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Greece: Emergency Liquidity Assistance¹

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Yale Program on Financial Stability Case Study
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Abstract

The Global Financial Crisis of 2007-09 triggered a deep recession in Greece, leading investors to withdraw one third of Greek bank deposits between 2008 and 2011. As banks' nonperforming assets rose and rating agencies downgraded Greek sovereign debt, Greek banks' capital fell below levels required for Eurosystem refinancing operations. In response, the Bank of Greece (BOG) provided Emergency Liquidity Assistance (ELA) to all Greek banks. ELA was a revolving credit line open to solvent institutions at a premium rate, so long as that support did not interfere with the Eurosystem's monetary policy. European Central Bank (ECB) rules required the BOG to bear all credit risk for ELA. The Greek case was the first ELA to be administered to an entire financial system. From August 2011 to February 2019, the BOG provided ELA at a 100-150 basis-point premium over the ECB's refinancing rate. ELA outstanding peaked at EUR 124 billion (USD 162 billion) in May 2012, and again at EUR 90 billion in May 2015. In total, banks paid EUR 4.5 billion in premia above Eurosystem interest rates. ELA ended when Greek banks were once again accepted as counterparties in Eurosystem refinancing operations. A small body of research agrees that ELA significantly improved the liquidity of Greek banks.

Keywords: ELA, Emergency Liquidity Assistance, Eurozone Crisis, Global Financial Crisis, Greece, lender of last resort, Sovereign Debt Crisis

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Overview

The Global Financial Crisis (GFC) revealed deep vulnerabilities in Greece's economy and finances. Still, bank deposits continued to rise through September 2009, and domestic banks received Eurosystem refinancing at rates consistent with pre-crisis years (Andruszkiewicz et al. 2020; Runkel 2021). In October 2009, the government announced that its budget deficit would be 12.5% of GDP, not 3.7%, as previously expected. This surprise led rating agencies to announce the first of seven downgrades to the country's sovereign debt, causing it to fall below the credit ratings required by the European Central Bank (ECB) for its main and longer-term refinancing operations (MROs and LTROs) (Andruszkiewicz et al. 2020).

Greek banks experienced distress following these downgrades owing to the banks' uncommonly high holdings of Greek sovereign debt (Andruszkiewicz et al. 2020).³ After the downgrades in later 2009 and early 2010, neither the Eurosystem nor private counterparties accepted Greek sovereign debt as collateral (Pantelias 2021b). In May 2010, the ECB waived its credit-quality requirements for Greek sovereign debt after Greece signed onto an Economic Adjustment Program (EAP) administered by the ECB, European Commission, and International Monetary Fund, collectively, the Troika (ECB/2010/3 2010). This waiver permitted the Greek banks to use Greek sovereign debt as collateral to access the main and longer-term refinancing operations (MROs and LTROs) administered by the ECB. Greek banks dominated usage of these facilities

Key Terms

Purpose: to "counterbalanc[e] the decrease in and the withdrawal of deposits by the private and public sectors, as well as the decrease in the value of eligible collateral for monetary policy operations" (Bank of Greece 2014, 160)

Launch Dates	First activation: August 2011 Second activation: February 2015
Expiration Dates	First activation: May 2014 Second activation: March 2019
Legal Authority	Statute of the ESCB, article 14.4
Peak Outstanding	First activation: EUR 124 billion in May 2012 Second activation: EUR 87 billion in June 2015
Participants	Solvent Greek banks
Rate	Fixed rate 100-150 bps above ECB main refinancing rate
Collateral	Unknown; included Greek sovereign debt
Loan Duration	Case-by-case basis; short-term
Notable Features	National central bank bore risk; first broad-based ELA
Outcomes	Support repaid in March 2019

³ Each country in the eurozone issued its own euro-denominated debt, and ECB regulatory and refinancing requirements did not discriminate between debt issued by a bank's home country or that of another eurozone Member State. Banks, therefore, received little incentive from the Eurosystem to purchase home country debt above that of another eurozone Member State. Andruszkiewicz (2020) proposes, however, that the Greek

from September 2010 to August 2011, borrowing more than one fifth of the total lent by the Eurosystem in each month (Runkel 2021; ECB 2021).

Further complicating the situation faced by Greek banks during this period, they began to experience a “large and persistent increase in” nonperforming loans (NPLs) (Andruszkiewicz et al. 2020). From 2008 to 2012, NPLs increased from less than 6% to more than 30%. The recession—GDP declined 17% from 2008 to 2012—was made worse by bank management, foreclosure moratoria, and an inefficient legal regime for resolving NPLs (Andruszkiewicz et al. 2020; Bank of Greece 2014, 101). Experts agreed that these two factors—the home bias of banks toward Greek government bonds and the potential difficulties in recovering collateral—were the most important causes of Greece’s banking crisis. In addition, banks had no capital buffers to absorb losses (Andruszkiewicz et al. 2020).

In summer 2011, low capital adequacy ratios began to disqualify many Greek banks from Eurosystem lending facilities (Andruszkiewicz et al. 2020). The same problems excluded banks from nonofficial funding sources (Pantelias 2021b, 51:20-51:50). Facing liquidity crises and declining capital, in August 2011 the first banks applied to the Bank of Greece (BOG) for Emergency Liquidity Assistance (ELA), a facility governed by Eurosystem rules that had been used in other eurozone countries to rescue individual banks (Mourmouras 2017).

Eurosystem rules required the national central bank administering an ELA program to bear all risks. This contrasted with other forms of Eurosystem liquidity, in which risk was shared between the ECB and the national central bank. ELA allowed national central banks, such as the BOG, to act as lender of last resort—that is, to offer a line of credit to solvent but illiquid institutions headquartered in their jurisdictions at a premium above Eurosystem refinancing operations—so long as such lending did not conflict with the Eurosystem’s monetary policy (ECB 2013).

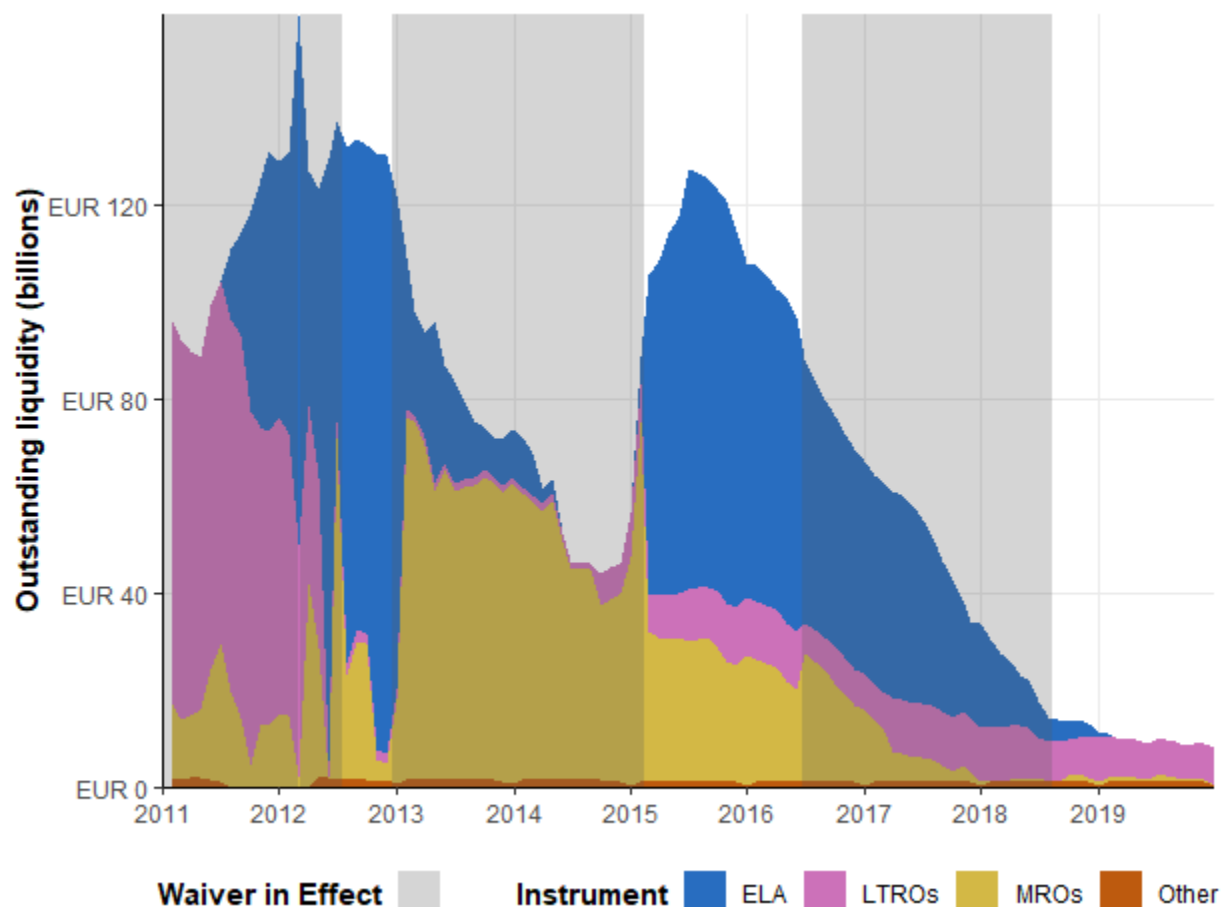
Under Eurosystem rules that were developed during Greece’s crisis but applied across the Eurosystem, ELA was priced between 100 and 150 basis points above Eurosystem refinancing facilities (Suoninen and Jones 2013; Mourmouras 2017; Andruszkiewicz et al. 2020). In addition to collateral eligible for other forms of Eurosystem refinancing, Greek government bonds were eligible regardless of credit rating (Mourmouras 2017). Banks accessed ELA by applying to the BOG, which would then review applications and submit an ELA request to the ECB (Pantelias 2021c, 26:36-27:00). The ECB Governing Council approved EUR 50 billion (USD 66 billion⁴) initially for the Greek ELA. This ceiling was regularly reviewed by the BOG (to ensure support was appropriate) and the ECB Governing Council (to ensure ELA did not conflict with Eurosystem monetary policy) (Pantelias 2021b; Andruszkiewicz et al. 2020).

government pressured banks to buy domestic bonds, resulting in a higher ownership than in other countries and creating a dynamic where bank solvency was tightly interwoven with that of the Greek government.

⁴ EUR 0.76 = USD 1 in 2010.

Monthly ELA draws grew from EUR 20 billion to EUR 50 billion between August and October 2011 as Greece's crisis worsened. Usage spiked to more than EUR 100 billion in February 2012 after the ECB revoked its first waiver covering Greek debt in response to the government's creation of a bond-exchange scheme that devalued its debt (Runkel 2021; ECB/2012/2 2012). As shown in Figure 1, ELA peaked in May 2012, when banks borrowed more than EUR 120 billion—roughly equivalent to 64% of the country's GDP. The ECB quickly instated a second waiver after Greece started a bond-purchase program to guard the value of its debt. But after this program ended, the ECB revoked the second waiver and ELA usage again spiked, above EUR 120 billion (Runkel 2021; Gibson et al. 2020; ECB/2012/2 2012; Bank of Greece 2014, 101). When the condition of Greek banks began improving, in December 2012, the ECB issued a third waiver allowing Greek debt to be used as collateral against the MROs and LTROs, further helping the condition of Greek banks (ECB/2012/32 2012). Throughout 2013 and into 2014, banks requested less and less ELA, ultimately phasing it out in May 2014 (Mourmouras 2017).

However, the January 2015 election of an anti-austerity government fueled fears over Greece's economy and its place in the eurozone (Andruszkiewicz et al. 2020; Mourmouras 2017). In February, the ECB revoked the third waiver, causing banks to apply again for ELA and starting the second activation of the tool in Greece's crisis (Mourmouras 2017; ECB/2015/6 2015). Usage reached EUR 66 billion in February and peaked at EUR 87 billion in June amid deposit runs (Runkel 2021). That month, the ECB Governing Council refused to raise the ELA ceiling to cover further requests from banks (Pantelias 2021c, 23:33-23:45; Wyplosz 2015). With the imposition of capital controls and the passage of time, usage of ELA tapered, finally ending in March 2019. However, as of 2021, deposits had not returned to their September 2009 peak.

Figure 1: Outstanding Liquidity from the Bank of Greece to Greek Banks

Source: Runkel 2021.

Summary Evaluation

Greece's crisis marked the first time ELA had been used on an entire Member State's banking system, and it exposed the BOG and the Eurosystem to unusually large risks. Market commentators speculated that Greece would be kicked out of the eurozone as yields on its sovereign debt soared (Wyplosz 2015; see Figure 3). To resolve the crisis, Greece imposed capital controls and a bank holiday at the end of June 2015. This second wave of ELA tapered much more slowly than the first and did not end until early 2019 (Andruszkiewicz et al. 2020).

A small body of literature on the Greek ELA agrees that it was effective at relieving interbank funding pressures. Andruszkiewicz et al. (2020) surveyed 30 experts close to the BOG. Respondents rated ELA the most effective of various measures employed in addressing the liquidity needs of the Greek banking sector: the capital controls, ECB rate cuts, and Eurosystem open market operations. About 70% said ELA was highly effective "in addressing the liquidity needs of the Greek banks" (Andruszkiewicz et al. 2020). Kostika and

Laopodis (2020) found that ELA alleviated interbank funding strains in several of the countries in which it was implemented. They concluded that Greek ELA also likely helped increase deposits and narrow spreads of Greek bonds over German sovereign debt; however, they also concluded that the effects of ELA are difficult to separate from other Greek programs. Research by BOG staff also credited ELA lending with positive effects on bank lending, GDP growth, and with positive spillover effects on the health of other Greek banks (Gibson et al. 2020).

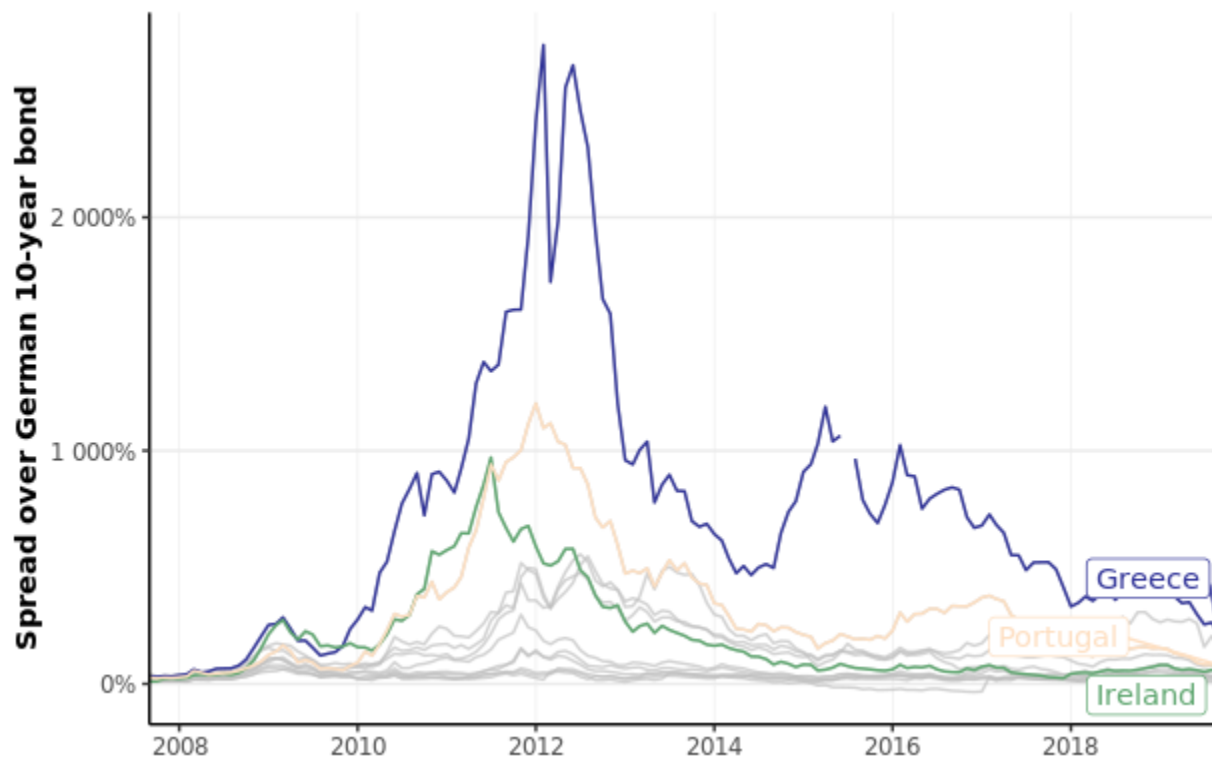
Context: Greece 2010–2011	
GDP (SAAR, nominal GDP in LCU converted to USD)	\$298.5 billion in 2010 \$284.2 billion in 2011
GDP per capita (SAAR, nominal GDP in LCU converted to USD)	\$26,717 in 2010 \$25,484 in 2011
Sovereign credit rating (five-year senior debt)	Moody's: Ba1 in 2010; Ca in 2011 S&P: BB+ in 2010; CC in 2011 Fitch: BBB- in 2010; CCC in 2011
Size of banking system	\$373.66 billion in 2010 \$422.62 billion in 2011
Size of banking system as a percentage of GDP	125% of 2010 GDP 149% of 2011 GDP
Size of banking system as a percentage of financial system	Data not available in 2010 Data not available in 2011
Five-bank concentration of banking system	80.7% of assets in 2010 93.5% of assets in 2011
Foreign involvement in banking system	13.0% of assets in 2010 9.0% of assets in 2011
Government ownership of banking system	Data not available in 2010 Data not available in 2011
Existence of deposit insurance	\$133,333 provided by Hellenic Deposit and Investment Guarantee Fund in 2010 \$133,333 provided by Hellenic Deposit and Investment Guarantee Fund in 2011
<i>Sources: Bloomberg; Federal Reserve Economic Data; World Bank Global Financial Development Database.</i>	

Key Design Decisions

1. Purpose: The BOG used ELA to provide funds to Greek banks after they lost access to Eurosystem liquidity facilities.

Greece experienced a deep recession after the GFC. In 2008, banks' nonperforming assets rose, and in 2009, deposit outflows began (see Figure 8; Andruszkiewicz et al. 2020). Greek banks also held a large amount of Greek government bonds, which saw successive credit-rating downgrades and a significant depreciation in 2010 and 2011 (see Figure 2). Banks turned to Eurosystem liquidity facilities for financing (see Figure 6) and private counterparties as well but decreases in bank capital disqualified banks from borrowing (Andruszkiewicz et al. 2020). The Bank of Greece (BOG) provided ELA for all Greek banks to fill that funding gap (Bank of Greece 2014, 160). ELA was a credit line, requested by each Greek bank, renewed frequently, and funded by the BOG. ELA was governed by Eurosystem rules, but the BOG bore all risks. Other eurozone countries had used ELA before, but the Greek case was the first application to an entire financial system. The Greek case was also the longest use of ELA, spanning three years in its first activation and four years in its second activation. The ECB's allowance for prolonged support aimed to avoid fire sales that may have occurred had ELA ended earlier.

Figure 2: Ten-year Government Bond Yield Spreads over German Bonds, Monthly Data



Source: OECD 2007–2021.

2. Legal Authority (A): Article 14.4 of the Statute of the European System of Central Banks (ESCB) allowed the Bank of Greece to implement ELA, subject to Governing Council review.

The 1992 Treaty on European Union included several annexes related to the functioning of the Union. Member States that also adopted the euro as their official currency devolved many powers of financial regulation to the Eurosystem through these annexes. Some monetary policy powers were also explicitly delegated to the ECB. But the annex—known as the Statute of the ESCB—reserved to the national central banks powers not explicitly delegated:

National central banks may perform functions other than those specified in this Statute unless the Governing Council finds, by a majority of two thirds of the votes cast, that these interfere with the objectives and tasks of the ESCB. Such functions shall be performed on the responsibility and liability of national central banks and shall not be regarded as being part of the functions of the ESCB. (European Union 1992, art. 14.4)

Eurosystem central banks had used this authority to lend, at their own risk, to solvent but illiquid institutions since at least 2007. Still, the Eurosystem imposed rules on liquidity-providing central banks to ensure that lending did not conflict with monetary policy goals. By 2011, most of the rules that governed ELA were in place. First, the Governing Council could veto any ELA larger than EUR 2 billion within two business days after the aid was provided (ECB 2013). Second, the Eurosystem required borrowing institutions to pay a penalty rate over the Eurosystem refinancing rate. Third, in the Greek case, the Governing Council also reviewed the total ceiling of ELA usage biweekly (Andruszkiewicz et al. 2020).

Legal Authority (B): The European Commission approved ELA operations as permissible state aid to private institutions.

Financial interventions in the EU often collided with European Commission competition regulations, termed “State aid,” which restrict support from Member States to private companies. Article 107(3)(b) of the Treaty on the Functioning of the European Union permitted the Commission to find State aid permissible if it was intended “to remedy a serious disturbance in the economy of a Member State.”

The 2008 Banking Communication published by the Commission defined its jurisdiction and application of the State aid rules to measures taken in relation to financial institutions in the context of the GFC and clarified how the Commission would review such matters to determine if State aid was intended “to remedy a serious disturbance in the economy of a member State” (European Commission 2008, vol. 270, para. 7). While the communication mostly aimed at guarantees and restructuring efforts, it also acknowledged that a central bank may wish to augment such efforts with liquidity support, and it allowed, in certain “exceptional circumstances, a scheme of liquidity support from public sources (including the central bank)” (Banking Communication 2008, vol. 270, para. 52). This Communication further acknowledged that “the drastic repercussions of the potential failure of a systemically relevant financial institution” might require interventions that “extend beyond

the stabilization of individual financial institutions and include general schemes” (Banking Communication 2008, vol. 270, para. 4).

Funding provided by a central bank to a financial institution did not constitute State aid if four conditions were met:

- (a) the financial institution was solvent at the moment of the liquidity provision;
- (b) the facility was fully secured by collateral to which appropriate haircuts are applied, in function of its quality and market value;
- (c) the central bank charged a penal interest rate to the beneficiary;
- (d) the measure was taken at the central bank's own initiative, and in particular was not backed by any counter-guarantee of the State (European Commission 2008, vol. 270, para. 51).

Greece's ELA program satisfied the first three conditions, which defined classical lender-of-last-resort activities (Domanski, Moessner, and Nelson 2014; European Commission 2014). But the Commission ruled that the ELA constituted State aid since bank borrowing under the ELA was guaranteed by the Greek government (European Commission 2014).

The Commission then subjected the Greek ELA to the required compatibility standards — the *appropriateness*, *necessity*, and *proportionality* tests — which the 2008 Banking Communication outlines as general principles for all programs hoping to comply with State aid rules. To be appropriate, a State aid program must have been “well-targeted in order to [remedy] a serious disturbance in the economy” (European Commission 2008, vol. 270, para. 15). State aid documents for the case of support provided to TT Bank—a postal savings bank—demonstrate the Commission's general stance toward Greek ELA: The Commission ruled that “because the Greek banks were shut out from wholesale markets and became entirely dependent on central bank funding . . . and since [TT] Bank could not borrow a sufficient amount” from regular refinancing operations, the ELA was appropriate to quell the “serious disturbance” that may have occurred had the recipient defaulted on its debt (European Commission 2014).

The Commission then addressed the necessity test, which asked whether the scale of ELA was enough to achieve its desired effect—rescuing TT Bank from its liquidity crisis—and the proportionality test, which asked if the scale of ELA went beyond what was required (European Commission 2008, vol. 270, para. 15). The Commission decided that the ELA's premium over Eurosystem refinancing facilities, coupled with close monitoring by the ECB, “entails a relatively high cost of funding for the Bank, [so that] the Bank has a sufficient incentive to avoid relying on that source of funding for developing its activities” (European Commission 2014). As a result, the Commission found that the ELA was “limited to the minimum amount necessary” (European Commission 2014). The Commission then determined that the ELA support was proportional, largely owing to the close scrutiny of its use and regular verification by the BOG and ECB so “that its use [was] limited to the minimum

[which] also ensure[d] that this liquidity . . . d[id] not lead to undue distortion of competition” (European Commission 2014).

The Commission also cited Greece’s commitment to implementing “a number of measures aiming at reducing negative spill-over effects” (European Commission 2014). By this reasoning, the Commission found that ELA complied with the 2008 Banking Communication (and the later 2011 Prolongation Communication and the 2013 Banking Communication). Under the Treaty on the Functioning of the European Union (2012, art. 107[3][b]), the Commission considered each bank that received ELA as a separate case subject to review under the Banking Communication, but it applied the same framework in each case, and in the eurozone generally (Mourmouras 2017). However, the Commission did not suggest thresholds for which the amount of ELA would have distorted competition or been more than the minimum necessary. These counterfactual scenarios cannot be explored since the Commission permitted State aid for the entire Greek banking system, which the Commission believed faced a systemic threat (Pantelias 2021c, 23:40-23:50).

Legal Authority (C): The Commission found the state guarantee backing ELA to be legally sufficient.

The Greek government guaranteed the total amount of ELA—rather than support to any particular recipient—through its Credit Guarantee Scheme (European Commission 2014; Andruszkiewicz et al. 2020; Thompson 2021). The Credit Guarantee Scheme allowed banks to access counterparties that would otherwise not lend to them (European Commission and Vestager 2015). These counterparties included the BOG, which wanted the Credit Guarantee Scheme to cover ELA so that the BOG could comply with its risk framework (Pantelias 2021b, 14:21-15:00). To satisfy the conditions for a state-backed scheme, banks must have paid a guarantee fee higher than the rate⁵ set in the 2011 Prolongation Communication (European Commission 2011; 2014). The guarantee fee was added to the 100-150 bps premium charged over the ECB’s main refinancing rate but the exact figure is not known (European Commission 2014). Since Greek ELA exceeded this rate, the Commission found the guarantee acceptable.

The guarantee of Greek ELA was subject to further EU conditions to comply with the ECB’s prohibition on monetary financing. Specifically, there must have been “no doubts as to the legal validity and enforceability of the State guarantee” or to “the economic adequacy of the State guarantee” (ECB 2012). This framework, cited regularly by Eurosystem officials, was originally articulated in a review of an Italian lira banknote exchange program (Mourmouras 2017; Magnus and Xirou 2017). The ECB meant for these conditions to ensure central-bank independence (ECB 2012).

⁵ That rate was 40 basis points plus “a risk-based fee equal to the product of 40 basis points and a risk metric composed of: (i) one half of the ratio of the beneficiary’s median five-year senior CDS spread over the three years ending one month before the date of issue of the guaranteed bond to the median level of the iTraxx Europe Senior Financials five-year index over the same three-year period; plus (ii) one half of the ratio of the median five-year senior CDS spread of all Member States to the median five-year senior CDS spread of the Member State granting the guarantee over the same three-year period” (European Commission 2011).

3. Part of a Package: ELA interacted with other crisis-fighting measures but was not conceived alongside other programs.

The BOG did not introduce ELA as part of a package with other measures. Rather, the BOG introduced ELA after Greek banks had lost access to Eurosystem financing through LTROs and MROs. The ECB carved out more authority and flexibility for ELA than open market operations provided (Pantelias 2021b, 55:16-55:53; Trichet 2010; see Runkel 2022).

4. Management: The Bank of Greece managed ELA under Governing Council supervision.

The Statute of the ESCB (1992, art. 14.4) gave the Governing Council the right to prohibit ELA if it interfered with the “objectives and tasks of the [Eurosystem].” In practice, this meant that the Governing Council voted on an ELA request if it exceeded EUR 2 billion (ECB 2013). The Governing Council regularly met biweekly, though there was a process to handle urgent matters (Pantelias 2022).

The BOG reviewed the size of ELA “each week (and more frequently if necessary)” (Pantelias 2022). The BOG was responsible for evaluating collateral to determine the maximum liquidity each bank could request.

5. Administration: ELA offered an open credit line of euros to eligible banks.

When a bank wanted ELA, it applied to the BOG describing its expected inflows and outflows for the next few weeks (Pantelias 2021c, 26:18-26:35). The Division of Supervision at the BOG then reviewed the applicant for solvency, the quality of its collateral, and, with the ECB, to ensure that banks would receive no more than their need (Pantelias 2021c, 4:30-5:45; 2022). Banks filed these requests to start ELA and whenever they wanted to raise or lower their level of support (Pantelias 2022).

ELA was monitored daily, weekly, and biweekly to accomplish different objectives. BOG officials required daily reports from banks to monitor their liquidity conditions. This informed the BOG’s weekly review of the ELA level. Based on this review and the reports, the BOG submitted an “ELA note” every two weeks to the ECB Governing Council describing, bank by bank, the country’s ELA needs.

This note contained nine pieces of information:

- (e) the counterparty to which the ELA had been/would be provided;
- (f) the value and maturity date of the ELA that had been/would be provided;
- (g) the volume of the ELA that had been/would be provided;
- (h) the currency in which the ELA had been/would be provided;
- (i) the collateral/guarantees against which the ELA had been/would be provided,

including the valuation of, and any haircuts applied to, the collateral provided and, where applicable, details on the guarantee provided;

- (j) the interest rate to be paid by the counterparty on the ELA that had been/would be provided;
- (k) the specific reason(s) for the ELA that had been/would be provided (e.g., margin calls, deposit outflows);
- (l) the prudential supervisor's assessment, over the short and medium term, of the liquidity position and solvency of the institution receiving the ELA, including the criteria used to come to a positive conclusion with respect to solvency; and
- (m) where relevant, an assessment of the cross-border dimensions and/or the potential systemic implications of the situation that had made/was making the extension of ELA necessary. (ECB 2013)

The BOG received this information during daily calls with bank managers. Banks disclosed their liquidity status and any significant near-term liabilities. Through these calls, the BOG exercised its informational advantage over the ECB. It had officials appointed to supervise each bank and was much closer to those banks than were ECB officials (Pantelias 2021b).

The BOG also used these calls to communicate policies to banks. For instance, the BOG wanted to avoid any public impression that banks were running low on liquidity. Their policy was to satisfy any request for cash on the same business day. And the phone calls let them monitor which banks needed banknotes soon. In the event that some did, commercial airplanes flew overnight from Frankfurt to Athens carrying banknotes in anticipation of the next business day (Pantelias 2021b, 43:32-45:34). However, ELA usually took the form of credit in banks' reserve accounts. ECB guidelines stated that ELA could be "central bank money and/or any other assistance that may lead to an increase in central bank money" (ECB 2013).

6. Eligible Participants: All solvent and viable Greek banks were eligible for ELA and participated.

All solvent banks were eligible to receive ELA. To assess solvency, the BOG's Division of Supervision subjected banks to an asset quality review and stress test. These evaluated bank capital conditions under static and dynamic conditions looking forward more than two years (Pantelias 2021c, 7:17-7:56). This condition was required by the ECB (2013). The viability condition was required by the European Commission, which would not grant aid to institutions that would still be at risk of failure after State aid (Pantelias 2021c, 16:27-16:35; European Commission 2013).

The ECB considered credit institutions solvent if their relevant capital ratios complied with its general guidelines⁶ or if they held “a credible prospect of recapitalization [...] within 24 weeks” of the quarter that showed insufficient capital. In the case of Greek banks, determining solvency “was a huge project” (ECB 2017; Pantelias 2021c, 6:37). The financial position of Greek banks depended on the possibility of further assistance by the state, which in turn depended on the solvency and viability assessments (Magnus and Xirou 2017). Generally, lender-of-last-resort programs suffer from difficulties distinguishing between illiquidity and insolvency, and by the time a thorough audit is complete, institutions that were solvent before the audit may no longer be (Domanski, Moessner, and Nelson 2014). In practice, though “everybody tried to avoid [applying for ELA], within a few weeks” of ELA starting, “all [eligible] Greek banks decided to participate . . . they had no other choice” (Pantelias 2021b, 18:08-18:25).

However, only banks majority-owned by Greek entities could receive ELA from the BOG. Banks owned by foreign entities could receive support from their parent bank, or ultimately via ELA from their parent’s central bank (Mourmouras 2017). For example, during the crisis, a distressed Portuguese bank operating in Greece was referred to Banco de Portugal and was not supported by the BOG; both major Cypriot banks had access to ELA via the Central Bank of Cyprus (Pantelias 2021b, 4:32-5:22).

7. Funding Source: The BOG funded ELA on its balance sheet and credit was guaranteed by the Greek government.

Although ELA took the form of a Eurosystem liability, the BOG alone bore responsibility for any defaults or other losses (ECB 2013).

The BOG requested that the Greek government guarantee the ELA of all participating banks through its existing Credit Guarantee Scheme (Pantelias 2021b, 14:21-15:30, 47:50-49:10). The BOG did this to minimize its exposure to credit risk. As a result, the Greek government bore the credit risk. Banks participating in ELA were required to pay the government a guarantee fee (European Commission 2014; see Thompson 2021 for a review of the program).

8. Program Size: The size of ELA was subject to a ceiling set by the ECB and reviewed every week.

The size of ELA was subject to a ceiling that the ECB Governing Council set and reviewed weekly (Andruszkiewicz et al. 2020). The ECB Governing Council approved EUR 50 billion initially for the Greek ELA. This number grew quickly as the support requested by each bank in ELA notes grew. Outstanding ELA in Greece peaked at EUR 124 billion in May 2012, and then again at EUR 87 billion in June 2015, during the second activation of ELA (Runkel 2021). In June 2015, the ECB raised the Greek ELA limit to EUR 88.9 billion but refused to raise it further (Pantelias 2021c, 23:33-23:45; Wyplosz 2015; Andruszkiewicz et al. 2020). The ELA ceilings that the Governing Council set were not made public until September 17, 2015—

⁶ In 2017, these ratios were: 4.5% for Common Equity Tier 1 (CET1); 6% for Tier 1; and 8% for Total Capital (ECB 2017).

after ELA usage and the ceiling had declined—when the ceiling stood at EUR 88.9 billion (BOG 2015).

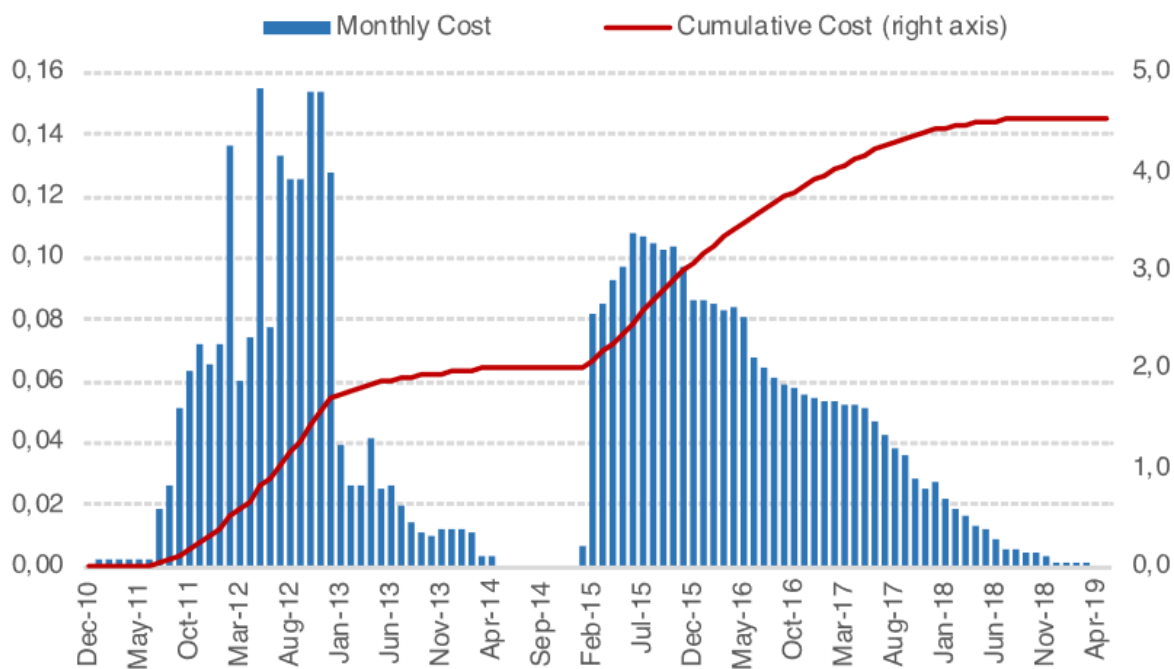
9. Individual Participation Limits: The BOG limited borrowing only by the quality and amount of a bank's collateral.

The BOG limited borrowing only by the quality and amount of each bank's collateral, although it could have denied funds based on other factors (Pantelias 2021b, 21:10-22:30).

As discussed in Key Design Decision **Error! Reference source not found.**, the Governing Council did not scrutinize the ELA positions of individual banks, but rather of the system at large. The June 2015 Governing Council decision not to raise the ELA ceiling affected individual bank borrowing, but not because of the applications of any one bank (Pantelias 2021c, 23:33-23:50).

10. Rate Charged: ECB guidelines required banks to pay 100-150 bps above the main refinancing rate.

ECB guidelines reflect that ELA is a lender-of-last-resort facility (Magnus and Xirou 2017). Following Bagehot's dictum, Greek ELA required borrowers to pay a premium rate, disincentivizing use (ECB 2017). This premium was between 100 bps and 150 bps over the Eurosystem's main refinancing rate (Suoninen and Jones 2013; Mourmouras 2017; Andruszkiewicz et al. 2020). In total, borrowers paid an estimated EUR 4.5 billion in premia: EUR 2 billion between 2011 and 2014; and EUR 2.5 billion between 2015 and 2019 (Andruszkiewicz et al. 2020). These costs are depicted in Figure 3.

Figure 3: Estimated Costs of ELA to Banks 2010-2019, in EUR billions

Source: Andruszkiewicz et al. 2020.

11. Eligible Collateral: The BOG accepted Greek government bonds, as well as any collateral that the ECB accepted for open market operations.

Part of the BOG's stated purpose in administering ELA was to counter the "decrease in the value of eligible collateral [held by Greek banks] for monetary policy operations" (Bank of Greece 2014, 160). Specifically, the BOG accepted Greek sovereign debt, regardless of its credit rating, as collateral under the ELA. This was important because Greek debt was, at times, not eligible for Eurosystem refinancing operations. Four separate waivers allowed Greek banks to use Greek sovereign debt as collateral in Eurosystem refinancing operations (see Figure 4). When the ECB revoked those waivers on February 27, 2012; July 18, 2012; and February 11, 2015, ELA draws soared, as shown in Figure 1. In addition, the BOG accepted some privately issued securities and performing loans (Pantelias 2021c, 3:35-4:00). "As far as it is known, the majority of collateral used in ELA as collateral is Government guarantees or bonds that have ratings lower than those accepted for the ECB's standard monetary policy operations" (Mourmouras 2017).

At the beginning of ELA, the BOG told banks to post all their eligible collateral to the BOG's settlement system. In doing so, the BOG could provide additional ELA quickly, as it had already reviewed collateral. There was little opportunity cost in posting this collateral since international banks had refused lending to Greek banks, leaving Greek banks with no other options (Pantelias 2021b, 21:40-21:50). The BOG's decision to accept Greek debt prevented

such assets from sitting idle on balance sheets and allowed banks to receive funding when no other counterparties were interested.

Figure 4: Waivers Allowing Greek Debt as Collateral in Eurosystem Refinancing Operations

<i>Date enacted</i>	<i>Date revoked</i>	<i>Reason for revocation</i>
January 1, 2011	February 27, 2012	Government launched debt exchange program that decreased the quality of Greek bonds
March 5, 2012	July 18, 2012	Bond-purchase program that insured the value of Greek bonds ended
December 21, 2012	February 11, 2015	SYRIZA party wins elections and says it will not comply with Economic Adjustment Programme
June 22, 2016	August 10, 2018	Economic Adjustment Programme ends

Source: ECB/2012/2 2012; ECB/2012/14 2012; ECB/2015/6 2015; ECB/2018/21 2018.

In addition to accepting Greek debt under the ELA, the BOG also accepted other collateral that would have been accepted by the ECB: marketable debt instruments rated at least A-, and two standard non-marketable assets — bank loans and retail mortgage-backed debt (RMBD; ECB 2006). Only collateral denominated in euros was eligible.

The BOG applied haircuts to all collateral. Haircuts were harmonized with the ECB's schedule, available in the Appendix, with the exception of Greek debt. Figure 5 shows the haircuts that the BOG applied to Greek debt. The BOG changed its schedule of haircuts on Greek debt posted against monetary policy operations in December 2014 and July 2015. The schedules used before December 2014, between December 2014 and July 2015, and after July 2015 are shown respectively as Schedule A, B, and C in Figure 5. Only Schedules A and C were used during a period that ELA was active. In the first period (Schedule A), the BOG applied haircuts between 15% and 71% on Greek sovereign debt and between 23% and 81% on guaranteed private debt, depending on remaining maturity and whether the bonds paid coupons. In the third period (Schedule C), the BOG applied a fixed 45% haircut on all Greek debt.

Figure 5: Haircuts on Greek Debt throughout the Eurozone Crisis

	Residual maturity	Schedule A Haircut schedule applied 19 Dec. 2012- 14 Dec.2014		Schedule B Haircut schedule applied 14 Dec.2014- 11 Feb. 2015		Schedule C ELA haircut on nominal since July 2015	
		Fixed and floating rate coupons	Zero coupon	Fixed and floating rate coupons	Zero coupon	Fixed and floating rate coupons	Zero coupon
Greek government bonds (GGBs)	0-1	15.0	15.0	6.5	6.5	45% on nominal	
	1-3	33.0	35.5	11.0	12.0		
	3-5	45.0	48.5	16.5	18.0		
	5-7	54.0	58.5	23.0	26.0		
	7-10	56.0	62.0	34.0	39.5		
	>10	57.0	71.0	40.0	52.5		
Government guaranteed bank bonds (GGG-BBs) and government guaranteed non-financial corporate bonds	0-1	23.0	23.0	13.5	14.0	45% on nominal	
	1-3	42.5	45.0	19.0	20.0		
	3-5	55.5	59.0	24.5	26.5		
	5-7	64.5	69.5	31.5	36.0		
	7-10	67.0	72.5	43.5	49.5		
	>10	67.5	81.0	50.0	62.0		

Source: ECB.

Source: Mourmouras 2017.

12. Loan Duration: Maturities varied bank by bank and were revised as banks requested new limits.

Documents did not reveal the maturities of ELA, but BOG officials said that ELA was generally short-term and was revised when a bank requested a new limit of support.

13. Other Conditions: ELA did not impose other conditions on participants.

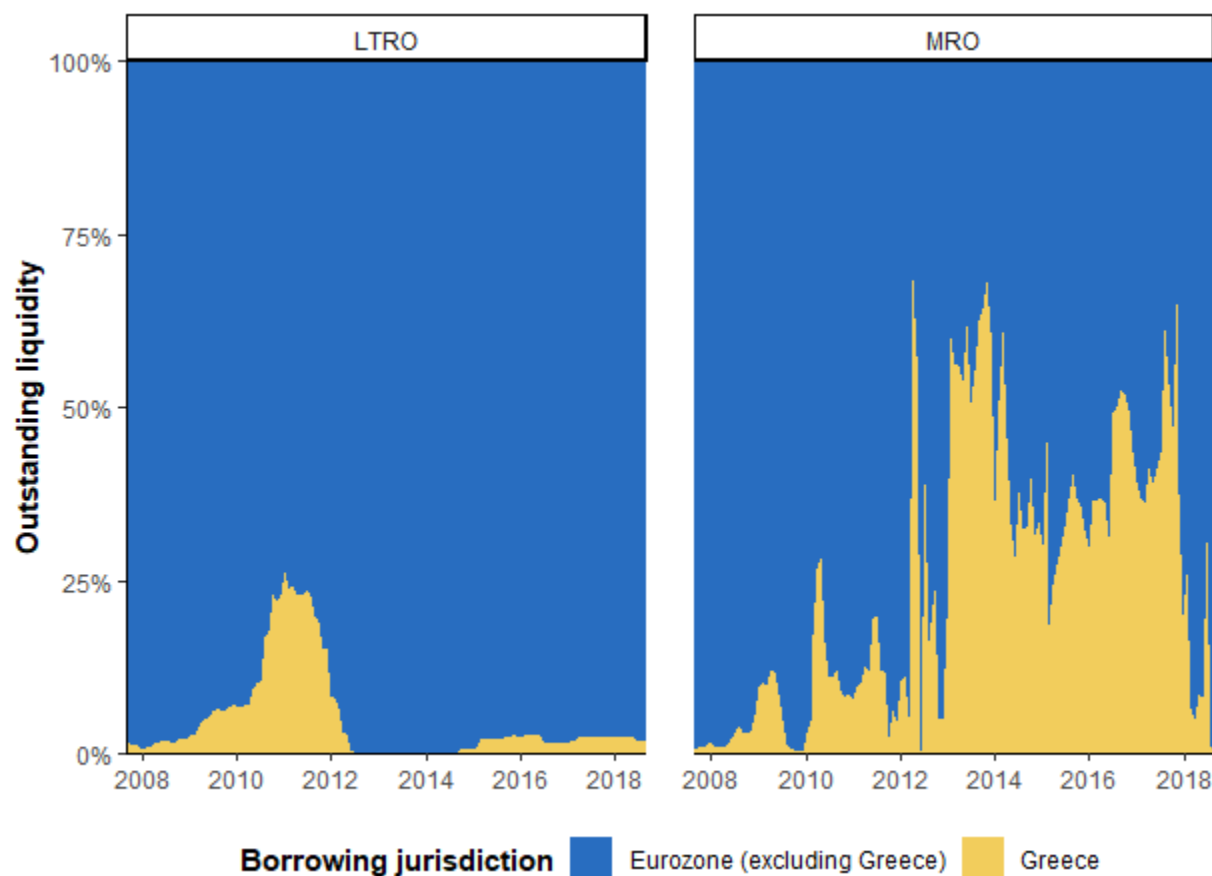
Documents surveyed do not indicate other conditions that were required under ELA.

14. Impact on Monetary Policy Transmission: The Commission limited ELA to only the amount necessary to keep banks in operation.

Under the ECB's ELA policy, ELA must not have interfered with the implementation of the Eurosystem's monetary policy (ECB 2013). To ensure this, the ECB's Governing Council reviewed the Greek ELA activity every two weeks (Andruszkiewicz et al. 2020). In its note approving the Greek ELA, the European Commission (2014) found that its rules, along with ECB and BOG management, "limited [ELA] to the minimum necessary" to stabilize a participating bank, and accordingly, the system. Through its monitoring, the ECB Governing Council attempted to balance the amount of ELA with the amount of liquidity in the Greek banking system for the permissible financial stability purposes. Pantelias (2021b, 12:53) asserted that ELA "[could] not be used for credit expansion, period."

15. Other Options: ELA substituted for longer-term refinancing operations.

ELA played a lender-of-last-resort role in the Eurosystem (Mourmouras 2017). Before drawing on ELA, Greek participants used MROs and LTROs to secure credit. Between September 2010 and the start of ELA in August 2011, Greek banks were borrowing more than 20% of the Eurosystem's outstanding MRO liquidity and 20% of the outstanding LTRO liquidity, as shown in Figure 6 (Runkel 2021; ECB 2021). Pantelias (2021b, 55:16-55:53) noted that the ECB "did everything in [its] power to help" the Greek banks using "alternatives" to open market operations. Greek banks reverted to ELA after they lost access to LTROs and exhausted main refinancing operations (MROs).

Figure 6: Greek Usage of Eurosystem Open Market Operations

Source: ECB 2021; Runkel 2021.

16. Similar Programs in Other Countries: Greece’s, Ireland’s, and Portugal’s programs were the first broad uses of ELA; seven other eurozone members supported multiple institutions in the years that followed.

Before 2009, ELA had been used only to administer support to one or two institutions at a time (Mourmouras 2017). The 2008 Banking Communication (2008, vol. 270, para. 2) recognized that the scale and nature of the GFC affected solvent and insolvent institutions alike. And several sources noted that distinguishing between the two can be difficult and risky (Domanski, Moessner, and Nelson 2014; Mourmouras 2017). These factors resulted in the ECB broadening “the scope of assistance from individual [banks] to the entire banking system” (Mourmouras 2017).

As one of the first broad-based uses of ELA, the Greek experience shaped the rules of later programs and caused the ECB to refine and standardize its rules. For instance, ELA procedures applicable to the entire eurozone were published during its administration (ECB 2013; ECB 2017). Figure 7 describes some experiences of ELA during the crisis.

A Bank of Greece working paper gives a fuller treatment. Gibson et al. (2020) surveyed 10 banks in Austria, 10 in Belgium, four in Cyprus, 11 in France, nine in Germany, nine in Ireland, 12 in Italy, nine in the Netherlands, 12 in Portugal, and 14 in Spain. All received liquidity support during the GFC.

Figure 7: ELA Usage in the Eurozone, 2007–2017

Year	Country	ELA amounts (in billion euro)
September 2008- October 2008	Belgium	The National Bank of Belgium (NBB), NBB provided ELA of €51.3 billion (including USD funding).
October 2008- April 2009	Germany	Loan guarantees totaling €35 billion that the German Federal Government, together with a group of German financial institutions, provided for covering Hypo Real Estate's re-financing needs until April 2009. Based on the Bundesbank's balance sheet, the ELA peak amount was around €38 billion in October 2008.
March 2009- February 2013	Ireland	The Central Bank of Ireland started to provide ELA in March 2009 at an amount of €11.5 billion. As the sovereign debt crisis intensified the ELA amount reached €49 billion in November 2010, while in February 2012 increased to €68 billion. One year later, in February 2013 Ireland's ELA programme ended.
July 2009- September 2014 & October 2015- December 2015	Portugal	From July 2009, the central bank of Portugal started to provide ELA with a record high of €1.3 billion in June 2010 and it remained elevated at €1.0 billion in November 2010. In the second quarter 2014 Banco Espirito Santo (BES) received of €3.5 billion in ELA. Since October 2015 another Portuguese bank Banco Internacional do Funchal (Banif) has benefited from the ELA provision with the amount of €300 million.
August 2011- June 2014 & February 2015- December 2016	Greece	In August 2011, the Bank of Greece started providing liquidity to credit institutions. ELA funding peaked at around 123 billion in November 2012. After the success of the government bond buyback operation carried out in December 2012 and the upgrade of Greece's sovereign rating, the banks returned to the Eurosystem facilities, which explains the rapid reduction in the amount of ELA since the beginning of 2014, before gradually declining to zero in June 2014. On 4 February 2015, the ECB's Governing Council decided to lift the waiver of minimum credit rating requirements for marketable instruments issued or guaranteed by the Hellenic Republic. As a result, Greek banks started using GGBs as collateral under the ELA mechanism and their borrowing increased to €90 billion in June 2015. Since then, banks' reliance on ELA has decreased and in December 2016 the ELA ceiling was lowered to €50.7 billion.
October 2011- March 2013	Cyprus	In October 2011, the Central Bank of Cyprus (CBC) started providing ELA and by 3 July 2012, ELA reached €9.6 billion.
June 2015	Italy	On 30 June 2016, the European Commission authorised Italy to use government guarantees to provide liquidity support to its banks.

Source: Mourmouras 2017.

17. Communication: The BOG and ECB slowly abandoned constructive ambiguity and became more transparent.

Neither BOG nor the ECB communicated with the public on a regular basis about ELA. This approach typified *constructive ambiguity*, in which a central bank deliberately does not disclose information about how decisions are made regarding lender-of-last-resort activities. Proponents of this approach, widely followed before the GFC, held “that ex ante ambiguity about the provision of liquidity support c[ould] effectively contain moral hazard” (Domanski, Moessner, and Nelson 2014). If a bank did not know which criteria a central bank would use when deciding whether to intervene, then that bank would make sure that its activities appeared prudent based on any criteria a central bank could use (Magnus and Xirou 2017). Eurozone central banks cited constructive ambiguity in their policies, where such policies existed:

By end-2006, about half of the central banks of the G10 advanced economies had publicly released statements on their ELA policies. Generally, these statements set out broad guidelines or principles for ELA. Many central banks, particularly in the euro area, were deliberately vague about their ELA policies, emphasising the importance of constructive ambiguity. (Domanski, Moessner, and Nelson 2014)

But constructive ambiguity became impossible when the system became too fragile (Domanski, Moessner, and Nelson (2014). Eurozone central banks, led by the ECB, began to move past constructive ambiguity during the GFC. In 2013, the ECB released standard procedures for ELA, formalizing these protocols in a 2017 agreement with national central banks (ECB 2013; ECB 2017). The BOG added to this movement by regularly disclosing its ELA ceiling starting in 2015, while other central banks remained quiet about their ELA activities (Magnus and Xirou 2017).

18. Disclosure: The BOG reported aggregate ELA levels mixed with other assets.

Eurozone national central banks were required to publish monthly financial statements, but ELA did not carry its own disclosure requirements. The BOG reported total ELA lending on a comingled basis with other lending to eurozone credit institutions.⁷ Banks receiving ELA also did not have to disclose their ELA borrowings. State aid documents revealed some details of banks’ positions, but the disclosures were not standardized and State aid procedures did not impose rules about ELA disclosure. The EU’s regulatory structure supported this lack of disclosure to the point of waiving regulatory requirements “to ensure that . . . the amount of liquidity assistance given by central banks cannot be detected” (European Banking Authority 2014).

⁷ Until April 2012, these figures appeared either under line 10 of its monthly financial statements for *Sundry assets*, after which they appeared under line 6 for *Other lending to euro area credit institutions*. BOG officials stated that the only other expenses mixed in with line 6 were “insignificant” (BOG Financial Accounts Team 2021; it did not comment on line 10).

Additionally, State aid documents redact the actual premia charged by the BOG to participants.

19. Stigma Strategy: The BOG did not use a strategy to manage ELA stigma.

Banks needed ELA regardless of the reputational risks, according to Spiros Pantelias, then head of financial stability at BOG. ELA “may have been viewed negatively by market participants but banks had no other alternative at that time” (Pantelias 2021a). In other words, the need for cash surmounted the price of stigma.

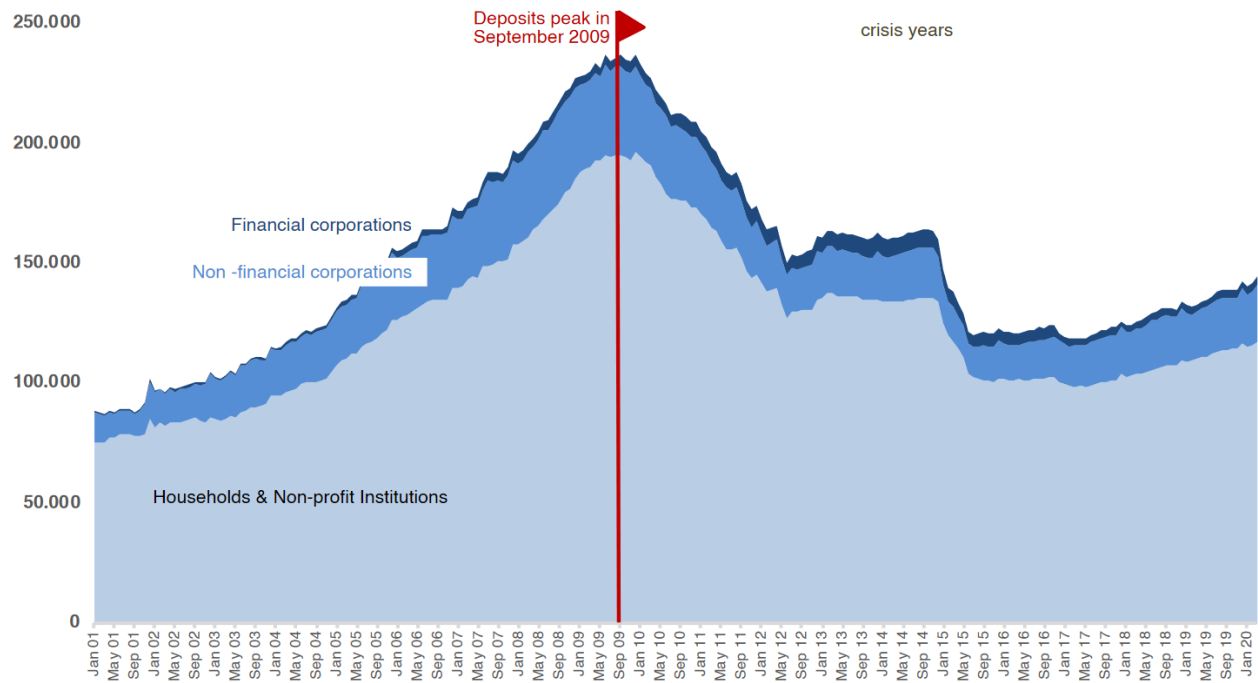
20. Exit Strategy: ELA ended as Greek banks were restructured and regained access to alternative sources of lending.

The premium rate and short loan duration left healthy banks with better options than ELA, disincentivizing its long-term usage. This was important because even though ELA lasted several years, by the ECB’s rules it must be temporary and last no longer than was needed. The weekly ELA notes and biweekly ECB reviews allowed banks to repay and exit ELA when they found financing alternative forms of financing (Pantelias 2021c, 19:42-21:08).

Greek banks found alternative financing gradually as deposits returned slowly and private-sector lending limits increased. In 2013, Greek banks outperformed their expectations and ELA saw a sharp drop-off (Pantelias 2021c, 21:18). ELA usage fell also as private counterparties saw the support given by the government and BOG, as shown in Figure 8 (Pantelias 2021b, 26:48-27:52). Banks’ health improved after a successful recapitalization program, a consolidation of banks, and other programs .

By May 2014, no Greek banks were drawing on ELA (Mourmouras 2017). But the BOG saw the impending election of the SYRIZA party, which had campaigned on anti-austerity measures and committed itself to avoiding negotiations with the Troika, as a source of financial instability and “nobody was surprised when, for a significant amount of time, we had continuous deposit outflows” (Pantelias 2021a, 30:27-30:50). ELA usage during the second phase tapered much more gradually than the first but followed the same causes. In June 2016, the ECB reinstated Greek bonds as eligible collateral (ECB/2016/18 2016). Still, LTRO usage remained low compared to the first phase of ELA, possibly suggesting that banks could again access the private interbank market (see Figure 1). Support tapered even more after the ECB declared in 2018 that Greece was no longer subject to an EAP, and finally ended in August 2019 (ECB/2018/21 2018).

Figure 8: Private-Sector Deposits in Greek Banks, EUR millions



Source: Andruszkiewicz et al. 2020.

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Appendix

Figure 9: ECB Liquidity Categories and Haircut Schedule

ECB Liquidity Categories

<i>Category I</i>	<i>Category II</i>	<i>Category III</i>	<i>Category IV</i>	<i>Category V</i>
Central government debt instruments	Local and regional government debt instruments	Traditional covered bank bonds	Credit institution debt instruments (unsecured)	Asset-backed securities
Debt instruments issued by national central banks*	Jumbo covered bank bonds†	Debt instruments issued by non-financial corporations and other issuers‡	Debt instruments issued by financial corporations other than credit institutions (unsecured)	
	Agency debt instruments‡	Other covered bank bonds§		
	Supranational debt instruments			

* Debt certificates issued by the ECB and debt instruments issued by the national central banks prior to the adoption of the euro in their respective Member State are included in liquidity category I.

† Only instruments with an issuing volume of at least EUR 1 billion, for which at least three market-makers provide regular bid and ask quotes, fall into the asset class of jumbo covered bank bonds.

‡ Only marketable assets issued by issuers that have been classified as agencies by the ECB are included in liquidity category II. Marketable assets issued by other agencies are included in liquidity category III or IV, depending on the issuer and asset type.

§ Non-UCITS-compliant covered bank bonds, including both structured covered bank bonds and multi-issuer covered bank bonds are included in liquidity category III.

ECB haircut schedule

Credit quality	Residual maturity (years)	Liquidity categories								Category V*
		Category I		Category II*		Category III*		Category IV*		
		fixed coupon	zero coupon	fixed coupon	zero coupon	fixed coupon	zero coupon	fixed coupon	zero coupon	
Steps 1 and 2 (AAA to A-)	0-1	0.5	0.5	1.0	1.0	1.5	1.5	6.5	6.5	16
	1-3	1.5	1.5	2.5	2.5	3.0	3.0	8.5	9.0	
	3-5	2.5	3.0	3.5	4.0	5.0	5.5	11.0	11.5	
	5-7	3.0	3.5	4.5	5.0	6.5	7.5	12.5	13.5	
	7-10	4.0	4.5	5.5	6.5	8.5	9.5	14.0	15.5	
	> 10	5.5	8.5	7.5	12.0	11.0	16.5	17.0	22.5	
Step 3 (BBB + to BBB-)**	0-1	5.5	5.5	6.0	6.0	8.0	8.0	15.0	15.0	Not eligible
	1-3	6.5	6.5	10.5	11.5	18.0	19.5	27.5	29.5	
	3-5	7.5	8.0	15.5	17.0	25.5	28.0	36.5	39.5	
	5-7	8.0	8.5	18.0	20.5	28.0	31.5	38.5	43.0	
	7-10	9.0	9.5	19.5	22.5	29.0	33.5	39.0	44.5	
	> 10	10.5	13.5	20.0	29.0	29.5	38.0	39.5	46.0	

* Individual asset-backed securities, covered bank bonds (jumbo covered bank bonds, traditional covered bank bonds and other covered bank bonds) and uncovered bank bonds that are theoretically valued in accordance with Section 6.5 are subject to an additional valuation haircut. This haircut is directly applied at the level of the theoretical valuation of the individual debt instrument in the form of a valuation markdown of 5 %.

Source: ECB 2011.

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