



American Finance Association

Impact of the 1988 Basle Accord on International Banks

Author(s): John D. Wagster

Source: *The Journal of Finance*, Vol. 51, No. 4 (Sep., 1996), pp. 1321-1346

Published by: Blackwell Publishing for the American Finance Association

Stable URL: <http://www.jstor.org/stable/2329396>

Accessed: 25/11/2009 10:19

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/action/showPublisher?publisherCode=black>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



Blackwell Publishing and American Finance Association are collaborating with JSTOR to digitize, preserve and extend access to *The Journal of Finance*.

<http://www.jstor.org>

Impact of the 1988 Basle Accord on International Banks

JOHN D. WAGSTER*

ABSTRACT

The ostensible purpose of the Basle Accord was to standardize bank-capital regulations among the twelve leading industrial countries. Its ulterior goal was to "level the playing field" by eliminating a funding-cost advantage of Japanese banks that had allowed them to capture more than one-third of international lending. The wealth gain for Japanese bank shareholders was 31.63 percent. Wealth effects for shareholders of non-Japanese banks were not significant. These results suggest that the Basle Accord did not eliminate the pricing advantage of Japanese banks, challenging the non-Japanese regulators' contention that the regulation would help level the playing field.

THE BASLE ACCORD WAS a landmark regulatory agreement; for the first time, regulations affecting banks in many different countries were jointly established. Agreement was reached on July 12, 1988 concluding fifteen months of negotiations conducted by members of the Basle Committee on Banking Supervision.¹ The ostensible goals of the Basle Accord were to reduce the risk of the international banking system and to minimize competitive inequality that arises from differences among national bank-capital regulations. Its ulterior goal was to eliminate the funding-cost advantage of Japanese banks that allowed them to capture more than one-third of international lending during

* The author gratefully thanks René Stulz for his comments that substantially improved the empirical model and hypotheses tested in this paper, Edward Kane for his many thoughtful comments and insights that helped to focus and refine the research, and anonymous referees for their helpful suggestions that improved the paper's overall quality. The author also thanks James Ang, S. Kerry Cooper, Edward Deak, James L. Hamilton, James Kolari, Kelly Price, Hassan Tehranian, and seminar participants at Wayne State University, the 1993 Financial Management and Southern Finance Association meetings, and the 1994 European Financial Management Association meeting for their helpful comments on earlier versions of this article. An earlier version of this article was chosen the outstanding international paper at the 1993 Southern Finance Association meeting. The author also thanks Mary Dehner for her valuable editorial suggestions. Any remaining errors are the author's sole responsibility. The author acknowledges financial support from the School of Business Administration at Wayne State University.

¹ The committee was formed in 1974 by the central bank governors of the G-10 countries plus Switzerland and Luxembourg in the aftermath of the failures of Franklin National Bank in New York and Bankhaus Herstatt in Germany. The committee is under the aegis of the Bank for International Settlements and has no formal authority, thus its agreements are carried out on a voluntary basis by the member countries.

the 1980s.² The Basle Accord was a major change for the regulatory system of many of the signatory countries with unknown consequences for the competitiveness of their banks.³

Even though the impact of the Basle Accord on bank competition is not known, the regulation has become the standard for financial services regulators throughout the industrialized world. Cooke (1991) reports that as of 1990, nineteen countries were planning to use the new methodology in regulating their banks. Moreover, the methodology applies to all financial intermediaries in the European Community (EC) and is being extended to the insurance and securities industries in North America and Japan. Because of the Basle Accord's foundational role in establishing this new regulatory regime, it is critical for financial services regulators, managers and shareholders to understand its effect on international bank competition and whether it accomplished its goals. To this end, this article addresses the Basle Accord's effect on the competitiveness of international banks.

Because regulatory theories have developed in a single-country context, no one theory of regulation provides a satisfactory explanation for the motivations behind the Basle Accord. However, several different theories do provide insights into certain aspects of the regulation. Applied to international banking, Niskanen's (1971) theory asserts that regulatory competition increases as the cost of changing regulatory regimes decreases. This implies that as technological advances reduce distance, culture, currency, and language barriers to switching regulatory regimes, international banks will engage in "regulatory arbitrage" by switching to lower-cost regulators to reduce the costs of complying with burdensome regulations. High-cost regulators view this competition with alarm because as their market share declines their importance declines, which means their budgets may decline too. To protect their interests by becoming more competitive with low-cost regulators, high-cost regulators will either reduce their regulatory burdens or increase their regulatory subsidies.⁴

² In 1981, only one of the ten largest banks in the world in terms of total assets was Japanese. By 1988, the seven largest were Japanese. This phenomenal growth occurred because Japanese banks were underpricing their competitors. Even though the value of international banks' market share varies according to how loans are treated that are booked offshore, it appears that by the end of the decade, Japanese banks had captured 38 percent of all international lending including 12 percent of the U.S. banking market and 23 percent of the U.K. banking market. Regarding this issue, *Euromoney* (1988, p. 47) quotes Eiji Akiyama, general manager of the London branch of Dai-Ichi Kangyo, as stating: "Because we have this big advantage, we can provide funds for our customers at reasonable cost." *Euromoney* interprets this quote as: "For that, read: 'We can undercut our non-Japanese competitors on (the) price (of loans).'" See Monro-Davies (1987) for evidence of market share acquisition by Japanese banks.

³ *Euromoney* (1988, p. 34) states that the Basle Accord will not hurt the Japanese banks, hence "... don't expect an end to their predatory pricing." Kane (1991, p. 8) also maintains "The new capital requirements will not as claimed noticeably raise the funding cost of rapidly growing Japanese banks." Likewise, Kapstein (1994, p. 116) reports "Critics claimed that U.S. negotiators had done nothing to restore the competitive balance and to level the playing field, which the authorities had claimed was one of their objectives."

⁴ Kapstein (1989, p. 324) points out that the growth of international banking in the 1970s and 1980s created new investment in financial centers such as Hong Kong, London, and Singapore

Kane (1990) argues that regulators of financial services constitute an industry that engaged in cartel-like behavior in negotiating the Basle Accord. In an attempt to limit regulatory competition to maintain regulatory market shares, Kane asserts that non-Japanese regulators tried to use the Basle Accord to restrain Japanese penetration of European and American financial markets.⁵ Moreover, Kane (1977) maintains that constituents seek government regulation of the behavior of agents whose actions are believed to reduce their individual welfare. In the context of the Basle Accord, this could explain why non-Japanese international banks did not oppose the efforts of their regulators during the Basle Accord negotiations—they believed the benefits in eliminating the pricing advantage of Japanese banks, thus stopping Japanese penetration of their markets, would outweigh the additional costs of the new regulation.⁶

Another issue regarding the economic effects of the Basle Accord is whether the “playing field” for international banks was made more level. Stigler (1971) maintains that the theory of economic regulation should explain who will receive the benefits or burdens of regulation, what form regulation will take, and the effects of regulation upon the allocation of resources. Stigler’s main thesis states that, as a rule, regulation is acquired by an industry and is designed and operated primarily for its benefit. Peltzman (1976) generalizes Stigler’s theory and posits that the essential commodity being transacted in the political market is a transfer of wealth. Viewed this way, the marketplace distributes more of the good to those whose effective demand is highest. Peltzman also notes that the group with the highest demand translates into a question of numbers: a small group with a large per capita stake will dominate over a large group with more diffuse interests.

Schwert (1981) argues that stock-market data measure the impact of regulatory changes better than other measures because asset prices incorporate all relevant information as soon as it becomes available. Therefore, a growing literature uses financial theory to study the consequences of regulatory changes. To measure the effects of regulatory changes produced by the Basle Accord, this article uses a multivariate regression model (MVRM) similar to that used by Cornett and Tehranian (1990) but extended to a multi-country context.

with relatively lax regulatory regimes. This development accelerated regulatory arbitrage. Kane (1991, p. 3) notes that “increasing international competition imposes *market discipline* on *government* regulators. This discipline constricts the freedom of financial regulators in different countries to impose or to maintain burdensome differences in the rules of financial competition.”

⁵ Graven (1986, p. 21) reports “While the ostensible purpose of an international agreement on capital ratios would be to establish standards that take into account the increased risk of lending, many analysts and bankers believe the Americans and the Europeans have another goal in mind: to rein in Japan’s aggressive banks, which account for an estimated 32 percent of world lending.”

⁶ Tobin (1991, p. 246) reports that during the pre-ratification public comment period of the Basle Committee proposal: “In the United States, members of Congress raised a few questions, but the issue did not attract a great deal of attention. A Senate staffer said: ‘It just never became an issue around here. It didn’t require any legislation, nor were there any banks calling up to get us to do anything.’”

Empirical models used in single-country studies may not be properly specified for multi-country studies when studying international regulatory agreements. In a single-country study, a stock market index proxies for aggregate market movements that may have affected the returns of stocks but had nothing to do with the event. However, when conducting a multi-country study, it is necessary to account for both worldwide and own-country systematic influences. Moreover, when studying banks, these issues become more complex because their stock prices are sometimes affected by interest-rate changes, too. This research breaks new ground by extending the MVRM methodology to an international context.

This study measures the wealth effects of shareholders of international banks from Canada, Germany, Japan, the Netherlands, Switzerland, the United Kingdom, and the United States to eighteen important events leading up to the Basle Accord over the September 11, 1985 to March 28, 1990 time period. While shareholders of banks from all of the countries studied experienced significant wealth effects for some of the events, only shareholders of Japanese banks experienced significant wealth effects when considering all eighteen events. This large cumulative wealth gain of 31.63 percent indicates that Japanese bank shareholders benefited from the Basle Accord. This challenges the contention of non-Japanese regulators that the Basle Accord would help level the playing field between Japanese and non-Japanese banks. The results also indicate that international equity-market factors should be taken into consideration when studying banks from Japan, the Netherlands, Switzerland, the United Kingdom, and the United States. The results further suggest that the long-term interest rate is an important factor in explaining bank stockholder returns in Canada, Germany, Japan, the Netherlands, Switzerland, and the United States, while the short-term interest rate is an important factor in explaining Canadian bank stockholder returns.

This article is organized as follows. Section I presents the hypothesized wealth effects for bank stockholders to announcements regarding the Basle Accord. Section II describes the data, the empirical methodology, and the tests of the hypotheses. Section III presents the empirical results. Section IV concludes.

I. Hypothesized Wealth Effects for Bank Stockholders to the Basle Accord

Pre-Basle Accord capital standards in the different countries failed to prevent an increase in the overall risk of the banking industry. Besides the well-documented incentives for management to increase bank risk as discussed by Buser, Chen, and Kane (1981), Lam and Chen (1985), Sharpe (1978), and Taggart and Greenbaum (1978), other factors during the 1980s brought substantial changes to the banking industry. High and volatile interest rates motivated deregulation of deposit interest rates and expanded bank asset powers. Moreover, in an effort to circumvent existing capital regulations, banks greatly increased their level of involvement in contingent, as opposed to

immediate, claims on the bank. These so-called off-balance-sheet activities further increased the opportunity for banks to exploit the deposit insurance system. In combination with rising international bank competition and the resultant changes in international banks' market shares, these trends raised the issue of differences in capital regulations across national boundaries. Bardos (1987–1988), Kapstein (1991), and Tobin (1991) relate that many regulators and bankers argued that divergent capital rules gave banks with lower capital ratios an advantage over banks subject to higher capital ratios. By increasing their asset base, low-capital banks could accept lower returns to achieve a given return on equity and thereby increase their market share.

Before the Basle Accord, cross-country comparisons of the capital levels of international banks were difficult because many different elements were considered to be bank capital. The Basle Accord, however, provides a common international definition of bank capital that divides capital into two tiers as shown in Table I. Tier 1 capital is common to all of the signatory countries thus making it useful for cross-country comparisons. It consists of common stockholder equity and disclosed reserves (except for some forms of preferred stock that U.S. bank holding companies count). Tier 2 capital, which consists of leeway elements that at least one of the signatory countries considered to be bank capital, can include any combination of the eligible capital elements permitted by the national regulator. Consequently, meaningful cross-country comparisons of the capital holdings of international banks can be made with Tier 1 capital, but not with Tier 2.

When regulators impose a higher capital-to-assets ratio that is binding, i.e., that cannot be avoided or mitigated by the regulated banks, banks with capital holdings in excess of the new minimum requirement should not be affected as much as banks with capital holdings below the new requirement.⁷ As capital-deficient banks are forced to hold more capital, their value will decline if their capital structure moves away from its optimal level or if their ability to appropriate deposit-insurance subsidies from the insuring agency is reduced. Both of these occurrences would increase the cost of capital for capital-deficient banks.

Panel A of Table II displays estimates of the 1987 capital-to-assets ratio of the seven bank portfolios based upon their Tier 1 capital holdings. In Column 2, it can be seen that the capital-to-assets ratio of 2.11 percent for the Japanese portfolio is below the 4 percent minimum prescribed for Tier 1 capital by the Basle Accord. The range of the Japanese bank ratios, displayed in Column 4, is from 1.60 to 3.13 percent and indicates that the capital ratio of each Japanese bank is less than the new minimum standard. Column 6 also shows that 100 percent of the banks in the Japanese portfolio are below the 4 percent minimum.

⁷ Changing the minimum capital requirement could affect the capital level at stronger banks to the extent they view their excess capital holdings above the minimum as a signal to customers about their capital strength, and to the extent they wish to hold an average amount of capital above the regulatory minimum for precautionary purposes.

Table I
Countries in which Capital Elements Recognized by the Basle Accord Predominate

Before the Basle Accord, cross-country comparisons of the capital levels of international banks were difficult because many different elements were considered to be bank capital. The Basle Accord, however, provides a common international definition of bank capital that divides capital into two tiers. Tier 1 capital is common to all of the signatory countries and consists of common stockholder equity and disclosed reserves (except for some forms of preferred stock that U.S. bank holding companies can count). Tier 2 capital, which consists of leeway elements that at least one of the signatory countries considered to be bank capital, can include any combination of eligible capital elements permitted by the national regulator. Consequently, meaningful cross-country comparisons of the capital holdings of international banks can be made with Tier 1 capital but not with Tier 2. The Basle Accord assigns various weights to broad categories of credit risk in a bank's balance sheet (0, 10, 20, 50, and 100 percent). Off-balance-sheet exposures are included with their appropriate conversion factors. The sum of weighted assets constitute adjusted total assets of which 8 percent (4 percent in Tier 1 elements and 4 percent in Tier 2) is the minimum capital base. Tier 2 elements are only eligible up to 100 percent of Tier 1.

Source: *Iron Triangles and Revolving Doors: Cases in U.S. Foreign Economic Policy*, R. Vernon, D. Spar, and G. Tobin, Praeger Publishers: New York, N.Y. An imprint of Greenwood Publishing Group, Inc., Westport, Conn.

Type of Capital	Countries
Tier 1 (Core Capital)	
A. Equity capital (less goodwill)	All
B. Disclosed reserves	All
C. Some forms of preferred stock	United States
Tier 2 (Supplementary Capital)	
A. Undisclosed reserves that have been charged against income	Japan, Germany
B. Revaluation Reserves	
1. Formal revaluation carried to the balance sheet	United Kingdom
2. Market values of securities not already reflected on the balance sheet (45 percent)	Japan, Germany
C. General loan-loss reserves up to 1.25 percent of total capital	France
D. Hybrid debt-capital instruments:	
1. long-term preferred shares	Canada
2. titres participatifs, titres subordonnés à durée indéterminée	France
3. Genussscheine	Germany
4. perpetual debt	United Kingdom
5. mandatory convertible debt instruments	United States

The capital-to-assets ratio for the German portfolio, at 3.32 percent, and for the Netherlands portfolio, at 3.52 percent, are also below the Tier 1 minimum. All three banks from the Netherlands are below the minimum, as are four of the German banks. The ratios of the remaining four portfolios are above the Tier 1 minimum, but five U.S. banks and one U.K. bank are below the minimum.

Panel A of Table II suggests that if the Basle Accord is a binding constraint, shareholders of banks from Japan and the Netherlands should experience wealth losses, because all of the banks in these portfolios are below the Tier 1

Table II

Descriptive Statistics for the Estimated Capital-to-Assets Ratio of Each Country's Bank Portfolio

Panel A lists the 1987 pre-Basle-Accord capital-to-assets ratio for each country's bank sample and some related statistics. The source of the capital-to-assets ratios is *The Banker's* "Top 500 Banks by Country for 1988" (July 1989, pp 113–130). Capital is defined as equity plus reserves with no debt provisions. Retained earnings are included only after provisions for bad debt. This definition is close to the concept of "core" or Tier 1 capital found in the Basle Accord. Panel B lists the Japanese bank portfolio's capital-to-assets ratio when including their "hidden reserves," i.e., the appreciated value of equity securities carried at cost on the balance sheet. The source of the capital-to-assets ratios is Salomon Brothers and are valued as of March 1987. The source for the Industrial Bank of Japan is Monro-Davies (1987, p. 59). The country portfolios in Panel A are ranked from lowest to highest by their capital-to-assets ratio. Panel A shows that the Japanese portfolio had the lowest ratio when not including hidden reserves in the capital base. Panel B, however, shows that the Japanese portfolio's ratio is higher than the other portfolios when including the hidden reserves of Japanese banks.

The capital-to-assets ratios are calculated using total assets and not risk-adjusted assets. A portfolio's capital-to-assets ratio would be larger on a risk-adjusted basis than the displayed capital-to-assets ratio if the asset holdings of the banks that comprise the portfolio are skewed towards low-risk assets. It is impossible to accurately reconstruct what a bank's pre-Basle Accord capital ratio would have been on a risk-adjusted basis because an asset's risk weight is determined by the counterparty to the claim. Certain distinctions are made between Organization for Economic Development (OECD) and non-OECD central governments, public sector entities (PSEs), and banks.

Claims on OECD central governments are assigned a 0 (or low) percent risk weight while non-OECD central government claims (not denominated in the national currency and funded by liabilities in the same currency) are assigned a 100 percent risk weight. OECD and non-OECD PSEs and banks are also treated differentially.

1	2	3	4	5	6
Bank Portfolio	Portfolio Capital-to- Assets Ratios (%)	Standard Deviation of Ratios (%)	Ratio Range (%)	Number of Banks	Number/Percent of Banks Below Tier 1 4% Minimum
Panel A: Estimates of the 1987 Pre-Basle-Accord Capital-to-Assets Ratios					
Japan	2.11	0.44	1.60–3.13	10	10/100%
Germany	3.32	0.70	2.37–4.20	6	4/67%
The Netherlands	3.52	0.37	3.14–3.87	3	3/100%
United States	4.90	0.91	3.53–6.86	22	5/23%
Canada	5.05	1.03	4.15–6.98	6	0/0%
United Kingdom	5.41	1.57	2.41–7.75	7	1/11%
Switzerland	6.29	0.65	5.86–7.44	5	0/0%
Panel B: Estimate of the 1987 Japanese Bank Capital-to-Assets Ratio Including Hidden Reserves					
Japan	12.35	1.48	9.62–14.89	10	0/0%

minimum. Conversely, shareholders of Canadian and Swiss banks should experience non-negative wealth effects because all of the banks within these portfolios are above the Tier 1 minimum. The German, U.K., and U.S. portfolios have banks that are both above and below the new minimum. A wealth loss

is expected for German bank shareholders, since 67 percent of the banks in this portfolio are below the Tier 1 minimum, and non-negative wealth effects are expected for U.K. and U.S. bank shareholders, since 89 percent and 77 percent of the banks in these portfolios are above the Tier 1 minimum.

Panel B of Table II shows that when including hidden reserves, the capital-to-assets ratio of the Japanese bank portfolio increases dramatically from 2.11 to 12.35 percent. Hidden reserves are primarily the unrealized capital gains of equity securities Japanese banks carry at cost on their books, even though they are many times larger than the reported capital holdings of Japanese banks.⁸

In Panel B, all of the Japanese banks are well above the Tier 1 capital requirement by at least a factor of two. Therefore, the cost of converting hidden reserves into Tier 1 capital should be a major factor in determining whether shareholders of Japanese banks experience wealth losses or nonnegative wealth effects.

II. Data, Empirical Methodology, and Hypotheses

A. Data

The data consist of weekly stock returns with weeks ending on Wednesdays. Only banks with no missing stock prices and those listed in *The Banker's* (July 1988, pp 56–129) “Top 500 Banks for 1987” with stock prices listed in the *Financial Times* from September 11, 1985 (when the stock prices of seven Japanese banks were first listed) to March 28, 1990 (when two Japanese banks merged) are included in the samples. The equity market indices are from the *Financial Times* and the interest rate data are from the Federal Reserve's H-13 release.

Appendix I lists eighteen events and their dates, which are obtained in two different ways.⁹ First, public information is used to determine the dates that major information about the Basle Accord became available. These dates are identified from news items in the *Wall Street Journal* and from computer searches of U.S. and non-U.S. databases. The two U.S. databases are The *National Newspaper Index* and the *Magazine Index*. The non-U.S. databases are the *Japan Economic Newswire*, *Pais International*, *UPI DataBase*, *Infor-*

⁸ Brown and Stickney (1991) report that generally accepted accounting principles in Japan require carrying marketable investments at cost on the balance sheet until they are sold. Furthermore, Japanese banks are not required to disclose the market value of their investments.

Kane, Unal, and Demirgüç-Kunt (1990) differentiate hidden reserves into two types: 1) the net undervaluation of on-balance-sheet assets and liabilities because of accounting measures; and 2) the net economic value of off-balance-sheet items. They present an econometric model that estimates the stock-market, interest-rate, foreign-exchange, and real-estate sensitivities of returns to shareholders of Japanese banks, with only the stock-market sensitivity proving to be statistically significant.

⁹ Many other events beside the eighteen listed in Appendix I were made concerning the Basle Accord. This article follows Cornett and Tehranian (1990) in including for analysis only those events that refer to major changes in the regulation, create or resolve stumbling blocks to its acceptance, and deal with its acceptance by a key group. However, because this is an international negotiation lacking a formal governmental structure that is present in intra-country negotiations, events relating to major changes in the negotiating process are also included in the study.

mat International Business, and *Canadian Business and Current Affairs*. Although the date of the same announcement sometimes differs by one day among these sources, all of these occurrences are unequivocally identified to a one-week event period. The announcements made on January 5, 1987; January 9, 1987 in Japan; November 17, 1987; and June 24, 1988 came from the *Japan Economic Newswire* with no corresponding published source.

The second source for events comes from Tobin (1991) who conducts confidential interviews with individuals who were involved in the Basle Accord negotiation. The March 12 and June 22, 1987 meetings of the Basle Committee are discussed by Tobin (1991) with the exact date of the meetings obtained from the Freedom of Information Office of the Board of Governors of the Federal Reserve System. The April 15, 1987 meeting of the Basle Committee is discussed by both Tobin (1991) and Bardos (1987–1988) with the actual meeting date being supplied by the Federal Reserve System's Freedom of Information Office. The September 13 and September 17, 1987 meetings are discussed by Tobin (1991), who also supplies the dates.

The *Wall Street Journal Index* and database search results are used to insure that no other announcements regarding deposit insurance operating procedures, LDC debt considerations, the supervisory framework, judicial rulings, or debt reviews by rating agencies occur in the event weeks. If two announcements occur during the same event week, it is difficult to determine the announcement whose information is not anticipated by the market. Five events are found to share their event week with other announcements and are removed from the study.¹⁰

B. Methodology

The impact of these events is estimated with a Multivariate Regression Model (MVRM) similar to that used in Schipper and Thompson (1983), Binder (1985a, 1985b), Smith, Bradley, and Jarrell (1986), Allen and Wilhelm (1988), and Cornett and Tehranian (1990). The main advantage of the MVRM is in providing a framework for testing highly interesting cross-country and cross-event coefficient restrictions in hypothesis tests. Another advantage of the MVRM is that it explicitly incorporates contemporaneous dependence of the disturbances into the hypothesis tests. This is important because regulatory events presumably affect firms in the same industry during the same calendar time period, which makes cross-sectional correlation in the error terms probable. The MVRM is estimated as a system of seemingly unrelated equations, and the return generating process is explicitly conditioned on the occurrence or nonoccurrence of an event by appending zero-one dummy variables to the market model equation.

¹⁰ The five discarded events occurred on March 5, June 12, July 15, December 8, and December 11, 1987. If these events are included in the tests of Hypothesis 2, only the cumulative wealth effect for shareholders of U.S. banks is qualitatively different from the reported results in Panel B of Table IV. Including the five events produces a wealth loss of 11.12 percent for shareholders of U.S. banks that is significant at the 5 percent level.

The model estimated is:

$$\tilde{R}_{nt} = \alpha_n + \beta^1 \tilde{R}_{wt} + \beta^2 \tilde{R}_{Mnt} + \beta^3 \tilde{I}_{Snt} + \beta^4 \tilde{I}_{Lnt} + \sum D_a \delta_{na} + \tilde{e}_{nt}, \quad (1)$$

$$n = 1, 2, \dots, 7; \quad t = 1, 2, \dots, 237; \quad a = 1, 2, \dots, 18;$$

where

$\tilde{R}_{nt}$ = the weekly rate of return on an equally weighted bank portfolio of country n (the seven countries are Canada, Germany, Japan, the Netherlands, Switzerland, the United Kingdom, and the United States) at time t (from September 11, 1985 through March 28, 1990);

α_n = the intercept coefficient for the bank portfolio of country n ;

β^1 = the systematic risk coefficient measuring the sensitivity of country n 's bank portfolio returns to the Morgan Stanley Capital International (MSCI) World Index returns;¹¹

$\tilde{R}_{wt}$ = the weekly rate of return of the MSCI World Index;

β^2 = the systematic risk coefficient measuring the sensitivity of country n 's bank portfolio returns to its equity market index returns;

$\tilde{R}_{Mnt}$ = the weekly rate of return on an equity market index for country n at time t (the indices are the Toronto Stock Exchange 300 Composite, Frankfurt Allegemeine Zeitung (FAZ), Nikkei Stock Average, ANP-CBS General, Swiss Bank Corporation-Industriales, Financial Times-Stock Exchange 100-share, and the Standard & Poor's 500);

β^3 = the systematic risk coefficient measuring the sensitivity of country n 's bank portfolio returns to changes in its three-month interbank interest rate;

$\tilde{I}_{Snt}$ = the weekly rate of return on the three-month interbank interest rate for country n at time t ;

β^4 = the systematic risk coefficient measuring the sensitivity of country n 's bank portfolio returns to changes in its long-term bellwether bond interest rate;

$\tilde{I}_{Lnt}$ = the weekly rate of return on a ten-year constant-maturity bellwether bond interest rate for country n at time t ;

D_a = a dummy variable that equals one in the week of the a^{th} announcement and zero otherwise;

δ_{na} = the effect of the a^{th} regulatory change on the n^{th} portfolio;

¹¹ The MSCI World Index, published in the *Financial Times*, is composed of over 1,400 securities listed on nineteen of the world's stock exchanges located in the United States, Europe, Canada, Australia, South Africa, and the Far East. Berlin (1990) reports that this capitalization weighted index aims to account for approximately 60 percent of the capitalization of each nation's market. Nearly 99 percent of the component stocks are easily purchasable except for the restricted shares in Sweden and Switzerland.

$\tilde{e}_{nt}$ = random disturbances that are assumed to be i.i.d. normal, independent of the return of the market indices and the event announcement variable.¹²

The model assumes that its parameters are stationary over the analysis period. Kane and Unal (1988) contend that this assumption may be violated because of the movements of omitted variables or otherwise misspecified relations. These exogenous influences could produce parameter shifts unknown to the researcher. With respect to this concern, the following four precautions should minimize the possibility that the results are unduly influenced by non-stationary betas: 1) Rather than just the final event, abnormal returns produced by eighteen separate but related events that span approximately two and one-half years are examined; 2) Banks from seven different countries, rather than just one country's banks, are studied; 3) The analysis uses both own-country equity indices and the MSCI World Index as market models; and 4) Each announcement's event period is screened for any other announcements regarding deposit insurance operating procedures, LDC debt considerations, the supervisory framework, judicial rulings, or debt reviews by rating agencies.¹³

C. Hypotheses

HYPOTHESIS 1: $H_o: \delta_{na} = 0 \forall_n$; the abnormal returns for each portfolio equal zero on event day a . This is tested by 126 t -tests (eighteen events times seven portfolios). The purpose of each test is to determine the wealth effects for each portfolio from each regulatory event.

HYPOTHESIS 2: $H_o: \Sigma \delta_{na} = 0 \forall_n$; the abnormal returns for each portfolio equal zero over all announcements a ($= 1, 2, \dots, A$). This is tested by seven F tests (one for each country portfolio). The purpose of each test is to determine the cumulative wealth effects for each portfolio over all of the announcements. This provides valuable information about the wealth impact of the Basle Accord on banks from different countries.

III. Empirical Results

Table III presents parameter estimates of the intercepts, equity indices, and interest rates used in equation (1) with their related t -statistics in parentheses. Column 3 reveals that worldwide systemic factors, proxied by the MSCI World Equity Index, help to explain bank stockholder returns at the 10 percent level of significance in the United Kingdom, at the 5 percent level in Japan and the United States, and at the 1 percent level in the Netherlands and Switzer-

¹² Time series autocorrelation is detected and the residuals are transformed using the Prais-Winston methodology (Kmenta 1986).

¹³ Shift dummy variables were used to allow the intercept and slope parameters to change the week of July 12, 1988, when the agreement was finalized. Qualitatively, the results of this study remain unchanged. I wish to thank an anonymous referee for suggesting this test.

Table III

**Parameter Estimates and Statistical Significance Levels for the
Intercepts, Equity Indices, and Interest Rates Used in Equation (1)**

$$\tilde{R}_{nt} = \alpha_n + \beta^1 \tilde{R}_{wt} + \beta^2 \tilde{R}_{Mnt} + \beta^3 \tilde{I}_{Snt} + \beta^4 \tilde{I}_{Lnt} + \sum D_a \delta_{na} + \tilde{e}_{nt}, \quad (1)$$

$$n = 1, 2, \dots, 7; \quad t = 1, 2, \dots, 237; \quad a = 1, 2, \dots, 18;$$

$\tilde{R}_{nt}$ is the weekly rate of return on an equally weighted bank portfolio of country n (the seven countries are Canada, Germany, Japan, the Netherlands, Switzerland, the United Kingdom, and the United States) at time t (from September 11, 1985 through March 28, 1990). For each country's bank portfolio, the parameter estimates and their related t -statistics (in parentheses) are listed for the intercepts (α_n), the MSCI World Equity Index ($\tilde{R}_{wt}$), Canada's Toronto Stock Exchange 300 Composite Index, Germany's Frankfurter Allgemeine Zeitung (FAZ) Index, Japan's Nikkei Stock Average, the Netherlands' ABP-CBS General Index, Switzerland's Swiss Bank Corporation-Industrials, the United Kingdom's Financial Times-Stock Exchange 100-Share Index, and the United States' Standard & Poor's 500 Index ($\tilde{R}_{Mnt}$), each country's three-month interbank interest rate ($\tilde{I}_{Snt}$), and each country's constant maturity bellwether bond's interest rate (a ten-year maturity applies for all countries except the United States that has a thirty-year maturity) ($\tilde{I}_{Lnt}$). D_a is a dummy variable that equals one in the week of the a^{th} announcement and zero otherwise. δ_{na} is the effect of the a^{th} regulatory change on the n^{th} portfolio. Column 3 reveals that worldwide systemic factors, proxied by the MSCI World Equity Index, help to explain bank stockholder returns at the 10 percent level of significance in the United Kingdom, at the 5 percent level in Japan and the United States, and at the 1 percent level in the Netherlands and Switzerland. Column 4 displays results that indicate own-country systemic factors help to explain bank stockholder returns at the 1 percent level of significance for each of the countries studied. Column 5 indicates that the short-term interest rate helps to explain stockholder returns of Canadian banks at the 10 percent level of significance. Column 6 reveals that long-term interest rates help explain stockholder returns of Canadian and U.S. banks at the 1 percent level, German and Japanese banks at the 5 percent level, and Netherlands and Swiss banks at the 10 percent level.

1	2	3	4	5	6
	α_n	β^1	β^2	β^3	β^4
Portfolio	Intercept	MSCI World Equity Index	Own-Country Equity Index	Short-Term Interest Rate	Long-Term Interest Rate
Canada	0.000 (0.31)	-0.07 (-0.79)	0.84 (9.84)***	-0.13 (-1.92)*	-0.24 (-2.64)***
Germany	-0.001 (-0.42)	0.10 (1.56)	0.92 (19.59)***	0.04 (0.89)	-0.21 (-2.44)**
Japan	-0.002 (-1.70)*	0.24 (2.35)**	0.74 (8.27)***	0.06 (0.71)	-0.08 (-2.02)**
Netherlands	-0.000 (-0.23)	0.25 (3.00)***	0.33 (7.04)***	-0.01 (-0.11)	-0.21 (-1.65)*
Switzerland	-0.003 (-2.53)***	0.18 (2.99)***	0.69 (12.21)***	0.02 (0.92)	-0.02 (-1.66)*
United Kingdom	0.001 (0.34)	-0.15 (-1.87)*	1.06 (15.43)***	-0.02 (-0.42)	0.11 (1.29)
United States	-0.000 (-0.45)	-0.12 (-2.03)**	0.58 (10.99)***	0.02 (0.68)	-0.18 (-3.76)***

* Significant at the 0.10 level.

** Significant at the 0.05 level.

*** Significant at the 0.01 level.

land. Moreover, the results show that bank stockholder returns are positively correlated with this index in Japan, the Netherlands, and Switzerland, and negatively correlated with this index in the United Kingdom and the United States. This suggests that international equity-market considerations are important when studying banks in the United States, the United Kingdom, Switzerland, the Netherlands, and Japan. The evidence does not support this conclusion for banks in Canada and Germany.

Column 4 displays results that indicate own-country systemic factors help to explain bank stockholder returns at the 1 percent level of significance for each of the countries studied. Comparing these results with those in Column 3 suggest that the influence of own-country factors on bank stockholder returns is more pronounced than worldwide factors.

Column 5 indicates that the short-term interest rate helps to explain stockholder returns of Canadian banks at the 10 percent level of significance, but do not explain stockholder returns in the other countries studied. Column 6 reveals that long-term interest rates help explain stockholder returns of Canadian and U.S. banks at the 1 percent level, German and Japanese banks at the 5 percent level, and Netherlands and Swiss banks at the 10 percent level. The long-term interest rate does not explain U.K. bank stockholder returns.

The test results for the two hypotheses are reported in Table IV. Panel A displays findings for the tests of Hypothesis 1 and Panel B displays findings for the tests of Hypothesis 2. In Panel A, the event number and date listed corresponds to the event number and date listed in Appendix I. Ten of the eighteen events produce significant wealth effects in at least one of the seven bank portfolios, and these ten events occur within the first thirteen events listed. This is not surprising because, as negotiating processes near their end, many of the most important issues have been resolved; and during the culminating meetings no unanticipated news is released to the market. In Panel B, one of the seven portfolios experience significant cumulative wealth effects when considering all of the announcements.

Event 1, occurring on January 16, 1986, is an announcement by U.S. regulators of a unilateral risk-based capital plan. This plan was met with a storm of criticism from the U.S. banking industry. Kapstein (1994, p. 112) reports the American Bankers Association (ABA) strenuously argued against this plan because it would put U.S. banks at more of a competitive disadvantage to their foreign competitors and other less-regulated financial institutions than they already were. This, the ABA asserted, would undermine "the ability of U.S. banks to compete." It was felt that if U.S. banks were forced to use less financial leverage than foreign banks, U.S. banks would have to increase their prices to maintain a competitive return on equity. Because U.S. banks were already being underpriced by Japanese banks, the proposed capital rules would make a bad situation worse.

The empirical results provide support for this argument because U.S. bank shareholders experience a 4.57 percent wealth loss to this announcement that is significant at the 1 percent level. Curiously, German shareholders also

Table IV

Test of Hypotheses that (1) Abnormal Returns for Each Portfolio Equal Zero for Each Event and (2) The Cumulative Abnormal Returns for Each Portfolio Equal Zero Over All of the Events

$$\tilde{R}_{nt} = \alpha_n + \beta^1 \tilde{R}_{Wt} + \beta^2 \tilde{R}_{Mnt} + \beta^3 \tilde{I}_{Snt} + \beta^4 \tilde{I}_{Lnt} + \sum D_a \delta_{na} + \tilde{e}_{nt},$$

$$n = 1, 2, \dots, 7; \quad t = 1, 2, \dots, 237; \quad a = 1, 2, \dots, 18;$$

Panel A presents abnormal returns (in percent) (δ) and t -statistics (in parentheses) for seven portfolios of banks ($n = 1, 2, \dots, 7$) at each of 18 events ($a = 1, 2, \dots, 18$) that are detailed in Appendix I on which important information about the Basle Accord was released. These estimates are the coefficients from a regression of equal-weighted portfolio returns (R_{nt}) regressed on the MSCI World Index (R_{Wt}), an own-country equity market index (R_{Mnt}), own-country short-term (I_{Snt}) and long-term interest rates (I_{Lnt}), and dummy variables (D_a) corresponding to the 18 events. Panel B presents portfolio cumulative abnormal returns (in percent) and F statistics (in parentheses) over all 18 events.

Events	Canada	Germany	Japan	Netherlands	Switzerland	United Kingdom	United States
Panel A: Results of the Tests of Hypothesis 1: $H_0: \delta_{na} = 0 \forall_n$							
1. 01/16/86	-0.73 (-0.35)	-3.79 (-2.25)**	-0.94 (-0.46)	-1.30 (-0.58)	2.53 (1.54)	0.25 (0.13)	-4.57 (-3.94)***
2. 03/17/86	1.69 (0.79)	3.08 (1.84)*	-1.85 (-0.91)	-2.13 (-0.95)	-1.61 (-0.99)	3.75 (1.88)*	-0.77 (-0.66)
3. 01/05/87	0.86 (0.42)	-0.58 (-0.35)	12.67 (6.14)***	0.02 (0.01)	1.17 (0.71)	-2.92 (-1.13)	1.58 (1.34)
4. 01/09/87	-0.76 (-0.37)	-1.34 (-0.78)	2.17 (1.05)	-1.56 (-0.69)	-2.53 (-1.53)	-1.80 (-0.93)	-0.92 (-0.79)
5. 03/12/87	-0.01 (-0.00)	-3.46 (-2.06)**	2.39 (1.17)	0.28 (0.12)	-3.31 (-2.03)**	1.70 (0.87)	-0.02 (-0.02)
6. 04/15/87	2.79 (1.31)	-0.60 (-0.36)	21.21 (10.33)***	-4.01 (-1.77)*	-3.81 (-2.33)**	0.02 (0.01)	2.63 (2.17)**
7. 06/22/87	-0.33 (-0.16)	3.39 (2.02)**	-7.82 (-3.74)***	1.19 (0.53)	3.64 (2.22)**	-2.63 (-1.34)	-2.14 (-1.83)*
8. 08/06/87	-1.62 (-0.78)	0.79 (0.47)	1.58 (0.77)	-0.80 (-0.35)	4.11 (2.51)***	-1.54 (-0.77)	1.71 (1.47)
9. 09/13/87	-1.19 (-0.58)	0.04 (0.03)	-2.67 (-1.31)	-2.27 (-1.01)	0.29 (0.17)	-1.46 (-0.76)	-0.35 (-0.31)
10. 09/17/87	-1.68 (-0.82)	-0.07 (-0.04)	-2.81 (-1.38)	-0.28 (-0.12)	-0.55 (-0.34)	3.68 (1.89)*	-1.38 (-1.19)
11. 10/23/87	1.93 (0.84)	-0.80 (-0.42)	3.00 (1.36)	-6.81 (-2.77)***	-1.09 (-0.56)	-2.67 (-1.13)	-3.11 (-2.52)***
12. 11/09/87	3.13 (1.50)	2.27 (1.28)	1.03 (0.48)	2.37 (1.04)	1.01 (0.59)	1.75 (0.88)	-1.46 (-1.24)
13. 11/17/87	-3.62 (-1.74)*	-3.69 (-2.19)**	1.95 (0.93)	3.10 (1.35)	-2.88 (-1.71)*	1.29 (0.66)	-0.57 (-0.48)
14. 11/30/87	1.86 (0.89)	0.88 (0.52)	-0.07 (-0.03)	-3.56 (-1.54)	0.13 (0.08)	-0.04 (-0.02)	0.28 (0.24)
15. 03/23/88	-0.40 (-0.20)	-1.64 (-0.99)	2.52 (1.24)	3.62 (1.61)	-2.54 (-1.56)	0.29 (0.15)	1.83 (1.58)
16. 04/15/88	-0.98 (-0.47)	0.08 (0.05)	-0.72 (-0.35)	1.40 (0.62)	1.22 (0.74)	0.95 (0.49)	1.49 (1.26)
17. 06/24/88	-1.23 (-0.60)	-0.03 (-0.02)	0.72 (0.35)	0.82 (0.35)	-0.27 (-0.17)	0.79 (0.39)	-0.23 (-0.20)
18. 07/12/88	0.98 (0.48)	-1.88 (-1.11)	-0.73 (-0.36)	0.77 (0.32)	0.03 (0.02)	-0.93 (-0.48)	1.23 (1.06)
Panel B: Results of the Tests of Hypothesis 2: $H_0: \sum \delta_{na} = 0 \forall_n$							
Returns (in %)	0.69	-7.35	31.63	-9.15	-4.46	0.48	-4.77
F(1, 1512)	(0.01)	(0.94)	(12.29)***	(0.85)	(0.37)	(0.00)	(0.86)

* Significant at the 0.10 level.

** Significant at the 0.05 level.

*** Significant at the 0.01 level.

experience a wealth loss of 3.79 percent to this announcement that is significant at the 5 percent level.

The second event occurs on March 17, 1986 and regards an announcement by the Basle Committee that regulators plan to adopt stricter measures governing off-balance-sheet items. Truell (1986) reports that affected banks would probably have to raise additional capital to meet the new standards. The wealth gain of 3.08 percent for German bank shareholders and 3.75 percent for U.K. bank shareholders are both significant at the 10 percent level. Because these two countries already incorporated off-balance-sheet elements into required capital holdings, the positive wealth effects may reflect shareholder expectations that the new off-balance-sheet standards would provide a more level playing field thus making the banks of these two countries more competitive.

The third event occurs on January 5, 1987 and is a Monday announcement that the President of the New York Federal Reserve Bank would visit Japan on his way to the next Basle Committee meeting. U.S. bank regulators had tabled their unilateral proposal because of the severe criticism it had received and started working in secret on a joint regulation with the Bank of England. Bardos (1987–1988) reports the Japanese regulators joined these negotiations in late 1986, which was important to the U.S. and U.K. regulators because they believed the low capital level of Japanese banks gave them an unfair pricing advantage. However, because the Ministry of Finance was adamant about allowing Japanese banks to count seventy percent of “hidden reserves” as capital, the trilateral talks broke down.¹⁴

Shareholders of Japanese banks experienced a wealth gain of 12.67 percent that is significant at the 1 percent level to Event 3. This suggests investors may have interpreted this publicized visit to Japan by a high-ranking Federal Reserve official as an indication that concessions would be made by the U.S. and U.K. regulators to revive the moribund negotiation.

The fourth event concerns three Friday announcements that occurred on January 9, 1987. The U.S. and U.K. regulators announced in Washington and London that a joint risk-based capital agreement had been reached. Federal Reserve officials hailed it as “a breakthrough . . . a step toward international consistency” and said it would “minimize the distortion in international competition.” A Bank of England official stated the joint proposal “will provide a basis which other countries, notably Japan . . . can follow.” Significantly, this bilateral agreement did not allow hidden reserves to be counted as capital.

Tobin (1991) reports that Federal Reserve officials were purposely in Tokyo on the day of these announcements. The *Japanese Economic Newswire* reports

¹⁴ Tobin (1991) reports the U.S. and U.K. bank regulators did not consider hidden reserves to be bank capital because of the volatility of the Japanese equity market. Kapstein (1991, p. 116) reports the U.S. and U.K. regulators objected to counting hidden reserves because their “existing regulatory and accounting rules prevented their banks from valuing similar holdings at market levels.” Kane (1991, p. 15) argues the objections were because hidden reserves were “negative and substantial for large U.S. and some European banks. . . . American and British authorities appear to fear the consequences of acknowledging to their own taxpayer-citizens the greater relevance of market-value as opposed to book-value measures of bank capital.”

that these officials asked the Bank of Japan to increase the capital levels of Japanese banks to the levels required of U.S. banks to "curb their prospective advance into the U.S. money market." It was also reported that the Federal Reserve had invited the Bank of Japan to join the bank supervisory talks being held with the Bank of England.

The January 9, 1987 announcements do not produce significant wealth effects in any of the country portfolios, which indicates that these activities by the regulators may have been anticipated by the market. Because the rapid growth in Japanese-bank market share had become a major political issue receiving wide publicity in non-Japanese countries, coercive action by non-Japanese regulators may have been expected.

Note that the abnormal returns to Event 4 for the non-Japanese banks are negative, while the Japanese portfolio's is positive. Even though all of the abnormal returns are nonsignificant, when this pattern of the signs is considered in conjunction with the findings for Event 3, it appears investors did not expect the U.S.-U.K. agreement to be detrimental to the Japanese banks. This suggests that investors may have expected concessions to be made by the U.S. and U.K. regulators in order to achieve an agreement with the Japanese.

The first Basle Committee meeting dealing with the bilateral agreement was held on March 12, 1987, which is Event 5. Tobin (1991) reports the crucial stumbling block to achieving a multilateral agreement was deciding upon an international definition of capital. Because bank capital in Germany is carefully defined by law, and because the German regulators did not want to request new legislation to implement any agreement reached, the German regulators' ability to negotiate on this issue was greatly restricted, making the negotiations very difficult.

The wealth loss of 3.46 percent for German bank shareholders and 3.31 percent for Swiss bank shareholders to Event 5 are both significant at the 5 percent level. Because these two countries do not allow many reserve elements to count as bank capital, and because the negotiations were about establishing minimum capital standards, investors may have perceived that German and Swiss banks would be placed at a competitive disadvantage if the Basle Committee agreed to a definition of capital allowing elements "less-pure" than common equity and retained earnings.

Event 6 was a special meeting held on April 15, 1987 in Gerzensee, Switzerland. It concerned the decision by the Basle Committee to formally consider expanding the U.S.-U.K. agreement to all G-10 countries plus Luxembourg and Switzerland. Panel A shows that this announcement produced a wealth gain of 21.21 percent for Japanese bank shareholders that is significant at the 1 percent level, and 2.63 percent for U.S. bank shareholders that is significant at the 5 percent level. Swiss bank shareholders experienced a wealth loss of 3.81 percent that is significant at the 5 percent level, and shareholders of banks regulated by the Netherlands experienced a wealth loss of 4.01 percent that is significant at the 10 percent level.

Prior to this meeting, the U.S. and U.K. regulators had been unyielding in trying to force Japanese banks to substantially increase their capital holdings.

Besides not counting hidden reserves as capital in the bilateral agreement, the U.S. and U.K. regulators were trying to influence EC regulators to do the same in the new EC bank-capital regulation. Therefore, unless the Japanese regulators could increase their influence over the course of events, Japanese banks would either lose their U.S. and EC banking markets or have to pay substantial costs to keep them.¹⁵ The costs would either be large capital gains taxes and transactions costs incurred when converting their hidden reserves into on-balance-sheet capital, or an increase in their cost of capital if raising vast amounts of new equity contributed to suboptimal capital structures for the Japanese banks.¹⁶

However, in the process of the Basle Accord negotiation, the Japanese succeeded in having their hidden reserves included in the capital base. This, in effect, lowered the compliance costs of Japanese banks to the Basle Accord requirements. The decision to expand the U.S.-U.K. agreement into a truly international bank capital accord might have greatly increased stockholder expectations that the Japanese banks and regulators would succeed in shaping the new regulation to their advantage. This increased probability of Japanese success may be reflected in the large wealth gain for Japanese bank shareholders associated with Event 6, and the wealth losses of the Netherlands and Swiss bank shareholders. Possible reasons for the wealth gain of U.S. bank shareholders are not as transparent as for the other countries.

Event 7 concerns the critical progress made in determining an acceptable definition of capital at the June 22, 1987 Basle Committee meeting in Brussels, Belgium. It was proposed to divide capital into two tiers similar to the method used in the U.S.-U.K. agreement. Tier 1 would consist of only "pure" capital elements (i.e., stockholder equity and retained earnings), to satisfy the German regulators. The second tier would consist of "non-pure" capital elements. At this meeting, the German regulators indicated for the first time that they could, in principle, support the new plan.

¹⁵ Momentum was building to restrict Japanese bank access to both the U.S. and EC banking markets. In the U.S., Vernon, Spar, and Tobin (1991) report that pleas were being made in the Congress to restrict Japanese bank access to the U.S. banking market because of their low capital levels. Moreover, the Federal Reserve had already blocked Sumitomo Bank from buying an equity position in Goldman, Sachs and Company, claiming that the capital participation of a Japanese bank with a low capital ratio could harm the health of the U.S. firm (*Japan Economic Newswire*, January 9, 1987).

In the EC, the standard of "reciprocity" was being considered for the 1992 unified market. This meant a foreign bank could only obtain a banking license in one of the twelve member states if reciprocal access was granted to European banks in their home countries (the EC's Second Banking Directive, adopted in December 1989, allows non-EC banks to secure a banking license on condition their governments grant EC banks the same treatment as their own domestic lenders, which is more flexible than the principle of reciprocity).

¹⁶ Japanese Corporation Tax Law (CTL) does not have a special tax rate for capital gains, which are included in taxable income. CTL has a flat tax rate of 37.5 percent for corporations whose capital is more than ¥100 million. Euromoney (1987), in an interview with the Deputy Governor of the Bank of Japan, reports that in the normal course of business Japanese banks time their sales of hidden reserves to coincide with loan losses, thus avoiding taxes on capital gains while leaving the on-balance-sheet capital account unchanged.

Japanese bank shareholders experienced a significant wealth loss of 7.82 percent to this event. Because the proposed capital definition only allowed hidden reserves to count as Tier 2 capital, Japanese banks would have to either issue new equity securities or sell some of their hidden reserves to meet the Tier 1 requirement, both costly alternatives.¹⁷

Event 7 also produced a significant wealth loss of 2.14 percent for U.S. bank shareholders and significant wealth gains of 3.39 and 3.64 percent for German and Swiss bank shareholders. Because these latter two countries are generally considered to require "purer" capital elements than the other countries in the study, the wealth gains may reflect shareholder expectations that the playing field would become more level because of the proposed requirement that at least one-half of required capital holdings be of "pure" Tier 1 elements.

Note that the significant wealth effects for the Japanese, Swiss, and U.S. portfolios change signs from the April 15 to the June 22 events. On April 15, stock market participants may have perceived that the probability of hidden reserves ultimately being counted as bank capital greatly increased. However, to be most advantageous for Japanese bank shareholders, hidden reserves would need to qualify as unrestricted capital. When it was decided on June 22 to establish two tiers of capital where hidden reserves would only count as Tier 2 capital, it meant that the Japanese banks could satisfy the Tier 2 requirement, but that they would have to make costly adjustments to meet the Tier 1 requirement. Note also that the positive and negative wealth effects for the Swiss and U.S. portfolios associated with these two events practically offset one another, while the wealth loss for the Japanese portfolio to the June 22 event is about one-third of the wealth gain to the April 15 event. Therefore, on the whole, investors may have expected that including hidden reserves in the capital base was beneficial for Japanese bank shareholders, even if it could only count as Tier 2 capital, because it substantially reduced the potential incremental net burden of the emerging rules on Japanese banks.

Event 8 occurred on August 6, 1987. The Federation of Bankers' Associations of Japan announced that their banks were no longer insisting on counting 70 percent of hidden reserves as capital. "We can't accept zero, but we are flexible." Graven (1987) reports that Japanese bank managers felt their capital holdings were sufficient to cover loan losses and that criticism of their low capital levels "in the U.S. is politically motivated and triggered by a Japan-bashing mood." Swiss shareholders experienced a wealth gain of 4.11 percent, which is significant at the 1 percent level. This result may reflect investor expectations that the relative competitive position of Swiss banks would be

¹⁷ For example, Zielinski and Holloway (1991) report net gains of ¥1.8 trillion from sales of equity holdings by Japanese city banks in the year ending March 1990. This compares to new equity offerings (public offerings, rights offerings, and convertible bonds) that Pettway, Kaneko, and Young (1991) report for 77 Japanese banks of ¥1.8 trillion for the same year. Consequently, it appears that Japanese banks pursued a relatively balanced strategy in raising capital for the Tier 1 requirement for fiscal year 1990. Zielinski and Holloway (1991) further note that to avoid disturbing the pattern of cross-share holdings that are common in Japan, the banks repurchased most of the shares they had sold.

improved if the Japanese banks were forced to use capital elements more similar to their own.

Events 9 and 10 are discussed by Tobin (1991) and occurred on September 13 and 17, 1987. On September 13 in London, U.S., U.K., and Japanese regulators met by themselves and decided to allow 45 percent of hidden reserves to count as Tier 2 capital. They then went directly to the September 17 Basle Committee meeting, where they failed to inform the other members that an agreement had been reached. However, because of their unity this development soon became obvious to the others. Tobin (1991, p 244) reports that "Peter Cooke, occupying the chair, quickly realized that the only option left was to try to get other countries to turn the trilateral accord into a truly multinational agreement."

Holloway (1987) reports that the decision by U.S. regulators to allow 45 percent of hidden reserves to count as Tier 2 capital was favorably influenced by the decision of a group of Japanese banks to subscribe to \$250 million of Bank of America's subordinated debt. The idea to subscribe to Bank of America's debt may have come from a Japanese novel named *Japan Bashing*, in which a shrewd Japanese lobbyist arranges a bailout of troubled Bank of America to reduce anti-Japanese sentiment in the United States. Ono (1987) reports that one month after this novel was published, Japanese banks pledged \$130 million for Bank of America. Moreover, Chase (1987) reports that Bank of America started negotiating this much-needed capital infusion in June of 1987, which means the Japanese banks increased their subscription by \$120 million over the three-month negotiating period.¹⁸

Only the U.K. portfolio experienced a significant wealth effect to the September 17 event, and no significant wealth effects were detected for any of the portfolios to the September 13 event. The U.K. portfolio's gain of 3.68 percent, significant at the 10 percent level, may indicate that investors expected U.K. banks to benefit from their competitors' adoption of a risk-based capital system similar to the one they had used for the past five years.

Event 11 occurs on October 23, 1987 and concerns a confidential draft agreement that was obtained by the *Wall Street Journal*.¹⁹ In this report, Norman (1987) describes the new capital definition, the risk-weighting system, and how the debt of EC and G-10 governments is considered to be risk-free, thus receiving a zero percent risk weight (this treatment was later extended to all countries belonging to the Organization for Economic Development

¹⁸ This event is not included in the empirical analysis, or listed in Appendix I, because only Holloway (1987) related Bank of America's capital infusion to the Basle Accord negotiation and because the capital infusion was reported by Chase (1987) on October 19, 1987, the first day of the October 1987 stock market crash.

¹⁹ The Monday preceding this Friday announcement was "Black Monday" (i.e., October 19, 1987) that is generally considered to be the first day of a worldwide stock-market crash. Empirical research shows that market efficiency was violated only during the worst of the crash on the 19th and 20th. Thus, there is no a priori reason to dismiss the wealth effects associated with event 11 on account of the market crash. The weekly return for this event is calculated from the close on October 21 to the close on October 28. See Neumark, Tinsley, and Tosini (1991) and Bowen, Johnson, and Shevlin (1989) for empirical evidence that markets were efficient in processing information during most of the crash period.

(OECD)). Shareholders of banks in the Netherlands and the United States experienced significant wealth losses at the 1 percent level of 6.81 and 3.11 percent to this announcement. The reason for these results are not discernible from the information given in the public announcement.

Event 13 is the November 17, 1987 announcement that the December meeting of the Basle Committee would be the deadline for achieving an agreement. This was important because just one week earlier, on November 9, it was reported that both German and French concerns about the capital definition threatened to delay any agreement. Event 13 produced significant wealth losses of 3.62 percent for Canadian shareholders, 3.69 percent for German shareholders, and 2.88 percent for Swiss shareholders. The Canadian and Swiss bank shareholder losses were both significant at the 10 percent level, while the German bank shareholder loss was significant at the 5 percent level. Stock market investors may have expected that the deadline set by the Basle Committee, especially after having just received serious objections about the capital definition the week before, would lead to a compromise that might result in lower standards. It is possible that the percentage of risk-adjusted assets to be held as Tier 1 capital was being negotiated. Holloway (1987) reports that during 1987 the Japanese thought a Tier 1 requirement of 6 percent might be proposed. Because the Basle Accord only sets minimum standards, if the minimum is set too low banks subject to higher capital standards would remain at a competitive disadvantage.

The remaining events fail to produce significant wealth effects for shareholders of banks in any of the countries studied. On December 8 the central bank governors announced they had agreed to start national consultations about the draft agreement, even though key differences remained unresolved among the negotiators. A summary of the draft agreement released on December 11 was reported to be a setback for U.S. banks because preferred stock and goodwill were omitted from Tier 1 capital (as noted in footnote 10, it was necessary to discard these two events). In March of 1988, German opposition to the capital definition softened. In April the EC released its capital proposal for the upcoming unified market and reported that a risk-weighted system and an 8 percent capital ratio would be used. In June the Basle Committee reconvened its deliberations. After the German regulators reluctantly accepted the proposed capital definition, even though it was decided that U.S. banks could count some forms of preferred stock as Tier 1 capital, the agreement was finalized on July 12.

Panel B of Table IV reports the results of tests of Hypothesis 2. When considering the cumulative wealth effects of all of the events studied, only the Japanese portfolio experienced a significant wealth effect. This was a wealth gain of 31.63 percent that is significant at the 1 percent level.

In Section I of this article, it was argued that if the Basle Accord is a binding constraint, banks with capital holdings above the new requirement should not be affected as much as banks with capital holdings below the new requirement. It was also predicted that shareholders of banks from Germany, Japan, and the Netherlands should experience significant wealth losses, and shareholders of banks from Canada, Switzerland, and the United Kingdom, and the United States should experience nonnegative wealth effects. While the results do

show that shareholders of banks from Canada, Switzerland, the United Kingdom, and the United States did experience nonnegative wealth effects, shareholders of banks from Germany, the Netherlands, and Japan did not experience the hypothesized wealth losses.

To further investigate these surprising results, a test of the hypothesis that the economic impact of the Basle Accord was the same for banks from each of the seven countries studied is conducted ($H_0: \Sigma \delta_{1a} - \Sigma \delta_{2a} = 0$). The findings indicate that the economic impact of the Basle Accord on shareholders of Japanese banks was significantly different from the economic impact of the Basle Accord on shareholders of banks from the other countries studied.²⁰

These results suggest that shareholders of Japanese banks benefited from the Basle Accord at the expense of shareholders of banks from Canada, Germany, the Netherlands, Switzerland, the United Kingdom, and the United States. Moreover, this finding suggests it is unlikely that the Basle Accord achieved its ulterior goal of eliminating the pricing advantage of Japanese banks thus hindering them from capturing non-Japanese banking markets. If the argument of the non-Japanese regulators was correct and Japanese banks were substantially undercapitalized, a large wealth loss would be expected for the shareholders of Japanese banks. However, the empirical results of Hypothesis 2 indicate that shareholders of Japanese banks had a very large, highly significant wealth gain from the Basle Accord events. Therefore, the empirical results cast doubt on the validity of the argument used by non-Japanese regulators concerning the source of the Japanese bank pricing advantage, and on their contention that the Basle Accord would help to level the playing field between Japanese and non-Japanese banks.²¹

Moreover, the size of the wealth gain of the Japanese bank shareholders suggests that factors other than just their banks' large capital bases are driving the results. This observation is bolstered by the fact that banks from the United States, Canada, the United Kingdom, and Switzerland experienced nonsignificant wealth effects to the test of Hypothesis 2 even though their capital holdings also exceeded the Tier 1 minimum level, as shown in Panel A of Table II.

During the 1980s, the international market share of Japanese banks was growing very rapidly. This phenomenal growth caused an increase in protectionist sentiments among politicians, bank regulators, and bankers in both North America and Europe. Indeed, the Basle Accord was supposed to address this issue, which probably accounted for the lack of opposition among bankers to the regulation. However, the empirical evidence suggests Kane's (1990, 1991) contention that non-Japanese regulators misconstrued the source of the Japanese banks' pricing advantage may be correct.²² This conclusion, in turn,

²⁰ I wish to thank an anonymous referee for suggesting this test. The results are available from the author upon request.

²¹ This finding provides support for the opinions of Kane (1991), Kapstein (1994), and Eurromoney (1988) (see footnote 3) that the Basle Accord would have little affect on the funding costs of Japanese banks, thus failing to provide a more level playing field for international banks.

²² Kane (1990, 1991) argues that during the Basle Accord negotiation, non-Japanese regulators should have focused on barriers to Japanese deposit markets rather than the capital holdings of

leads to another possible explanation for the very large wealth gain of Japanese bank shareholders to the Basle Accord events.

Because the Basle Accord guarantees Japanese banks continued access to North American and European banking markets, it essentially was a ratification by the G-10 and EC countries of the market share gains made by the Japanese banks. Before the Basle Accord, Japanese banks were facing an increasingly hostile political environment because of their continued dominance over non-Japanese banks. After the Basle Accord, Japanese banks were guaranteed continued access to these markets in exchange for increasing their Tier 1 capital level to 4 percent, which could be accomplished by recognizing capital gains on their equity holdings, by raising new equity, or by using a combination of the two. The empirical results suggest that stock market participants may have expected the costs associated with these capital raising efforts to be of minor consequence when compared to the benefit of having guaranteed access to overseas banking markets with their market share gains of the 1980s intact.

IV. Conclusions

This article examines the effect of a series of events leading up to the Basle Accord of 1988 on returns to stockholders of international banks from Canada, Germany, Japan, the Netherlands, Switzerland, the United Kingdom, and the United States. The ostensible goals of the Basle Accord were to reduce the risk of the international banking system and to minimize competitive inequality that arises from differences among national bank-capital regulations. Its ulterior goal was to eliminate the funding-cost advantage of Japanese banks that allowed them to capture more than one-third of international lending during the 1980s. The empirical results suggest the Basle Accord failed to eliminate the pricing advantage of Japanese banks.

The empirical results also lend support to several different theories that help to provide insight into the Basle Accord negotiation. Niskanen's (1971) theory can be used to argue that international banks engage in regulatory arbitrage to reduce the burdens of regulation as the cost of changing regulators declines. Kane (1990) builds upon this earlier work by arguing the Basle Accord was a cartel-like agreement among G-10 and EC bank regulators to standardize international bank capital regulations in order to reduce the incentive for international banks to engage in regulatory arbitrage, thus protecting the regulators' market shares. Moreover, in the context of the Basle Accord, Kane's (1977) arguments can be extended to suggest that non-Japanese international banks did not oppose the additional regulations that would result from the Basle Accord in the belief that

Japanese banks. Kane maintains the low book value of capital level of Japanese banks was not the reason for their pricing advantage and that the Japanese regulator was correct in counting hidden reserves as bank capital. Kane asserts that Japanese banks have a lower funding cost than non-Japanese banks because the Japanese have a high personal savings rate and limit the entry of foreign banks into their regulated deposit markets. This provides Japanese banks with exclusive access to low-cost deposits, which allows Japanese banks to underprice their competitors.

the playing field would be leveled by the elimination of the pricing advantage of Japanese banks.

The empirical results indicate that during the course of the negotiations, the regulation was shaped in such a way as to benefit shareholders of Japanese banks. Interestingly, this finding tends to support the argument of Stigler (1971) and Peltzman (1976) that the group with the largest economic stake in regulation stands to benefit the most. Recall that the Federal Reserve and Bank of England, after talks with Japan's Ministry of Finance had failed, proposed joint capital standards in January 1987 that omitted hidden reserves from the calculation of capital. After negotiations were expanded to include nine additional countries in April 1987, the Japanese were ultimately successful in negotiating the inclusion of 45 percent of hidden reserves into the Tier 2 capital calculations. Increasing the number of involved regulators and banks lowered the per capita benefit of the opposition group to the exclusion of hidden reserves in the capital calculations. Since the holding of equity portfolios primarily benefits Japanese banks, their per capita stake in including hidden reserves was high relative to the other countries. Therefore, they were willing to pay higher costs than other countries in researching their opponents, in developing viable plans for achieving their goals, and in executing their plans to gain the higher financial rewards that were available for Japanese bank shareholders.

Appendix I: Event Descriptions

Event	Date	Description
1	01/16/86	U.S. bank regulators proposed new guidelines for establishing risk-based capital reserves.
2	03/17/86	G-10 banking supervisors planned to implement stricter measures requiring off-balance-sheet liabilities to have capital backing.
3	01/05/87	The Bank of Japan announced that Gerald Corrigan, president of the Federal Reserve Bank of New York, would visit Japan this Friday to discuss regulatory cooperation. He will then proceed to the Basle Committee meeting to be held early next week.
4	01/09/87	U.S. and U.K. bank regulators proposed a joint risk-based capital regulation. The Bank of England said it hoped the joint proposal "will provide a basis which other countries, notably Japan . . . can follow." On the same day in Japan, it was announced that the Bank of Japan had been invited to join the U.S. and the U.K. regulators in talks about supervisory rules for banks.
5	03/12/87	The Basle Committee, after getting the U.S. and U.K. regulators to wait one year before implementing their bilateral agreement, used its regular meeting to try to develop a strategy of how to address the U.S.-U.K. agreement.
6	04/15/87	At a specially-called meeting, the Basle Committee formally took the U.S.-U.K. agreement under consideration and addressed the possibility of expanding it to include all G-10 countries plus Luxembourg and Switzerland.

Appendix I—continued

Event	Date	Description
7	06/22/87	The "Brussels formula" was conceived that defined banks' capital similar to the method used in the U.S.-U.K. agreement. For the first time, German authorities indicated they could, in principal, support the new plan.
8	08/06/87	The Federation of Bankers' Associations of Japan said the Japanese banks are flexible and are not insisting on counting 70 percent of hidden reserves in their capital base.
9	09/13/87	The U.S., U.K., and Japanese regulators met by themselves for the first time. It was decided they would use the two-tier capital definition, that loan-loss reserves would be included in Tier 2 capital, and that Japanese banks could count 45 percent of their hidden reserves as Tier 2 capital.
10	09/17/87	At the Basle Committee meeting, the U.S., the U.K., and Japanese regulators did not inform the other members they had already reached a separate agreement. However, because of their united front, the others realized this and began negotiating in earnest.
11	10/23/87	Parts of a confidential draft agreement are obtained by the <i>Wall Street Journal</i> . Among its provisions, it applies a discount of 55 percent to hidden reserves.
12	11/09/87	Longstanding German and unexpected French objections threaten to delay the international bank-capital agreement. German officials believe the definition of capital is too broad while French officials believe it is too narrow.
13	11/17/87	The chairman of a large U.K. bank announced during a visit to Japan that the Bank for International Settlements would fix guidelines for bank capital that take account of domestic differences at their next monthly meeting. He is not sure how much of hidden reserves will be allowed.
14	11/30/87	The Bank of England asserted that central bankers can overcome German and French objections to the capital definition at their next meeting; however, officials elsewhere doubt this.
15	03/23/88	Senior German bankers displayed a less hostile approach to the capital proposals surprising their regulators by proposing a compromise.
16	04/15/88	The EC unveiled a plan to require banks in the EC to maintain a common minimum capital-to-risk-adjusted-assets ratio.
17	06/24/88	A closed-door meeting of the Basle Committee will be held on June 27 at the end of the six-month consultation period and Japanese banks said they can meet the new standard by end-1992 by issuing new shares and convertible bonds.
18	07/12/88	Concessions by a reluctant West German Bundesbank enabled central bankers to agree on new minimum capital standards for international banks.

REFERENCES

- Allen, Paul R., and William J. Wilhelm, 1988, The impact of the 1980 depository institution deregulation and monetary control act on market value and risk: Evidence from the capital markets, *Journal of Money, Credit, and Banking* 20, 364–380.
- Bank for International Settlements, 1988, *International Convergence of Capital Measurement and Capital Standards*, prepared by the Basle Committee on Banking Regulations and Supervisory Practices.
- Bardos, Jeffrey, 1987–1988, The risk-based capital agreement: A further step towards policy convergence, The Federal Reserve Bank of New York *Quarterly Review* 12, 26–34.
- Berlin, Howard, 1990, *The Handbook of Financial Market Indexes, Averages, and Indicators* (Dow Jones-Irwin, Homewood, Illinois).
- Binder, John J., 1985a, Measuring the effects of regulation with stock price data, *Rand Journal of Economics* 16, 167–183.
- Binder, John J., 1985b, On the use of the multivariate regression model in event studies, *Journal of Accounting Research* 23, 370–383.
- Bowen, Robert M., Marilyn F. Johnson, and Terry Shevlin, 1989, Informational efficiency and the information content of earnings during the market crash of October 1987, *Journal of Accounting and Economics* 11, 225–254.
- Brown, Paul R., and Clyde P. Stickney, 1991, BIS standards and assessing capital adequacy: Comparative U.S. and Japanese practices, Working paper, International University of Japan.
- Buser, Stephen A., Andrew H. Chen, and Edward J. Kane, 1981, Federal deposit insurance, regulatory policy, and optimal bank capital, *Journal of Finance* 35, 863–882.
- Chase, Marilyn, 1987, BankAmerica sets terms for issues, settles a lawsuit, *The Wall Street Journal* (October 19), p. 37, col. 1.
- Cooke, Peter, 1991, *Bank Capital Adequacy and Capital Convergence* (Price Waterhouse, London, England).
- Cornett, Marcia M., and Hassan Tehranian, 1990, An examination of the impact of the Garn-St. Germain depository institutions act of 1982 on commercial banks and savings and loans, *Journal of Finance* 45, 95–111.
- Graven, Katheyn, 1986, Japan's banks strengthen capital base in response to U.S., European pressure, *Wall Street Journal* (August 6), p. 21, col. 2.
- Holloway, Niegel, 1987, A hidden asset: Japanese banks win victory over capital-adequacy proposals, *Far Eastern Economic Review* 138, 52, 62–64.
- Kane, Edward J., 1977, Good intentions and unintended evil: The case against selective credit allocation, *Journal of Money, Credit, and Banking* 9, 55–69.
- Kane, Edward J., 1990, Incentive conflict in the international risk-based capital agreement, The Federal Reserve Bank of Chicago *Economic Perspectives* May/June, 33–36.
- Kane, Edward J., 1991, Incentive conflict in the international regulatory agreement on risk-based capital, in S. G. Rhee and R. P. Chang, eds.: *Pacific-Basin Capital Market Research II* (Elsevier Science Publishers, Amsterdam, The Netherlands).
- Kane, Edward J., and Haluk Unal, 1988, Change in market assessments of deposit-institution riskiness, *Journal of Financial Services Research* 1, 207–230.
- Kane, Edward J., Haluk Unal, and Asli Demirgüç-Kunt, 1990, Capital positions of Japanese banks, Working paper No. 3401, National Bureau of Economic Research Inc.
- Kapstein, Ethan B., 1989, Resolving the regulator's dilemma: International coordination of banking regulations, *International Organization* 43, 321–347.
- Kapstein, Ethan B., 1991, *Supervising International Banks: Origins and Implications of the Basle Accord* (Princeton, N.J., Princeton Essays in International Finance).
- Kapstein, Ethan B., 1994, *Governing the Global Economy: International Finance and the State* (Harvard University Press, Cambridge, Mass.).
- Kmenta, Jan, 1986, *Elements of Econometrics* (Macmillan Publishing Company, New York, N.Y.).
- Lam, Chun H., and Andrew H. Chen, 1985, Joint effects of interest rate deregulation and capital requirements on optimal bank portfolio adjustments, *The Journal of Finance* 40, 563–575.
- Monro-Davies, Robin, 1987, Capital ratios are only one step, *Banker* 137, 55–59.

- Neumark, David, P. A. Tinsley, and Suzanne Tosini, 1991, After-hours stock prices and post-crash hangovers, *Journal of Finance* 46, 159–178.
- Niskanen, William A., 1971, *Bureaucracy and Representative Government* (Aldine-Atherton, Chicago, Ill).
- Norman, Peter, 1987, Seventeen industrial nations draft pact on big banks' capital-adequacy needs, *Wall Street Journal* (October 23), p. 23, col. 2.
- Ono, Yumiko, 1987, In the sequel, the hero buys GM but pledges to use American parts, *Wall Street Journal* (September 17), p. 37, col. 1.
- Peltzman, Sam, 1976, Toward a more general theory of regulation, *Journal of Law and Economics* 19, 211–241.
- Pettway, Richard H., Takashi Kaneko, and Michael T. Young, 1991, International bank capital standards and the costs of issuing capital securities by Japanese banks, *Journal of Banking and Finance* 15, 559–580.
- Sharpe, William F., 1978, Bank capital adequacy, deposit insurance, and security values, *Journal of Financial and Quantitative Analysis* 13, 701–718.
- Schipper, Katherine, and Rex Thompson, 1983, The impact of merger-related regulations on the shareholders of acquiring firms, *Journal of Accounting Research* 21, 184–221.
- Schwert, G. William, 1981, Using financial data to measure effects of regulation, *Journal of Law and Economics* 24, 121–158.
- Smith, Rodney T., Michael Bradley, and Greg Jarrell, 1986, Studying firm-specific effects of regulation with stock-market data: An application to oil price regulation, *Rand Journal of Economics* 17, 467–489.
- Staff, 1987, The regulators, *Euromoney* April, 104–105.
- Staff, 1988, Cooke's medicine—kill or cure? *Euromoney* July, 34–54.
- Stigler, George J., 1971, The theory of economic regulation, *Bell Journal of Economics and Management Science* 2, 3–21.
- Taggart, Robert A., and Stuart I. Greenbaum, 1978, Bank capital and public regulation, *Journal of Money, Credit, and Banking* 10, 158–169.
- Tobin, Glenn P., 1991, *Global Money Rules*, dissertation, John F. Kennedy School of Government, Harvard University.
- Truett, Peter, 1986, Industrial nations plan strict rules for off-balance-sheet liabilities, *Wall Street Journal* (March 17), p. 24, col. 5.
- Vernon, Raymond, Debora L. Spar, and Glenn P. Tobin, *Iron Triangles and Revolving Doors: Cases in U.S. Foreign Economic Policy* (Praeger Publishers, New York).
- Zielinski, Robert, and Nigel Holloway, 1991, *Unequal Equities*, (Kodansha International, Tokyo, Japan).