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Hungary: Liquidity Scheme[1]

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Abstract

Amid the global credit crunch in late 2008, foreign investors dumped Hungarian assets, the Hungarian forint (HUF) depreciated, and liquidity deteriorated in the Hungarian banking sector due to the prevalence of short-term, foreign currency-denominated liabilities. On March 10, 2009, the Hungarian government established a scheme to provide up to HUF 1.1 trillion (USD 4.9 billion) in foreign exchange liquidity to domestic credit institutions and subsidiaries of foreign banks. The government used funds provided by the International Monetary Fund (IMF) and European Union (EU) in October 2008, a USD 25.1 billion package to provide Hungary with sufficient foreign exchange reserves to meet broad external, foreign-currency obligations. Earlier efforts to establish voluntary guarantees and recapitalizations for Hungarian banks using the IMF-EU funds were unsuccessful, and markets remained concerned about the liquidity of Hungary's banks. By January 2010, the liquidity scheme had lent HUF 690 billion (USD 3 billion) to three domestic banks. Over the next four years, the EC repeatedly reapproved the scheme for six-month extensions, although the facility did not originate any further loans. The scheme was finally allowed to expire on June 30, 2013.

Keywords: broad-based emergency liquidity, European Commission, Hungary, IMF, Magyar Nemzeti Bank

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[1] This case study is part of the Yale Program on Financial Stability (YPFS) selection of New Bagehot Project modules considering broad-based emergency lending programs. Cases are available from the *Journal of Financial Crises* at https://elischolar.library.yale.edu/journal-of-financial-crises/

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Overview

As turmoil spread in global markets, during the Global Financial Crisis, international investors dumped Hungarian government bonds and other assets. The sharp exchange rate depreciation created liquidity pressures for banks (IMF 2011, 4). At the request of the Hungarian government, the International Monetary Fund (IMF), European Union (EU), and World Bank (WB) agreed in October 2008 to a USD 25.1 billion[4] package to provide Hungary with sufficient reserves to meet its external obligations, even in extreme market conditions (IMF 2008b, 1).

The Hungarian government (the State) drew down USD 18.9 billion of funds from the IMF and EU,[5] mostly to restore the central bank's currency reserves (IMF 2011, 9, 32; Kerényi 2011, 44). The State allocated USD 2.7 billion evenly between a recapitalization program[6] to bolster capital ratios at Hungarian banks and a voluntary program to guarantee[7] interbank loans issued by Hungarian banks and wholesale debt contracts with foreign counterparties (Gárdos 2008; Buchholtz 2021; 2020; IMF 2011, 8). Both were undersubscribed by eligible banks: only one bank requested capital, and none applied for the guarantee (Buchholtz 2021; 2020).

As a result of minimal participation in these two programs and lingering liquidity pressures, the State allocated the IMF-EU funds to a new liquidity program (IMF 2011, 38). In March 2009, the Hungarian

Key Terms

Purpose: To ". . . improve the overall liquidity position of the Hungarian banking system so as to maintain lending to the real economy" (EC 2010a, 2).

Launch Date	March 10, 2009
Expiration Dates	Original: June 30, 2010 Extended: June 30, 2013
Legal Authority	Amendment to Law IV of 2009/Law CXCIV of 2011
Peak Outstanding	HUF 690 billion (USD 3 billion) loaned to three domestic financial institutions
Participants	Hungarian-based financial institutions and subsidiaries of foreign banks
Rate	Multiple yield competitive auction for a fixed CAD amount
Collateral	Unsecured
Loan Duration	Three-year maximum; one-third of each loan allowed a maximum maturity of four years
Notable Features	Unsecured lending by the Hungarian state
Outcomes	HUF 400 billion repaid early by OTP; HUF 290 billion repaid by MFB and FHB in November 2012

[4] This case study uses six currencies. Per Yahoo Finance and the IMF, USD 1.000 = EUR 0.742 = HUF 222.750 = CHF 1.130 = JPY 98.307 = GBP 0.680 = SDR 0.664 on March 25, 2009.

[5] The State agreed in principle to World Bank funding on September 22, 2009, but did not conclude the loan agreement (MNB n.d.). The State did not draw on any portion of the multilateral loan package after September 29, 2009. This case refers to the October 2008 package as IMF-EU funding (IMF 2011, 8).

[6] For more information on Hungary's 2008 Recapitalization Scheme, see Buchholtz (2021). Hungary also implemented a recapitalization scheme alongside a loan consolidation program in response to a recession in 1992; for more information, see Dreyer 2021.

[7] For more information on Hungary's 2008 Guarantee Scheme, see Buchholtz 2021.

Parliament passed a law authorizing the State to promote the return of the Hungarian financial system to normal functioning (EC 2010a, 3).

Hungary set aside up to HUF 1.1 trillion (USD 4.9 billion) from the IMF-EU funds to lend under commercial terms to Hungarian credit institutions in the form of uncollateralized medium-term foreign-currency loans (EC 2010a, 2; IMF 2011, 21). The Hungarian central bank, the Magyar Nemzeti Bank (MNB), and the Hungarian Financial Supervisory Authority evaluated banks' systemic importance and liquidity and then made their recommendations for the Minister of Finance to execute. Loans had a maximum maturity of three years, but one-third of each loan could receive a four-year maturity. To ensure adequate repayment, loan interest rates were subject to a fee based on the greater of 1) an IMF weekly rate or 2) the one-year benchmark rate, plus a penalty rate (EC 2010a, 3).

Although Hungary was not part of the Eurozone, it was part of the European Union (EU) and was obligated to notify the European Commission (EC) of any state aid, including this liquidity scheme (Gárdos 2008; EC 2010a, 5; TFEU 2012). However, Hungary did not notify the EC until late 2009, after the EC became aware of the program from press reports (EC 2010a, 1). The EC did not approve the liquidity scheme until January 2010 (EC 2010a). By that point, the State had already lent HUF 400 billion to OTP Bank, the largest Hungarian domestic bank (March 2009); HUF 120 billion to FHB Mortgage Bank plc, a mortgage lender (March 2009); and HUF 170 billion to MFB, a state-owned development bank (April 2009) (EC 2010a, 3). The State made no further loans through the liquidity scheme.

Because Hungary issued loans prior to notifying the EC, the EC considered the program "non-notified aid." In its approval, the EC wrote: "The European Commission regrets that Hungary put the aid scheme into effect, in breach of Article 108(3) TFEU" (EC 2010a, 10). Nevertheless, the EC determined the scheme was in accordance with regulations governing state aid in the Treaty on the Functioning of the European Union (TFEU). It said it agreed with the Hungarian government that "if the issues of lack of liquidity and lack of confidence are not properly dealt with, it can result not only in difficulties for the banking sector but could also have a serious effect on the Hungarian economy as a whole" (EC 2010a, 7).

Summary Evaluation

In 2008, 69% of household debt and 48% of nonfinancial corporate debt in Hungary was denominated in foreign currency—particularly Swiss francs—exposing households and firms to exchange rate risk (Verner and Gyöngyösi 2020, 10, 36). Verner and Gyöngyösi (2020) found that the 30% depreciation in the Hungarian forint observed in late 2008 caused a significant increase in household financial distress and a decline in local demand, precipitating a local recession (Verner and Gyöngyösi 2020, 6). This debt revaluation had negative spillovers to other households, including those without foreign currency debt. The authors also found the overall contractionary effects of debt revaluation on the local economy were more severe when foreign currency debt was concentrated in the household sector, rather than the corporate sector, as it was in Hungary in 2008 (Verner and Gyöngyösi 2020, 6).

Kerényi observed that Hungary's low level of foreign exchange reserves compared to neighboring economies meant it was uniquely unprepared for the dual financial and economic crises of 2008–2009 (Kerényi 2011, 46). Banai noted that Hungarian banks financed their FX-denominated assets using on- and off-balance sheet short-term FX funding, which the central bank was unprepared to replace in a stressed environment (Banai 2022). With more foreign reserves, the MNB could have intervened in currency markets earlier to arrest the forint's decline. Because of this delay in providing foreign currency liquidity, Kerényi stated that the MNB only partially fulfilled its role as lender-of-last-resort (Kerényi 2011, 45–46).

The IMF determined that the program's design posed risks to public finances and was insufficiently transparent, particularly about which banks were eligible (IMF 2011, 21–22).

After the State adjusted the loan pricing at the EC's request and satisfied the IMF's recommendations, the State sought and the EC granted extensions to the liquidity scheme due to concerns about financial stability and because market conditions "did not allow for a termination" of the program (EC 2013, 3–4; IMF 2011, 21–22).

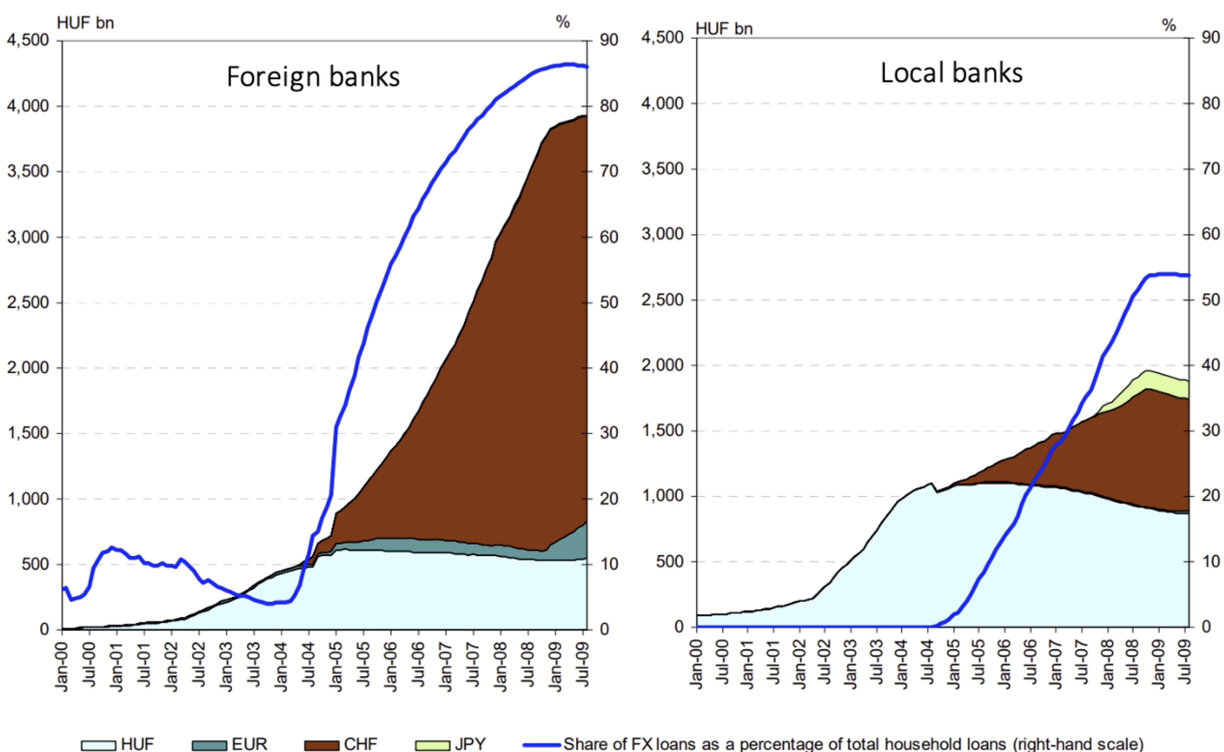
In its review of the assistance provided to Hungary, the IMF claimed that the liquidity scheme achieved its goal to "support the real economy by requiring recipient banks to maintain certain credit exposures, notably to SMEs" (IMF 2011, 21). The IMF believed that the liquidity scheme served its purpose "of supplying affordable credit to domestic enterprises . . . under commercial terms" and adequately addressed the need "to maintain liquidity and lending exposures" in the banking sector (IMF 2011, 38).

Context: Hungary 2008–2009	
GDP (SAAR, nominal GDP in LCU converted to USD)	$159.90 billion in 2008 $132.20 billion in 2009
GDP per capita (SAAR, nominal GDP in LCU converted to USD)	$15,777 in 2008 $13,082 in 2009
Sovereign credit rating (five-year senior debt)	Data for 2008: Moody's: A3 S&P: BBB Fitch: BBB+ Data for 2009: Moody's: Baa1 S&P: BBB- Fitch: BBB+
Size of banking system	$134.27 billion in 2008 $100.40 billion in 2009
Size of banking system as a percentage of GDP	83.97% in 2008 76.20% in 2009
Size of banking system as a percentage of financial system	100% in 2008 100% in 2009
Five-bank concentration of banking system	89.27% in 2008 93.40% in 2009
Foreign involvement in banking system	67.00% in 2008 64.00% in 2009
Government ownership of banking system	Data not available for 2008 Data not available for 2009
Existence of deposit insurance	Yes, in 2008 Yes, in 2009
Sources: Bloomberg; World Bank Global Financial Development Database; World Bank Deposit Insurance Dataset.	

I. Background

By 2008, Hungary was a highly integrated investment and trade center in Europe. Hungary's integration into international banking markets left it extremely vulnerable to external credit shocks (IMF 2011, 5). Moreover, the Hungarian banking sector mostly consisted of foreign bank subsidiaries[8] and a few domestic banks that depended largely on international bank flows (IMF 2011, 5). Foreign banks had extended significant amounts of foreign currency loans to domestic borrowers; domestic banks employed foreign exchange (FX) swaps to gain access to foreign currecncy and compete with foreign banks (Verner and Gyöngyösi 2020, 9). As a result, most Hungarian household mortgages were denominated in Swiss francs because borrowers could get much lower interest rates than they could on forint loans (see Figure 1) (Verner and Gyöngyösi 2020, 9).

Figure 1: Currency Structure of Household Mortgage Loans in Hungary, 2000–2009



Source: Banai, Király, and Nagy 2011, 204.

Hungarian households had limited foreign currency income or assets, so their borrowing was largely unhedged against exchange rate risk (Verner and Gyöngyösi 2020, 9). Domestic banks had hedged their long foreign currency positions by shorting foreign currencies through FX swaps. Leading up to the global credit crunch in 2008, Hungary was unusual for

[8] Most banks in Hungary were subsidiaries of foreign-owned banks, mostly European. Thus, they had access to ECB liquidity facilities in the run-up to Hungary's liquidity pressures (Gárdos 2008).

its large nonresident holdings of government paper denominated in local currency and the large fraction of FX lending to unhedged retail borrowers (IMF 2011, 5).

When credit conditions tightened in October 2008, foreign investors dumped Hungarian government bonds. Between September 2008 and March 2009, the Hungarian forint depreciated 30% against a strong appreciation of the Swiss franc, causing the ratio of household debt to GDP to increase over 6 percentage points by mid-2010 (Verner and Gyöngyösi 2020, 6, 10). Banks' swap counterparties demanded margin to reflect the loss on banks' swaps, which were typically short-term and banks needed to roll them over. The Hungarian government (the State) and the Hungarian central bank, the Magyar Nemzeti Bank (MNB), had only enough cash to relieve pressures on the banking system for about two months (IMF 2011, 6; Verner and Gyöngyösi 2020, 6). On October 10, 2008, the MNB initiated market operations to support liquidity in the FX swap market (ECB 2008).

Hungary turned to the IMF for assistance, an unusual step among EU countries (Kerényi 2011, 39). Concerned that a financial crisis in Hungary could spread to other European financial systems[9] with claims and investments in Hungarian government bonds, the IMF[10] announced its willingness to assist Hungary on October 13, 2008 (IMF 2008a). On October 16, the European Central Bank (ECB) extended a EUR 5 billion repo facility to the MNB "to support the MNB's instruments of euro liquidity provision" (ECB 2008).[11] Although Hungary was part of the European Union (EU), it was not part of the Eurozone, thus marking this as "the first instance of the ECB providing financing to the central bank of a country outside the eurozone" (Gárdos 2008). However, the ECB's repo facility did not address the MNB's currency shortage. Hungary had few euros in its stock of foreign reserves, and Hungarian government bonds, rated BBB/BBB-/Baa1, did not meet the minimum rating requirement for the ECB's repo collateral of A- (IMF 2011, 21; Trading Economics n.d.). Therefore, the State was unable to draw upon the ECB repo facility until it was converted to a swap line, capped at EUR 2.5 billion, in the spring of 2009; it is unclear whether Hungary used the ECB swap line (IMF 2011, 21).

[9] Including Austria, Belgium, and Ireland (IMF 2011, 6).

[10] Hungary was the first of the "new" EU member states to receive IMF support.

[11] The Swiss National Bank later provided a Euro-Swiss franc swap line of up to EUR 5 billion in February 2009 (IMF 2011, 21).

Figure 2: Multilateral Aid Offered to Hungary, 2008–2009 (USD)

Multilateral Aid (Offered)

	Amount Offered	Approved	Maturity	Outcome
Total	**26.95 billion**			
IMF	16.58 billion[A]	Nov. 6, 2008	5.0 years	72% drawn
EC	8.76 billion[B]	Nov. 4, 2008	3.0 years	100% drawn
World Bank	1.35 billion	Sep. 22, 2009	8.5 years	Undrawn

Multilateral Aid (Drawn)

	Amount Disbursed/Drawn	Disbursed	Interest (%)	Repayment
IMF	**11.45 billion**			
	6.34 billion	Nov. 6, 2008	1.630[C]	Mar. 2013
	3.16 billion	Mar. 25, 2009	0.460	Aug. 2013[D]
	1.96 billion	Jun. 23, 2009	0.420	Aug. 2013
	0.08 billion	Sep. 25, 2009	0.250	Aug. 2013
EC	**7.41 billion**			
	2.70 billion	Dec. 2008	3.250	Dec. 2011
	2.70 billion	Mar. 2009	3.250	Nov. 2014
	2.02 billion	Jul. 2009	3.625	Apr. 2016

Other Aid

	Limit	Date	Outcome
ECB Repo Line	6.74 billion	Oct. 16, 2008	Unused
ECB Swap Line	3.37 billion	N/A	Unused
Swiss National Bank Swap Line	3.37 billion	Feb. 2, 2009	CHF 3.7 billion provided

[A] Under the Emergency Financing Mechanism procedures, the IMF approved 1,015% of Hungary's quota (roughly SDR 1.0 billion), the largest IMF arrangement since Turkey in 2002 and Korea in 1997 (IMF 2008b; IMF 2011, 8).
[B] The EU's contribution to Hungary's financing package was the first access case under the EU balance of payments assistance facility; similar programs would be implemented in Latvia and Romania (IMF 2011, 8).
[C] SDR interest rate as of the date of disbursal.
[D] Hungary repaid the first tranche of the IMF loan in quarterly installments by March 2013; it repaid the second tranche in quarterly payments until August 12, 2013, when the remaining balance of the second tranche, and the entirety of the third and fourth tranches, were repaid in full ahead of their 2014 maturity (Banai 2022).
Note: Hungary requested additional financing on November 21, 2011, but negotiations were delayed due to concerns about the independence of the MNB on the part of the EU's Economic and Financial Affairs Council (EC n.d.). In 2012, Hungary raised market financing of USD 3.25 billion.

Sources: World Bank 2009; EC n.d.; IMF 2008b; IMF 2009c; IMF 2009b; Allen and Moessner 2010, 49.

On October 28, 2008, the IMF, EU, and World Bank authorized a USD 25.1 billion assistance package to supply fiscal support, improve financial stability, and reduce the contagion risk (see Figure 2 for details) (IMF 2008a). The package included commitments of USD 15.7 billion from the IMF, USD 8.1 billion from the European Union, and USD 1.3 billon from the World Bank. Ultimately, the IMF provided SDR 7.6 billion (about USD 11 billion), the EU

provided EUR 5.5 billion (USD 7.4 billion), and the World Bank did not provide any funds (IMF 2011, 8).

In November 2008, Hungary set aside HUF 600 billion (USD 2.7 billion) of the committed funds for a bank support program that created two voluntary schemes—a guarantee scheme and a recapitalization scheme—designed to strengthen capital positions and increase the liquidity of domestic banks, with the goal of stabilizing the Hungarian financial system (see Figure 3) (IMF 2008c; IMF 2007, 17).

Figure 3: Hungarian Crisis Response Measures Funded by Multilateral Aid (USD)

Program	Launch Date	Size	Use	Fees/Interest Rate	Expiration
Recapitalization	Feb. 12, 2009	1.5 billion	0.1 billion	Preferred equity in the borrowing institution, with dividends equal to five-year government yield + 200 bps fee, increasing by 100 bps annually after 2011	Jun. 30, 2013
Guarantee	Feb. 6, 2009	7.4 billion	-	123.5 bps	Dec. 31, 2009
Liquidity	Mar. 25, 2009	5.1 billion	3.2 billion	IMF SDR rate + 345 bps *or* IBOR + 100 bps + 123.5 bps	Jun. 30, 2013

Sources: Buchholtz 2021; 2020; EC 2010a.

The recapitalization scheme, called the Capital Base Enhancement Fund (CBEF), was intended to help raise the capital adequacy ratio of eligible domestic banks to 14% via voluntary capital injections. Any remainder of the CBEF's HUF 300 billion not utilized by banks by January 31, 2009, would transfer over to the Refinancing Guarantee Fund (RGF). The RGF would guarantee the wholesale loans received and debt securities issued by domestic banks, up to a maximum of HUF 1.5 trillion (IMF 2008c).

With only one participant in the recapitalization scheme and none in the guarantee scheme, the Hungarian banking system still required immediate FX funding assistance (IMF 2011, 21).

Program Description

On March 10, 2009, the Hungarian Parliament passed a law permitting the State to lend to financially sound, Hungarian-based credit institutions (Petrovic and Tutsch 2009, 45).[12] The State then used that authority to extend medium-term FX loans via a liquidity scheme, under commercial terms, to credit institutions in Hungary, including subsidiaries of foreign banks (EC 2010a, 2; IMF 2011, 21). The goal of the liquidity scheme was to "improve the overall

[12] In 2011, the State recodified Law IV of 2009 as Law CXCIV of 2011, the Act on the Economic Stability of Hungary.

liquidity position of the Hungarian banking system so as to maintain lending to the real economy" (EC 2010a, 2). The State extended its first loan on March 25, 2009 (EC 2010a, 3).

Loan applications were evaluated by the MNB and the Pénzügyi Szervezetek Állami Felügyelete (PSZÁF), the Hungarian Financial Supervisory Authority. The MNB would assess the institution's relative importance in the financial system and its impact on other institutions, markets, and the economy; its short-term liquidity position; and the overall availability of liquidity in the global credit market. The PSZÁF would assess the institution's assets and its medium- and long-term liquidity positions. Following evaluation, each authority would recommend a level of assistance to the Ministry of Finance, which would grant the institution such aid (EC 2010a, 2).

The liquidity scheme had an overall budget of HUF 1.1 trillion (USD 4.9 billion), and there was no limitation on the amount an institution could be awarded. The State required recipients to use the loans to lend to households and businesses, and not for acquisition financing (EC 2010a, 3).

Loans carried an interest rate based on the higher of the IMF's weekly "Special Drawing Rights Interest Rate Calculation" plus 345 basis points; or a one-year interbank offer rate (IBOR) plus 100 basis points and an additional credit risk margin of 123.5 basis points. The one-year IBOR benchmark was based on the currency the loans were granted in (EC 2010a, 8). Although each loan had a maturity date three years from receipt, one-third of any loan was eligible for a four-year maturity (EC 2010a, 8). Any institution that defaulted on the loans would have to file a restructuring or liquidation plan within six months of default (EC 2010a, 5).

Outcomes

Over the course of the liquidity scheme's life span, three domestic banks within Hungary's banking sector utilized the scheme (EC 2010a, 3–4; Várhegyi 2008).[13]

On March 25, OTP Bank Nyrt received HUF 400 billion and FHB Mortgage Bank received HUF 120 billion. MFB, a state-owned development bank, received HUF 170 billion two weeks later (EC 2010a). Each loan granted was disbursed in two tranches and each had a maturity date of November 11, 2012 (see Figure 4). Additionally, some of the loans granted were disbursed in a variety of currencies (EC 2010a, 3–4).

[13] In 2008, 30% of the total assets in Hungary's banking system were claimed by OTP Bankgroup (OTP Bank, OTP Mortgagebank, Merkantilbank and OTP Lakástakarékpénztár), FHB Bankgroup (FHB Mortgagebank and FHB Bank), the Postabank (foreign-owned in 2008), Magyar Takarékszövetkezeti Bank, and ELLA Első Lakáshitel Kereskedelmi Bank (Banai, Király, and Nagy 2011). OTP, the largest Hungarian retail bank, claimed between 40 and 60% of home loans, current (checking) accounts, and deposits in 2008 (Várhegyi 2008).

Figure 4: FX Loans Offered to Hungarian-Based Banks

	OTP		FHB		MFB	
Total:	HUF 400 billion		HUF 120 billion		HUF 170 billion	
Originated:	March 25, 2009		March 25, 2009		April 9, 2009	
	First Tranche	Second Tranche	First Tranche	Second Tranche	First Tranche	Second Tranche
Disbursed:	Apr. 1, 2009	Jun. 30, 2009	Apr. 1, 2009	Apr. 30, 2009	Jun. 19, 2009	Dec. 10, 2009
EUR (millions)	357.7	143.1	200.0	200.0	93.8	110.0
USD (millions)	584.4	233.8	-	-	153.2	179.7
JPY (millions)	14.4	5.7	-	-	3.8	4.4
GBP (millions)	97.1	38.8	-	-	25.4	29.9
Maturity:	Nov. 11, 2012		Nov. 11, 2012		Nov. 11, 2012	
Repaid:	HUF 200 billion on Nov. 5, 2009[A] HUF 200 billion on Mar. 19, 2010		N/A		N/A	

[A] The amount repaid consisted of EUR 250.4 million, USD 409.1 million, JPY 10.053 million, and GBP 67.95 million. Information on the composition of the second repayment was unavailable.

Note: The EC provided its formal approval of the liquidity scheme on January 14, 2010.

Sources: EC 2010a, 4; EC 2010b, 2.

Although Hungary breached Article 108(3) of the Treaty on the Functioning of the European Union (TFEU) by implementing a state aid program prior to the EC's approval, the EC gave its approval on January 14, 2010, with the hope that it would restore market confidence and improve access to liquidity for credit institutions (EC 2010a).

Wind-Down and Repayment

OTP Bank Nyrt repaid the State well before either loan matured, in part due to improving markets and the motivation to exit State assistance with the strict commercial terms attached to the loans (IMF 2011, 38).

Hungarian credit institutions and banks continued to face persistent difficulty accessing liquidity over the years following the launch of the liquidity scheme. The EC stated that keeping the liquidity scheme open would give struggling credit institutions a door for credit if needed. Thus, the EC approved the State's requests for six-month extensions to the liquidity scheme on six different occasions, until it allowed the liquidity scheme to expire on June 30, 2013 (EC 2013).

II. Key Design Decisions

1. Purpose: The government established the facility to provide foreign currency liquidity to Hungarian banks and maintain lending to the real economy.

The purpose of the liquidity scheme was to "improve the overall liquidity position of the Hungarian banking system so as to maintain lending to the real economy" (EC 2010a, 2). The

State said it expected that resolving the shortage of liquidity in the banking sector would improve market confidence and prevent a crisis from affecting the real economy (EC 2010a, 4). The government expected participants in the liquidity scheme to maintain their credit exposure to small- and medium-size enterprises (EC 2010a, 2; IMF 2011, 21).

The State extended liquidity through foreign exchange (FX) loans to address the risk that banks would sell Hungarian forint (HUF) to meet their FX needs, which would have placed even more pressure on the depreciating exchange rate (IMF 2011, 21). Both foreign and domestic banks had provided extensive foreign currency loans (largely in Swiss francs) to domestic borrowers using forint funds; they had hedged those long foreign currency positions by shorting foreign currencies through FX swaps. This exposed them to exchange rate and maturity risks and, in October 2008, the forint—used to collateralize the swaps—rapidly depreciated. Banks felt FX liquidity pressure amid margin calls and a frozen swap market in which short-term contracts were no longer being rolled over (IMF 2011, 5).

2. Legal Authority (A): The Hungarian Parliament amended the Act on Public Finances (later, the Act on the Economic Stability of Hungary) to authorize the Ministry of Finance to provide loans to credit institutions under a new liquidity scheme.

On March 10, 2009, the Hungarian Parliament amended Law IV of 2009—which is also known as the Act on Public Finances, and is based on Law XXXVIII of 1992—to authorize the State to extend nonrecourse medium-term FX loans under commercial terms to credit institutions in Hungary, including subsidiaries of foreign banks (EC 2010a, 2; IMF 2011, 21).

Following a re-codification of its legal documentation in 2011, the law authorizing the State's liquidity scheme fell under Article 44 (Chapter VII) of Act CXCIV of 2011, known as the Act on the Economic Stability of Hungary (henceforth "the Act"), which was published in the Official Gazette No. 2011/64 on December 30, 2011 (EC 2013, 2). Article 44 of the Act states, "In a situation that may endanger the stability of the financial intermediation system, the state, within the framework of the management of its free funds. . . b) may grant a loan to a credit institution established in the territory of Hungary" (National Assembly 2011, Chapter VII).

Legal Authority (B): The European Commission approved Hungary's liquidity scheme nine months after its launch, despite Hungary's breach of the Treaty on the Functioning of the European Union.

Although Hungary was not part of the Eurozone, it was part of the European Union (EU) and was thus obligated to inform the EC of any "State aid"—including its liquidity scheme—prior to granting it. Under Article 107 of the Treaty on the Functioning of the European Union (TFEU), an EU Member State can offer aid to "remedy a serious disturbance in [its] economy" (TFEU 2012). The State determined—and the EC agreed—that the liquidity scheme qualified as state aid under Article 107(1) (EC 2013, 3–4).

However, because state subsidies can confer an unfair economic advantage to a state's market participants, the EC generally requires EU states to abide by Article 108 of the TFEU.

Article 108 calls for the EC to monitor state aid to ensure it is "compatible with the internal market," as defined by Article 107, and does not distort, or threaten to distort, competition (TFEU 2012). Article 108 also allows the EC to refer states that do not comply with Article 107 to the Court of Justice of the European Union (EC 2010a, 1). In the case of Hungary, the State launched its liquidity scheme in March 2009 but did not notify the EC until November 2009. The EC referred to this as "non notified aid," and the State acknowledged this was a breach of Article 108(3)[14] of the TFEU (EC 2010a, 4).

The EC did not formal authorize the liquidity scheme until January 2010 (EC 2010a, 2). At that point, the EC judged that, given the ongoing financial market difficulties in Hungary, the scope of the liquidity scheme and its duration were adequate in terms of achieving the State's objective of boosting lending to the real economy, as well as addressing a "serious disturbance in the entire economy," under Article 107(3)(b) TFEU (EC 2010a, 6). Moreover, the EC determined that a liquidity scheme could help Hungarian banks overcome their current difficulties in raising funds, and that such a program could be "compatible" with recapitalization and guarantee schemes (EC 2010a, 8).

The EC believed that remuneration fees on loans were sufficient[15] to repay the State, while the availability of the measure to banks of all sizes and subsidiaries of foreign institutions offset any possible "distortions of competition" amongst Hungarian banks (EC 2010a, 5).

The State was required to inform the EC when it extended a loan within three months of its origination (EC 2013, 3). The State also committed to updating the EC on the liquidity scheme every six months, including the support provided and under what conditions, as well as any other, non-State liquidity support sought by individual borrowers and the volume, nature, and currency of comparable funding (IMF 2011, 5; EC 2010a, 5; EC 2013, 4).

3. Part of a Package: The State launched the liquidity scheme after prior efforts to support the banking sector saw little to no use.

In November 2008, the IMF, EU, and World Bank agreed to a USD 25.1 billion financing package, maturing in four years (EC n.d.). The IMF agreed to contribute USD 15.7 billion as part of a Stand-By Arrangement; the EU agreed to USD 8.1 billion; and the World Bank agreed to USD 1.3 billion (EC n.d.). Ultimately, the IMF provided SDR 7.6 billion (about USD 11 billion) and the EU provided EUR 5.5 billion (USD 7.4 billion). Hungary never drew upon the

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[14] TFEU Article 108 states, *inter alia*, the EC will review all aid extended by member states and ensure its compliance with Article 107 (TFEU 2012). Article 107(3)(b) states that "3. The following may be considered to be compatible with the internal market: . . . (b) aid to promote the execution of an important project of common European interest or to remedy a serious disturbance in the economy of a Member State" (TFEU 2012). N.B. Prior to December 1, 2009, Articles 107 and 108 are referred to as Articles 87 and 88; the two sets of provisions are functionally identical.

[15] On March 31, 2009, shortly after originating a HUF 120 billion loan to FHB, the State injected HUF 30 billion of capital into the bank through the State's Capital Base Enhancement Fund—again, without notifying the EC (IMF 2011, 22). The EC subsequently declared that the FHB's rate of remuneration on state capital did not comply with EU state aid rules (IMF 2011, 22). For more information on that recapitalization, see Buchholtz 2018.

World Bank's contribution (see footnote 5 for details) (World Bank 2009; Kerényi 2011; EC n.d.).

The central bank would use most of the IMF and EU funds to restore its currency reserves (IMF 2011, 32; Kerényi 2011, 44). The IMF and EU also provided Hungary with HUF 600 billion (USD 2.7 billion) for a bank support program to be split evenly between two schemes—a guarantee scheme and a recapitalization scheme—designed to strengthen capital positions and increase the liquidity of domestic banks, with the ultimate goal of stabilizing the Hungarian financial system (IMF 2008c; IMF 2007, 17; EC 2009). No banks participated in the guarantee scheme, and only one institution, FHB Mortgage Bank plc, drew down HUF 30 billion in the recapitalization scheme (Buchholtz 2021; 2020). The liquidity scheme was implemented after the State's guarantee and recapitalization schemes saw little use.

In addition to multilateral financing, the ECB and Swiss National Bank offered the State swap lines. On October 16, 2008, the ECB extended a EUR 5 billion repo facility to the MNB "to support MNB's newly introduced euro-liquidity operations," but Hungary was ineligible for the facility until it was converted to a swap facility several months later (Gárdos 2008; ECB 2008). In February 2009, the Swiss National Bank also announced a temporary swap line with the MNB, whereby the Swiss National Bank lent Swiss francs to Hungary against euros (rather than Hungarian forint) (SNB n.d.).

Because the ECB's repo line was not immediately accessible, the swap agreements offered by the ECB and Swiss National Bank in October 2008 followed the worst period of Hungary's liquidity crisis. By late October 2008, liquidity in the FX market was eight standard deviations below its long-term average before the crisis (Banai, et al. 2014, 40). To meet the pressing euro and forint liquidity needs of Hungarian banks in late 2008, the MNB intermediated a two-way EUR/HUF swap tender facility beginning on October 10, and on October 16 the MNB established a standing swap facility offering euros (MNB 2008b; MNB 2008a; Banai, et al. 2014, 41–42).

Although foreign banks were more exposed than domestic banks to foreign currency loans to Hungarian borrowers, they also had better access to foreign currency through their parent companies. Foreign banks increased exposures by over 35% (about USD 5 billion) in the period between September 2008 and March 2009 to provide additional liquidity to their Hungarian subsidiaries (IMF 2011, 21).

In January 2009, the Austrian Ministry of Finance convened the European Bank Coordination Process, or Vienna Initiative, with the objective of coordinating a response to bank funding needs among emerging European countries (EBRD 2009b). In September 2009, Hungary, acting on the recommendation of the IMF and EC, committed its systemically important parent banks to maintain 100% rollover rates for individual institutions and recapitalize their subsidiaries as needed (EBRD 2009a).

4. Management: The central bank and financial supervisory authority determined eligibility and the Finance Minister originated the loans.

Hungary's Finance Minister,[16] acting through the Államadósság Kezelő Központ Zrt. (ÁKK Zrt.), the Hungarian government's debt management agency, completed loan contracts with borrowers on behalf of the State (National Assembly 2011, Chapter VII).

The State tasked the MNB and Pénzügyi Szervezetek Állami Felügyelete (PSZÁF), Hungary's Financial Supervisory Authority, with determining eligibility for the liquidity scheme, but the IMF found that this process lacked transparency (IMF 2011, 21–22).

Citing concerns over the program's terms, its risk to public finances, and uncertainy over whether banks would comply with the use of fund requirement, the IMF requested that the State place a government representative on the board of each bank borrower. A new Financial Stability Subcommittee—comprised of the Ministry of Finance, the MNB, and the PSZÁF—monitored the financial stability of borrowers. In response to calls from the IMF to improve ongoing supervision of financial institutions, the State turned PSZÁF into an independent institution and empowered the Financial Stability Subcommittee and the MNB to propose legislation or regulation under a "comply or explain" mechanism—though this right was rescinded after April 2010 (IMF 2011, 22–23).

The State committed to extending loans "only to solvent financial institutions" in compliance with capital requirements (EC 2013, 3). However, the State provided limited oversight of the borrowers, despite the IMF's recommendations to reorganize and improve bank supervision: on-site bank examinations began in April 2009 and concluded in March 2010, a full year after the State originated the loans. Additionally, the State objected to the IMF's recommendation to hire non-Hungarian external auditors, and audits of Hungarian financial institutions were delayed (IMF 2011, 22). For example, on-site examinations were supposed to include an external audit of OTP's foreign operations, but this did not begin until 2011, by which point OTP had already repaid its loan (IMF 2011, 22; EC 2010b, 2). In 2010, the EC required the State to evaluate the "solidity of the funding capacity" of borrowers and, upon request, conduct a liquidity stress test (EC 2010b, 2).

5. Administration: Several agencies coordinated lending through the liquidity scheme.

Hungarian-based financial institutions or subsidiaries of foreign banks submitted applications to the MNB and PSZÁF (EC 2010a, 2). The MNB evaluated applications on the basis of the institution's importance to Hungary's financial system and its short-term liquidity position in the context of the amount of liquidity available in the market, the same process used for the MNB's Emergency Liquidity Assistance (Banai 2022). PSZÁF assessed the funds available to the institution and its mid-term and long-term liquidity position. For

[16] In 2012, the MNB informed the EC that the Ministry of Finance would henceforth be known as the Ministry for National Economy (EC 2012b, 2). This case refers to the office as the Ministry of Finance for the duration of the liquidity scheme.

large holding companies, PSZÁF also considered the funds and liquidity positions of the institutions affiliates (EC 2010a, 2).

With the recommendation of both the MNB and PSZÁF, the Finance Minister then finalized the terms of the loan and acted through the ÁKK Zrt., the State's debtmanagement agency, to extend credit to Hungarian financial institutions (EC 2010a, 2).

6. Eligible Participants: Hungarian-based financial institutions and subsidiaries of foreign banks were eligible for the liquidity scheme.

The liquidity scheme was open to all Hungarian-based credit institutions,[17] including subsidiaries of foreign banks, but excluded banks operating in the form of branch offices. These participants could request loans, and their applications would be reviewed by several agencies (EC 2010a). Ultimately, only three domestic borrowers participated in the program; parent companies of foreign bank subsidiaries located in Hungary likely had access to alternative funding sources (Banai 2022).

An applicant had to be deemed financially sound following an evaluation by the MNB and the PSZÁF. The Act on Economic Stability required the Governor of the MNB to provide the Minister of Finance with an evaluation of the applicant's systemic importance and liquidity positions, as well as an analysis of current market conditions and available liquidity (National Assembly 2011, Chapter VII). In practice, the MNB evaluated the applicant's systemic importance and its short-term liquidity position, while PSZÁF assessed the funds available to the institution and its mid-term and long-term liquidity position (EC 2010a, 2).

All three of Hungary's programs were targeted at systemically important banks (Banai 2022). Systemic importance was based on the institution's size, its influence on financial markets and the payments and settlement systems, and its lending to the real economy, among other criteria.

For large holding companies, PSZÁF also considered the funds and liquidity positions of the institution's affiliates (EC 2010a, 2). The IMF called for on-site bank examinations and external audits, but the State delayed or objected to these actions (IMF 2011, 22–23).

7. Funding Source/Allocation: The Hungarian government reallocated funds from the IMF and EU's unused programs to fund the liquidity scheme.

The State funded the liquidity program by reallocating funds from underutilized facilities. In November 2008, Hungary received HUF 600 billion (USD 2.7 billion) for a bank support program that created two schemes—one for bank guarantees and another for recapitalizing banks—designed to strengthen capital positions and increase the liquidity of domestic banks, with the ultimate goal of stabilizing the Hungarian financial system (IMF 2008c; IMF

[17] In 2008, there were 36 banks operating in Hungary, roughly 30 of which were foreign-owned and one was a State-owned development bank—MFB, one of the three borrowers in the liquidity scheme (IMF 2008c; Cull, Peria, and Verrier 2018, 47). Foreign-owned banks were thought to perform more efficiently than other types of banks (Cull, Peria, and Verrier 2018, 11).

2007, 17). No banks participated in the guarantee scheme, and only one institution, FHB Mortgage Bank plc, drew down HUF 30 billion in the recapitalization scheme (Buchholtz 2021; 2020).

The State launched the liquidity scheme on March 10, 2009, when the Hungarian Parliament amended the Act on Public Finances to grant the State the authority to extend nonrecourse medium-term FX loans under commercial terms to credit institutions in Hungary, including subsidiaries of foreign banks. The Ministry of Finance budgeted up to HUF 1.1 trillion (USD 4.9 billion) for the liquidity scheme (EC 2010a; IMF 2011, 21).

8. Program Size: The Ministry of Finance budgeted HUF 1.1 trillion for the liquidity scheme.

The Ministry of Finance budgeted up to HUF 1.1 trillion (USD 4.9 billion) through the liquidity scheme (EC 2010a; IMF 2011, 21). Ultimately, it lent HUF 690 billion (USD 3 billion) to three institutions (EC 2010a, 3).

9. Individual Participation Limits: There was no limit on how much an individual institution could borrow.

The State did not limit how much an individual institution could request for a loan. The State lent HUF 400 billion to OTP Bank, the largest Hungarian domestic bank (March 2009); HUF 120 billion to FHB Mortgage Bank plc, the largest mortgage lender, responsible for issuing mortgage bonds on behalf of other banks (March 2009); and HUF 170 billion to MFB, a state-owned development bank (April 2009) (EC 2010a, 3). FHB Mortgage Bank plc, the only participant in the recapitalization scheme, also benefitted from Hungary's liquidity scheme, which the EC stated did not comply with TFEU rules on state aid (Buchholtz 2021; IMF 2011, 22).

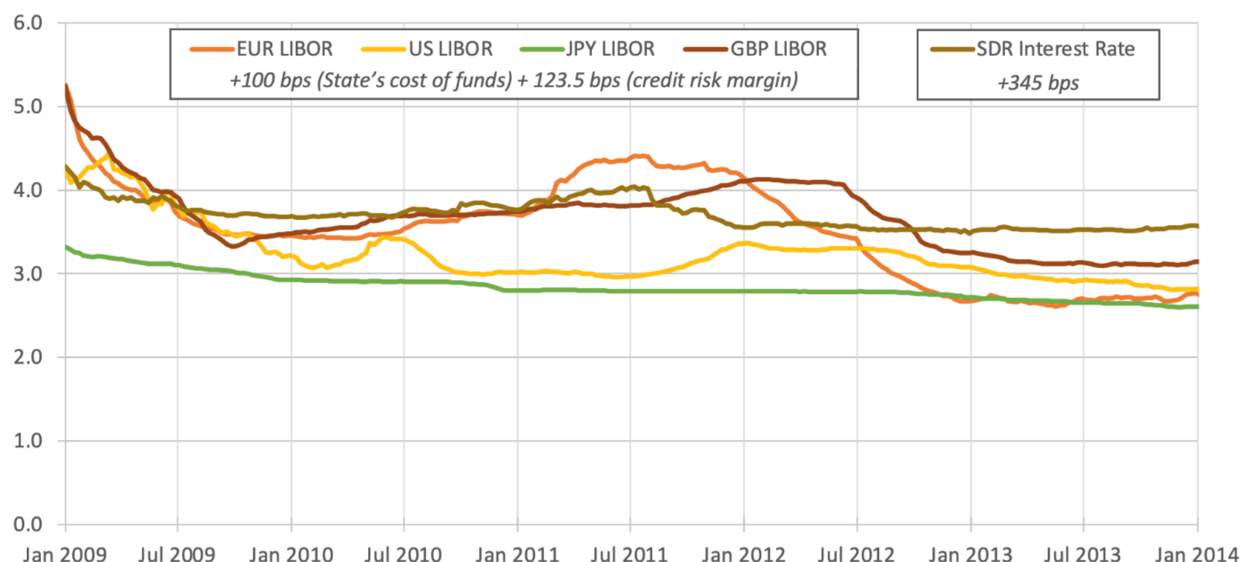
10. Rate: The State charged borrowers the higher of two interest rates, as well as an add-on fee that depended on the rate charged.

Loans were subject to fees based on the higher[18] of:

- IMF's weekly "Special Drawing Rights Interest Rate Calculation" plus 345 basis points; or
- a twelve-month IBOR plus 100 basis points (addressing the State's cost of funds) and an additional credit risk margin of 123.5 basis points (EC 2010a, 8). The 12-month IBOR benchmark was determined using the currency the loans were granted in (see Figure 5) (EC 2010a, 3).

[18] In March 2009, most of the State's liquidity loans were offered in euros, and the Euribor-based pricing was the higher of the two rates, by roughly 15 bps (EC 2010a, 9).

Figure 5: Effective Interest Rates on Liquidity Scheme Loans, 2009–2014 (%)



Sources: Bloomberg, IMF.

The credit risk margin was based on the ECB Recommendations on Government Guarantees on Bank Debt published on October 20, 2008. According to the EC, the penalty add-on to the 12-month IBOR was adequate remuneration for the aid since the liquidity scheme was funded by the IMF's portion of the original multilateral schemes announced in November 2008 (EC 2010a, 3). Because Hungary lacked adequate CDS data, the risk of loans utilized the lowest CDS rating category, A, which at the time equated to a rate of 73.5 bps plus a mark-up of 50 bps. The EC noted this fee was consistent with the State's guarantee scheme (EC 2010a, 8–9).

Beginning July 1, 2010, the State adjusted the IBOR-based pricing formula of the loans upwards according to the borrower's credit rating[19] on the day of origination (EC 2010b, 2):

- 20 bps for banks with a rating of A+/A1 or A/A2
- 30 bps for banks rated A-/A3
- 40 bps for banks rated below A-

Borrowers without ratings were considered to have a rating of BBB (EC 2010b, 2). In the case of multiple assessments by rating agencies, the higher rating would be used for the calculation of the fee (EC 2010b, 2).

[19] In 2009, Moody's had rated OTP at Baa1 and FHB at A3 (Moody's 2009). Because the State guaranteed most of MFB's funds, its rating generally tracked that of the State (Banai 2022).

In 2012, the IBOR-based pricing scheme was revised again for loans issued until June 30, 2012 (EC 2012a, 3–4). For loans with remaining maturities of one year or more, the State determined the fees would be no less than 40 bps plus a complex risk-based fee.[20]

For borrowers without CDS data, a credit rating would be used to derive an equivalent CDS spread using the median value of five-year CDS spreads over the same three-year period, based on a representative sample of large banks in the EU (EC 2012a, 3–4).

For loans with remaining maturities of less than one year, the fees would be no less than 50 bps plus a complex risk-based fee.[21]

11. Eligible Collateral: Lending through the liquidity scheme was uncollateralized.

The State extended credit against a commitment by banks to secure external funding and maintain corporate lending exposures in Hungary (IMF 2011, 21). If an institution defaulted on a loan, the State was required to submit a restructuring plan or liquidation plan to the EC within six months of the default (EC 2010a, 5).

12. Duration: Loans had a maximum maturity of three years, although one-third of each loan was allowed a maximum maturity of four years.

Loans had a maximum maturity of three years, while one-third of each loan could receive a four-year maturity (EC 2010a, 3). All three loans had a final maturity date of November 11, 2022 (see Figure 6).

Figure 6: Hungarian Liquidity Scheme Borrower Amounts and Duration

Borrower	Origination	Amount (HUF)	Maturity Date
OTP Bank Nyrt.	March 25, 2009	400 billion	November 11, 2012
FHB Jelzálogbank Nyrt. [A]	March 25, 2009	120 billion	November 11, 2012
MFB Zrt./ Eximbank Zrt.	April 4, 2009	170 billion	November 11, 2012

[A] *On March 31, 2009, Hungary injected HUF 30 billion of capital into the bank* (Buchholtz 2021, 157).

Note: All borrowers repaid loans by the maturity date.

Source: EC 2010a, 3-4.

[20] The formula for the risk-based fee was 40 bps × $\frac{1}{2}$ (median five-year senior CDS spread over the three years ending one month before the origination date/median level of the iTraxx Europe Senior Financials five-year index over the same period) + $\frac{1}{2}$ (median 5-year senior CDS spread of all EU Member States/median five-year senior CDS spread in Hungary over the same period) (EC 2012a, 3).

[21] The formula for the risk-based fee was 20 bps for ratings A+/A1 or A/A2, 30 bps for banks rated A-/A3, and 40 bps for banks rated below A- (EC 2012a, 3–4).

13. Other Conditions: Borrowers were required to lend to the real economy and forbidden from using the funds to finance acquisitions, advertising their borrowing, or pursuing aggressive commercial strategies.

Loans were uncollateralized, and the primary condition on borrowers was a requirement that borrowers used the funds to lend to the real economy, including Hungarian corporations, and especially small and medium-size enterprises (SMEs) (IMF 2011, 21–22). However, research did not uncover a mechanism to enforce this promise.

Additionally, the State forbade institutions from advertising their borrowing through the liquidity scheme or engaging in "aggressive commercial strategies" during the duration of the loan, and dictated that borrowers could not use the funds to finance acquisitions (EC 2010a, 3; EC 2013, 3).

14. Impact on Monetary Policy Transmission: The MNB narrowed the interest rate corridor and established a floor on net international reserves to manage exchange rate disruptions.

To reduce the risks of volatility in short-term interest rates and of banks incurring losses due to a lack of liquidity, the MNB narrowed the interest rate corridor in October 2008 (MNB 2009, 22). The MNB raised the reference rate by 300 bps, the only central bank in the region to do so (Kerényi 2011, 45). By mid-2009, the MNB observed enough improvement in market conditions to justify reimposing the original interest rate corridor (MNB 2009, 22).

To manage FX volatility, the MNB established a floor on net international reserves (NIR) at a lower level than the baseline projection included in the balance of payments. However, this was constrained by the level of reserves required to ensure an adequate buffer for the MNB's guarantee, recapitalization, and liquidity schemes (IMF 2011, 15).

With regard to its FX purchases over the same period, the MNB was required to consult with the IMF if the 12-month CPI inflation rate fell outside an inner band of the target rate plus or minus 1%. Had the CPI rate fallen outside plus or minus 2%, the IMF would have required the MNB to cease FX purchases (IMF 2011, 15).

15. Other Options: The liquidity scheme was implemented after other measures to support the banking sector were underutilized.

The liquidity scheme, part of a broad suite of measures to provide liquidity and support the Hungarian economy, was implemented after the State's guarantee and recapitalization schemes saw little use (Buchholtz 2021; IMF 2011, 38).

16. Similar Operations in Other Countries: Hungary's liquidity scheme resembled broad-based liquidity assistance programs launched by several countries during the GFC.

Although Hungary's actions were not coordinated with responses in other countries, its liquidity provisions resembled those undertaken by the Bank of Greece in August 2011. With

non-performing assets rising amid broad credit downgrades, the Bank of Greece offered emergency liquidity assistance, a revolving line of credit charging a penalty rate (100–150 basis-point premium to the ECB's refinancing rate), to all Greek banks, so long as support did not interfere with EU monetary policy. Greece was one of the first countries to use broad emergency liquidity assistance, with Ireland, Portugal, and several other countries offering similar programs in subsequent years (Runkel 2022). Like Greece, Hungary's central bank, MNB, stepped in as lender-of-last-resort when the traditional lender-of-last-resort failed. However, Hungary's decision to offer unsecured lending was unlike the Greek emergency liquidity assistance, and unusual among central banks generally.

During the GFC, the Bank of Korea provided USD 26.6 billion in foreign currency liquidity program to banks struggling to raise overseas funding. The Bank of Korea established a USD 10 billion scheme that provided foreign currency loans secured by export bills, but only allocated USD 0.2 billion between December 10, 2008, and February 25, 2009 (Chung 2011, 260).

17. Communication: The liquidity scheme was announced in March 2009 with an amendment to the Act on Public Finances.

On March 10, 2009, the Hungarian Parliament amended the Act, which was published in the Official Gazette, "Magyar Közlöny" (No. 2009/28), effectively announcing the liquidity scheme (EC 2010a, 2). We were unable to locate any State communication that described the program's terms in detail, possibly in an attempt to avoid stigmatizing potential participants (Banai 2022). The IMF determined the liquidity scheme lacked transparency, particularly around borrower eligibility (IMF 2011, 22–23).

The EC published its approval of each request for extension by the State, and the IMF published its own review of Hungary's response to liquidity shortages (EC 2013; IMF 2009a).

18. Disclosure: The European Commission published information on participants in the liquidity scheme.

In addition to publishing its approval of the scheme, the EC published evaluations of the State's requests for extensions to the liquidity scheme, including disclosures of borrowers and amounts lent (EC 2009; EC 2013; EC 2010a). Between 2009 and 2011, the IMF published evaluations covering the State's guarantee, recapitalization, and liquidity schemes (IMF 2009a; IMF 2011).

19. Stigma Strategy: There was no explicit strategy for addressing stigma.

The State did not have an explicit strategy for addressing stigma.

20. Exit Strategy: Initially set to expire on June 30, 2009, the European Commission approved extensions to the liquidity scheme until it expired on June 30, 2013; the State raised the lending rate once in 2010.

The liquidity scheme was initially slated for expiration in June 2009. Effective July 1, 2010, the State raised its lending rates in accordance with the EC's stated desire that programs of this type contain "minimum exit incentives" and gradually return to market conditions in order to minimize potential spillover effects on other EU Member States (EC 2010a, 6). The State requested six extensions to the scheme, all of which were approved by the EC (EC 2013). OTP, the largest borrower, repaid its loan in two installments on November 5, 2009, and March 19, 2010, long before the loan's maturity on November 11, 2011; information on repayment by the other two borrowers was unavailable (EC 2010a, 3-4). The State and the EC allowed the scheme to expire on June 30, 2013 (EC 2013, 1).

III. References and Key Program Documents

Program Summaries

(EC 2010a) European Commission (EC). 2010a. "State Aid NN 68/2009 Hungary Liquidity Scheme for Banks."
Initial approval for Hungary's liquidity scheme.
https://ypfs.som.yale.edu/library/document/state-aid-nn-682009-hungary-liquidity-scheme-banks

(IMF 2011) International Monetary Fund (IMF). 2011. "Hungary: Ex Post Evaluation of Exceptional Access Under the 2008 Stand-By Arrangement." *IMF Staff Country Reports* 11, no. 145: i.
An overview of Hungary's IMF Stand-by Arrangement.
https://ypfs.som.yale.edu/library/hungary-ex-post-evaluation-exceptional-access-under-2008-stand-arrangement

Legal/Regulatory Guidance

(National Assembly 2011) National Assembly of Hungary (National Assembly). 2011. *Law CXCIV of 2011 (Act on the Economic Stability of Hungary)*.
Law CXCIV of 2011—in Hungarian; this act replaced Law IV of 2009 following a recodification of Hungarian Law.
https://ypfs.som.yale.edu/library/document/law-cxciv-2011-act-economic-stability-hungary

(TFEU 2012) European Commission (EC). [1957] 2012. *Treaty on the Functioning of the European Union*. 326/1 C 37.
Treaty restricting the ECB from, among other activities, monetary financing.
https://ypfs.som.yale.edu/node/19603

Press Releases/Announcements

(EBRD 2009a) European Bank for Reconstruction and Development (EBRD). 2009a. "European Bank Coordination: PSI Rollover Requirements and Macroeconomic Consequences."
Details from the "Vienna Initiative" on rollover agreements among countries in Central and Eastern Europe.
https://ypfs.som.yale.edu/library/psi-rollover-requirements-and-macroeconomic-consequences

(EC n.d.) European Commission (EC). n.d. "Financial Assistance to Hungary." Accessed March 21, 2022.
Information on Hungary's balance of payments (BoP) program and post-program surveillance.
https://ypfs.som.yale.edu/library/document/financial-assistance-hungary

(ECB 2008) European Central Bank (ECB). 2008. “Magyar Nemzeti Bank and European Central Bank Cooperation to Support the MNB’s Euro Liquidity Providing Instruments.”
ECB announcement of its support for the MNB.
https://ypfs.som.yale.edu/library/document/magyar-nemzeti-bank-and-european-central-bank-cooperation-support-mnbs-euro

(MNB 2008a) Magyar Nemzeti Bank (MNB). 2008a. “The MNB’s Two-Way O/N FX Swap Tenders (Providing Euro and Forint Liquidity).”
MNB announcement of initial two-way swap tenders.
https://ypfs.som.yale.edu/library/mnbs-two-way-fx-swap-tenders-providing-euro-and-forint-liquidity

(MNB 2008b) Magyar Nemzeti Bank (MNB). 2008b. “The MNB’s O/N FX Swap Standing Facility Providing Euro.”
Following the two-way swap tenders, the MNB’s announcement of a euro swap facility.
https://ypfs.som.yale.edu/library/mnbs-fx-swap-standing-facility-providing-euro

(MNB n.d.) Magyar Nemzeti Bank (MNB). n.d. “IMF / EU Financial Assistance (Archive).” Accessed April 28, 2022.
Details on the agreement with the World Bank, whose funding the Hungarian state never drew upon.
https://ypfs.som.yale.edu/library/mnb-imf-eu-financial-assistance-archive

(SNB n.d.) Swiss National Bank (SNB). n.d. “Swiss National Bank and Magyar Nemzeti Bank Cooperate to Provide Swiss Franc Liquidity.” Accessed January 6, 2022.
Announcement of Swiss National Bank and MNB swap line.
https://ypfs.som.yale.edu/library/document/swiss-national-bank-and-magyar-nemzeti-bank-cooperate-provide-swiss-franc

(World Bank 2009) World Bank. 2009. “Hungary: Financial Sector and Macro Stability Development Policy Loan.”
World Bank announcement on the loan to the Hungarian state, which was not drawn.
https://ypfs.som.yale.edu/library/hungary-financial-sector-and-macro-stability-development-policy-loan

Reports/Assessments

(Chung 2011) Chung, Hee Chun. 2011. “The Bank of Korea’s Policy Response to the Global Financial Crisis,” Bank for International Settlements, no. 54: 10.
Analysis of the Bank of Korea’s GFC liquidity provision, which resembled Hungary’s foreign currency lending.
https://ypfs.som.yale.edu/library/document/bank-koreas-policy-response-global-financial-crisis

(EC 2009) European Commission (EC). 2009. “State Aid N 664/2008 – Support Measures for the Banking Industry in Hungary.”
EC approval of Hungary’s initial crisis response measures, prior to the launch of the liquidity

scheme.
https://ypfs.som.yale.edu/library/state-aid-n-6642008-support-measures-banking-industry-hungary

(EC 2010b) European Commission (EC). 2010b. "State Aid N 225/2010 Prolongation and Modification of the Hungarian Bank Support Scheme."
First extension to Hungary's liquidity scheme.
https://ypfs.som.yale.edu/library/document/state-aid-n-2252010-prolongation-and-modification-hungarian-bank-support-scheme

(EC 2012a) European Commission (EC). 2012a. "State Aid SA.34078 (2011/N) Extension of the Hungarian Bank Support Scheme."
Fourth extension to Hungary's liquidity scheme.
https://ypfs.som.yale.edu/library/document/state-aid-sa34078-2011n-extension-hungarian-bank-support-scheme

(EC 2012b) European Commission (EC). 2012b. "State Aid SA.35144 (2012/N) Extension of the Hungarian Bank Support Scheme."
Fifth extension to Hungary's liquidity scheme.
https://ypfs.som.yale.edu/library/document/state-aid-sa35144-2012n-extension-hungarian-bank-support-scheme

(EC 2013) European Commission (EC). 2013. "State Aid SA.36087 (2013/N)—Hungary—Sixth Prolongation of the Liquidity Scheme for Banks."
Sixth and final extension to Hungary's liquidity scheme.
https://ypfs.som.yale.edu/library/document/state-aid-sa36087-2013n-hungary-sixth-prolongation-liquidity-scheme-banks

(Gárdos 2008) István Gárdos (Gárdos). 2008. "IMF, European Union and World Bank Support Credit Crisis Relief Measures."
Overview of Hungary's initial crisis response measures, including the guarantee and recapitalization schemes.
https://ypfs.som.yale.edu/library/document/imf-european-union-and-world-bank-support-credit-crisis-relief-measures

(IMF 2007) International Monetary Fund (IMF). 2007. "Hungary: 2007 Article IV Consultation: Staff Report; and Public Information Notice on the Executive Board Discussion." *IMF Staff Country Reports* 07, no. 250: 1.
IMF country report on Hungary.
https://ypfs.som.yale.edu/library/document/hungary-2007-article-iv-consultation-staff-report-and-public-information-notice

(IMF 2008a) International Monetary Fund (IMF). 2008a. "Press Release: IMF Announces Staff-Level Agreement with Hungary on 12.5 Billion Euro Loan (US$15.7 Billion); European Union, World Bank to Lend, Too."
Initial press release announcing the joint IMF-EU-WEB loan to Hungary.

https://ypfs.som.yale.edu/library/document/press-release-imf-announces-staff-level-agreement-hungary-125-billion-euro-loan

(IMF 2008b) International Monetary Fund (IMF). 2008b. "Press Release: IMF Executive Board Approves 12.3 Billion Euro Stand-By Arrangement for Hungary."
Official IMF announcement of the Stand-By Arrangement.
https://ypfs.som.yale.edu/library/imf-executive-board-approves-eu123-billion-stand-arrangement-hungary

(IMF 2008c) International Monetary Fund (IMF). 2008c. "Hungary: Request for Stand-By Arrangement-Staff Report; Staff Supplement; and Press Release on the Executive Board Discussion" 2008, no. 361.
IMF report on Hungary's request for a Stand-By Arrangement.
https://ypfs.som.yale.edu/library/hungary-request-stand-arrangement

(IMF 2009a) International Monetary Fund (IMF). 2009a. "Hungary: Second Review Under the Stand-By Arrangement, Request for Waiver of Nonobservance of Performance Criterion, and Request for Modification of Performance Criteria: Staff Report; and Press Release on the Executive Board Discussion." *IMF Staff Country Reports* 09, no. 197: i.
IMF's second review under the Stand-By Arrangement.
https://ypfs.som.yale.edu/library/hungary-second-review-under-stand-arrangement-request-waiver-nonobservance-performance

(IMF 2009b) International Monetary Fund (IMF). 2009b. "Hungary: Third Review Under the Stand-By Arrangement, Requests for Extension of the Arrangement, Rephasing of Purchases, and Modification of Performance Criterion." *IMF Staff Country Reports* 09, no. 304: i.
IMF's third review under the Stand-By Arrangement.
https://ypfs.som.yale.edu/library/hungary-third-review-under-stand-arrangement-request-waiver-nonobservance-performance

(IMF 2009c) International Monetary Fund (IMF). 2009c. "Hungary: Fourth Review Under the Stand-By Arrangement, and Request for Modification of Performance Criteria (2009)."
IMF's fourth review under the Stand-By Arrangement.
https://ypfs.som.yale.edu/library/document/hungary-fourth-review-under-stand-arrangement-and-request-modification-performance

(MNB 2009) Magyar Nemzeti Bank (MNB). 2009. "Annual Report 2009."
Annual report of the MNB, 2009.
https://ypfs.som.yale.edu/library/document/magyar-nemzeti-bank-annual-report-2009

(Trading Economics n.d.) Trading Economics. n.d. "Hungary - Credit Rating." Accessed March 22, 2022.
Hungary's credit ratings.
https://ypfs.som.yale.edu/library/document/hungary-credit-rating

Key Academic Papers

(Allen and Moessner 2010) William A Allen, and Richhild Moessner (Allen and Moessner). 2010. "Central Bank Co-Operation and International Liquidity in the Financial Crisis of 2008-9." BIS Working Paper, 310, May 2010.
Overview of central bank responses to the GFC.
https://ypfs.som.yale.edu/library/document/central-bank-co-operation-and-international-liquidity-financial-crisis-2008-9

(Banai, et al. 2014) Ádám Banai, András Kollarik, and András Szabó-Solticzky (Banai, et al.). 2014. "The Network Topology of the Hungarian Short-Term Foreign Exchange Swap Market." *Research in Economics and Business: Central and Eastern Europe* 6, no. 2.
Overview of the Hungarian FX swap market and the effects of the GFC on that market.
https://ypfs.som.yale.edu/library/network-topology-hungarian-short-term-foreign-exchange-swap-market

(Banai, Király, and Nagy 2011) Banai, Ádám, Júlia Király, and Márton Nagy. 2011. "The Demise of the Halcyon Days in Hungary: 'Foreign' and 'Local' Banks—before and after the Crisis," no. 54: 30.
Analysis of foreign and local banking representation in Hungary.
https://ypfs.som.yale.edu/library/document/demise-halcyon-days-hungary-foreign-and-local-banks-and-after-crisis

(Buchholtz 2020) Buchholtz, Alec. 2020. "The Hungarian Guarantee Scheme (Hungary GFC)." *Journal of Financial Crises* 2, no. 3: 18.
YPFS case study on Hungary's guarantee scheme.
https://ypfs.som.yale.edu/node/4694

(Buchholtz 2021) Buchholtz, Alec. 2021. "Hungary Recapitalization Scheme." *Journal of Financial Crises* 3, no. 3: 18.
YPFS case study on Hungary's Recapitalization Scheme, which only saw one participant.
https://ypfs.som.yale.edu/node/4579

(Cull, Peria, and Verrier 2018) Cull, Robert, Maria Soledad Martinez Peria, and Jeanne Verrier. 2018. "Bank Ownership: Trends and Implications." IMF Policy Research Working Paper 8297. Development Research Group; Finance and Private Sector Development Team.
IMF Policy Research Working Paper presenting recent trends in government and foreign bank ownership across countries.
https://ypfs.som.yale.edu/library/bank-ownership-trends-and-implications

(EBRD 2009b) Erik Berglof and Piroska M. Nagy (EBRD). 2009b. "Coordinated Policy Response to the Financial Crisis in Emerging Europe."
Presentation detailing the "Vienna Initiative's" response to the crisis in Central and Eastern Europe, delivered at an informal seminar in Vienna sponsored by the European Bank for Reconstruction and Development, January 23, 2009.
https://ypfs.som.yale.edu/library/coordinated-policy-response-financial-crisis-emerging-europe

(Kerényi 2011) Ádám Kerényi (Kerényi). 2011. "Financial Assistance for Hungarian Crisis Management – a Case Study." *Studies in International Economics and Finance*, 35–61.
Overview of the Hungarian response to the GFC.
https://ypfs.som.yale.edu/library/document/financial-assistance-hungarian-crisis-management-case-study

(Petrovic and Tutsch 2009) Petrovic, Ana, and Ralf Tutsch. 2009. "National Rescue Measures in Response to the Current Financial Crisis." *ECB Legal Working Paper Series*, July.
Piece detailing financial responses to the Global Financial Crisis by country.
https://ypfs.som.yale.edu/node/4151

(Runkel 2022) Runkel, Corey N. 2022. "Greece: Emergency Liquidity Assistance." *Journal of Financial Crises* 4, no. 2.
YPFS case study reviewing the Bank of Greece's (and the ECB's) Emergency Liquidity Assistance.
https://elischolar.library.yale.edu/journal-of-financial-crises/vol4/iss2/39

(Várhegyi 2008) É. Várhegyi (Várhegyi). 2008. "The Hungarian Banking System 20 Years After Modernization." *Acta Oeconomica* 58, no. 4: 351–66.
Analysis of the Hungarian banking sector.
https://ypfs.som.yale.edu/library/document/hungarian-banking-system-20-years-after-modernization

(Verner and Gyöngyösi 2020) Verner, Emil, and Győző Gyöngyösi. 2020. "Household Debt Revluation and the Real Economy: Evidence from a Foreign Currency Debt Crisis." *MNB Working Papers, No. 2020/2*, March.
Summary of foreign debt borrowing by Hungarian households in the lead-up to the GFC.
https://www.econstor.eu/bitstream/10419/241072/1/mnb-wp-2020-2-final.pdf

IV. Appendix

European Commission's Review of Hungary's Liquidity Scheme

Approval	Date	Notice
Initial Approval	January 14, 2010	NN 68/2009
Extension 1	June 28, 2010	N 225/2010
Extension 2	December 7, 2010	N 535/2010
Extension 3	June 23, 2011	SA.32994 (2011/N)
Extension 4	March 7, 2012	SA.34078 (2011/N)
Extension 5	July 30, 2012	SA.35144 (2012/N)
Extension 6	January 16, 2013	SA.36087 (2013/N)