The Journal of Financial Crises

Volume 2 | Issue 3

2020

Denmark's Excess-Capital Temporary Credit Facility (Denmark GFC)

Keni Sabath
Yale University

Denmark Excess-Capital Temporary Credit Facility[1]

Keni Sabath [2]

Yale Program on Financial Stability Case Study
December 31, 2018, revised: October 10, 2020

Abstract

During the interbank market freeze following the Lehman Brothers collapse in September 2008, Denmark's central bank, Danmarks Nationalbank, used a series of unconventional monetary policy instruments to increase market liquidity. One such action included the introduction of the excess-capital temporary credit facility, also known as the solvency scheme. Under this facility, credit lines from Danmarks Nationalbank could be provided to banks and mortgage-credit institutions on the basis of their excess capital adequacy, calculated as the difference between their base capital and their capital need. The purpose of this facility was to ease the tight liquidity situation by providing access to credit directly from Danmarks Nationalbank, thus aiding the liquidity of banks with adequate capital but insufficient assets that are eligible as collateral. The program ran from September 26, 2008, to February 26, 2011, after being extended twice. The facility effectively assisted some banks with their statutory liquidity requirements, and few banks had to draw on their credit lines throughout the duration of the program.

Keywords: Denmark, temporary credit facility, excess capital adequacy

[1] This case study is part of the Yale Program on Financial Stability (YPFS) selection of New Bagehot Project modules considering the responses to the global financial crisis that pertain market liquidity programs.

Cases are available from the *Journal of Financial Crises* at https://elischolar.library.yale.edu/journal-of-financial-crises/.

[2] Keni Sabath - Research Associate, YPFS, Yale School of Management.

Denmark Excess-Capital Facility

At a Glance

During the interbank market freeze following the collapse of Lehman Brothers in September 2008, Denmark's central bank, Danmarks Nationalbank, used a series of unconventional monetary policy instruments to increase market liquidity. One such action included the introduction of the excess-capital temporary credit facility, also known as the solvency scheme. Under this facility, credit lines from Danmarks Nationalbank could be provided to banks and mortgage-credit institutions on the basis of their excess capital adequacy, calculated as the difference between their base capital and their capital need. The purpose of this facility was to ease the tight liquidity situation by providing access to credit directly from Danmarks Nationalbank, thus aiding the liquidity of banks with adequate capital but with insufficient assets that are eligible as collateral. The program ran from September 26, 2008, to February 26, 2011, after being extended twice.

Summary of Key Terms	
Purpose: To increase access to loans from Danmarks Nationalbank to support liquidity of banks.	
Announcement Date	September 26, 2008
Operational Date	September 26, 2008
End of Issuance Window	Jan. 30, 2009 (initial) Sept. 30, 2010 (second) Feb. 26, 2011 (final)
Legal Authority	N/A
Peak Utilization	About DKK14 billion taken out in credit lines but rarely utilized (exact number pending)
Participants	Several (exact number pending)
Administrators	Danmarks Nationalbank

Summary Evaluation

The program assisted some banks with their statutory liquidity requirements, and few banks had to draw on their credit lines. Both the Danish government and critics agree that the lack of usage of temporary credit facilities in Denmark was in part due to the more successful and more widely used bank rescue packages that guaranteed interbank loans.

Excess Capital Temporary Credit Facility: Denmark Context	
GDP	$355.62 billion in 2008 *Source: Bloomberg*
GDP per capita	$64,322 per capita in 2008 *Source: Bloomberg*
Sovereign credit rating (5-year senior debt)	As of Q4 2008: Fitch: AAA Moody's: AAAu S&P: AAAu *Source: Bloomberg*
Size of banking system	$750.5 billion in total assets *Source: Bloomberg*
Size of banking system as a percentage of GDP	211.04% in 2008 *Source: Bloomberg*
Size of banking system as a percentage of financial system	*Data not available for given year* *Source: World Bank Global Financial Development Database*

5-bank concentration of banking system	89% of total banking assets in 2008 *Source: World Bank Global Financial Development Database*
Foreign involvement in banking system	18% of total banking assets in 2008 *Source: World Bank Global Financial Development Database*
Government ownership of banking system	1% of banks owned by the state in 2008 *Source: Call et al. "Bank Ownership – Trends and Implications"*
Existence of deposit insurance	100% insurance on deposits up to $133,333 in 2010 *Source: World Bank Deposit Insurance Dataset, OECD*

I. Overview

Background

During the interbank market freeze of September 2008, Denmark's central bank, Danmarks Nationalbank, used a series of unconventional monetary policy instruments to increase market liquidity. As part of these measures, the central bank created two temporary credit facilities: first the loan-bills facility and later the excess-capital facility, also known as the solvency scheme. In addition, it expanded the collateral base for loans from Danmarks Nationalbank to include more securities than were normally eligible as collateral.[3] These steps were taken to "prevent solvent banks from experiencing difficulties due to insufficient liquidity" (Financial Stability 2009, 1st half, 18).

The loan-bills temporary credit facility was first implemented in May 2008, before the Global Financial Crisis and the interbank market freeze had truly hit Denmark. By contrast, the excess-capital facility was implemented months later, in September 2008, driven in part by the initial failure of the loan-bill scheme to meet banking needs that were intensified after the fall of Lehman Brothers. A 2009 report from Danmarks Nationalbank elaborates on this disappointment, noting that the loan-bill scheme "assume[d] that the banking institutions want to lend to each other," however, "confidence among the banking institutions weakened during the summer of 2008 as the scope of the problems in the financial sector became more apparent" (Financial Stability 2009, 1st half, 19).

The purpose of the excess-capital facility in particular was to prevent banking institutions with adequate capital from incurring liquidity problems as a result of insufficient assets that could be pledged as collateral to Danmarks Nationalbank. Unlike the loan-bill scheme, the solvency scheme was meant to help institutions access loans raised directly from Danmarks Nationalbank—not from other banks. To achieve this, the excess-capital facility allowed Danmarks Nationalbank to offer uncollateralized credit in the form of credit lines, the value of which depended on the applying institutions' excess capital adequacy (FINANCIAL STABILITY 2009, 1st half, 20). The credit line could be counted toward the institution's statutory liquidity requirement (Financial Stability 2010, 66).

Program Description

On September 26, 2008, Denmark introduced its second temporary credit facility in response to the Global Financial Crisis: the excess-capital facility. This facility provided credit to banks and mortgage-credit institutes on the basis of their excess capital adequacy, calculated as the difference between their base capital and their capital need. Financial institutions had to apply for a credit line; successful applications were then granted credit lines by the Board of Governors of Danmarks Nationalbank. The credit line was calculated as an institution's excess capital adequacy less a margin of one percentage point, usually up to a maximum of DKK800 million. On Fridays, banks and mortgage-credit institutes could receive seven-day loans at Danmarks Nationalbank within the credit line.

---

[3] During the financial crisis, the collateral base for loans from Danmarks Nationalbank to financial institutions was temporarily expanded to include special loan bills, quoted and unquoted shares, investment fund shares, bank bonds with government guarantee, as well as special purpose vehicle (SPV) bonds issued on the basis of government-guaranteed loans to the institutions (Financial Stability 2010, 66).

If an institution chose to exercise the credit commitment, it had to pay an interest rate corresponding to Danmarks Nationalbank's lending rate plus a premium. The interest rate was initially fixed as Danmarks Nationalbank's usual lending rate plus two percentage points. On March 13, 2009, the interest was reduced to Danmarks Nationalbank's usual lending rate plus one percentage point, a decision driven by a general downward trend in interest rates. On April 8, 2010, the interest rate was changed a third and final time to Danmarks Nationalbank's usual lending rate plus two percentage points, a change that came into effect on October 1, 2010.

The Danish Financial Supervisory Authority stated that access to excess-capital credit lines could be included as part of an institution's statutory liquidity, cf. Section 152 of the Danish Financial Business Act, until one month before the expiry of the facility. The expiration date subsequently changed twice. When it was introduced in September 2008, the excess-capital credit facility was initially set to expire on January 30, 2009. On October 7, 2008, it was extended to September 30, 2010. On April 8, 2010, the facility was further extended until February 26, 2011. On February 26, 2011, the credit facility on the basis of excess capital adequacy expired.

Outcomes

Usage of the scheme remained low throughout its existence. In 2009, Denmark reported that "new temporary credit facilities" had "led to a significant relaxation of Danmarks Nationalbank's extension of credit to banks and mortgage-credit institutes compared to the framework for credit operations that applied prior to the onset of the crisis" (Financial Stability 2009, 1st half). The central bank had established DKK14 billion in credit lines based on the solvency scheme by the end of April 2009, distributed across 35 banking institutions (Danmarks Nationalbank 2009, 1st half, 21). Credit lines totaled DKK12.4 billion at the end of April 2010 (Danmarks Nationalbank 2010, 65). Credit lines were drawn on for loans only a few times; the exact number of times has not yet been identified. But the central bank emphasized that the point of the program was to reassure markets about the liquidity of banking institutions. The excess-capital scheme helped 35 institutions meet the liquidity requirements under Section 152 of the Danish Financial Business Act.

After the first wave of temporary credit facilities and expansion of collateral expired in February 2011, a partial reintroduction of the temporary collateral expansion was put into place on August 10, 2011. It allowed banks and mortgage-credit institutes to pledge certain shares in jointly owned corporations as collateral with Danmarks Nationalbank. This policy expired on July 1, 2014.

II. Key Design Decisions

1. On September 26, 2008, Denmark introduced its second credit facility in response to the financial crisis based on institutions' calculated excess capital.

The first temporary credit facility was the loan-bills scheme, introduced in May 2008. The excess-capital facility was implemented months later, in September 2008, driven in part by the initial failure of the loan-bill scheme to meet banking needs that were intensified after the fall of Lehman Brothers. A 2009 report from Danmarks Nationalbank elaborates on this disappointment, noting that the loan-bill scheme "assume[d] that the banking institutions want to lend to each other," however, "confidence among the banking institutions weakened during the summer of 2008 as the scope of the problems in the financial sector became more apparent" (Financial Stability 2009, 1st half, 19).

The purpose of the excess-capital facility in particular was to prevent banking institutions with adequate capital from incurring liquidity problems as a result of insufficient assets that could be pledged as collateral to Danmarks Nationalbank. Unlike the loan-bill scheme, the solvency scheme was meant to help institutions access loans raised directly from Danmarks Nationalbank—not from other banks. To achieve this, the excess-capital facility allowed Danmarks Nationalbank to offer uncollateralized credit in the form of credit lines, the value of which depended on the applying institutions' excess capital adequacy (Financial Stability 2009, 1st half, 20). As was the case in the loan-bills scheme, this was a seven-day loan.

2. Banks and mortgage-credit institutes were eligible to participate.

3. For the excess-capital facility, the credit line was calculated as an institution's excess capital adequacy less a margin of one percentage point.

The usual limit was DKK800 million.

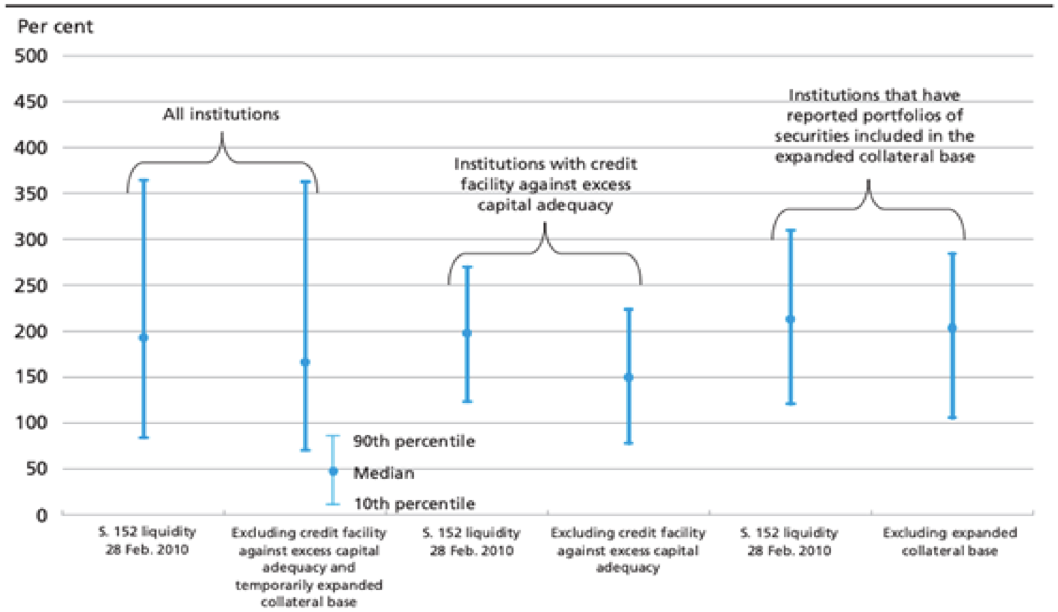
4. The interest rate for the excess-capital facility changed over time.

If an institution chose to exercise the credit commitment, it had to pay an interest rate corresponding to Danmarks Nationalbank's lending rate plus a premium. The interest rate was initially fixed as Danmarks Nationalbank's usual lending rate plus two percentage points. On March 13, 2009, the interest was reduced to Danmarks Nationalbank's usual lending rate plus one percentage point, a decision driven by a general downward trend in interest rates. On April 8, 2010, the interest rate was changed a third and final time to Danmarks Nationalbank's usual lending rate plus two percentage points, to come into effect on October 1, 2010.

5. The Danish Financial Supervisory Authority stated that excess-capital credit lines may be included as part of an institution's statutory liquidity, cf. Section 152 of the Danish Financial Business Act, until one month before the expiry of each respective facility.

Some financial institutions used the excess-capital credit lines to help with their statutory liquidity requirements by increasing their excess liquidity cover. Figure 1 shows how the excess-capital facility contributed to increasing the institutions' excess liquidity cover. The chart is based on liquidity reporting by the institutions to Danmarks Nationalbank and the Danish Financial Supervisory Authority. The chart illustrates the excess liquidity cover—with and without Danmarks Nationalbank's temporary facilities—of banking institutions from Denmark's groups 1-3 (with group 1 containing the largest banks and group 3 containing the smallest) (Financial Stability 2010, 65-66). The chart shows that 34 of the 35 institutions with credit lines under the solvency scheme improved their excess liquidity ratio by about 50 percentage points on average (middle bars).

Figure 1: Statutory Excess Liquidity Cover for Danish Banks in Groups 1, 2, and 3, with and without Danmarks Nationalbank's Temporary Liquidity Facilities



Note: Data based on figures as at end-February 2010 for Danish banks in groups 1, 2 and 3. The data set covers 95 of the institutions. 34 of these have credit facility against excess capital adequacy. For 54 of the 95 institutions, we have information on Danmarks Nationalbank's expanded collateral base. 35 of the 54 institutions have reported portfolios of securities included in Danmarks Nationalbank's expanded collateral base (excluding loan bills and SPV bonds).

Source: Liquidity reporting to the Danish Financial Supervisory Authority and Danmarks Nationalbank.

Source: Danish Financial 2009 (Financial Stability 2010, 67, Chart 36)

Figure 2: Danish Financial Supervisory Authority Banking Institutions in Groups 1 and 2

BANKING INSTITUTIONS IN GROUPS 1 AND 2 Box 1

The analyses in this section are based on the banking institutions included in the Danish Financial Supervisory Authority's groups 1 and 2 as at 31 December 2009. Group 1 comprises institutions with working capital of at least kr. 50 billion, while group 2 comprises institutions with working capital of at least kr. 10 billion. Unlike in the Danish Financial Supervisory Authority's groups, these analyses exclude FIH Kapital Bank, which is a fully-owned subsidiary of FIH Erhvervsbank, and Sammenslutningen Danske Andelskasser, which is an umbrella organisation for 20 cooperative banks. Banking institutions acquired by the Financial Stability Company have not been included in the analyses either.[1]

Group 1	Group 2
Danske Bank	Alm. Brand Bank
FIH Erhvervsbank	Amagerbanken
Jyske Bank	Arbejdernes Landsbank
Nordea Bank Danmark	Forstædernes Bank
Nykredit Bank[2]	Ringkjøbing Landbobank
Sydbank	Spar Nord Bank
	Sparbank
	Sparekassen Sjælland[3]
	Vestjysk Bank

Source: Danish Financial 2009 (Financial Stability 2010, 14, Box 1)

6. The excess-capital credit facility was extended twice before expiring.

The excess-capital credit facility was initially set to expire on January 30, 2009. On October 7, 2008, it was extended until September 30, 2010. On April 8, 2010, the facility was further extended until February 26, 2011. On February 26, 2011, the credit facility on the basis of excess capital adequacy expired.

III. Evaluation

The excess-capital facility, like Denmark's other temporary credit facilities, was not widely used (Carstensen 2011, 108). The Danish government attributed this lack of temporary credit facilities usage to the success of the Original Guarantee Scheme under Bank Package I. Officials claim that because of the October 2008 government guarantee under the Bank Rescue Package I, "banking institutions started lending to each other in the money market again, and the need to borrow from Danmarks Nationalbank [became] modest" (FINANCIAL STABILITY 2009, 1st half, 21). The 2009 report continues to note that this was part of a broader trend where securities eligible as part of the temporary expanded collateral base were not used. Although the temporary facilities (and corresponding expanded collateral policies) were supposed to help Danish institutions meet solvency requirements through alternative collateral, the use of these unconventional collateral types was limited. Of the total DKK332 billion in assets pledged as collateral to Danmarks Nationalbank by the end of April, usual eligible assets continued to account for the vast majority of the assets pledged as collateral for loans from Danmarks Nationalbank.

Some have argued that the temporary credit facilities in general had limited usage because Denmark was simultaneously experiencing a currency crisis. The combination of not being a Eurozone member and having a fixed exchange rate regime may have led to high demand for euro and dollar liquidity by Danish banks and increasing pressure on the Danish krone (Woll 2014, 158). As a result, monetary policy instruments used by the Danish central bank were simply not as significant to supporting the banking industry as in the United States or United Kingdom (Woll 2014, 158).

Regardless, the International Monetary Fund has noted that compared to the first temporary liquidity facility—the loan-bills scheme—the excess-liquidity facility was a "more direct interventio[n]" (p. 12). In addition, the Financial Stability 2009, 1st half, report claims that the excess-capital schemes may have contributed to capping the borrowing rates (21).

IV. References

Carstensen, Martin B. 2011. "New Financial Regulation in Denmark After the Crisis—or the Politics of Not Really Doing Anything." *Danish Foreign Policy Review*, 2011: 106-129. https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Carstensen_2011.pdf.

Danmarks Nationalbank. FINANCIAL STABILITY, 1ST HALF 2009. https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Denmark_FSR_2009A.pdf.

Danmarks Nationalbank. Financial Stability 2010. https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Denmark_FSR_2.pdf.

Danmarks Nationalbank. Overview of temporary credit facilities initiatives at Danmarks Nationalbank. https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Overview%20of%20temporary%20credit%20facilities%20initiatives%20at%20Danmarks%20Nationalbank.pdf.

International Monetary Fund. Staff Report for the 2008 Article IV Consultation. https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/cr08379.pdf.

Woll, Cornelia. 2014. *The Power of Inaction: Bank Bailouts in Comparison*. Ithaca: Cornell University Press. ProQuest Ebook Central. https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Woll_2014.pdf.

V. Key Program Documents

Summary of Program

Danmarks Nationalbank. Overview of temporary credit facilities initiatives at Danmarks Nationalbank. – *Table of the various crisis-era lending operations of the Danmarks Nationalbank.* https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Overview%20of%20temporary%20credit%20facilities%20initiatives%20at%20Danmarks%20Nationalbank.pdf.

Reports/Assessments

Danmarks Nationalbank. Financial Stability, 1st Half 2009 – *Danmarks Nationalbank financial stability document on the Danish economy in early 2009.* https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Denmark_FSR_2009A.pdf.

Danmarks Nationalbank. Financial Stability 2010 – *Danmarks Nationalbank financial stability document on the Danish economy in 2010*. https://ypfsresourcelibrary.blob.core.windows.net/fcic/YPFS/Denmark_FSR_2.pdf