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Abstract

Prior to the Global Financial Crisis, Swiss banks made significant Swiss franc loans to financial institutions in several European countries. By the fall of 2008, many of those Swiss banks were unwilling or unable to continue refinancing those loans. In mid-September 2008, following the collapse of Lehman Brothers, short-term interest rates in the Swiss franc money market rose significantly. Banks throughout Europe, particularly in Poland and Hungary, had borrowed Swiss francs and lent them to households to buy real estate. As their domestic currencies lost value relative to the Swiss franc, a relative safe haven currency, borrowers in these countries began to default, and the lending banks lost money on the loans they had made. In October 2008, the Swiss National Bank (SNB) entered a swap arrangement with the European Central Bank (ECB) to provide Swiss franc liquidity to euro area banks. The SNB then announced similar Swiss-franc-for-euro swap arrangements with two non-eurozone central banks, the Polish central bank, Narodowy Bank Polski (NBP), in November 2008 and the Hungarian central bank, Magyar Nemzeti Bank (MNB), in January 2009. In each case, the borrowing central bank would offer Swiss francs to financial institutions within its borders in downstream auctions that coincided with the SNB's domestic auctions. For the swaps in aggregate, the peak amount outstanding during the crisis period was about 39 billion Swiss francs (CHF; USD 34 billion) in March 2009, with most of that usage coming from the ECB. The SNB, ECB, NBP, and MNB announced the end of the downstream liquidity auctions in January 2010, by which time the condition of the European banking system had improved, interbank funding rates had fallen, and the swap lines were allowed to expire.

Keywords: central bank liquidity swaps, financial crises, Global Financial Crisis, Swiss National Bank

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Overview

During the early stages of the Global Financial Crisis (GFC), European banks faced a US dollar liquidity problem. Many had financed relatively long-term assets with short-term US dollar funding. From December 2007 to mid-September 2008, the Swiss National Bank (SNB) was one of two central banks to enter a swap agreement with the Federal Reserve; the other was the European Central Bank (ECB). The SNB needed the swap agreement with the Fed to lend US dollars to financial institutions in Switzerland. After the collapse of Lehman Brothers on September 15, 2008, financial institutions across the world sought to shore up liquidity with the help of their central banks. Many needed foreign currencies because of similar short-term funding issues. In September, a dozen more central banks entered into swap arrangements with the Fed to source dollars that they could then lend to financial institutions that needed to roll over dollar liabilities (Ho and Michaud 2008; SNB 2009b). See "United States: Central Bank Swaps to 14 Countries, 2007-2009" for more info on the Fed's swap line activity during the crisis (French 2023).

However, European financial institutions needed other currencies besides dollars—particularly euros and Swiss francs. In the lead-up to the crisis, Switzerland's banking system had financed loans denominated in Swiss francs in several European countries. By the fall of 2008, many of those Swiss banks stopped refinancing those loans (SNB 2009b). Swiss franc lending was especially popular in Poland and Hungary, where a number of banks had borrowed Swiss francs and lent them to households to finance real estate purchases (Andries,

Key Terms

Purpose: To "improve liquidity in short-term Swiss franc money markets" and meet the Swiss franc funding needs of banks outside Switzerland that lacked direct access to SNB operations (SNB 2008c)

Participating Parties	Lending central bank: SNB Borrowing central banks: ECB, NBP, MNB
Type of Swap	Bilateral; reciprocal with the ECB and unidirectional with NBP and MNB
Currencies Involved	ECB, NBP, MNB: to borrow Swiss francs in exchange for euros
Launch Date	ECB: October 2008; NBP: November 2008; MNB: February 2009
End Date	ECB, NBP, MNB: January 2010
Date of First Usage	ECB: October 2008; NBP: November 2008; MNB: February 2009
Interest Rate and Fees	ECB: Spot exchange rates were based on the prevailing market rate, and that was applied to the forward leg of the transaction, with an adjustment to take into account the different interest rates on the two currencies and any fees. NBP and MNB: No info
Amount Authorized	No pre-specified limit for any of the lines
Peak Usage Amount and Date	All figures are approximate; ECB: CHF 36.5 billion in March 2009; NBP: CHF 0.8 billion in March 2009; MNB: CHF 0.9 billion in April 2009; Aggregate: CHF 39.2 billion in March 2009 *(continued)*

Fischer, and Yesin 2014; Smith and Koeppen 2010).

As local currencies lost value relative to the Swiss franc, a safe haven currency, repayment of those loans became more expensive and borrowers began to default (Smith and Koeppen 2010).

Downstream Use/Application of Swap Funds	ECB: To provide Swiss franc funding to banks in jurisdiction; NBP: To provide Swiss francs to counterparties against Polish zloty; MNB: To provide Swiss franc funding against euros to banks in jurisdiction
Outcomes	SNB balances from swap transactions against Swiss francs returned to zero by early 2010 when the downstream foreign exchange swaps ended and lines expired
Notable Features	Use of Swiss-francs-for-euros swap lines with the NBP and MNB, instead of Swiss francs for local currencies; Coordinated downstream usage via fixed-price auctions coinciding with SNB

Years earlier, in January 2003, the SNB and ECB had signed an agreement creating a standing swap arrangement that enabled the Swiss central bank to borrow euros to provide liquidity in euros to financial institutions in Switzerland. In October 2008, the two central banks amended the agreement by establishing a "temporary standing arrangement" in the other direction—to enable the ECB to provide liquidity in Swiss francs to banks in the euro area (ECB and SNB 2008; SNB 2008c). Two more Swiss franc–providing swap agreements soon followed between the SNB and the Polish central bank, Narodowy Bank Polski (NBP), in November 2008, and the Hungarian central bank, Magyar Nemzeti Bank (MNB), in January 2009. Like the ECB, the NBP and MNB used euros as collateral for their lines (SNB 2008d; SNB 2009a). In addition to the three central bank swap lines, the SNB provided Swiss franc liquidity via swaps to its normal repo counterparties (Allen and Moessner 2010). The instruction sheet issued by the SNB described them as being open to domestic and foreign banks that were eligible to access the SNB's main refinancing and fine-tuning operations, including counterparties outside of the SNB's jurisdiction (SNB 2008a).

The ECB, NBP, and MNB distributed Swiss francs drawn on their swap lines with SNB to commercial banks in their jurisdictions through downstream, fixed-price auctions that coincided with those organized by the SNB (Allen and Moessner 2010). The ECB's downstream auctions allowed ECB counterparties to submit bids for the euro amount they wished to swap for Swiss francs at a fixed price based on market exchange rates. The national central banks of the Eurosystem then acted as administrative entities and channeled the funds to the financial institutions in their jurisdictions by first entering into their own swap with the ECB. The system allowed the same set of rules to apply to the entirety of the Eurosystem's downstream Swiss franc liquidity operations (ECB 2008a). The ECB's October 2008 agreement with the SNB did not set a limit on total draws that the ECB could make on behalf of euro-area financial institutions (ECB and SNB 2008). However, the press release announcing the agreement said that the SNB and ECB would announce a specific maximum allotment for the seven-day downstream foreign exchange swaps in advance of each weekly downstream auction. Therefore, the size of ECB draws was effectively limited by maximum allotments for the downstream auctions that the ECB set in consultation with the SNB (ECB

2009). The swap arrangement between the SNB and ECB to provide Swiss franc liquidity, which was created by the amendment to the 2003 agreement, was first set to last until at least January 2009 (SNB 2008c).

The November 2008 swap line between the SNB and NBP allowed Poland's central bank to draw Swiss francs against euros. The purpose of the swap was for the NBP to provide Swiss francs to banks in its jurisdiction with funding needs. Like the ECB line, the NBP arrangement was meant to be in place until at least January 2009. In addition to announcing the creation of the swap line between the two central banks, the press release also announced that the NBP would be joining the weekly foreign exchange swap operations of the SNB and the Eurosystem. Effectively that meant the NBP would be using the swap line to fund weekly liquidity auctions targeting banks in its jurisdiction, and that the auctions where said banks could bid for funds would coincide with those of the SNB and the ECB (Allen and Moessner 2010; SNB 2008d).

The SNB's January 2009 press release announcing the swap line with the MNB stated that it was similar to the agreements with the ECB and NBP and would allow the MNB to offer Swiss-franc-for-euro funding to financial institutions in Hungary via foreign exchange swaps. As with the NBP, the press release also stated that the MNB would be joining the weekly downstream foreign exchange operations conducted under the umbrella of the SNB. The MNB's annual report said the swap agreement enabled the MNB "to provide Swiss franc liquidity through EUR/CHF fixed rate swap tenders with maturity of one week" (MNB 2010; SNB 2009a). The line with the MNB was intended to last until at least the end of April 2009.

The central banks extended the swap agreements several times (MNB 2009b; MNB 2009c; MNB 2009d). The SNB, along with the ECB, NBP, and MNB, announced in January 2010 that the EUR/CHF downstream foreign exchange swaps operations would end that month. The SNB's 2010 annual report confirmed that the swap arrangements ended in January 2010 as well. The press release stated that Swiss franc funding conditions had improved and there was less demand for liquidity via that type of operation. The press release also said domestic and foreign banks domiciled in Switzerland could continue to access Swiss franc liquidity through the Swiss franc repo system and the interbank market (SNB 2010a). Foreign banks in Switzerland had been able to participate in the SNB's repo transactions since 1999 (IMF 2009). Amounts outstanding under the swap lines fell to zero by February 2010 (SNB 2022).

The SNB's swap line with the ECB was bilateral and reciprocal, while its lines with the NBP and MNB were bilateral and unidirectional, meaning the SNB could not draw funds through them. The ECB line was really the amendment to the 2003 SNB-ECB arrangement. The two swap lines with the NBP and MNB and the amendment to the ECB line gave the borrowing central banks the ability to access Swiss francs in exchange for euros, whereas the 2003 swap agreement between the SNB and ECB gave the SNB the ability to draw euros in exchange for Swiss francs (SNB 2008c; SNB 2008d; SNB 2009a).

The SNB's goal in its lender-centric series of swap lines was to improve liquidity in the international Swiss franc market. The SNB did not publish separate usage figures for its three swap lines but instead reported only the aggregate amount outstanding across its swap lines and its domestic auctions. Neither the ECB, NBP, nor MNB released their own figures (Andries, Fischer, and Yesin 2014). Allen and Moessner (2010) estimated the amounts of Swiss francs outstanding under each of the swap lines and the SNB's own Swiss franc auctions. They used the SNB's "Balances from swap transactions against CHF" balance sheet item and individual auction results that had been published at the time. Their calculation leaves a residual of any amounts the ECB, MNB, and NBP drew on their swaps but didn't distribute minus anything they distributed. The result shows a peak amount outstanding of about CHF 39 billion (USD 34 billion)[3] (Allen and Moessner 2010). The ECB accounted for most of the usage among the three central banks. See Figure 1 for information on swap line usage from their paper. The table shows the amount of Swiss francs the SNB provided via euro-for-Swiss-franc swaps by counterparty central bank, including the SNB's own domestic auctions.

[3] Per FRED, USD 1 = CHF 1.14 on March 31, 2009.

Figure 1: Approximate Swiss Franc Swap Usage by Downstream Liquidity Provider

Amounts of Swiss Francs Provided by the SNB via Swaps (in Billions)

	Total ex SNB	Total ex SNB	SNB	ECB	NBP	MNB	Residue
Date	CHF	USD	USD	USD	USD	USD	USD
10/31/2008	20.2	17.3	15.9	16.1			1.1
11/30/2008	23.1	19.0	19.1	17.9	0.2		1.0
12/31/2008	28.0	26.2	21.0	24.4	0.5		1.4
1/31/2009	32.9	28.3	15.6	26.4	0.5		1.3
2/28/2009	39.2	33.6	19.4	31.0	0.3	0.7	1.6
3/31/2009	39.2	34.4	20.2	32.0	0.7	0.7	1.1
4/30/2009	38.5	33.8	13.3	31.4	0.3	0.8	1.4
5/31/2009	38.3	35.8	21.1	33.8	0.2	0.6	1.1
6/30/2009	33.5	30.8	13.8	28.1	0.2	0.5	2.0
7/31/2009	20.5	19.2	10.8	17.7	0.2	0.1	1.3
8/31/2009	16.9	16.0	11.8	14.7	0.2	0.0	1.1
9/30/2009	10.5	10.1	1.7	9.5	0.1	0.0	0.6

Note: Total ex SNB is the sum of the SNB's CHF–EUR swap operations not including the SNB's own domestic operations. Data is as of the end of the month. USD amounts were converted from CHF using applicable spot rates from the Board of Governors of the Federal Reserve System, accessed through FRED. Gray cells denote periods where no swap arrangement existed; the NBP line was established in November 2008, and the MNB line was established in February 2009.

Source: Allen and Moessner 2010; author's calculations.

Summary Evaluation

The International Monetary Fund's (IMF) 2009 Article IV report said the SNB's monetary policy during the crisis had a positive impact in a challenging environment (IMF 2009). Allen and Moessner wrote that the SNB's swap facilities were probably motivated in part by concern about the Swiss franc appreciating too much in addition to concern about credit markets. They also describe the purpose of the swaps as enabling foreign central banks to provide domestic banks with Swiss francs and say that doing so was expected to help the SNB bring their policy rate within its target range, since the strong demand for Swiss francs was putting upward pressure on the LIBOR rate (Allen and Moessner 2010). The 2010 IMF Article IV report said Switzerland survived the global downturn well relative to most industrial countries and pointed to supportive macroeconomic and financial policies as part of the reason (IMF 2010). A 2014 paper from SNB officials used stock prices to show the SNB swap lines had a positive impact on banks in Central and Eastern Europe (Andries, Fischer, and Yesin 2014). The *Wall Street Journal* reported the end of the liquidity operations in January 2010 as a sign of improving conditions in the European banking system and money markets (Smith and Koeppen 2010).

Context: Switzerland 2008–2009		
GDP (SAAR, nominal GDP in USD)		$567.3 billion in 2008
		$554.2 billion in 2009
GDP per capita (SAAR, nominal GDP in USD)		$74,175 in 2008
		$71,568 in 2009
Sovereign credit rating (five-year senior debt)	2008	Moody's: Aaau
		S&P: AAA
		Fitch: AAAu
	2009	Moody's: Aaau
		S&P: AAA
		Fitch: AAAu
Size of banking system		$894.0 billion in 2008
		$922.3 billion in 2009
Size of banking system as a % of GDP		157.6% in 2008
		166.4% in 2009
Size of banking system as a % of financial system		Data not available in 2008
		Data not available in 2009
Five-bank concentration of banking system		94.6% in 2008
		93.2% in 2009
Foreign involvement in banking system		5% in 2008
		6% in 2009
Existence of deposit insurance		Yes in 2008
		Yes in 2009
Sources: Bloomberg; World Bank Global Financial Development Database; World Bank Deposit Insurance Dataset.		

Key Design Decisions

1. **Purpose and Type: The SNB entered into a series of bilateral swap lines that were reciprocal with the ECB, and unidirectional with the NBP and the MNB, to provide Swiss franc funding downstream to banks in their jurisdictions.**

The SNB provided Swiss franc liquidity to the ECB, NBP, and MNB, which were then able to offer the funds to banks in their jurisdictions via weekly auctions that coincided with the SNB's own swaps to domestic and foreign banks that were its normal repo counterparties (Allen and Moessner 2010; SNB 2010b). The SNB's goal in establishing the swap lines was to supply Swiss franc liquidity to banks operating outside Switzerland that had Swiss franc funding needs. The SNB intended for the swaps to meet the strong foreign demand for Swiss francs and to address the illiquidity in the international Swiss franc money market. Central and Eastern European banks in particular had extended a significant number of loans in Swiss francs that they had financed by borrowing short-term from Swiss banks. When the Swiss banks pulled their funding during the financial crisis, many European banks, especially smaller Eastern European ones that generally had less involvement in Swiss payment systems, did not have access to the SNB's domestic crisis-era liquidity operations (Andries, Fischer, and Yesin 2014). A few large Western European banks had accounts with the SNB and could access Swiss franc liquidity directly, while the Eastern European banks that had financed Swiss franc mortgage loans and were now facing liquidity issues were less likely to have access to the SNB's operations. The swap lines allowed the SNB to have a central bank as its counterparty in each transaction, and that central bank could then allocate the Swiss franc liquidity and take on the risk of dealing with local banks. That structure helped with providing liquidity to banks with lower credit ratings than the SNB would want to transact with directly.

2. **Part of a Package: The SNB took various other measures to address liquidity inside and outside of Switzerland, including Swiss franc–euro foreign exchange swaps targeting domestic and foreign banks.**

The SNB relaxed monetary policy early in the crisis and then turned to offering more longer-term repos, purchasing Swiss franc bonds issued by the private sector and buying foreign currency via the open market (IMF 2009). The SNB also stepped in to provide financing for the transfer of illiquid assets from UBS, a large Swiss bank with global operations, to a special purpose vehicle. Additionally, the central bank lent Swiss francs in exchange for euros to eligible commercial banks[4] (SNB 2008a). The SNB held its own euro–Swiss franc swap auctions for domestic and foreign banks in addition to having the swap lines with the ECB, NBP, and MNB (SNB 2009a; SNB 2009b).

[4] See Key Design Decision No. 5, Administration, for more information on bank eligibility for SNB foreign exchange swaps.

3. Legal Authority: The SNB has authority to use currency swaps under Article 9, Paragraph 1 of the National Bank Act.

Article 9, Paragraph 1 of the National Bank Act gives the SNB the ability to use spot and forward foreign exchange transactions and currency swaps (SNB 2003; SNB 2010b).

4. Governance: Members of the Governing Board of the SNB agreed to the SNB and ECB swap amendment.

The SNB's supervisory and executive bodies are the Bank Council and the Governing Board. The Bank Council oversees and controls business at the SNB, while the Governing Board is responsible for monetary policy, asset management strategy, international monetary cooperation, and the stability of the financial system, as well as representing the bank to the public (SNB n.d.b; SNB n.d.c). The SNB's press releases and annual reports do not specify which body had to approve the swap lines, but members of the Governing Board were listed as signees to the October 15, 2008, amendment to the SNB-ECB swap arrangement (ECB and SNB 2008; SNB 2008c).

The SNB reported the swap lines in its annual reports but provided only the aggregate usage numbers across the three borrowing central banks (Andries, Fischer, and Yesin 2014; SNB 2010b). The ECB's 2009 annual report discussed the swap line with the SNB and the Eurosystem's downstream foreign exchange swaps and mentioned that the Eurosystem conducted 51 Swiss franc–providing operations at seven-day maturities during 2009, consistent with the weekly auction schedule described in the press releases (ECB 2010). The NBP reported on downstream lending in its annual report (NBP 2010). The MNB discussed the swap agreement and the downstream lending in its annual report (MNB 2010).

5. Administration: The SNB coordinated with the ECB, NBP, and MNB on the downstream uses of funds in each of their jurisdictions.

When the SNB first announced its swap agreement with the ECB, it said the SNB and ECB would provide Swiss francs to euro-area financial institutions in return for euros. The press release noted that the two central banks had entered into a swap arrangement through which the ECB would access Swiss francs to lend to euro-area banks (SNB 2008c).

For the Poland and Hungary press releases, the SNB announced swap lines with each central bank and said that the NBP and MNB would join the weekly foreign exchange swap operations "conducted under the umbrella of the SNB" (SNB 2008d; SNB 2009a). The MNB said the swap agreement enabled it to provide Swiss franc liquidity through the one-week maturity swap tenders (MNB 2010).

In October 2008, the SNB issued instruction sheets for participation in the bank's domestic weekly auctions (SNB 2008a; SNB 2008b). The SNB's auctions were accessible by its normal commercial repo counterparties (Allen and Moessner 2010).

The ECB offered its downstream foreign exchange swaps via fixed-price auctions that were open to counterparties eligible for US dollar foreign exchange swap tenders or that were eligible under Annex 3 of the General Documentation on Eurosystem Monetary Policy Instruments and Procedures (ECB 2008a). The 2006 version of that document describes the selection as mainly being based on prudence and efficiency (ECB 2006). Those categories included creditworthiness of, quality of information provided by, and reputation of the potential counterparty. While the ECB's instruction sheet specifies a minimum bid of EUR 1 million, there was no maximum bid given. The ECB's annual report states that the maximum allotment amounts for the downstream auctions were determined by the ECB in coordination with the SNB (ECB 2010).

The ECB's 2008 annual report stated that the ECB drew Swiss francs from its swap line and simultaneously entered into swaps with national central banks (NCBs) of the Eurosystem. Those NCBs then used the funds to provide Swiss franc liquidity against euros to euro-area financial institutions (ECB 2009). The weekly downstream swap offerings allowed one set of rules to apply to the entirety of the Eurosystem and leveraged the NCBs as administrative entities (ECB 2008a).

In 2009 the NBP's downstream foreign exchange swaps were offered weekly, at seven-day-maturity, and in Swiss francs for Polish zloty, US dollars for Polish zloty, or euros for zloty. The Swiss-franc-for-Polish-zloty swaps saw the highest demand from banks (NBP 2010).

The MNB offered seven-day-maturity Swiss-franc-for-euro swaps to its domestic institutions. The MNB also offered euro-for-Hungarian-forint swaps to provide liquidity domestically in euros with terms of three and six months (MNB 2010).

On its balance sheet, the SNB reported collateral from the 2008 and 2009 swap arrangements under "balances from swap transactions against Swiss francs" (SNB n.d.a; SNB 2022).

6. Communication: The SNB announced the swap agreements via press releases.

The SNB announced the swap lines via press releases with each release also announcing downstream foreign exchange swaps (SNB 2008c; SNB 2008d; SNB 2009a).

The press release language, particularly with the SNB and ECB agreement, emphasized the close collaboration between the central banks with statements like "the Swiss National Bank (SNB) and the European Central Bank (ECB) are jointly announcing measures to improve liquidity." In the same press release that the SNB announced the revised swap agreement with the ECB, it also announced that the SNB and the Eurosystem would together offer Swiss franc–euro swaps to euro-area banks in a weekly foreign exchange swap facility (SNB 2008c). The ECB and MNB issued press releases announcing their respective swap agreements around the same time as the SNB, while the NBP's press release is dated about two months after the SNB announcement, when the arrangement was already underway (ECB 2008b; MNB 2009a; NBP 2009).

The SNB's press release announcing the swap line with the ECB mostly contained details on the downstream lending, including the rates that would be used for the swap points[5] on the downstream activities[6] (SNB 2008c).

The four central banks also jointly announced the end of the downstream foreign exchange swaps (SNB 2010a).

7. Eligible Institutions: The first swap agreement was between the SNB and the ECB, followed by the SNB and NBP agreement and then the SNB and MNB.

The swap lines were between the SNB as the lending bank and the ECB, NBP, and MNB as borrowing banks (SNB 2010b). The line with the ECB was launched in October 2008 alongside the launch of the SNB's domestic Swiss franc lending facility and the ECB's downstream lending (SNB 2008c). The NBP swap was launched in November 2008, and the MNB swap was launched in February 2009 (SNB 2008d; SNB 2009a).

Some foreign banks participating in the SNB's repo operations could access Swiss franc liquidity directly from the SNB through Swiss-franc-for-euro foreign exchange swap operations (SNB 2008a). The SNB entered into the swap agreements with the ECB, NBP, and MNB to enable those central banks to extend Swiss franc liquidity to financial institutions within their jurisdictions that had Swiss franc funding needs (SNB 2008c; SNB 2008d; SNB 2009a).

8. Size: The SNB did not announce limits on the sizes of the swap lines, but their size was effectively controlled by the maximum allotments the ECB and MNB set for the downstream auctions. The NBP did not report a maximum allotment for its downstream auctions.

There was no specified size for the central bank swap lines. The earlier 2003 swap agreement between the ECB and SNB that the 2008 agreement amended did provide a maximum size of EUR 10 billion for the amount of euro liquidity that the SNB could access (ECB and SNB 2003).

For the ECB's downstream lending, the foreign exchange swaps were offered with maximum amounts of EUR 20 billion for seven-day operations and EUR 5 billion for 84-day operations. The ECB said in its annual report that it determined the size of the swaps in coordination with the SNB (ECB 2009). If the aggregate amount of bids exceeded the allotted amount, the SNB and ECB would allocate swaps to banks on a pro rata basis (SNB 2008c).

The MNB reported that its Swiss-franc-for-euro swap tenders for its domestic banks had maximum amounts of EUR 5 billion per week for seven-day maturity operations (MNB

[5] Generally, swap points, also referred to as "forward points" or the "forward spread" are the number of basis points added to or subtracted from the spot rate to determine the forward rate for a specific date in the future (Chen 2020).

[6] The press release described the swap points as being "calculated using the rate applied in main refinancing operations of the ECB and the SNB 1-week repo rate plus 25 basis points" (SNB 2008c).

2010). The NBP did not report a maximum size for its weekly Swiss-franc-for-Polish-zloty auctions targeting domestic banks in its annual report (NBP 2010).

9. Process for Utilizing the Swap Agreement: The foreign central banks placed bids for Swiss francs at the SNB's fixed-price and fixed-term auction, and the two central banks then agreed on terms.

Under the October 2008 amendment to the January 2003 SNB and ECB swap agreement, the parties had to mutually agree to enter into swap transactions. The amendment specifically allowed the ECB to buy Swiss francs from the SNB in exchange for euros and simultaneously enter a forward transaction to sell back the Swiss francs on a maturity date specified upfront (ECB and SNB 2008).

When one of the foreign central banks wanted to draw on its swap line, it would place a bid at the SNB's auction. After the two parties agreed to initiate a draw, the central banks would agree to the amount, value date, exchange rate, maturity date, applicable interest rates, and applicable swap points. On the value date, the Swiss francs would be credited to the ECB's account at the SNB and the euros would be credited to the SNB's account at the ECB. On the maturity date, the euros were then repaid including any interest to the ECB through the SNB's account (ECB and SNB 2008). The difference between the exchange rate used on the value date and the maturity date reflected the forward points or swap points.

10. Downstream Use of Borrowed Funds: The swaps were used to offer Swiss francs to counterparties in the borrowing central bank's jurisdiction.

The ECB, NBP, and MNB offered Swiss franc funds to banks in their jurisdictions via weekly auctions that coincided with the SNB's own swap auctions for banks that were its repo counterparties (Allen and Moessner 2010; SNB 2010b). The swap agreements did not govern the downstream operations, and the borrowing central banks were largely responsible for allocating the Swiss francs.

The ECB provided one-week and three-month Swiss franc funding to banks in its jurisdiction by drawing Swiss francs from its swap line and simultaneously entering into swaps with the NCBs (SNB 2008c). Those NCBs then used the funds to provide Swiss franc liquidity against euros to euro-area financial institutions (ECB 2009).

Under the SNB's swap lines, the central banks of Poland and Hungary had to swap euros for Swiss francs rather than their local currencies (SNB 2008d; SNB 2009a). The NBP lent Swiss francs to banks in its jurisdiction in return for zloty. The MNB lent Swiss francs to banks in return for euros, although there's no information regarding whether or not that was required by the SNB. The MNB would only accept euros from commercial financial institutions, whereas NBP accepted Polish zloty in exchange for euros. However, Hungarian banks could access euros through euro–Hungarian forint swaps offered by the MNB (MNB 2010). The MNB and NBP also had repo agreements with the ECB (ECB 2009).

The NBP's 2009 downstream foreign exchange swaps were offered weekly, at seven-day-maturity, and in Swiss francs for Polish zloty, US dollars for zloty, or euros for zloty (NBP

2010). The NBP also offered US dollars for zloty and euros for zloty on a monthly basis with a 28-day maturity. The MNB offered seven-day-maturity Swiss-franc-for-euro swaps on their domestic markets (MNB 2010).

11. Duration of Swap Draws: The ECB, NBP, and MNB offered swaps with a one-week maturity; the ECB later also offered swaps with a three-month (84-day) maturity.

The SNB's swaps with the three central banks initially all had a one-week duration. The ECB later introduced a three-month (84-day) swap to address "tensions in this segment of the Swiss franc money markets" (ECB 2009).

12. Rates and Fees: The swaps and downstream auctions were set at fixed prices based on prevailing exchange rates.

SNB swap transactions use the same exchange rate for the spot and forward rates but with a discount or premium to account for the spread between the interest rates on the two currencies, called the swap points. In effect, the borrowing central bank pays the rate of interest on the currency they borrow and receives the interest rate on the currency they lent in exchange (SNB n.d.a). In the ECB swap line, the agreement states that the spot exchange rate would be based on the prevailing market spot rate, while the forward exchange rate would equal the spot exchange rate plus or minus forward swap points. Once the SNB and ECB agreed to a drawing, they would agree to the exchange rate and fees, along with other specifics (ECB and SNB 2008). Documentation was not available for the swap lines with the NBP or MNB, but their press releases noted that their Swiss franc auctions would also be based on fixed prices, similar to the SNB-ECB arrangement.

13. Balance Sheet Protection: If the ECB failed to repay Swiss francs at the maturity date, any amount owed would be rolled into a new overnight swap transaction with the interest rate and exchange rate being mutually agreed to by the ECB and SNB. No information was found regarding the NBP or MNB.

If the ECB failed to repay any amount of Swiss franc on the maturity date, the unpaid amount maturing on that date would be rolled over into a new overnight swap, and the ECB would credit the SNB account with that amount in euros. The two central banks would mutually agree to the interest rate and exchange rate for the roll-over draw (ECB and SNB 2008).

14. Other Restrictions: The documentation doesn't reveal other restrictions.

The documentation doesn't reveal other restrictions.

15. Other Options: The SNB did not enter into a swap agreement with the Bank of England despite the United Kingdom's having a similar Swiss franc shortage.

In December 2008, the four economies with the largest Swiss franc shortages according to the "net outstanding Swiss franc cross-border claims" measure were the euro area, Poland, the United Kingdom, and Hungary, in that order. The SNB extended Swiss franc swap lines to the euro area, Poland, and Hungary, but not to the United Kingdom (Allen and Moessner 2010).

16. Exit Strategy: The swaps were extended several times before ending in January 2010.

The initial swap agreement with the ECB said the measure would be in place "as long as needed, at least until January 2009" (SNB 2008c). In January 2009, the SNB and MNB announced their swap agreement (SNB 2009a). The agreements between the SNB and the ECB, NBP, and MNB were then extended in April, June, and September of 2009 (MNB 2009b; MNB 2009c; MNB 2009d). The SNB, along with the three borrowing central banks, announced on January 18, 2010, that because conditions in the Swiss franc funding market had improved and the demand for liquidity had declined, the last downstream foreign exchange swap operation would be conducted on January 25, 2010. The press release said banks domiciled in Switzerland could continue to access Swiss franc liquidity through the Swiss franc repo system and the interbank market (SNB 2010a). The SNB's 2010 annual report confirmed that the swap arrangements ended in January 2010 as well (SNB 2011).

References and Key Program Documents

Summary of Program.

(SNB n.d.a) Swiss National Bank (SNB). n.d.a. "Questions and Answers on Foreign Exchange Swaps in Swiss Francs." Accessed September 26, 2022.
FAQ page on SNB site answering various questions on foreign exchange swaps.
https://ypfs.som.yale.edu/node/22288

Implementation Documents.

(ECB 2008a) European Central Bank (ECB). 2008a. "Tender Procedure for the Provision of Swiss Francs to Eurosystem Counterparties Through FX Swap Operations." November 4, 2008.
ECB document describing the provision of Swiss franc funding to Eurosystem counterparties by Eurosystem central banks.
https://ypfs.som.yale.edu/node/22261/

(ECB and SNB 2003) European Central Bank and Banque Nationale Suisse (ECB and SNB). 2003. "Euro-Swiss Franc Swap Agreement." January 23, 2003.
Document detailing the 2003 Euro-Swiss franc swap agreement between the ECB and SNB.
https://ypfs.som.yale.edu/node/22861

(ECB and SNB 2008) European Central Bank and Banque Nationale Suisse (ECB and SNB). 2008. "Amendment to the Euro-Swiss Franc Swap Agreement." October 15, 2008.
Document describing the 2008 amendment to the 2003 swap agreement between the ECB and SNB.
https://ypfs.som.yale.edu/node/22263

(SNB 2008a) Swiss National Bank (SNB). 2008a. "Instruction Sheet on Participation in EUR/CHF Foreign Exchange Swaps of the Swiss National Bank." October 16, 2008.
Instruction sheet describing the Swiss National Bank's EUR/CHF foreign exchange swaps and how to participate.
https://ypfs.som.yale.edu/node/22277/

(SNB 2008b) Swiss National Bank (SNB). 2008b. "Instruction Sheet on Participation in EUR/CHF Foreign Exchange Swaps of the Swiss National Bank." October 29, 2008.
Instruction sheet describing the Swiss National Bank's EUR/CHF foreign exchange swaps and how to participate.
https://ypfs.som.yale.edu/node/22278

Legal/Regulatory Guidance.

(SNB 2003) Swiss National Bank (SNB). 2003. "Federal Act on the Swiss National Bank (National Bank Act)." October 3, 2003.
Federal Act covering the Swiss National Bank.
https://ypfs.som.yale.edu/node/22275/

Media Stories.

(Smith and Koeppen 2010) Smith, Geoffrey T., and Nina Koeppen. 2010. “Swiss Bank Will Stop Providing Liquidity to European Markets.” *Wall Street Journal*, January 18, 2010.
Article about the end of the SNB’s swap lines to the ECB, MNB, and NBP.
https://ypfs.som.yale.edu/node/22274

Press Releases/Announcements.

(ECB 2006) European Central Bank (ECB). 2006. “The Implementation of Monetary Policy in the Euro Area—September 2006.” Press release, September 2006.
ECB document containing general documentation on Eurosystem monetary policy instruments and procedures.
https://ypfs.som.yale.edu/node/22259

(ECB 2008b) European Central Bank (ECB). 2008b. “Swiss National Bank and European Central Bank Cooperation to Provide Swiss Franc Liquidity.” Press release, October 15, 2008.
ECB press release announcing the SNB and ECB swap agreement.
https://ypfs.som.yale.edu/node/22260

(MNB 2009a) Magyar Nemzeti Bank (MNB). 2009a. “Swiss National Bank and Magyar Nemzeti Bank Cooperate to Provide Swiss Franc Liquidity.” Press release, January 28, 2009.
MNB press release announcing the SNB and MNB swap agreement.
https://ypfs.som.yale.edu/node/22267

(MNB 2009b) Magyar Nemzeti Bank (MNB). 2009b. “The Swiss National Bank, the European Central Bank, the Narodowy Bank Polski and the Magyar Nemzeti Bank Will Continue One-Week EUR/CHF Foreign Exchange Swap Operations.” Press release, April 27, 2009.
MNB press release announcing the continuation of the SNB and MNB foreign exchange swap operations until at least the end of July 2009.
https://ypfs.som.yale.edu/node/22268/

(MNB 2009c) Magyar Nemzeti Bank (MNB). 2009c. “The Swiss National Bank, the European Central Bank, the Narodowy Bank Polski and the Magyar Nemzeti Bank Will Continue One-Week EUR/CHF Foreign Exchange Swap Operations.” Press release, June 25, 2009.
MNB press release announcing the continuation of the SNB and MNB foreign exchange swap operations until at least October 31, 2009.
https://ypfs.som.yale.edu/node/22269

(MNB 2009d) Magyar Nemzeti Bank (MNB). 2009d. “The Swiss National Bank, the European Central Bank, the Narodowy Bank Polski and the Magyar Nemzeti Bank Continue to Provide Swiss Francs through EUR/CHF Foreign Exchange Swaps until the End of January 2010.” Press release, September 24, 2009.
MNB press release announcing the continuation of the SNB and MNB foreign exchange swap

operations until the end of January 2009.
https://ypfs.som.yale.edu/node/22270

(NBP 2009) Narodowy Bank Polski (NBP). 2009. "Swiss National Bank, European Central Bank and Narodowy Bank Polski Cooperation to Provide Swiss Franc Liquidity." Press release, January 16, 2009.
NBP press release announcing the ECB and NBP swap agreement.
https://ypfs.som.yale.edu/node/22272

(SNB 2008c) Swiss National Bank (SNB). 2008c. "Swiss National Bank and European Central Bank Cooperate to Provide Swiss Franc Liquidity." Press release, October 15, 2008, October 15, 2008.
Press release announcing the swap agreement between the SNB and the ECB.
https://ypfs.som.yale.edu/node/22276

(SNB 2008d) Swiss National Bank (SNB). 2008d. "Swiss National Bank and Narodowy Bank Polski Cooperate to Provide Swiss Franc Liquidity." Press release, November 7, 2008.
Press release announcing the swap agreement between the SNB and the NBP.
https://ypfs.som.yale.edu/node/22279

(SNB 2009a) Swiss National Bank (SNB). 2009a. "Swiss National Bank and Magyar Nemzeti Bank Cooperate to Provide Swiss Franc Liquidity." Press release, January 28, 2009.
Press release announcing the swap agreement between the SNB and the MNB.
https://ypfs.som.yale.edu/node/22280

(SNB 2010a) Swiss National Bank (SNB). 2010a. "Swiss National Bank Discontinues EUR/CHF Foreign Exchange Swaps." Press release, January 18, 2010.
SNB press release announcing the end of the EUR/CHF swap arrangements.
https://ypfs.som.yale.edu/node/22282

Reports/Assessments.

(Chen 2020) Chen, James. 2020. "Forward Points," December 26, 2020.
Forward points are the number of basis points added to or subtracted from the current spot rate to determine the forward rate.
https://ypfs.som.yale.edu/node/22258/

(ECB 2009) European Central Bank (ECB). 2009. "Annual Report 2008," February 1, 2009.
ECB annual report covering 2008.
https://ypfs.som.yale.edu/node/22262

(ECB 2010) European Central Bank (ECB). 2010. "Annual Report 2009," 2010.
ECB annual report covering 2009.
https://ypfs.som.yale.edu/node/20065

(Ho and Michaud 2008) Ho, Corrinne, and François-Louis Michaud. 2008. "Central Bank Measures to Alleviate Foreign Currency Funding Shortages." December 8, 2008.

BIS report on central bank measures during 2008, extract from pages 14-15 of BIS Quarterly Review, December 2008.
https://ypfs.som.yale.edu/node/22264

(IMF 2009) International Monetary Fund (IMF). 2009. "Switzerland: 2009 Article IV Consultation—Staff Report; Public Information Notice on the Executive Board Discussion; and Statement by the Executive Director for Switzerland." May 26, 2009.
IMF Article IV report covering Switzerland.
https://ypfs.som.yale.edu/node/22265/

(IMF 2010) International Monetary Fund (IMF). 2010. "Switzerland: 2010 Article IV Consultation—Staff Report; Public Information Notice on the Executive Board Discussion; and Statement by the Executive Director for Switzerland." May 20, 2010.
IMF Article IV report covering Switzerland during 2009.
https://ypfs.som.yale.edu/node/22266

(MNB 2010) Magyar Nemzeti Bank (MNB). 2010. "Annual Report 2009." April 6, 2010.
Annual report covering 2009.
https://ypfs.som.yale.edu/node/22271

(NBP 2010) Narodowy Bank Polski (NBP). 2010. "Annual Report 2009." 2010.
NBP annual report covering 2009.
https://ypfs.som.yale.edu/node/22273

(SNB 2009b) Swiss National Bank (SNB). 2009b. "Swiss National Bank, 101st Annual Report, 2008." March 9, 2009.
Annual report covering 2008 from the SNB.
https://ypfs.som.yale.edu/node/22281

(SNB 2010b) Swiss National Bank (SNB). 2010b. "Swiss National Bank, 102nd Annual Report, 2009." February 26, 2010.
Annual report covering 2009 from the SNB.
https://ypfs.som.yale.edu/node/22284

(SNB 2011) Swiss National Bank (SNB). 2011. "Swiss National Bank, 103rd Annual Report, 2010." February 25, 2011.
SNB annual report covering 2010.
https://ypfs.som.yale.edu/node/22416

(SNB 2022) Swiss National Bank (SNB). 2022. "Balance Sheet Items of the SNB." Dataset, August 31, 2022.
SNB data tracking balances from swap transactions against CHF.
https://ypfs.som.yale.edu/node/22285/

(SNB n.d.b) Swiss National Bank (SNB). n.d.b. "Information About the SNB." Accessed October 17, 2022.
SNB web page containing info including goals and responsibilities, structure and organization, and legal basis of the SNB.
https://ypfs.som.yale.edu/node/22286

(SNB n.d.c) Swiss National Bank (SNB). n.d.c. "Information About the SNB - Questions and Answers on the SNB as a Company." Accessed October 21, 2022.
Web page containing Q/A on the SNB's operations and governance.
https://ypfs.som.yale.edu/node/22287/

Key Academic Papers.

(Allen and Moessner 2010) Allen, William A., and Richhild Moessner. 2010. "Central Bank Co-Operation and International Liquidity in the Financial Crisis of 2008-9." BIS Working Paper No 310, May 2010.
Overview of central bank responses to the GFC.
https://ypfs.som.yale.edu/node/19791

(Andries, Fischer, and Yesin 2014) Andries, Alin Marius, Andreas M. Fischer, and Pinar Yesin. 2014. "The Impact of International Swap Lines on Stock Returns of Banks in Emerging Markets." Swiss National Bank, November.
Paper mainly analyzing Swiss National Bank swap lines to Central and Eastern European countries during the Global Financial Crisis.
https://ypfs.som.yale.edu/node/22257/

(French 2023) French, Jack. 2023. "United States: Central Bank Swaps to 14 Countries, 2007–2009." *Journal of Financial Crises* 5, no. 1.
Case study describing the Fed's swap lines with 14 central banks during the Global Financial Crisis.
https://elischolar.library.yale.edu/journal-of-financial-crises/vol5/iss1/20