

**"THE INTRODUCTION OF UNIVERSAL BANKING  
IN CANADA: AN EVENT STUDY"**

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N° 91/37/EP

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Printed at INSEAD,  
Fontainebleau, France.

# The Introduction of Universal Banking in Canada:

## An Event Study

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### Introduction

The rationale for financial sector regulatory reform most often advanced in recent years has been its positive effect on the efficiency rather than on the stability of the industry. In the 1980s and 1990s, the debate has been conducted actively in Australia, the United Kingdom, Japan, the United States, the European Community and Canada. Its focus has been on elimination of geographic and/or functional barriers to competition among financial institutions, with a view to increasing the efficiency of the financial sector.

The Canadian experience is especially instructive to countries like the U.S., currently contemplating elimination of functional barriers. This is true, in part, because Canada is the only country that has restructured its financial system from functional separation of commercial banking and securities activities to universal banking in a single policy shift. This allows analysis of both its efficiency and its stability effects. The reform, which became law on 1 July 1987, represented a dramatic reversal of government policy.

If the Canadian deregulation were indeed pro-competitive, the expected earnings of banks would have increased slightly and those of securities firms and other financial institutions that lost regulatory protection from competition would have declined

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\* Stern School of Business, New York University. The authors wish to extend sincere thanks to Yakov Amihud, Nathalie Dierkens, Tom Pugel and Tony Saunders for detailed comments on earlier drafts.

considerably. Assuming that the stock market efficiently capitalizes the expected earnings stream in daily stock prices, one would expect to find over the period when the policy change occurred: (1) An increase in the (risk-adjusted) stock market returns of Canadian banks, and (2) a decrease in the (risk adjusted) stock market returns of Canadian securities firms and trusts which had previously held protected positions.

The market, however, may not have anticipated large a gain for banks -- the more competitive the newly widened market for investment banking was expected to be, the lower would be excess profits the market would expect to accrue to banks. Thus, the excess returns to banks can be considered a measure of market perception of the degree of oligopoly in the new market, and the losses of securities firms capitalized in their market returns may be considered to be a measure of the degree of oligopoly protected by the old regulatory structure.

With regard to the stability of the banking system, if the regulatory reform resulted in an increase in the riskiness of the financial sector, one would also expect to find that the market returns of all sectors would show increased systematic risk.

Our tests of these three hypotheses lends weak support to the conclusion that the regulatory reform of removing functional barriers was indeed pro-competitive. We find somewhat stronger support for rejecting the contention that removing of functional barriers increased financial system risk.

The paper gives a brief description of the institutional background for the Canadian reform, and then presents the empirical methodology, data, and findings.

## Institutional Background

From 1924 to 1987, Canada's financial regulatory system rested on "the Four Pillars" -- (1) federally chartered banks with exclusive full lending powers; (2) predominantly provincially regulated loan and trust companies with exclusive fiduciary powers; (3) provincially regulated investment companies (i.e., investment banks); and (4) federally and provincially regulated insurance companies.<sup>1</sup>

A clause of the Canadian Banking Act, which governs the federally chartered banks, requires that every ten years there be a Banking Act review. Such a review -- were it to recommend reform -- would involve amendments to the Banking Act in the first year of the new decade.<sup>2</sup> The Progressive Conservative Party, following its election victory of 1984, indicated that its agenda for financial reform specifically did not include widening the powers of the commercial banks, at least not before the 1990 Banking Act review. The Minister of State for Finance, Barbara McDougall, was perceived as favoring increasing competition from trusts and small banks against the big federally chartered banks.

The government in late 1986 abruptly reversed this policy. In retrospect, one can easily identify the pressures that led toward the reversal. The primary pressure was the growing perception that Canadian banks competed in an international environment of increasingly universal banks. Several studies commissioned by various federal government agencies had

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<sup>1</sup> For a good summary of the two-tier "Four Pillar" system, see the Economic Council of Canada's A Framework for Financial Regulation.

<sup>2</sup> Although the exact timing was not mandatory, it formed a credible and widely anticipated schedule. The 1967 Bank Act revision had been sweeping. The next revision, the 1980 Bank Act revision, in contrast, had been limited, with its chief reform being in the definition of Schedule A (i.e. Canadian Domestic) and Schedule B (i.e. foreign-owned) banks. The date of 1990 for the next revision was frequently cited in Canadian financial media.

addressed this issue. And the erosion of the U.S. Glass-Steagall Act, which constrained the domestic investment banking operations of commercial banks, gave credence to the belief that the U.S. would soon join the Europeans in implementing some form of universal banking.

Urgency was added to the case for banking system reform by the failure of two small banks, Canadian Commercial Bank and Northland Bank. These failures severely depleted the resources of the Canadian Deposit Insurance Corporation and called into question regulatory favoring of weak financial institutions. As the American public discovered a short time later in the FDIC/FSLIC crisis, the Canadians discovered the disadvantages of an inadequately supervised, fixed-premium deposit insurance system that treated banks of different risk structures identically.

In Canada, too, functions that had been the preserve of chartered banks were increasingly being assumed by other, unconstrained financial corporations. The trusts were becoming increasingly effective competitors with the chartered banks. Moreover, the acquisition of several large trusts by commercial interests in 1985 and 1986 underlined unequal regulatory treatment between chartered banks (where such commercial/banking inter-ownership was prohibited) and trusts.

Given that a financial sector overhaul was in order, the question was one of timing and direction. Federal government policy reversal was made possible by the major cabinet reshuffle of July 1, 1986, although the views with regard to banking sector reform of the new Minister of State for Finance, Thomas Hockin became known only over the ensuing months.

The actual trigger to the government's policy reversal was an initiative of the

federally-chartered Bank of Nova Scotia in accord with deregulatory moves of provincial authorities. The Bank of Nova Scotia established an investment bank in the province of Quebec in November 1986 under a **clause of the Bank Act** that permitted temporary ownership of distressed investment companies by chartered banks. The bank made clear, however, that it viewed its action as permanent, clearly anticipating that the federal government would be forced to address the reform of the four pillars system before 1990 -- and, in effect, challenging it to do so. Secret federal-provincial talks rapidly ensued, the result of which was the policy reversal first announced on December 4th in the Ontario provincial legislature and finally confirmed on December 18 in the federal House of Commons.

The new policy was outlined in the "Blue Paper" (see Appendix 1 for a summary). Critical portions of the new policy were enacted in early 1987 and became law on July 1, 1987. Those laws (a) allowed banks to acquire investment companies, (b) created a single national regulatory agency to supervise a financial services sector comprising both commercial and investment banking, and (c) partially extended to trusts the principle, formerly applied to only chartered banks, that concentration of shareholdings of financial institutions in the hands of commercial interests be prohibited by law. A chronology of the events is presented in Appendix 2.

In an earlier study of financial deregulation through analysis of stock returns, Saunders and Smirlock [1987] evaluated market reaction to an important erosion of Glass-Steagall -- bank entry into discount brokerage activities in the United States signaled by (1) the announcement by BankAmerica that it was acquiring Charles Schwab and Company, and

(2) the approval of the Federal Reserve Board. The authors concluded that bank profitability and risk were largely unaffected by the deregulation, but that securities firms' returns experienced significant declines -- **presumably due** to the anticipation of increased competition.

The acquisition by Canadian chartered banks of Canadian investment companies subsequent to the aforementioned policy change has also been examined using event study methodology by Kryzanowski and Ursel [1990]. During the period from the policy change announcement of December 18, 1986 through year-end 1989, each of the large Canadian chartered banks acquired at least one domestic investment company (Table 1). Kryzanowski and Ursel sought to determine market reaction to that series of takeover announcements, and to make inferences about economies of scope therefrom. They conclude that, "whereas Canadian banks may have gained from possible economies of scope in joint bank/brokerage activities, they probably paid an excessive price for the investment dealers they purchased.

The methodology employed here is a refinement of the standard event study techniques investigated by Brown and Warner [1985] and applied with widely reported success to the analysis of the market for corporate control, e.g., by Jensen and Ruback [1983]. The returns generating process is estimated for the period from 90 days prior to the announcement of the takeover to 30 days subsequent to the announcement. The "event windows" with respect to which abnormal returns are calculated, cumulated and then aggregated across banks varies from a maximum 11-day duration (5 days before the announcement to 5 days thereafter) to a minimum of 1-day duration. Statistically significant negative returns to bidding banks are recorded in the smallest event window (the day

following the announcement) while positive significant excess returns generally accrue to the target firms and others in the target industry. We concur with Kryzanowsky and Ursel's conclusion that positive excess returns to the target industry (i.e., former competitors of the target firm) implies that the unacquired firms were also deemed to be "in play" by the market. However, we take exception to their conclusion that Canada's banks have generally fallen into Roll's [1986] hubris trap whereby overpayment for the firm exceeds scope economies to be realized.

Our study looks at the effect of the change in government regulation which allowed chartered banks legally to implement the acquisition strategies which Kryzanowsky and Ursel studied. In a situation that might be considered the reverse of that studied by Schipper and Thompson [1983] in an analysis of the effect of increased regulatory constraints in the late 1960s on firms that had active mergers and acquisitions programs, we believe that the Canadian chartered banks by 1986 already had formed a universal banking policy constrained only by the regulatory system. The release of that regulatory constraint, we would argue, is the appropriate information that the stock market would capitalize as excess returns accruing to the banks in the event that the market expected that decreased costs from economies of scope associated with combined securities and lending transactions would accrue. To be sure, the later announcement -- the investment company to be acquired and the price to be paid -- would also contain information. The market capitalization of such new information would be a reaction to a specific execution of part of the bank's plan to achieve banking universality, not the capitalization of the a reaction to the price paid and the particular institution purchased. In that context, one can legitimately assert that

"overpayment" or "underpayment" has occurred. But we believe that such payment error is likely to be of a lower order of magnitude than the previously capitalized gains from scope economies. Moreover, one could further speculate that, in the event that a large chartered bank had not opted to pursue investment banking (through acquisition or greenfield investment), the market would have penalized its share price for the foregone economies of scope.

### Methodology

We examine the content of new information regarding the reform of Canada's banking system by analyzing the extent of "abnormal" stock returns and the shift in the risk coefficient during the sample period (January 1986 to December 1987) covering the relevant events listed in Appendix 2. We create portfolios to capture the effect of the reform on each of the four pillars of the Canadian financial system.

We model the returns-generating process with the following market model:

$$(1) r_{it} = \alpha_i + \beta_i r_{mt} + \sum_{j=1}^4 \Gamma_{ji} \delta_j + \delta_0 \alpha_{2i} + d\beta \delta_0 r_{mt} + \epsilon_{it}$$

where  $r_{it}$  is the return (both capital appreciation and dividend flow) for the  $i$ th company (or portfolio of companies) in the period  $t$ ,  $r_{mt}$  is the market return in the same period,  $\epsilon_{it}$  is the error term with expected value zero,  $\delta_0$  is a dummy variable taking the value 0 before the final event day and one thereafter,  $\delta_j$  are the four dummy variables taking on the value 1 on the event periods 1 to 4 and zero elsewhere,  $\delta_0$  is a dummy variable taking the value 0 before the final event day and one thereafter, and the  $\alpha$ ,  $\beta$ ,  $d\beta$  and  $\Gamma$  are parameters to be

estimated.<sup>3</sup> We have opted to use a simple market model, rather than a multiple-factor model such as that used by Flannery and James [1984], which incorporates interest rates, because we feel that inclusion of such a term captures the ex-post effect of interest changes on any given financial institution's maturity mismatch of assets and liabilities, rather than pricing by investors of risk in the sense of interest rate volatility.

Our first set of tests concern the risk of the financial institutions. We compare the total variances of returns of portfolios to determine whether total risk of the stocks changed from 1986 to 1987.<sup>4</sup> We then test to determine whether the undiversifiable risk measured by the market beta of each portfolio has changed. We do this by running the full model outlined in (1) for each portfolio of companies in order to determine whether  $d\beta$  is significant -- i.e. whether the portfolio's beta has changed subsequent to the change in government policy. The unrestricted model (whereby  $d\beta$  is allowed to vary) is compared to the restricted model (holding  $d\beta=0$ ) using a standard F test.

Having determined that such a structural change has occurred, we truncate the data series to cover only 1986 data, and drop the  $\delta_0$  terms to leave the model as:

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<sup>3</sup> The daily returns  $r_{it}$  for each company  $i$  for each day  $t$  were calculated as

$$r_{it} = \ln \left\{ \frac{(P_{it} + d_{it})}{P_{it-1}} \right\}$$

where  $P_{it}$  is the price per share,  $d_{it}$  is the present value of the quarterly dividend per share on the ex dividend day and  $\ln \{ \dots \}$  denotes the natural logarithm. All firms in the sample paid dividends from 3 to 5 weeks after the ex dividend day. The time value of the delay was calculated by dividing the paid dividend per share by 1.0073 based on average interest rates of 8.75% p.a. and a one month average delay, and generally accounted for a magnitude of less than one "tick" in the price of the stock. Where  $r_{it}$  represents the returns of a portfolio of companies, it is the simple average of the individual company  $r_{i,t}$ s in the portfolio.

<sup>4</sup> The test employed is

$$\frac{\sigma^2\{r_{i1987}\}}{\sigma^2\{r_{i1986}\}} \sim F[\text{number of obs. 1987, number of obs. 1986}]$$

$$(2) r_{it} = \alpha_i + \beta_i r_{mt} + \sum_{j=1}^4 \Gamma_{ji} \delta_j + \epsilon_{it}$$

To estimate this model, two econometric methods were used: (a) seemingly unrelated regressions (SUR), and (b) ordinary least squares (OLS). Because the events under study are contemporaneous over the sample of companies, we cannot justify aggregating the single or cumulative abnormal returns over companies to improve the power of the tests. Following Saunders and Smirlock [1987], however, we used the contemporaneous correlation of residuals through SUR and parameter restrictions across equations. As is widely appreciated -- see Green [1990] -- if the regressors in the stacked system of equations have identical independent variables (as is the case here) the SUR estimator is the same as OLS. The cross-equation restriction is, therefore, essential. Hence, we stacked equations (2) for large banks to estimate the model, while restricting the coefficients on the dummy variables to be identical. We felt that use of cross-equation parameter restrictions among the large banks -- whose scope and scale of businesses are very similar -- was justified, whereas we felt it was not justified for other financial institutions in our sample, which exhibit great diversity.

For the OLS estimates, we averaged returns of all of the companies in each financial institution categories (large banks, small banks, trusts, insurance companies and securities companies) and then estimated the parameters of (1) and (2) for each portfolio separately. In the event, the SUR results were not a substantial improvement over the OLS estimates using portfolios. Because the latter are less cumbersome and more intuitively appealing, we used them in most of our analysis.

In calculating the cumulative abnormal returns, the expression in (2) was modified

by omitting the dummy terms  $\sum_{j=1}^4 \Gamma_{ji} \delta_j$ , leaving the expression

$$(3) r_{it} = \alpha_{li} + \beta_{li} r_{mt} + \epsilon_{it}$$

where  $t$  runs from January 2, 1986 to December 31, 1986. The abnormal returns,  $\epsilon_{it}$ , were normalized and summed across the relevant event window and tested using a z-test.<sup>5</sup>

A problem exists with thin trading, especially for the small Canadian banks and trusts. In the absence of daily trading volume information, one can use the absence of change in stock price as a rough proxy for no trading.<sup>6</sup> To address the problem, we first tried regressions using a two-day averaging technique, whereby the real beta is an average of the beta on the lagged market return and the current market return beta, as discussed in Scholes & Williams [1977]. Perhaps because non-traded days typically are grouped together, there was no appreciable change in the coefficients estimated. We have not reported these results. Our solution was to run the regressions again using weekly instead of daily returns.

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<sup>5</sup> The normalized abnormal returns were calculated, following Patel [1978], as follows:

$$AR = \epsilon_i / \sigma_{\epsilon_i} [1 + 1/N + (r_{mt} - r_{m.mean})^2 / \sum_{i=0}^N (r_{mt} - r_{m.mean})^2]^{-1/2}$$

where  $N$  is the number of days in the estimation period (here  $N=250$  days),  $\sigma_{\epsilon_i}$  is the standard deviation of the regression (i.e. the sum of squared residuals/degrees of freedom) and  $\epsilon_i$  is the abnormal return (the error term of the regression) and  $r_{m.mean}$  is the mean of the market return. Note that, given the large size of the event window and the lack of outliers among the  $r_{mt}$ , the expression in the square brackets [...] tends to 1 for all  $t$ . Hence, little overstatement of significance would have been involved had we used the simpler expression  $AR = \epsilon_i / \sigma_{\epsilon_i}$ .

To obtain the cumulative normalized AR, the ARs were summed over the sample periods and divided by  $W^{1/2}$ , where  $W$  is the number of days in the event window, here 125.

<sup>6</sup> The following shows the frequency of days when stock price did not change from one day to the next: Toronto Dominion 15%; Royal Bank of Canada 21%; Bank of Nova Scotia 22%; Bank of Montreal 18%; Canadian Imperial Bank of Commerce 20%; National Bank of Canada 22%; Montreal City 40%; Bank of Alberta 47%; Fairfax 36%; Canada Trust 25%; Montreal Trust 28%; First City Trust 29%; Hees 16%; Marathon 32%.

Weekly returns were defined as the sum of the  $r_{it}$  from Monday through Friday of each week. Although this possibly introduced errors associated with the "Friday effect" and "Monday effect", discussed at length in Foster and Viswanathan [1989], it allowed the event periods -- each of which unambiguously occurred during the week -- to be restricted to single weeks, rather than be spread across two. Results, however, were not appreciably altered.

### Data

Daily Toronto Stock Exchange (TSE) closing stock price and dividend data for 14 Canadian financial service companies were used, representing all financial companies whose stocks are actively and continuously traded on the TSE from 1986 and 1987. Stock price data were obtained from Interactive Data Corporation. The TSE composite index, also supplied by Interactive Data Corporation, was used as the market index. The dividend data were obtained from the Toronto Stock Exchange Review.

As Table 2 shows, all four of the traditional "four pillars" are represented -- although unequally. For the OLS tests, we constructed five portfolios of averaged returns, one for each of the four pillars with the exception of chartered banks, where we distinguished between large banks and small banks.

For the large chartered banks, the sample is highly representative -- Bank of Montreal, Bank of Nova Scotia, Canadian Imperial Bank of Commerce, National Bank of Canada, Royal Bank and Toronto-Dominion Bank completely dominate Canadian bank stocks, and make up 15% of the capitalization of the top-300 listed companies that form the

Toronto Stock Exchange 300 index.<sup>7</sup> Two small chartered banks, Bank of Alberta and Montreal City Bank, were averaged into the small-bank portfolio.

Because of the importance of mutual companies in the insurance business, partnerships among investment companies, and closely-held companies among trusts -- as well as mergers and acquisitions that took place in that sector -- the sample is not as representative of the other three pillars of the Canadian financial system. Three trust companies, Canada Trustco, Montreal Trustco, and First City Trust Company are quoted, but thinness of trading due to closely held shares of Canada Trustco probably calls into question the validity of data relating to that firm. One (predominantly) insurance company, Fairfax Financial Holdings, and two investment banks (Hees International and First Marathon) were also included in the study.

Six event-days associated with four relevant events were identified: (1) July 2, 1986, the first day the stock market was open after the cabinet reshuffle in which Thomas Hockin replaced Barbara McDougall as Minister of State for Finance, thereby clearing the way for a reversal of government policy; (2) November 12-13, 1986, the day on which the Bank of Nova Scotia announced its clearance from the Quebec provincial government to establish a wholly-owned investment subsidiary in the province and the day following that announcement (precise time of announcement not known); (3) December 4 and 5, 1986, the day of the announcement in the Ontario Legislature of the agreement between Monte Kwinter, Ontario Minister of Financial Institutions, and Thomas Hockin with respect to the amendment of the Banking Act to allow banks to own investment companies and one day

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<sup>7</sup> 1989 Official Trading Statistics Toronto Stock Exchange.

after the announcement (precise time of announcement not known); and (4) December 19, the day following the announcement by the federal government in parliament of its new policy regarding financial institutions as detailed in the "Blue Paper" to amend the Banking Act (the TSE closed at 4:10 p.m., while the time of announcement 4:30 p.m.).

In this context, it is important to note that a common failure of event studies is their inability to identify explicitly what constitutes "news," and precisely when that news becomes public. This is especially true with regard to the formulation of government policy that is carried out more or less as a public debate, without a clear beginning and a clear end. In the case of the Canadian reforms considered here, the openness of the debate mitigated the impact of the events on the market. Nevertheless, sufficient "new" information may have been conveyed on the event days to justify analysis of this type.

## Results

Risk Tests of Parameter Shifts. Table 3 shows the results of the risk tests. Total variance generally increased throughout the sample from 1986 to 1987,<sup>8</sup> as one would expect from the October 1987 worldwide stock market crash, which greatly increased volatility. Toronto was no exception.

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<sup>8</sup> Only the variance of the insurance portfolio appears to have decreased from 1986 to 1987. This reduction, however, is reversed when one considers weekly rather than daily returns -- probably from the effect of thin trading in the stock. Note that the insurance portfolio is a portfolio of one company, and that it has an improbable (and statistically insignificant) beta of zero on its daily returns. That the beta becomes a believable (and significant at the 15% level) .75 when weekly returns are used. Hence, more credibility should be attached to the weekly returns of the insurance portfolio. A similar argument applies to the small banks portfolio. Note also that, since the number of institutions in each portfolio varies, one can make no direct comparison of one portfolio's risk with another's.

Of greater interest in determining the change in the risk of financial institutions concerns the undiversifiable risk, the covariance of returns with the market, scaled by the variance of market returns. As Table 3 shows, the large-bank portfolio was statistically significantly less risky in 1987 than in 1986, with its beta falling from 1.11 to 0.71. Judging by daily returns, both the trust and the investment companies were statistically more risky at the 5% level. In general, similar trends are evidenced in the weekly data, although statistical significance is lost.

The data, on the whole, provide strong evidence that commercial bank stocks were less risky in 1987 than 1986. Two caveats, however, are in order. One concerns the problem of attributing the event's effect, and the other concerns the effect's statistical significance.

The betas of the large banks in Canada declined from 1986 to 1987, but the length of the estimating period for the differential betas is so great as to beg the question whether the only cause was the reform of the financial structure. In particular, the government of Canada introduced several regulatory and supervisory policies designed to improve the safety and soundness of commercial banking itself, regardless of reform of the financial structure. These policies followed the recommendations of the Esty Commission report of October 24, 1986 and were confirmed both before and in Blue Paper of December 19. It is impossible to disentangle the effects on stock riskiness of these policies from the reform of the four pillars.

The statistical significance is also moot. In order to achieve significance in a regression, high variance in the independent variables is desirable. In 1987, that variance was provided by the stock market crash, during which large banks exhibited a lower covariance with the

TSE 300 than they had in 1986. It may be argued, however, that the stock market crash also introduced a qualitatively different kind of risk into the market.

To address this issue, we re-ran the regressions using a cutoff date of September 30, 1987. The results in Table 4 show that, whereas the negative sign for large banks is preserved, its significance is lost.

Event Day Tests. Table 5 shows the estimates of the parameters for the event day returns using SUR for the large banks, where the estimation of a single parameter would be justifiable. The parameters take on the anticipated sign in three out of four cases but the highest level of significance which is achieved is the 21% level for the third event day period -- December 4th and 5th. A comparison with the OLS estimates of the portfolio in Table 6 confirms that, whatever the theoretical increase in efficiency of estimation in using SUR, the parameters of interest did not increase in significance. In some cases, where reduction of the standard error was offset by reduction of the estimated parameter, they became less significant.

The cabinet reshuffle, which occurred on Canada's national holiday of July 1 impacted the stock market at its opening on July 2. Generally, there were gains for the large chartered bank, investment company and insurance portfolios but losses for the small banks and trusts, with the highest level of significance of the dummy variable being an unimpressive 15% for trusts.

The second event period, occasioned by Bank of Nova Scotia's November 12 announcement, met the predicted market reception: Large chartered banks that could take

advantage of their entry into investment banking showed positive abnormal returns, while the other three pillars (plus small chartered banks) experienced negative abnormal returns. Again, however, none of the dummy variables approached statistical significance.

The most important dates with regard to the change in government policy toward eliminating financial separatism explicit in the "four pillars" came with the formulation of that policy. This occurred at the undisclosed meeting on Monday 1 December 1986 between Thomas Hockin, representing the federal government, and Monte Kwinter, Minister of Financial Institutions of the provincial government of Ontario. The meeting's decisions were disclosed to the public by Mr. Kwinter -- to the apparent embarrassment of Mr. Hockin -- at a session of the Ontario legislature on 4 December, which was reported in the press on the following morning. The positive dummy variable for large chartered banks was significant only at the 20% level.

The formal statement of policy in the House of Commons at 4:30 p.m. (after the close of TSE trading) on December 18 confirmed the Ottawa-Toronto deal struck 18 days earlier. Assuming no leaks, its effect would be reflected in stock market prices on the following day. The large chartered banks were unaffected. Negative (but insignificant) abnormal returns accrued to the insurance and investment company portfolio. The only significant excess returns was from the small banks. It is difficult, however, to attribute that gain to the elimination of the investment banking/commercial banking separation. It may have had more to do with the prohibition of incorporation of new trusts with significant commercial interests and the waiver for small banks of the requirement that they be widely held within 10 years of incorporation, or perhaps from the confirmation that deposit insurance would

remain.

Cumulative Event Period Tests. Figures 1, 2, and 3 plot the cumulative abnormal returns calculated shown in equation (3) from the first event date (July 2, 1986) through to the end of 1986 for each of the portfolios. It is apparent that the cumulative abnormal returns of the trust company and investment company portfolios were strongly negative over the period, while those of large banks were positive. The difference between the large-bank and trust-company portfolios was approximately 26% by yearend, while the difference between the large bank and the investment company portfolio was 28%. A distinctive pattern does not emerge from either the small chartered bank or the insurance portfolio.

It is also apparent that the performance was neither restricted to nor centered around the relevant event days. Instead, there seems to be a general evolution over the period, with the trust portfolio capitalizing the bad news earlier than the investment company portfolio. The slow evolution and the small sizes of our portfolios are responsible for the relatively low statistical significance of these dramatic differences (see Table 7) -- 6.6% for the trust, 13.2% for the investment company and 18.0% for the large bank portfolio.

### Conclusions

This study considered a sweeping financial reform -- the full conversion of a country's banking system from functional separation to universal banking. The results tend to confirm those of the earlier studies that deregulation tends to be pro-competitive. It benefits commercial banks at the expense of investment banks, but the loss of regulatory

protection of the investment banks leads to losses more dramatic than the gains of commercial banks entering the formerly protected market. The efficiency gains, moreover, appear not to be obtained at the expense of stability. In fact, in the Canadian case, the commercial banks emerged from the Canadian reforms less risky than when they entered.

The study also provides insight into how the stock market anticipates changes in public policy. Whereas the Canadian debate on banking system reform was carried out in full public view, the final negotiation and formulation of policy was carried out in secret. Nevertheless, the study has demonstrated that in revealing the results of those secret meetings held in December 1986, the government was providing relatively little new information to the market. The market, having read the various independent studies of the banking system compiled in previous years, having heard the evolving views of the Minister of State for Finance over the previous six months, and having observed the interaction of government and business, had evidently anticipated the policies that would subsequently be announced.

## References

Don Blenkarn Canadian Financial Institutions Report of the Standing Committee on Finance, Trade and Economic Affairs. November 1985.

Jeffrey Clark, "Economies of Scale and Scope at Depository Financial Institutions: A Review of the Literature," Federal Reserve Bank of Kansas City Review, September-October 1988.

Economic Council of Canada A Framework for Financial Regulation research report, Ottawa, 1987,

M.J. Flannery and C.M. James "The Effect of Interest Rate Changes on the Common Stock Returns of Financial Institutions" Journal of Finance 39, 1141-1153.

F. Douglas Forster and S. Viswanathan "A Theory of Interday Variations in Volumes, Variances and Trading Costs in Securities Markets" Working Paper, September 1989.

William H. Greene Econometric Analysis Macmillan Publishing Company, New York, 1990.

Thomas Hockin "New Directions for the Financial Sector" Report of the Minister of State for Finance tabled in the House of Commons. Ottawa, December 18, 1986.

Michael Jensen and Richard Ruback. "The Market for Corporate Control: The Scientific Evidence" Journal of Financial Economics 11 (April 1983), 5-50.

Lawrence Kryzanowski and Nancy Ursel, "Market Reaction to Canadian Bank Takeover Announcements of Canadian Investment Dealers and Announcement Timing," Concordia University Working Paper, January 1990.

A. Nathan and E.H. Neave, "Competition and Contestability in Canada's Financial System: Empirical Results," Canadian Journal of Economics, August 1989.

J.M. Patel "Corporate Forecasts of Earnings per Share and Stock price Behavior" Journal of Accounting Research 14 1976, 246-276.

Randall J. Pozdena, "Do Banks Need Securities Powers?" Federal Reserve Bank of San Francisco Weekly Letter, 29 December 1989.

Richard Roll "The Hubris Hypothesis of Corporate Takeovers" Journal of Business (April 1986), 197-216.

Anthony Saunders and G. Smirlock Journal of Financial and Quantitative Analysis, Vol 22, No 4., December 1987.

Katherine Schipper and Rex Thompson "The Impact of Merger-Related Regulations on the Shareholders of Acquiring Firms" Journal of Accounting Research vol 21 no 1 (1983) 184-221.

Myron Scholes and Joseph Williams ("Estimating Betas from Non-Synchronous Data" Journal of Financial Economics 5, 1977 pp 309-327).

Toronto Stock Exchange 1989 Official Trading Statistics, The Toronto Stock Exchange Press, Toronto, 1989.

The Toronto Stock Exchange Review. years 1986-1989.

## Appendix 1: Summary of the "Blue Paper"

On December 18, 1986 Thomas Hockin, Minister of State (Finance) tabled the policy paper New Directions for Financial Institutions which signaled the largest reform of the Canadian financial structure in 60 years. The key proposals of the "Blue Paper" were as follows:

1. There would be no restrictions on the common ownership of financial institutions.
  - . Separate corporate or jointly owned entities would be maintained for regulatory purposes.
  - . Either a holding company or direct ownership could be used (a new option for banks which trusts formerly exclusively enjoyed).
  - . Full networking of sales would be permitted except for retailing insurance.
  
2. Increased powers would be granted to existing institutions.
  - . All trust loan and life insurance companies would be granted full consumer lending powers and trusts with over \$25 million in capital would be given new, full corporate lending powers.
  - . Banks would be allowed to offer investment advice, portfolio management and other fiduciary services.
  - . Banks required non-interest bearing deposits at the Bank of Canada would be phased out by 1990.
  
3. Ownership restrictions would be made more equitable across types of financial institutions.
  - . The Minister of Finance would maintain discretionary power to approve mergers and acquisitions among financial firms.
  - . Acquisition of large institutions would, in general be discouraged.
  - . No changes in policies regarding foreign ownership of financial institutions would be made, except that foreign banks in Canada would be allowed to purchase up to 50% of Canadian securities dealerships.
  - . Small banks (below \$750 million capital) would be exempted from the previous restriction that their shares be widely held within 10 years of incorporation.
  - . Banks above the capital threshold would have to restrict ownership by any single interest of any single class of shares to less than 10% (this confirmed existing policy to encourage wide ownership). Holders of more than 10% would not be allowed to increase shareholding.
  - . Banks reaching the capital threshold would have to have 35% of shares publicly traded within 5 years.
  - . A prospective new trust would only be granted a license if its applicants had no significant other commercial interests.

- . Commercial interests would not be permitted to acquire or increase ownership positions in non-bank financial institutions with capital over 50 million.
  - . Non-bank financial institutions over the 50 million threshold with commercial links would be required to have at least 35% of capital publicly traded and widely held within five years.
  - . All non-bank financial institutions over the 750 million capital threshold would be required to have 35% of capital publicly traded and widely held within five years.
4. New regulations regarding all of the financial service industry would come into effect.
- . Loans and investments to and purchase and sale of assets with non-arm's-length persons (not including intra-financial group) would be banned.
  - . Use of greater disclosure and Chinese Walls would be made to combat potential conflicts of interest.
  - . As recommended in the Estey report, the roles and responsibilities of directors would be strengthened and a review of bank auditing procedures would be undertaken.
  - . As recommended by the Estey report A new body, the Office of the Superintendent of Financial Institutions would be created to bring all federally regulated financial institutions under one authority.
5. The role of the Canadian Deposit Insurance Corporation was confirmed.
- . The Governor of the Bank of Canada and the CIDC would be empowered to require the Superintendent to carry out special investigations of specific banks.
  - . As recommended by the Estey Report, the powers of the CIDC in assuming and managing failed insured institutions would be increased.
  - . Insurance rates would be raised to eliminated, over time, the deficit.

## Appendix 2: Chronology

- March 25, 1985      The Bank of Canada implements a rescue of the Canadian Commercial Bank, a young, Alberta-based bank suffering deposit outflow.
- April 15, 1985      Barbara McDougall, Minister of State for Finance, releases the Green Paper of the Regulation of Financial Institutions, a discussion document proposing that trust companies and insurance companies be allowed to establish holding companies which could acquire banking subsidiaries (a new category of bank called "Schedule C Banks" to distinguish them from "Schedule A" Canadian commercial banks and "Schedule B" foreign owned banks) but restricts banks from establishing such holding companies. The proposal is seen as hastening the change of the "Four Pillars" to two: one with banks, insurance and trust companies and the other with securities companies. Bankers are hostile to the proposals for their lack of even treatment for banks and criticizes proposal as tolerating and encouraging the comingling of financial and non-financial interests.
- Sept 1 1985        The Department of Finance of the federal Ministry of Finance, The Bank of Canada and the Inspector General of Banks announce that credit will no longer be provided to two Alberta banks, Canadian Commercial Bank and Northland Bank, that curators are being appointed to take over management of the banks, that all insured depositors will be covered by the CIDC and that parliamentary approval for full reimbursement of uninsured depositor will be sought. These are the first Canadian banks failures in 62 years. In subsequent months, rumors of financial distress for other small banks, Bank of British Columbia, Mercantile Bank, and Continental Bank, cause liquidity difficulties and tapping of BOC lines. Within a year and a half, all three have been merged into other banks (Mercantile with National Bank of Canada, Bank of British Columbia with the Hong Kong Shanghai Banking Corporation, and Continental Bank with Lloyds Bank of Canada, a subsidiary of the U.K. clearing bank).
- Sept 30, 1985      Judge Willard Z. Estey appointed as commissioner of the Commission of Inquiry on Certain Banking Operations to report on the causes of the failure of Canadian Commercial and Northland and recommend system changes.

- Nov 7, 1985 Commons Finance Committee makes its 11th report. Known as the Blenkarn Report after its chairman, by Don Blenkarn, the report's recommendation for reform are contrary to most of the ideas in the Green Paper. The proposals concern increasing Ottawa's bank supervisory and enforcement powers, but also calling for an early opening up of the system to permit financial supermarkets. McDougall, in contrast, favors a three stage implementation: rapid regulatory strengthening followed by increasing powers of trust companies and insurance companies and in 1990, with the 10 year review of the Banking Act, changing of the powers of banks as then deemed appropriate. McDougall appoints Coopers and Lybrand to conduct study of implementation of tighter bank supervisory system.
- March 1986 Imasco Ltd. acquires Genstar Corp., holder of 99% of the shares of Canada Trustco Mortgage Corp, the country's largest trust company, adding fuel to the debate about commercial-financial ties and potential conflicts of interest therefrom.
- May 1986 Senate banking commission releases report calling for maximum freedom and flexibility for Canadian financial institutions, but reaffirms that banks must wait until 1990 for any changes in status.
- June 1986 Monte Kwinter, Liberal Party Ontario Provincial minister of Financial Institutions announces October 1 deadline for introduction of legislation to increase role of foreign securities firms (up to 30% of industry) and allow holdings of up to 30% of securities firms by other financial institutions. Coordination with Ottawa would be needed for successful implementation of proposed reforms.
- July 1 1986 In a large cabinet reshuffle, Thomas Hockin is named to replace Barbara McDougall as federal minister of state for Finance. Hockin indicates that he is averse to industrial companies owning financial institutions and that banks could be included in current round of financial system overhaul.
- Oct 24 1986 Estey Commission report recommends merger of Office of Inspector General of Banks with Canadian Deposit Insurance Corporation into a supervisory body called the Canadian Deposit Insurance Commission with increased powers and roundly criticizes auditing practices. Newspapers speculate that swift legislative action will be forthcoming on implementing report findings and that restructuring of financial system will have to wait until 1987, since no clear consensus has been achieved and that the "Four Pillars" will be left intact.

- Nov 12, 1986 The Bank of Nova Scotia announces that it has received permission from the Quebec provincial government to establish a wholly owned provincially regulated securities company. Under national Banking Act legislation, bank can own a securities company for up to two years (the law was to allow **bank workouts** of troubled securities firms). The move is seen as forcing Ottawa's decision as to whether or not to reform the Act before its 1990 expiry.
- Dec 1, 1986 Tom Hockin and Monte Kwinter reach agreement for Ottawa's appointment of a "super agency" to regulate banks, trust and insurance companies and to allow banks, trust and insurance companies to own up to 100% of securities companies.
- Dec 4, 1986 Monte Kwinter announces to agreement to the Ontario Legislature.
- Dec 11, 1986 The Canadian press reports that a federal cabinet split is delaying the federal government's announcement on financial structure reform.
- Dec 18, 1986 Thomas Hockin announces the federal government's reform policy in parliament by tabling the "Blue Paper", officially entitled New Directions for the Financial Sector.
- May 7, 1987 Bill C-56 Introduced into Parliament to effect ownership regulatory reforms proposed in the "Blue Paper".
- July 1, 1987 C-56 becomes law.

Table 1

The Acquisitions of Investment Dealers by Canadian Chartered Banks

Acquiring Bank -----	Acquired Investment Dealer -----	Date -----	% Acquired -----
Canadian Imperial Bank of Commerce	Gordon Capital	7/17/87	i n d i r e c t through JV formation
Bank of Montreal	Nesbitt Thomson	78/13/87	75
Bank of Nova Scotia	McLeod, Young, Weir	9/30/87	100
Toronto Dominion Bank	Guardian Group	10/16/87	100
Royal Bank of Canada	Dominion Securities	12/1/87	75
Canadian Imperial Bank of Commerce	Wood Gundy	1/26/88	65
National Bank of Canada	Levesque Beaubien	7/1/88	73
National Bank of Canada	Geoffrion Leclerc	2/6/89	60-90
Royal Bank of Canada	Pemberton Securities	4/18/89	90

Source: Kryzanowski and Ursel [1990]

Table 2

Companies Included in the Study

Financial Company	Abbreviation Used in Subsequent Tables
-----	-----

Large Banks

Toronto Dominion Bank	TD
Royal Bank of Canada	RBC
Bank of Nova Scotia	BNS
Bank of Montreal	BOM
Canadian Imperial Bank of Commerce	CIBC
National Bank of Canada	NBC

Small Banks

Montreal City and District Savings Bank	MCITY
Bank of Alberta	BOA

Trust Companies

Canada Trustco Mortgage Company	CTR
Montreal Trustco Inc	MTR
First City Trusts Company	FCTR

Insurance Company

Fairfax Financial Holdings, Ltd.	FF
----------------------------------	----

Investment Companies

Hees International Corp.	HEES
First Marathon Inc.	MAR

Table 3  
Changes of Risk: 1986 to 1987

$$\text{model: } r_{it} = \alpha_{1i} + \beta_i r_{mt} + \sum_{j=1}^4 \Gamma_{ji} \delta_j + \alpha_{2i} \delta_0 + d\beta_{i\delta 0} r_{mt} + \epsilon_{it}$$

(a) Risk Parameters for Daily Returns

Portfolio	Total Risk			Undiversifiable Risk			
	1986 $\sigma r_i$	1987 $\sigma r_i$	Probability F	$\beta$	Probability $t > t\beta$	$d\beta$	Probability $d\beta=0$
Large Banks	0.0093	0.0143	0.000	1.1139	0.000	-0.4024	0.000
Small Banks	0.0157	0.0267	0.000	0.1857	0.436	0.3292	0.197
Trusts	0.0116	0.0183	0.000	0.5076	0.000	0.3430	0.020
Insurance	0.0293	0.0263	0.956	-0.0192	0.949	0.7341	0.024
Investment Companies	0.0165	0.0204	0.000	0.3605	0.049	0.4921	0.012

(b) Risk Parameters for Weekly Returns

Portfolio	Total Risk			Undiversifiable Risk			
	1986 $\sigma r_i$	1987 $\sigma r_i$	Probability F	$\beta$	Probability $t > t\beta$	$d\beta$	Probability $d\beta=0$
Large Banks	0.0213	0.0303	0.007	0.9442	0.000	-0.3388	0.119
Small Banks	0.0361	0.0432	0.102	0.8660	0.010	-0.2165	0.548
Trusts	0.0254	0.0337	0.023	0.5874	0.019	0.0716	0.791
Insurance	0.0488	0.0559	0.168	0.7234	0.153	-0.2743	0.619
Investment Companies	0.0434	0.0504	0.145		0.080	0.2739	0.528

Probability F give the probability that an F statistic (df 1987, df 1986) will exceed the value of  $\sigma^2 r_{i,1987} / \sigma^2 r_{i,1986}$

Probability  $t > t\beta$  gives the probability that a T statistic would exceed the calculated value of the t statistic of the estimated coefficient.

Probability  $d\beta=0$  gives the probability of an F statistic (1, df regression) exceeding the value of  $(e^* \cdot e^* - e \cdot e) / (e \cdot e / (n-k))$  where  $e^*$  and  $e$  are the vectors of residuals of the restricted and unrestricted regressions and  $(n-k)$  are the degrees of freedom in the unrestricted regression.

Table 3 ... continued  
Changes of Risk: 1986 to 1987

(a) Other Parameters for Daily Returns

$$\text{model: } r_{it} = \alpha_{1i} + \beta_i r_{mt} + \sum_{j=1}^4 \Gamma_{ji} \delta_j + \alpha_{2i} \delta_0 + d\beta_{i60} r_{mt} + \epsilon_{it}$$

	Large Bank	Small Bank	Trusts	Insurance	Invest. Co	
$\alpha_{1i}$	0.0001	0.0005	0.0015	0.0032	0.0019	
Probability $t > t_{\alpha 1}$	0.826	0.733	0.066	0.065	0.061	
$\Gamma_1$	0.0009	-0.0175	-0.0160	0.0092	0.0019	
Probability $t > t_{\Gamma 1}$	0.912	0.411	0.193	0.733	0.905	
$\Gamma_2$	0.0028	-0.0045	-0.0073	-0.0128	-0.0087	
Probability $t > t_{\Gamma 2}$	0.636	0.765	0.405	0.504	0.453	
$\Gamma_3$	0.0066	-0.0075	0.0021	0.0061	0.0019	
Probability $t > t_{\Gamma 3}$	0.266	0.619	0.811	0.750	0.873	
$\Gamma_4$	0.0033	0.0579	-0.0004	0.0049	-0.0054	
Probability $t > t_{\Gamma 4}$	0.694	0.007	0.971	0.856	0.741	
$\alpha_{2i}$	-0.0005	-0.0016		0.0009	-0.0036	-0.0021
Probability $t > t_{\alpha 2}$	0.506	0.396	0.399	0.142	0.150	

Table 3 ... continued  
Changes of Risk: 1986 to 1987

(a) Other Parameters for Weekly Returns

$$\text{model: } r_{it} = \alpha_{1i} + \beta_i r_{mt} + \sum_{j=1}^4 \Gamma_{ji} \delta_j + \alpha_{2i} \delta_0 + d\beta_{i\delta 0} r_{mt} + \epsilon_{it}$$

	Large Bank	Small Bank	Trusts	Insurance	Invest. Co
$\alpha_{1i}$	0.0011	0.0009	0.0077	0.0147	0.0140
Probability $t > t_{\alpha 1}$	0.713	0.851	0.042	0.059	0.022
$\Gamma_1$	-0.0089	-0.0190	-0.0161	0.0291	-0.0313
Probability $t > t_{\Gamma 1}$	0.667	0.583	0.535	0.582	0.451
$\Gamma_2$	0.0092	-0.0216	-0.0063	-0.0147	-0.326
Probability $t > t_{\Gamma 2}$	0.657	0.530	0.809	0.781	0.0431
$\Gamma_3$	0.0065	-0.0358	-0.0050	0.0182	0.0460
Probability $t > t_{\Gamma 3}$	0.756	0.301	0.847	0.730	0.270
$\Gamma_4$	0.0105	0.1237	-0.0236	0.0035	-0.0398
Probability $t > t_{\Gamma 4}$	0.612	0.001	0.363	0.995	0.338
$\alpha_{2i}$	-0.0029	-0.0065	-0.0051	-0.0161	-0.0139
Probability $t > t_{\alpha 2}$	0.484	0.341	0.327	0.127	0.094

Table 4

Changes Undiversifiable Risk: 1986 to September 30, 1987

$$\text{model: } r_{it} = \alpha_{1i} + \beta_i r_{mt} + \sum_{j=1}^4 \Gamma_{ji} \delta_j + \delta_0 \alpha_{2i} + \delta_0 \beta_i r_{mt} + \epsilon_{it}$$

Portfolio	Daily Returns				weekly returns			
	$\beta$	Probability $t > t_\beta$	$d\beta$	Probability $d\beta=0$	$\beta$	Probability $t > t_\beta$	$d\beta$	Probability $d\beta=0$
Large Banks	1.1104	0.000	-0.0745	0.546	0.9417	0.000	-0.1110	0.964
Small Banks	0.1881	0.387	-0.0809	0.790	0.8398	0.010	-0.5778	0.182
Trusts	0.5103	0.000	-0.0301	0.852	0.5769	0.013	-0.1175	0.705
Insurance	-0.9053	0.976	0.7602	0.069	0.7499	0.101	-0.4222	0.492
Investment Cos.	0.3672	0.038	0.3551	0.149	0.7107	0.059	-0.0082	0.987

Probability  $t > t_\beta$  gives the probability that a T statistic would exceed the calculated value of the t statistic of the estimated coefficient.

Probability  $d\beta=0$  gives the probability of an F statistic (1, df regression) exceeding the value of  $(e^*e^* - e'e)/(e'e/(n-k))$  where  $e^*$  and  $e$  are the vectors of residuals of the restricted and unrestricted regressions and  $(n-k)$  are the degrees of freedom in the unrestricted regression.

Estimates of other parameters are available from the authors.

Table 5

SUR Estimation of Model for Large BanksJanuary 2 to December 31, 1986

$$\begin{aligned} \text{model: } r_{1t} &= \alpha_1 + \beta_1 r_{mt} + \sum_{j=1}^4 \Gamma_j \delta_j + \epsilon_{1t} \\ r_{2t} &= \alpha_2 + \beta_2 r_{mt} + \sum_{j=1}^4 \Gamma_j \delta_j + \epsilon_{2t} \\ &\vdots \\ r_{6t} &= \alpha_6 + \beta_6 r_{mt} + \sum_{j=1}^4 \Gamma_j \delta_j + \epsilon_{6t} \end{aligned}$$

## Individual Parameters

Large Bank	$\alpha$		$\beta$	
	$\alpha$	P $\alpha$	$\beta$	P $\beta$
TD	-0.0001	0.866	1.2499	0.000
RBC	0.0001	0.877	0.7969	0.000
BNS	0.0005	0.438	1.1793	0.000
BOM	-0.0002	0.737	1.2562	0.000
CIBC	-0.0004	0.637	1.1740	0.000
NBC	0.0006	0.416	1.1320	0.000

## Jointly Determined Parameters

Dummy Variable	$\Gamma$	p $\Gamma$
Date		
July 2	0.0001	0.993
November 12-13	0.0023	0.624
December 4-5	0.0058	0.211
December 19	-0.0008	0.901

The P values give the probability that a t-statistic would exceed the sample t value.

Estimates of other parameters are available from the authors.

Table 6

OLS Estimation of Model for PortfoliosJanuary 2 to December 31, 1986

$$\text{model: } r_{it} = \alpha_i + \beta_i r_{mt} + \sum_{j=1}^4 \Gamma_{ji} \delta_j + \epsilon_{it}$$

Portfolio	$\beta$	$P[t > t\beta]$	$\Gamma_1$	$P[t > t_{r1}]$	$\Gamma_2$	$P[t > t_{r2}]$	$\Gamma_3$	$P[t > t_{r3}]$	$\Gamma_4$	$P[t > t_{r4}]$
Large Banks	1.1129	0.000	0.0009	0.893	0.0028	0.569	0.0066	0.181	0.0001	0.991
Small Banks	0.8876	0.004	-0.0189	0.543	-0.2142	0.490	-0.0357	0.250	0.1169	0.000
Trusts	0.5130	0.001	-0.0160	0.157	-0.0072	0.366	0.0020	0.795	0.0009	0.933
Insurance	0.7153	0.143	0.0308	0.543	-0.0130	0.797	0.0200	0.693	-0.0146	0.772
Investment Cos.	0.3634	0.052	0.0021	0.900	-0.0085	0.468	0.0020	0.865	-0.0040	0.810

Note: To adjust for the infrequent trading problem of the small banks and insurance portfolios, weekly returns are reported in those rows. Large banks, Trusts and Investment companies are reported as daily returns. Estimates of other parameters are available from the authors. See footnote 3 and tables 3 and 5.

Table 7  
Cumulative Abnormal Returns  
from July 2 to December 31 1986

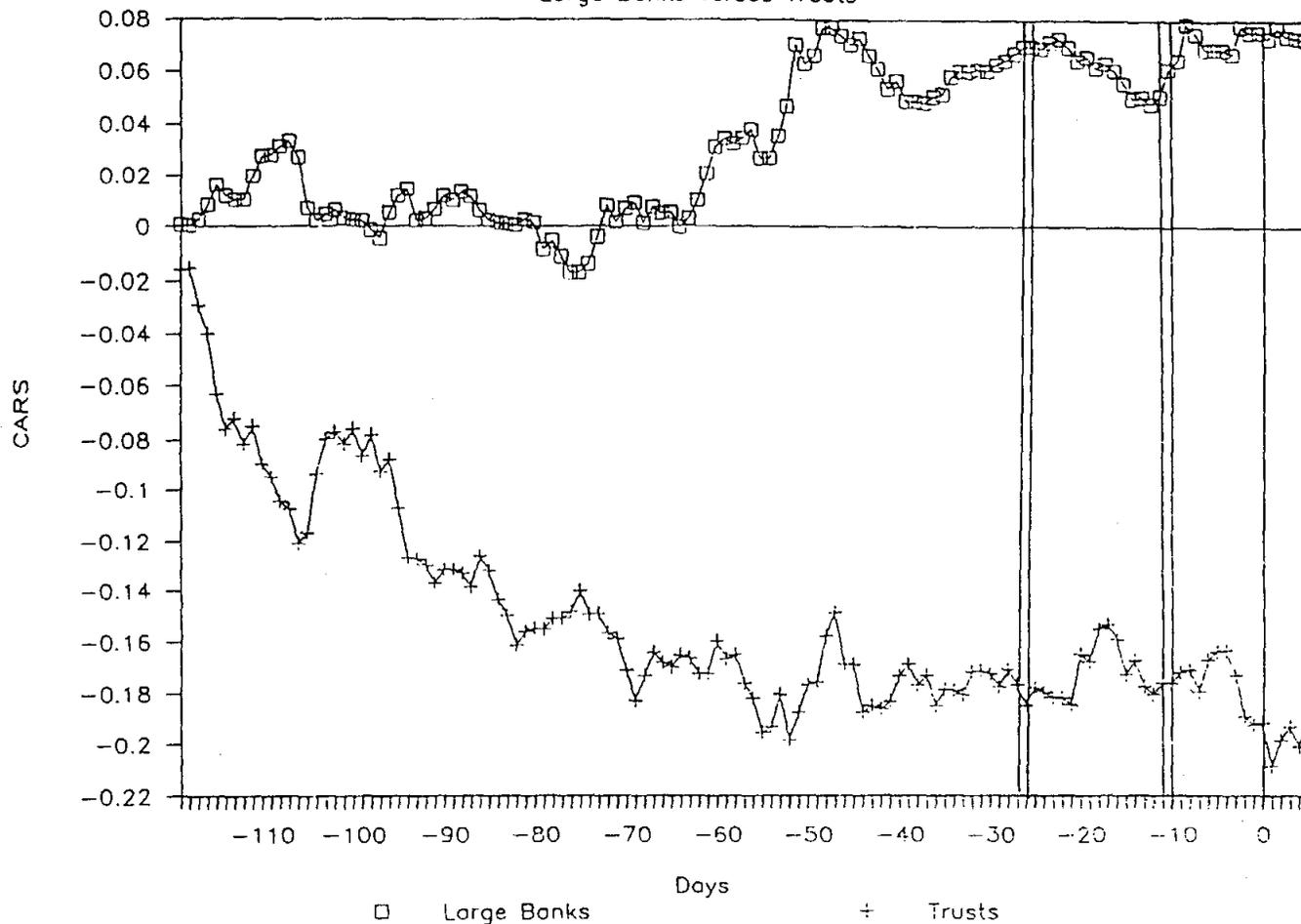
Portfolio	CAR	Normalized CAR	Probability
Large Banks	0.0735	0.9162	0.180
Small Banks	0.0271	0.3387	0.367
Trusts	-0.1899	-1.5083	0.066
Insurance	-0.1384	-0.4192	0.338
Investment Cos	-0.2066	-1.1175	0.132

Probability gives the probability, for the large bank and small bank portfolios, that a standard normal value would exceed the normalized CAR and, for the trust, insurance and investment company portfolio, that a standard normal value would be less than the normalized CAR.

Figure 1

# Cumulative Abnormal Returns

Large Banks versus Trusts

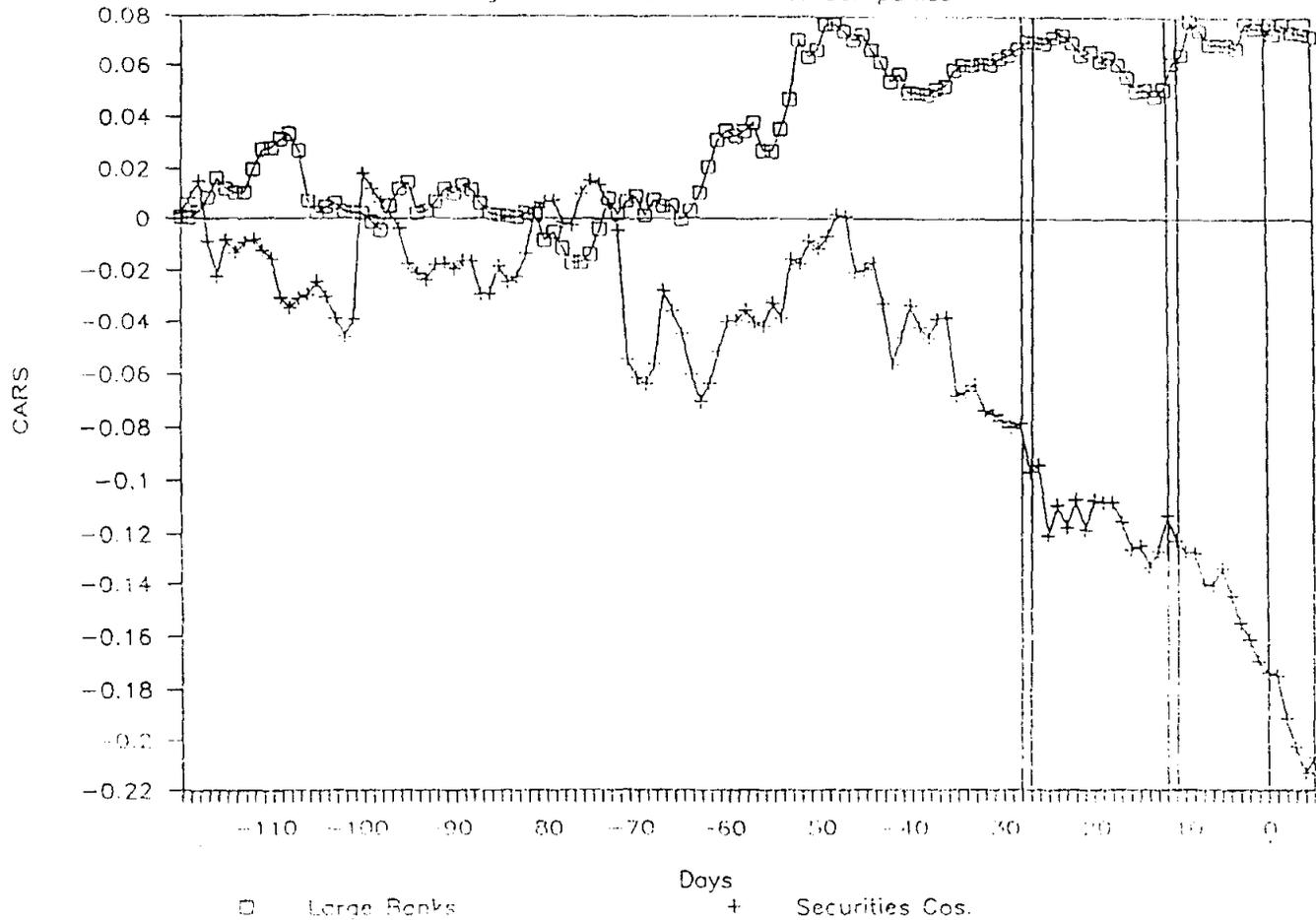


Event period 1 (July 2) corresponds to the Y-axis  
Event period 2 (November 12 and 13) correspond to days -27 and -26  
Event period 3 (December 4 and 5) correspond to days -11 and -10  
Event period 4 (December 19) corresponds to day 0

Figure 2

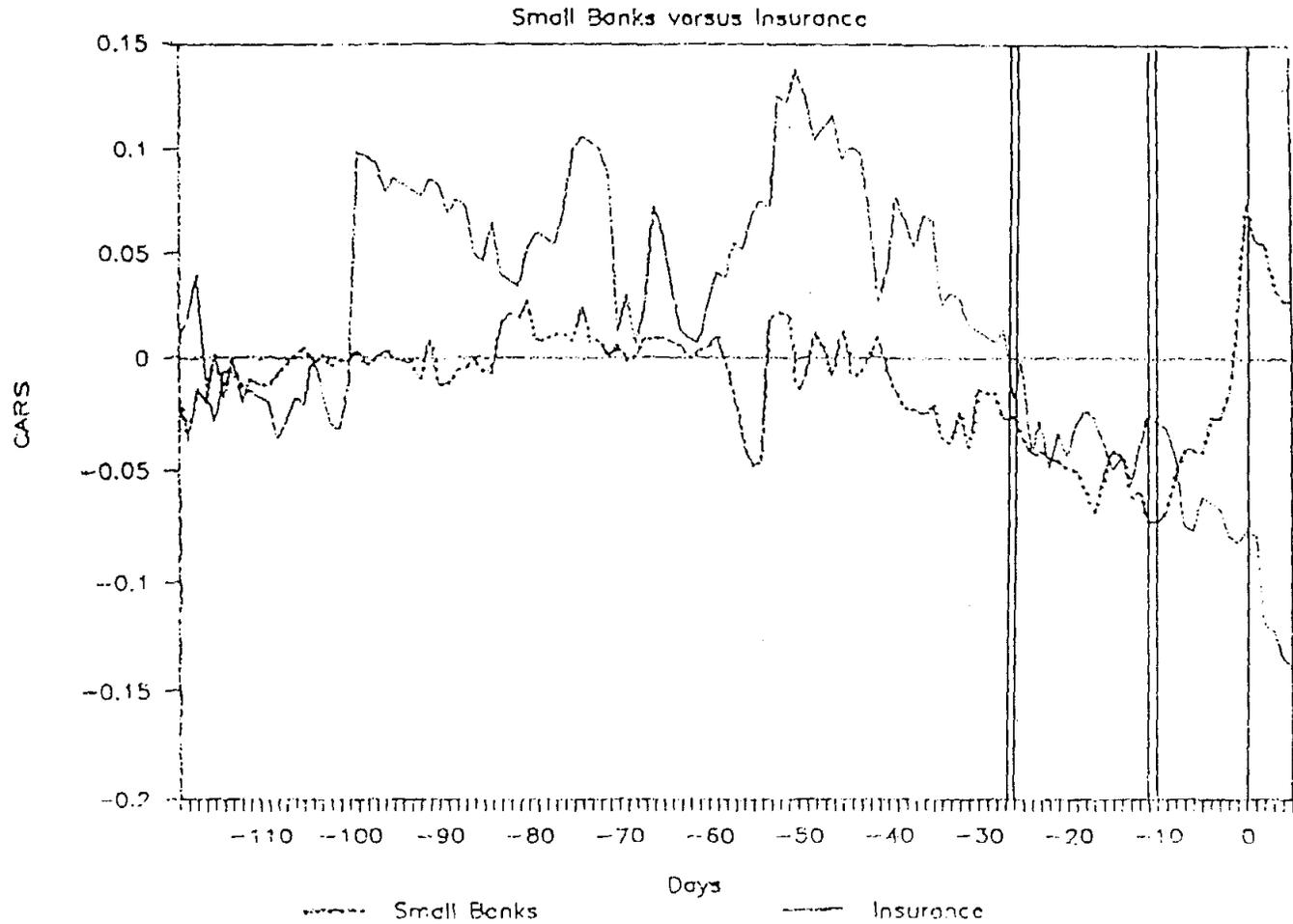
# Cumulative Abnormal Returns

Large Banks versus Securities Companies



Event period 1 (July 2) corresponds to the Y-axis  
Event period 2 (November 12 and 13) correspond to days -27 and -26  
Event period 3 (December 4 and 5) correspond to days -11 and -10  
Event period 4 (December 19) corresponds to day 0

Figure 3  
Cumulative Abnormal Returns



Event period 1 (July 2) corresponds to the Y-axis  
Event period 2 (November 12 and 13) correspond to days -27 and -26  
Event period 3 (December 4 and 5) correspond to days -11 and -10  
Event period 4 (December 19) corresponds to day 0

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88/51	Rob WEITZ	"Technology, work, and the organization: the impact of expert systems", July 1988.	88/63	Fernando NASCIMENTO and Wilfried R. VANHONACKER	"Strategic pricing of differentiated consumer durables in a dynamic duopoly: a numerical analysis", October 1988.
88/52	Susan SCHNEIDER and Reinhard ANGELMAR	"Cognition and organizational analysis: who's minding the store?", September 1988.	88/64	Kasra FERDOWS	"Charting strategic roles for international factories", December 1988.
88/53	Manfred KETS DE VRIES	"Whatever happened to the philosopher-king: the leader's addiction to power, September 1988.	88/65	Arnoud DE MEYER and Kasra FERDOWS	"Quality up, technology down", October 1988
88/54	Lars-Hendrik RÖLLER and Mihkel M. TOMBAK	"Strategic choice of flexible production technologies and welfare implications", October 1988	88/66	Nathalie DIERKENS	"A discussion of exact measures of information asymmetry: the example of Myers and Majluf model or the importance of the asset structure of the firm", December 1988.
88/55	Peter BOSSAERTS and Pierre HILLION	"Method of moments tests of contingent claims asset pricing models", October 1988.			
88/56	Pierre HILLION	"Size-sorted portfolios and the violation of the random walk hypothesis: Additional empirical evidence and implication for tests of asset pricing models", June 1988.	88/67	Paul S. ADLER and Kasra FERDOWS	"The chief technology officer", December 1988.
			<u>1989</u>		
88/57	Wilfried VANHONACKER and Lydia PRICE	"Data transferability: estimating the response effect of future events based on historical analogy", October 1988.	89/01	Joyce K. BYRER and Tawfik JELASSI	"The impact of language theories on DSS dialog", January 1989.
88/58	B. SINCLAIR-DESGAGNÉ and Mihkel M. TOMBAK	"Assessing economic inequality", November 1988.	89/02	Louis A. LE BLANC and Tawfik JELASSI	"DSS software selection: a multiple criteria decision methodology", January 1989.

89/03	Beth H. JONES and Tawfik JELASSI	"Negotiation support: the effects of computer intervention and conflict level on bargaining outcome", January 1989.	89/13	Manfred KETS DE VRIES	"The impostor syndrome: a disquieting phenomenon in organizational life", February 1989.
89/04	Kasra FERDOWS and Arnoud DE MEYER	"Lasting improvement in manufacturing performance: In search of a new theory", January 1989.	89/14	Reinhard ANGELMAR	"Product innovation: a tool for competitive advantage", March 1989.
89/05	Martin KILDUFF and Reinhard ANGELMAR	"Shared history or shared culture? The effects of time, culture, and performance on institutionalization in simulated organizations", January 1989.	89/15	Reinhard ANGELMAR	"Evaluating a firm's product innovation performance", March 1989.
89/06	Mihkel M. TOMBAK and B. SINCLAIR-DESGAGNÉ	"Coordinating manufacturing and business strategies: I", February 1989.	89/16	Wilfried VANHONACKER, Donald LEHMANN and Fareena SULTAN	"Combining related and sparse data in linear regression models", February 1989.
89/07	Damien J. NEVEN	"Structural adjustment in European retail banking. Some view from industrial organisation", January 1989.	89/17	Gilles AMADO, Claude FAUCHEUX and André LAURENT	"Changement organisationnel et réalités culturelles: contrastes franco-américains", March 1989.
89/08	Arnoud DE MEYER and Hellmut SCHÜTTE	"Trends in the development of technology and their effects on the production structure in the European Community", January 1989.	89/18	Srinivasan BALAK- RISHNAN and Mitchell KOZA	"Information asymmetry, market failure and joint-ventures: theory and evidence", March 1989.
89/09	Damien NEVEN, Carmen MATUTES and Marcel CORSTJENS	"Brand proliferation and entry deterrence", February 1989.	89/19	Wilfried VANHONACKER, Donald LEHMANN and Fareena SULTAN	"Combining related and sparse data in linear regression models", Revised March 1989.
89/10	Nathalie DIERKENS, Bruno GERARD and Pierre HILLION	"A market based approach to the valuation of the assets in place and the growth opportunities of the firm", December 1988.	89/20	Wilfried VANHONACKER and Russell WINER	"A rational random behavior model of choice", Revised March 1989.
89/11	Manfred KETS DE VRIES and Alain NOEL	"Understanding the leader-strategy interface: application of the strategic relationship interview method", February 1989.	89/21	Arnoud de MEYER and Kasra FERDOWS	"Influence of manufacturing improvement programmes on performance", April 1989.
89/12	Wilfried VANHONACKER	"Estimating dynamic response models when the data are subject to different temporal aggregation", January 1989.	89/22	Manfred KETS DE VRIES and Sydney PERZOW	"What is the role of character in psychoanalysis?" April 1989.
			89/23	Robert KORAJCZYK and Claude VIALLET	"Equity risk premia and the pricing of foreign exchange risk" April 1989.
			89/24	Martin KILDUFF and Mitchel ABOLAFIA	"The social destruction of reality: Organisational conflict as social drama" zApril 1989.

89/25	Roger BETANCOURT and David GAUTSCHI	"Two essential characteristics of retail markets and their economic consequences" March 1989.	89/36	Martin KILDUFF	"A dispositional approach to social networks: the case of organizational choice", May 1989.
89/26	Charles BEAN, Edmond MALINVAUD, Peter BERNHOLZ, Francesco GIAVAZZI and Charles WYPLOSZ	"Macroeconomic policies for 1992: the transition and after", April 1989.	89/37	Manfred KETS DE VRIES	"The organisational fool: balancing a leader's hubris", May 1989.
89/27	David KRACKHARDT and Martin KILDUFF	"Friendship patterns and cultural attributions: the control of organizational diversity", April 1989.	89/38	Manfred KETS DE VRIES	"The CEO blues", June 1989.
89/28	Martin KILDUFF	"The interpersonal structure of decision making: a social comparison approach to organizational choice", Revised April 1989.	89/39	Robert KORAJCZYK and Claude VIALLET	"An empirical investigation of international asset pricing", (Revised June 1989).
89/29	Robert GOGEL and Jean-Claude LARRECHE	"The battlefield for 1992: product strength and geographic coverage", May 1989.	89/40	Balaji CHAKRAVARTHY	"Management systems for innovation and productivity", June 1989.
89/30	Lars-Hendrik ROLLER and Mihkel M. TOMBAK	"Competition and Investment in Flexible Technologies", May 1989.	89/41	B. SINCLAIR-DESGAGNE and Nathalie DIERKENS	"The strategic supply of precisions", June 1989.
89/31	Michael C. BURDA and Stefan GERLACH	"Intertemporal prices and the US trade balance in durable goods", July 1989.	89/42	Robert ANSON and Tawfik JELASSI	"A development framework for computer- supported conflict resolution", July 1989.
89/32	Peter HAUG and Tawfik JELASSI	"Application and evaluation of a multi- criteria decision support system for the dynamic selection of U.S. manufacturing locations", May 1989.	89/43	Michael BURDA	"A note on firing costs and severance benefits in equilibrium unemployment", June 1989.
89/33	Bernard SINCLAIR- DESGAGNÉ	"Design flexibility in monopsonistic industries", May 1989.	89/44	Balaji CHAKRAVARTHY and Peter LORANGE	"Strategic adaptation in multi-business firms", June 1989.
89/34	Sumantra GHOSHAL and Nittin NOHRIA	"Requisite variety versus shared values: managing corporate-division relationships in the M-Form organisation", May 1989.	89/45	Rob WEITZ and Arnoud DE MEYER	"Managing expert systems: a framework and case study", June 1989.
89/35	Jean DERMINE and Pierre HILLION	"Deposit rate ceilings and the market value of banks: The case of France 1971-1981", May 1989.	89/46	Marcel CORSTJENS, Carmen MATUTES and Damien NEVEN	"Entry Encouragement", July 1989.
			89/47	Manfred KETS DE VRIES and Christine MEAD	"The global dimension in leadership and organization: issues and controversies", April 1989.
			89/48	Damien NEVEN and Lars-Hendrik RÖLLER	"European integration and trade flows", August 1989.

89/49	Jean DERMINE	"Home country control and mutual recognition", July 1989.	89/62 (TM)	Arnoud DE MEYER	"Technology strategy and international R&D operations", October 1989.
89/50	Jean DERMINE	"The specialization of financial institutions, the EEC model", August 1989.	89/63 (TM)	Enver YUCESAN and Lee SCHRUBEN	"Equivalence of simulations: A graph approach", November 1989.
89/51	Spyros MAKRIDAKIS	"Sliding simulation: a new approach to time series forecasting", July 1989.	89/64 (TM)	Enver YUCESAN and Lee SCHRUBEN	"Complexity of simulation models: A graph theoretic approach", November 1989.
89/52	Arnoud DE MEYER	"Shortening development cycle times: a manufacturer's perspective", August 1989.	89/65 (TM, AC, FIN)	Soumitra DUTTA and Piero BONISSONE	"MARS: A mergers and acquisitions reasoning system", November 1989.
89/53	Spyros MAKRIDAKIS	"Why combining works?", July 1989.	89/66 (TM,EP)	B. SINCLAIR-DESGAGNÉ	"On the regulation of procurement bids", November 1989.
89/54	S. BALAKRISHNAN and Mitchell KOZA	"Organisation costs and a theory of joint ventures", September 1989.	89/67 (FIN)	Peter BOSSAERTS and Pierre HILLION	"Market microstructure effects of government intervention in the foreign exchange market", December 1989.
89/55	H. SCHUTTE	"Euro-Japanese cooperation in information technology", September 1989.			
89/56	Wilfried VANHONACKER and Lydia PRICE	"On the practical usefulness of meta-analysis results", September 1989.			
			<u>1990</u>		
89/57	Taekwon KIM, Lars-Hendrik RÖLLER and Mihkel TOMBAK	"Market growth and the diffusion of multiproduct technologies", September 1989.	90/01 TM/EP/AC	B. SINCLAIR-DESGAGNÉ	"Unavoidable Mechanisms", January 1990.
89/58 (EP, TM)	Lars-Hendrik RÖLLER and Mihkel TOMBAK	"Strategic aspects of flexible production technologies", October 1989.	90/02 EP	Michael BURDA	"Monopolistic Competition, Costs of Adjustment, and the Behaviour of European Manufacturing Employment", January 1990.
89/59 (OB)	Manfred KETS DE VRIES, Daphna ZEVADI, Alain NOEL and Mihkel TOMBAK	"Locus of control and entrepreneurship: a three-country comparative study", October 1989.	90/03 TM	Arnoud DE MEYER	"Management of Communication in International Research and Development", January 1990.
89/60 (TM)	Enver YUCESAN and Lee SCHRUBEN	"Simulation graphs for design and analysis of discrete event simulation models", October 1989.	90/04 FIN/EP	Gabriel HAWAWINI and Eric RAJENDRA	"The Transformation of the European Financial Services Industry: From Fragmentation to Integration", January 1990.
89/61 (All)	Susan SCHNEIDER and Arnoud DE MEYER	"Interpreting and responding to strategic issues: The impact of national culture", October 1989.	90/05 FIN/EP	Gabriel HAWAWINI and Bertrand JACQUILLAT	"European Equity Markets: Toward 1992 and Beyond", January 1990.

90/06 FIN/EP	Gabriel HAWAWINI and Eric RAJENDRA	"Integration of European Equity Markets: Implications of Structural Change for Key Market Participants to and Beyond 1992", January 1990.	90/17 FIN	Nathalie DIERKENS	"Information Asymmetry and Equity Issues", Revised January 1990.
90/07 FIN/EP	Gabriel HAWAWINI	"Stock Market Anomalies and the Pricing of Equity on the Tokyo Stock Exchange", January 1990.	90/18 MKT	Wilfried VANHONACKER	"Managerial Decision Rules and the Estimation of Dynamic Sales Response Models", Revised January 1990.
90/08 TM/EP	Tawfik JELASSI and B. SINCLAIR-DESGAGNÉ	"Modelling with MCDSS: What about Ethics?", January 1990.	90/19 TM	Beth JONES and Tawfik JELASSI	"The Effect of Computer Intervention and Task Structure on Bargaining Outcome", February 1990.
90/09 EP/FIN	Alberto GIOVANNINI and Jae WON PARK	"Capital Controls and International Trade Finance", January 1990.	90/20 TM	Tawfik JELASSI, Gregory KERSTEN and Stanley ZIONTS	"An Introduction to Group Decision and Negotiation Support", February 1990.
90/10 TM	Joyce BRYER and Tawfik JELASSI	"The Impact of Language Theories on DSS Dialog", January 1990.	90/21 FIN	Roy SMITH and Ingo WALTER	"Reconfiguration of the Global Securities Industry in the 1990's", February 1990.
90/11 TM	Enver YUCESAN	"An Overview of Frequency Domain Methodology for Simulation Sensitivity Analysis", January 1990.	90/22 FIN	Ingo WALTER	"European Financial Integration and Its Implications for the United States", February 1990.
90/12 EP	Michael BURDA	"Structural Change. Unemployment Benefits and High Unemployment: A U.S.-European Comparison", January 1990.	90/23 EP/SM	Damien NEVEN	"EEC Integration towards 1992: Some Distributional Aspects", Revised December 1989
90/13 TM	Soumitra DUTTA and Shashi SHEKHAR	"Approximate Reasoning about Temporal Constraints in Real Time Planning and Search", January 1990.	90/24 FIN/EP	Lars Tyge NIELSEN	"Positive Prices in CAPM", January 1990.
90/14 TM	Albert ANGEHRN and Hans-Jakob LÜTHI	"Visual Interactive Modelling and Intelligent DSS: Putting Theory Into Practice", January 1990.	90/25 FIN/EP	Lars Tyge NIELSEN	"Existence of Equilibrium in CAPM", January 1990.
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			90/28 TM	Arnoud DE MEYER	"The Manufacturing Contribution to Innovation", February 1990.

90/29 FIN/AC	Nathalie DIERKENS	"A Discussion of Correct Measures of Information Asymmetry", January 1990.	90/40 OB	Manfred KETS DE VRIES	"Leaders on the Couch: The case of Roberto Calvi", April 1990.
90/30 FIN/EP	Lars Tyge NIELSEN	"The Expected Utility of Portfolios of Assets", March 1990.	90/41 FIN/EP	Gabriel HAWAWINI, Itzhak SWARY and Ik HWAN JANG	"Capital Market Reaction to the Announcement of Interstate Banking Legislation", March 1990.
90/31 MKT/EP	David GAUTSCHI and Roger BETANCOURT	"What Determines U.S. Retail Margins?", February 1990.	90/42 MKT	Joel STECKEL and Wilfried VANHONACKER	"Cross-Validating Regression Models in Marketing Research", (Revised April 1990).
90/32 SM	Srinivasan BALAK- RISHNAN and Mitchell KOZA	"Information Asymmetry, Adverse Selection and Joint-Ventures: Theory and Evidence", Revised, January 1990.	90/43 FIN	Robert KORAJCZYK and Claude VIALLET	"Equity Risk Premia and the Pricing of Foreign Exchange Risk", May 1990.
90/33 OB	Caren SIEHL, David BOWEN and Christine PEARSON	"The Role of Rites of Integration in Service Delivery", March 1990.	90/44 OB	Gilles AMADO, Claude FAUCHEUX and André LAURENT	"Organisational Change and Cultural Realities: Franco-American Contrasts", April 1990.
90/34 FIN/EP	Jean DERMINE	"The Gains from European Banking Integration, a Call for a Pro-Active Competition Policy", April 1990.	90/45 TM	Soumitra DUTTA and Piero BONISSONE	"Integrating Case Based and Rule Based Reasoning: The Possibilistic Connection", May 1990.
90/35 EP	Jae Won PARK	"Changing Uncertainty and the Time-Varying Risk Premia in the Term Structure of Nominal Interest Rates", December 1988, Revised March 1990.	90/46 TM	Spyros MAKRIDAKIS and Michèle HIBON	"Exponential Smoothing: The Effect of Initial Values and Loss Functions on Post-Sample Forecasting Accuracy".
90/36 TM	Arnoud DE MEYER	"An Empirical Investigation of Manufacturing Strategies in European Industry", April 1990.	90/47 MKT	Lydia PRICE and Wilfried VANHONACKER	"Improper Sampling in Natural Experiments: Limitations on the Use of Meta-Analysis Results in Bayesian Updating", Revised May 1990.
90/37 TM/OB/SM	William CATS-BARIL	"Executive Information Systems: Developing an Approach to Open the Possibles", April 1990.	90/48 EP	Jae WON PARK	"The Information in the Term Structure of Interest Rates: Out-of-Sample Forecasting Performance", June 1990.
90/38 MKT	Wilfried VANHONACKER	"Managerial Decision Behaviour and the Estimation of Dynamic Sales Response Models", (Revised February 1990).	90/49 TM	Soumitra DUTTA	"Approximate Reasoning by Analogy to Answer Null Queries", June 1990.
90/39 TM	Louis LE BLANC and Tawfik JELASSI	"An Evaluation and Selection Methodology for Expert System Shells", May 1990.	90/50 EP	Daniel COHEN and Charles WYPLOSZ	"Price and Trade Effects of Exchange Rates Fluctuations and the Design of Policy Coordination", April 1990.

90/51 EP	Michael BURDA and Charles WYPLOSZ	"Gross Labour Market Flows in Europe: Some Stylized Facts", June 1990.	90/63 SM	Sumantra GHOSHAL and Eleanor WESTNEY	"Organising Competitor Analysis Systems", August 1990
90/52 FIN	Lars Tyge NIELSEN	"The Utility of Infinite Menus", June 1990.	90/64 SM	Sumantra GHOSHAL	"Internal Differentiation and Corporate Performance: Case of the Multinational Corporation", August 1990
90/53 EP	Michael Burda	"The Consequences of German Economic and Monetary Union", June 1990.	90/65 EP	Charles WYPLOSZ	"A Note on the Real Exchange Rate Effect of German Unification", August 1990
90/54 EP	Damien NEVEN and Colin MEYER	"European Financial Regulation: A Framework for Policy Analysis", (Revised May 1990).	90/66 TM/SE/FIN	Soumitra DUTTA and Piero BONISSONE	"Computer Support for Strategic and Tactical Planning in Mergers and Acquisitions", September 1990
90/55 EP	Michael BURDA and Stefan GERLACH	"Intertemporal Prices and the US Trade Balance", (Revised July 1990).	90/67 TM/SE/FIN	Soumitra DUTTA and Piero BONISSONE	"Integrating Prior Cases and Expert Knowledge In a Mergers and Acquisitions Reasoning System", September 1990
90/56 EP	Damien NEVEN and Lars-Hendrik RÖLLER	"The Structure and Determinants of East-West Trade: A Preliminary Analysis of the Manufacturing Sector", July 1990	90/68 TM/SE	Soumitra DUTTA	"A Framework and Methodology for Enhancing the Business Impact of Artificial Intelligence Applications", September 1990
90/57 FIN/EP/ TM	Lars Tyge NIELSEN	Common Knowledge of a Multivariate Aggregate Statistic", July 1990	90/69 TM	Soumitra DUTTA	"A Model for Temporal Reasoning in Medical Expert Systems", September 1990
90/58 FIN/EP/TM	Lars Tyge NIELSEN	"Common Knowledge of Price and Expected Cost in an Oligopolistic Market", August 1990	90/70 TM	Albert ANGEHRN	"Triple C': A Visual Interactive MCDSS", September 1990
90/59 FIN	Jean DERMINE and Lars-Hendrik RÖLLER	"Economies of Scale and Scope in the French Mutual Funds (SICAV) Industry", August 1990	90/71 MKT	Philip PARKER and Hubert GATIGNON	"Competitive Effects in Diffusion Models: An Empirical Analysis", September 1990
90/60 TM	Peri IZ and Tawfik JELASSI	"An Interactive Group Decision Aid for Multiobjective Problems: An Empirical Assessment", September 1990	90/72 TM	Enver YÜCESAN	"Analysis of Markov Chains Using Simulation Graph Models", October 1990
90/61 TM	Pankaj CHANDRA and Mihkel TOMBAK	"Models for the Evaluation of Manufacturing Flexibility", August 1990	90/73 TM	Arnoud DE MEYER and Kasra FERDOWS	"Removing the Barriers in Manufacturing", October 1990
90/62 EP	Damien NEVEN and Menno VAN DIJK	"Public Policy Towards TV Broadcasting in the Netherlands", August 1990	90/74 SM	Sumantra GHOSHAL and Nitin NOHRIA	"Requisite Complexity: Organising Headquarters- Subsidiary Relations in MNCs", October 1990

90/75 MKT	Roger BETANCOURT and David GAUTSCHI	"The Outputs of Retail Activities: Concepts, Measurement and Evidence", October 1990	90/87 FIN/EP	Lars Tyge NIELSEN	"Existence of Equilibrium in CAPM: Further Results", December 1990
90/76 MKT	Wilfried VANHONACKER	"Managerial Decision Behaviour and the Estimation of Dynamic Sales Response Models", Revised October 1990	90/88 OIB/MKT	Susan C. SCHNEIDER and Reinhard ANGELMAR	"Cognition in Organisational Analysis: Who's Minding the Store?" Revised, December 1990
90/77 MKT	Wilfried VANHONACKER	"Testing the Koyck Scheme of Sales Response to Advertising: An Aggregation-Independent Autocorrelation Test", October 1990	90/89 OB	Manfred F.R. KETS DE VRIES	"The CEO Who Couldn't Talk Straight and Other Tales from the Board Room," December 1990
90/78 EP	Michael BURDA and Stefan GERLACH	"Exchange Rate Dynamics and Currency Unification: The Ostmark - DM Rate", October 1990	90/90 MKT	Philip PARKER	"Price Elasticity Dynamics over the Adoption Lifecycle: An Empirical Study," December 1990
90/79 TM	Anil GABA	"Inferences with an Unknown Noise Level in a Bernoulli Process", October 1990			
90/80 TM	Anil GABA and Robert WINKLER	"Using Survey Data in Inferences about Purchase Behaviour", October 1990	<u>1991</u>		
90/81 TM	Tawfik JELASSI	"Du Présent au Futur: Bilan et Orientations des Systèmes Interactifs d'Aide à la Décision," October 1990	91/01 TM/SM	Luk VAN WASSENHOVE, Leonard FORTUIN and Paul VAN BEEK	"Operational Research Can Do More for Managers Than They Think!," January 1991
90/82 EP	Charles WYPLOSZ	"Monetary Union and Fiscal Policy Discipline," November 1990	91/02 TM/SM	Luk VAN WASSENHOVE, Leonard FORTUIN and Paul VAN BEEK	"Operational Research and Environment," January 1991
90/83 FIN/TM	Nathalie DIERKENS and Bernard SINCLAIR-DESGAGNE	"Information Asymmetry and Corporate Communication: Results of a Pilot Study", November 1990	91/03 FIN	Pekka HIETALA and Timo LÖYTTYNIEMI	"An Implicit Dividend Increase in Rights Issues: Theory and Evidence," January 1991
90/84 MKT	Philip M. PARKER	"The Effect of Advertising on Price and Quality: The Optometric Industry Revisited," December 1990	91/04 FIN	Lars Tyge NIELSEN	"Two-Fund Separation, Factor Structure and Robustness," January 1991
90/85 MKT	Avijit GHOSH and Vikas TIBREWALA	"Optimal Timing and Location in Competitive Markets," November 1990	91/05 OB	Susan SCHNEIDER	"Managing Boundaries in Organisations," January 1991
90/86 EP/TM	Olivier CADOT and Bernard SINCLAIR-DESGAGNE	"Prudence and Success in Politics," November 1990	91/06 OB	Manfred KETS DE VRIES, Danny MILLER and Alain NOEL	"Understanding the Leader-Strategy Interface: Application of the Strategic Relationship Interview Method," January 1990 (89/11, revised April 1990)

91/07 EP	Olivier CADOT	"Lending to Insolvent Countries: A Paradoxical Story," January 1991	91/19 MKT	Vikas TIBREWALA and Bruce BUCHANAN	"An Aggregate Test of Purchase Regularity", March 1991
91/08 EP	Charles WYPLOSZ	"Post-Reform East and West: Capital Accumulation and the Labour Mobility Constraint," January 1991	91/20 MKT	Darius SABAVALA and Vikas TIBREWALA	"Monitoring Short-Run Changes in Purchasing Behaviour", March 1991
91/09 TM	Spyros MAKRIDAKIS	"What can we Learn from Failure?", February 1991	91/21 SM	Sumantra GHOSHAL, Harry KORINE and Gabriel SZULANSKI	"Interunit Communication within MNCs: The Influence of Formal Structure Versus Integrative Processes", April 1991
91/10 TM	Luc Van WASSENHOVE and C. N. POTTS	"Integrating Scheduling with Batching and Lot-Sizing: A Review of Algorithms and Complexity", February 1991	91/22 EP	David GOOD, Lars-Hendrik RÖLLER and Robin SICKLES	"EC Integration and the Structure of the Franco-American Airline Industries: Implications for Efficiency and Welfare", April 1991
91/11 TM	Luc VAN WASSENHOVE et al.	"Multi-Item Lotsizing in Capacitated Multi-Stage Serial Systems", February 1991	91/23 TM	Spyros MAKRIDAKIS and Michèle HIBON	"Exponential Smoothing: The Effect of Initial Values and Loss Functions on Post-Sample Forecasting Accuracy", April 1991 (Revision of 90/46)
91/12 TM	Albert ANGEHRN	"Interpretative Computer Intelligence: A Link between Users, Models and Methods in DSS", February 1991	91/24 TM	Louis LE BLANC and Tawfik JELASSI	"An Empirical Assessment of Choice Models for Software Evaluation and Selection", May 1991
91/13 EP	Michael BURDA	"Labor and Product Markets in Czechoslovakia and the Ex-GDR: A Twin Study", February 1991	91/25 SM/TM	Luk N. VAN WASSENHOVE and Charles J. CORBETT	"Trade-Offs? What Trade-Offs?" April 1991
91/14 MKT	Roger BETANCOURT and David GAUTSCHI	"The Output of Retail Activities: French Evidence", February 1991	91/26 TM	Luk N. VAN WASSENHOVE and C.N. POTTS	"Single Machine Scheduling to Minimize Total Late Work", April 1991
91/15 OB	Manfred F.R. KETS DE VRIES	"Exploding the Myth about Rational Organisations and Executives", March 1991	91/27 FIN	Nathalie DIERKENS	"A Discussion of Correct Measures of Information Asymmetry: The Example of Myers and Majluf's Model or the Importance of the Asset Structure of the Firm", May 1991
91/16 TM	Arnoud DE MEYER and Kasra FERDOWS et.al.	"Factories of the Future: Executive Summary of the 1990 International Manufacturing Futures Survey", March 1991	91/28 MKT	Philip M. PARKER	"A Note on: 'Advertising and the Price and Quality of Optometric Services', June 1991
91/17 TM	Dirk CATTRYSSE, Roelof KUIK, Marc SALOMON and Luk VAN WASSENHOVE	"Heuristics for the Discrete Lotsizing and Scheduling Problem with Setup Times", March 1991	91/29 TM	Tawfik JELASSI and Abbas FOROUGHJI	"An Empirical Study of an Interactive, Session-Oriented Computerised Negotiation Support System (NSS)", June 1991
91/18 TM	C.N. POTTS and Luk VAN WASSENHOVE	"Approximation Algorithms for Scheduling a Single Machine to Minimize Total Late Work", March 1991			

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| <b>91/30<br/>MKT</b> | Wilfried R. VANHONACKER and<br>Lydia J. PRICE | <b>"Using Meta-Analysis Results in Bayesian Updating:<br/>The Empty Cell Problem", June 1991</b>                  |
| <b>91/31<br/>FIN</b> | Rezaul KABIR and<br>Theo VERMAELEN            | <b>"Insider Trading Restrictions and the Stock<br/>Market", June 1991</b>   |
| <b>91/32<br/>OB</b>  | Susan C. SCHNEIDER                            | <b>"Organisational Sensemaking: 1992", June 1991</b>  |
| <b>91/33<br/>EP</b>  | Michael C. BURDA and<br>Michael FUNKE         | <b>"German Trade Unions after Unification - Third<br/>Degree Wage Discriminating Monopolists?",<br/>June 1991</b> |
| <b>91/34<br/>FIN</b> | Jean DERMINE                                  | <b>"The BIS Proposal for the Measurement of Interest<br/>Rate Risk, Some Pitfalls", June 1991</b>                 |
| <b>91/35<br/>FIN</b> | Jean DERMINE                                  | <b>"The Regulation of Financial Services in the EC,<br/>Centralization or National Autonomy?" June 1991</b>       |
| <b>91/36<br/>TM</b>  | Albert ANGEHRN                                | <b>"Supporting Multicriteria Decision Making: New<br/>Perspectives and New Systems", August 1991</b>              |