

# The reaction of Swiss bank stock prices to the Russian crisis

Bertrand Rime<sup>1</sup>

## 1. Introduction

On 17 August 1998 Russia announced a debt moratorium after several weeks of pressure on the rouble exchange rate and tension on the Russian treasury bill markets. The Russian financial collapse represented one more episode in the financial turmoil that had been affecting emerging market economies since the floating of the Thai baht in mid-1997. The spreading crisis in emerging markets raised concerns about the financial stability of a number of western and Japanese creditor banks. Crisis fears culminated in September 1998 with the near-collapse of the hedge fund LTCM. Some analysts pointed to the risk of contagion among international banks and to the systemic repercussions that the failure of a large creditor bank might have on the domestic banking sector of its home country. The loss of investor confidence led to a 30% fall in the stock markets of the developed countries during the third quarter of 1998.

The issues of contagion and systemic risk have a particular dimension in Switzerland for two reasons. First, the Swiss banking sector is highly concentrated by international standards. This is especially true for the domestic interbank market, where the two big banks represent about 65% of total liabilities. Secondly, the two big Swiss banks are highly involved in international banking and have been significantly affected by the Russian crisis and the LTCM debacle.

In this paper, we try to assess the impact of the Russian moratorium on Swiss banks. Using event study methodology, we compute Swiss bank stock returns for a number of events related to the Russian moratorium. In a second step, we regress each bank's stock returns against dummy variables reflecting the bank's category.

The paper is organised as follows. Section 2 provides a detailed chronology of the Russian crisis. In Section 3 we introduce the event study methodology and the cross-sectional regression model. In Section 4 we present the results of the event study and of the regression analysis. Section 5 concludes.

## 2. Chronology of the Russian crisis

In this section, we try to identify the events related to the Russian moratorium that are most likely to have affected Swiss bank stocks.

The 69th Annual Report of the Bank for International Settlements (1999, pp. 50–2) provides a well-structured chronology of the Russian crisis: “*Difficulties in controlling public finances, the rising pace of short-term government debt issuance, falling commodity prices and real exchange rate appreciation cast increasing doubt on Russia’s debt servicing capabilities in late 1997 and the first half of 1998. As a result, the exchange rate suffered repeated attacks which were met by successive increases in interest rates to 150% by end-May... To buttress rouble stability, which had been a centrepiece of monetary policy for some years, a two-year international financial package of almost \$23 billion was offered to Russia in July... However, given strong parliamentary opposition to key revenue-raising measures, implementing IMF’s adjustment programme proved difficult... Reserve losses continued and an attempt to lengthen the very short-term maturity of marketable government debt effectively*

---

<sup>1</sup> Banking Studies Section, Swiss National Bank. The opinions expressed are the author’s and do not necessarily reflect those of the Swiss National Bank.

failed, leaving almost \$20 billion of short-term rouble debt to be financed before the end of the year. In addition, equity prices reached new lows, domestic interest rates stayed high, and spreads on Russian eurobonds reached 2,000 basis points. Faced with mounting domestic and external financing problems, the Russian authorities announced a radical policy shift in mid-August 1998. The main measures included the widening and subsequent abandonment of the exchange rate band, the suspension of trading in treasury bills combined with a mandated restructuring of government debt, and a 90-day moratorium on the repayment of corporate and bank debt to foreign creditors.” In September western banks began discussions with Russia on the debt restructuring, with agreement on the general principles of the restructuring reached in November. In December, however, western creditors rejected the Russian rouble debt deal, and Russia announced the terms of the debt restructuring unilaterally. “By end-1998, Russia was failing to meet payments on its more than \$100 billion foreign currency debt inherited from the Soviet Union.”

A parallel chronology can be established for international banks’ announcements on their exposure, losses and provisioning vis-à-vis Russia. As far as Swiss banks are concerned, UBS announced on 25 August a net exposure of \$0.4 billion and trading losses of \$0.2 billion. On 26 August Credit Suisse Group (CSG), the parent holding company of Credit Suisse First Boston, acknowledged that Russia’s problems would weigh on its profits, after rumours had circulated among traders about its Russian exposure. On 9 September CSG announced an exposure of \$2.2 billion and provisioning of \$1.1 billion.

By combining the BIS survey with information from Reuters archives, we obtain a list of “key events” related to the Russian financial collapse. Table 1 recapitulates these events with an indication of their expected impact on Swiss bank stocks.

Table 1  
Events surrounding the Russian moratorium

Date (1998)	Event	Expected impact	Date (1998)	Event	Expected impact
26.5.	TB interest rates up by 23%	–	27.8.	Worst depreciation of rouble (27%)	–
27.5.	Discount rate tripled to 150%	–	31.8.	Duma rejects Chernomyrdin	?
14.7.	TB interest rates down by 135%	+	9.9.	CSG details exposure and provisions	–
11.8.	TB interest rates up by 74%	–	10.9.	Yeltsin nominates Primakov	?
14.8.	Several Russian banks default on interbank payments	–	17.9.	Talks between banks and Russia on TB	+
17.8.	Moratorium, government abandons rouble floor	–	20.11.	Agreement in principle between Russia and creditor banks	+
20.8.	Rumours about CSG’s exposure	–	25.11.	IMF criticises Russia’s reforms	–
25.8.	UBS announces net exposure and \$0.2 billion loss	?	10.12.	Banks reject debt restructuring	–
26.8.	CSG says Russia’s problems with weigh on profits	–			

Source: Reuters.

We expect increases in Russian treasury bill (RTB) interest rates and in the central bank discount rate to have a negative impact on bank stocks, as they reflect the pressures on the rouble exchange rate as well as investors’ preoccupations concerning Russia’s debt servicing capabilities. The moratorium announcement, if not anticipated by investors, may also depress bank stock returns. Likewise, we expect the failure of several Russian banks to have a negative impact on Swiss bank stocks, as this

event made it clear that the Russian banking system was seriously hit by the adverse developments on the RTB and rouble markets. Concerning the negotiations between Russia and its creditor banks, we expect the start of the talks and the announcement of an agreement in principle to have a positive impact on Swiss bank stocks. The banks' rejection of the terms of the debt restructuring, conversely, may have affected bank stocks negatively as it destroyed hopes of a rapid resolution of the crisis. We make no a priori assumption about the impact of Russian political events such as Chernomyrdin's rejection by the Duma and Primakov's nomination by President Yeltsin.

Concerning news on Swiss banks, we expect the rumours about CSG's Russian exposure and the announcement by CSG of its substantial losses in Russia to negatively affect bank stock returns. UBS's announcement of its fairly small Russian losses, conversely, may be considered as good news and we expect this event to affect bank stock returns positively.

### 3. Database and methodology

#### 3.1 Database

The data sample covers all Swiss-domiciled banks whose equity is traded on the Swiss stock exchange. We distinguish three bank categories: big banks, cantonal banks and foreign or investment banks.

#### 3.2 Event study methodology

We apply event study methodology to determine the magnitude of the stock market reaction to events related to Russia's moratorium. Following Cornell and Shapiro (1986), we use two measures of return.<sup>2</sup> The first measure is the excess return as estimated from the capital asset pricing model (CAPM). The second measure is simply the raw return. The excess return approach has the advantage of relying on a theoretical basis. Its results, however, are sensitive to the choice of risk-free asset and market index. The raw returns approach does not rely on a theoretical foundation, but it has the advantage of avoiding the aforementioned choices.

##### 3.2.1 Excess return approach

We begin the event analysis based on excess returns with an estimation of the CAPM equation:

$$ER_{i,t} = R_{i,t} - (R_{f,t} + \hat{\beta}_i \cdot (R_{m,t} - R_{f,t})) + \varepsilon_{i,t}$$

where  $R_{i,t}$  is the daily return on the stock of bank  $i$  on day  $t$ ,  $R_{m,t}$  is the daily return on the stock market (Swiss Performance Index)<sup>3</sup> on day  $t$ ,  $R_{f,t}$  is the daily return on the risk-free asset (Confederation debt register claims)<sup>4</sup> on day  $t$ ,  $\beta_i$  is the beta of the stock of bank  $i$ , and  $\varepsilon_{i,t}$  is an error term.

Excess returns for each bank or portfolio  $i$  are calculated for each event day as the difference between the observed return and the expected return:

$$ER_{i,t} = R_{i,t} - (R_{f,t} + \hat{\beta}_i \cdot (R_{m,t} - R_{f,t}))$$

---

<sup>2</sup> See Copeland and Weston (1983), pp. 319–27, for an introduction to event study methodology. A third approach consists in regressing observed returns on an intercept and on a market index in order to obtain “abnormal returns”. See Musumeci and Sinkey (1990) and Docking et al. (1997) for an application of the abnormal returns approach to the banking sector.

<sup>3</sup> Source: Datastream.

<sup>4</sup> Source: Swiss National Bank EASY database.

Standardised excess returns  $SER_{i,be}$  or t-values are obtained by dividing the excess return on day  $i$  by the standard deviation of excess returns over the estimation period:

$$SER_{i,be} = \frac{ER_{i,be}}{SD(ER_{i,be})}$$

Cumulative returns  $CER_{i,be}$  over a particular time interval are computed as

$$CER_{i,be} = \sum_{t=b}^e ER_{i,t}$$

for the interval beginning on day  $t = b$  and ending on day  $t = e$ . The cumulative standardised excess return  $SCER_{i,be}$  or t-value equals:

$$SCER_{i,be} = \frac{CER_{i,be}}{SD(CER_{i,be})}$$

The standard deviation  $SD(CER_{i,be})$  is estimated as:

$$SE(CER_{i,be}) = [T \cdot Var(ER_i) + 2(T-1) \cdot Cov(ER_{i,t}, ER_{i,t-1})]^{0.5}$$

where  $T$  represents the number of trading days in the interval  $T = e - b + 1$ . This standard deviation measurement controls for the autocorrelation of returns that may result from event clustering.<sup>5</sup>

### 3.2.2 Raw returns methodology

Within this approach, we look directly at the raw return  $R_{i,t}$  occurring on a given day or over a given time interval. To determine whether the raw return is significant or not, we calculate raw standardised returns as

$$SR_{i,be} = \frac{R_{i,be}}{SD(R_{i,be})}$$

where  $SD(R_{i,be})$  is the standard deviation of raw returns over the estimation period.

Cumulative raw returns  $CR_{i,be}$  and cumulative standard raw returns  $SCR_{i,be}$  are calculated following the procedure described above for excess returns.

### 3.3 Cross-sectional regression analysis

In the absence of accurate information on each bank's exposure, we can imagine that investors consider that banks belonging to the same category are equally exposed to the Russian crisis. In the Swiss case, investors may consider that the big banks and foreign/investment banks, because of their international orientation, have a larger exposure to Russia than the cantonal banks, whose core business is domestic. Under that assumption, we would expect a sell-off of all big and foreign/investment bank stocks following bad news from Russia.

To test the hypothesis of *category-based discrimination*, we regress each bank's raw or excess returns against dummy variables reflecting the bank's category:

$$R_{i,be} \text{ or } ER_{i,be} = \gamma_1 \cdot BIG_i + \gamma_2 \cdot CAN_i + \gamma_3 \cdot FI_i + \upsilon_{i,be}$$

where  $BIG_i$  is unity for big banks and zero otherwise,  $CAN_i$  is unity for cantonal banks and zero otherwise, and  $FI_i$  is unity for foreign/investment banks and zero otherwise.

The finding of significant differences between the dummy variables would indicate that investors mainly discriminate between banks according to their category.

<sup>5</sup> See Ruback (1982), Brunner and Simms (1987) and Madura et al. (1991).

## 4. Results

### 4.1 Stock event analysis

In this section, we compute daily and cumulative bank equity returns for each key event inventoried in our chronology of Russia's financial collapse. The purpose of this stock event analysis is to determine whether the Russian financial collapse coincided with significant moves in Swiss bank stock prices and to identify the categories of bank that were most affected.

To save space, we limit our discussion of the results to the stock event analysis based on raw returns. Table 2 presents the raw returns both by event day and cumulated from the start of the tensions on the RTB market. Their standardised values are in parentheses. The results are presented separately for UBS, CSG, a portfolio of cantonal banks and a portfolio of foreign/investment banks (equally weighted portfolios).

Table 2  
Event analysis: raw returns

Date (1998)	Event	Daily returns				Cumulative returns			
		CSG	UBS	CAN	FI	CSG	UBS	CAN	FI
26.5.	TB interest rates up by 23%	0.008 (0.39)	0.004 (0.25)	0.003 (0.50)	0.009 (0.95)				
27.5.	Discount rate tripled to 150%	-0.020 (-1.01)	-0.023 (-1.49)	-0.002 (-0.45)	-0.005 (-0.52)				
14.7.	TB interest rates down by 135%	-0.001 (-0.07)	-0.014 (-0.90)	0.001 (0.16)	0.020* (2.13)				
11.8.	TB interest rates up by 74%	-0.051* (-2.66)	-0.048* (-3.05)	-0.011* (-2.02)	-0.047* (-5.15)	-0.051* (-2.66)	-0.048* (-3.05)	-0.011* (-2.02)	-0.047* (-5.15)
14.8.	Several Russian banks default on interbank payments	0.011 (0.55)	0.032* (2.04)	-0.002 (-0.40)	0.033* (3.56)	-0.027 (-0.70)	-0.008 (-0.24)	-0.009 (-0.84)	-0.025 (-1.24)
17.8.	Moratorium, government abandons rouble floor	-0.002 (-0.08)	-0.014 (-0.88)	0.003 (0.58)	-0.017 (-1.91)	-0.028 (-0.66)	-0.022 (-0.57)	-0.006 (-0.50)	-0.042 (-1.90)
20.8.	Rumours about CSG's exposure	-0.046* (-2.38)	-0.040* (-2.56)	0.000 (-0.08)	-0.007 (-0.75)	-0.087 (-1.62)	-0.062 (-1.26)	0.010 (0.61)	-0.038 (-1.34)
25.8.	UBS announces net exposure and \$0.2 billion loss	0.019 (0.97)	0.035* (2.22)	0.000 (0.02)	0.013 (1.45)	-0.129* (-2.03)	-0.086 (-1.50)	-0.014 (-0.75)	-0.088* (-2.65)
26.8.	CSG says Russia's problems will weigh on profits	-0.045* (-2.35)	-0.024 (-1.55)	-0.007 (-1.25)	-0.048* (-5.23)	-0.174* (-2.63)	-0.110 (-1.84)	-0.021 (-1.07)	-0.136* (-3.92)
27.8.	Worst depreciation of rouble (27%)	-0.082* (-4.28)	-0.052* (-3.30)	-0.011 (-1.93)	-0.061* (-6.63)	-0.257* (-3.73)	-0.161* (-2.59)	-0.031 (-1.54)	-0.197* (-5.44)
31.8.	Duma rejects Chernomyrdin	-0.032 (-1.68)	-0.027 (-1.73)	0.000 (-0.04)	-0.025* (-2.68)	-0.287* (-3.88)	-0.223* (-3.32)	-0.039 (-1.79)	-0.221* (-5.70)
9.9.	CSG details exposure and provisions	-0.131* (-6.80)	-0.045* (-2.89)	-0.001 (-0.21)	0.004 (0.46)	-0.445* (-4.97)	-0.194* (-2.38)	-0.037 (-1.40)	-0.238* (-5.06)
10.9.	Yeltsin nominates Primakov	-0.066* (-3.42)	-0.084* (-5.37)	-0.011* (-1.97)	-0.048* (-5.21)	-0.511* (-5.58)	-0.278* (-3.34)	-0.048 (-1.77)	-0.286* (-5.94)
17.9.	Talks between banks and Russia on TB	-0.108* (-5.58)	-0.068* (-4.32)	-0.001 (-0.21)	-0.014 (-1.51)	-0.562* (-5.56)	-0.324* (-3.53)	-0.049 (-1.62)	-0.259* (-4.86)
20.11.	Agreement in principle between Russia and banks	0.050* (2.60)	0.041* (2.62)	-0.002 (-0.35)	0.035* (3.82)	-0.331* (-2.02)	-0.262 (-1.75)	-0.056 (-1.15)	-0.129 (-1.49)
25.11.	IMF criticises Russia's reforms	-0.029 (-1.49)	-0.022 (-1.41)	-0.002 (-0.33)	-0.005 (-0.50)	-0.279 (-1.66)	-0.258 (-1.69)	-0.051 (-1.02)	-0.117 (-1.32)
10.12.	Banks reject debt restructuring	-0.070* (-3.61)	-0.013 (0.33)	0.000 (-0.04)	0.000 (-1.36)	-0.443* (-2.47)	-0.324* (-1.99)	-0.062 (-1.16)	-0.133 (-1.41)

The standardised values or t-values are in parentheses. \* significant at the 5% level.

Concerning the commencement of the crisis, our results indicate that early increases in RTB rates and the tripling of the central bank discount rate in May 1998 did not significantly affect Swiss bank stock prices. The 74% rise in RTB rates in August, however, coincided with significant negative returns for all Swiss bank categories.

The default of several major Russian banks on the interbank market and the announcement of the moratorium had no significant impact on Swiss bank stocks. A possible interpretation for this absence of reaction is that investors anticipated the moratorium and the disruption of the interbank market, given the tensions observed on the RTB and rouble markets. The 17% depreciation of the rouble in late August coincided with significant negative returns for the two big Swiss banks.

Surprisingly, the start of the discussions between Russia and its creditor banks coincided with significant negative returns for the two big banks. A possible explanation for this reaction could be that investors interpreted the announcement of the negotiations as a confirmation of the gravity of the crisis. The announcement of an agreement in principle between Russia and its creditors in November coincided with significant positive returns for the two big banks. Conversely, CSG shares were affected negatively by western banks' rejection of the debt restructuring and by Russia's unilateral announcement of the restructuring terms in December.

As far as political events are concerned, Chernomyrdin's rejection by the Duma did not affect Swiss bank stocks, while Primakov's nomination by President Yeltsin coincided with significant negative returns for all Swiss bank categories. Investors' reaction may be explained by Primakov's intention to return to a planned economy.

Proceeding to bank-specific news, our results indicate that rumours concerning CSG's exposure to Russia were accompanied by significant negative returns on the two big banks' shares. UBS's announcement of its quite moderate exposure was followed by a significant positive return on its shares. Conversely, CSG's first announcement that Russia's problems would weigh on its profits coincided with a significant negative return on the bank's stock. CSG's release of details on its Russian exposure and provisioning was followed by a very large negative return on the bank's own shares, while UBS also experienced a significant, although smaller, negative return.

A cross-category comparison of the results of the stock event analysis indicates that CSG shares were the most affected by the Russian financial collapse. UBS and foreign/investment bank stock returns were affected less often and less significantly than CSG shares. Cantonal bank shares reacted only on two occasions, and by little. This differentiation in market reaction seems at first sight reasonable, given that CSG experienced more substantial losses than UBS in Russia and that cantonal banks, because of their domestic orientation, are unlikely to have a significant exposure to Russia.

The last four columns of Table 2 present raw returns cumulated as from 11 August. Cumulated raw returns reached their minimum at  $-0.576$  for CSG (significant at the 1% level),  $-0.440$  for UBS (significant at the 1% level),  $-0.321$  for the foreign/investment bank portfolio (significant at the 1% level) and  $0.066$  (significant at the 5% level) for the cantonal bank portfolio. For three bank categories, the minimum coincides with the start of the talks between Russia and its creditor banks. The figures obtained for CSG and UBS indicate that the equity value of the two big banks measured at market prices was nearly halved during the most turbulent phase of the Russian crisis. This seems quite impressive when compared to the losses announced by the two big banks for their Russian operations, as they represented "only" 7% of CSG's equity and 1% of UBS's equity.

The findings of our stock event analysis can be summarised as follows. First, Swiss bank stocks did not react to the announcement of the Russian moratorium itself, but were negatively affected by the tensions in the RTB and rouble markets. Here, a plausible interpretation is that the moratorium came as no surprise to investors, given the adverse financial and economic context. Secondly, the Russian financial collapse affected CSG shares more than those of UBS and the cantonal banks; a priori, this result seems consistent with the respective losses announced by the two big banks and with the low international profile of the cantonal banks. Thirdly, the cumulated negative stock returns observed for the two big banks are much larger than the announced losses vis-à-vis Russia. Here a possible explanation is that investors, in a context of financial instability, feared that large banks could also suffer considerable losses on their exposures to other emerging market countries.

## 4.2 Results of the cross sectional analysis

In this subsection we present the results of the cross-sectional regression analysis. The model is estimated for each event characterised by a significant raw return or excess return. Given the heteroscedasticity in raw returns and excess returns, the t-statistics of the estimated coefficients may be biased. To cope with this problem, we use the White (1980) heteroscedasticity-consistent covariance matrix estimator, which provides correct t-statistics for the coefficient estimates in the presence of heteroscedasticity of unknown form.

Table 3 presents the model estimates based on raw returns. The big bank dummy is negative and significant for all events, except for the announcement of the agreement in principle, where it is positive and significant. The cantonal bank dummy is negative and significant for two events only. The foreign/investment bank dummy is significant and negative for seven events, and positive and significant for the announcement of the agreement in principle. Differences between the bank category dummies are highly significant for the great majority of events.

Table 3  
Model estimates based on raw returns

Date (1998)	Event	BIG	CAN	FI	R2
11.8.	TB interest rates up by 74%	-0.05* (0.01)	-0.02 (0.06)	-0.04* (0.00)	0.16
20.8.	Rumours about CSG's exposure	-0.04* (0.00)	0.00 (0.55)	-0.01 (0.25)	0.49
25.8.	UBS announces net exposure and \$0.2 billion loss	0.03* (0.01)	0.00 (0.94)	0.02* (0.01)	0.36
26.8.	CSG announces Russia's problems will weigh on profits	-0.03* (0.04)	-0.01* (0.05)	-0.03* (0.01)	0.06
27.8.	Worst depreciation of rouble (27%)	-0.07* (0.01)	-0.02* (0.05)	-0.06* (0.00)	0.33
31.8.	Duma rejects Chernomyrdin	-0.03* (0.02)	0.00 (0.55)	-0.03* (0.00)	0.36
9.9.	CSG details exposure and provisions	-0.09* (0.00)	0.00 (0.63)	0.01 (0.30)	0.63
10.9.	Yeltsin nominates Primakov	-0.08* (0.00)	-0.02 (0.06)	-0.04* (0.01)	0.30
17.9.	Talks between banks and Russia on TB	-0.09* (0.00)	0.00 (0.44)	-0.02* (0.03)	0.79
20.11.	Agreement in principle between Russia and creditor banks	0.05* (0.00)	0.00 (0.72)	0.02* (0.01)	0.50
10.12.	Banks reject debt restructuring	-0.04* (0.01)	0.00 (0.96)	0.00 (0.93)	0.34

In parentheses: p-values derived from a t-Student test based on White's coefficient covariance matrix. \* significant at the 5% level.

Table 4 presents the model estimates based on excess returns. The big bank dummy is negative and significant for four events, and positive and significant for the announcement of the agreement in principle. The cantonal bank dummy is never significant. The foreign/investment bank dummy is significant and negative for three events, and positive and significant for one event. Differences between the bank category dummies are highly significant for the great majority of events.

Table 4  
**Model estimates based on excess returns**

Date (1998)	Event	BIG	CAN	FI	R2
11.8.	TB interest rates up by 74%	-0.01 (0.54)	-0.01 (0.11)	-0.02* (0.05)	-0.09
17.8.	Moratorium	0.00 (0.79)	0.00 (0.63)	-0.01 (0.18)	0.01
20.8.	Rumours about CSG's exposure	-0.03* (0.00)	0.00 (0.86)	0.00 (0.93)	0.36
25.8.	UBS announces net exposure and \$0.2 billion loss	0.01 (0.49)	0.00 (0.54)	0.01 (0.21)	0.03
26.8.	CSG announces Russia woes weigh on profits	-0.01 (0.51)	-0.01 (0.06)	-0.02* (0.02)	-0.05
27.8.	Worst depreciation of rouble (27%)	-0.01 (0.47)	-0.01 (0.06)	-0.04* (0.00)	0.26
31.8.	Duma rejects Chernomyrdin	-0.01 (0.21)	0.00 (0.82)	-0.02* (0.01)	0.22
9.9.	CSG details exposure and provisions	-0.06* (0.00)	0.00 (0.90)	0.03* (0.01)	0.60
10.9.	Yeltsin nominates Primakov	-0.03 (0.07)	-0.01 (0.11)	-0.01 (0.15)	-0.07
17.9.	Talks between banks and Russia on TB	-0.04* (0.00)	0.00 (0.36)	0.01 (0.24)	0.67
20.11.	Agreement in principle between Russia and creditor banks	0.02* (0.03)	0.00 (0.66)	0.01 (0.18)	0.24
10.12.	Banks reject debt restructuring	-0.02 (0.06)	0.00 (0.72)	0.01 (0.30)	0.19

In parentheses: p-values derived from a t-Student test based on White's coefficient covariance matrix. \*significant at the 5% level.

Overall, the results of the cross-sectional regression analysis provide strong evidence in favour of the hypothesis that in the absence of official information on bank's individual exposures to Russia, investors discriminated mainly according to bank category.

## 5. Conclusions

In this paper, we have studied the impact of the Russian crisis on Swiss bank stock prices. In a first step, using stock event analysis, we tried to determine the events related to the Russian moratorium that coincided with significant returns on Swiss bank shares. Our results indicate that Swiss bank stocks were negatively affected by the tensions in the RTB and rouble markets, but that they did not react to the Russian debt moratorium itself. Here, a possible interpretation is that the moratorium was not a surprise for investors, given the adverse financial and economic context. In a second step, we regressed each bank's stock against dummy variables reflecting the category of the bank. Our estimates provide strong evidence in favour of the hypothesis that in the absence of official information on banks' individual exposures to Russia, investors discriminated mainly according to bank category.



## Bibliography

- Bank for International Settlements (1999): *69th Annual Report*, June, pp. 50-2.
- Bruner, Robert F and John M Simms Jr. (1987): "The International Debt Crisis and Bank Security Returns in 1982". *Journal of Money Credit and Banking*, Vol. 19, No. 1, pp. 47-55.
- Copeland, Thomas E and J Fred Weston (1983): *Financial Theory and Corporate Policy, Second Edition*, by Addison-Wesley Publishing Company, Inc.
- Cornell, Bradford and Alan C Shapiro (1986): "The Reaction of Bank Stock Prices to the International Debt Crisis". *Journal of Banking and Finance* 10, pp. 55-73.
- Docking, Diane Scott, Mark Hirschey and Elaine Jones (1997): "Information and contagion effects of bank loan-loss reserve announcements". *Journal of Financial Economics* 43, pp. 219-39.
- Karafiath, Imre, Ross Mynatt and Kenneth L Smith (1991): "The Brazilian default announcement and the contagion effect hypothesis". *Journal of Banking and Finance* 15, pp. 699-716.
- Kaufman, George (1994): "Bank Contagion: a Review of the theory and Evidence". *Journal of Financial Services Research* 8(2), pp. 123-50.
- Madura, Jeff, Anne Marie White and William R McDaniel (1991): "Reaction of British bank share prices to Citicorp's announced \$3 billion increase in loan-loss reserves". *Journal of Banking and Finance* 15, pp. 151-63.
- Musumeci, James J and Joseph F Sinkey, Jr. (1990): "The International Debt Crisis, Investor Contagion, and Bank Security Returns in 1987: The Brazilian Experience". *Journal of Money, Credit, and Banking*, pp. 209-20.
- Wall, Larry D and David R Peterson (1990): "The effect of Continental Illinois' failure on the financial performance of other banks". *Journal of Monetary Economics* 26, pp. 77-99.