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The Case of Swiss Banks

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Abstract

We use an early episode of negotiations between Switzerland and the European Union to investigate the value of banking secrecy for four Swiss banks: two universal banks and two private banks. We find that the value of banking secrecy to private banks is large, accounting for at least 8 to 14% of their market value. Perhaps surprisingly, banking secrecy appears to account for only a very small fraction of the market value of the universal banks.

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1   Introduction

Switzerland's banking secrecy laws have been credited with helping the country become the world's largest offshore private banking center, with an estimated one third of the world's offshore private wealth. Yet, on Friday, March 13, 2009, in an ultimately successful attempt to avoid being placed on the Organisation for Economic Co-operation and Development's (OECD) so-called "black list," Switzerland agreed to abandon its long-held distinction between tax fraud and tax evasion.[1] Such distinction, between fraud that involves the use of forged or falsified documents for the purpose of evading tax and evasion that involves the omission—even voluntary—to declare assets or revenues to the relevant tax authorities had long been considered a central component of banking secrecy: only in the former case would banking secrecy be lifted and account information communicated to inquiring tax authorities. Numerous observers predicted that it would be only a matter of time before banking secrecy itself would go, to be replaced by the automatic exchange of information between tax authorities. Governments such as those of France, Germany, the United Kingdom, and the United States variously pledged to keep up the pressure on countries with banking secrecy until such time as these countries would abandon secrecy altogether.

In response, the Swiss Government has been adamant that banking secrecy is not negotiable. Such statement may or may not be credible, but it would be surprising if banking secrecy were to go, if indeed it were, without long and arduous negotiations, perhaps even financial and trade sanctions and counter-sanctions, the former an explicitly threatened consequence of the "black list." Some foretaste the tone such negotiations may be provided by a number of statements made in late 2008 and early 2009: then German Finance Minister Peer Steinbrück talked of "cracking the whip" on Switzerland, German Social Democratic Party Chairman Franz Müntefering remarked that "in the old times one would have sent in the troops;" conversely, Swiss parliamentarian Thomas Müller said that Mr Steinbrück reminds him of "the old generation of Germans, who sixty years ago went through the streets with leather coats, boots, and armbands."

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[1]Switzerland instead was placed on the "grey list," from which it was removed in late 2009, having met the requirement that it sign twelve "OECD-compatible" tax conventions.

One could go on. The main point is that both pro- and anti-banking secrecy countries must deem banking secrecy extremely important for them to have shown themselves so clearly determined to cross swords over it, the former to keep it, the latter to have the former do away with it. How important is banking secrecy? How much is it worth? The latter is the question we ask in the present paper, and for which we provide a *partial* answer, one that estimates the value of banking secrecy for four listed Swiss banks. For that purpose, we use the opportunity provided by a prior round of negotiations over banking secrecy between Switzerland and the European Union. We do not use present developments because these are heavily contaminated by the ongoing financial crisis, which likely prompted them in the first place.

Starting in 1998, the European Union (EU) put pressure on Switzerland to agree to exchanging information regarding bank accounts held by EU residents in Switzerland, i.e., abolish banking secrecy altogether. During negotiations that took place between June 2002 and June 2003, Switzerland was successful in preserving banking secrecy, but agreed to introduce a withholding tax of up to 35% on interest income earned by EU residents. Three fourths of the proceeds from this tax are paid to EU countries.

We use an event study methodology to measure the impact of the negotiations on the share prices of four Swiss banks: UBS, Credit Suisse Group (CSG), Bank Julius Baer (Baer), and Bank Vontobel. At any point in time, the market value of a bank can be viewed as the value of the bank in the absence of banking secrecy, plus the value of banking secrecy to the bank weighted by the perceived probability that banking secrecy will be preserved. A bank's share price reacts to a given announcement to the extent that any of these three components of bank value are affected by the announcement.

We conduct an event-by-event analysis of 34 events that occurred over the period December 1998 to June 2003, between the decision by the EU to start exploratory discussions with Switzerland and the signature of the agreement between the two parties. We find contrasting results for the universal banks (UBS and CSG) and the private banks (Baer and Vontobel). Specifically, we find the value of banking secrecy to be at least 8.3% of the value of the equity of Baer, and 13.6% of that of Vontobel. In contrast, we find that banking secrecy has little to no value to UBS and CSG. These numbers correspond to the movements in the share prices of the four banks in response to two consecutive events: the initial failure by the EU Council of Ministers to approve the treaty agreed to the previous day by Switzerland and the EU Commission, and the final approval of the agreement three months later. The private banks' shares fall sharply with the first event, and rise by essentially the same percentage with the second. In contrast, the universal banks' shares

remain largely unaffected.

We find no overall impact of the negotiations on the share prices of the four banks. Two explanations are possible. One is statistical: the standard error of 34 abnormal returns cumulated may be so large as to preclude any finding of statistical significance. The other is economic: investors may have expected the profitability of Swiss banks not to be affected by the imposition of the withholding tax, perhaps because they considered the tax easy to avoid. Supporting the latter explanation are the relatively small amounts withheld under the new arrangement; these have been such as to prompt the European Commission recently to make a number of proposals to close the loopholes it deems make the tax easy to circumvent.

An obvious question regards the applicability of our results to present circumstances. We discuss this issue in the Conclusion, but note at this stage that the aforementioned abandonment of the distinction between tax fraud and tax evasion suggests that the absence of reaction may no longer be justified.

To the best of our knowledge, ours is the first paper that uses event study methodology to assess the importance of banking secrecy. Event studies have a long history in economics, finance, and the law. Schwert (1981) discusses the use of event studies to measure the effects of regulation. He surveys a wide variety of applications, covering the regulation of such diverse industries as electricity, commercial and investment banking, and pharmaceuticals. Schipper and Thompson (1983) examine the impact of merger-related regulations adopted in the late 1960s; Ryngaert and Netter (1988) that of the 1986 Ohio Antitakeover Law. Loderer (1985) examines the effects of Organization of Petroleum Exporting Countries's minimum price and production quota decisions on oil prices; Bittlingmayer and Hazlett (2000) those of federal antitrust enforcement actions against Microsoft. Our paper is in the line of such research. A number of papers extend the estimation from that of abnormal returns to obtain a monetary value for the effects of the events considered. Cutler and Summers (1988) and Engelmann and Cornell (1988) examine the effects of litigation. Jarrell and Peltzman (1985) and Mitchell and Maloney (1989) examine the effects of product recalls and air crashes, respectively. Dial and Murphy (1995) and Dittmann, Maug, and Schneider (2004) follow General Dynamics and Preussag, respectively, through extensive restructuring and refocusing. We follow these papers in using abnormal returns to obtain a measure of the value of banking secrecy to Swiss banks.

Perhaps most closely related to our paper are a series of papers that have examined the effect of political events on stock prices. Abadie and Gardeazabal (2003), Guidolin

3

and La Ferrara (2006), and DellaVigna and La Ferrara (2007) examine the effect of armed conflict; Roberts (1990), Fisman (2001), and Johnson and Mitton (2003) that of political connections; and Snowberg, Wolfers, and Zitzewitz (2007) that of election outcomes.

The paper proceeds as follows. Section 2 provides a very short history of banking secrecy in Switzerland. Section 3 summarizes the negotiations on banking secrecy between Switzerland and the EU and describes the events considered in the study. Section 4 presents the data and some summary statistics. Section 5 obtains a lower bound for the value of banking secrecy. Section 6 concludes.

2   Banking Secrecy in Switzerland

Although banking secrecy formally was introduced into Swiss Law some eighty years ago, banking secrecy has in effect existed for much longer, probably going back to the early modern era (Bergier, 1984). Banking secrecy became an issue already in the early 1920s when, in a situation that bears a number of similarities with the present situation, Switzerland at the League of Nations came under strong pressure from France and Belgium to abandon banking secrecy (Farquet, 2009). These two countries were concerned with tax evasion by *German* citizens: the Versailles Treaty had imposed heavy reparation payments on Germany; Germany argued it could not make such payments because of tax evasion by its citizens; it blamed Switzerland for making such evasion possible. In pressing need of funds and determined to get the reparation payments they were due, France and Belgium pressured Switzerland to agree to information exchange; unable to convince the United Kingdom to join them in putting pressure to bear on Switzerland, France and Belgium eventually relented.

Some ten years later, following attempts by France to obtain information about deposits held in Switzerland by French nationals, Switzerland formally introduced banking secrecy into Swiss Law: violations were punished by fines and imprisonment. The stated aim of the Law was to protect the privacy of bank depositors; a diplomatic dispatch from that period reveals that the Swiss Government was mindful of the important business conducted by Swiss banks in foreign deposits (Besson, 2004, pp. 24 and 26-27). Three quarters of a century later, at the time of writing, Swiss Law punishes violations of banking secrecy with fines of up to 250,000 Swiss Francs and up to three years imprisonment.[2]

During the 1970s, 1980s, and 1990s, Switzerland introduced a number of exceptions to

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[2]At the time of writing, one Swiss Franc is worth about €0.67 and $1.

4

banking secrecy, for funds originating from tax fraud, insider trading, money laundering, and other activities considered criminal under Swiss Law. However, as Swiss Law continued to distinguish between tax fraud (a crime) and tax evasion (not a crime), banking secrecy remained for funds originating from tax evasion. Thus, there were during the period of study (1998-2003) two primary reasons for wishing to take advantage of Swiss banking secrecy: genuine privacy concerns and tax evasion.

Banking secrecy is widely believed to have been a source of rents for Swiss banks. It has afforded them the opportunity to charge higher-than-average fees (Besson, 2004, p. 64) and to pay lower-than-average deposit rates (English and Shahin, 1994).

3 Negotiations on Banking Secrecy Between Switzerland and the European Union

While the EU has never looked too kindly on Swiss banking secrecy, pressure on Switzerland to relax banking secrecy increased strongly after December 1, 1998. On that day, EU Finance Ministers agreed on a common framework for the taxation of savings interest, consisting in a combination of withholding tax and information exchange between the tax authorities of EU countries. Recognizing that these measures might cause a sizeable outflow of funds away from EU countries, the ministers instructed the European Commission and the so-called "Troika" to start exploratory discussions with third countries, especially Switzerland, to induce them to adopt similar measures.[3] An exploratory meeting between the EU and Swiss authorities took place on March 2, 1999. On June 9, 2000, EU Commissioner Frits Bolkestein, in charge of the issue for the EU, met Swiss Finance Minister Kaspar Villiger in Bern to discuss the taxation of savings interest.

Pressure increased once again after June 20, 2000. On that day, at an EU Council held at Feira (Portugal), EU Finance Ministers agreed to exchange information on savings income with other EU countries, i.e., to report interest income earned by a citizen residing in another member country to the tax authorities of the citizen's country of residence. Moreover, they decided to pressure the US, Switzerland, and other key non-EU counties to agree to similar information exchange. Luxembourg and Austria, two EU countries with strong banking secrecy laws, had made such agreement with non-EU countries a condition for themselves agreeing to exchange information. A few days later, the Swiss

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[3]At any given time, the Troika consists of the current, past, and future presidents of the Council of EU Economics and Finance Ministers (henceforth referred to as Council of Ministers).

government announced that information exchange was not a feasible solution.

On March 16, 2001, Switzerland and the EU agreed to initiate discussions with the aim of starting negotiations. While the EU was interested in negotiating over banking secrecy, Switzerland wished to discuss a number of other issues, including security and migration, education, and pensions. On June 25, 2001, the EU agreed to start negotiations with Switzerland on banking secrecy and nine other issues.

During the first and second rounds of negotiations, which took place on June 18 and September 3, 2002, Switzerland agreed to introduce a withholding tax, but ruled out information exchange with EU countries. On September 7, EU Commissioner Bolkestein threatened Switzerland with sanctions if it did not agree to exchange information. Possible sanctions included restrictions on capital movements between Switzerland and EU countries and a halt to the negotiations on the nine other issues. After EU countries were unable to agree on sanctions on October 8, 2002, the EU and Switzerland agreed for the first time on the principle of a withholding tax on October 31.

On January 21, 2003, the Council of Ministers agreed in principle with the proposed solution of a withholding tax. On March 6, an agreement between Switzerland and the European Commission on all outstanding issues was found. The agreement specified the introduction by Switzerland of a withholding tax, initially at the rate of 15%, to be increased to 20% and ultimately to 35%.[4] However, on the following day, the Council of Ministers was unable to reach an agreement on whether to approve the treaty with Switzerland or not and postponed its decision on the issue to the next Council. Following the approval by the Council on June 3, 2003, the agreement was signed.

Table 1 lists the 34 events involving banking secrecy that occurred over the period December 1998 to June 2003, between the decision by the EU to start exploratory discussions with Switzerland and the signature of the agreement between the two parties. The list was created from the information posted on the Swiss Parliament's web site; from the news released by the Swiss Telegraphic Agency; and from the announcements made by the *Administration Fédérale des Finances*, the federal body that was in charge of the negotiations with the EU. Events happening during weekends were recorded as occurring on the next trading day. Such events are marked with a hash sign in Table 1. For example, the results of an opinion poll revealing that a majority of Swiss voters would be willing

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[4]The definition of interest income for purposes of the agreement is quite broad. In addition to any explicit interest payment, it includes accrued or capitalized interest obtained on selling fixed income assets, distributions by mutual funds of income originating from interest payments, and gains on the sale of shares in mutual funds with sizable fixed income investments.

to relax or abolish banking secrecy were released on Sunday, April 28, 2002. That event was therefore recorded as occurring on Monday, April 29 (event 16 in Table 1).

In addition, for each event occurring on a trading day, we analyzed the time at which the information was released. Whenever the information about an event was released after the 5 p.m. market close, the event was recorded as taking place the following day.[5] These events are marked with an asterisk in Table 1. For example, news about the outcome of the meeting between EU Commissioner Bolkestein and Swiss Finance Minister Villiger was released at 5:26 p.m. on May 22, 2001, and the event was therefore recorded as occurring on May 23. Similarly, news about the second round of negotiations was released at 7:48 p.m. on September 3, 2002, and the event was therefore recorded as happening on September 4.

We do not attempt to classify the events in Table 1 as positive or negative from the point of view of preserving banking secrecy. This is because both interpretations are possible for most events. Consider for example event 21 on September 9, 2002, when EU Commissioner Bolkestein threatened Switzerland with sanctions if it did not agree on a compromise on savings interest. At first glance, this event appears to be unambiguously negative. However, an alternative interpretation is as an act of desperation by a commissioner otherwise unable to prevail in negotiation. This is because such sanctions were likely to be opposed by Austria and Luxembourg, two countries that effectively held veto power over the decision to impose EU-wide sanctions. Conversely, consider event 18 on June 17, 2002, when a bill requiring that banking secrecy be written in the Swiss Constitution was introduced in parliament. Although this event appears to be positive, it may also reflect the fear on the part of the member who introduced the bill that the Swiss government could not be relied upon to safeguard banking secrecy.

4   Data and Summary Statistics

In order to investigate the reaction of the prices of Swiss bank shares to the announcements in Table 1, we obtain stock price data from Datastream for the period ranging from November 1, 1998 to June 30, 2004 (a total of 1422 trading days).[6] Of the 18 Swiss bank

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[5]Information released shortly before the 5 p.m. market close on a given day may not have been fully incorporated in prices that day. This is not a concern as none of the events in Table 1 occurred between 4:30 and 5 p.m.

[6]We use November 1 as our starting date because this follows the effective conclusion of the dormant accounts litigation between Swiss banks and the World Jewish Congress.

stocks traded on the Swiss stock exchange during the entire period, only 4 are liquid: UBS, Credit Suisse Group (CSG), Julius Baer (Baer) and Vontobel.[7] UBS and CSG are universal banks active in commercial lending, brokerage, investment banking and wealth management, whereas Baer and Vontobel are private banks with a strong focus on wealth management. Numerous other banks of various sizes exist in Switzerland. However, they either have retained the partnership form (such as the private banks Pictet and Lombard Odier Darier Hentsch) or their stock is not listed on the stock market (such as Union Bancaire Privée).

Summary statistics for the four bank stocks considered are presented in Table 2. Average annual returns range from about -9% for Vontobel, reflecting the failure of its e-banking project, to almost 6% for UBS (we use continuously compounded returns throughout the study). The annual return volatility of all four stocks exceeds 30%. As of June 30, 2004 (the end of our sample period), the market capitalization of UBS was about double that of CSG. Baer and Vontobel both had market capitalizations that were smaller than those of the universal banks by an order of magnitude.

In order to investigate the impact of the negotiations on the valuation of bank stocks, we compute daily abnormal returns for each stock, as well as the unweighted average return across the four stocks. This average reflects the abnormal return earned by an investor holding an equally weighted, daily rebalanced portfolio of the four bank stocks. Considering an equally weighted portfolio avoids having the two universal banks, UBS and CSG, dominate the portfolio.

We compute abnormal returns as OLS-adjusted returns, i.e., as the residuals from a market model regression of the form[8]

$$R_{i,t} = \beta_{i,0} + \beta_{i,1}R_{M,t-1} + \beta_{i,2}R_{M,t} + \beta_{i,3}R_{M,t+1} + \epsilon_{i,t}, \tag{1}$$

where $R_{i,t}$ denotes the return on bank i, $R_{M,t}$ the return on the market index, and t the day considered. In order to control for the presence of nonsynchronous trading, we include lead and lag terms for the market index in the regression equation (Dimson (1979)).

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[7]The fourteen other stocks are those of Bank Coop, Bank Linth, Bank Sarasin, Bank Valiant, the New Aargau Bank, the Mortgage Bank of Lenzburg and the banks of the Cantons of Basel, Geneva, Graubünden, Jura, Lucerne, Valais, Vaud and Zug. Daily turnover in these shares is a small fraction of the turnover in the four selected stocks.

[8]Brown and Warner (1985) show that mean-adjusted returns, market-adjusted returns (computed as the return on the stock minus the return on the stock market index) and OLS-adjusted returns yield similar results. Since the events considered affect the four banks concurrently in our case, the movements in the market must be adjusted for explicitly, thus the use of OLS-adjusted returns.

When estimating equation (1), we use the FTSE Eurotop 100 index in Swiss Francs—an index of the 100 most highly capitalized blue chip companies in Europe—as the market index for two reasons. First, the bank stocks considered in our study constitute a sizable fraction of the Swiss Market Index (SMI).[9] Second, given the importance of the financial sector in Switzerland, the outcome of the banking secrecy negotiations could impact the Swiss economy at large and therefore affect the returns of non-bank stocks included in the SMI. Using an European-wide index addresses these concerns.[10] Table 3 reports the regression coefficient estimates and their t-statistics. The coefficients on the contemporaneous market return range from 0.58 for Vontobel to about 1.28 for CSG and are highly significant for all four banks, with t-statistics between 15.24 for Vontobel and 43.47 for UBS. The coefficients on the lagged market return are significant for UBS and for the two small banks (and sizeable for the latter, with values exceeding 0.2), while the coefficients on the leading market return are not.

Table 4 reports the average, median, and standard deviation of daily abnormal returns in percent for all days, event days, and non-event days. Days are classified as event or non-event days using either 1-day windows or 3-day windows around the banking secrecy announcements. In the classification based on 1-day windows, all days on which an announcement occurs are considered event days; all others are non-event days. This yields 34 event days and 1388 non-event days (i.e., 34 event day abnormal returns and 1385 non-event day abnormal returns).[11] In the classification based on 3-day windows, all days falling inside a 3-day window around an announcement are considered event days; all others are non-event days. Because some events occur less than three trading days apart (event pairs 15 and 16, 18 and 19, 22 and 23, and 32 and 33), a total of 7 trading days fall into two overlapping 3-day windows. Accordingly, the total number of event days using the 3-day window classification is 95, 7 fewer than the 102 event days one would have if all event pairs were at least 3 trading days apart.

The results in Table 4 reveal that the standard deviation of abnormal returns is higher for event days than for non-event days. This is the case for all four banks as well as for their average returns, both for the 1-day window classification and for the 3-day window classification. For the 1-day windows, the variance ratio F-statistics show that the difference in volatility between event and non-event days is significant at the 5%

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[9]The fraction varies between one fifth and one fourth of the index during the period considered.

[10]In order to assess the robustness of our results, we also performed our empirical analysis using the FTSE European Bank Index in Swiss Francs. The results (not reported) are very similar.

[11]One day is lost in transforming prices into returns, and two returns are lost in leading and lagging the return on the market in equation (1).

level for three banks (CSG, Baer and Vontobel) and for the average return (statistically significant test statistics are boldfaced throughout the table). For the 3-day windows, the difference in volatility is significant for two banks (CSG and Vontobel) as well as for the average return. Thus, the data indicates that bank stocks tended to be more volatile on and around banking secrecy announcement days than at other times, suggesting that these announcements did have an impact on the valuation of bank stocks.

Interestingly, the mean equality tests reported in Table 4 reveal that average daily returns on event days are not statistically different from those on non-event days; neither are median daily returns. This does not imply that the value of banking secrecy is negligible. Indeed, differences in average returns between event and non-event days do not measure the value of banking secrecy itself. Rather, they reflect the *cumulative* impact that the negotiations had on the valuation of bank stocks. In fact, the value of banking secrecy could be very large even if average returns did not differ at all between event and non-event days. This would be the case, for instance, if the probability that banking secrecy would survive fluctuated during the negotiations, but was comparable at the beginning and at the end of the negotiations. In this case, return volatility on event days would be larger than that on non-event days, but there would be no significant difference between average returns on event and non-event days. In order to assess the value of banking secrecy, a more detailed analysis than a simple comparison of average returns is required.

5   Valuing Banking Secrecy

The present section obtains a lower bound for the value of banking secrecy to the four banks considered. Section 5.1 presents a (very) simple framework for thinking about the problem; Section 5.2 presents the details of our methodology; Section 5.3 measures the abnormal returns associated with banking secrecy announcements; Section 5.4 interprets such returns and provides an estimate of the value of banking secrecy.

5.1   A Simple Framework

Let V denote the value of a given bank in the absence of banking secrecy and V^s be the value of banking secrecy to the bank. For simplicity, assume that V and V^s are constant through time. Let p_t denote the probability that banking secrecy will be maintained, as perceived by investors at time t. The probability p_t can be expected to change in line

with the course of the negotiations. The value of the bank on the market at time t, V_t^b, is therefore given by

$$V_t^b = V + p_t V^s. \tag{2}$$

Note that if p_t were the same at the beginning and at the end of the negotiations, V_t^b would be the same as well; average abnormal returns hence would be zero, even though V^s might be very large. This confirms our observation in Section 4 that the finding of no overall (end-to-end) impact of the negotiations on the market value of Swiss bank shares need not imply that banking secrecy has no value.

If either p_t or its changes were observed, then the value of banking secrecy could be estimated straightforwardly from (2) as the change in the bank's market value divided by the corresponding change in p_t. Since neither p_t nor its changes are observed, we can only estimate a lower bound for the value of banking secrecy. The change in value between dates t and t' equals $(p_{t'} - p_t)V^s$; it constitutes a lower bound on the value of V^s, because $p_{t'} - p_t$ always has magnitude less than 1: a magnitude of 1 would require investors to be certain that banking secrecy will be maintained at date t, and certain that it will be abolished at date t', or the reverse; such large shifts are not consistent with the nature of the events reported in Table 1.

In order to obtain as high a lower bound on V^s as possible, it is necessary to identify as close in magnitude to 1 a difference $p_{t'} - p_t$ as possible, within the constraints imposed by the data. Such difference can be inferred from the difference between highest and lowest cumulative abnormal returns (CAR), between the day where investors were most optimistic about the outcome of the negotiations and that were investors were most pessimistic. The highest lower bound equals $(\max[p_t] - \min[p_t]) V^s$.

As noted above, besides banking secrecy as such, the negotiations involved many other value-relevant issues, such as the introduction of a withholding tax and the possibility of sanctions. Modeling these other issues separately, by including in equation (2) additional terms for the introduction of the withholding tax and possible sanctions, is made difficult by the interaction among the different issues. For example, the introduction of a withholding tax (as an alternative to the abolition of secrecy) can be expected to affect not only the probability that secrecy will be maintained, p_t, but also the value of secrecy conditional on it being maintained, V^s. Similarly, the possibility of sanctions affects both the probability that secrecy will be maintained, p_t, and the value of Swiss banks in the absence of secrecy, V. Equation (2) is a simplification, which takes both the value in the absence of secrecy and the value of secrecy as given and reduces all changes in a bank's market value to changes in the probability that secrecy is maintained.

11

5.2 Methodology

In order to investigate the impact of the individual announcements on banks' stock prices, we estimate the regression

$$R_{i,t} = \beta_{i,0} + \beta_{i,1}R_{M,t-1} + \beta_{i,2}R_{M,t} + \beta_{i,3}R_{M,t+1} + \sum_{k=1}^{K} \delta_{i,k}D_{k,t} + \epsilon_{i,t}, \tag{3}$$

where $D_{k,t}$ denotes a dummy variable that takes the value 1 on the k-th event day and 0 otherwise, and $\delta_{i,k}$ its estimated coefficient. Since we use one dummy per day, $K = 34$ for 1-day windows and $K = 95$ for 3-day windows. Accordingly, the 1-day abnormal return for a given event is the coefficient of the corresponding dummy variable, and the 3-day abnormal return is the sum of the coefficients of the three corresponding dummy variables.[12] In order to account for the contemporaneous correlation of the residuals, equation (3) is estimated using Seemingly Unrelated Regression.

Abnormal returns obtained in this fashion could be distorted by the presence of confounding events occurring on or around banking secrecy announcements. In order to address this problem, we searched for potential confounding events in the Lexus/Nexus database and among the press releases posted by the four banks' on their respective web sites. We retained all announcements that involved (1) major acquisitions or divestitures, (2) changes in top management, (3) the hiring or firing of large numbers of employees, (4)

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[12] The 3-day windows of event pairs that occur less than 3 trading days apart (event pairs 15 and 16, 18 and 19, 22 and 23, and 32 and 33) overlap. In order to avoid double-counting, the "3-day" abnormal returns for these events are computed as follows:

- When two events occur on trading days immediately following each other, the abnormal return for the first window is computed as the sum of the coefficients of the dummy variables corresponding to the day before the first event and the day of the event. The abnormal return for the second window is computed as the sum of the coefficients of the dummy variables corresponding to the day of the second event and the following day. Hence, both "3-day" windows contain 2 days in this case.

- When two events are separated by one non-event trading day, the abnormal return for the first window is computed as the sum of the coefficients of the dummy variables corresponding to the day before the first event and the day of the event, and half the coefficient of the dummy variable corresponding to the day following the event. The abnormal return for the second window is computed as the sum of half the coefficient of the dummy variable corresponding to the day preceding the second event, the coefficient of the dummy for the event day, and that for the day after the event. Hence, both "3-day" windows contain 2 1/2 days in this case.

The significance tests account for the lower number of trading days in the case of these overlapping 3-day windows.

legal disputes or regulatory actions, (5) earnings announcements, or (6) share buybacks. We identified the events that could potentially affect our results as those events whose 3-day windows overlap with the 3-day windows around banking secrecy announcements (i.e. taking place two or fewer trading days before or after a banking secrecy announcement). There are 4 such events for UBS, 13 for CSG, 5 for Baer and 4 for Vontobel. Table 5 reports the date and description of these confounding events, as well as the banking secrecy announcements whose 3-day windows overlap with the 3-day window around the confounding event.

A potential approach to account for confounding events is to estimate their impact on stock returns and adjust the estimated abnormal returns attributed to the banking secrecy announcements accordingly. Due to the relatively small number of events in our sample and their large degree of heterogeneity, however, this approach would yield very noisy estimates. Instead, we use the simpler, but more robust approach of leaving out the days directly affected by confounding events and giving a lower weight to days lying between a confounding event and a banking secrecy announcement. Specifically, when computing abnormal returns for each banking secrecy announcement, confounding events are taken into account as follows:

- Whenever a confounding event for a given bank occurs on the same day as a banking secrecy announcement, no abnormal return for the banking secrecy announcement affected is computed, neither for the 1-day window nor for the 3-day window. Such announcements are marked with an asterisk in the column "Events Affected" in Table 5.

- Whenever a confounding event and a banking secrecy announcement occur on trading days immediately following each other, the 1-day abnormal return is obtained normally using the corresponding dummy variable coefficient. The abnormal return for the "3-day" window is computed by leaving out the day of the confounding event. Hence, as in the case of two banking secrecy announcements immediately following each other, the "3-day" event window contains 2 days. Such events are marked with a hash sign in Table 5.

- Whenever a confounding event and a banking secrecy announcement are separated by one non-event day, the 1-day abnormal return is obtained normally. The abnormal return for the "3-day" window is computed by giving a weight of one half to the day lying between the two events. Again, as in the case of two banking secrecy

announcements separated by one non-event trading day, the "3-day" event window contains 2 1/2 days. Such events are also marked with a hash sign in Table 5.

5.3 Abnormal Returns on Announcement Dates

Table 6 reports the 1-day and 3-day abnormal return on each of the four bank stocks, as well as the average abnormal return across banks for each of the 34 banking secrecy announcements. Cells corresponding to events for which no abnormal return is computed for a particular bank due to a confounding event are marked with an asterisk, and "3-day" abnormal return estimates that are based on two or two and one-half dummy variable coefficients only because of a confounding event are marked with a hash sign. At the 5% level statistically significant abnormal returns are boldfaced. For individual banks, the significance of 1-day abnormal returns is assessed using the t-statistic of the corresponding dummy variable coefficient. For 3-day abnormal returns, it is based on the t-statistic for the test that the sum of the coefficients of the dummy variables included in the event window is zero.

The average abnormal return on each day is computed as the average of the dummy variable coefficients for the banks not affected by a confounding event on that day. Its significance is assessed by performing a t-test that the average of the coefficients of the dummy variables included in the average is zero. This ensures that missing values do not distort our significance tests. For example, for event 4, no abnormal return is available for Vontobel because of a confounding event. Hence, the average 1-day abnormal return for event 4 is computed based on the dummy variable coefficients for UBS, CSG and Baer, and its significance assessed by testing whether the average of the three corresponding dummy coefficients is zero. Similarly, for the 3-day window, the average abnormal return is based on nine dummy variables—three per day—and its significance is assessed by testing whether the sum of the three daily average returns is zero.

Table 6 reports abnormal returns. Relatively few are significant; even fewer are significant for more than a single bank and for both the 1- and 3-day windows. Overall, considering 1-day windows, there are three statistically significant abnormal returns for UBS, four each for CSG and Baer, and five each for Vontobel and the average abnormal return. For 3-day windows, there is a single significant abnormal return for UBS, three each for CSG and Baer, six for Vontobel, and four for the average abnormal return.

When examining the share price response of 4 banks to 34 events, we should expect approximately 7 events to be significant at the 5% level even if there is in fact no significant

response of the share prices to the events ($7 \approx 4 \times 34 \times 0.05$). In order to avoid possible Type I errors, we consider only those events that are statistically significant for at least two banks for both the 1-day and 3-day windows: the multiple significance requirement makes such significance less likely to be mere Type I error. We are thus left with three events: events 22, 33 and 34.[13]

Event 22—EU Commissioner Bolkestein writing in the *Financial Times* "I cannot stand Switzerland cheating on tax"—is associated with large and significant abnormal returns for both UBS and CSG. These returns are -5.63% over the 1-day window and -11.20% over the 3-day window for UBS, and -3.51% and -10.37% for CSG.[14] However, event 22 has almost no impact on the small private banks. A possible explanation for this result is that, in contrast to the small banks, UBS and CSG would have been strongly affected by sanctions from the EU because of their strong presence in most European financial centers.

Event 33—the Council of Ministers' being unable to decide whether to approve the proposed agreement with Switzerland or not—is associated with negative abnormal returns for all four banks. Abnormal returns lie between -1.64% for UBS and -9.38% for Vontobel on the day of the announcement, and are significant for three of the four banks. For 3-day windows, abnormal returns range from -1.28% to -13.52%, and are significant for two banks, Baer and Vontobel.[15] The most likely cause of these strong negative

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[13]Events that exhibit statistically significant returns but do not meet our criterion are the following. Event 9—the agreement between Switzerland and the EU to initiate discussions with the aim of starting negotiations—is associated with a significant 1-day abnormal return of -4.28% for Vontobel. Event 10—a meeting between Switzerland and the EU to discuss the taxation of savings interest—is associated with a significant 1-day abnormal return of 2.74% for UBS, while Vontobel displays significant 1-day and 3-day abnormal returns of 5.68% and 8.34%, respectively. Event 18—the introduction of a bill in parliament requiring that banking secrecy be written in the Swiss Constitution—is associated with a single significant abnormal return, a 3-day return of -6.13% for Vontobel. For event 19—the first round of negotiations between Switzerland and the EU—CSG and Baer have significant 1-day abnormal returns of -3.48% and -4.20%, respectively. Event 23—EU countries being unable to agree on sanctions against Switzerland—is associated with positive abnormal returns for Baer (5.37% over the 1-day window and 6.05% over the 3-day window). There are also significant abnormal returns for individual banks around events 24, 26, 27 and 28, but here again, no clear pattern is apparent. Event 31—the Council of Ministers agreeing in principle with the proposed introduction by Switzerland of a withholding tax—is associated with a significant 1-day abnormal return of -2.77% for UBS.

[14]The returns for CSG may be affected by CSG's announcement on October 8, 2002 of its decision to lay off 1700 employees. In accordance with the discussion in Section 5.2, this confounding event is accounted for by using 2 days for the "3-day" window.

[15]The returns for Baer may be affected by Baer's issuance of a profit warning on March 13, 2003 and its announcement on that same day that assets under management are still falling and that it is laying

returns is that a rejection of the proposed agreement by EU Finance Ministers would probably have triggered additional negotiation rounds and prompted EU negotiators to take a much tougher stance. Accordingly, with the single exception of confounding-event affected 3-day return for CSG, abnormal returns for all banks are positive when the proposed agreement is finally approved on June 4 (event 34), with values between 0.47% for CSG and 7.56% for Vontobel for 1-day windows and between 0.15% for UBS and 14.49% for Vontobel for 3-day windows. These abnormal returns are significant for Baer and Vontobel, both on the day of the announcement and for the corresponding 3-day window.

The last two rows in Table 6 show the total abnormal returns over all events, as well as their t-statistics. Total abnormal returns over all 1-day windows range from -14.63% for CSG to 2.70% for Vontobel, and are not significant for any of the banks, nor for the average return. For 3-day windows, abnormal returns range from -12.52% for CSG to 13.48% for Baer, and are again not significant for any bank. Thus, as already noted in Section 4, the negotiations were not associated with a statistically significant decline in the market value of Swiss bank shares. We offer an economic interpretation of such result in Section 5.4.

Figure 1 shows the cumulative abnormal returns (CARs) of the four bank stocks for each of the 34 announcement days. The upper panel shows these abnormal returns for 1-day windows, the lower panel for 3-day windows. In each picture, the solid line depicts the cumulative abnormal return considering all announcements, the dashed line the CAR considering only announcements with statistically significant abnormal returns, the dotted line the CAR considering only announcements with abnormal returns that meet the multiple significance requirement: abnormal returns are significant for at least two banks for both the 1-day and 3-day windows. Hence, for the solid line, horizontal segments correspond to events for which no abnormal return is computed because of a confounding event; for the dashed line, they correspond to events with either no or insignificant abnormal returns; finally, for the dotted line, they correspond to events with abnormal returns that do not meet the multiple significance requirement. The pictures reveal sizeable CARs in some cases (for example, -14.63% for CSG using 1-day windows). However, as will be recalled from Table 6, all CARs are statistically insignificant.

Figure 1 also reveals a similarity in the pattern of CARs for UBS and CSG on the one hand and for Baer and Vontobel on the other. This similarity is apparent for both bank pairs for the 1-day windows, and for the pair UBS and CSG for the 3-day windows.

off employees. In accordance with the discussion in Section 5.2, this confounding event is accounted for by using 2 1/2 days for the "3-day" window.

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Table 7 reports the abnormal return correlation across banks on event and on non-event days, as well as the difference between the two.[16] The correlations are positive for all bank pairs, both for 1-day windows and for 3-day windows. The top panel reveals that correlations on event days are quite large and statistically significant for three bank pairs. In addition to the pairs UBS/CSG (with values of 0.5702 for 1-day windows and 0.5333 for 3-day windows) and Baer/Vontobel (with values of 0.5690 and 0.3540), for which a sizable correlation was already apparent in Figure 1, there is a strong abnormal return correlation for the pair CSG/Baer (with values of 0.4109 and 0.3367).

Abnormal return correlations on non-event days, reported in the middle panel of Table 7, are significant for all bank pairs thanks to the larger number of observations. As was the case for event days, the correlations are largest for the pairs UBS/CSG, CSG/Baer and Baer/Vontobel. The bottom panel of Table 7 reports the difference between the abnormal return correlation on event days and that on non-event days. For 1-day windows, all correlations are sizably larger on event days than on non-event days with two exceptions, the pairs UBS/Baer and CSG/Vontobel. For 3-day windows, abnormal return correlations are larger on event days with two exceptions, the pairs UBS/Baer and CSG/Vontobel. However, the Jennrich (1970) test does not reject the null hypothesis of no change in correlation between event and non-event days. Thus, although the point estimates are generally higher, the banking secrecy negotiations were not associated with a statistically significant increase in the abnormal return correlation across banks.

Figure 2 shows the cumulative average abnormal returns of the four bank stocks. The overall impact of the negotiations on returns is small both for 1-day windows and 3-day windows, even if only events with significant abnormal returns are considered.

5.4   Interpretation and Value

We now turn to the interpretation of our results. Perhaps the first conclusion to be drawn from these results is this: banking secrecy has a value, at least to the private banks, namely Baer and Vontobel. This is a clear implication of the decline in value that accompanies event 33, the inability of the Council of Ministers to reach an agreement on whether to approve the treaty with Switzerland, and the rebound in value around event 34, the approval and signing of the agreement. Thus, confronted with the possibility that the EU may not be satisfied with the withholding tax proposed by Switzerland, at least

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[16]For each bank pair, the correlation on event days is computed on the basis of days where neither of the two banks considered is affected by a confounding event.

not in the form specified in the agreement, and that it may insist on the complete removal of banking secrecy for EU residents, Baer and Vontobel suffered a marked decline in their share prices. Relieved that such would not be the case after all, they saw their share prices recover the loss in value.

If banking secrecy is important, a number of questions arise. Why did UBS not suffer from event 33, and why did it not benefit from event 34, at least not to a statistically and economically significant extent? Why were the results for CSG intermediate between those for the private banks and those for UBS? Why did the 32 events that precede events 33 and 34 have no clear effect on the four banks, with the exception of event 22 on UBS and CSG?[17] And why did event 22, EU Commissioner Bolkestein's writing in the Financial Times that he "cannot stand Switzerland cheating on tax" affect UBS and CSG but not Baer and Vontobel?

The absence of reaction on the part of UBS to events 33 and 34 is consistent with a number of statements by UBS to the effect that it has developed its foreign private banking operations to such an extent that it no longer needs to rely on its Swiss operations, those that can prevail themselves of banking secrecy, to attract and keep foreign clients.[18] CSG may be an intermediate case, not nearly as dependent on domestic operations and banking secrecy as the private banks, yet not as independent of banking secrecy as UBS appears to be.[19]

Not only have UBS and CSG developed their foreign private banking operations, they have also developed their foreign investment banking operations. A sizeable fraction of the European operations are in London. We believe this explains the negative reaction of UBS and CSG to event 22, Commissioner Bolkestein's letter in the Financial Times. EU sanctions on Switzerland, threatened by Commissioner Bolkestein in event 21, probably were viewed as not feasible. This was confirmed by event 23, EU countries unable to agree on sanctions, and acknowledged by Commissioner Bolkestein himself in an interview with Swiss newspapers (event 24).[20] A possible explanation for the failure to agree on

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[17]By a "clear" effect, we mean one that meets the multiple significance requirement: it is significant for more than a single bank and for both windows.

[18]In the summer of 2002, UBS reported that following Italy's tax amnesty at the beginning of that year, almost half of the assets repatriated by Italian clients had been directed to UBS's domestic Italian business.

[19]In 2004, the last year of our sample period, 36.4% of UBS's operating income was generated outside Switzerland. The corresponding figures for CSG, Baer, and Vontobel are 37.7%, 23.6%, and 12.4%, respectively. Note that these figures include income from investment banking and retail, because disaggregated figures for private banking alone are not publicly available.

[20]It is also confirmed by the weak to non-existent reactions of UBS and CSG to event 33, the inability

sanctions may have been Luxembourg and Austria's opposition to such sanctions.[21] In contrast to EU sanctions on Switzerland, UK sanctions on the London-based investment banking operations of UBS and CSG may have been viewed as being in the realm of the possible: UK Chancellor Gordon Brown was perceived as being one of the most determined opponents of Swiss banking secrecy. Such sanctions, which may have been suggested by the publication of Commissioner Bolkestein's letter in the Financial Times, would have affected UBS and CSG but would have been unlikely to affect Baer and Vontobel, which have little to no presence in London.

A political economy interpretation of UBS and CSG's reactions, or lack thereof to events 22, 33, and 34 is that the universal banks may have chosen purposely to decrease reliance on banking secrecy in order not to jeopardize their investment banking operations in London and New York. There is much evidence consistent with the importance of political economy considerations: to take but one example, UBS and CSG were among the first European banks to heed US calls for ceasing business dealings with Iran, part of the long tug of war between the Islamic Republic and the United States. Underlining the difference between universal and private banks, Baer publicly stated its desire to expand its Middle-Eastern private banking business, explicitly referring to Iran; UBS advised its Iranian clients to transfer their assets to Baer.[22]

Interestingly, event 22 seems to have left other European banks unaffected. Indeed, when we repeat the analysis of Section 5.3 for the FTSE index of European banks in place of the four Swiss banks, the abnormal return is insignificant, both for the 1-day window and for the 3-day window. For the 3-day window, the small, statistically insignificant, negative abnormal return of 1.5% roughly corresponds to the product of the weight of UBS and CSG in the European bank index and the abnormal returns of these two banks around event 22.

We also repeat the analysis of Section 5.3 for two individual European private banks, Italy's Fideuram and Sweden's Carnegie.[23] Event 22 leaves Fideuram unaffected. In contrast, event 22 significantly affects Carnegie for the 3-day window. Surprisingly perhaps, event 22's effect is negative, suggesting that Carnegie may in fact have suffered from the

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of the Council of Ministers to reach an agreement on whether to approve the treaty with Switzerland. Surely, had EU sanctions on Switzerland been considered a real possibility, investors would have feared that the EU would resort to such sanctions for the purpose of obtaining a more satisfactory treaty.

[21] On October 7, 2002, Luxembourg Prime Minister Jean-Claude Juncker called for the EU to cease treating Switzerland as "the Iraq of the Alps."

[22] Somewhat ironically, Baer was 21%-owned by UBS at the time; the stake was later sold.

[23] There are very few private banks quoted on an exchange.

threat directed at its Swiss competitors. The significance of event 22 (-19%) is preceded by that of event 21 (-13%) and followed by that of event 23 (+18%): Carnegie suffers on the day Commissioner Bolkestein threatens Switzerland with sanctions; it benefits on the day EU countries are unable to agree on such sanctions.[24] In our opinion, such findings have less to do with banking secrecy than with the confounding event that followed event 23: Carnegie announced a 59% decline in profits on 15 October 2002. The dramatic movements in Carnegie's share price suggest investors were very uncertain about Carnegie's profitability prior to the earnings announcement.[25]

We can relate our interpretation of events 22, 33, and 34 to the framework presented in Section 5.1. Event 33 represents a decrease in p_t and event 34 an increase. That the universal banks are little affected suggests that V^s is close to zero for these banks, that is, banking secrecy has little to no value for the universal banks. The lack of response of the private banks' share prices to event 22 suggests that the event leaves p_t unaffected. The universal banks' definite response therefore must pertain to these banks' value in the absence of secrecy, V. No inference regarding the value of banking secrecy thus can be drawn from event 22.

We are now in a position to estimate a value for banking secrecy. Our results suggest that it is very low if not nil, in statistical terms at least, for UBS and CSG; it is positive for Baer and Vontobel. We consider 3-day windows; we use event 33 to estimate the desired lower bound for Baer and events 33 and 34 for Vontobel. For Baer, the maximum CAR is zero, maintained over the first 32 events; the minimum CAR is -8.7%, attained at event 33; the $+7.4\%$ return on event 34 is not so large as to raise the maximum CAR above zero. For Vontobel, the minimum CAR is -13.5%, attained at event 33; the maximum CAR is $+1\%$, attained at event 34. The value of banking secrecy therefore must be at least $1 - \exp(-0.087) = 8.3\%$ of Baer's equity and $\exp(0.01) - \exp(-0.135) = 13.6\%$ of Vontobel's.[26] In absolute terms, this amounts to 294 million Swiss Francs (€196m, $294m) for Julius Baer and 188 million Swiss Francs (€125m, $188m) for Vontobel, at the end of our sample period on June 30, 2004.

Finally, we turn to events 1 to 32, exclusive of event 22 discussed above. Why did none of these events affect the four banks considered—and the two private banks in particular—

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[24]Fideuram remains entirely unaffected.

[25]When we repeat the the analysis of Section 5.3 for events 33 and 34, we find neither Carnegie, nor Fideuram, nor other European banks (as represented by the FTSE index of European banks) to be affected by these events.

[26]Recall from the discussion in Section 5.1 that the difference between highest and lowest CAR is used to infer the difference $\max[p_t] - \min[p_t]$.

consistently across banks and windows and in a statistically significant sense? In our view, what our results suggest is that, until event 33 at least, investors were remarkably sanguine about the implications of the negotiations and their perceived outcome for the profitability of the Swiss-based private banking operations of the Swiss banks. Perhaps they felt they could rely on the convergence of interests between Switzerland on the one hand and EU members Austria and Luxembourg on the other to ensure that banking secrecy, present in these two countries as well as in Switzerland, would be preserved. Perhaps they were confident that Swiss negotiators would not budge from their offer of introducing a withholding tax. Regardless, it is interesting to note that our results indicate that even a withholding tax was not viewed as compromising the profitability of private banking operations.

How could that be? One explanation is statistical; it revolves around the large standard error of 34 abnormal returns cumulated. The other is economic; it revolves around the relative ease of circumventing the withholding tax. Such ease is attributable to the restricted applicability of the tax, which 1) applies to interest paid on bank deposits, debt securities, and some fixed income mutual funds, not to dividends and capital gains on equities and 2) applies to payments made to individuals resident in the European Union, not to payments made to legal entities such as foundations and trusts, even where the beneficial owner of such an entity is an individual resident in the European Union. It is easy to see that the tax can to some extent at least be circumvented by a) reallocating the Swiss portion of a portfolio from bonds to stocks, with offsetting changes in the portfolio's non-Swiss portion, b) holding non-debt securities that offer debt-like payoffs, such as various forms of structured products with capital protection, c) subscribing to life insurance policies whose savings component offers debt-like payouts, and d) setting up a trust or a foundation. Three observations suggest that such schemes were relatively successful at circumventing the tax. First, modest amounts have been withheld since the introduction of the tax on July 1, 2005: 160 million Swiss Francs during the second half of 2005, 540 million in 2006, and 650 million in 2007. Second, there was a disproportionate increase in the liabilities of Swiss banks towards non-EU-based non-banking entities (nonbanks), suggesting increased used of trusts and foundations: Swiss National Bank (2005, 2008, Table 32, Column (1) minus Column (2)) statistics indicate that, between December 31, 2004 and December 31, 2007, the liabilities of Swiss banks towards nonbanks based in the EU 15 countries rose from 253 to 333 billion Swiss francs, an increase of 31.8%; liabilities towards nonbanks based in Australia, Japan, Canada, New Zealand, and the U.S. rose from 223 to 422 billion Swiss francs, an increase of 88.7%; last but not least, liabilities

towards nonbanks based in offshore centers (excluding Aruba, Barbados, Macau and the West Indies because of missing data) rose from 182 to 365 billion Swiss francs, an increase of 100.2%. Third, on November 13, 2008, the European Commission explicitly acknowledged that the EU Savings Directive (on which is based the withholding tax agreed to by Switzerland) can easily be circumvented. It proposed a number of changes to "better ensure the taxation of interest payments which are channeled through intermediate tax-exempted structures" as well as to "extend the scope of the Directive to income equivalent to interest obtained through investments in some innovative financial products as well as in certain life insurances products."

6   Conclusion

Our analysis reveals that banking secrecy has a value to the private banks; this value is of the order of 8 to 14% of the banks' equity, at the minimum. In contrast, banking secrecy seems to hold little to no value to the universal banks; these seem principally to have feared the imposition of sanctions on their London-based investment banking operations. The analysis also reveals that the withholding tax had no impact on the value of the banks, private as well as universal. That last finding may be a statistical artifact due the large standard error of 34 abnormal returns cumulated; it may be due the relative ease with which the tax can be circumvented.

Our findings pertain to the period 1998-2003; how valid are they to the present period, characterized by an ongoing financial crisis and much more determined opposition to banking secrecy? Perhaps surprisingly, the first two findings appear to remain valid. Consider the finding that banking secrecy has little to no value to the universal banks: CSG's CFO Renato Fassbind recently stated that CSG does not fear the—partial—abandonment of banking secrecy.[27] He added that he expects funds that might be withdrawn from CSG's Swiss branches to be transferred to CSG's foreign branches, to what he calls CSG's "onshore network."[28] Now turn to the finding that banking secrecy has a value to the private banks: Ivan Pictet, a partner in the eponymous Geneva-based private bank, stated in an interview that he expects finance to halve from 12 to 6-7% of Geneva's GDP in case banking secrecy is abandoned; private banking in Geneva is conducted overwhelmingly

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[27]Mr. Fassbind does not specify what he means by the "partial" abandonment of banking secrecy; he is quoted in the April 25, 2009 issue of Geneva's *Le Temps*.

[28]Onshore banking is to be contrasted with "offshore" banking, the latter conducted within Switzerland on behalf of non-Swiss based clients.

by the private rather than the universal banks.[29]

What of the universal banks' investment banking operations? These remain important to the universal banks: despite sizeable losses attributable to the subprime crisis, CSG's investment banking income accounted for nearly two and a half times the bank's private banking income during the first quarter of 2009. The political economy considerations mentioned in Section 5.4 therefore should remain valid for the universal banks: these will go to great length to avoid sanctions or restrictions in London or New York.

It is difficult, however, to be as sanguine about present developments as investors might have been at the time the withholding tax was imposed: the EU and indeed much of the world appear to be intent on ending banking secrecy or, at the very least, severely restricting its scope; some Swiss banks at least might be in for some challenging times.

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[29]Mr. Pictet's figure is not directly comparable to ours: it includes the salaries paid by private banks to reflect the sector's value-added. The interview can be found in the February 24, 2009 issue of *Le Temps*.

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Swiss National Bank, 2008, Banks in Switzerland 2007.

Event	Date	Description
1	12/01/1998	EU Finance Ministers ask the European Commission and the Troika to start exploratory discussions with Switzerland on the taxation of savings interest.
2	03/02/1999	Exploratory meeting between the European Commission, the Troika and the Swiss Finance Minister to discuss the taxation of savings interest.
3	06/09/2000	EU Commissioner Bolkestein and Swiss Finance Minister Villiger meet in Bern to discuss the taxation of savings interest.
4	06/20/2000	EU Finance Ministers agree to work towards common rules to tax savings income. In the meantime, they agree to exchange information on savings income with other EU countries. They decide to enter into discussions with the U.S. and key third countries (such as Switzerland) to promote the adoption of equivalent measures in those countries.
5	06/28/2000	The Swiss government announces that information exchange is not a feasible solution.
6	09/13/2000	The Swiss government again declares to Parliament that it will not exchange information.
7	11/27/2000	EU Finance Ministers agree on a minimum withholding tax rate of 15% for 3 years and then 20% until information exchange is implemented by a member country.
8*#	03/12/2001	The Swiss government again declares to Parliament that it is not willing to exchange information and abolish banking secrecy.
9	03/16/2001	Switzerland and the EU agree to initiate discussions with the aim of starting negotiations.
10	04/11/2001	Meeting between Switzerland and the EU to discuss the taxation of savings interest.
11*	05/23/2001	Meeting between EU Commissioner Bolkestein and Swiss Finance Minister Villiger in Bern. Switzerland agrees in principle to introduce a withholding tax on savings interest, but rules out information exchange.
12*	06/26/2001	The EU agrees to start negotiations with Switzerland on banking secrecy and 9 other issues.
13*	09/20/2001	UK Chancellor Brown challenges Switzerland to relax its banking secrecy in order to ensure there was no hiding place for terrorist money.
14*	12/13/2001	UK Chancellor Brown declares that Switzerland should join the fight against tax evasion.
15	04/25/2002	A Swiss minister declares that banking secrecy is not negotiable but is evolving.
16#	04/29/2002	An opinion poll reveals that a majority of Swiss voters (65%) would be willing to relax or abolish banking secrecy.
17	05/24/2002	Another opinion poll reveals that a majority of Swiss voters (58%) wants to keep banking secrecy as is.

Table 1: **News Announcements about Banking Secrecy.** News announcements about banking secrecy over the period from December 1998 to June 2003. The list was created from the information posted on the Swiss Parliament's web site; from the news released by the Swiss Telegraphic Agency; and from the announcements made by the *Administration Fédérale des Finances*. Events marked with a hash sign are those happening on week-ends and recorded as occurring on the next trading day. Events marked with an asterisk are those for which information was released after 4:30 p.m. and recorded as taking place the following day.

Event	Date	Description
18	06/17/2002	A bill is introduced in Parliament requiring that banking secrecy be written in the Swiss Constitution.
19	06/18/2002	First round of negotiations between Switzerland and the EU. Switzerland agrees to introduce a withholding tax, but rules out information exchange. The EU requests information exchange.
20*	09/04/2002	Second round of negotiations between Switzerland and the EU. Switzerland agrees to introduce a withholding tax, but again rules out information exchange. The EU again requests information exchange.
21#	09/09/2002	EU Commissioner Bolkestein threatens Switzerland with sanctions if it does not agree to a compromise on savings interest.
22	10/07/2002	EU Commissioner Bolkestein writes in the Financial Times "I cannot stand Switzerland cheating on tax."
23	10/08/2002	EU countries are unable to agree on sanctions against Switzerland. Switzerland once again offers to introduce a withholding tax.
24	10/24/2002	EU Commissioner Bolkestein tells Swiss newspapers that sanctions are not really feasible.
25*	11/01/2002	The EU and Switzerland agree for the first time on the principle of a withholding tax. There is still disagreement on the applicable rate.
26*	11/06/2002	EU Commissioner Bolkestein tells EU Finance ministers that Switzerland agrees to a withholding rate of 35%, provided that the same rate is used by EU countries electing to use a withholding tax instead of information exchange. UK Chancellor Brown requests information exchange.
27*	11/19/2002	The finance committee of the Swiss Parliament recommends writing banking secrecy in the Constitution.
28	11/29/2002	The Swiss government declares in Parliament that the agreement with the EU will be applicable to residents of EU countries only and will not be extended to other countries.
29	12/12/2002	The Council of Ministers decides to postpone the decision on the taxation of savings interest to January 21, 2003.
30	12/19/2002	The Swiss Finance Minister explains that banking secrecy is not negotiable, even if the EU threatens with sanctions.
31*	01/22/2003	The Council of Ministers agrees in principle with the proposed solution, according to which Switzerland would keep its banking secrecy, but introduce a withholding tax.
32*	03/07/2003	Switzerland and the European Commission find an agreement on all outstanding issues. This agreement must be approved by the Council of Ministers.
33*#	03/10/2003	The Council of Ministers is unable to reach an agreement on whether to approve the treaty with Switzerland or not. The decision is postponed to the next Council.
34*	06/04/2003	The Council of Ministers approves the proposed agreement with Switzerland. The agreement is signed.

Bank	UBS	CSG	Baer	Vontobel
Average Return (% p.a.)	5.92	−2.17	−3.10	−9.41
Return Standard Deviation (% p.a.)	31.64	42.18	38.84	38.23
Market Capitalization, 06/30/2004, CHF billion[a]	98.001	49.238	3.538	1.494

[a] Source: Quarterly Financial Reports of the four banks.

Table 2: **Summary Statistics.** Summary statistics for the four bank stocks over the period from November 1, 1998 to June 30, 2004.

Bank	UBS	CSG	Baer	Vontobel	Average
Constant	0.0004	0.0001	0.0000	-0.0003	0.0001
	(1.1922)	(0.2806)	(0.0378)	(-0.4566)	(0.2401)
$R_{M,t-1}$	0.0658	0.0429	0.2420	0.2029	0.1384
	(2.9245)	(1.3870)	(7.1359)	(5.3228)	(6.8524)
$R_{M,t}$	0.9783	1.2755	0.9237	0.5807	0.9396
	(43.4686)	(41.2384)	(27.2494)	(15.2393)	(46.5317)
$R_{M,t+1}$	0.0306	-0.0246	0.0033	0.0159	0.0063
	(1.3576)	(-0.7942)	(0.0978)	(0.4171)	(0.3120)
R^2	0.5722	0.5457	0.3578	0.1545	0.6088
σ_ϵ	0.0131	0.0180	0.0198	0.0222	0.0118

Table 3: **Regression Results for the Four Bank Stocks and the Average Return.** Results of market model regressions of the form $R_{i,t} = \beta_{i,0} + \beta_{i,1}R_{M,t-1} + \beta_{i,2}R_{M,t} + \beta_{i,3}R_{M,t+1} + \epsilon_{i,t}$ for the four bank stocks as well as for the unweighted average return across the four stocks, reflecting the return on an equally weighted, daily rebalanced portfolio of the four stocks. Lead and lag terms of the market index return R_M are included in order to control for the presence of nonsynchronous trading. The upper part of the table shows the coefficient estimates and, in parentheses, their t-statistics. The bottom part shows the coefficient of determination R^2 and the standard error of the regression residuals, σ_ϵ.

		1-day					3-day				
		UBS	CSG	Baer	Vontobel	Average	UBS	CSG	Baer	Vontobel	Average
All days	Mean (%)	0	0	0	0	0	0	0	0	0	0
	Median (%)	0.0269	0.0306	−0.0337	−0.0240	0.0156	0.0269	0.0306	−0.0337	−0.0240	0.0156
	Std. dev. (%)	0.0131	0.0180	0.0198	0.0222	0.0118	0.0131	0.0180	0.0198	0.0222	0.0118
Event days	Mean (%)	−0.1588	−0.3193	0.1429	0.0161	−0.0798	0.0229	0.1140	0.2435	−0.1896	0.0477
	Median (%)	−0.0543	0.0367	−0.3500	0.1463	−0.2985	0.0893	0.1467	0.0081	−0.2072	0.0203
	Std. dev. (%)	1.5154	2.3939	2.5992	3.1640	1.7481	1.4306	2.1056	2.1281	3.5928	1.5559
Non-event days	Mean (%)	0.0039	0.0078	−0.0035	−0.0004	0.0020	−0.0016	−0.0082	−0.0175	0.0136	−0.0034
	Median (%)	0.0277	0.0306	−0.0324	−0.0241	0.0189	0.0242	0.0283	−0.0365	−0.0180	0.0141
	Std. dev. (%)	1.3064	1.7856	1.9584	2.1938	1.1598	1.3030	1.7791	1.9634	2.0891	1.1452
Test for equal means											
t-statistic		−0.6203	−0.7915	0.3262	0.0302	−0.2712	0.1622	0.5515	1.1603	−0.5447	0.3141
P-Value		0.5351	0.4288	0.7443	0.9759	0.7863	0.8712	0.5814	0.2461	0.5861	0.7535
Test for equal medians											
Kruskal-Wallis χ^2-statistic		0.1421	0.1236	0.1294	0.0583	0.4874	0.2837	1.1588	0.9133	0.1075	0.3123
P-Value		0.7062	0.7251	0.7191	0.8092	0.4851	0.5943	0.2817	0.3392	0.7430	0.5763
Test for equal variances											
Variance ratio F-statistic		1.3457	**1.7973**	**1.7616**	**2.0800**	**2.2716**	1.2055	**1.4007**	1.1748	**2.9575**	**1.8460**
P-value		0.0922	0.0038	0.0051	0.0003	0.0001	0.0943	0.0085	0.1281	0.0000	0.0000

Table 4: **Means, Medians, and Standard Deviations of Abnormal Returns on Event and Non-Event Days.** Abnormal returns are computed as OLS-adjusted returns from market model regressions of the form $R_{i,t} = \beta_{i,0} + \beta_{i,1}R_{M,t-1} + \beta_{i,2}R_{M,t} + \beta_{i,3}R_{M,t+1} + \epsilon_{i,t}$ estimated for the four bank stocks as well as for the unweighted average return across the four stocks and reported in Table 3. Days are classified as event or non-event days using both 1-day and 3-day windows around the banking secrecy announcements. At the 5% level statistically significant test statistics are boldfaced.

Bank	Date	Events Affected	Description
UBS	04/24/2002	15#	UBS announces that it will hire 250 additional wealth managers in Germany.
	11/01/2002	25*	UBS sells its private clinics chain to a British group.
	01/20/2003	31#	UBS to be probed by Swiss Banking Commission.
	03/06/2003	32#	UBS announces up to CHF5bn share buyback.
CSG	03/13/2001	8#	CSG announces record net income of CHF 7.2 billion for 2000.
	05/21/2001	11#	CSG managers forecast lower net income for the second quarter.
	06/20/2002	19#	CSG provides CHF 1.7 billion of additional equity to Winterthur, its insurance subsidiary.
	09/05/2002	20#, 21#	Credit Suisse First Boston (CSFB) is asked by the U.S. Congress to provide documents detailing how high-tech companies were taken public.
	10/08/2002	22#, 23*	CSFB lays off 1700 employees.
	10/25/2002	24#	CSG announces a wage freeze for 2003.
	10/28/2002	24#	Together with Citigroup and JP Morgan, CSFB is sued by Enron shareholders for allegedly helping the company hide liabilities.
	10/31/2002	25#	Ten investment banks, including CSFB, appear close to settling charges regarding biased ratings on stocks.
	11/01/2002	25*	Class action suit filed against CSFB for misleading analyst reports.
	11/04/2002	25#, 26#	CSFB announces it will cut 20% of its workforce.
	01/21/2003	31#	CSG announces a record loss of CHF 3.4 billion for 2002.
	03/07/2003	32*	CSFB subpoenaed by Enron bankruptcy court.
	06/05/2003	34#	UBS raises its price target for CSG.
Baer	03/16/2001	9*	Baer announces CHF100m share buyback.
	06/17/2002	18*, 19#	Baer rules out any merger deal with other banks.
	10/30/2002	25#	Baer is sued by clients.
	12/16/2002	29#	Sal Oppenheim downgrades Baer to "Sell".
	03/12/2003	33#	Bear issues profit warning, announces that assets under management are still falling, and lays-off employees.
Vontobel	06/20/2000	4*	Vontobel's private equity arm reports record profits of CHF 130 million for 1999.
	03/15/2001	9#	Top management is fired after the bank incurs an additional CHF 100 million loss in its e-banking project.
	09/04/2002	20*	ZKB downgrades Vontobel to "Sell".
	12/13/2002	29#	Vontobel announces the departure of its CFO, the closing of its Frankfurt office, and pulling out of the U.S. brokerage business.

Table 5: **Confounding Events for the Four Banks.** Confounding events are identified from the Lexus/Nexus database and banks' web sites. The events retained are announcements whose 3-day windows overlap with the 3-day window around a banking secrecy announcement and involving (1) M&A transactions (both acquisitions and divestitures), (2) changes in top management, (3) major restructurings (such as layoffs), (4) legal disputes or actions taken by regulators, or (5) earnings announcements. For each confounding event, the column "Events Affected" reports the banking secrecy announcements whose 3-day windows overlap with the 3-day window around the confounding event. Banking secrecy announcements occurring on the same day as a confounding event are marked with an asterisk, announcements occurring one or two trading days before or after a confounding event with a hash sign.

			1-day					3-day		
Event	UBS	CSG	Baer	Vontobel	Average	UBS	CSG	Baer	Vontobel	Average
1	−1.89	−0.29	1.97	−2.52	−0.68	−1.83	−0.83	3.55	3.90	1.20
2	−0.92	−1.29	−3.09	0.99	−1.08	1.14	1.78	−1.09	3.50	1.33
3	0.55	−0.14	−0.46	0.07	0.01	3.57	1.20	−1.68	0.17	0.82
4	−0.11	−1.47	0.24	*	−0.44	−1.11	−0.34	2.81	*	0.45
5	1.85	0.92	1.42	0.22	1.10	1.97	3.65	1.36	0.66	1.91
6	−0.16	2.38	0.37	1.14	0.93	−0.76	0.07	3.52	0.39	0.80
7	1.34	0.86	−0.46	−2.47	−0.18	1.90	0.97	−1.25	−6.14	−1.13
8	−1.19	0.39	−0.94	−0.97	−0.68	−0.71	0.42$^{\#}$	0.25	−5.66	−1.81
9	−1.37	2.15	*	**−4.28**	−1.17	−3.50	1.95	*	0.75$^{\#}$	−0.97
10	**2.74**	1.89	−0.58	**5.68**	**2.43**	4.16	0.90	−3.66	**8.34**	2.43
11	1.73	1.17	−0.81	−0.44	0.41	2.61	1.64$^{\#}$	1.05	1.32	1.81
12	−0.93	−0.91	0.14	−3.62	−1.33	−0.93	−4.08	0.36	−0.16	−1.20
13	0.49	−0.54	0.93	2.19	0.77	1.38	−2.32	3.25	−3.00	−0.17
14	0.70	0.15	−1.39	−1.29	−0.46	1.57	3.44	−0.87	−5.30	−0.29
15	−1.05	−2.10	−1.13	0.33	−0.99	−1.92$^{\#}$	−2.77	−2.08	−1.26	−2.09
16	1.50	2.50	2.96	1.88	2.21	−0.22	1.32	1.42	0.29	0.71
17	−0.65	−0.47	0.01	1.73	0.16	−0.05	−1.48	−0.28	1.18	−0.16
18	−0.41	−2.27	*	−2.47	−1.72	1.56	−1.23	*	**−6.13**	−1.93
19	−1.32	**−3.48**	**−4.20**	1.15	−1.96	−0.56	−3.90$^{\#}$	−1.90$^{\#}$	−0.48	−1.60
20	−0.37	−2.54	2.39	*	−0.17	−0.82	−1.66$^{\#}$	3.45	*	−0.03
21	0.17	1.74	−1.38	−1.63	−0.28	−0.50	2.17$^{\#}$	−1.17	6.77	1.93
22	**−5.63**	**−3.51**	−0.47	0.88	−2.18	**−11.20**	**−10.37**$^{\#}$	0.06	−0.43	**−5.49**
23	−0.45	*	**5.37**	3.72	**2.88**	3.01	*	**6.05**	3.82	**4.30**
24	0.86	2.57	2.96	**4.44**	**2.71**	2.56	−1.36$^{\#}$	−1.00	**8.53**	1.98
25	*	*	2.11	1.58	1.84	*	*	5.36$^{\#}$	−0.85	1.42
26	−0.84	**−8.20**	−0.84	1.85	−2.01	−1.78	**−6.11**$^{\#}$	−2.39	1.92	−2.36
27	0.38	−1.13	−0.31	−0.21	−0.32	−0.29	2.94	−1.25	**8.00**	2.35
28	0.66	2.41	−0.41	2.54	1.30	−0.35	**6.27**	5.27	2.70	3.47
29	0.25	0.82	1.21	−4.17	−0.47	1.71	1.81	−1.76$^{\#}$	−5.25$^{\#}$	−0.39
30	0.88	0.90	−3.49	1.06	−0.16	0.44	−1.01	−4.28	0.21	−1.16
31	**−2.77**	−3.04	−0.74	−1.14	−1.92	−2.68$^{\#}$	−0.57$^{\#}$	1.61	−2.60	−0.89
32	−0.05	*	−1.64	−1.72	−1.14	−0.05$^{\#}$	*	0.05	−3.23	−1.03
33	−1.64	**−4.58**	**−7.87**	**−9.38**	**−5.87**	−1.28	−4.66	**−8.69**$^{\#}$	**−13.52**	**−7.08**
34	0.70	0.47	**4.00**	**7.56**	**3.19**	0.15	−0.34$^{\#}$	**7.41**	**14.49**	**6.31**
Total	−6.93	−14.63	−4.12	2.70	−5.26	−2.77	−12.52	13.48	12.92	3.45
t-ratio	−0.90	−1.44	−0.36	0.21	−0.75	−0.21	−0.75	0.70	0.64	0.29

Table 6: **Abnormal Returns Around the Individual News Announcements About Banking Secrecy.** For 1-day windows, abnormal returns are given by the coefficient of dummy variables that take the value 1 on the day of the event and 0 otherwise. For 3-day windows, it is computed as the sum of the coefficients of three dummy variables. Events for which no abnormal return is computed for a given bank because of a confounding event occurring on the same day as a banking secrecy announcement are marked with an asterisk, and events for which the abnormal return is based on fewer than 3 trading days because of a confounding event with a hash sign. At the 5% level statistically significant abnormal returns are boldfaced.

	1-day				3-day			
	UBS	CSG	Baer	Vontobel	UBS	CSG	Baer	Vontobel
Event Days								
UBS	**1**	**0.5702**	0.2155	0.3116	**1**	**0.5333**	0.1712	0.2080
CSG		**1**	**0.4109**	0.2275		**1**	**0.3367**	0.1202
Baer			**1**	**0.5690**			**1**	**0.3540**
Vontobel				**1**				**1**
Non-Event Days								
UBS	**1**	**0.3812**	**0.1716**	**0.0977**	**1**	**0.3846**	**0.1722**	**0.0897**
CSG		**1**	**0.2678**	**0.1412**		**1**	**0.2670**	**0.1516**
Baer			**1**	**0.2086**			**1**	**0.2166**
Vontobel				**1**				**1**
Difference								
UBS	0	0.1890	0.0439	0.2139	0	0.1487	−0.0010	0.1182
CSG		0	0.1431	0.0862		0	0.0697	−0.0314
Baer			0	0.3604			0	0.1374
Vontobel				0				0

Table 7: **Correlation Between Banks' Abnormal Returns on Event and Non-Event Days, and Difference Between the Two.** For each bank pair, the correlation on event days is computed on the basis of days where neither of the two banks considered is affected by a confounding event. At the 5% level statistically significant values are boldfaced. The significance of each correlation is assessed using the standard t-test, that of the difference in correlation between event and non-event days using the Jennrich (1970) test.
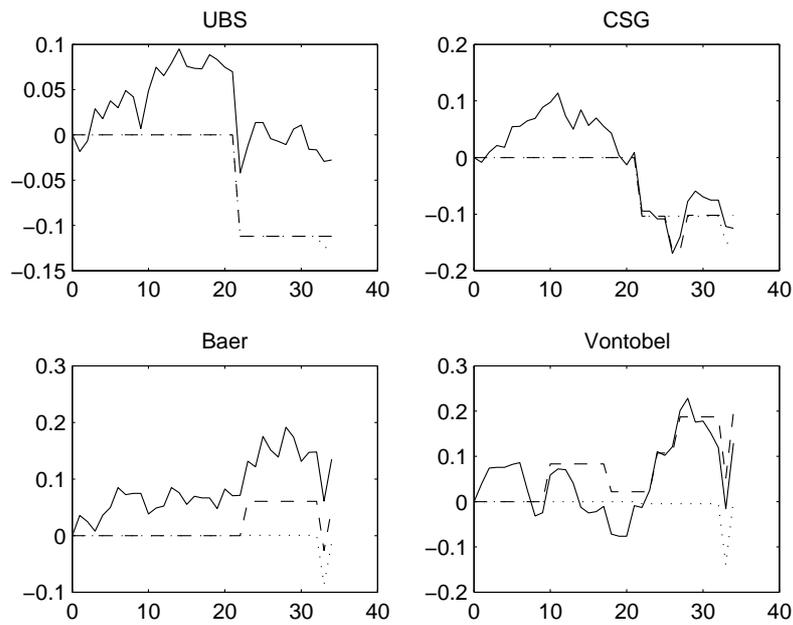
33
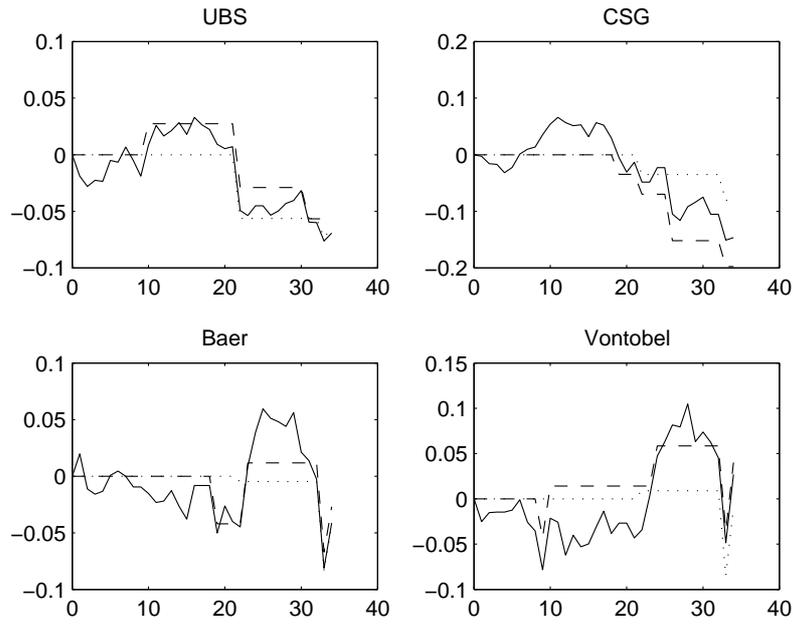
Figure 1: **Cumulative Abnormal Returns of the Four Bank Stocks.**
Cumulative abnormal returns of the four bank stocks for each announcement using
1-day windows (top panel) and 3-day windows (bottom panel). Solid lines depict
the CARs considering all announcements, dashed lines CARs considering announce-
ments with statistically significant abnormal returns only, and dotted lines CARs
considering events that are statistically significant for at least two banks for both
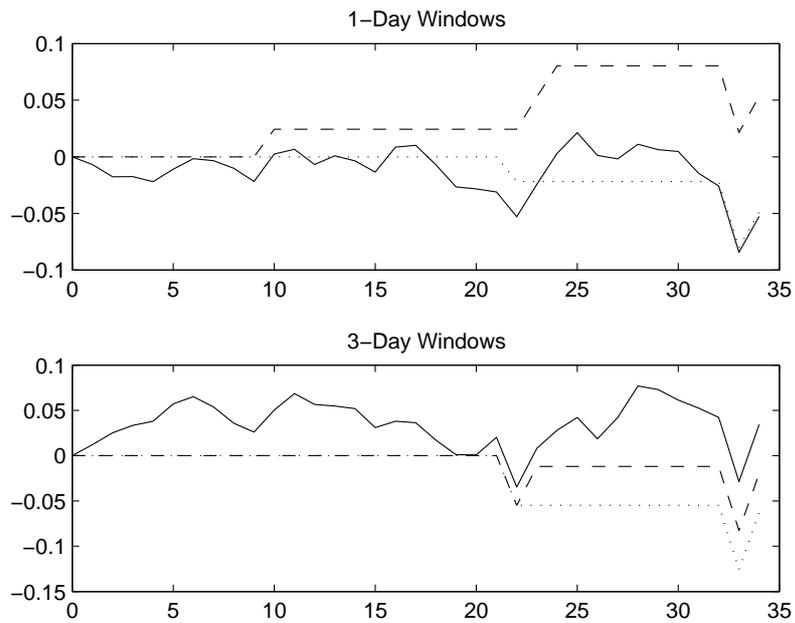the 1-day and 3-day windows.

Figure 2: **Cumulative Average Abnormal Returns.**

Cumulative average abnormal returns of the four bank stocks for each announcement using 1-day windows (top panel) and 3-day windows (bottom panel). Solid lines depict the CARs considering all announcements, dashed lines CARs considering announcements with statistically significant abnormal returns, and dotted lines CARs considering events that are statistically significant for at least two banks for both the 1-day and 3-day windows.