ZURICH—As a yearslong U.S. tax-evasion case dragged on in recent months, board members at Credit Suisse Group AG CSGN.VX +0.96% considered actions that likely would have cost Brady Dougan his job as chief executive, according to people familiar with the deliberations.

To expedite a legal settlement, Credit Suisse officials considered asking the Swiss government to implement an emergency law enabling the lender to sidestep bank-secrecy rules and hand over the names of American clients to U.S. authorities, these
people said. Board members believed such a request would mean Mr. Dougan would have to resign to appease Swiss politicians—something that seemed like a distinct possibility inside the bank until recently, they said.

Ultimately, Mr. Dougan, a 54-year-old Illinois native, dodged the bullet, further cementing the reputation as a survivor he has earned after outlasting a financial crisis and most of his fellow bank CEOs. Credit Suisse on Monday pleaded guilty in a Virginia court to aiding tax evasion and agreed to pay $2.6 billion to settle the case. Mr. Dougan remains in his role.

The fact Mr. Dougan only narrowly escaped with his job highlights the severity of the case against Credit Suisse, which U.S. authorities said spent decades helping clients dodge U.S. taxes.

But it also could prove controversial in both the U.S. and Switzerland, where some lawmakers have been pushing for executives to be held personally accountable and, in general, for tougher penalties to be imposed on wayward banks. Mr. Dougan, who became CEO in 2007, didn't preside over the Credit Suisse division that engaged in the misconduct, but U.S. authorities criticized how the bank handled the probe during Mr. Dougan's tenure.

Sen. John McCain (R., Ariz.) said in a statement that he will closely review the bank's guilty plea "to see whether it appropriately holds officers, directors and key executives individually accountable."

As part of Credit Suisse's settlement, the bank agreed to fire three employees who are currently on leave. Those were the only personnel-related concessions Credit Suisse had to make. None of the U.S. authorities pushed for Mr. Dougan to be penalized personally, according to people familiar with the matter.

"You don't just say, 'Well, you were upper management, off with your head,'" said Benjamin Lawsky, superintendent of New York's Department of Financial Services, one of the regulators that penalized Credit Suisse. "I think it has to be a careful analysis when you're talking about individuals and their lives and their careers."

A number of other bank CEOs in recent years have paid for scandals with their jobs. Barclays PLC's Bob Diamond resigned in 2012 after the British bank admitted trying to rig benchmark interest rates, and after the Bank of England and the U.K. financial regulator called for his departure. UBS AG's CEO, Oswald Grübel, stepped down from the Swiss bank in 2011 after a London trader racked up billions of dollars in losses on unauthorized trades.

Hoping to improve their chances at winning leniency, Credit Suisse officials in recent weeks dangled the possibility of disclosing their American clients' names to U.S. authorities, according to people familiar with the matter. In talks with the Justice Department, one option floated by Credit Suisse officials was asking the Swiss Parliament for an emergency exemption to the country's laws restricting the disclosure of such information, these people said.

Ultimately, the bank decided not to pursue that option, which Credit Suisse board members believed would require Mr. Dougan to lose his job in order for the bank to win support from Swiss lawmakers, these people said. Instead, as part of Monday's
settlement, Credit Suisse agreed to provide information that will help the Justice Department and the Internal Revenue Service make requests under existing treaties for account records pertaining to U.S. customers.

As the size and severity of the tax-evasion settlement came into focus, Credit Suisse board members discussed whether they should make senior management changes, according to people familiar with the board's discussions.

Brady Dougan, chief executive officer of Credit Suisse Group AG, during a TV interview in Zurich. Bloomberg News

They ultimately concluded that Mr. Dougan, who joined a Credit Suisse predecessor in 1990, wasn't responsible for the criminal activity and that replacing him now would be too disruptive to justify any potential political benefits, these people said. Plus, some directors reckoned, it would be difficult to quickly find a suitable candidate to take over the country's second-biggest bank, one person said. A Credit Suisse spokesman disputed the notion that board members discussed replacing Mr. Dougan and said "the board backs the CEO."

On Tuesday, Mr. Dougan shrugged off questions during a conference call with analysts and reporters about whether he had felt pressured to resign. He said only that he had never considered stepping aside, adding that he is "committed to Credit Suisse."

Credit Suisse's stock gained 1% Tuesday, although the shares are still about 6% below where they traded before news of the likely guilty plea and multibillion-dollar penalty was reported. Some analysts said the settlement removed a level of uncertainty that had been hanging over the bank. The positive stock reaction also might have reflected U.S. authorities' extensive efforts to cushion the blow from the guilty plea.
Prosecutors won assurances from state and federal regulators that they wouldn't strip Credit Suisse of its banking license. And the Securities and Exchange Commission on Monday granted the bank a temporary reprieve from a rule that bars firms from serving as investment advisers if they have pleaded guilty to felonies or misdemeanors. The SEC exemption staves off what Credit Suisse had warned could be a severe blow to its lucrative U.S. asset-management business.

But the bank still could feel other negative effects. Late Tuesday, Moody's Investors Service reaffirmed bank subsidiary Credit Suisse AG's senior debt rating of A1, but it changed its outlook to "negative" from "stable." The ratings firm cited, among other things, the potential for client defections.

Mr. Dougan is known as a soft-spoken Midwesterner who fits nicely into Zurich's relatively low-key financial community. He doesn't come off as excessively slick. In a city of flashy cars, Mr. Dougan drives a Toyota Prius. But he has sometimes rankled Swiss investors and politicians.

He has faced criticism from local shareholders for failing to address them in German at the bank's annual meetings.

The biggest fracas came in June 2012. The Swiss National Bank stunned Credit Suisse executives by publicly questioning whether the bank was adequately capitalized. The comments, in the central bank's financial-stability report, rocked the bank's stock and knocked billions of dollars off Credit Suisse's market value. Mr. Dougan fired back, disputing the central bank's calculations and telling a Swiss newspaper that he found the national bank's position "difficult to comprehend." The unusual public spat triggered investor and media speculation about Mr. Dougan's grasp on the job.

Nearly two years later, though, Mr. Dougan remains CEO. "He is quite the survivor," said Canaccord analyst Arun Melmane.

—Devlin Barrett and Andrew R. Johnson contributed to this article.

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