914 (and for a few years thereafter) they reported six times a year. The sample period used for the empirical tests begins in 1870 and goes through 1914. Consequently, one observation during 1914 was thrown out. That observation was October 31, 1914.

A. Currency in the Hands of the Public

The *Annual Report* of the Secretary of the Treasury gives monthly figures for total currency in circulation beginning in 1878. Monthly figures corresponding to the call dates were used starting with June 1878. For call dates prior to June 1878, annual observations on currency in circulation were interpolated by Friedman and Schwartz's (1970) Method R using National Bank Notes Outstanding. Annual observations from Historical Statistics of the United States (series x 423); monthly observations of National Bank Notes Outstanding from Andrew (1910). Currency in the Hands of the Public then is Currency in Circulation minus vault cash which during this period is the same as reserves.

B. "Promised" Return on Deposits (r_d)

The estimation procedure is explained and rationalized in Klein (1974). A variety of other procedures for estimating r_d were experimented with, including using a series culled from ads in the New York Times. The NY Times series had little variation over the National Banking Era. Other series constructed from annual surveys by the Comptroller of the Currency (or for Kansas) using the Chow-Lin (1971) procedure were also tried. As explained by Klein (1974), the appropriate measure is the marginal cost of a deposit dollar. The Times series and series constructed from annual surveys do not capture any marginal notion, and in the latter cases required interpolating annual data to five times a year as well as backcasting. For these reasons Klein's procedure was used.

The formula used for Klein's procedure was $r_d = r(1 - (\text{Reserves}/\text{Deposits}))$, where r is the bank's opportunity cost. Reserves were computed as the sum of National Bank notes of other banks, state bank notes (1867-68), fractional currency, specie, legal tender, compound interest notes, 3% certificates, and U.S. certificates of deposit. These items were taken from the Comptroller Reports. The opportunity cost was taken to be MaCaulay's (1938) adjusted index of the yields of American railroad bonds. The results varied insignificantly when the unadjusted series was used. Results using shorter rates (three month commercial paper; call money) to estimate r_d were less successful. Using a longer interest rate seems consistent with a longer portfolio adjustment horizon.

C. Capital Losses on Demand Deposits

The proxy for actual capital losses is the "loss on assets compounded or sold under order of court" for National Banks placed in the hands of receivers. The date the receiver was appointed was taken as the date of failure and losses for that date were assigned to the closest call date. Once a receiver was appointed the bank was liquidated over a period of years. Each year the losses would "compound" until the bank was closed. The total losses when the bank closed is the desired figure to be assigned as the loss on the day the receiver was appointed. For the sample period here, the largest loss figure for each insolvent bank was taken from the Reports of 1898, 1919, and 1931. The total losses for each date were then divided by total deposits to form the proxy series for actual losses.

The above proxy for the capital losses on deposits uses an accounting method for construction, working from the balance sheets of failed banks. This measure captures a sense of the magnitude of losses actually incurred by depositors. An alternative would be to use the market prices of deposits after suspension of convertibility. Such a measure is conceptually very different. During periods of suspension deposits traded against currency at a discount so that losses were incurred by depositors during the supension period even if their banks eventually reopened. The market prices of deposits during suspension periods are not known. However, as part of the clearinghouse response to panics, currency was often rationed through a process of certifying checks, or clearinghouse loan certificates were issued.[1] The market price (in terms of currency) of certified checks and loan certificates are available (see Sprague (1910)). The discount on certified checks and loan certificates captures the notion of losses to depositors during the suspension period, but not losses at banks which were declared insolvent. More importantly, the discount is positive at only ten dates out of a sample size of 210. For these reasons the accounting method of computing losses was used.

The existence of a discount on demand deposits during the period of suspension, however, has another implication. At data points during suspension periods, the currency-deposit ratio would be biased downwards because deposits have not been discounted. Deposits are measured using the one-to-one currency-deposit exchange rate. However, since the discount is positive at only ten data points, discounting deposits at these ten points does not change the results presented here or in Gorton (1987).

D. Expected Capital Losses on Demand Deposits

The expected capital losses on demand deposits are the predicted values from an equation forecasting capital losses. As explained in Gorton (1987) the capital loss on deposits may be positive or zero, but deposits never receive capital gains. The appropriate estimation method is, therefore, the Tobit procedure. Table 1, colums (1) and (2), provide the coefficients and standard errors estimated using the Tobit procedure. Columns (3) and (4) are the OLS estimates (using all the data) which were used as starting values for the Tobit procedure.

E. Unanticipated Liabilities of Failed Businesses

Quarterly observations on liabilities of failed nonfinancial businesses are from Financial Review for 1875-1918, except 1905-06, from Bradstreet's. Quarterly observations were assigned to the closest corresponding call date, and the missing call date value was linearly interpolated. The annual observations on liabilities of failed businesses for 1873-74 were distributed over five yearly dates using monthly observations on railroad bond defaults (Financial Review, 1875, p. 11). Anticipated liabilities of failed businesses were then computed from:

$$\underset{(.06602)}{(1 - .3607\, L)}\, Z_t = 17.285 + (\underset{(.08661)}{.16109}\, \underset{(.0654)}{L^3} + \underset{(.06441)}{.16362}\, L^5 + \underset{(.06142)}{.21803}\, L^{10})\, U_t$$

$$\hat{\sigma} = .5255 \qquad Q(12) = 4.24 \quad (7 \text{ d.f.})$$

Z_t is the log of liabilities of failed businesses. The standard errors of the estimates are in parentheses. $\hat{\sigma}$ is the standard error of the regression. Q(12) is the Box-Pierce statistic. Unanticipated liabilities are the residuals from the above process.

F. Pig Iron

Monthly observations of pig iron production in the U.S. (daily average; thousands of gross tons) were assigned to the call dates (MaCaulay (1938)). The MaCaulay (1938) pig iron production series begins in 1877. In order to include the Panic of 1873 this series had to be extended backwards, through 1871. The pig iron series was extended backwards using the following estimated equation:

$$PIGIN_t = \underset{(3.146)}{-16.98} \; \underset{(.039)}{-.074T} + \underset{(.037)}{.124}\, FRIC_t + \underset{(2.61E-09)}{1.69E\text{-}08}\, LOANDIS_t$$

$$R^2 = .897; \; D\text{-}W = .986$$

where: PIGIN ≡ Pig iron production; T ≡ Time trend; FRIC ≡ Frickey's (1947) Index of Production for Transportation and Communication; LOANDIS ≡ Loans and discounts at National Banks. Standard errors are in parentheses.

G. Deseasonalization

The liabilities of failed businesses and the interest rate on commercial paper were deseasonalized for some of the estimated equations and tests reported in Gorton (1987). Deseasonalization was performed using seasonal dummies, as follows:

$$\underset{}{BUSLIA_t} = \underset{(5.43)}{23.34}\ \text{Winter} + \underset{(4.11)}{35.73}\ \text{Spring} + \underset{(4.62)}{30.27}\ \text{Fall}$$

$$R^2 = .3943$$

$$\text{Compaper}_t = \underset{(.0059)}{.037}\ \text{Winter} + \underset{(.0046)}{.049}\ \text{Spring} + \underset{(.005)}{.05}\ \text{Fall}$$

$$R^2 = .5606$$

Standard errors are in parentheses.

Recall that the Comptroller Reports' data are five times a year, unevenly spaced. The liabilities of failed businesses data were assigned to the closest call date, and the missing date estimated. Consequently, deseasonalization procedures must be primitive. The same procedure was used for commercial paper to be consistent.

III. MONTHLY DATA FOR THE PERIOD 1914-1972

A. Currency in the Hands of the Public

1914-1960, from Friedman and Schwartz (1963); 1961-1972, Survey of Current Business (Supplements).

B. Demand Deposits (DD)

Friedman and Schwartz (1963B); Banking and Monetary Statistics; Annual Statistical Digest of the Federal Reserve System.

C. "Promised" Return on Deposits (r_d)

Following Klein (1974) the promised rate of return on deposits was computed as:

$$r_d = \text{RPAP (DD-RDD)/DD} + \text{(RPAP-RDISC) (BOR/DD) (RDD/RES)} + \text{RPAP (USDD-RGOVD) (1/DD) (RDD/RES)} - \text{SERCRG}$$

RPAP is the interest rate on 4-6 month Prime Commercial Paper (Banking and Monetary Statistics; Annual Statistical Digest). RDD is reserves held by banks on demand deposits, calculated as: RDD=RES-(RESREQ*TD); where RES=VC+DEPFED. VC is vault cash (1914-1960 from Friedman and Schwartz (1963); 1961-1972 from Survey of Current Business). DEPFED is deposits of banks at the Fed (Friedman and Schwartz (1963); Annual Statistical Digest). TD is time deposits (Bankings and Monetary Statistics; Annual Statistical Digest). RESREQ is the reserve requirement on time deposits (Comptroller of the Currency Reports (1914, 1917); Banking and Monetary Statistics), RDISC is the discount rate at the Federal Reserve Bank of New York (Banking and Monetary Statistics; Annual Statistical Digest). BOR is member bank borrowings at the Fed (Banking and Monetary Statistics). USDD is government demand deposits at commercial banks, adjusted for a 1 percent interest payment by banks, 1909-32 (Friedman and Schwartz (1963); Banking and Monetary Statistics; Annual Statistical Digest). RGOVD is reserves held by commercial banks against government demand deposits, computed as: RGOVD=(RDD/DD)USDD, except for years when government demand deposits were exempted from reserve requirements. SERCRG is the service change on demand deposits. Annual observations on member banks service charges on demand deposit accounts for 1934-1968 from Banking and Monetary Statistics. Annual observations on insured commercial bank service charges for 1942-1972 from FDIC Annual Reports were used to update the first series. Monthly observations were estimated using demand deposits at member banks according to the Chow-Lin (1971) procedure.

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D. Expected Capital Losses on Demand Deposits

For the years 1914-1935, "losses on assets sold by order of court," from the Comptroller of the Currency Reports, were used as a proxy. Total losses from the year the bank was finally closed were assigned to the date the receiver was appointed. For the years 1934-1944 the FDIC Annual Reports provide monthly observations on the uninsured losses to depositors at insured banks. For the years 1934-1962 the FDIC Annual Reports provide monthly observations on the losses to depositors of noninsured banks. Over the period 1934-1972 the FDIC Annual Reports provide monthly observations on FDIC payoffs to banks to cover losses. The uninsured losses to depositors at insured banks series was updated by using the payoffs series. The resulting series was then added to the series of losses to depositors of noninsured banks. Finally, the resulting series was smoothed to be consistent with the series from the Comptroller Reports. Total losses for each date were divided by total deposits to form the proxy series for actual losses. Reported results are not significantly different if losses after 1934 are set to zero.

E. Expected Capital Losses on Demand Deposits

As before, Tobit estimation methods were used to obtain the expected capital loss on deposits. Columns (1) and (2) of Table 2 are the estimated coefficients and standard errors, respectively, obtained using Tobit. Columns (3) and (4) are the OLS estimates, used as starting values.

F. Unanticipated Liabilities of Failed Businesses

The series, compiled by Dun and Bradstreet, is for commercial failures (Survey of Current Business, monthly). Coverage of the series was changed several times because of changing legal definitions of bankruptcy, so four overlapping series were smoothed. Anticipated liabilities of failed businesses were then computed from:

$$(1 - \underset{(.0361)}{.1067}L^{12})(1 - L) Z_t = -(\underset{(.0277)}{.623}L - \underset{(.0285)}{.096}L^8 - \underset{(.0295)}{.0434}L^{15} + \underset{(.0296)}{.0716}L^{18} - \underset{(.0286)}{.0571}L^{22}) U_t$$

$$\hat{\sigma} = .3014 \quad Q(24) = 17.26 \quad (24 \text{ d.f.})$$

Z_t is the log of the failure liabilities. The cyclical component of the liabilities of failed businesses was estimated by the Beveridge-Nelson (1981) procedure using the above model.

G. Index of Industrial Production

The index, 1919-1972, is monthly, from Industrial Production Indexes (Board of Governors of the Federal Reserve System).

H. Deseasonalization

The liabilities of failed businesses and the interest rate on commercial paper were deseasonalized for some of the estimated equations and tests reported in Gorton (1987) and below. Deseasonalization was performed using monthly seasonal dummies, as follows:

$$BLIA_t = \underset{(5.21)}{45.81} \text{ Jan} + \underset{(5.21)}{43.65} \text{ Feb} + \underset{(5.21)}{48.69} \text{ Mar} + \underset{(5.21)}{43.48} \text{ May} + \underset{(5.21)}{41.93} \text{ Jun} + \underset{(5.21)}{42.11} \text{ Jul}$$

$$+ \underset{(5.21)}{44.05} \text{ Aug} + \underset{(5.21)}{38.25} \text{ Sep} + \underset{(5.21)}{41.42} \text{ Oct} + \underset{(5.21)}{43.07} \text{ Nov} + \underset{(5.21)}{44.35} \text{ Dec}$$

$$R^2 = .5274$$

$$COMP_t = \underset{(.003)}{.0324} \text{ Jan} + \underset{(.003)}{.0320} \text{ Feb} + \underset{(.003)}{.0325} \text{ Mar} + \underset{(.003)}{.0323} \text{ May} + \underset{(.003)}{.033} \text{ Jun} + \underset{(.003)}{.0325} \text{ Jul}$$

$$+ \underset{(.003)}{.0325} \text{ Aug} + \underset{(.003)}{.0330} \text{ Sept} + \underset{(.003)}{.0332} \text{ Oct} + \underset{(.003)}{.0328} \text{ Nov} + \underset{.003}{.0331} \text{ Dec}$$

$$R^2 = .6570$$

Standard errors are in parentheses.

IV. DATA FOR THE PERIOD 1873-1934

The two previously described data sets, 1873-1914 (five observations per year), and 1914-1972 (monthly) were put together for the period 1873-1934 as follows. Five observations per year, February, April, June, October, December, were picked off the second data set. Results are not particularly sensitive to this choice. The 1873-1914 data include demand and time deposits at national banks. This series was used to estimate the missing values from the Friedman-Schwartz (1970) quarterly deposit series. The Chow-Lin (1971) procedure was used. Since this series includes demand and time deposits at all commercial banks, time deposits were added to demand deposits for the 1914-1934 period of the monthly series. Vault cash was also adjusted to be consistent.

With five observations per year, over 1873-1934, the following model was estimated for the log of the liabilities of failed businesses:

$$\underset{}{(1} + \underset{(.0559)}{.5211L} + \underset{(.0606)}{.419L^2} + \underset{(.0606)}{.1792L^3} + \underset{(.0534)}{.27L^4})\,(1-L)\,Z_t =$$

$$-(\underset{(.0533)}{.2118L^6} - \underset{(.0506)}{.1126L^{10}} + \underset{(.0512)}{.1494L^{18}} + \underset{(.0536)}{.1651L^{22}} + \underset{(.0534)}{.0883L^{23}})\,U_t$$

$$\hat{\sigma} = .4762 \quad Q(24) = 13.38 \quad (24 \text{ d.f.})$$

The residuals from this model were taken as the unanticipated liabilities of failed businesses (UNLIA). The above model was also used to compute the cyclical component of the liabilities of failed businesses according to the Beveridge-Nelson (1981) procedure.

Expected capital losses on demand deposits were re-estimated using Tobit, as before. Table 3 provides the estimates in Columns (1) and (2). As before, Columns (3) and (4) are the OLS estimates.

Deseasonalization for the period 1873-1934 was performed as follows:

$$BLIA_t = \underset{(2.64)}{43.29}\text{ Winter} + \underset{(2.99)}{35.74}\text{ Spring} + \underset{(3.18)}{35.67}\text{ Fall}$$

$$R^2 = .7400$$

$$COMP_t = \underset{(.0026)}{.0495}\text{ Winter} + \underset{(.003)}{.0484}\text{ Spring} + \underset{(.0538)}{.0538}\text{ Fall}$$

$$R^2 = .7400$$

V. BANK FAILURES

The figures for the actual percentage of national and all banks failing in Table 8 of Gorton (1987) require some discussion. Monthly observations on bank suspensions, by class of bank, for 1921-1936, are from the Federal Reserve Bulletin, September 1937. According to the Federal Reserve system:

> Bank suspensions comprise all banks closed to the public, either temporarily or permanently by supervisory authorities or by the banks' boards of directors on account of financial difficulties, whether on a so-called moratorium basis or otherwise, unless the closing was under a special holiday declared by civil authorities. If a bank closed under a special holiday declared by civil authorities and remained closed only during such holiday or part thereof, it has not been counted as a bank suspension. Banks which were reopened or taken over by other institutions after suspension have been included as suspensions. The figures for 1933 include all banks not granted licenses following the banking holiday in March 1933 which were subsequently placed in liquidation or receivership (including unlicensed banks or succeeded by other banks), and all other unlicensed banks which were not granted licenses to reopen by June 30, 1933. (Bulletin, September 1957, p. 866)

This definition of suspension includes more than bank failures. In particular, it includes banks which closed temporarily. This is likely to be a problem for the December 1929 date, as discussed below, and less of a problem for the June 1920 date (because no temporary suspension of convertibility of deposits into currency occurred).[2] The Fed data was used for the actual percentage of all banks failing from January 1921 (the date the data series begins) through the trough (July 1921). Because, strictly speaking, the Fed definition is not comparable, the number of failures for that period, for national banks, is from the Comptroller Reports of 1925 (p. 231-2). (Using the Fed data for January 1921-July 1921, the percentage of national banks failing was .76.)

Table 8 of Gorton (1987) lists two numbers, for the percentage of national banks failing, and for the percentage of all banks failing, from December 1929 through March 1933. In each case, the first number listed uses the Federal Reserve System's definition of suspension, quoted above, which is not strictly comparable. It is biased upwards, as explained above. The second number, in the case of national banks, uses the number of receiverships closed during 1930-1933. If, instead, the 1935 Comptroller Report is used, the percentage of failures of national banks for the period December 1929-March 1933 is 11.87. This number does not have the problem of definition, like the Fed number. However, it does not seem to treat the banking holiday correctly since it assigns the failure date to the date the receiver was appointed.

During the banking holiday many receivers were appointed after March 1933. According to Upham and Lamke (1934, p. 46): "Most of the insolvent banks were permitted to operate on a restricted basis for some time before being reorganized or placed in receivership." Thus, if the Comptroller Report numbers are taken through 1933, the percentage failing rises to 16.6, and through 1934, the percentage failing is 21.68. The licensing process, allowing banks to reopen, which followed the banking holiday lasted until 1937. By December 30, 1934 there were still 1,769 banks unlicensed. Thus, for national banks, the 21.68% number, which is roughly mid-way between the two numbers presented in Table 8 of Gorton (1987), may be reasonable. The numbers in Table 8, for national banks, are the upper and lower limits.

Similarly, for the actual percentage of all banks failing, Table 8 of Gorton (1987) presents upper and lower limits. The first number (36.08%) uses the Fed definition of suspension. The second number was computed using the number of banks which did not reopen after the March 1933 banking holiday (2,132), instead of the Federal Reserve number for suspensions during March 1933 (3,460). The second number of 2,132 banks which did not reopen after the banking holiday is from Friedman and Schwartz (1963, p. 426). The Friedman and Schwartz measure attempts to adjust the Fed's definition so that the number is comparable to the pre-Fed measures.

The Fed definition of suspension includes banks which temporarily restricted convertibility before the banking holiday was declared. Supposing that most of this happened the week before the banking holiday was declared, Friedman and Schwartz replace the number the Fed gives for March 1933 with the number of banks which actually did not reopen after the banking holiday. The difference between these two numbers, however, may include banks other than those which temporarily suspended themselves. It could include, for example, banks which actually failed during the first week of March 1933.

VI. ECONOMETRIC CONSIDERATIONS

The model of depositor behavior studied in Gorton (1987) consists of three equations:

$$[\frac{D_t}{C_t} + 1]^2 = \alpha_0 + \alpha_1 t + \alpha_2 t^2 + \alpha_3(1 + r_{dt} - \pi_t^e) + \alpha_4 COV_t^e + u_t \qquad (1)$$

$$\alpha_3 \equiv \mathrm{Exp}[\beta_1 \ln(X_{t+1}/X_t) + \beta_2 \ln X_t]$$

$$\pi_t = Z_t\gamma + \varepsilon_t \qquad \text{if } Z_t\gamma + \varepsilon_t > 0 \tag{2}$$
$$= 0 \qquad \text{if } Z_t\gamma + \varepsilon_t \leq 0$$

$$COV_t \equiv (X_{t+1} - X_t)\pi_t = W_t\delta + \mu_t \qquad \text{if } Z_t\gamma + \varepsilon_t > 0 \tag{3}$$
$$= 0 \qquad \text{if } Z_t\gamma + \varepsilon_t \leq 0$$

There are three main, interrelated, difficulties with estimating the above model of depositor behavior. First, there is the issue of joint estimation of the three (or possibly two) equations. Second, there are issues surrounding the specification and estimation of the perceived covariance term of equation (3). Thirdly, there are alternative specifications of equation (1) and, hence, there are issues of functional form. These are discussed in turn.

A. Joint Estimation

In principle the preferred estimation procedure would be to jointly estimate the three equations, as specified above, with a maximum likelihood procedure. Such a procedure, however, is (currently) computationally impossible because of the truncation of the capital loss variable. π_t is the capital loss on a dollar of demand deposits. Since demand deposits are debt contracts there are never capital gains. Consequently, equation (2) is truncated and, when estimated as a single equation, requires a TOBIT procedure.

But there is a further difficulty. Equation (3) cannot be separately estimated as a TOBIT problem. The truncation point for equation (3) comes from equation (2). The right-hand side of equation (3) can take on any value if equation (2) is ignored. Equations (2) and (3) could perhaps be jointly estimated along the lines of Heckman (1974) (also see Maddala (1983)), but then equation (1) could not be jointly estimated with either of the other two equations. Equations (1) and (3) can be jointly estimated only at the cost of ignoring the constraint on the capital loss variable implied by equation (2).

The basic strategy in Gorton (1987) is to estimate the three equations separately, though below some joint estimates of (1) and (3) are reported. Whether the three equations are separately estimated, or (1) and (3) jointly estimated, with (2) separately estimated, equation (3) is not treated correctly. If it is estimated separately we can try to approximate the restriction from (2); if it is estimated jointly, the restriction from (2) is ignored.

B. Estimation and Specification of COV_t

The above estimation difficulties indicate that it is not currently possible to test the cross-equation restrictions implied by the above model. When the three equations are separately estimated, Gorton (1987) proposes a restriction on the perceived risk variable to approximate the restriction implied by the truncation point of equation (2). As explained in Gorton (1986), the restriction is to set positive values of the perceived risk variable to zero when entered into the currency-deposit ratio equation. This restriction partly tests a hypothesis about depositor behavior. Recall that the perceived risk variable could turn out to be positive for two reasons: the coincidence of a declining income and capital gains which is the case the truncation point from equation (2) should eliminate; and the coincidence of a rising income and capital losses which should not be eliminated. In the latter case, however, the hypothesized consumption smoothing behavior of depositors would imply little change in the currency-deposit ratio since the losses are coinciding with a rising income.

Table 4 contains a small sample of the indirect evidence concerning the appropriateness of the exogenous constraint on perceived risk, namely,

$COV_t^e \leq 0$. As can be seen from Table 4 when the estimate of perceived risk is divided into two components, one positive or zero and one negative or zero, the former is always insignificant. When no restriction is imposed, the fit deteriorates slightly compared to when only the nonpositive values are used. This pattern of results is independent of the definition of COV, the estimation procedure, and the functional form of the deposit-currency ratio equation.

C. Functional Form

As explained in Gorton (1987) specification tests of the type proposed by White (1980, 1981) are inappropriate here because of the time trends in equation (1). However, a modified form of these tests can be conducted and these tests are reported on subsequently. Nevertheless the modified tests are simply incorrect and so the basic issue of functional form is unresolved. An alternative approach to the issue of functional form, albeit primitive, is to simply try a large number of alternatives. In what follows, only one other alternative is systematically reported. That alternative roughly corresponds to the case of equation (1) above when α_3 is constant across time. Also, the alternative is a currency-deposit ratio equation:

$$\ell n\left(\frac{C_t}{D_t}\right) = \alpha_0 + \alpha_1 t + \alpha_2 \ell n(1+r_{dt}-\pi_t) + \alpha_3 COV_t^e + \varepsilon_t \qquad (4)$$

This form of the equation gives results which are essentially the same as those given by equation (1) above. Equation (4), since it is linear, is also convenient for a number of other purposes.

D. Summary

The difficulties of estimating and testing the model (1) - (3) motivated the nonparametric tests in Gorton (1987). That is, the parametric form of (1), the deposit-currency ratio equation, is circumvented by examining (2), (3), and a large number of other variables at the panic dates. This procedure is also fraught with difficulties, but broadly confirms the pattern of results reported on in Gorton (1987) and in the next sections.

VII. FURTHER RESULTS FOR THE NATIONAL BANKING ERA

This section provides a more complete set of results than reported in Gorton (1987).

A. Estimates of Perceived Risk

As explained in Gorton (1987) there are four conceivably reasonable definitions of COV_t: (1) $COV_t \equiv (X_{t+1}-X_t)(r_{dt}-\pi_t)$; (2) $COV_t \equiv (X_{t+1}-X_t)\pi_t$; (3) $COV_t \equiv (X_t-X_{t-1})(r_{dt}-\pi_t)$; (4) $COV_t \equiv (X_t-X_{t-1})\pi_t$. Since consumption (X) is proxied for by pig iron production, the change in consumption from date t to t+1 may well best be proxied for by the change in pig iron production from date t-1 to t. In general, the results of estimating the model (1)-(3), above, are not particularly sensitive to this dating issue.

The other issue concerns r_{dt}. Since r_{dt} is the promised rate of return on demand deposits, it is known <u>ex ante</u>, i.e., at time t. The hypothesis of a panic causing information asymmetry implies that what is unknown to depositors is the covariance of the change in consumption and the capital loss. Since r_{dt} is known, the covariance of the change in consumption and r_{dt} is known, and constant. So definitions (1) and (3) do not make sense. Empirically, these definitions do not do as well.

Aside from the definition, there are the issues of estimating COV_t with: (1) deseasonalized or nondeseasonalized data; (2) contemporaneous predictors or only lagged variables; (3) use of instrumental variables for the contemporaneous value of the liabilities of failed businesses. These issues are discussed in Gorton (1987). Here a sample of the possible ways of defining and estimating COV_t is presented. These results are in Tables 5-9.

Table 9 presents some results using instrumental variables for the contemporaneous value of the liabilities of failed businesses. As explained in Gorton (1987) there is the possibility of inconsistent estimates of COV_t because of confounding between the Failure Hypothesis and the Recession Hypothesis. The inconsistency can be eliminated using instruments. The instruments were the contemporaneous value of Frickey's (1947) Index of Production for Transportation and Communication and four lags, and the contemporaneous value and four lags of loans and discounts at national banks (Comptroller Reports).

Also, in Table 9, column (5) presents the estimated COV equation estimated jointly with equation (9) of Table 14, i.e., the log-linear currency-deposit ratio equation.

B. Nonlinear Deposit-Currency Ratio Equations

Tables 10-13 present the estimates of the nonlinear deposit-currency ratio equation, (1) above, using various definitions of COV_t, seasonalized/deseasonalized data to estimate COV_t, and contemporaneous/only lags to estimate COV_t.

C. Log-linear Currency-Deposit Ratio Equations

Tables 14-17 present the results of estimating equation (4), the log-linear currency-deposit ratio equation, using various COV_t^e estimates. These results broadly confirm the results using the nonlinear equation. Though omitted, the dummy variable for the panics is always insignificant in these equations. If dummies for each panic date are separately included, these too are insignificant in the linear version.

D. Functional Specification

In general, the functional specification of the deposit-currency ratio equation, equation (1), could and should be tested using the specification tests developed in White (1980, 1981) and Domowitz and White (1982). Diagnostic tests of nonlinear misspecification, however, are not applicable when the equation includes trends. (Assumption 4 of Domowitz and White (1982) is violated.)

Suppose that a two-step procedure is adopted. In step one the deposit-currency ratio equation is estimated. Then using the estimated coefficients on the trend terms, the trends are subtracted from the dependent variable. Finally, in step two, the "detrended" deposit-currency ratio is again estimated, omitting the trends as explanatory variables. The residuals from step two can be used in the artificial regression of Domowitz and White (1982, p. 50) and a diagnostic test conducted. Not surprisingly, however, while coming "close," the deposit-currency ratio equation does not pass this test. Neither does the log-linear form.

E. Cross-Equation Restriction Tests

Entering the perceived risk measure, (3), into the deposit-currency ratio equation, (1), imposes a set of restrictions on the manner in which the predictors of the risk measure are allowed to influence the deposit-currency ratio. If the measure of perceived risk is appropriate, then the imposition of the restrictions should not significantly worsen the fit of the deposit-currency ratio equation. It is well-known that such cross-equation restrictions can be tested (e.g., Barro (1981)). In effect, the test is for whether there is additional information in the predictors of COV_t which affects the deposit-currency ratio through some channel other than perceived risk. Unfortunately, this type of test is inappropriate in the setting here.

Recall that the deposit contract between banks and depositors restricts the rate of return on deposits such that no capital gains can be earned, i.e., $\pi_t \geq 0$. In constructing the expected value of this measure it is not possible to impose the restriction that there be no capital gains. One way of approximating this restriction is to set positive values of the perceived risk measure to zero. The predicted value of the risk measure could be positive because capital losses are expected to coincide with a consumption rise or because a capital gain is coinciding with a consumption decline. In the latter case the positive value results from failing to constrain the capital loss to be nonnegative. In the first case, the capital loss is given little weight in utility terms because it coincides with rising consumption, the hypothesis discussed above. The restriction of perceived risk to nonpositive values is a reasonable approximation insofar as the hypothesized depositor behavior is correct. The effect of restricting the perceived risk measure to nonpositive values is to raise the estimated coefficients on perceived risk, while leaving the coefficients on the other variables essentially unchanged. Imposition of the restriction also improves the fit of the estimated equations.

Further (indirect) evidence on the appropriateness of the restriction can be adduced as follows. Suppose the estimated perceived risk series is divided into two variables. The first variable is the nonpositive part of the series, i.e., positive values are set to zero. The second variable is the nonnegative part of the series, i.e., negative values are set to zero. Then the two variables are entered in the currency-deposit ratio equation. If the asymmetry of the deposit contract can be captured with the empirical approximation of restricting the values of the perceived risk variable, then the second variable, consisting of only nonnegative values, should turn out to be insignificant. When the above experiment is conducted for the equations listed in Table 3 of the main text (Gorton (1987)), the nonnegative measure of perceived risk is always insignificant.[3] Though it cannot be tested directly, imposition of the restriction that the perceived risk measure take on nonpositive values seems appropriate. Theoretically and empirically, the restriction seems appropriate, making the cross-equation restrictions tests inappropriate.[4]

F. Nonparametric Tests

Gorton (1987) examines the behavior of the data at the panic dates in several ways. Further evidence is provided here on the timing of the spikes in perceived risk and the relation of these spikes to other variables, using Spearman rank correlation coefficients. A basic problem with these tests is that when COV_t is defined using the difference between next period's pig iron production and this period's pig iron production, the predicted value of COV is zero at more than one panic date. Consequently, the timing cannot be examined and rank correlation coefficients cannot be computed. This, clearly, casts doubts on the hypothesis that panics are predictable.

As explained in Gorton (1987) the hypotheses that panics are systematic and predictable imply that at panic dates there should be spikes in the perceived risk measure which are not present since the last business cycle peak. Tables 18 and 19 replicate the examination of this timing pattern which was conducted in Gorton (1987), except on other measures of perceived risk.

Table 20 presents the Spearman rank correlation coefficients on three measures of perceived risk not examined in Gorton (1987). In Table 20, $COV_t(1) \equiv (Pigiron_t - Pigiron_{t-1})(R_{dt} - LOSS_t)$, and is estimated using contemporaneous and lagged predictors, and nondeseasonalized data. $COV_t(3)$ is the same as $COV_t(1)$, but uses deseasonalized data, $COV_t(2) \equiv (Pigiron_t - Pigiron_{t-1}) \cdot LOSS_t$, and is predicted using only lagged predictors and nondeseasonalized data.

VIII. FURTHER RESULTS FOR 1873-1934

Gorton (1987) does not report any of the estimated equations for this period. Instead, the results of tests using the estimated equations are reported. The estimated equations for perceived risk and the deposit-currency ratio are reported here.

A. Estimates of Perceived Risk

Tables 21-26 present the various estimates of the perceived risk equation for the period 1873-1914 and the two sub-periods. Dummy variables for World War I and the banking holiday during 1933 were not significant when included in these equations.

B. Nonlinear Deposit-Currency Ratio Equations

Tables 27-30 present the estimates of the nonlinear deposit-currency ratio equation, (1) above, using the different definitions and estimation procedures of COV_t. Only a sample of the full set of results are provided.

C. Log-linear Currency-Deposit Ratio Equations

Tables 31 and 32 report the estimated currency-deposit ratio equations for the whole period and two sub-periods. In these tables the perceived risk measures for each period were estimated without deseasonalization. Table 31 constrains the perceived risk measure to be nonpositive. Table 32 does not constrain the perceived risk measure. Dummy variables for World War I and the 1933 banking holiday are included.

Tables 33 and 34 also report the estimated currency-deposit ratio equations for the whole period and two sub-periods, but in these tables the perceived risk measures for each period were estimated using deseasonalized data. Table 33 constrains the perceived risk measure to be nonpositive; Table 34 does not constrain the perceived risk measure.

D. Tests of Structural Change

Gorton (1987) asserts that the perceived risk equations and the deposit-currency ratio equations exhibit significant structural changes after 1914. Chow tests on the log-linear currency-deposit ratio equation also show evidence of structural change. The null hypothesis of a stable relationship is rejected in every case for all three equations. Below a representative sample of the results is presented.

When $COV_t \equiv (Pigiron_{t+1} - Pigiron_t)LOSS_t$, and is estimated using only lagged predictors, and nondeseasonalized data, the computed F-statistic is 3.1136 ((24,264) degrees of freedom). The null hypothesis of a stable relationship is rejected at the .05 level ($F^*_{.05} \approx 1.52$). When $COV_t \equiv (Pigiron_t - Pigiron_{t-1})(R_{dt} - LOSS_t)$, and is estimated using contemporaneous and lagged predictors, and deseasonalized data the computed F-statistic is 2.822. With the same definition of COV_t, but nondeseasonalized data, and no contemporaneous predictors, the computed F-statistic is 2.5464. When $COV_t \equiv (Pigiron_t - Pigiron_{t-1})LOSS_t$, and is estimated using contemporaneous predictors and nondeseasonalized data, the F-statistic is 4.1951. In these cases, and every other case, the hypothesis of a stable relationship is rejected.

When the above four measures of perceived risk are used in the nonlinear deposit-currency ratio equation, and the deposit-currency ratio is examined for evidence of structural change, the computed F-statistics are 2.8144, 3.3269, 3.4085, and 3.2926, respectively. Gallant (1975) explains this use of the F-statistic in the nonlinear case. The critical value at the .05 level is $F^* \approx 1.22$, so in these cases, and in every other case, the hypothesis of a stable relationship is rejected.

The null hypothesis of a stable relationship is also rejected, at the .01 level, for the log-linear currency-deposit ratio equation. When this equation is estimated with a perceived risk measure using only lagged predictors and nondeseasonalized data $\left(COV_t \equiv (Pigiron_t - Pigiron_{t-1})LOSS_t\right)$, the computed F-statistic is 140.786 when perceived risk is unconstrained, and 140.156 when perceived risk is constrained to be nonpositive ((4,302) degrees of freedom). The critical F-value at .01 is 3.32. Similarly, using the same perceived risk measure based on deseasonalized data, the computed F-values for currency-deposit ratio equations with unconstrained and constrained perceived risk are 140.737 and 139.828, respectively. In these, and every other case, the null hypothesis of a stable relationship is rejected.

IX. FURTHER RESULTS FOR 1914-1972

Gorton (1987) does not report any of the estimated equations for this period, but only reports results of tests on the equations. A sample of the estimated equations for perceived risk and the deposit-currency ratio are reported here.

A. Estimates of Perceived Risk

Tables 35-38 provide a sample of the estimates of the perceived risk variable for the period 1914-1972 and sub-periods. Omitted estimated equations do not seriously differ from those included here.

B. Nonlinear Deposit-Currency Ratio Equations

Table 39 contains the estimated deposit-currency ratio equation for the periods 1914-1972 and 1914-1934 using the perceived risk measures from Tables 35-38. The nonlinear deposit-currency ratio equation could not be estimated over the period 1935-1972 because the capital loss on deposits is almost always zero over this period, causing a singularity.

C. Log-linear Currency-Deposit Ratio Equations

Tables 40-43 provide estimates of the log-linear currency-deposit ratio equation using a variety of different measures of the perceived risk variable. These tables also include dummy variables for the Bank Holiday, World War II, and the doubling of reserve requirements (in three steps during a nine month period of 1937 (see Friedman and Schwartz (1963), p. 517 ff.)).

D. Tests of Structural Change

Gorton (1987) asserts that the introduction of deposit insurance significantly altered depositor behavior. Both the perceived risk equations and the nonlinear deposit-currency ratio equations exhibit significant structural changes after 1934. Chow tests on the log-linear currency-deposit ratio equation also show evidence of structural change. Only a representative sample of the results is presented here.

When $COV_t \equiv (Inpro_t - Inpro_{t-1})(R_{dt} - LOSS_t)$, where Inpro is the Index of Industrial Production, and COV_t is estimated using deseasonalized data, and contemporaneous and lagged predictors, the computed F-statistic is 2.187. When $COV_t \equiv (Inpro_t - Inpro_{t-1})LOSS_t$, and is estimated using only lagged predictors, and deseasonalized data, the computed F-statistic is 1.457. For $COV_t \equiv (Inpro_t - Inpro_{t-1})(R_{dt} - LOSS_t)$, and is estimated using nondeseasonalized data, and only lagged predictors, the computed F-statistic is 2.551. When $COV_t \equiv (Inpro_t - Inpro_{t-1})LOSS_t$ and is estimated using contemporaneous and lagged predictors, and deseasonalized data, the computed F-statistic is 1.51429. In these cases, and all others, the null hypothesis of a stable relationship across the introduction of deposit insurance in 1934 is rejected at the .05 level ($F^*_{.05} \approx 1.35$).

When the above four measures of perceived risk are used in the nonlinear deposit-currency ratio equation, and the deposit-currency ratio equation is examined for evidence of structural change, the computed F-statistics are 5.047, 3.157, 2.919, and 3.144, respectively. (See Gallant (1975) for a discussion of the test procedure in this nonlinear case.) The critical value at the .05 level is $F^* \approx 2.0$, so in these, and in every other case, the hypothesis of a stable relationship is rejected.

The null hypothesis of a stable relationship is also rejected, at the .01 level, for the log-linear currency-deposit ratio equation. For example, when this equation is estimated using a perceived risk measure based on nondeseasonalized data and contemporaneous as well as lagged predictors, the computed F-statistic is 13.585 when perceived risk is unconstrained, and 15.226 when perceived risk is constrained to be nonpositive ((7,615) degrees of freedom). The critical F-value at .01 is 2.64. Similarly, using the perceived risk measure based on deseasonalized data and contemporaneous as well as lagged predictors, the F-values for currency-deposit ratio equations with unconstrained and constrained perceived risk, respectively, are 15.363 and 15.514.

X. THE TWENTIES AND THIRTIES WITHOUT THE FED

Gorton (1987) reports that the process generating the liabilities of failed businesses did not change with the introduction of the Federal Reserve System. The claim that there was no structural change in the process is the basis for the counterfactual. The evidence for the claim is a number of Chow tests on autoregressive models for the liabilities process. For an AR(10) with no intercept the computed F-statistic is 1.6367 compared to a critical value of $F^*_{.01} = 2.32$ ((10,288) degrees of freedom.) For an AR(10) with an intercept the computed F-statistic is 1.1895 with (11,286) degrees of freedom. Similarly, the computed F-statistic for an AR(12) with no intercept is 1.4954 and with an intercept, 1.1500, with (12,284) and (13,282) degrees of freedom, respectively. In each case the null hypothesis of a stable relationship is not rejected at the .01 confidence level.

XI. CONCLUSION

The basic issues raised in Gorton (1987) were whether panics were systematic events, i.e., events which could be explained on the basis of relations governing nonpanic times. The conclusion was that the deposit-currency ratio equation could explain banking panics. The results reported here demonstrate that that conclusion is basically robust to functional specification, data definition, and variable construction.

A stronger claim was that banking panics were predictable on the basis of prior information. In particular, information about a coming recession--a rise in the liabilities of failed businesses. The results reported here support this conclusion, though with the caveats discussed in Gorton (1987).

FOOTNOTES

[1]During banking panics private bank clearinghouses would transform the claims on individual banks (demand deposits) into claims on the clearinghouse. This transformation was accomplished by the clearinghouse "certifying" the checks or allowing individual bank checks to be exchanged for clearinghouse loan certificates. See Gorton (1985) and Gorton and Mullineaux (1986).

[2]Recall that October 1929, the date of the stock market crash, is not a data point.

[3]I am grateful to John Taylor for the suggestion of this test.

[4]In principle, the preferred estimation method would be to jointly estimate the three equations using Tobit procedures for the capital loss equation, imposing the constraint $\pi_t \geq 0$ in the process of estimating all three equations. In general, if perceived risk measures are not constrained to be nonpositive, then the cross-equation restrictions are rejected. On the other hand, if the perceived risk measures are constrained and the tests conducted, then cross-equation restrictions are accepted. (See Gorton (1987).)

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TABLE 1

Estimates of the Expected Capital Loss on Deposits, 1873-1914

Independent Variable	TOBIT (1) Coefficient	TOBIT (2) Standard Error	OLS (3) Coefficient	OLS (4) Standard Error
CONSTANT	-.0026	.68E-03	-.0017	.566E-03
$CAPLOSS_{t-1}$	.0731	.0848	.0738	.0723
$CAPLOSS_{t-2}$	.0904	.0838	.0937	.0719
$BUSLIA_t$	.105E-10	.348E-11	.981E-11	.301E-11
$BUSLIA_{t-1}$	-.264E-11	.378E-11	-.342E-11	.321E-11
$BUSLIA_{t-2}$	.669E-11	.392E-11	.465E-11	.332E-11
$BUSLIA_{t-3}$	-.265E-11	.396E-11	-.240E-11	.332E-11
$BUSLIA_{t-4}$	-.164E-11	.398E-11	-.196E-11	.329E-11
$BUSLIA_{t-5}$	.576E-11	.379E-11	.364E-11	.327E-11
$BUSLIA_{t-6}$	.574E-11	.379E-11	.603E-11	.326E-11
$BUSLIA_{t-7}$	-.101E-11	.394E-11	-.312E-11	.33E-11
$BUSLIA_{t-8}$	.532E-11	.389E-11	.508E-11	.328E-11
$BUSLIA_{t-9}$	-.216E-11	.355E-11	-.203E-11	.301E-11
$PIGIRON_t$	.621E-06	.127E-04	-.395E-07	.111E-04
$PIGIRON_{t-1}$	-.115E-04	.171E-04	-.809E-05	.149E-04
$PIGIRON_{t-2}$	-.129E-04	.17E-04	-.95E-05	.15E-04
$PIGIRON_{t-3}$	-.486E-05	.171E-04	-.456E-05	.149E-04
$PIGIRON_{t-4}$	-.794E-05	.135E-04	-.424E-05	.117E-04
$COMPAPER_t$	.0158	.0055	.0118	.0046
$COMPAPER_{t-1}$	.0195	.0056	.0149	.0052
$COMPAPER_{t-2}$	-.0189	.0061	-.0081	.0050
$COMPAPER_{t-3}$	.0131	.006	.0097	.0050
$COMPAPER_{t-4}$	-.0068	.0056	-.0042	.0047
T	.1293E-04	.3463E-05	.8281E-05	.2909E-05
σ	.8061E-03	.47E-04	--	--
R^2	--	--	.3243	

Log of the Likelihood Function = 909.962

CAPLOSS ≡ Capital loss on deposits; BUSLIA ≡ Liabilities of failed businesses; PIGIRON ≡ Pigiron production; COMPAPER ≡ Interest rate on commercial paper; T ≡ Time trend.

TABLE 2

Estimates of the Expected Capital Loss on Deposits, 1919-1972

Independent Variable	TOBIT (1) Coefficient	TOBIT (2) Standard Error	OLS (3) Coefficient	OLS (4) Standard Error
CONSTANT	-.1334E-02	.4054E-03	-.5622E-04	.1646E-03
$CAPLOSS_{t-1}$	.1008E-01	.8002E-01	.8527E-02	.4211E-01
$CAPLOSS_{t-2}$	-.6750E-01	.1002	.1576E-01	.4202E-01
$CAPLOSS_{t-3}$	.2995E-01	.7374E-01	.4737E-01	.4060E-01
$CAPLOSS_{t-4}$	.1695	.7634E-01	.1319	.4024E-01
$CAPLOSS_{t-5}$	.2207	.7769E-01	.1961	.4213E-01
$CAPLOSS_{t-6}$	.1116	.7874E-01	.7050E-01	.4213E-01
$CAPLOSS_{t-7}$	-.4395E-01	.8346E-01	-.2202E-01	.4201E-01
$BUSLIA_{t}$	.1344E-06	.3964E-05	-.8831E-06	.1945E-05
$BUSLIA_{t-1}$	.2729E-05	.4035E-05	.1339E-06	.1983E-05
$BUSLIA_{t-2}$	.1385E-05	.4154E-05	-.3252E-06	.2053E-05
$BUSLIA_{t-3}$	-.1627E-04	.4492E-05	-.8218E-05	.2054E-05
$BUSLIA_{t-4}$	-.2680E-05	.4612E-05	-.1335E-05	.2089E-05
$BUSLIA_{t-5}$	.1630E-04	.4023E-05	.1005E-04	.2075E-05
$BUSLIA_{t-6}$	-.5818E-05	.4463E-05	-.2576E-05	.2112E-05
$BUSLIA_{t-7}$	.8783E-05	.3992E-05	.7215E-05	.2100E-05
$BUSLIA_{t-8}$	.9972E-05	.4162E-05	.6073E-05	.2100E-05
$BUSLIA_{t-9}$	-.7672E-05	.4095E-05	-.3802E-05	.2114E-05
$BUSLIA_{t-10}$	-.3299E-05	.4419E-05	-.1886E-05	.2153E-05
$BUSLIA_{t-11}$	.2820E-05	.4143E-05	.8169E-06	.2138E-05
$BUSLIA_{t-12}$	.1850E-05	.4220E-05	.1899E-05	.2190E-05
$BUSLIA_{t-13}$	.1158E-05	.4591E-05	.1297E-05	.2130E-05
$BUSLIA_{t-14}$	-.1036E-04	.4862E-05	-.5084E-05	.2136E-05
$BUSLIA_{t-15}$	.1181E-04	.3948E-05	.5527E-05	.2137E-05
$BUSLIA_{t-16}$	.1003E-04	.4291E-05	.3699E-05	.2161E-05
$BUSLIA_{t-17}$	.1202E-06	.4436E-05	-.3585E-05	.2177E-05
$BUSLIA_{t-18}$	-.4115E-05	.4300E-05	-.5794E-05	.2236E-05
$BUSLIA_{t-19}$	.4374E-05	.4898E-05	.3180E-05	.2250E-05
$BUSLIA_{t-20}$	-.1372E-04	.5337E-05	-.7148E-05	.2314E-05
$BUSLIA_{t-21}$	-.7544E-06	.4636E-05	-.1275E-05	.2302E-05
$BUSLIA_{t-22}$	.1253E-04	.4428E-05	.7713E-05	.2273E-05
$BUSLIA_{t-23}$	-.6778E-05	.4826E-05	-.4057E-05	.2216E-05
$BUSLIA_{t-24}$	.1093E-04	.4314E-05	.3200E-05	.2186E-05
$IPRO_{t}$	.6780E-04	.4373E-04	.4164E-04	.1885E-04
$IPRO_{t-1}$	-.4658E-04	.5626E-04	-.3088E-04	.2431E-04
$IPRO_{t-2}$	-.2109E-03	.5247E-04	.9234E-04	.2424E-04
$IPRO_{t-3}$	.7532E-04	.5365E-04	.5302E-04	.2426E-04

TABLE 2 - Cont'd

$IPRO_{t-4}$	.9082E-05	.6200E-04	-.1727E-04	.2407E-04
$IPRO_{t-5}$	.2951E-04	.6433E-04	.3463E-04	.2421E-04
$IPRO_{t-6}$	.9280E-04	.5964E-04	.4232E-04	.2423E-04
$IPRO_{t-7}$	-.8815E-04	.5590E-04	-.6830E-04	.2429E-04
$IPRO_{t-8}$	.1151E-03	.5393E-04	.8526E-04	.2450E-04
$IPRO_{t-9}$	-.4783E-04	.6055E-04	-.3941E-04	.2539E-04
$IPRO_{t-10}$	-.7281E-04	.5720E-04	-.3699E-04	.2512E-04
$IPRO_{t-11}$	.3654E-04	.4365E-04	.2152E-04	.1966E-04
$COMP_{t}$	-.1672E-01	.2210E-01	-.1961E-01	.1049E-01
$COMP_{t-1}$	.2955E-02	.3001E-01	-.4245E-03	.1567E-01
$COMP_{t-2}$	.9291E-01	.2795E-01	.6447E-01	.1569E-01
$COMP_{t-3}$	-.1096	.4167E-01	-.4756E-01	.1595E-01
$COMP_{t-4}$	.3162E-01	.5175E-01	.6234E-02	.1609E-01
$COMP_{t-5}$	-.3145E-01	.5181E-01	-.1407E-01	.1609E-01
$COMP_{t-6}$	.1E-01	.4948E-01	-.5422E-02	.1608E-01
$COMP_{t-7}$	.3074E-01	.4288E-01	.3104E-01	.1607E-01
$COMP_{t-8}$	-.6359E-03	.3596E-01	-.1608E-01	.1614E-01
$COMP_{t-9}$	.1446E-01	.3192E-01	.1427E-01	.1618E-01
$COMP_{t-10}$	.1391E-01	.2872E-01	-.4346E-02	.1598E-01
$COMP_{t-11}$	-.2114E-01	.1862E-01	-.8339E-02	.1080E-01
T	.2018E-05	.2017E-05	.6768E-06	.8484E-06
σ	.1074E-02	.5221E-04	--	--
R^2	--	--	.3150	

Log of the Likelihood Function = 1206.68

CAPLOSS ≡ Capital loss on deposits; BUSLIA ≡ Liabilities of failed businesses; IPRO ≡ Index of Industrial Production; COMP ≡ Interest rate on commercial paper; T ≡ Time trend.

TABLE 3

Estimates of the Expected Capital Loss on Deposits, 1875-1934

Independent Variable	TOBIT (1) Coefficient	TOBIT (2) Standard Error	OLS (3) Coefficient	OLS (4) Standard Error
CONSTANT	-.8891E-03	.6907E-03	.1168E-04	.5009E-03
$CAPLOSS_{t-1}$	.2105	.9002E-01	.1703	.6982E-01
$CAPLOSS_{t-2}$	.9868E-01	.9048E-01	.9974E-01	.6946E-01
$BUSLIA_{t}$	-.8033E-11	.4484E-11	-.7129E-11	.3426E-11
$BUSLIA_{t-1}$	.3005E-12	.5005E-11	-.3221E-12	.3743E-11
$BUSLIA_{t-2}$	-.1623E-11	.5124E-11	.5379E-12	.3782E-11
$BUSLIA_{t-3}$	-.6573E-11	.5029E-11	-.4343E-11	.3760E-11
$BUSLIA_{t-4}$	.4147E-11	.5042E-11	.5273E-11	.3754E-11
$BUSLIA_{t-5}$	-.3953E-11	.5036E-11	-.4078E-11	.3749E-11
$BUSLIA_{t-6}$	.2864E-11	.4971E-11	.3026E-11	.3742E-11
$BUSLIA_{t-7}$	-.6196E-11	.5165E-11	-.3312E-11	.3757E-11
$BUSLIA_{t-8}$	.7728E-11	.5026E-11	.5365E-11	.3747E-11
$BUSLIA_{t-9}$	-.2742E-11	.4519E-11	-.1801E-11	.3343E-11
$PIGIRON_{t}$	-.1073E-04	.1552E-04	-.5489E-05	.1220E-04
$PIGIRON_{t-1}$	-.1809E-04	.2077E-04	-.1476E-04	.1649E-04
$PIGIRON_{t-2}$	.1639E-04	.2088E-04	.1215E-04	.1662E-04
$PIGIRON_{t-3}$	-.8831E-05	.2126E-04	.3315E-05	.1687E-04
$PIGIRON_{t-4}$	-.4433E-05	.1641E-04	-.7964E-05	.1286E-04
$COMPAPER_{t}$	.9128E-02	.6797E-02	.4832E-02	.5151E-02
$COMPAPER_{t-1}$	.3392E-02	.7037E-02	.2666E-02	.5286E-02
$COMPAPER_{t-2}$	-.5216E-03	.7227E-02	.2203E-02	.5247E-02
$COMPAPER_{t-3}$	.1961E-02	.6980E-02	-.2530E-02	.5056E-02
$COMPAPER_{t-4}$	-.4794E-03	.6534E-02	-.1556E-03	.4653E-02
T	.1319E-04	.4148E-05	.4932E-05	.2965E-05
σ	.1015E-02	.6143E-04	--	--
R^2	--	--	.1262	

Log of the Likelihood Function = 1262.87

CAPLOSS ≡ Capital loss on deposits; BUSLIA ≡ Liabilities of failed businesses; PIGIRON ≡ Pigiron production; COMPAPER ≡ Interest rate on commercial paper; T ≡ Time trend.

TABLE 4

Estimates of the Deposit-Currency Ratio, 1870–1914

$$\left[\frac{D_t}{C_t} + 1\right]^2 = \alpha_0 \text{Dummy} + \alpha_1 + \alpha_2 t + \alpha_3 t^2 + \text{EXP}\left[\alpha_4 \ln(X_{t+1}/X_t) + \alpha_t \ln X_t\right]$$

$$(1 + r_{dt} - \pi_t^e) + \alpha_5 COV_t^e + \alpha_6 COV_t^e + \alpha_7 COVP_t^e + \alpha_8 COVAL_t^e$$

(where $COV_t^e < 0$; $COVP_t^e > 0$; $COVAL_t^e$ is all values)

	α_0	α_1	α_2	α_3	α_4	α_5	α_6	α_7	α_8	R^2	COV Definition
1)	-.8788 (.5317)	2.471 (.1789)	-.0212 (.0028)	.0002 (.00001)	.0442 (.1096)	.2906 (.0298)	---	---	18.76 (15.37)	.9616	(1)
2)	---	2.58 (.1858)	-.0248 (.0027)	.0002 (.00001)	.2787 (.0312)	.2787 (.0312)	68.67 (23.69)	-43.97 (30.75)	---	.9633	(1)
3)	-.7262 (.5334)	2.538 (.1817)	-.0213 (.0027)	.0002 (.00010)	.0162 (.1100)	.286 (.0303)	46.39 (22.65)	---	---	.9633	(1)
4)	---	2.45 (.1784)	-.0205 (.0027)	.0002 (.00001)	.0375 (.1111)	.285 (.0304)	---	---	42.37 (20.19)	.9617	(2)
5)	---	2.52 (.1851)	-.0201 (.0027)	.0002 (.00001)	.0037 (.1126)	.2776 (.0314)	102.62 (32.49)	-44.91 (42.0)	---	.9636	(2)
6)	---	2.54 (.179)	-.021 (.270)	.0002 (.00001)	-.0047 (.1091)	.2860 (.0301)	82.58 (29.94)	---	---	.9637	(2)

Standard errors in parentheses. COV definiton (1): $COV_t \equiv (PIGIRON_t - PIGIRON_{t-1})LOSS_t$; estimated using nondeseasonalized data and contemporaneous predictors and instruments; (2) same as (1), but no instruments.

TABLE 5

Estimates of Perceived Risk, 1870-1914

(Nondeasonalized Data)

	Cov ≡ (DPIG) • PE		COV1 ≡ DPIG(RD - PE)		COV2 ≡ FDPIG + PE		COV3 ≡ FDPIG (RD - PE)	
Intercept	.0039	(.002)	.164	(.07)	-.004	(.002)	-.274	(.08)
COV_{t-1}	.053	(.071)	-.186	(.072)	.199	(.073)	.718	(.072)
COV_{t-2}	-.184	(.073)	-.026	(.071)	.164	(.076)	.01	(.09)
COV_{t-3}	.002	(.072)	-.061	(.071)	-.103	(.076)	-.082	(.088)
COV_{t-4}	.078	(.07)	-.156	(.073)	.019	(.076)	.106	(.089)
COV_{t-5}	-.099	(.069)	-.094	(.071)	-.206	(.076)	-.628	(.089)
COV_{t-6}	.952	(.069)	-.202	(.076)	.012	(.074)	.163	(.095)
COV_{t-7}	.005	(.069)	-.067	(.076)	.052	(.074)	.2	(.098)
COV_{t-8}	.009	(.067)	-.114	(.076)	-.152	(.074)	-.249	(.098)
COV_{t-9}	.014	(.067)	-.259	(.077)	-.090	(.074)	.107	(.100)
COV_{t-10}	-.136	(.066)	-.285	(.08)	-.075	(.071)	-.262	(.077)
$BLIA_t$	---		---		---		---	
$BLIA_{t-1}$	-.481	(.155)	-5.02	(5.75)	.461	(.19)	2.89	(6.52)
$BLIA_{t-2}$	.013	(.174)	-13.6	(6.33)	-.061	(.21)	1.37	(7.15)
$BLIA_{t-3}$	-.009	(.074)	-.852	(6.43)	.258	(.211)	2.69	(7.23)
$BLIA_{t-4}$	-.009	(.177)	.533	(6.48)	.057	(.215)	2.77	(7.34)
$BLIA_{t-5}$	.276	(.174)	13.2	(6.22)	-.043	(.21)	-8.11	(7.09)
$BLIA_{t-6}$	-.20	(.175)	-12.2	(6.30)	.065	(.21)	6.80	(7.13)
$BLIA_{t-7}$	.345	(.173)	1.95	(6.27)	-.342	(.206)	.816	(7.09)
$BLIA_{t-8}$	-.298	(.174)	-9.43	(6.39)	.313	(.207)	11.6	(7.13)
$BLIA_{t-9}$	.017	(.164)	4.42	(5.96)	.199	(.195)	-1.40	(6.66)
$COMP_t$	---		---		---		---	
$COMP_{t-1}$	-.128	(.025)	-2.41	(.937)	.083	(.032)	2.67	(1.05)
$COMP_{t-2}$	.100	(.028)	1.71	(1.01)	-.042	(.034)	-.648	(1.14)
$COMP_{t-3}$	-.062	(.028)	.267	(.969)	.013	(.033)	.092	(1.10)
$COMP_{t-4}$	.038	(.026)	-.951	(.925)	-.022	(.031)	.285	(1.03)
R^2	.29		.24		.32		.79	
F	3.32		2.55		3.76		31.21	
d.f.	187		187		186		186	

COV_t ≡ DPIG • PE ≡ $(PIGIRON_t - PIGIRON_{t-1})LOSS_t$.

$COV1_t$ ≡ DPIG • (RD - PE) ≡ $(Pigiron - Pigiron_{t-1})(R_{dt} - LOSS_t)$.

$COV2_t$ ≡ FDPIG • PE ≡ $(Pigiron_{t+1} - Pigiron_t)LOSS_t$.

$COV3_t$ ≡ FDPIG • PE ≡ $(Pigiron_{t+1} - Pigiron_t)(Rd_t - LOSS_t)$.

BLIA ≡ Liabilities of failed (nonfinancial) businesses.

COMP ≡ Interest rate on commercial paper.

Standard errors in parentheses.

TABLE 6

Estimates of Perceived Risk, 1870-1914

(Nondeseasonalized Data)

	Cov ≡ (DPIG) • PE		COV1 ≡ DPIG(RD − PE)		COV2 ≡ FDPIG + PE		COV3 ≡ FDPIG (RD − PE)	
Intercept	-.0	(.0)	.029	(.015)	0.0	(.0)	-.067	(.017)
COV_{t-1}	-.007	(.074)	-.174	(.074)	.194	(.074)	.711	(.073)
COV_{t-2}	-.182	(.075)	-.022	(.073)	.125	(.075)	.011	(.09)
COV_{t-3}	-.005	(.076)	-.077	(.073)	-.11	(.074)	-.101	(.089)
COV_{t-4}	.065	(.076)	-.14	(.073)	.035	(.076)	.108	(.089)
COV_{t-5}	-.114	(.078)	-.098	(.074)	-.235	(.077)	-.626	(.09)
COV_{t-6}	.071	(.078)	-.201	(.08)	.007	(.077)	.147	(.097)
COV_{t-7}	.003	(.078)	-.084	(.08)	.052	(.078)	.206	(.099)
COV_{t-8}	.025	(.078)	-.118	(.08)	-.147	(.078)	-.259	(.100)
COV_{t-9}	-.0003	(.073)	-.257	(.08)	-.061	(.076)	.098	(.102)
COV_{t-10}	-.146	(.072)	-.281	(.08)	-.135	(.072)	-.256	(.078)
$BLIA_t$		---		---		---		---
$BLIA_{t-1}$	-.516	(.145)	-11.6	(4.96)	.535	(.161)	11.9	(5.57)
$BLIA_{t-2}$	.0315	(.154)	-4.52	(5.20)	.089	(.173)	6.26	(5.86)
$BLIA_{t-3}$	.045	(.152)	2.13	(5.20)	-.039	(.173)	1.96	(5.85)
$BLIA_{t-4}$	.072	(.151)	.381	(5.11)	.055	(.170)	-.321	(5.71)
$BLIA_{t-5}$	.156	(.129)	1.37	(4.33)	-.031	(.146)	-1.77	(4.82)
$BLIA_{t-6}$	.02	(.173)	-5.37	(6.0)	.077	(.197)	.088	(6.76)
$BLIA_{t-7}$	1.17	(1.82)	2.97	(6.43)	-.254	(.205)	-1.9	(7.18)
$BLIA_{t-8}$	.009	(1.82)	-2.98	(6.51)	.194	(.205)	5.98	(7.18)
$BLIA_{t-9}$	-.666	(1.84)	3.04	(6.44)	.173	(.205)	-.965	(7.08)
$COMP_t$		---		---		---		---
$COMP_{t-1}$	-.005	(.02)	.689	(.685)	-.002	(.022)	-0.187	(.766)
$COMP_{t-2}$	.001	(.02)	-.571	(.686)	-.0004	(.022)	.724	(.767)
$COMP_{t-3}$	-.009	(.02)	-.655	(.706)	-.002	(.022)	.465	(.775)
$COMP_{t-4}$	.006	(.019)	.339	(.648)	-.019	(.021)	.281	(.705)
R^2	.1569		.2045		.3116		.7885	
F	1.51		2.09		3.66		30.14	
d.f.	187		187		186		186	

COV_t ≡ DPIG • PE ≡ $(PIGIRON_t - PIGIRON_{t-1})LOSS_t$.

$COV1_t$ ≡ DPIG • (RD − PE) ≡ $(Pigiron - Pigiron_{t-1})(R_{dt} - LOSS_t)$.

$COV2_t$ ≡ FDPIG • PE ≡ $(Pigiron_{t+1} - Pigiron_t)LOSS_t$.

$COV3_t$ ≡ FDPIG • PE ≡ $(Pigiron_{t+1} - Pigiron_t)(Rd_t - LOSS_t)$.

BLIA ≡ Liabilities of failed (nonfinancial) businesses.

COMP ≡ Interest rate on commercial paper.

Standard errors in parantheses. σ ≡ standard error of the regression.

TABLE 7

Estimates of Perceived Risk, 1870-1914

(Nondeseasonalized Data)

	Cov ≡ (DPIG) • PE		COV1 ≡ DPIG(RD − PE)		COV2 ≡ FDPIG + PE		COV3 ≡ FDPIG (RD − PE)	
Intercept	.004	(.002)	.184	(.072)	-.004	(.002)	-.273	(.085)
COV_{t-1}	.056	(.073)	-.183	(.072)	.198	(.076)	.726	(.072)
COV_{t-2}	-.179	(.073)	-.009	(.072)	.157	(.077)	.019	(.089)
COV_{t-3}	.006	(.973)	-.06	(.072)	-.094	(.077)	-.107	(.088)
COV_{t-4}	.078	(.07)	-.159	(.072)	.018	(.076)	.115	(.089)
COV_{t-5}	-.095	(.07)	-.088	(.071)	-.203	(.076)	-.633	(.089)
COV_{t-6}	.095	(.069)	-.197	(.076)	.012	(.074)	.195	(.095)
COV_{t-7}	.004	(.069)	-.068	(.076)	.055	(.075)	.191	(.097)
COV_{t-8}	.02	(.07)	-.095	(.077)	-.147	(.074)	-.257	(.098)
COV_{t-9}	.015	(.067)	-.256	(.077)	-.088	(.075)	.104	(.099)
COV_{t-10}	-.128	(.067)	-.263	(.081)	-.071	(.071)	-.249	(.077)
$BLIA_t$	-.112	(.067)	-5.89	(5.82)	.201	(.193)	11.96	(6.57)
$BLIA_{t-1}$	-.444	(.168)	-3.24	(6.25)	.386	(.021)	-1.34	(7.02)
$BLIA_{t-2}$	.098	(.176)	-1.52	(6.37)	-.039	(.212)	15.38	(7.15)
$BLIA_{t-3}$	-.065	(.18)	.462	(6.59)	.206	(.218)	-.212	(7.4)
$BLIA_{t-4}$	-.098	(.178)	-.304	(6.49)	.078	(.216)	4.12	(7.33)
$BLIA_{t-5}$	.293	(.176)	14.1	(6.27)	-.075	(.212)	-10.21	(2.13)
$BLIA_{t-6}$	-.206	(.175)	-12.7	(6.28)	.076	(.21)	7.58	(7.08)
$BLIA_{t-7}$	.339	(.175)	1.28	(6.36)	-.356	(.209)	.699	(7.14)
$BLIA_{t-8}$	-.285	(.175)	-8.46	(6.4)	.306	(.208)	10.61	(7.12)
$BLIA_{t-9}$	.039	(.166)	5.41	(5.97)	.17	(.2)	-3.01	(6.65)
$COMP_t$	-.02	(.025)	-1.23	(.943)	.004	(.032)	.899	(1.05)
$COMP_{t-1}$	-.115	(.027)	-1.63	(1.02)	.071	(.034)	1.69	(1.15)
$COMP_{t-2}$	.103	(.028)	1.89	(1.01)	-.043	(.035)	-.87	(1.14)
$COMP_{t-3}$	-.061	(.028)	.315	(.977)	.017	(.034)	.24	(1.11)
$COMP_{t-4}$	.04	(.026)	-.867	(.923)	-.024	(.031)	.18	(1.03)
R^2	.2954		.2529		.3222		.7997	
F	3.10		2.51		3.5		29.39	
d.f.	185		185		184		184	

COV_t ≡ DPIG • PE ≡ $(PIGIRON_t - PIGIRON_{t-1})LOSS_t$.

$COV1_t$ ≡ DPIG • (RD − PE) ≡ $(Pigiron - Pigiron_{t-1})(R_{dt} - LOSS_t)$.

$COV2_t$ ≡ FDPIG • PE ≡ $(Pigiron_{t+1} - Pigiron_t)LOSS_t$.

$COV3_t$ ≡ FDPIG • PE ≡ $(Pigiron_{t+1} - Pigiron_t)(Rd_t - LOSS_t)$.

BLIA ≡ Liabilities of failed (nonfinancial) businesses.

COMP ≡ Interest rate on commercial paper.

Standard errors in parentheses.

TABLE 8

Estimates of Perceived Risk, 1870-1914

(Deseasonalized Data)

	Cov ≡ (DPIG) • PE		COV1 ≡ DPIG(RD − PE)		COV2 ≡ FDPIG + PE		COV3 ≡ FDPIG • (RD − PE)	
Intercept	0.0	(0.0)	.043	(.015)	0.0	(0.0)	-.077	(.018)
COV_{t-1}	-.034	(.073)	-.174	(.072)	.192	(.073)	.707	(.072)
COV_{t-2}	-.164	(.074)	-.048	(.071)	.117	(.074)	.01	(.88)
COV_{t-3}	-.004	(.075)	-.08	(.07)	-.081	(.075)	-.105	(.087)
COV_{t-4}	.093	(.077)	-.15	(.071)	.042	(.077)	.12	(.088)
COV_{t-5}	-.105	(.077)	-.123	(.072)	-.241	(.077)	-.641	(.089)
COV_{t-6}	.053	(.077)	-.171	(.078)	.002	(.077)	.178	(.095)
COV_{t-7}	.003	(.077)	-.104	(.078)	.062	(.078)	.188	(.098)
COV_{t-8}	.035	(.077)	-.11	(.078)	-.137	(.077)	-.258	(.099)
COV_{t-9}	.01	(.072)	-.237	(.078)	-.06	(.075)	.099	(.1)
COV_{t-10}	-.136	(.071)	-.274	(.079)	-.128	(.072)	-.247	(.077)
$BLIA_{t}$	-.392	(.138)	-9.63	(4.75)	.312	(.158)	15.5	(5.32)
$BLIA_{t-1}$	-.411	(.149)	-6.96	(5.05)	.451	(.169)	6.23	(5.73)
$BLIA_{t-2}$	.048	(.152)	-6.17	(5.07)	.072	(.017)	6.95	(5.78)
$BLIA_{t-3}$	.087	(.150)	3.8	(5.06)	-.065	(.173)	.263	(5.74)
$BLIA_{t-4}$	.05	(.150)	-2.77	(5.02)	.067	(.171)	2.46	(5.66)
$BLIA_{t-5}$	.13	(.174)	15.87	(5.93)	.014	(.2)	-10.4	(6.76)
$BLIA_{t-6}$	.058	(.183)	-13.3	(6.34)	.024	(.21)	3.98	(7.2)
$BLIA_{t-7}$	.165	(.180)	4.16	(6.26)	-.293	(.205)	-3.43	(7.04)
$BLIA_{t-8}$	.055	(.188)	-8.23	(6.53)	.141	(.211)	8.08	(7.29)
$BLIA_{t-9}$	-.027	(.182)	1.79	(6.26)	.134	(.205)	-.991	(6.95)
$COMP_{t}$	.032	(.02)	-1.5	(.676)	-.029	(.022)	.2	(.76)
$COMP_{t-1}$	-.014	(.02)	.897	(.687)	.007	(.023)	-.017	(.775)
$COMP_{t-2}$	-.005	(.02)	-.75	(.667)	.003	(.022)	.876	(.751)
$COMP_{t-3}$	-.013	(.02)	-.49	(.691)	.002	(.022)	.453	(.762)
$COMP_{t-4}$	.001	(.019)	.649	(.639)	-.015	(.021)	.214	(.702)
R^2	.1932		.2622		.3273		.80	
F	1.77		2.63		3.58		29.44	
d.f.	185		185		184		184	

COV_t ≡ DPIG • PE ≡ $(PIGIRON_t - PIGIRON_{t-1})LOSS_t$.

$COV1_t$ ≡ DPIG • (RD − PE) ≡ $(Pigiron - Pigiron_{t-1})(R_{dt} - LOSS_t)$.

$COV2_t$ ≡ FDPIG • PE ≡ $(Pigiron_{t+1} - Pigiron_t)LOSS_t$.

$COV3_t$ ≡ FDPIG • PE ≡ $(Pigiron_{t+1} - Pigiron_t)(Rd_t - LOSS_t)$.

BLIA ≡ Liabilities of failed (nonfinancial) businesses.

COMP ≡ Interest rate on commercial paper.

Standard errors in parentheses.

TABLE 9

Estimates of Perceived Risk, 1870-1914

(Instrumental Variables)

	Nondeseasonalized Data		Deseasonalized Data		Joint
	COV (1)	COV1 (2)	COV (3)	COV1 (4)	COV (5)
Intercept	.005(.002)	.251(.094)	.002(.001)	.06(.02)	.001(.001)
COV_{t-1}	.032(.079)	-.263(.096)	-.193(.08)	-.22(.093)	-.02(.081)
COV_{t-2}	-.02(.079)	-.069(.095)	-.193(.08)	-.01(.09)	-.113(.055)
COV_{t-3}	-.02(.079)	-.128(.094)	-.001(.079)	.121(.091)	-.006(.158)
COV_{t-4}	.075(.075)	-.12(.094)	.10(.073)	-.103(.093)	.019(.09)
COV_{t-5}	-.086(.075)	-.031(.093)	-.134(.073)	-.05(.09)	-.03(.146)
COV_{t-6}	.099(.075)	-.162(.099)	.11(.073)	-.18(.096)	.041(.099)
COV_{t-7}	.015(.075)	-.019(.099)	.019(.074)	-.002(.097)	-.002(.081)
COV_{t-8}	.024(.075)	-.077(.10)	.039(.073)	-.041(.097)	.033(.105)
COV_{t-9}	.013(.072)	-.242(.10)	.034(.07)	-.237(.097)	-.003(.085)
COV_{t-10}	-.122(.072)	-.22(.104)	-.158(.069)	-.249(.10)	-.047(.121)
$BLIA_t$	-8.61(3.24)	-64.42(15.65)	-.07(.025)	-48.71(11.87)	-.248(.174)
$BLIA_{t-1}$	-3.34(1.78)	6.0(8.0)	-.037(.014)	4.73(7.56)	-.146(.155)
$BLIA_{t-2}$	2.30(1.94)	-5.02(8.6)	.02(.014)	-6.87(7.93)	-.189(.140)
$BLIA_{t-3}$	.304(1.96)	8.86(8.68)	.006(.014)	4.52(7.91)	-.053(.147)
$BLIA_{t-4}$	-.586(1.93)	2.81(8.41)	-.002(.014)	4.2(8.15)	-.144(.139)
$BLIA_{t-5}$	2.90(1.88)	14.18(8.06)	.015(.014)	10.0(6.53)	.151(.172)
$BLIA_{t-6}$	-2.10(1.89)	-11.28(8.16)	-.019(.014)	-4.75(6.5)	-.007(.126)
$BLIA_{t-7}$	3.35(1.88)	1.22(8.21)	.024(.015)	-5.86(6.52)	-.008(.127)
$BLIA_{t-8}$	-2.34(1.90)	-5.40(8.34)	-.009(.015)	-8.20(6.47)	-.057(.126)
$BLIA_{t-9}$	.300(1.78)	3.51(7.73)	.004(.014)	6.70(6.25)	-.088(.124)
$COMP_t$	-.004(.027)	-.377(1.20)	.014(.027)	-.699(.71)	-.006(.019)
$COMP_{t-1}$	-.088(.030)	-.23(1.34)	-.135(.028)	-1.07(.843)	-.039(.015)
$COMP_{t-2}$	.085(.030)	.93(1.31)	.091(.03)	.811(.856)	-.009(.017)
$COMP_{t-3}$	-.053(.030)	.51(1.26)	-.056(.031)	.169(.845)	-.022(.018)
$COMP_{t-4}$	.026(.029)	-1.77(1.21)	.054(.029)	-.546(.814)	.02(.016)
R^2	28.27	.2218	.32	.2411	---
SSE	.0036	6.0293	.0028	5.6665	.0031
F	2.78	2.12	3.46	2.36	---
d.f.	186		186		---

COV_t ≡ DPIG · PE ≡ $(PIGIRON_t - PIGIRON_{t-1})LOSS_t$.

$COV1_t$ ≡ DPIG · (RD − PE) ≡ $(Pigiron - Pigiron_{t-1})(R_{dt} - LOSS_t)$.

$COV2_t$ ≡ FDPIG · PE ≡ $(Pigiron_{t+1} - Pigiron_t)LOSS_t$.

$COV3_t$ ≡ FDPIG · PE ≡ $(Pigiron_{t+1} - Pigiron_t)(Rd_t - LOSS_t)$.

BLIA ≡ Liabilities of failed (nonfinancial) businesses.

COMP ≡ Interest rate on commercial paper.

Standard errors in parentheses.

TABLE 10

Deposit-Currency Ratio Equations, 1870-1914

(Deseasonalized Data; Contemporaneous Predictors of COV Used)

$$\left[\frac{D_t}{C_t} + 1\right]^2 = \alpha_0 \text{Dummy} + \alpha_1 + \alpha_2 t + \alpha_3 t^2 + \text{EXP}\left[\alpha_4 \ln(X_{t+1}/X_t) + \alpha_5 \ln X_t\right](1 + r_{dt} - \pi_t^e) + \alpha_6 COV_t^e$$

(where $COV_t^e < 0$; $COVP_t^e > 0$; $COVAL_t^e$ is all values)

	α_0	α_1	α_2	α_3	α_4	α_5	α_6	R^2	σ	COV Definition
1)	——	3.672 (.1518)	-.0072 (.0029)	.0002 (.00002)	-.0857 (.2623)	.9882 (.0300)	91.36 (27.36)	.9672	.4779	COV
2)	-.5260 (.4918)	3.696 (.1534)	-.0076 (.0029)	.0002 (.00002)	-.0849 (.2623)	.9882 (.0300)	87.35 (27.61)	.9673	.4778	COV
3)	——	3.573 (.1543)	-.0066 (.0030)	.0002 (.00002)	.0507 (.3089)	.9943 (.031)	.1710 (.8684)	.9653	.4909	COV_1
4)	-.7535 (.5123)	3.605 (.1555)	-.0071 (.0030)	.0002 (.00002)	.0877 (.3146)	.9914 (.0313)	-.1108 (.8874)	.9657	.4895	COV_1
5)	——	3.587 (.1523)	-.0062 (.0030)	.0002 (.00002)	.1231 (.2686)	.9922 (.0300)	38.57 (25.85)	.9657	.4883	COV_2
6)	-.7617 (.4965)	3.629 (.1542)	-.0068 (.0030)	.0002 (.00002)	.1159 (.2678)	.9918 (.0299)	39.75 (25.77)	.9661	.4866	COV_2
7)	——	3.595 (.1529)	-.0075 (.0030)	.0002 (.00002)	.0467 (.2856)	.9720 (.0355)	-.386 (.2383)	.9658	.4878	COV_3
8)	-.7306 (.4961)	3.634 (.1548)	-.0081 (.0031)	.0002 (.00002)	.0374 (.2847)	.9719 (.3538)	-.3822 (.2376)	.9661	.4864	COV_3

$COV_t \equiv$ DPIG • PE $\equiv (PIGIRON_t - PIGIRON_{t-1})LOSS_t$.

$COV1_t \equiv$ DPIG • (RD - PE) $\equiv (Pigiron - Pigiron_{t-1})(R_{dt} - LOSS_t)$.

$COV2_t \equiv$ FDPIG • PE $\equiv (Pigiron_{t+1} - Pigiron_t)LOSS_t$.

$COV3_t \equiv$ FDPIG • PE $\equiv (Pigiron_{t+1} - Pigiron_t)(R_{dt} - LOSS_t)$.

BLIA $\equiv$ Liabilities of failed (nonfinancial) businesses.

COMP $\equiv$ Interest rate on commercial paper.

Standard errors are in parentheses. $\sigma \equiv$ standard error of the regression.

TABLE 11

Deposit-Currency Ratio Equations, 1870-1914

(Nondeseasonalized Data; Contemporaneous Predictors of COV Used)

$$\left[\frac{D_t}{C_t} + 1\right]^2 = \alpha_0 \text{Dummy} + \alpha_1 + \alpha_2 t + \alpha_3 t^2 + \text{EXP}\left[\alpha_4 \ln(X_{t+1}/X_t) + \alpha_5 \ln X_t\right](1 + r_{dt} - \pi_t^e) + \alpha_6 COV_t^e$$

(where $COV_t^e < 0$; $COVP_t^e > 0$; $COVAL_t^e$ is all values)

	α_0	α_1	α_2	α_3	α_4	α_5	α_6	R^2	σ	COV Definition
1)	——	3.745 (.1497)	-.0083 (.0029)	.0002 (.00002)	-.1643 (.2585)	.9829 (.0301)	98.09 (20.85)	.9687	.4660	COV
2)	.5495 (.5530)	3.737 (.15)	-.0081 (.0029)	.0002 (.00002)	-.1901 (.2601)	.982 (.0303)	110.34 (24.26)	.9689	.4660	COV
3)	——	3.593 (.1531)	-.0068 (.0030)	.0001 (.00002)	-.084 (.2909)	1.002 (.0299)	1.068 (.8976)	.9656	.4891	COV_1
4)	-.5919 (.5432)	3.615 (.1545)	-.0072 (.0030)	.0002 (.00002)	-.03 (.3041)	.9984 (.0306)	.6621 (.9761)	.9658	.4889	COV_1
5)	---	3.567 (.1524)	-.0062 (.0030)	.0001 (.00002)	.1012 (.2702)	.9922 (.0301)	16.83 (27.09)	.9654	.4905	COV_2
6)	-.7406 (.4987)	3.606 (.1543)	-.0069 (.0030)	.0002 (.00002)	.0929 (.2695)	.9918 (.0301)	17.03 (27.01)	.9658	.4890	COV_2
7)	---	3.601 (.1532)	-.0076 (.0030)	.0002 (.00002)	.044 (.2867)	.9709 (.0357)	-.4034 (.2385)	.9658	.4875	COV_3
8)	-.733 (.4958)	3.64 (.155)	-.0082 (.0031)	.0002 (.00002)	.0344 (.2858)	.9708 (.0356)	-.4008 (.2378)	.9662	.4861	COV_3

$COV_t \equiv DPIG \cdot PE \equiv (PIGIRON_t - PIGIRON_{t-1})LOSS_t$.

$COV1_t \equiv DPIG \cdot (RD - PE) \equiv (Pigiron - Pigiron_{t-1})(R_{dt} - LOSS_t)$.

$COV2_t \equiv FDPIG \cdot PE \equiv (Pigiron_{t+1} - Pigiron_t)LOSS_t$.

$COV3_t \equiv FDPIG \cdot PE \equiv (Pigiron_{t+1} - Pigiron_t)(R_{dt} - LOSS_t)$.

BLIA $\equiv$ Liabilities of failed (nonfinancial) businesses.

COMP $\equiv$ Interest rate on commercial paper.

Standard errors in parentheses. $\sigma \equiv$ standard error of the regression.

TABLE 12

Deposit-Currency Ratio Equations, 1870-1914

(Nondeseasonalized Data; No Contemporaneous Predictors of COV)

$$\left[\frac{D_t}{C_t} + 1\right]^2 = \alpha_0 \text{Dummy} + \alpha_1 + \alpha_2 t + \alpha_3 t^2 + \text{EXP}\left[\alpha_4 \ln(X_{t+1}/X_t) + \alpha_5 \ln X_t\right](1 + r_{dt} - \pi_t^e) + \alpha_6 COV_t^e$$

(where $COV_t^e < 0$; $COVP_t^e > 0$; $COVAL_t^e$ is all values)

	α_0	α_1	α_2	α_3	α_4	α_5	α_6	R^2	σ	COV Definition
1)	——	3.735 (.1507)	-.0082 (.0029)	.0002 (.00002)	-.1294 (.2597)	.9837 (.0302)	93.56 (21.29)	.9684	.4690	COV
2)	.3765 (.5485)	3.729 (.5485)	-.0080 (.0029)	.0002 (.00002)	-.1440 (.2612)	.9831 (.0303)	101.69 (24.42)	.9684	.4690	COV
3)	——	3.583 (.1536)	-.0067 (.003)	.0001 (.00002)	-.0119 (.2949)	.9986 (.0305)	.6379 (.9211)	.9654	.4903	COV_1
4)	-.6982 (.5297)	3.611 (.1549)	-.0072 (.0030)	.0002 (.00002)	.0386 (.3053)	.9944 (.0312)	.2224 (.9747)	.9657	.4894	COV_1
5)	——	3.566 (.1525)	-.0062 (.0030)	.0001 (.00002)	.1009 (.27)	.9922 (.0301)	16.84 (27.21)	.9645	.4905	COV_2
6)	-.7399 (.4987)	3.605 (.1544)	-.0068 (.0031)	.0002 (.00002)	.0929 (.2692)	.9919 (.0301)	16.96 (27.13)	.9658	.4890	COV_2
7)	——	3.599 (.1535)	-.0075 (.0030)	.0002 (.00002)	.0501 (.2850)	.973 (.0355)	-.3579 (.2389)	.9657	.4883	COV_3
8)	-.7347 (.4965)	3.638 (.1553)	-.0081 (.0031)	.0002 (.00002)	.0406 (.2841)	.9727 (.0354)	-.3558 (.2382)	.9661	.4868	COV_3

COV_t ≡ DPIG • PE ≡ $(PIGIRON_t - PIGIRON_{t-1})LOSS_t$.

$COV1_t$ ≡ DPIG • (RD - PE) ≡ $(Pigiron - Pigiron_{t-1})(R_{dt} - LOSS_t)$.

$COV2_t$ ≡ FDPIG • PE ≡ $(Pigiron_{t+1} - Pigiron_t)LOSS_t$.

$COV3_t$ ≡ FDPIG • PE ≡ $(Pigiron_{t+1} - Pigiron_t)(R_{dt} - LOSS_t)$.

BLIA ≡ Liabilities of failed (nonfinancial) businesses.

COMP ≡ Interest rate on commercial paper.

Standard errors in parentheses. σ ≡ standard error of the regression.

TABLE 13

Deposit-Currency Ratio Equation, 1870–1914

(Deseasonalized Data; No Contemporaneous Predictors of COV)

$$\left[\frac{D_t}{C_t} + 1\right]^2 = \alpha_0 \text{Dummy} + \alpha_1 + \alpha_2 t + \alpha_3 t^2 + \text{EXP}\left[\alpha_4 \ln(X_{t+1}/X_t) + \alpha_5 \ln X_t\right](1 + r_{dt} - \pi_t^e) + \alpha_6 COV_t^e$$

(where $COV_t^e < 0$; $COVP_t^e > 0$; $COVAL_t^e$ is all values)

	α_0	α_1	α_2	α_3	α_4	α_5	α_6	R^2	σ	COV Definition
1)	———	3.669 (.1535)	-.0073 (.003)	.0002 (.0002)	-.0202 (.2669)	.9849 (.0308)	89.75 (30.78)	.9667	.4810	COV
2)	-.7739 (.4888)	3.712 (.1553)	-.008 (.003)	.0002 (.00002)	-.0315 (.2661)	.9844 (.0307)	90.93 (30.68)	.9671	.4792	COV
3)	———	3.567 (.1526)	-.6442 (.0031)	.0001 (.00002)	.0297 (.3050)	.9960 (.0312)	.3459 (.9928)	.9654	.4908	COV_1
4)	-.7338 (.4993)	3.607 (.1545)	-.0071 (.003)	.0001 (.00002)	.0282 (.3049)	.9951 (.0312)	.2971 (.9906)	.9657	.4894	COV_1
5)	———	3.590 (.1521)	-.0062 (.003)	.0002 (.00002)	.1298 (.2691)	.9919 (.030)	44.26 (26.47)	.9650	.4876	COV_2
6)	-.7213 (.4960)	3.628 (.154)	-.0068 (.003)	.0002 (.00002)	.1205 (.2684)	.9915 (.0299)	43.43 (26.40)	.9662	.4863	COV_2
7)	———	3.598 (.153)	-.0075 (.003)	.0002 (.00002)	.0571 (.2861)	.9716 (.0358)	-.3744 (.2398)	.9657	.4880	COV_3
8)	-.7373 (.4962)	3.637 (.1551)	-.0081 (.0031)	.0002 (.00002)	.0474 (.2852)	.9713 (.0358)	-.3736 (.2391)	.9661	.4866	COV_3

$COV_t \equiv DPIG \cdot PE \equiv (PIGIRON_t - PIGIRON_{t-1})LOSS_t$.

$COV1_t \equiv DPIG \cdot (RD - PE) \equiv (Pigiron - Pigiron_{t-1})(R_{dt} - LOSS_t)$.

$COV2_t \equiv FDPIG \cdot PE \equiv (Pigiron_{t+1} - Pigiron_t)LOSS_t$.

$COV3_t \equiv FDPIG \cdot PE \equiv (Pigiron_{t+1} - Pigiron_t)(R_{dt} - LOSS_t)$.

BLIA ≡ Liabilities of failed (nonfinancial) businesses.

COMP ≡ Interest rate on commercial paper.

Standard errors in parentheses. σ ≡ standard error of the regression.

TABLE 14

Log-Linear Currency-Deposit Ratio Equations, 1870-1914

(Deseasonalized Data; $COV_t^e \equiv E[(Pigiron_t - Pigiron_{t-1}) - LOSS_t])$

	CONSTANT	t	$(R_{dt} - LOSS_t^e)$	COV_t^e	R^2	SEE	DW
(1)	-.6903 (.1158)	-.0054 (.00009)	-.2824 (.0346)	-14.87 (2.61)	.9585	.9024	1.303
(2)	-.5833 (.1549)	-.0054 (.0001)	-.2515 (.0463)	-9.83 (2.37)	.9235	.7819	*
(3)	-.7076 (.1199)	-.0055 (.00009)	-.2912 (.0359)	-8.96 (1.96)	.9564	.948	1.275
(4)	-.5843 (.1614)	-.0054 (.0001)	-.2547 (.0483)	-5.03 (1.67)	.9173	.8074	*
(5)	-.6916 (.118)	-.0055 (.00009)	-.2841 (.0352)	-10.68 (2.14)	.9572	.9315	1.24
(6)	-.5641 (.1629)	-.0054 (.0001)	-.2465 (.0487)	-7.21 (2.019)	.9149	.7905	*
(7)	-.7019 (.1204)	-.0055 (.00009)	-.2908 (.0361)	-6.81 (1.58)	.9560	.9573	1.241
(8)	-.5672 (.1653)	-.0054 (.0495)	-.2499 (.0495)	-3.99 (1.428)	.9127	.8086	*
(9)	.6742 (.067)	-.0056 (.0001)	-11.3680 (1.836)	-20.9360 (4.714)	--	.0613	1.362

*Corrected for first order serial correlation. Standard errors are in parentheses. In all cases, above, contemporaneous predictors of COV were used. In rows (5)-(8), instrumental variables were used to estimate COV. In rows (1), (2), (5), (6) COV_t^e was constrained to be nonpositive; in the remaining rows, COV_t^e was unconstrained. Row (9) was estimated jointly with the COV equation.

TABLE 15

Log-Linear Currency-Deposit Ratio Equations, 1870-1914

(No deseasonalization; $COV_t^e = E[(Pigiron_t - Pigiron_{t-1})(R_{dt} - LOSS_t)]$)

	CONSTANT	t	$(R_{dt} - LOSS_t^e)$	$PCOV_t$	R^2	SSE	DW
(1)	-.6958 (.1308)	-.0055 (.0001)	-.2889 (.0392)	-.2187 (.110)	.9530	1.0237	1.1182
(2)	-.5408 (.1845)	-.0054 (.0001)	-.2419 (.0552)	-.1157 (.1016)	.8932	.8260	*
(3)	-.6613 (.1260)	-.0055 (.00009)	-.2792 (.0378)	-.1286 (.067)	.9529	1.025	1.1396
(4)	-.5188 (.181)	-.0054 (.0001)	-.2355 (.0543)	-.0334 (.0623)	.8955	.8307	*
(5)	-.7154 (.1240)	-.0055 (.00009)	-.2929 (.0370)	-.1698 (.048)	.9548	.9841	1.1657
(6)	-.5727 (.1760)	-.0054 (.0001)	-.2503 (.0526)	-.1099 (.0452)	.9017	.8099	*
(7)	-.6912 (.1221)	-.0055 (.00009)	-.2889 (.0366)	-.1231 (.0339)	.9549	.9811	1.1887
(8)	-.5573 (.1728)	.0054 (.0001)	.2478 (.0518)	-.0731 (.0318)	.9045	.8136	*
(9)	.7381 (.0694)	-.0056 (.0001)	-12.929 (1.826)	-1.541 (.7255)	--	.6540	--

*Corrected for first order serial correlation. Standard errors are in parentheses. In all cases, above, contemporaneous predictors of COV were used. In rows (5)-(8), instrumental variables were used to estimate COV. In rows (1), (2), (5), (6) COV_t^e was constrained to be nonpositive; in the remaining rows, COV_t^e was unconstrained. Row (9) was estimated jointly with the COV equation.

TABLE 16

Log-Linear Currency-Deposit Ratio Equations, 1870-1914

(Nondeseasonalized Data; $COV_t^e \equiv E[(Pigiron_t - Pigiron_{t-1})LOSS_t])$

	CONSTANT	t	$(R_{dt} - LOSS_t^e)$	COV_t^e	R^2	SSE	DW
(1)	-.7162 (.1155)	-.0054 (.00009)	-.2896 (.0344)	-17.455 (2.903)	.9592	.8888	1.257
(2)	-.5940 (.1571)	-.0054 (.0001)	-.2539 (.047)	-12.454 (2.632)	.9213	.7598	*
(3)	-.7289 (.1201)	-.0055 (.00009)	-.2981 (.0359)	-10.255 (2.147)	.9568	.9400	1.256
(4)	-.5953 (.1626)	-.0054 (.0001)	-.2578 (.0487)	-6.209 (1.829)	.9161	.7965	*
(5)	-.7373 (.1157)	-.0055 (.00009)	-.2965 (.0345)	-13.084 (2.138)	.9594	.8840	1.197
(6)	-.5963 (.1630)	-.0054 (.0001)	-.2545 (.0487)	-10.629 (2.061)	.9149	.7403	*
(7)	-.7463 (.1182)	-.0055 (.00009)	-.3041 (.0354)	-8.837 (1.605)	.9581	.9107	1.237
(8)	-.6097 (.1627)	-.0054 (.0001)	-.2626 (.0487)	-6.333 (1.494)	.9160	.7715	*
(9)	.6927 (.0634)	-.0056 (.0001)	-11.82 (1.762)	-20.087 (3.712)	--	.7442	1.426

*Corrected for first order serial correlation. Standard errors are in parentheses. In all cases, above, contemporaneous predictors of COV were used. In rows (5)-(8), instrumental variables were used to estimate COV. In rows (1), (2), (5), (6) COV_t^e was constrained to be nonpositive; in the remaining rows, COV_t^e was unconstrained. Row (9) was estimated jointly with the COV equations.

TABLE 17

Currency-Deposit Ratio Equations, 1870-1914

(Deseasonalization; $COV^e_t = E[(Pigiron_t - Pigiron_{t-1})(R_{dt} - LOSS_t)]$)

	CONSTANT	t	$(R_{dt} - LOSS^e_t)$	$PCOV_t$	R^2	SSE	DW
(1)	-.6945 (.1313)	-.0055 (.0001)	-.2885 (.0393)	-.2013 (.1055)	.9529	1.0253	1.1372
(2)	-.5263 (.1835)	-.0054 (.0001)	-.2375 (.0549)	-.0509 (.0989)	.8957	.8309	*
(3)	-.6610 (.1266)	-.0055 (.00009)	-.2790 (.038)	-.1160 (.0643)	.9528	1.0271	1.1526
(4)	-.5089 (.180)	-.0054 (.0001)	-.2323 (.0539)	.0004 (.0598)	.8973	.8325	*
(5)	-.6693 (.1256)	-.0055 (.00009)	-.2797 (.0375)	-.112 (.0507)	.9532	1.019	1.1673
(6)	-.5218 (.177)	-.0054 (.0001)	-.2359 (.0529)	-.0243 (.0455)	.8996	.8321	*
(7)	-.6545 (.1241)	-.0055 (.00009)	-.2772 (.0372)	-.0763 (.0341)	.9532	1.0186	1.1697
(8)	-.519 (.1763)	-.0054 (.0001)	-.2355 (.0528)	-.0178 (.0300)	.8998	.8319	*
(9)	.6979 (.0703)	-.0056 (.0001)	-11.849 (1.869)	-.8006 (.2051)	--	.7600	--

*Corrected for first order serial correlation. Standard errors are in parentheses. In all cases, above, contemporaneous predictors of COV were used. In rows (5)-(8), instrumental variables were used to estimate COV. In rows (1), (2), (5), (6) COV^e_t was constrained to be nonpositive; in the remaining rows, COV^e_t was unconstrained. Row (9) was estimated jointly with the COV equation.

TABLE 18

TIMING OF MEASURES OF PERCEIVED RISK

Panic of	$COV^e(1)$ Before*	$COV^e(1)$ After	$COV^e(2)$ Before	$COV^e(2)$ After	$COV^e(3)$ Before	$COV^e(3)$ After	$COV^e(4)$ Before	$COV^e(4)$ After	$COV^e(5)$ Before	$COV^e(5)$ After	$COV^e(6)$ Before	$COV^e(6)$ After
1873	0/0	0/26	0/0	2/26	0/0	1/26	0/0	0/26	0/0	0/26	0/0	0/26
1884	1/13	1/4	1/13	1/4	0/13	0/4	1/13	1/4	3/13	1/4	0/13	2/4
1890	0/2	0/2	1/2	1/2	0/2	0/2	0/2	0/2	0/2	1/2	0/2	0/2
1893	0/2	0/4	0/2	1/4	0/2	0/4	0/2	1/4	0/2	1/4	0/2	0/4
1896	0/4	0/3	0/4	0/3	0/4	0/3	0/4	0/3	0/4	0/3	0/4	1/3
1907	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	0/2	1/2	0/2	0/2
1914	0/8	0/2	0/8	0/2	6/8	0/2	0/8	0/2	1/8	1/2	7/8	1/2

*Number of times the perceived risk measure is lower, i.e., "more negative" than the value at the panic date, from previous peak to panic date (Before), and from panic date to subsequent trough (After), as a fraction of possible data points at which it could have been lower.

COV(1) estimated using contemporaneous predictors, instruments for the contemporaneous liabilities variable, and deseasonalized data. Also, $COV(1) \equiv (Pigiron_t - Pigiron_{t-1}) \cdot LOSS_t$. COV(2) is the same as COV(1), except without instruments. COV(3) is the same as COV(2), except $COV(3) \equiv (Pigiron_t - Pigiron_{t-1})(R_{dt} - LOSS_t)$. COV(4), COV(5), and COV(6) are the same, respectively as COV(1), COV(2), and COV(3), except nondeseasonalized data is used.

TABLE 19

Timing of Measures of Perceived Risk

Panic of	$COV^e(7)$ Before*	After	$COV^e(8)$ Before	After	$COV^e(9)$ Before	After	$COV^e(10)$ Before	After
1873	0/0	0/26	0/0	0/26	0/0	10/26	0/0	3/26
1884	6/13	3/4	3/13	3/4	9/13	2/4	2/13	3/4
1890	1/2	1/2	0/2	2/2	1/2	1/2	0/2	1/2
1893	0/2	1/4	1/2	1/4	0/2	1/4	0/2	1/4
1896	0/4	1/3	0/4	0/3	0/4	0/3	0/4	0/3
1907	0/2	1/2	2/2	1/2	0/2	0/2	0/2	0/2
1914	2/8	1/2	7/8	1/2	0/8	0/2	7/8	1/2

*Number of times the perceived risk measure is lower, i.e., "more negative" than the value at the panic date, from previous peak to panic date (Before), and from panic date to subsequent trough (After), as a fraction of possible data points at which it could have been lower.

COV(7) estimated with only lagged predictors and nondeseasonalized data; where $COV(7) \equiv (Pigiron_t - Pigiron_{t-1})LOSS_t$. COV(8) estimated with only lagged predictors and nondeseasonalized data; where $COV(8) \equiv (Pigiron_t - Pigiron_{t-1})(R_{dt} - LOSS_t)$. COV(9) and COV(10) are the same as COV(7) and COV(8), respectively, except that COV(7) and COV(8) use deseasonalized data.

TABLE 20

SPEARMAN RANK CORRELATION COEFFICIENTS

	Eckler (Overall)	Eckler (Pig Iron)	Achinstein (Amplitude)	% ΔM	% $\Delta \frac{C}{D}$	UNLIA	CCBUS	DECC	Losses	Total Losses	Post-panic Losses	RES	DECOMP	$COV_t^e(1)$	$COV_t^e(2)$	$COV_t^e(3)$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1)		.90	.818	.564	.609	.888	.618	.582	.818	.935	.913	.782	.445	.755	.564	.60
(2)			.827	.50	.755	.867	.668	.527	.627	.909	.873	.605	.455	.782	.664	.709
(3)				.65	.632	.877	.682	.609	.782	.944	.914	.536	.591	.655	.573	.709
(4)					.564	.862	.736	.755	.691	.818	.764	.482	.464	.346	.418	.446
(5)						.872	.70	.273	.391	.914	.879	.282	.727	.727	.586	.727
(6)							.65	.491	.605	.956	.962	.268	.482	.596	.236	.60
(7)								.673	.545	.949	.91	.345	.482	.714	.473	.764
(8)									.436	.60	.509	.345	.264	.264	.409	.282
(9)										.791	.782	.682	.527	.682	.546	.627
(10)											.989	.473	.718	.536	.50	.655
(11)												.382	.627	.446	.464	.627
(12)													.355	.564	.491	.482
(13)														.746	.727	.80
(14)															.636	.955
(15)																.586
(16)																

TABLE 21

Estimates of Perceived Risk, 1873-1934

$COV \equiv (PGIN_t - PGIN_{t-1})LOSS_t$; Nondeseasonalized Data

	(1) 1873-1934		(2) 1873-1914		(3) 1914-1934	
Intercept	-.0002	(.0013)	.0018	(.0012)	-.0015	(.0031)
COV_{t-1}	.1867	(.0582)	-.0426	(.0707)	.2894	(.1209)
COV_{t-2}	-.2450	(.0624)	-.2085	(.0706)	-.2696	(.1326)
COV_{t-3}	.0663	(.0643)	-.0133	(.0695)	.0716	(.1441)
COV_{t-4}	.2873	(.0643)	-.0655	(.0693)	.6066	(.1417)
COV_{t-5}	.0049	(.0064)	-.0268	(.0693)	-.3484	(.1557)
COV_{t-6}	.0733	(.0651)	-.0006	(.0690)	.0883	(.1400)
COV_{t-7}	-.1535	(.0653)	-.2751	(.0689)	-.0810	(.1406)
COV_{t-8}	-.2934	(.0646)	-.0742	(.0698)	-.3451	(.1448)
COV_{t-9}	-.1928	(.0631)	-.2619	(.0698)	.1262	(.1398)
$BLIA_t$	-2.975	(1.17)	-1.270	(.0943)	-8.601	(3.522)
$BLIA_{t-1}$	1.758	(1.32)	.2184	(1.042)	7.638	(4.189)
$BLIA_{t-2}$	-1.215	(1.33)	-.7955	(1.047)	-3.220	(4.26)
$BLIA_{t-3}$	-.9488	(1.34)	-.3291	(1.086)	-1.943	(4.302)
$BLIA_{t-4}$	-1.017	(1.33)	1.125	(1.065)	-5.633	(4.226)
$BLIA_{t-5}$	-.0295	(1.31)	-.0862	(1.037)	.1284	(4.261)
$BLIA_{t-6}$	1.109	(1.30)	.0672	(1.03)	3.931	(4.292)
$BLIA_{t-7}$	.1277	(1.30)	-1.647	(1.04)	6.206	(3.974)
$BLIA_{t-8}$	-.9813	(1.30)	.4729	(1.04)	-7.628	(4.030)
$BLIA_{t-9}$	.5510	(1.16)	-.165	(.955)	3.078	(3.449)
$COMP_t$	-.0290	(.020)	-.0273	(.0155)	-.2492	(.1032)
$COMP_{t-1}$	.0303	(.0223)	.0247	(.0167)	.2470	(.1480)
$COMP_{t-2}$	.0114	(.0220)	.0114	(.0168)	.1432	(.1120)
$COMP_{t-3}$	-.0151	(.0215)	-.0144	(.0162)	-.1024	(.1038)
$COMP_{t-4}$	.0330	(.0195)	-.0036	(.0154)	.0139	(.0802)
R^2	.2557		.2017		.5672	
F	4.09		1.96		4.10	
d.f.	286		186		75	

Standard errors are in parentheses.

BLIA ≡ Liabilities of failed businesses.

COMP ≡ Interest rate on commercial paper.

TABLE 22

Estimates of Perceived Risk, 1873-1934

$COV \equiv (PGIN_t - PGIN_{t-1})LOSS_t$; Deseasonalized Data

	(1) 1873-1934		(2) 1873-1914		(3) 1914-1934	
Intercept	-.0002	(.0003)	.0006	(.0003)	-.001	(.0069)
COV_{t-1}	.1826	(.0581)	-.0595	(.0706)	.3855	(.1187)
COV_{t-2}	-.2449	(.0620)	-.1976	(.0708)	-.3562	(.1365)
COV_{t-3}	.0759	(.0643)	.0040	(.0699)	-.0521	(.1517)
COV_{t-4}	.2821	(.0648)	-.0385	(.0698)	.6632	(.1527)
COV_{t-5}	.0118	(.0669)	-.0645	(.0698)	-.4124	(.1696)
COV_{t-6}	.0585	(.0655)	-.0229	(.0693)	.1589	(.1532)
COV_{t-7}	-.1408	(.0659)	-.2553	(.0697)	-.0284	(.1530)
COV_{t-8}	-.0091	(.0652)	-.0606	(.0707)	-.2886	(.1477)
COV_{t-9}	-.2106	(.0637)	-.2597	(.0708)	.0086	(.1376)
$BLIA_t$	-2.366	(1.155)	-.8834	(.9129)	-6.925	(4.020)
$BLIA_{t-1}$	.0966	(1.279)	-.0593	(.0996)	6.502	(4.723)
$BLIA_{t-2}$	-1.293	(1.277)	-.8798	(.9871)	-3.658	(4.811)
$BLIA_{t-3}$	-.3457	(1.295)	.0471	(1.027)	.6944	(4.612)
$BLIA_{t-4}$	-.9716	(1.300)	1.080	(1.039)	-5.164	(4.414)
$BLIA_{t-5}$	.6499	(1.103)	-.3878	(.8467)	1.427	(4.305)
$BLIA_{t-6}$	-.1959	(1.104)	-.4123	(.8335)	-4.764	(4.527)
$BLIA_{t-7}$	.2178	(1.103)	-.8646	(.8371)	5.562	(4.375)
$BLIA_{t-8}$	-.1277	(1.089)	.2071	(.8248)	-3.677	(4.430)
$BLIA_{t-9}$	.4382	(.9977)	-.0360	(.7912)	2.670	(3.628)
$COMP_t$	.0064	(.0131)	-.0044	(.0112)	.0220	(.0375)
$COMP_{t-1}$	-.0096	(.0134)	-.0043	(.0113)	-.0276	(.0418)
$COMP_{t-2}$	.0017	(.0134)	.0088	(.0112)	-.0145	(.0421)
$COMP_{t-3}$	.0211	(.0132)	.0095	(.0111)	.0354	(.0423)
$COMP_{t-4}$	.0145	(.0126)	-.0185	(.0107)	.0623	(.0353)
R^2	.2450		.2006		.5189	
F	3.87		1.94		3.37	
d.f.	286		186		75	

Standard errors are in parentheses.

BLIA ≡ Liabilities of failed businesses.

COMP ≡ Interest rate on commercial paper.

TABLE 23

Estimates of Perceived Risk, 1873-1934

$COV \equiv (PGIN_t - PGIN_{t-1})LOSS_t$; Nondeseasonalized Data

	(1) 1873-1934		(2) 1873-1914		(3) 1914-1934	
Intercept	-.0003	(.0013)	.0018	(.0012)	-.0015	(.003)
COV_{t-1}	.187	(.058)	-.043	(.071)	.289	(.121)
COV_{t-2}	-.245	(.062)	-.209	(.071)	-.27	(.133)
COV_{t-3}	.066	(.064)	-.013	(.069)	.072	(.144)
COV_{t-4}	.287	(.064)	-.066	(.069)	.607	(.142)
COV_{t-5}	.005	(.066)	-.027	(.069)	-.348	(.156)
COV_{t-6}	.073	(.065)	-.001	(.069)	.088	(.14)
COV_{t-7}	-.153	(.065)	-.275	(.069)	-.081	(.141)
COV_{t-8}	-.029	(.064)	-.074	(.07)	-.345	(.145)
COV_{t-9}	-.193	(.063)	-.262	(.07)	.126	(.14)
$BLIA_t$	-3.0E-11	(1.17E-11)	-1.3E-11	(9.4E-12)	-8.6E-11	(3.5E11)
$BLIA_{t-1}$	1.76E-11	(1.32E-11)	2.18E-12	(1.0E-11)	7.6E-11	(4.2E-11)
$BLIA_{t-2}$	-1.2E-11	(1.33E-11)	-8.0E-12	(1.0E-11)	-3.2E-11	(4.3E-11)
$BLIA_{t-3}$	-9.5E-12	(1.3E-11)	-3.29E-12	(1.1E-11)	-1.9E-12	(4.3E-11)
$BLIA_{t-4}$	-1.02E-11	(1.33E-11)	1.12E-11	(1.1E-11)	-5.6E-11	(4.2E-11)
$BLIA_{t-5}$	-2.95E-13	(1.31E-11)	-8.6E-12	(1.0E-11)	1.3E-12	(4.3E-11)
$BLIA_{t-6}$	1.1E-11	(1.3E-11)	6.7E-12	(1.03E-11)	3.9E-11	(4.3E-11)
$BLIA_{t-7}$	1.3E-11	(1.3E-11)	-1.6E-11	(1.04E-11)	6.2E-11	(4.0E-11)
$BLIA_{t-8}$	-.98E-12	(1.30E-11)	4.7E-12	(1.03E-11)	-7.6E-11	(4.0E-11)
$BLIA_{t-9}$	5.51E-12	(1.2E-11)	-1.6E-12	(9.6E-12)	3.1E-11	(3.4E-11)
$COMP_t$	-.029	(.02)	-.027	(.015)	-.249	(.103)
$COMP_{t-1}$	.030	(.022)	.025	(.017)	.247	(.148)
$COMP_{t-2}$	.011	(.02)	.011	(.07)	.143	(.111)
$COMP_{t-3}$	-.015	(.02)	-.014	(.016)	-.10	(.10)
$COMP_{t-4}$	.033	(.02)	-.004	(.015)	.014	(.08)
R^2	.2557		.2017		.5672	
F	4.09		1.96		4.10	
d.f.	286		186		75	

TABLE 24

Estimates of Perceived Risk, 1873-1934

$COV \equiv (PGIN_t - PGIN_{t-1})(RD_t - LOSS_t)$; Nondeseasonalized Data

	(1) 1873-1934		(2) 1873-1914		(3) 1914-1934	
Intercept	.132	(.147)	.275	(.087)	-.098	(.388)
COV_{t-1}	.062	(.060)	-.175	(.074)	.01	(.116)
COV_{t-2}	-.117	(.060)	-.0096	(.074)	-.181	(.116)
COV_{t-3}	-.172	(.06)	-.125	(.076)	-.218	(.114)
COV_{t-4}	-.118	(.059)	-.05	(.075)	-.20	(.113)
COV_{t-5}	-.046	(.058)	-.139	(.078)	-.101	(.103)
COV_{t-6}	-.21	(.057)	-.152	(.079)	-.246	(.101)
COV_{t-7}	-.19	(.058)	-.048	(.077)	-.259	(.101)
COV_{t-8}	- .067	(.059)	-.086	(.078)	.063	(.103)
COV_{t-9}	-.079	(.058)	-.266	(.079)	-.089	(.103)
$BLIA_t$	---	---	---	---	---	---
$BLIA_{t-1}$	-9.28E-10	(1.25E-09)	-6.39E-10	(6.2E-10)	-6.3E-09	(4.1E-09)
$BLIA_{t-2}$	-2.3E-109	(1.39E-09)	-1.63E-09	(6.6E-10)	-1.7E-09	(4.9E-09)
$BLIA_{t-3}$	-1.34E-10	(1.37E-09)	5.57E-10	(6.5E-10)	2.2E-09	(4.9E-09)
$BLIA_{t-4}$	-1.82E-09	(1.37E-09)	3.25E-10	(6.5E-10)	-1.3E-08	(4.9E-09)
$BLIA_{t-5}$	3.58E-09	(1.27-09)	1.09E-09	(5.8E-10)	1.3E-08	(5.0E-09)
$BLIA_{t-6}$	-2.53E-10	(1.29E-09)	-8.2E-10	(5.8E-10)	4.1E-09	(5.1E-09)
$BLIA_{t-7}$	1.88E-09	(1.28E-09)	-2.6E-10	(5.9E-10)	3.2E-09	(4.9E-09)
$BLIA_{t-8}$	-1.7E-09	(1.29E-09)	-1.1E-09	(5.9E-10)	-2.5E-09	(5.0E-09)
$BLIA_{t-9}$	1.2E-09	(1.17E-09)	7.5E-10	(5.5E-10)	2.0E-09	(4.4E-09)
$COMP_t$	---	---	---	---	---	---
$COMP_{t-1}$	-2.33	(2.37)	-3.51	(1.11)	4.56	(12.2)
$COMP_{t-2}$	1.23	(2.75)	2.3	(1.24)	-6.11	(13.7)
$COMP_{t-3}$	.43	(2.68)	-1.06	(1.2)	15.7	(12.6)
$COMP_{t-4}$	-1.8	(2.34)	-1.72	(1.12)	-14.4	(9.9)
R^2	.1962		2.623		.3622	
F	3.08		2.88		1.99	
d.f.	278		178		77	

TABLE 25

Estimates of Perceived Risk, 1873-1934

$COV \equiv (PGIN_{t+1} - PGIN_t)LOSS_t$; Nondeseasonalized Data

	(1) 1873-1934		(2) 1873-1914		(3) 1914-1934	
Intercept	.0012	(.0013)	.003	(.001)	-.004	(.003)
COV_{t-1}	.162	(.059)	.065	(.074)	.356	(.111)
COV_{t-2}	-.495	(.064)	-.238	(.074)	-.804	(.128)
COV_{t-3}	.11	(.071)	.01	(.077)	.433	(.153)
COV_{t-4}	.07	(.075)	-.051	(.077)	-.012	(.196)
COV_{t-5}	.023	(.075)	-.004	(.076)	-.174	(.199)
COV_{t-6}	.079	(.076)	.072	(.076)	-.175	(.185)
COV_{t-7}	-.1	(.076)	-.045	(.076)	-.194	(.188)
COV_{t-8}	- .003	(.074)	-.017	(.073)	.017	(.187)
COV_{t-9}	-.094	(.074)	-.038	(.073)	-.308	(.174)
$BLIA_t$	---	---	---	---	---	---
$BLIA_{t-1}$	1.3E-11	(1.2E-11)	8.0E-12	(1.1E-11)	1.8E-11	(3.0E-11)
$BLIA_{t-2}$	-2.6E-11	(1.3E-11)	-1.8E-11	(1.2E-11)	-1.6E-11	(3.5E-11)
$BLIA_{t-3}$	-1.3E-11	(1.3E-11)	6.4E-12	(1.3E-11)	-7.6E-11	(3.5E-11)
$BLIA_{t-4}$	2.1E-13	(1.3E-11)	-1.0E-13	(1.3E-11)	3.1E-11	(3.6E-11)
$BLIA_{t-5}$	-8.1E-12	(1.3E-11)	-1.75E-11	(1.2E-11)	-3.2E-11	(3.7E-11)
$BLIA_{t-6}$	1.6E-11	(1.3E-11)	1.8E-12	(1.2E-11)	8.5E-11	(3.7E-11)
$BLIA_{t-7}$	-3.1E-11	(1.3E-11)	-1.68E-11	(1.2E-11)	-1.0E-10	(3.9E-11)
$BLIA_{t-8}$	8.2E-12	(1.3E-11)	5.5E-12	(1.2E-11)	9.5E-12	(4.3E-11)
$BLIA_{t-9}$	1.2E-11	(1.2E-11)	-3.8E-12	(1.1E-11)	8.1E-11	(3.4E-11)
$COMP_t$	---	---	---	---	---	---
$COMP_{t-1}$	-.027	(.02)	-.01	(.02)	.019	(.085)
$COMP_{t-2}$	-.008	(.023)	-.003	(.02)	-.104	(.097)
$COMP_{t-3}$	.014	(.02)	-.013	(.019)	.062	(.09)
$COMP_{t-4}$	.02	(.02)	.0002	(.018)	.096	(.071)
R^2	.2579		.0965		.6147	
F	4.53		.91		5.51	
d.f.	287		188		76	

TABLE 26

Estimates of Perceived Risk, 1873-1934

$COV \equiv (PGIN_t - PGIN_{t-1})LOSS_t$; Nondeseasonalized Data

	(1) 1873-1934		(2) 1873-1914		(3) 1914-1934	
Intercept	.266	(.779)	2.48	(.657)	-2.38	(1.93)
COV_{t-1}	.039	(.061)	-.155	(.074)	-.028	(.121)
COV_{t-2}	-.155	(.062)	-.031	(.074)	-.182	(.121)
COV_{t-3}	-.163	(.063)	-.156	(.074)	-.144	(.120)
COV_{t-4}	-.002	(.062)	-.002	(.076)	-.108	(.117)
COV_{t-5}	.016	(.06)	-.117	(.076)	.044	(.105)
COV_{t-6}	-.243	(.059)	-.171	(.076)	-.283	(.104)
COV_{t-7}	-.098	(.06)	-.030	(.077)	-.147	(.103)
COV_{t-8}	-.009	(.06)	-.05	(.077)	-.041	(.105)
COV_{t-9}	-.108	(.06)	-.24	(.077)	-.038	(.109)
$BLIA_t$	-5.9E-08	(3.2E-08)	-9.9E-09	(23.E-08)	-2.8E-07	(1.1E-07)
$BLIA_{t-1}$	-3.3E-08	(3.5E-08)	-2.8E-08	(2.4E-08)	-4.1E-10	(1.3E-07)
$BLIA_{t-2}$	-5.0E-08	(3.5E-08)	-4.8E-08	(2.4E-08)	6.6E-08	(1.2E-07)
$BLIA_{t-3}$	8.7E-08	(3.5E-08)	2.3E-08	(2.5E-08)	-3.5E-08	(1.2E-07)
$BLIA_{t-4}$	-3.8E-08	(3.4E-08)	3.0E-09	(2.4E-08)	-2.3E-07	(1.1E-07)
$BLIA_{t-5}$	9.1E-08	(2.8E-08)	3.6E-08	(1.8E-08)	2.0E-07	(1.1E-07)
$BLIA_{t-6}$	3.6E-09	(2.8E-08)	-2.1E-08	(1.8E-08)	1.9E-07	(1.3E-07)
$BLIA_{t-7}$	2.8E-08	(2.8E-08)	-2.0E-08	(1.8E-08)	2.0E-07	(1.3E-07)
$BLIA_{t-8}$	-3.7E-08	(2.8E-08)	-3.1E-08	(1.8E-08)	-2.8E-07	(1.3E-07)
$BLIA_{t-9}$	5.3E-08	(2.8E-08)	2.7E-08	(1.7E-08)	1.7E-07	(1.2E-07)
$COMP_t$	-42.8	(36.5)	-77.7	(27.8)	69.8	(110.2)
$COMP_{t-1}$	-.005	(37.3)	-24.2	(28.4)	-.102	(12.2)
$COMP_{t-2}$	4.07	(37.1)	17.3	(27.9)	-.164	(11.9)
$COMP_{t-3}$	7.28	(36.4)	-38.8	(27.0)	.230	(11.8)
$COMP_{t-4}$	37.5	(34.2)	-40.3	(26.3)	.152	(99.6)
R^2	.2240		.2812		.4282	
F	3.32		2.87		2.34	
d.f.	276		176		75	

TABLE 27

Nonlinear Deposit-Currency Ratio Equation, 1873-1934

	α_0	α_1	α_2	α_3	α_4	α_5	α_6	R^2	Sample Period
1)	___	356.0 (173.0)	-1.73 (.716)	.002 (.0007)	2.47 (1.77)	1.46 (.100)	2899.9 (4208.8)	.2016	1873-1934
2)	.499 (35.7)	356.1 (173.3)	-1.74 (.718)	.002 (.0007)	2.47 (1.77)	1.46 (.100)	2912.0 (4303.1)	.2016	1873-1934
3)	___	21.13 (2.60)	-.102 (.013)	.0001 (.00002)	-.141 (.217)	1.05 (.027)	83.54 (44.87)	.9693	1873-1914
4)	-.7317 (.1787)	21.68 (2.51)	-.105 (.012)	.0001 (.00001)	-.276 (.215)	1.04 (.027)	51.8 (43.9)	.9717	1873-1914
5)	___	-12,700.0 (8,212.9)	43.18 (27.63)	-.0363 (.0232)	5.96 (9.38)	.9988 (1.045)	-756.9 (5,316.0)	.0351	1914-1934
6)	Model could not be estimated due to singularity.								

Standard errors in parentheses.

TABLE 28

Nonlinear Deposit-Currency Ratio Equation, 1873-1934

(COV Estimates from Table 21)

	α_0	α_1	α_2	α_3	α_4	α_5	α_6	R^2	Sample Period
1)	—	370.02 (194.16)	-1.78 (.795)	.002 (.0008)	2.25 (1.72)	1.48 (.087)	2.50 (65.12)	.1975	1873-1934
2)	-4.06 (38.42)	368.56 (194.98)	-1.77 (.799)	.002 (.0008)	2.26 (1.73)	1.48 (.088)	2.18 (65.29)	.1975	1873-1934
3)	—	23.56 (2.84)	-0.113 (.014)	.0002 (.00002)	-.119 (.248)	1.05 (.027)	.419 (.910)	.9685	1873-1914
4)	-.7848 (.1938)	23.80 (2.74)	-.114 (.013)	.0002 (.00002)	-.325 (.244)	1.04 (.027)	.783 (.887)	.9709	1873-1914
5)	—	-13,689.1 (8,437.1)	46.54 (28.4)	-.0391 (.0238)	6.14 (13.27)	.8977 (1.628)	48.47 (82.73)	.0387	1914-1934
6)	Model could not be estimated due to singularity.								

Standard errors in parentheses.

TABLE 30

Nonlinear Deposit-Currency Ratio Equations, 1873-1934
(COV Estimates from Table 23)

	α_0	α_1	α_2	α_3	α_4	α_5	α_6	R^2	Sample Period
1)	—	369.72 (194.11)	-1.78 (.7942)	.0021 (.0008)	2.25 (1.71)	1.48 (.086)	1.49 (2.46)	.1975	1873-1934
2)	-3.768 (39.82)	368.68 (194.74)	-1.77 (.797)	.002 (.0008)	2.26 (1.72)	1.48 (.087)	.084 (2.55)	.1975	1873-1934
3)	—	23.53 (2.83)	-.1126 (.0136)	.0002 (.00002)	-.231 (.246)	1.06 (.027)	.032 (.025)	.9687	1873-1914
4)	-.7437 (.1961)	23.68 (2.74)	-.1138 (.0131)	.0002 (.00002)	-.2923 (.2484)	1.042 (.028)	.0137 (.0242)	.9709	1873-1914
5)	—	-12,985.0 (8,262.5)	44.11 (27.78)	-.0371 (.0233)	6.00 (11.78)	.9408 (1.382)	1.324 (3.45)	.0365	1914-1934
6)	Model could not be estimated due to singularity.								

Standard errors in parentheses.

TABLE 31

Currency-Deposit Ratio Equations, 1870-1934

(COV_t^e constrained to be nonpositive)

	CONSTANT	t	$(R_{dt} - LOSS_t^e)$	COV_t^e	WARI	BKHOL	R^2	SSE	DW	Sample Period
(1)	-1.026	-.0098	-.5483	-21.419	-.0445	.2671	.9038	23.454	.5598	1873-1934
	(.1507)	(.0002)	(.0448)	(12.517)	(.0900)	(.1685)				
(2)	-.2693	-.0095	-.3119	-8.254	-.0334	.2501	.6344	10.945	*	1873-1934
	(.2454)	(.0004)	(.0722)	(8.026)	(.1269)	(.1480)				
(3)	-.1802	-.0056	-.1654	-10.293	.0092	--	.9437	1.199	.9346	1873-1914
	(.1590)	(.0002)	(.0512)	(6.057)	(.0382)					
(4)	-.0354	-.0054	-.1172	-5.634	.0077	--	.8460	.8611	*	1873-1914
	(.2390)	(.0003)	(.0767)	(4.549)	(.0503)					
(5)	-1.667	-.0039	-.1888	-21.889	-.1321	.5264	.2166	6.339	1.554	1914-1934
	(.3244)	(.0014)	(.0582)	(14.920)	(.1365)	(.1632)				
(6)	-1.784	-.0034	-.1790	-13.984	-.1009	.4389	.1356	5.994	*	1914-1934
	(.3914)	(.0017)	(.0695)	(15.255)	(.1601)	(.1786)				

*Corrected for first order serial correlation. Standard errors are in parentheses.

WARI ≡ Dummy variable for World War I. BKHOL ≡ Dummy variable for the Banking Holiday of 1933.

TABLE 32

Currency-Deposit Ratio Equation, 1870-1934

(COV^e_t constrained)

	CONSTANT	t	$(R_{dt} - LOSS^e_t)$	COV^e_t	WARI	BKHOL	R^2	SSE	DW	Sample Period
(1)	-1.055 (.1474)	-.0098 (.0002)	-.5595 (.0435)	-14.121 (9.020)	-.0462 (.0902)	.2795 (.1704)	.9036	23.491	.5643	1873-1934
(2)	-.2805 (.2449)	-.0094 (.0004)	-.3159 (.0721)	-3.490 (5.374)	-.0342 (.1269)	.2520 (.1482)	.6361	10.974	*	1873-1934
(3)	-.2175 (.1581)	-.0056 (.0002)	-.1789 (.0510)	-7.412 (3.730)	.0118 (.0378)	--	.9440	1.194	.9504	1873-1914
(4)	-.0582 (.2369)	-.0054 (.0003)	-.1254 (.0761)	-3.417 (2.799)	.0091 (.0500)	--	.8493	.8618	*	1873-1914
(5)	-1.810 (.3196)	-.0035 (.0014)	-.1978 (.0585)	-4.658 (11.850)	-.1168 (.1381)	.4934 (.1687)	.2000	6.474	1.492	1914-1934
(6)	-1.901 (.3980)	-.0029 (.0018)	-.1801 (.0718)	-1.073 (11.573)	-.0840 (.1648)	.4055 (.1835)	.1171	6.035	*	1914-1934

*Corrected for first order serial correlation. Standard errors are in parentheses.

WARI ≡ Dummy variable for World War I. BKHOL ≡ Dummy variable for the Banking Holiday of 1933.

TABLE 33

Currency-Deposit Ratio Equations, 1870-1934

(COV^e_t unconstrained)

	CONSTANT	t	$(R_{dt} - LOSS^e_t)$	COV^e_t	WARI	BKHOL	R^2	SSE	DW	Sample Period
(1)	1.7802 (.1641)	-.0097 (.0002)	-.6102 (.0446)	-10.7978 (9.0494)	-.0419 (.0880)	.2411 (.1669)	.9082	22.3801	.5944	1873-1934
(2)	2.4830 (.2850)	-.0095 (.0004)	-.3631 (.0738)	-2.6351 (5.5570)	-.0354 (.1254)	.2611 (.1481)	.6574	10.9454	*	1873-1934
(3)	1.4945 (.1189)	-.0056 (.0002)	-.1838 (.0506)	1.8731 (5.2124)	.0278 (.0382)	--	.9434	1.2062	.9200	1873-1914
(4)	1.5598 (.1815)	-.0055 (.0003)	-.1478 (.0745)	-1.0042 (4.0827)	.0164 (.0506)	--	.8428	.8603	*	1873-1914
(5)	-.7802 (.7205)	-.0035 (.0014)	-.2099 (.0633)	-2.7610 (7.3053)	-.1163 (.1380)	.4798 (.1660)	.1980	6.4906	1.4871	1914-1934
(6)	-1.0243 (.9045)	-.0029 (.0018)	-.1910 (.0078)	-.8574 (.1652)	-.0851 (.1652)	.3995 (.1826)	.1149	6.0436	*	1914-1934

*Corrected for first order serial correlation. Standard errors are in parentheses.

WARI ≡ Dummy variable for World War I. BKHOL ≡ Dummy variable for the Banking Holiday of 1933.

TABLE 34

Currency-Deposit Ratio Equations, 1870-1934

(COV^e_t constrained to be nonpositive)

	CONSTANT	t	$(R_{dt} - LOSS^e_t)$	COV^e_t	WARI	BKHOL	R^2	SSE	DW	Sample Period
(1)	1.7945	-.0097	-.6046	-14.2302	-.0391	.2262	.9082	22.3883	.5900	1873-1934
	(.1683)	(.0002)	(.0459)	(12.4217)	(.0879)	(.1648)				
(2)	2.4962	-.0095	-.3592	-5.8228	-.0350	.2587	.6553	10.9298	*	1873-1934
	(.2863)	(.0004)	(.0741)	(8.2077)	(.1255)	(.1479)				
(3)	1.4918	-.0056	-.1851	2.5593	.0277	--	.9434	1.2063	.9185	1873-1914
	(.1198)	(.0002)	(.0508)	(7.4980)	(.0382)					
(4)	1.5570	-.0055	-.1484	.1172	.0164	--	.8422	.8605	*	1873-1914
	(.1822)	(.0003)	(.0748)	(5.8468)	(.0507)					
(5)	-.6675	-.0036	-.2046	-7.9276	-.1213	.4895	.2031	6.4492	1.5084	1914-1934
	(.7249)	(.0014)	(.0635)	(9.1662)	(.1376)	(.1633)				
(6)	-.9363	-.0031	-.1901	-4.1382	-.0901	.4083	.1205	6.0335	*	1914-1934
	(.9000)	(.0017)	(.0769)	(8.9148)	(.1637)	(.1801)				

*Corrected for first order serial correlation. Standard errors are in parentheses.

WARI ≡ Dummy variable for World War I. BKHOL ≡ Dummy variable for the Banking Holiday of 1933.

TABLE 35

Estimates of Perceived Risk, 1914-1972

($COV_t \equiv (INPRO_t - INPRO_{t-1})LOSS_t$; No Deseasonalization)

	(1) 1914-1972		(2) 1914-1934		(3) 1935-1972	
CONSTANT	-.0002	(.00015)	.0002	(.0009)	-.0002	(.0002)
COV_{t-1}	-.0232	(.0413)	.0944	(.088)	-.0775	(.0493)
COV_{t-2}	-.0227	(.0408)	-.0858	(.0885)	-.0435	(.0494)
COV_{t-3}	-.0118	(.0411)	-.0334	(.0891)	-.0022	(.0505)
COV_{t-4}	.0243	(.0408)	-.055	(.0896)	.0436	(.0493)
COV_{t-5}	.0817	(.0412)	-.1663	(.0897)	.1690	(.0496)
COV_{t-6}	-.0614	(.0409)	-.1599	(.0903)	-.0166	(.0500)
COV_{t-7}	-.0876	(.0408)	-.0273	(.0879)	-.0635	(.0501)
COV_{t-8}	-.0640	(.0409)	.0086	(.0855)	-.1034	(.0500)
$BLIA_t$	-5.7105	(5.2664)	-10.9363	(9.9649)	-4.9902	(6.2995)
$BLIA_{t-1}$	-6.9204	(5.4404)	-8.6718	(11.1703)	-8.3436	(6.4449)
$BLIA_{t-2}$	4.5431	(5.6095)	-7.2978	(11.1705)	4.3257	(6.6012)
$BLIA_{t-3}$	-17.2138	(5.652)	7.0201	(11.0899)	-22.6656	(6.698)
$BLIA_{t-4}$	-4.6602	(5.6767)	9.8365	(11.1068)	-11.8766	(6.7734)
$BLIA_{t-5}$	27.722	(5.7041)	-8.0562	(11.5962)	33.6259	(6.8199)
$BLIA_{t-6}$	-4.5706	(5.8194)	-7.1474	(11.8797)	4.0025	(7.0121)
$BLIA_{t-7}$	17.93	(5.7458)	1.4771	(11.5428)	26.7923	(6.9207)
$BLIA_{t-8}$	19.0821	(5.7988)	-13.1431	(11.6255)	25.8420	(7.0431)
$BLIA_{t-9}$	-8.2484	(5.8538)	6.881	(11.8709)	-5.7734	(7.0758)
$BLIA_{t-10}$	-6.4121	(5.9576)	15.3175	(11.7381)	-8.0517	(7.1855)
$BLIA_{t-11}$	-.8161	(5.9641)	-4.701	(11.7981)	-3.8862	(7.1850)
$BLIA_{t-12}$	4.7020	(5.9798)	-3.9641	(11.64)	-.0034	(7.1544)
$BLIA_{t-13}$	14.3406	(5.9814)	31.8184	(11.4986)	7.3174	(7.152)
$BLIA_{t-14}$	-4.8786	(5.9012)	-6.8684	(12.1696)	-11.0565	(6.9289)
$BLIA_{t-15}$	13.1928	(5.8961)	8.9459	(12.0811)	12.4041	(7.0223)
$BLIA_{t-16}$	4.2142	(5.9070)	.1088	(12.0414)	2.0109	(7.0047)
$BLIA_{t-17}$	-15.822	(5.9604)	3.8397	(12.3909)	-16.9938	(7.0488)
$BLIA_{t-18}$	-19.068	(6.1168)	-3.8563	(12.1693)	-22.9395	(7.2536)
$BLIA_{t-19}$	7.3158	(6.1463)	4.6597	(11.5748)	10.6319	(7.3178)
$BLIA_{t-20}$	-11.7264	(6.2536)	-6.5447	(11.5593)	-8.9517	(7.5667)
$BLIA_{t-21}$	-5.5524	(6.2132)	5.5288	(11.3573)	-2.7402	(7.5356)
$BLIA_{t-22}$	19.4777	(6.0844)	-7.1863	(11.3384)	15.8901	(7.3876)
$BLIA_{t-23}$	-10.8278	(6.01)	-9.3011	(10.1249)	-12.0074	(7.3349)
$COMP_t$	-.0604	(.0446)	-.0294	(.0437)	-.0637	(.0755)
$COMP_{t-1}$	-.0255	(.0775)	-.1621	(.0704)	.1013	(.1336)
$COMP_{t-2}$	.2680	(.0809)	.5048	(.0754)	-.0613	(.1392)
$COMP_{t-3}$	-.2449	(.0829)	-.4750	(.0901)	-.0253	(.1414)

TABLE 35 (Cont'd)

$COMP_{t-4}$	.1123	(.0846)	.2495	(.1007)	.1111	(.1433)
$COMP_{t-5}$	-.1129	(.0847)	-.1779	(.104)	-.0912	(.1430)
$COMP_{t-6}$	.0275	(.0848)	.1185	(.1067)	-.1317	(.1430)
$COMP_{t-7}$	.0551	(.0846)	-.0429	(.1088)	.2313	(.1432)
$COMP_{t-8}$	-.0425	(.0833)	.0201	(.1067)	-.0943	(.1420)
$COMP_{t-9}$	.1633	(.0817)	.0089	(.0994)	.3816	(.1417)
$COMP_{t-10}$	-.2128	(.0779)	.0208	(.088)	-.6400	(.1373)
$COMP_{t-11}$	.0706	(.0459)	-.0355	(.0496)	.2907	(.0794)
R^2	.2106		.4514		.3107	
SSE	.00214		.00022		.0016	
F	3.54		2.58		4.11	
d.f.	584		138		401	

Standard errors are in parentheses.

BLIA ≡ Liabilities of failed businesses.

COMP ≡ Interest rate on commercial paper.

TABLE 36

Estimates of Perceived Risk, 1914-1972

$(COV_t \equiv (INPRO_t - INPRO_{t-1})LOSS_t$; Deseasonalized)

	(1) 1914-1972		(2) 1914-1934		(3) 1935-1972	
CONSTANT	.0001	(.0001)	.00005	(.0002)	.0002	(.0001)
COV_{t-1}	-.0218	(.0415)	-.0349	(.0854)	-.0729	(.0500)
COV_{t-2}	-.0100	(.0411)	.0065	(.0862)	-.0411	(.0500)
COV_{t-3}	-.0407	(.0412)	-.1351	(.0853)	-.0382	(.0503)
COV_{t-4}	.0040	(.0409)	-.0649	(.0855)	.0324	(.0493)
COV_{t-5}	.1078	(.0412)	-.1127	(.0850)	.1699	(.0497)
COV_{t-6}	-.0453	(.0411)	-.2085	(.0858)	-.0143	(.0502)
COV_{t-7}	-.0747	(.0409)	-.0113	(.0873)	-.0765	(.0500)
COV_{t-8}	-.0808	(.0411)	.0565	(.0870)	-.1165	(.0502)
$BLIA_t$	-2.5841	(5.2059)	-8.8842	(10.9577)	-2.4558	(6.2251)
$BLIA_{t-1}$	-8.1707	(5.4399)	1.0724	(12.9107)	-7.3599	(6.4231)
$BLIA_{t-2}$	1.1799	(5.6313)	-33.4857	(12.6945)	5.5904	(6.6082)
$BLIA_{t-3}$	-16.3236	(5.6896)	19.3394	(12.9162)	-23.6032	(6.7288)
$BLIA_{t-4}$	-2.5999	(5.7224)	14.0039	(12.9311)	-10.6632	(6.8246)
$BLIA_{t-5}$	30.0627	(5.7327)	-5.1028	(13.8989)	32.1242	(6.8458)
$BLIA_{t-6}$	-4.5279	(5.8797)	-10.8551	(13.9178)	1.0066	(7.0371)
$BLIA_{t-7}$	16.3716	(5.7731)	-2.1222	(13.6811)	25.9295	(6.8818)
$BLIA_{t-8}$	18.1303	(5.8245)	-14.5620	(13.7745)	28.3325	(7.0058)
$BLIA_{t-9}$	-8.9287	(5.8591)	2.9056	(13.9667)	-6.9108	(7.1159)
$BLIA_{t-10}$	-5.0218	(5.9315)	13.0823	(13.7787)	-7.7153	(7.2424)
$BLIA_{t-11}$	1.4821	(5.8775)	4.1901	(12.9737)	3.3086	(.9470)
$BLIA_{t-12}$	5.4796	(5.8169)	8.6722	(12.9737)	-1.3149	(7.2032)
$BLIA_{t-13}$	7.7846	(5.9005)	27.1500	(13.6951)	6.9487	(7.0203)
$BLIA_{t-14}$	-10.3312	(5.8698)	-13.5613	(13.9766)	-11.1186	(6.9178)
$BLIA_{t-15}$	12.9034	(5.9219)	12.9100	(14.1352)	10.8989	(7.0189)
$BLIA_{t-16}$	8.0855	(5.9649)	10.5862	(13.3875)	3.5462	(7.0445)
$BLIA_{t-17}$	-14.3648	(6.0002)	-13.2023	(13.8794)	-18.4710	(7.0702)
$BLIA_{t-18}$	-22.0782	(6.1595)	-5.3020	(13.7023)	-24.4067	(7.2872)
$BLIA_{t-19}$	8.9933	(6.2107)	10.6571	(13.1637)	9.3055	(7.3745)
$BLIA_{t-20}$	-12.4947	(6.3155)	-8.8530	(13.3054)	-10.1870	(7.5271)
$BLIA_{t-21}$	-5.0664	(6.2532)	-5.5353	(13.1826)	-4.7135	(7.4105)
$BLIA_{t-22}$	19.9742	(6.0277)	7.1355	(13.2973)	18.1091	(7.1942)
$BLIA_{t-23}$	-8.5715	(5.8452)	-9.5873	(11.0493)	-12.2505	(7.1116)
$COMP_t$	-.0073	(.0115)	-.0234	(.0232)	-.0079	(.0147)
$COMP_{t-1}$	.0108	(.0123)	-.0087	(.0284)	.0062	(.0158)
$COMP_{t-2}$	.0172	(.0127)	.0751	(.0284)	.0062	(.0158)
$COMP_{t-3}$	-.0156	(.0130)	-.0480	(.0297)	-.0121	(.0162)

TABLE 36 (Cont'd)

$COMP_{t-4}$	-.0057	(.0130)	-.0260	(.0283)	.0173	(.0164)
$COMP_{t-5}$	-.0068	(.0131)	.0353	(.0293)	.0055	(.0165)
$COMP_{t-6}$	.0331	(.0131)	.0176	(.0287)	.0390	(.0164)
$COMP_{t-7}$	-.0391	(.0131)	-.0215	(.0278)	-.0489	(.0164)
$COMP_{t-8}$	-.0091	(.0131)	.0277	(.0298)	-.0237	(.0164)
$COMP_{t-9}$	.0159	(.0129)	-.0129	(.0295)	.0104	(.0159)
$COMP_{t-10}$	-.0004	(.0126)	-.0193	(.0298)	.0089	(.0155)
$COMP_{t-11}$	.0057	(.0119)	.0072	(.0234)	.0145	(.0152)
R^2	.2043		.3047		.2918	
SSE	.00215		.00028		.00163	
F	3.41		1.37		3.75	
d.f.	584		138		.2918	

Standard errors are in parentheses.

BLIA ≡ Liabilities of failed businesses.

COMP ≡ Interest rate on commercial paper.

TABLE 37

Estimates of Perceived Risk, 1873-1934

($COV_t \equiv (Inpro_t - Inpro_{t-1})Loss_t$; No Deseasonalized Data)

	(1) 1914-1934		(2) 1914-1972		(3) 1935-1972	
Constant	-.0002	(.0002)	.00	(0.0)	-.0002	(.0002)
COV_{t-1}	-.026	(.041)	.121	(.085)	-.085	(.049)
COV_{t-2}	-.026	(.041)	-.073	(.088)	-.051	(.049)
COV_{t-3}	-.019	(.041)	-.041	(.088)	-.014	(.049)
COV_{t-4}	.026	(.041)	-.034	(.088)	.043	(.049)
COV_{t-5}	.082	(.041)	-.178	(.088)	.171	(.05)
COV_{t-6}	-.062	(.041)	-.144	(.089)	-.014	(.05)
COV_{t-7}	-.084	(.041)	-.022	(.089)	-.058	(.05)
COV_{t-8}	-.061	(.041)	.012	(.087)	-.098	(.05)
$BLIA_t$		---		---		---
$BLIA_{t-1}$	-7.63	(5.35)	-13.28	(5.35)	-8.18	(6.4)
$BLIA_{t-2}$	3.13	(5.43)	-7.91	(11.1)	3.36	(6.43)
$BLIA_{t-3}$	-17.6	(5.63)	4.96	(10.9)	-23.0	(6.65)
$BLIA_{t-4}$	-4.78	(5.65)	11.4	(11.0)	-12.6	(6.72)
$BLIA_{t-5}$	27.7	(5.68)	-11.1	(10.8)	33.8	(6.80)
$BLIA_{t-6}$	-4.6	(5.82)	-4.16	(11.5)	4.03	(7.0)
$BLIA_{t-7}$	17.7	(5.75)	1.15	(11.5)	26.87	(6.91)
$BLIA_{t-8}$	19.0	(5.78)	-11.8	(11.5)	26.4	(6.94)
$BLIA_{t-9}$	-9.11	(5.83)	4.7	(11.6)	-6.0	(7.1)
$BLIA_{t-10}$	-6.91	(5.95)	14.4	(11.6)	-8.04	(7.18)
$BLIA_{t-11}$	-1.19	(5.96)	-6.97	(11.6)	-3.98	(7.16)
$BLIA_{t-12}$	3.46	(5.92)	-6.05	(11.5)	-.899	(7.1)
$BLIA_{t-13}$	14.2	(5.98)	31.9	(11.4)	6.81	(7.13)
$BLIA_{t-14}$	-4.85	(5.9)	-6.15	(11.8)	-11.1	(6.92)
$BLIA_{t-15}$	12.8	(5.88)	10.1	(11.9)	11.3	(6.93)
$BLIA_{t-16}$	4.43	(5.91)	0.6	(12.0)	1.67	(6.99)
$BLIA_{t-17}$	-16.2	(5.91)	4.3	(12.2)	-17.7	(6.95)
$BLIA_{t-18}$	-18.5	(6.1)	-2.75	(12.1)	-22.8	(7.23)
$BLIA_{t-19}$	7.10	(6.15)	3.24	(1.14)	10.5	(7.3)
$BLIA_{t-20}$	-10.9	(6.23)	-7.06	(11.5)	-7.66	(7.48)
$BLIA_{t-21}$	-5.5	(6.2)	6.93	(11.3)	-2.87	(7.49)
$BLIA_{t-22}$	19.1	(6.07)	-7.73	(11.2)	15.5	(7.37)
$BLIA_{t-23}$	-10.8	(6.01)	-7.84	(10.0)	-1.2	(7.3)
$COMP_t$		---		---		---
$COMP_{t-1}$	-.1143	(.045)	-.199	(.043)	.0037	(.075)
$COMP_{t-2}$	.3003	(.0778)	.5235	(.072)	-.0282	(.135)
$COMP_{t-3}$	-.2599	(.0821)	-.4965	(.087)	-.0320	(.141)
$COMP_{t-4}$	.1304	(.0835)	.2550	(.098)	.1294	(.1426)
$COMP_{t-5}$	-.1234	(.0845)	-.1706	(.102)	-.1061	(.1423)
$COMP_{t-6}$	.027	(.0848)	.0993	(.1051)	-.1267	(.1426)
$COMP_{t-7}$	.064	(.084)	-.0157	(.1063)	.2370	(.1423)
$COMP_{t-8}$	-.047	(.083)	.0017	(.1054)	-.0997	(.1418)

TABLE 37 (Cont'd)

$COMP_{t-9}$	.156	(.082)	.0184	(.0988)	.3692	(.1409)
$COMP_{t-10}$	-.212	(.078)	.0185	(.0878)	-.6326	(.137)
$COMP_{t-11}$	.076	(.045)	-.0340	(.0491)	.2925	(.0793)
R^2	.2065		.4454		.3084	
SSE	.0021		.0002		.0016	
F	3.63		2.68		4.28	
d.f.		586		140		403

TABLE 38

Estimates of Perceived Risk, 1914-1972

($COV_t \equiv (Inpro_t - Inpro_{t-1})(R_{dt} - LOSS_t)$; Deseasonalized Data)

	(1) 1914-1972		(2) 1914-1934		(3) 1935-1972	
Constant	.005	(.002)	0.0	(.003)	.009	(.003)
COV_{t-1}	-.335	(.041)	.312	(.088)	-.413	(.05)
COV_{t-2}	-.402	(.043)	0.035	(.090)	-.507	(.054)
COV_{t-3}	-.252	(.046)	-.121	(.085)	-.373	(.061)
COV_{t-4}	-.087	(.048)	.17	(.085)	-.212	(.063)
COV_{t-5}	-.002	(.047)	.038	(.089)	-.092	(.063)
COV_{t-6}	.144	(.046)	-.153	(.088)	.054	(.06)
COV_{t-7}	.130	(.043)	.193	(.09)	.099	(.053)
COV_{t-8}	- .145	(.042)	-.005	(.087)	.12	(.051)
$BLIA_t$		---		---		---
$BLIA_{t-1}$	-1.44	(1.39)	-2.94	(1.74)	-.391	(1.69)
$BLIA_{t-2}$	-2.65	(1.42)	2.12	(1.97)	-2.58	(1.7)
$BLIA_{t-3}$	-1.23	(1.48)	-1.09	(1.96)	-1.72	(1.77)
$BLIA_{t-4}$	.603	(1.48	1.37	(1.93)	-.209	(1.78)
$BLIA_{t-5}$	.242	(1.48)	1.09	(1.94)	-.761	(1.79)
$BLIA_{t-6}$	-.433	(1.49)	.753	(2.05)	-2.81	(1.80)
$BLIA_{t-7}$	-.941	(1.47)	-2.98	(1.98)	-2.9	(1.78)
$BLIA_{t-8}$	-.263	(1.48)	1.26	(2.01)	-.435	(1.79)
$BLIA_{t-9}$	-1.25	(1.48)	-1.35	(2.00)	1.12	(1.79)
$BLIA_{t-10}$	.207	(1.5)	1.74	(1.99)	.328	(1.83)
$BLIA_{t-11}$	.544	(1.49)	.644	(1.84)	-.492	(1.83)
$BLIA_{t-12}$	-.499	(1.12)	-.034	(1.29)	-.559	(1.39)
$BLIA_{t-13}$	1.59	(1.49)	-.327	(1.96)	1.88	(1.81)
$BLIA_{t-14}$	5.12	(1.51)	1.69	(2.07)	6.31	(1.82)
$BLIA_{t-15}$	2.42	(1.54)	-1.89	(2.09)	4.21	(1.86)
$BLIA_{t-16}$	1.39	(1.57)	2.94	(2.01)	2.18	(1.92)
$BLIA_{t-17}$	-.185	(1.58)	-1.58	(1.99)	.700	(1.93)
$BLIA_{t-18}$	2.39	(1.62)	.194	(2.12)	2.84	(1.98)
$BLIA_{t-19}$	-3.47	(1.62)	-.492	(1.97)	-3.07	(2.0)
$BLIA_{t-20}$	-1.10	(1.65)	.048	(1.99)	.942	(2.04)
$BLIA_{t-21}$	1.46	(1.62)	-1.15	(1.97)	3.32	(1.98)
$BLIA_{t-22}$	-.591	(1.56)	-1.43	(2.03)	1.13	(1.91)
$BLIA_{t-23}$	-1.59	(1.5)	1.42	(1.71)	-1.71	(1.89)
$COMP_t$		---		---		---
$COMP_{t-1}$	.389	(.311)	.56	(.366)	.297	(.412)
$COMP_{t-2}$	.651	(.323)	-.987	(.458)	.856	(.416)
$COMP_{t-3}$	-2.15	(.336)	.178	(.46)	-2.96	(.427)
$COMP_{t-4}$	.564	(.355)	.028	(.439)	.607	(.469)
$COMP_{t-5}$	.499	(.358)	.214	(.401)	.646	(.476)
$COMP_{t-6}$	-.047	(.357)	-.138	(.414)	.283	(.475)
$COMP_{t-7}$	.245	(.357)	.037	(.402)	.511	(.471)

TABLE 38 (Cont'd)

$COMP_{t-8}$	-.823	(.355)	-1.24	(4.03)	-.972	(.468)
$COMP_{t-9}$	-.368	(.351)	1.30	(.431)	-.803	(.454)
$COMP_{t-10}$	.412	(.339)	.259	(.446)	.21	(.443)
$COMP_{t11}$	.413	(.321)	-.290	(.362)	.61	(.432)
R^2	.4341		.5504		.5184	
SSE	1.499		.0658		1.204	
F	10.70		4.08		10.33	
d.f.		586		140		403

TABLE 39

Estimates of the Nonlinear Deposit-Currency Ratio, 1914-1972

α_0	α_1	α_2	α_3	α_4	α_5	α_6	R^2	Sample Period	COV Definition
1)	58.96 (4.47)	-.1628 (.0255)	.0002 (.00003)	-24.21 (15.2)	-.1223 (.5936)	264.59 (1334.9)	.1045	1914-1972	Table 32
2)	3.55 (31.67)	.5897 (.4325)	-.0023 (.0013)	-20.97 (16.97)	.4025 (.7117)	-447.2 (6820.4)	.0629	1914-1934	Table 32
3)	59.36 (4.47)	-.1645 (.0253)	.0002 (.00003)	-24.0 (14.9)	-.114 (.5757)	934.25 (1417.4)	.1051	1914-1972	Table 33
4)	3.46 (31.57)	.6137 (.4327)	-.0023 (.0013)	-20.97 (17.46)	.3899 (.7339)	5,389.7 (7100.1)	.0660	1914-1934	Table 33
5)	58.92 (4.46)	-.1626 (.0255)	.0002 (.00003)	-24.25 (15.24)	-.1246 (.5957)	221.3 (1,335.6)	.1045	1914-1972	Table 34
6)	3.27 (31.7)	.5888 (.4322)	-.0023 (.0013)	-21.05 (17.0)	.3988 (.7135)	-1,580.9 (6,754.0)	.0632	1914-1934	Table 34
7)	59.55 (4.40)	-.1675 (.0255)	.0002 (.00003)	-22.02 (11.99)	.0243 (.4588)	40.14 (34.65)	.1066	1914-1972	Table 35
8)	9.26 (32.12)	.5279 (.4372)	-.0021 (.0013)	-21.46 (13.13)	.4797 (.5523)	299.4 (32.55)	.0675	1914-1934	Table 35

Standard errors in parentheses.

TABLE 40

Log-Linear Currency-Deposit Ratio Equations, 1919-1972

(COV^e_t unconstrained; COV^e_t from Table 35)

	CONSTANT	t	$(R_{dt} - LOSS^e_t)$	COV^e_t	BKHOL	WARII	DOUB	R^2	SSE	DW	Sample Period
(1)	-1.8360 (.0340)	.0005 (.00004)	-.0539 (.0073)	-.4358 (3.6593)	.5083 (.0850)	.0277 (.0259)	-.1254 (.0971)	.3097	17.1856	.5334	1919-1972
(2)	-1.7772 (.0772)	.0005 (.0001)	-.0422 (.0158)	.5570 (1.9356)	.1210 (.0841)	.0384 (.0513)	-.0048 (.0516)	.0565	7.6191	*	1919-1972
(3)	-2.2204 (.0895)	-.0006 (.0005)	-.2165 (.0381)	-7.1803 (16.1458)	.5254 (.1234)	--	--	.3159	8.3962	1.0496	1919-1934
(4)	-2.1725 (.1414)	-.0003 (.0008)	-.1878 (.0596)	-2.6920 (11.7786)	.3258 (.1386)	--	--	.1250	6.4287	*	1919-1934
(5)	-.5731 (.1207)	-.0007 (.0001)	.1022 (.0150)	-.1739 (2.9920)	--	.1383 (.0206)	-.1615 (.0700)	.1297	6.2510	.0833	1935-1972
(6)	-1.0602 (.1277)	-.0003 (.0002)	.0376 (.0111)	.6986 (.4492)	--	-.0076 (.0175)	.0055 (.0103)	.0302	.2681	*	1935-1972

*Corrected for first order serial correlation. Standard errors are in parentheses.

BKHOL ≡ Dummy variable for the Banking Holiday of 1933. WARII ≡ Dummy variable for World War II. DOUB ≡ Dummy variable for the doubling of reserve requirements in 1937.

TABLE 41

Log-Linear Currency-Deposit Ratio Equations, 1919-1972

(COV^e_t constrained to be nonpositive; COV^e_t from Table 35)

	CONSTANT	t	$(R_{dt} - LOSS^e_t)$	COV^e_t	BKHOL	WARII	DOUB	R^2	SSE	DW	Sample Period
(1)	-1.83 (.0346)	.0005 (.00004)	-.0537 (.0073)	1.2893 (9.1645)	.5060 (.0837)	.0274 (.0260)	-.1258 (.097)	.3097	17.1855	.5330	1919-1972
(2)	-1.7768 (.0772)	.0005 (.00009)	-.0423 (.0157)	3.3161 (5.0637)	.1196 (.0841)	.0375 (.0514)	-.0047 (.0516)	.0570	7.6146	*	1919-1972
(3)	-2.2247 (.0901)	-.0006 (.0004)	-.2157 (.0381)	-16.6952 (34.5872)	.5075 (.1127)	--	--	.3161	8.3945	1.056	1919-1934
(4)	-2.1708 (.1407)	-.0003 (.0008)	-.1893 (.0593)	12.96 (28.5712)	.3179 (.1367)	--	--	.1273	6.4245	*	1919-1934
(5)	-.5896 (.1219)	-.0007 (.0001)	.1006 (.0150)	6.5486 (7.1878)	--	.1362 (.0207)	-.1613 (.0699)	.1313	6.2392	.0850	1935-1972
(6)	-1.0705 (.1270)	-.0003 (.0002)	.0364 (.0111)	1.3783 (1.1290)	--	-.0072 (.0175)	.0055 (.0104)	.0281	.2690	*	1935-1972

*Corrected for first order serial correlation. Standard errors are in parentheses.

BKHOL ≡ Dummy variable for the Banking Holiday of 1933. WARII ≡ Dummy variable for World War II. DOUB ≡ Dummy variable for the doubling of reserve requirements in 1937.

TABLE 42

Log-Linear Currency-Deposit Ratio Equations, 1919-1972

(COV_t^e constrained to be nonpositive; COV_t^e from Table 36)

	CONSTANT	t	$(R_{dt} - LOSS_t^e)$	COV_t^e	BKHOL	WARII	DOUB	R^2	SSE	DW	Sample Period
(1)	-1.8368 (.0344)	.0005 (.00004)	-.0540 (.0073)	-1.6021 (9.9343)	.5066 (.0836)	.0278 (.0260)	-.1253 (.0971)	.3097	17.1853	.5336	1919-1972
(2)	-1.7769 (.0771)	.0005 (.0001)	-.0423 (.0158)	3.7336 (5.4620)	.1202 (.0841)	.0375 (.0513)	-.0052 (.0516)	.0571	7.6144	*	1919-1972
(3)	-2.2291 (.0899)	-.0006 (.0005)	-.2171 (.0380)	-.0006 (.0005)	.5060 (.1122)	--	--	.3184	8.3655	1.0523	1919-1934
(4)	-2.1755 (.1411)	-.0003 (.0008)	-.1876 (.0594)	-17.2937 (29.0518)	.3250 (.1366)	--	--	.1271	6.4183	*	1919-1934
(5)	-.5845 (.1213)	-.0007 (.0001)	.1011 (.0149)	6.3388 (7.388)	--	.1369 (.0206)	-.1618 (.0699)	.1312	6.2406	.0842	1935-1972
(6)	-1.0661 (.1273)	-.0003 (.0002)	.0369 (.0111)	1.5453 (1.1408)	--	-.0075 (.0175)	.0052 (.0103)	.0289	.2686	*	1935-1972

*Corrected for first order serial correlation. Standard errors are in parentheses.

BKHOL ≡ Dummy variable for the Banking Holiday in 1933. WARII ≡ Dummy variable for World War II. DOUB ≡ Dummy variable for the doubling of reserve requirements in 1937.

TABLE 43

Log-Linear Currency-Deposit Ratio Equations, 1919-1972

(COV_t^e unconstrained; COV_t^e from Table 36)

	CONSTANT	t	$(R_{dt} - LOSS_t^e)$	COV_t^e	BKHOL	WARII	DOUB	R^2	SSE	DW	Sample Period
(1)	-1.8360 (.3399)	.0005 (.00004)	-.0539 (.0073)	-.3090 (3.649)	.5078 (.0851)	.0276 (.0259)	-.1255 (.0971)	.3097	17.1858	.5334	1919-1972
(2)	-1.7767 (.0772)	.0005 (.0001)	-.0421 (.0158)	.8886 (1.9242)	.1211 (.0841)	.0385 (.0513)	-.0049 (.0516)	.0567	7.6175	*	1919-1972
(3)	-2.2218 (1.0895)	-.0006 (.0005)	-.2173 (.0381)	-11.0185 (14.2610)	.5409 (.1226)	--	--	.3175	8.3774	1.0532	1919-1934
(4)	-2.1763 (.1411)	-.0003 (.0008)	-.1897 (.0595)	-5.6889 (10.4891)	.3336 (.1382)	--	--	.1271	6.4207	*	1919-1934
(5)	-.5728 (.1207)	-.0007 (.0001)	.1022 (.0149)	.5024 (2.9530)	-- (.0206)	.1382 (.0700)	-.1618 (?)	.1298	6.2506	.0828	1935-1972
(6)	-1.0535 (.1280)	-.0003 (.0002)	.0385 (.0111)	.7768 (.4402)	--	-.0078 (.0175)	.0054 (.0103)	.0317	.2676	*	1935-1972

*Corrected for first order serial correlation. Standard errors are in parentheses.

BKHOL ≡ Dummy variable for the Banking Holiday of 1933. WARII ≡ Dummy variable for World War II. DOUB ≡ Dummy variable for the doubling of reserve requirements in 1937.