

BANKING-CRISIS INTERVENTIONS ACROSS TIME AND SPACE

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We present a new database of banking-crisis interventions from the Roman Empire to the present, covering 1,946 interventions in 20 categories across 143 countries. We demonstrate that crisis-intervention patterns are significantly related to income and fiscal variables and to measures of the political system and currency regime. GDP losses following crises are economically significant and are larger for wealthier countries, with some evidence that these losses are mitigated by democratic political systems and liberal currency regimes. Finally, intervention frequencies reached an apex during the post-Bretton Woods era, continuing a secular increase since at least the late 17th century.

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Banking crises are pervasive. Such crises are costly for economies, for public trust, and for political stability. These costs motivate government action, but what form should that action take? What kinds of interventions work? How exactly should they be structured and sequenced? To answer these questions, we would like to learn from long-run empirical evidence, and to do this well requires a database of past actions. But no such comprehensive database exists. In this paper, we describe our process to construct such a database and analyze the patterns of interventions across time and space.

Since the 1990s, scholars have made considerable progress in building databases and chronologies of banking crises. We build upon this work, starting with a union of such events from four major chronologies, a set that we denote as “canonical crises”.⁴ One goal of our project is to identify all government interventions during these canonical crises, but another goal is to catalogue similar types of interventions done at other times. One reason to extend the scope in this way is that the existence of an intervention may be a sign that there was indeed a banking crisis that was overlooked by the past literature. But perhaps more intriguing is the possibility that such interventions played a role in successfully preventing an incipient crisis, and those would certainly be interventions worthy of further study. Since the time periods around such interventions may signify previously unidentified or incipient crises, we label them as “candidate crises”. Thus, every intervention in the database is associated with either a canonical or a candidate crisis, and we refer to the union of those two groups simply as “crises”.

In crises, governments have used a broad policy arsenal, acting through monetary, fiscal, and regulatory authorities. Many of these interventions operate by shoring up some component of bank balance sheets. In a crisis, a weakness of bank (or other intermediary) balance sheets carries negative externalities for other parts of the economy or the public sector. In the acute, “panic”, phase of a crisis, concerns about bank solvency can induce short-term creditors to run on a bank, decreasing its ability to sustain its liabilities. The traditional lender-of-last-resort (LOLR) function of central banks is just a direct replacement of such liabilities. If the panic has been driven by some short-term dislocation of markets, then such emergency *lending* may be all that is necessary. In cases where the government is confident of the ultimate solvency of banks but still concerned

⁴ These four chronologies are Reinhart and Rogoff (2009), Schularick and Taylor (2012), Laeven and Valencia (2020), and Baron, Verner, and Xiong (2021). We discuss our selection of these chronologies later in this introduction, and then provide more details in Section II.

about future runs, then an alternative action would be to extend *guarantees* to liabilities that go beyond any existing deposit insurance. Such guarantees, which work on the same part of the balance sheet as does the LOLR, were widely used during the global financial crisis.

If bank-solvency concerns are real and lasting, governments may need to consider interventions on other parts of the balance sheet. Instead of just replacing or guaranteeing liabilities, the government can provide equity through *capital injections*, which could reassure depositors of solvency and reduce the incentive to run. Such investments are complex to structure and have political challenges. Nevertheless, their use has increased greatly in the modern era.

In some cases, the solvency of the banking system is threatened by the concentration of certain kinds of assets. The credit booms that precede crises are often focused on specific asset classes and loan types, and banks face a coordination problem in exiting or restructuring them. In those cases, governments often move to the left side of the balance sheet through *asset management* programs, which can solve this coordination problem. When banks are clearly insolvent, the government may still have a role to play in the *restructuring* of these failed institutions, effectively reorganizing the full stack of assets, liabilities, and equity. In some cases, that government role is legally prescribed (many countries do not allow banks to go through regular bankruptcy processes), and in other cases the government role is intertwined with the provision of deposit insurance.

Thus far, each of the categories listed would typically include some outlay or contingent commitment from either the fiscal or monetary authority. But there are other types of interventions that do not have any direct effect on government finance, but instead use government's power to change or suspend *rules* and regulations. Through most of history, bank holidays and more general suspensions of convertibility were a common feature of crisis responses. In the modern era, governments often resort to suspensions of regulatory-capital requirements and to market-based changes like short-sale bans in equity markets. Finally, there is a catchall category of *other* interventions that do not fit neatly into the italicized categories above. This group includes, for example, major communications from senior officials, such as President's Roosevelt's first radio address in March 1933 (during the peak of the U.S. Great Depression), and Mario Draghi's "whatever it takes" speech during the Eurozone financial crisis in 2012 – both representing verbal actions designed to assuage markets amid ongoing banking sector turmoil.

In total, our seven broad categories of interventions are (1) *lending*, (2) *guarantees*, (3) *capital injections*, (4) *asset management*, (5) *restructuring*, (6) *rules*, and (7) *other*. Note that these categories do not include some of the main macroeconomic policies used in crises, such as fiscal stimulus, currency devaluation, or capital controls. This omission is deliberate and necessary. For our purposes, the defining feature of an intervention is that the government action is taken for the main purpose of stabilizing the financial sector. Therefore, by definition, our scope does not include general fiscal- or monetary-policy actions targeted to aid the entire macroeconomy. It is not feasible to catalogue all such actions the same way as we do here for just the financial sector, nor to use any such catalogue to isolate the impact of such policies on just that sector.

Our paper is most closely related to database projects that seek to empirically map and analyze banking distress dynamics across space and time – with perhaps the most closely related one being Laeven and Valencia (2020), one of the four chronologies that constitute the set of canonical crises we use as the starting point for our database construction. Laeven and Valencia cover countries across all income groups since 1976 and – setting the work apart from similar chronologies – also systematically document crisis interventions associated with a crisis event across seven intervention categories.⁵ The differences between our project and theirs is driven mostly by different objectives. The Laeven and Valencia paper fits within their larger project analyzing the patterns of financial crises in the post-Bretton Woods period, of which they study 151 cases in-depth. Our focus in this paper is a nuanced classification and analysis of the interventions themselves, even when such interventions occur outside of previously identified crisis periods. This approach allows for extensions further back in time and for inclusion of interventions during candidate crises. The current version of our database includes 1,946 interventions across 911 crises, of which 456 are canonical crises and 455 are candidate crises.

Several other papers have taken a more holistic view of interventions, but rather than to build a comprehensive database they survey samples of major systemic events to analyze intervention responses. Goodhart and Schoenmaker (1992) is an early example, documenting 104 bank interventions in advanced economies dating from the mid-1970s. Calomiris, Klingebiel, and Laeven (2005) provide a general overview of crisis-resolution strategies with recourse to cross-

⁵ Specifically, the authors distinguish between the following interventions categories: (1) deposit freezes; (2) bank holidays; (3) guarantees on bank liabilities; (4) extensive liquidity support; (5) nationalizations; (6) recapitalizations; and (7) asset purchases. (1) – (2) are components of our *rules* category, and (5) – (6) components of our *capital injection* category; (3), (4) and (7) have directly corresponding categories in our framework.

country empirics, with specific crises-containment patterns also being the focus in De Juan (1999), Honohan and Klingebiel (2001), Detragiache and Ho (2010), and recently Calderon and Schaeck (2016).⁶

While comprehensive treatments of crisis interventions are incomplete, there are many studies of specific subsets of interventions. This literature falls into three groups: (1) studies of multiple types of interventions in a specific single crisis context across different countries;⁷ (2) studies of interventions in a single specific country across different unique banking crises;⁸ and (3) detailed treatments on the effects and empirics of one specific intervention category over time and space (for instance, the effects of bank bailouts).⁹ Not least, with the creation of the database described in this paper, we hope to greatly reduce the overhead for authors looking to do such investigations in the future.

The rest of the paper proceeds as follows. In Section I, we further divide the seven categories into 20 specific intervention sub-types. In many cases, the division into sub-types is based on whether the intervention was broad-based for a large group of institutions, or narrowly tailored as an *ad hoc* intervention for a single bank. We consider our classification system to be a logical method of organizing and rationalizing interventions as acting on different parts of the balance sheet of the financial system, a method which then allows for an intuitive graphical representation and potential analyses of balance sheet-specific financial and economic intervention effects.

In Section II, we discuss the database-construction process. This process has several steps. First, we compile a master list of canonical crises from four major crisis-chronology projects:

⁶ There is also an extensive literature that deals with optimal crises responses from a theoretical perspective – for instance Freixas (1999), Farhi and Tirole (2012), or Jeanne and Korinek (2020) – or is primarily concerned with qualitatively ranking optimal crises responses and governance frameworks without recourse to any novel historical datasets – say, as in Beck et al. (2010). Our contribution does not for now seek to directly tie into this strand, or to qualitatively judge the specific historical intervention responses aggregated.

⁷ Bignon, Flandreau, and Ugolini (2011) discuss selected crises responses during the gold-standard period by European fiscal and monetary authorities; Grossman (1994) focuses on cross-country banking sector policies during the Great Depression; Goldstein (1998, chapters 3 and 4) discusses “cures” deployed during the Asian Financial Crisis. More recently, some notable contributions from the extensive GFC literature include Aït-Sahalia et al. (2012), Igan et al. (2019), and Bernanke, Geithner, and Paulson (eds. 2020).

⁸ A large number of historical case studies – far too numerous to credit here extensively – have over time assessed specific single crises and recorded authorities’ associated interventions. We draw on many these event studies to determine relevant actions, and list this literature systematically as part of Appendix E.

⁹ Contributions assess the effects and evolution of a specific intervention (sub-) category within our intervention universe, at times with recourse to unique spatial and chronological intervention datasets: for instance, recapitalizations have received particular attention (Philippon and Schnabl 2013), as have asset-management responses (Klingebiel 2000), blanket guarantees (Laeven and Valencia 2012), or deposit-guarantee policies (Demirguc-Kunt and Detragiache 2002). Similarly, multiple discussions focus more specifically on the binary “bailout or bankruptcy” choice facing policymakers in their crisis response (Rosas 2006; Levitin 2010).

Reinhart and Rogoff (2009), Schularick and Taylor (2012), Laeven and Valencia (2020), and Baron, Verner, and Xiong (2021).¹⁰ The union of these four sources includes 456 canonical crises. Next, for each canonical crisis, we consult the sources cited by the original authors, along with an extensive primary and secondary literature. These two steps yield a list of 1,178 specific interventions. In some cases, we do not find evidence of any interventions that meet our criteria, or we find evidence that policymakers deliberately abstained from an intervention: such crises are listed as “no intervention” in the database.

The same sources used to identify interventions during canonical crises often have evidence of interventions taken at other times. These additional interventions can show up in the historical record for several possible reasons. In some cases, such interventions may have successfully prevented a major crisis, so that existing crisis chronologies do not record an event at that time: but these new events could be particularly relevant to eventually reach normative results on optimal crisis policy design. In other cases, such interventions may be trace evidence of a crisis that did occur but was not detected by the methods of the canonical papers. One advantage of the intervention-prism used in this process is that it allows for the identification of such candidate crises. This is particularly important in the pre-1800 period, when the previous methods of crisis-detection are unlikely to be comprehensive. But we view the main purpose of our database to identify the interventions themselves, and we leave to later work any conclusive statements about the inclusion of our candidate crises in comprehensive crises lists. This additional step adds an additional 768 interventions, which are grouped temporally and geographically into 455 candidate crises. 125 of these candidate crises (associated with 187 specific interventions) occur before 1800.¹¹

¹⁰ We further considered additional crisis chronologies including Bordo et al.’s (2001) extensive documentation, whose crises dates are covered, and those of Duca et al. (2017), or Romer and Romer’s (2017) methodologies. In particular, we recognize efforts to qualify existing crisis-dating conventions, for instance via establishing quarterly level crisis metrics, but we were not able to identify annual-level crisis events in any of these which are not covered in any of the four existing databases discussed above, or being otherwise outside the scope of our additional intervention events recorded. Schularick and Taylor (2012), and Baron, Verner, and Xiong (2021) both incorporate the Bordo et al. crisis (2001) chronology, while the Duca et al. (2017) and Romer and Romer (2017) crises chronologies are comparatively concise, focusing on 50 systemic events in the EU+Norway from 1970 (in addition to 43 non-systemic episodes), and semi-annual distress events in 24 OECD countries between 1967-2012, respectively.

¹¹ For the present paper, the database time period ends in 2019, and thus does not include any Covid-era interventions. We have an ongoing project to catalogue those interventions, which were far more numerous than in any prior crisis and will eventually be absorbed into the full database. In 2020 and 2021, almost every country in the world made multiple interventions to shore up the financial system, but the canonical crisis thresholds were not triggered, and it will likely be ultimately classified as “candidate crises” for more than a hundred countries in our database. The

Taken together, the current database includes 1,946 interventions, spread over 911 total crises. Our earliest intervention is recorded in Roman times, a financial crisis in the year 33 A.D., which saw the Senate appoint a dedicated “banking commission” and intervened via a cash disbursement to struggling debtors;¹³ there is afterwards a large chronological gap, related to the historical (and financial) “Dark Ages” where primary source evidence is traditionally extremely sparse. But from our next data point onwards, several government-led liquidations of banks in Genoa in the 1250s, observations get increasingly more regular. For any *ex post* constructed database, researchers will be interested in exact details of sample selection, both to understand the database itself and to be aware of any possible biases induced by that selection. Perhaps most important is the choice of size threshold for an intervention to be included in the database. A tradeoff is unavoidable here: pick a threshold too high, and many interesting examples will be left out; pick a threshold too low and we will be unable to detect many qualifying interventions in the historical record. Furthermore, since data availability varies by country and over time, and since events in larger countries are more likely to register in the historical record, there are unavoidable sources of bias.

Section III summarizes the patterns of interventions across crises, and analyzes the mixture and likelihood of different interventions as a function of a country’s income, debt capacity, government size, currency regime, and political system. The most pronounced patterns here are in the *guarantee* and *lending* categories. We find that countries are more likely to have a *guarantee* intervention when they are wealthier, have greater debt capacity, and have more democratic political systems. We find that countries are more likely to have a *lending* intervention if they are wealthier and have a more liberal currency regime.

Section IV looks at the GDP losses for both canonical and candidate crises. For this analysis, we define the “GDP gap” as the sum of per-capita GDP below trend growth for the five years following a financial crisis. When compared to a control group of non-crisis base years, we find this total loss to be 17.6 percent (of base-year) GDP for canonical crises and 9.2 percent for candidate crises. We then regress these crisis-level losses on the same control variables used in the previous section, finding evidence that losses are greater in canonical crises for wealthier

importance of studying candidate crises is perfectly illustrated by the Covid era, as it is possible that these interventions were exactly the kinds of “successful” programs that ultimately prevented a full-blown crisis.

¹³ We classify this 100M sesterces cash disbursement as “other” in our taxonomy – it targeted a section outside of the bank sector balance sheet itself, but was deployed with the main policy aim to address bank balance sheet concerns. For further details see Frank (1935).

countries, countries with more autocratic political systems, and countries with more rigid currency regimes.

Section V uses the full database of crises (both canonical and candidate) to calculate the share of advanced-economy GDP experiencing some form of bank stress in any given year. The time-series reveals stark long-run international trends, but also allows more granular secular associations between specific currency and monetary regimes, and respective levels of bank stress. Notably, the series suggests that the four decades since the 1980s represent only the most recent apex in an entrenched trend towards growing absolute intervention frequencies over multiple centuries.

Section VI concludes with a summary of our results and proposals for future applications. Several appendices supplement the text. Online Appendix A describes the database-construction process in greater detail, thus allowing other scholars to supplement the database without having to repeat our searches. Online Appendix B shows how the various data elements are represented in the database, with Appendix C containing robustness results for our regressions. Online Appendix D is the database itself. Appendix E lists all of the primary and secondary sources used for the database construction. Finally, Appendix F contains specific country notes, including details on the country-level historical GDP and exchange-rate data used to calculate intervention sizes, geographic coverage notes, and a discussion of particular intervention cases that might be seen as borderline cases, or open to alternative types of intervention classifications.¹⁴

I. **Intervention Categories**

Figure 1 shows the 20 individual types in the seven major categories. The categories are situated on a stylized balance sheet, which can be thought of as representing either a single institution or the entire financial sector. We discuss the elements of the major categories from left to right in Figure 1, beginning with *asset management* (on the asset side), then *guarantees* and *restructuring* (which can operate on both sides of the balance sheet), then *lending* and *capital injections* (liabilities and equity side). The final two categories of *rules* and *other* do not fit directly into this framework, but, as we will see, they usually have balance-sheet implications as well.

¹⁴ These appendices are included as a single separate online appendix file to this paper. They are also available along with spreadsheet versions of the database at [Program on Financial Stability | Yale School of Management](#).

Asset Management:

- Broad-based asset management program (BBAM): authorities intervene by partially or fully transferring balance-sheet assets of several institutions or of a major share of the entire financial sector, either to a designated asset management vehicle (AMCs), or to another public or private financial institution. Includes the presentation of plans, or statements of intent by authorities, or the mere enabling of such transfers.
- Ad hoc asset management program (AHAM): authorities intervene by partially or fully transferring balance sheet assets at one financial institution or of a minor overall share of the entire financial sector, either to a designated asset management vehicle (AMCs), or to another public or private financial institution. Includes the presentation of plans, or statements of intent by authorities, or the mere enabling of such a transfer.

Guarantees:

- Account guarantees (AG): authorities intervene by announcing new deposit insurance or modifying an existing deposit insurance program in a material way.
- Other liability guarantees (OLG): authorities intervene to guarantee existing, future or a combination of existing and future bank liabilities of a single or of multiple financial institutions not related to deposit liabilities.
- Asset guarantees (ASG): authorities intervene by guaranteeing certain items on the asset side of the balance sheet. Blanket guarantees (BG): authorities intervene by guaranteeing multiple items on the balance sheet of one or multiple financial institutions, spanning either one or both of asset and liability components.

Figure 1: Overview of major intervention categories and subcategories used (the balance sheet view).

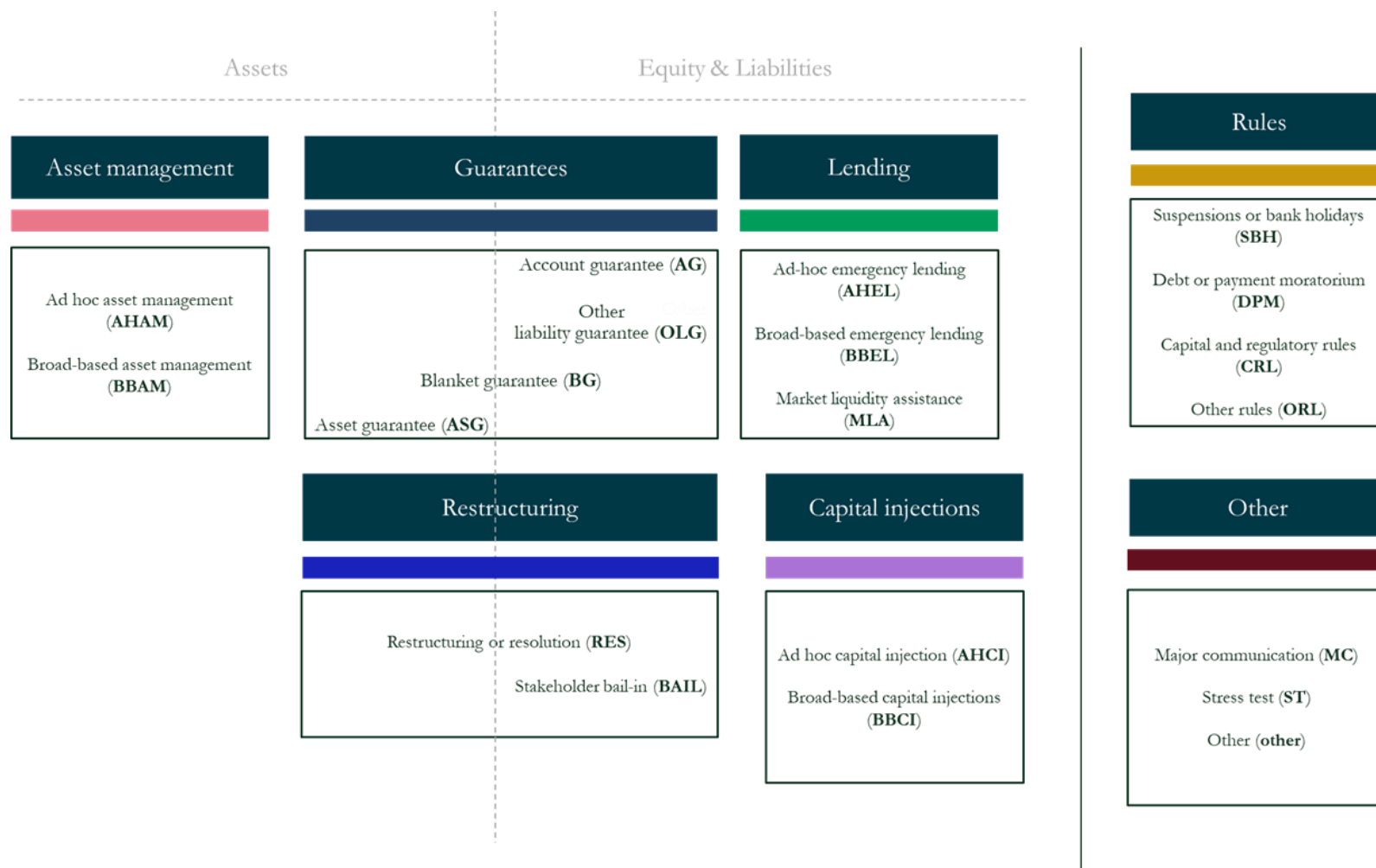


Figure 1 displays the seven major intervention categories (separate boxes) and the 20 types associated with each major category (items within boxes), with items located on a stylized balance sheet for the financial sector. The category and type labeling follow the definitions and descriptions detailed in Section I of the paper.

Restructuring:

- Restructuring or resolution (RES): authorities intervene by mandating a restructuring, resolution or liquidation process of one or more impaired financial institutions. Such a process does not have to be led operationally by any public authority, and can be undertaken on the operational level fully by the private sector, at the instigation of authorities, or merely involving suasion by authorities. Such restructuring often operates on both sides of the balance sheet.
- Stakeholder bail-in (BAIL): authorities intervene by forcing bondholders or other stakeholders to assume expected or already materialized losses, or forego privileges associated with ownership of a particular asset on the balance sheet of one or multiple affected banks. Historically, this category in also regularly involves cases where authorities decide to seize personal assets and property of bank owners to meet existing liabilities. With very few exceptions, the overwhelming majority of cases in this subcategory are also associated with an additional flag to indicate private-sector participation. In their modern form, “bail-in” interventions such as the March 1990 forced deposit conversion in Brazil (“Collor Plan”, see Crabtree 1991), or the Cypriot equivalent in 2013 – when authorities decided to involve uninsured depositors and bondholders at the Bank of Cyprus’ resolution process (IMF 2014) – are typical examples of this type.

Lending:

- Broad-based emergency liquidity (BBEL): authorities intervene to provide liquidity to the affected institution(s), via the use of fiscal or monetary channels, providing such assistance either to the entire or a major section of the banking sector. We exclude actions that merely ease financial conditions in the most general sense – such as monetary policy rate reductions – but do include instances where monetary authorities consciously meet a sharp rise in private-sector liquidity demand, for instance by fully discounting eligible paper in the context of a rise in market uncertainty. Historically, on the monetary side these actions are often officially phrased as “discounting freely” or “lending freely” in times of stress. We also include changes in the accepted collateral at the discount window of central banks in this category, to the extent that these changes are enacted against the backdrop of

financial-sector instability. Note, however, that this category does not include changes to reserve requirements – such actions fall into the *rules* group, as described below.

- Ad hoc emergency liquidity (AHEL): authorities intervene to provide liquidity to the affected institution(s), via the use of fiscal or monetary channels along the lines of BBEL, but without providing such assistance indiscriminately to the entire or major portions of the banking sector.
- Market liquidity assistance (MLA): authorities intervene with a key motivation to stabilize liquidity in a specific wholesale-funding market that is under stress. MLAs focus on markets that a central bank believes are critical to financial stability. In common with traditional interventions, MLAs may rely on individual institutions as intermediaries or market-makers to pass on liquidity. It may be described as constituting a “market maker of last resort” action.

Capital Injections:

- Broad-based capital injections (BBCI): authorities intervene by directly assuming ownership interest in multiple institutions. Includes the presentation of plans or statements of intent by authorities, even if actual assumption of ownership does not occur.
- Ad hoc capital injections (AHCI): authorities intervene by directly assuming ownership interest in a single institution, or in a clear minority group of total institutions comprising a subset of the banking or wider financial system.

Rules:

- Stock market closures, bank holidays, or suspensions of convertibility (SBH): authorities intervene by announcing a stock market closure (either temporary or open-ended), authorizing a suspension of payment convertibility at individual institutions or the entire banking sector; or proceed to implement a general suspension of convertibility on the level of the central bank, if undertaken against the backdrop of banking sector volatility. We do not include general suspensions that occur primarily to safeguard against capital flight or a currency attack, to the extent that these broader macroeconomic motivations are clearly identifiable.

- Debt or other payment moratoria (DPM): authorities intervene by implementing either a partial or general moratorium on debt-service obligations at least partly involving creditors in the banking sector, against the backdrop of distinct banking-sector volatility. Moratoria that are primarily associated with broader political or macroeconomic problems, and not distinctly justified by banking sector volatility are not covered in this category. However, we do include here rare instances of debt *cancellations*.¹⁵
- Capital and regulatory rules (CRL): authorities intervene by relaxing existing capital requirement or accounting rules, or other rules that would improve the outlook of the future capital adequacy of institutions in the banking sector, and are not covered in the other *rules* sub-categories. Changes in accepted collateral at the discount windows of central banks are not captured in this category – they are to be found under broad-based emergency lending (BBEL), above.
- Other rules (ORL): authorities intervene by amending legal arrangements affecting the banking or financial industry that do not fall into one of the other “rules” sub-categories specified above.

Other:

- Stress testing (ST): authorities intervene by mandating a detailed investigation of the sustainability or robustness of one or multiple banking institutions. We record the date that the launch of such an exercise is publicly made known, where such information is available.
- Major communication event (MC): we use this category to denote instances where authorities have made a significant public announcement with regards to the banking or wider financial sector which induced significant changes in market expectations or the de facto assessment of the health or profitability of the banking or financial sector. Famous examples here are FDR’s “fireside chat” on the banking crisis in March 1933, and the July 2012 speech by ECB President Mario Draghi to do “whatever it takes” to save the Eurozone.

¹⁵ For instance, the Czech state in April 1932 cancels its own deposit claims in two domestic banking institutions to alleviate the ongoing distress in the Great Depression context. See League of Nations (1935, 13f.).

- Other intervention type (Other): authorities intervene to alleviate an existing or an anticipated stress event in the banking or wider financial system with a policy tool that does not fall under any of the aforementioned categories. We include instances in this category where authorities set up central banks, either by founding an entirely new monetary institution, or by assuming ownership of a formerly private institution with no such previous public mandate – examples are the establishments of the Danish Rigsbank in 1813, or the Turkish Central Bank in 1930 amid respective banking crises (Suvla 1933; Maercher 2010).

Finally, there are crises in the combined database that do not appear to have any associated interventions. When that occurs, we designate the intervention as a NO/I (“no intervention”) in the single row representing that crisis in the database. This notation appears when either we cannot find any relevant intervention measure for a confirmed canonical crisis instance, or in all cases where our minimum event criteria for a candidate crisis are matched with regards to an institutions’ total liabilities – but where we do find evidence of a deliberate abstention by policymakers from an intervention.

We record interventions according to the above classifications even if authorities undertake actions that merely *enable* a particular type of intervention – even if *de facto* such a policy action does not eventually materialize. For instance, if political authorities approve the establishment of an asset management company (AMC) to purchase impaired banking assets – but subsequently this AMC does not actually proceed to transfer meaningful amounts of banking system assets, we would still designate the policy action as a “BBAM”.

II. Database Construction

This section describes the construction and summary statistics of the database. We begin with a core set of canonical crises, built from the union of the databases constructed by Reinhart and Rogoff (2009) (R/R), Schularick and Taylor (2012) (S/T), Laeven and Valencia (2020) (L/V), and Baron, Verner, and Xiong (2021) (B/V/X). Section A discusses the crisis definitions used in those papers and illustrates their various unions and intersections. Section B describes the rules and thresholds we use to go from the list of canonical crises to our database of interventions related to

those crises. That data gathering process also yields a set of interventions that are not associated with an existing canonical crisis; that set is used to build the supplementary list of candidate crises.

A. Canonical Crises

We combine four of the most widely used chronologies to construct our sample of canonical crises. We are aware of the multiple subsequent database updates that individual authors provided in non-published form, but limit our following data and discussion strictly to the published lists:¹⁶

(1) L/V: Laeven and Valencia (2020) cover a total of 165 countries over the period of 1976-2016, identifying a total of 151 systemic banking crises, for which the crisis start year is provided. The authors define a systemic banking crisis if one of two conditions hold:

- (i) “Significant signs of financial distress in the banking system (as indicated by significant bank runs, losses in the banking system, and/or bank liquidations).”
- (ii) “Significant banking policy intervention measures in response to significant losses in the banking system.”

As per the second crisis definition, the authors are unique across the included chronologies in investigating systematically the policy responses associated with bank stress events since 1976, and rely on a mixture of qualitative and quantitative measures to define a “significant” policy intervention: to measure intervention sizes, the authors calculate direct intervention “costs” associated with each crisis across fiscal and liquidity measures, though technically a policy intervention can be deemed “significant” on purely qualitative grounds in the framework.¹⁷ General intervention patterns are then studied in more detail, across seven intervention groups.

¹⁶ Such subsequent updates include recurrent online updates of the “JST” database in S/T’s case, and in R/R’s case updates recorded via the BFFS database, see <https://www.hbs.edu/behavioral-finance-and-financial-stability/data/Pages/global.aspx>. For a general discussion on trends and findings associated with banking crises chronologies over the past years, see Bordo and Meissner (2016), and Sufi and Taylor (2022).

¹⁷ The authors do not strictly quantify a “significant” bank nationalization, define any minimum levels for “bank holidays” or “deposit freezes”, or “significant” guarantees that can be deployed: if a bank stress event is associated with policy responses across these three sub-dimensions, it can be deemed “systemic” (c.f. *ibid.*, 310).

(2) R/R: Reinhart and Rogoff (2009) cover a total of 70 countries over the period of 1800-2008, identifying a total of 315 systemic banking crises. A systemic banking crisis is identified if one of two conditions are given:

- (i) “bank runs that lead to the closure, merging, or takeover by the public sector of one or more financial institutions or
- (ii) if there are no runs, the closure, merging, takeover, or large-scale government assistance of an important financial institution (or group of institutions), that marks the start of a string of similar outcomes for other financial institutions.”

R/R are unique for their extensive temporal sample, beginning observations in the early 19th century. They were also the first across our four chronologies to provide a long-run banking-crisis exercise. Against this backdrop, we use R/R as our default chronology wherever databases differ in their exact dating of a common banking crisis: in such cases, our crisis designation shows which other canonical databases also include the event, but follows the R/R *start year*, with additional crises start years in other databases that fall within a crisis period in R/R being discarded to avoid double-counting.

(3) S/T: Schularick and Taylor (2012) cover a total of 14 countries over the period of 1870-2016. As in previous approaches, the authors narratively identify banking crises, focusing on advanced economies. A total of 79 crises are identified – with no specific focus on their resolution or policy responses – and the authors provide the following crisis definition:

“In line with the previous studies, we define financial crises as events during which a country’s banking sector experiences bank runs, sharp increases in default rates accompanied by large losses of capital that result in public intervention, bankruptcy, or forced merger of financial institutions. We have corroborated the crisis histories from Bordo et al. (2001) and Reinhart and Rogoff (2009) with alternative codings found in the databases compiled by Laeven and Valencia (2008), as well the evidence described in Cecchetti, Kohler, and Upper (2009).”

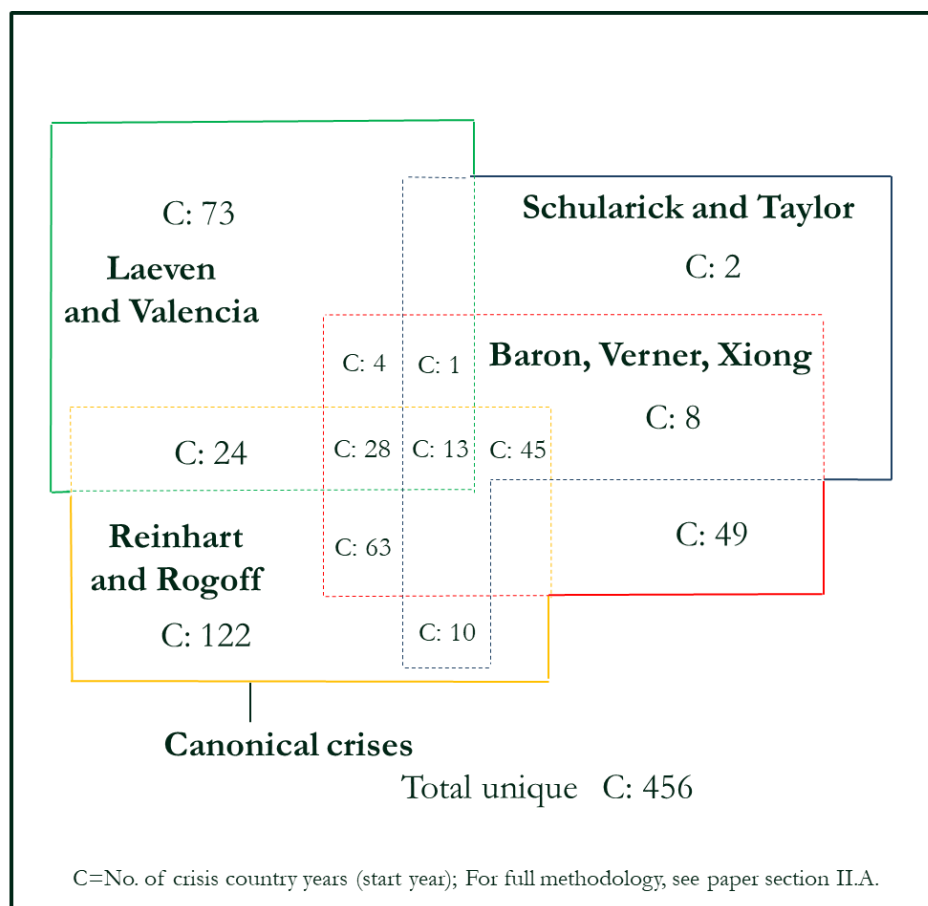
(4) B/V/X: Baron, Verner, and Xiong (2021) cover a total of 46 countries over the period of 1870-2016. The authors differ from earlier chronologies by systematically using bank-equity return data to identify crises, with quantitative thresholds in a bank-equity return variable as the key criterion. We include all events the authors here identify as belonging to the “B/V/X crisis list”, including war years.¹⁸ Their methodology yields a sample of 214 banking crisis (start years), 49 of which represent crises that do not appear in the other canonical papers. The authors feature some details on crises resolutions, and define a banking sector “crash” as follows (ibid., 55):

“We define a “bank equity crash” as an annual bank equity decline of over 30%. We separate these bank equity crashes into panic versus non-panic episodes based on a systematic reading of the narrative evidence for each of these episodes. We define panics as episodes of severe and sudden withdrawals of funding by bank creditors from a significant part of the banking system, which could include withdrawals of funding from insolvent banks or illiquid but fundamentally solvent banks.”

Figure 2 displays the universe of the 456 canonical crises, built from the union of these four chronologies. We observe that despite the methodological differences in the identification processes, there is a non-trivial overlap in the outputs.

¹⁸ B/V/X exclude a total of 25 crises in the “BVX crisis master list” from subsequent equity analyses given war years. We include these years: while stock markets were often shut down in these periods, other relevant forms of banking interventions often took place.

Figure 2: Existing “canonical” crises chronologies and crises distribution.



“C”: number of individual crisis start years; overlapping areas (dashed borders) denote crises and associated interventions identical in the respective canonical chronology covered by the particular area. Figures outside dashed areas represent crises unique to a particular chronology. “Baron, Verner, Xiong” denotes Baron, Verner, and Xiong (2021), “Laeven and Valencia” denotes Laeven and Valencia (2020), “Reinhart and Rogoff” denotes Reinhart and Rogoff (2009), and “Schularick and Taylor” denotes Schularick and Taylor (2012).

B. Cataloguing Interventions and Candidate Crises

We begin the search for interventions with the bibliography in R/R. Often, the same references that previously served as evidence for R/R to identify a banking crisis also elaborate on the wider circumstances of the event, and detail particular policy responses. In many instances, however, the existing banking-crises references are silent on the exact policy response: it is evident that some intervention took place, but we do not have the necessary details for our database. In these cases, we turn next to IMF or World Bank country reports, which are helpful for the post-1970 intervention documentation. For many crises prior to 1970, it is necessary to consult primary

sources, often in the language of the crisis country. Online Appendix A describes our systematic search of those sources, and Online Appendix E provides a full bibliography of all primary and secondary sources.

A plethora of potential interventions emerges from a comprehensive historical search. Yet, a significant share of these interventions may not be of sufficient size when measured in terms of fiscal or monetary outlays or balance sheet sizes involved; and for obvious reasons, the further one attempts to go back in time, the harder it would be to aim for a certain degree of comprehensiveness if only the loosest selection criteria apply.

While we do not restrict our analysis just to interventions during the canonical crises, we do have time-varying size thresholds for inclusion outside of such crises. These thresholds are necessarily arbitrary and are driven mostly by our judgement about the size of intervention likely to appear in our sources, thus giving us the best chance at comprehensiveness above those thresholds.

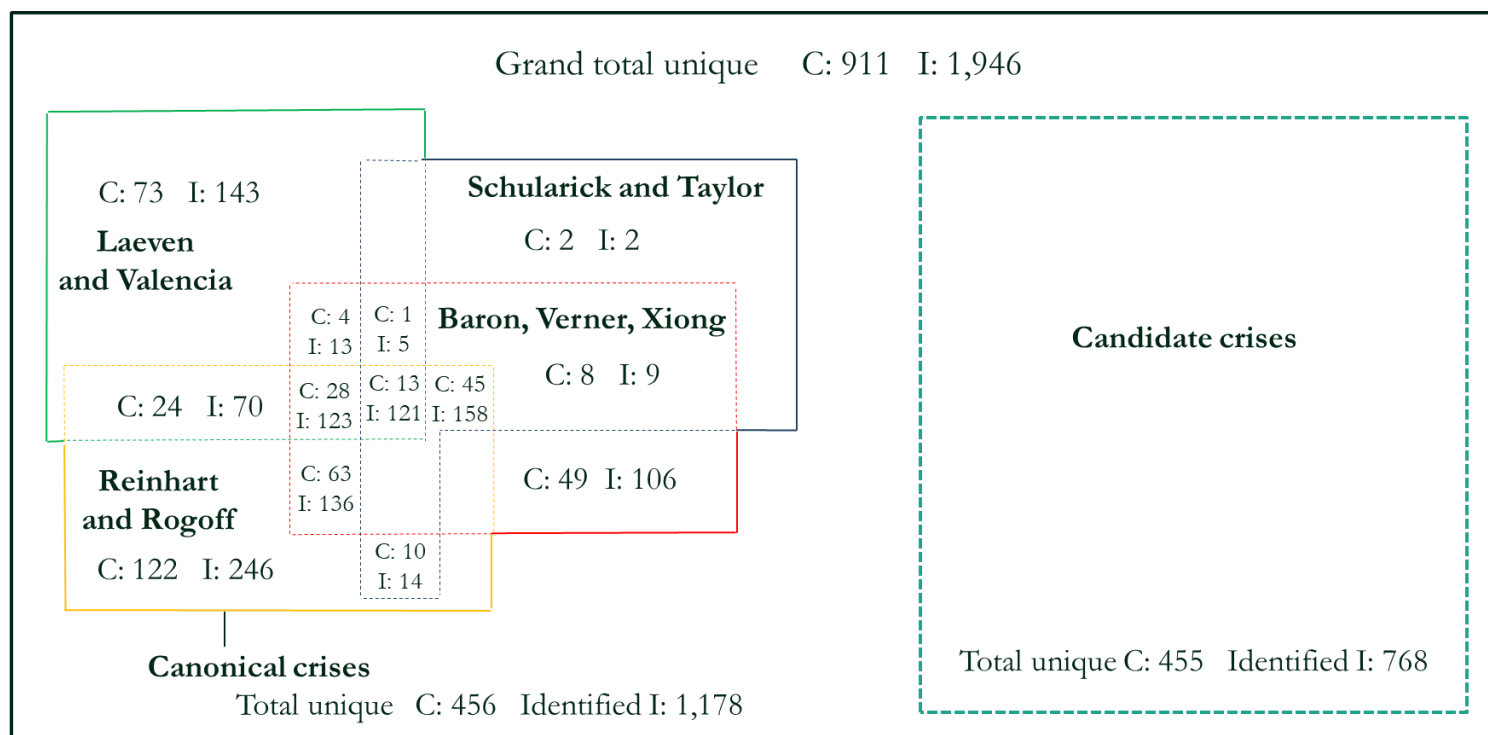
Specifically, we include an intervention outside of canonical crises if we have reason to believe that the gross fiscal or monetary volume, or the total liability volume of at least one institution affected by the policy, associated with the intervention is

- At least 5,000 Florentine florins in the case of all pre-1800 events, or at least 1,000 British Pounds deployed, or respective exchange rate equivalents;¹⁹
- From 1800-1914, at least either 50,000 British Pounds, or 50,000 U.S. Dollars (using the foreign exchange equivalent based on current exchange values);
- During 1915-1945, for advanced economies at least either 5M British Pounds, or 5M U.S. Dollars in total bank liabilities involved or in gross fiscal or monetary outlays deployed; and for emerging economies at least either 1M British Pounds or 1M U.S. Dollars for the respective intervention or total liability volumes involved.
- And from 1946-, for advanced economies at least either 50M British Pounds, or 50M U.S. Dollars in total bank liabilities involved, or in (gross) fiscal or monetary outlays deployed; and for emerging economies at least either 30M British Pounds or 30M U.S. Dollars for the respective intervention or total liability volumes involved.

¹⁹ One of our main long-run exchange rate (and respective gold content) sources are Karaman, Pamuk, and Yildirim-Karaman (2020). For full details on exchange rate bases, see the country notes in Online Appendix F.

Figure 3 illustrates the final composition of the database, which includes a total of 1,946 interventions. The left side of Figure 3 shows the distribution of 1,178 total interventions for the 456 canonical crises. As in Figure 2, the data is displayed in a Venn diagram showing the interventions corresponding to crises from each of the component databases. The right side of Figure 3 represents the interventions identified outside of the canonical-crisis periods. These 768 interventions are spread over 455 candidate crises. As we stated earlier, we are *not* claiming that these candidate crises should necessarily be classified as “banking crises” under the definitions used by earlier studies. Rather, we claim only that these candidates are worthy of further investigation, most importantly because they may represent periods of bank stress where interventions played a role in preventing a crisis. Furthermore, we do not claim to have uncovered all interventions or candidate crises; hence, the largest rectangle in the figure also includes open space to be filled by future discoveries.

Figure 3: Composition of full intervention database, and breakdown of “canonical” and “candidate” crises.



C=No. of crisis country years (start year); I=No. of interventions identified for respective crises years. For full methodology, see paper section II.A and B.

“C”: number of individual crisis start years; “I”: number of interventions associated with all crises; overlapping areas (dashed borders) denote crises and associated interventions identical in the respective canonical chronology covered by the particular area. Figures outside dashed areas represent crises and interventions unique to a particular chronology. “Baron, Verner, Xiong” denotes Baron, Verner, and Xiong (2021), “Laeven and Valencia” denotes Laeven and Valencia (2020), “Reinhart and Rogoff” denotes Reinhart and Rogoff (2009), and “Schularick and Taylor” denotes Schularick and Taylor (2012)

III. Intervention Patterns

In this section, we examine the pattern of interventions across countries with respect to national measures of income, government size, debt capacity, currency regime, and political system. Section A gives summary statistics for the full dataset. Section B describes each of the national measures and discusses the “mix” of interventions relative to each measure. With that background, Section C presents and interprets regression results using intervention categories as dependent variables and the set of national measures as regressors. \

A. Summary Statistics

Table 1 displays the distribution of the 1,946 interventions. The table shows that *lending* interventions – in the form of ad hoc emergency lending (AHEL), broad-based emergency lending (BBEL), or market liquidity assistance (MLA) – have been the most common group, with 561 cases accounting for 28.9% of the total. In order, the remaining groups are *guarantees* (317 for 16.3%), *capital injections* (288 for 14.8%), *rules* (282 for 14.4%), *restructuring* (252 for 13.0%), *asset management* (82 for 4.2%), and *other* (52 for 2.7%).

The table shows a clear shift in the pattern of interventions over time. Prior to 1945, the two largest categories were *rules* and *lending*, which combined for more than 50% of all interventions in every subperiod. Since 1945, both of these categories have had lower shares of the total, and in the last 50 years they comprise less than 30% of all interventions. During this same period, there has been a marked shift towards *capital injections*, which has been the largest category since 1972 and comprises more than one-quarter of all interventions since 2000. This occurred amid a parallel recovery of *guarantees* intervention measures, which over the past two decades have once more become more important than *lending* or *other* categories (re-claiming a prominence last recorded only in the pre-1750 era).

Table 1: Intervention types by period and category

<i>Intervention distribution by period</i>								
<i>share of all interventions (n)</i>	Pre-1800	1800-1869	1870-1913	1914-1945	1946-1971	1972-1999	2000-2019	<i>Total</i>
<u>LENDING</u>	<u>2.9 (57)</u>	<u>4.3 (84)</u>	<u>4.2 (82)</u>	<u>6.3 (121)</u>	<u>0.1 (14)</u>	<u>6.1 (118)</u>	<u>4.4 (85)</u>	<u>28.9 (561)</u>
AHEL	1.8 (40)	2.6 (50)	1.9 (36)	3.4 (63)	0.0 (2)	2.6 (53)	1.5 (29)	13.8 (273)
BBEL	0.7 (14)	1.4 (27)	2.0 (39)	2.8 (54)	0.1 (10)	3.3 (62)	2.3 (42)	13.0 (248)
MLA	0.1 (3)	0.3 (7)	0.4 (7)	0.2 (4)	0.0 (2)	0.1 (3)	0.8 (14)	1.9 (40)
<u>CAPITAL INJECTIONS</u>	<u>0.3 (6)</u>	<u>0.3 (5)</u>	<u>0.5 (9)</u>	<u>2.2 (37)</u>	<u>0.1 (10)</u>	<u>6.2 (120)</u>	<u>5.4 (101)</u>	<u>14.8 (288)</u>
AHCI	0.3 (6)	0.3 (5)	0.4 (7)	1.6 (29)	0.0 (3)	3.4 (68)	3.4 (64)	9.4 (182)
BBCI	0.0 (0)	0.0 (0)	0.1 (2)	0.5 (8)	0.1 (7)	2.8 (52)	2.0 (37)	5.6 (106)
<u>GUARANTEES</u>	<u>1.4 (27)</u>	<u>1.0 (16)</u>	<u>1.7 (30)</u>	<u>2.7 (52)</u>	<u>0.0 (2)</u>	<u>3.7 (89)</u>	<u>5.2 (101)</u>	<u>16.3 (317)</u>
AG	1.0 (17)	0.2 (4)	0.7 (13)	1.0 (19)	0.0 (2)	2.2 (46)	1.6 (32)	6.9 (133)
ASG	0.1 (1)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	1.0 (12)	0.8 (16)	1.5 (29)
BG	0.1 (1)	0.1 (2)	0.2 (4)	0.3 (5)	0.0 (0)	1.0 (13)	0.2 (5)	1.5 (30)
OLG	0.5 (8)	0.6 (10)	0.7 (13)	1.6 (28)	0.0 (0)	1.0 (18)	2.4 (48)	6.9 (125)
<u>RULES</u>	<u>2.6 (55)</u>	<u>2.8 (50)</u>	<u>2.0 (39)</u>	<u>3.3 (65)</u>	<u>0.1 (6)</u>	<u>2.2 (41)</u>	<u>1.1 (26)</u>	<u>14.4 (282)</u>
DPM	1.0 (22)	0.2 (5)	0.3 (5)	0.8 (18)	0.0 (1)	0.3 (6)	0.0 (0)	2.6 (57)
SBH	1.2 (22)	1.5 (28)	0.8 (16)	1.7 (35)	0.1 (3)	0.8 (14)	0.3 (5)	6.5 (123)
CRL	0.1 (1)	0.2 (3)	0.0 (2)	0.0 (1)	0.0 (0)	0.1 (4)	0.6 (13)	1.1 (24)
ORL	0.5 (10)	0.7 (14)	0.8 (16)	0.6 (11)	0.0 (2)	1.0 (17)	0.3 (8)	4.0 (78)
<u>RESTRUCTURING</u>	<u>1.3 (25)</u>	<u>1.3 (26)</u>	<u>0.7 (12)</u>	<u>1.6 (31)</u>	<u>0.1 (6)</u>	<u>5.3 (111)</u>	<u>2.1 (41)</u>	<u>13.0 (252)</u>
RES	0.6 (14)	0.8 (17)	0.6 (11)	1.5 (30)	0.1 (6)	4.9 (101)	1.1 (22)	10.3 (201)
BAIL	0.5 (11)	0.5 (9)	0.0 (1)	0.0 (1)	0.0 (0)	0.5 (10)	1.0 (19)	2.5 (51)
<u>ASSET MANAGEMENT</u>	<u>0.0 (2)</u>	<u>0.0 (0)</u>	<u>0.2 (3)</u>	<u>0.2 (13)</u>	<u>0.0 (0)</u>	<u>2.2 (39)</u>	<u>1.3 (25)</u>	<u>4.2 (82)</u>
AHAM	0.0 (0)	0.0 (0)	0.0 (0)	0.1 (2)	0.0 (0)	0.2 (5)	0.5 (8)	0.8 (15)
BBAM	0.0 (2)	0.0 (0)	0.2 (3)	0.1 (11)	0.0 (0)	2.0 (34)	0.9 (17)	3.5 (67)
<u>OTHER</u>	<u>0.6 (10)</u>	<u>0.1 (4)</u>	<u>0.5 (9)</u>	<u>0.3 (8)</u>	<u>0.0 (2)</u>	<u>0.5 (11)</u>	<u>0.2 (8)</u>	<u>2.7 (52)</u>
MC	0.0 (1)	0.0 (0)	0.0 (0)	0.0 (1)	0.0 (1)	0.0 (2)	0.1 (2)	0.2 (7)
ST	0.0 (0)	0.1 (1)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (2)	0.0 (1)	0.2 (4)
OTHER	0.5 (9)	0.1 (3)	0.5 (9)	0.3 (7)	0.0 (1)	0.4 (7)	0.1 (5)	2.1 (41)
<u>NO/I</u>	<u>0.2 (4)</u>	<u>0.7 (13)</u>	<u>1.5 (28)</u>	<u>1.0 (19)</u>	<u>0.0 (1)</u>	<u>2.4 (45)</u>	<u>0.1 (2)</u>	<u>5.8 (112)</u>
<i>total</i>	9.6 (186)	10.2 (199)	11.0 (215)	17.7 (344)	2.1 (40)	29.4 (572)	20.0 (390)	100.0 (1946)

Figures in brackets measure absolute number of interventions, outside of brackets share as percentage of all-time total interventions. Intervention tags correspond to subgroups (see Figure 1 and discussion in Section I): AHEL – ad hoc emergency liquidity; BBEL – broad-based emergency liquidity; MLA – market liquidity assistance; BBCI – broad-based capital injection; AHCI – ad hoc capital injection; AG – account guarantee; ASG – asset guarantee; BG – blanket guarantee; OLG – other liability guarantee; DPM – debt or payments moratorium; SBH – bank suspension or bank holiday; CRL – capital and regulatory rules; ORL – other rules; RES – restructuring or resolution; BAIL – stakeholder bail-in; BBAM – broad-based asset management; AHAM – ad hoc asset management; ST – stress test; MC – major communication; OTHER – other intervention; NO/I – no intervention (not included in total).

Figure 4: Intervention policy mix, by crisis type and by economic, fiscal, and political variables, 33 A.D. – 2019.

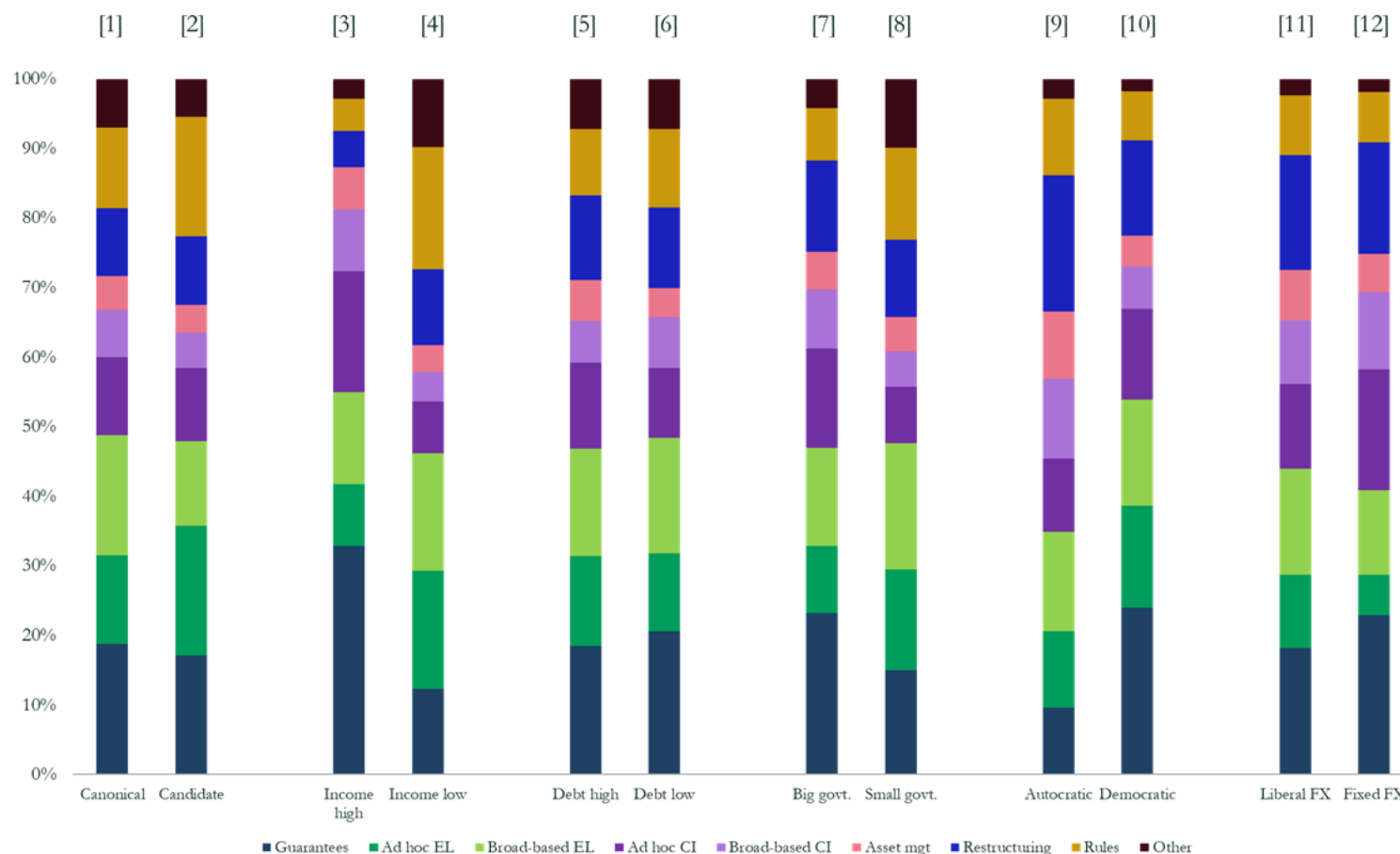


Figure 4 displays the composition of major intervention categories, by categorical (1-2), income (3-4), fiscal (5-8), political (9-10), and financial (11-12) variables as defined in text. For full notes on historical real GDP data used, refer to text above and country notes in Online Appendix F. Overwhelmingly, real per capita series on the basis of the latest Maddison Project estimates are used, and via underlying sources therein: real per capita levels are benchmarked to 2011 USD levels; readers should consult the full documentation and notes in Bolt and van Zanden (2020), and associated online spreadsheets via: [Maddison Project 2020 release](#). We use Nuvolari and Ridolfi's (2021) GDP data for France and Pfister's (2022) data for Germany, both of which are benchmarked to 1990 Geary-Khamis Dollar (GK\$) levels. Note that real p.c. sample has different source basis from our GDP sample detailed in Appendix E, with details on historical GDP bases and calculations there. Interventions without income datapoints are excluded. FX regime "Liberal FX" denotes currency regime observations on the "fine classification" basis in Ilzetzki, Reinhart, and Rogoff (2019) with values of 7 or higher; "Fixed FX" with lower than 7. For Big/small government and Debt high/low samples, samples are split at median value of all observations. "NO/I" observations are included in "other" category throughout.

B. Intervention Mixes: Definitions and Simple Comparisons

Figure 4 shows the relative frequency of intervention categories relative to a single crisis or country variable. We use the same color scheme for intervention categories as we did for the balance sheet representation of Figure 1. The goal here is to see if anything stands out from this visual representation.

The first pair of columns shows the distribution of interventions between canonical and candidate crises. In both cases, the largest category is *lending*, with the majority of those interventions broad-based (BBEL) in canonical crises and ad-hoc (AHEL) in candidate ones. That appears to be the most notable difference between the two columns. From this visual display, the distribution of intervention categories looks similar between the two types of crises.

The next pair of columns, (3) and (4), shows a comparison between countries with a per capital real GDP of <8,000 USD and those >30,000 USD.²⁰ Here, the differences are striking. The high-income countries rely heavily on *capital injections* and *guarantees*, with these two categories comprising more than half of all interventions in those countries. In contrast, those categories make up less than a quarter of the interventions in low-income countries. In those countries, the two most common categories are *rules* and *lending*, which together make up almost two-thirds of all interventions. These differences combine both time-series and cross-sectional variation, since more countries meet the “high-income” definition in the more recent years of the sample. In the regression evidence presented later in this section, we attempt to disentangle these two sources of variation.

We are also interested in the relationship between crisis response and fiscal capacity. We can think of this capacity in two connected ways. First, governments have limited borrowing capacity (“fiscal space”). Second, governments differ in the political willingness and human capacity to use this available space. Intuition suggests that both of these factors might matter, and recent theoretical work supports that intuition. Acharya, Drechsler, and Schnabl (2014) analyze optimal bailout policies to investigate the feedback loops between sovereign debt risks and banking-sector risk. Their model treats the existing debt stock of the government as a constraint

²⁰ Real per capita GDP series are mainly sourced from Bolt and van Zanden (2020), and authors therein. We thank Ulrich Pfister for sharing his latest German GDP compilations, on which we rely via Pfister (2022), and thank Leonardo Ridolfi for providing context to his most recent French data (Nuvolari and Ridolfi 2021). Note that the source basis for this exercise differs in multiple ways from the calculation of intervention size / GDP figures in table V, for which we utilize aggregate NGDP series, as also detailed in Online Appendix F.

on the bailout size. In addition, the authors also demonstrate a link between bank stress and a subsequent rise in debt/GDP, through the deployment of recapitalizations. In Gennaioli, Martin, and Rossi (2014), worsening debt sustainability (including the debt stock) constrain governments from bailing out large parts of the banking sector during a crisis, making sovereign defaults particularly costly to the domestic banking sector, especially when it holds large shares of the sovereign debt stock. Stavrakeva (2020) also builds on post-2008 observations that fiscal capacity – defined as efficiency of tax collection relative to GDP – determines bank bail-outs and other intervention decisions during banking crises, but focuses on ex ante crisis regulatory implications of levels of fiscal capacity.

The most informative empirical work on this subject is even more recent. Laeven and Valencia (2020) showed that systemic banking crises are associated with gross fiscal costs for government interventions between 6.7% (DMs) and 10.0% (EMs) measured as a share of GDP, implying the necessity for meaningful fiscal space to address systemic bank distress. At a more granular level, Acharya et al. (2021) identify fiscal constraints as predictive of bank recapitalizations in Europe during and after the GFC. The most significant predictive variable across measures was revealed as revenues/GDP. “Fiscal constraints” are significant by themselves when measured in terms of fiscal pressure: specifically, the share of debt maturing during the current fiscal year is associated with falling bailout probabilities in a significant way. While the existing stock of government debt by itself was negatively associated with bailout probabilities but not statistically significant, the debt stock/GDP became statistically significant – with a *positive* sign – once added on top of the revenue/GDP variable. There was no statistically significant association of any of the fiscal variables once tested against *any* kind of banking-sector intervention (recapitalizations or lending).

By combining our new database with long-run time series of government debt and spending from other scholars, we can get a long-run multi-crisis view of these patterns. Specifically, we merge our intervention observations with two datasets: the gross central government DEBT/GDP level of the affected economy in the year immediately preceding the crisis, drawing on the data since 1800 for a large country sample in Reinhart and Rogoff (2009); and second, a measure of state capacity, EXP/GDP, defined as the ratio of non-interest government expenditures to GDP in the year immediately preceding the crisis start, using the long-run empirics in Mauro et al. (2015).

Columns (5) and (6) of Figure 4 show the intervention mixtures for the DEBT/GDP variable. Here, we define the “high category” as all observations above the median level of 42.8% and the

“low” category as below this median level. Interestingly, the mixtures appear to be very similar between these two groups. Both intuition and the results of previous studies (cited above) led us to expect some differences here, but no substantial ones are apparent. We will see the same null result in the regression results of Section C.

For the EXP/GDP category, shown in columns (7) and (8), the differences are more apparent. We define “Big Government” and “Small Government” groups along the all-time median level of the sample, which yields a cutoff of 21.8% as the EXP/GDP ratio dividing the Big Government and Small Government groups. The stacked columns show that Big Government countries tend towards the more aggressive fiscal responses of guarantees and capital injections, while the Small Government group tends towards lending and rules.

Intervention choices may also be influenced by a country’s political regime; costly bail-out decisions for banks, for instance, might be more politically feasible where democratic control is weak; while in democracies the electoral cycle might encourage intervention options that “kick the can down the road” rather than deal with regulatory problems right away. To assess the relationship between political regimes and intervention choices, we source data on a country’s political regime from the POLITY V project, via Marshall and Gurr (2020). Among other indicators, the project assigns an annual numerical value to rank a country’s “regime authority spectrum” on an annual-level 21-point scale, ranging from -10 (strongly authoritarian, hereditary monarchy) and +10 (strongly democratic, consolidated democracy) for a total of 167 countries beginning in the year 1800. Over time, the data set shows a positive time trend in the POLITY value across all countries: while by 1900, only 22% of country observations are classified as “democratic”, this share stands at 59% by 2015. This data allows us to trace the precise link between political regime and intervention dynamics for the vast majority of cases over the past 220 years.

In columns (9) and (10) of Figure 4, we compare the intervention mixtures of “Autocracies” (POLITY measure less than negative five) and “Democracies” (POLITY measure greater than five). Here, the most salient difference appears to be a relative preference for *guarantees* among the Democracies – a result also reinforced by the regression results.

Intervention decisions might also be systematically related to the currency regime of the affected country; for example, large-scale emergency lending programs may be constrained by the existence of fixed exchange rate regimes (pegs); twin-crisis dynamics – where policymakers

have to address currency attacks or capital withdrawals at the same time as banking sector distress – could also leave distinct patterns on policy choices over time. A nuanced classification of de facto exchange rate regimes on an annual level was recently undertaken by Ilzetki, Reinhart, and Rogoff (2019) for a total of 194 countries over 1940-2016. Among other variables, the authors present a “fine” FX regime classification framework which uses a 15-point scale ranging from highly inflexible (no legal tender or pre-announced peg = 1,2) to highly flexible (freely floating, freely falling, or dual market = 13, 14, 15) exchange rate arrangements. For the vast majority of intervention observations since 1940, we are able to match corresponding entries for FX regime from their database.

The last two columns of Figure 4 summarize the intervention mix for regimes that are either “Liberal” (FX measure more than 7) or “Fixed” (FX measure less than 7). We see some evidence here that the fixed regimes are more constrained in their *lending* programs, as they comprise a smaller fraction of interventions than for liberal regimes.

C. Regression Results

The simple comparisons of Figure 4 allowed us to summarize the data, but does not allow for any formal tests. For that, we estimate logit regressions for each intervention category, using all of the crisis- and country-specific measures from Figure 4 as regressors. The results of this exercise are given in Table 2. Each column of the table gives the results for a different dependent variable. In each specification, the dependent variable is set equal to one if the specific intervention type was used in a crisis, and zero otherwise. Thus, the units of observation are at the crisis level, and there is a zero or one observation for each type of intervention in each crisis. Of the 911 unique crises in our database, we have complete data on all the regressors for 273 of them. Online Appendix C shows robustness checks with fewer regressors, allowing for a larger sample size of crises; the main results discussed below are robust to these different specifications

Table 2: Regression results for major intervention categories and dependent variables.

<i>Intervention type</i>	Guarantees	Lending	Capital injection	Restructuring	Asset mgt.	Rules	Other
<i>Candidate</i>	-1.409 (0.304)	-0.670 (0.271)	-0.881 (0.281)	-0.150 (0.272)	-1.705 (0.447)	0.648 (0.385)	-0.029 (0.576)
<i>INCOME (log)</i>	0.609 (0.226)	0.642 (0.201)	0.255 (0.196)	-0.454 (0.200)	0.408 (0.247)	-0.014 (0.261)	-0.148 (0.382)
<i>Polity</i>	0.100 (0.033)	0.040 (0.027)	-0.042 (0.027)	0.036 (0.029)	-0.064 (0.033)	0.064 (0.043)	0.072 (0.067)
<i>FX regime</i>	-0.012 (0.034)	0.085 (0.031)	-0.058 (0.031)	-0.008 (0.031)	0.028 (0.041)	0.045 (0.044)	0.120 (0.070)
<i>DEBT/GDP</i>	-0.015 (0.005)	-0.002 (0.004)	0.0003 (0.004)	-0.008 (0.004)	0.002 (0.005)	0.007 (0.006)	0.009 (0.008)
<i>EXP/GDP</i>	-0.004 (0.016)	-0.025 (0.015)	0.020 (0.015)	0.034 (0.015)	-0.027 (0.020)	-0.046 (0.023)	-0.034 (0.032)
<i>Year</i>	0.014 (0.012)	-0.009 (0.010)	0.021 (0.011)	-0.010 (0.010)	0.043 (0.019)	0.015 (0.015)	-0.001 (0.022)
<i>Constant</i>	-33.1 (23.0)	11.4 (20.1)	-43.7 (22.1)	21.8 (20.5)	-90.2 (38.1)	-31.8 (28.9)	-1.2 (43.6)
<i>N</i>	273	273	273	273	273	273	273

Table 2 displays the results of logit regressions at the crisis level, where each crisis (candidate or canonical) is one observation. Data begins in 1800. Each column represents a single regression, with the dependent variable given in the top row. The intervention categories in the first row follow the category definitions introduced in Section I. For each regression, the dependent variable is equal to one if that category of intervention is present in a crisis, and zero otherwise. *INCOME* is measured in logs, using data from the same year as the dependent variable. *CANDIDATE* takes on a value of one for a candidate crisis, and zero for a canonical crisis. Sources for the income data are given in Appendix F. *DEBT/GDP* = total gross central government debt/GDP (domestic+external), sourced from Reinhart and Rogoff (2009). *EXP/GDP* = non-interest government expenditure/GDP, sourced from Mauro et al. (2015). We exclude all observations where at least one of the variables in income, *DEBT/GDP*, or *EXP/GDP* is missing. All variables are measured for $t-1$, the year preceding the crisis start date.

Before interpreting the results of these regressions, one important caveat is necessary: the observations across these crises are not independent, and there is not good way to adjust for this problem given the limitations of the data. Our remaining sample of 273 crises includes several global or regional crises, so that we will have multiple countries making intervention decisions at similar times. Furthermore, most countries are in the final sample for several different crises, and could be some time dependence in their crisis responses, even if these crises are separated by many decades. In the discussion that follows, all statements about statistical significance are subject to this caveat.

Among the major categories of interventions, the most interesting results are for *guarantees* (column 1) and *lending* (column 2). For guarantees, there are four coefficients significant at the one-percent level: INCOME (positive), POLITY (positive), DEBT/GDP (negative), and CANDIDATE (negative). Thus, for any given crisis, we are more likely to see a guarantee intervention if the country has higher income, is more “democratic”, has a *lower* DEBT/GDP ratio, and is canonical. The DEBT/GDP result is consistent with the findings in Panetta et al. (2009), which shows that the effectiveness of debt-guarantee programs in the GFC was related to the sovereign spread of the guaranteeing country; since guarantees are only as useful as the credit-quality of the guarantor, a country with little fiscal space is unlikely to derive much benefit from them.

For lending, there are two coefficients significant at the one-percent level: INCOME (positive) and FX regime (positive). Here, for any given crisis, we are more likely to see emergency lending activity if the country has a higher income or if it has a *more* flexible currency regime. This latter result is consistent with the constraints of a fixed-exchange rate system, where any emergency lending would put pressure on the currency.

IV. GDP losses in Canonical and Candidate Crises

In this section, we investigate the GDP losses from Canonical and Candidate crises, and analyze the relationship of these losses with the same country variables introduced in the previous section. For this analysis, our key variable is the “GDP gap”, which we construct in several steps. First, for every “base year”, we estimate the trend (geometric) growth of GDP per capita using the prior 15 years of data. We do not use data from the base year itself. Next, we extrapolate that trend growth for five years, beginning at the end of the base year. This step yields an extrapolated GDP prediction for each of the next five years. We then compare the actual GDP in each of those years with this extrapolated GDP. The sum of the (percentage) differences for these five years represents the GDP gap for that base year. It is the “area under the trend GDP line”.

We repeat this exercise for every base year for which we have GDP data in the prior 15 and following five years. Figure 5 summarizes the results of this exercise on our universe of data, including non-crisis base years as a control. For all crises, the GDP gap has a mean of -8.9 percent and a median of -7.9 percent. By this measure, canonical crises are more severe, with a mean of -12.7 percent (median = -11.1 percent), as compared to the corresponding measures of -4.3 percent

Figure 5: GDP gaps associated with Financial Crises, sub-types, and non-crises years.

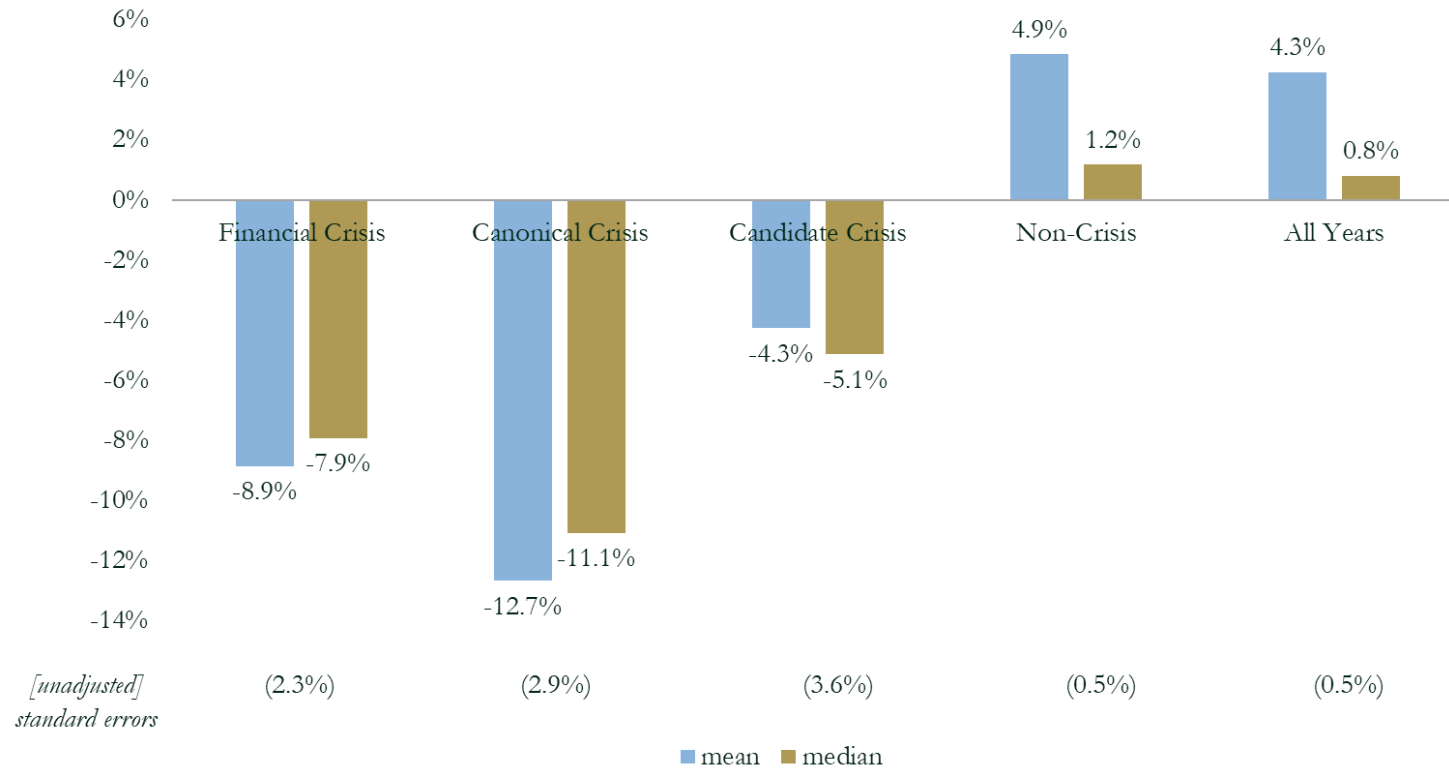


Figure 5 displays the mean and median GDP gap sum associated with different categories of country-years. GDP gap sum is defined as sum of annual real GDP per capita difference to GDP growth trend-implied real per capita GDP, over t to $t+4$, with trend path using the realized (log) real GDP path over $t-14$ to t . With t = crisis start year. Income data as per sources in Appendix F. “Financial crisis” sample includes all candidate and canonical crises; “all years” includes all annual-level GDP gap sum observations for which underlying (log) real per capita GDP is available for countries in intervention sample via Bolt and van Zanden (2020) and sources therein.

Table 3: Regression results for all crises, by crisis type, and dependent variables.

	Combined		Canonical crises		Candidate crises	
<i>Candidate</i>	0.1464 (0.0755)	0.0685 (0.0596)	-	-	-	-
<i>INCOME (log)</i>	-0.2287 (0.0370)	-0.2672 (0.0426)	-0.2306 (0.0416)	-0.2815 (0.0585)	-0.3621 (0.0791)	-0.2783 (0.0680)
<i>Polity</i>	0.0071 (0.0055)	0.0113 (0.0060)	0.0160 (0.0074)	0.0133 (0.0083)	-0.0028 (0.0097)	0.0063 (0.0101)
<i>FX regime</i>	0.0114 (0.0078)	0.0179 (0.0068)	0.0123 (0.0082)	0.0239 (0.0092)	0.0108 (0.0156)	0.0089 (0.0109)
<i>DEBT/GDP</i>		-0.0012 (0.0009)		-0.0018 (0.0011)		0.0005 (0.0017)
<i>EXP/GDP</i>		0.0054 (0.0034)		0.0057 (0.0042)		0.0046 (0.0058)
<i>Year</i>	0.0022 (0.0028)	0.0029 (0.0023)	0.0033 (0.0043)	0.0031 (0.0043)	0.0049 (0.0041)	0.0032 (0.0029)
<i>Constant</i>	-2.4627 (5.4536)	-3.7137 (4.5573)	-4.8310 (8.4863)	-4.0594 (8.5654)	-6.5296 (8.0010)	-4.2002 (5.6543)
<i>N</i>	334	261	203	146	131	115

Table 3 displays the results of logit regressions at the crisis level, where each crisis (candidate or canonical) is one observation. Data begins in 1800. Each column represents a single regression, with the dependent variable given in the top row. The intervention categories in the first row follow the category definitions introduced in Section I. For each regression, the dependent variable is equal to one if that category of intervention is present in a crisis, and zero otherwise. *INCOME* is measured in logs, using data from the same year as the dependent variable. *Candidate* takes on a value of one for a candidate crisis, and zero for a canonical crisis. Sources for the income data are discussed in Appendix F. *DEBT/GDP* = total gross central government debt/GDP (domestic+external), sourced from Reinhart and Rogoff (2009). *EXP/GDP* = non-interest government expenditure/GDP, sourced from Mauro et al. (2015). We exclude all observations where at least one of the variables in income, *DEBT/GDP*, or *EXP/GDP* is missing. All variables are measured for t-1, the year preceding the crisis start date.

(mean) and -5.1 percent (median) for candidate crises. The control group of “non-crisis” base years, which represents the vast majority of the data, has a positive mean GDP gap of 4.9 percent (median = 1.2 percent).²³ At the bottom of the figure, we report standard errors for the estimates of the mean, unadjusted for the unknown cross-sectional and time-series dependence across crises. While we cannot say anything definitive about statistical significance, the differences are clearly economically significant. The mean GDP gap for canonical crises is 17.6 percentage points greater than the control non-crisis case. That’s represents a substantial difference in real performance.

The mean candidate crisis GDP gap is almost exactly halfway between the canonical and non-crisis means. This is an intriguing result. It could be that some of the candidate crises are just small financial crises that went undetected by past filters. It might also be that the interventions of these candidate crises actually prevented more significant damage to GDP. It could also be that some of these candidate crises are just noise with nothing real going on. It will require a detailed look at any given candidate crisis to make that determination.

Table 3 shows results of regressions of the GDP gap on the same country variables used in Table 2. In these regressions, there are some differences depending on whether we examine canonical or candidate crises, and also on the number of regressors used (sample size changes due to missing data), so we show several different specifications in the table. The table reports coefficients and standard errors, with the standard caveat about unknown cross-sectional and time-series dependence. The first two columns show results for the full set of crises and the next four columns show the corresponding results when we split the sample into candidate and canonical crises. In all of these specifications, the coefficient on INCOME is *negative* and significant at the one-percent level, suggesting that negative GDP gaps are more severe for higher-income countries. Also, there is some evidence that both POLITY and FX Regime are related to the severity of GDP losses, particularly in canonical crises. When we include the full set of regressors in column (2) (full sample) and column 4 (canonical sample), the coefficient on FX regime is positive and significant at the five-percent level, suggesting that more flexible currency regimes are associated with smaller GDP losses. When we drop the fiscal variables to add more observations in column

²³ The mean GDP gap is positive for non-crisis years because of positive trend growth rates across the whole sample – this trend causes the growth to be higher in the five years after a base year than for the fifteen prior years.

(3) (canonical sample), the POLITY variable is positive and significant at the five-percent level, suggesting that more democratic countries have smaller GDP losses.

Of course, in a perfect world we would test for the relationship between GDP gaps and specific interventions. Scholars and policymakers would all like to know which types of interventions reduce GDP gaps in a crisis. But the obvious endogeneity problems prevent a straightforward statistical analysis, since interventions are clearly influenced by crisis severity as well. We hope that the availability of the full intervention database will allow future scholars to perform detailed case studies and identify natural experiments and useful instruments.

V. Bank Stress over the Very Long Run

One application of the database is a new investigation into the question whether “the crisis problem is growing more severe”, in the spirit of previous findings (Bordo et al. 2001; Reinhart and Rogoff 2013; Bordo and Meissner 2016). Consistent with the rest of this paper, our crisis definition in the following covers both existing crises identified in the canonical papers, and also adds the candidate crises identified by the existence of intervention decisions. In this respect, our crisis definition is broader than that considered by the previous literature. Since we view our work as a complement and not a replacement for that literature, we will use the broader term of “bank-stress period” instead of “crisis” for the long-run macro perspective discussed in this section.

Figure 6 displays the share of advanced economy (DM) GDP displaying bank stress – combining all canonical and candidate crises since the mid-17th century. We display the full annual distribution of interventions across both crises groups over time, for all countries, by major intervention group, and record separately the associated share of advanced economy GDP that is experiencing an intervention event of any form during the respective year. The GDP shares used here follow the shares constructed and discussed further in Schmelzing (2020), which builds on Maddison (2008) and subsequent extensions (Bolt and van Zanden 2020, and sources therein), covering eight leading advanced economies over the past centuries (Northern Italy, the U.K., the Netherlands, France, Germany, Spain, the U.S. (from 1790), and Japan (from 1870)).²⁴

²⁴ Trends observed by this GDP weighting are generally robust to alternative approaches, such as DM population shares, or expanded DM GDP country samples.

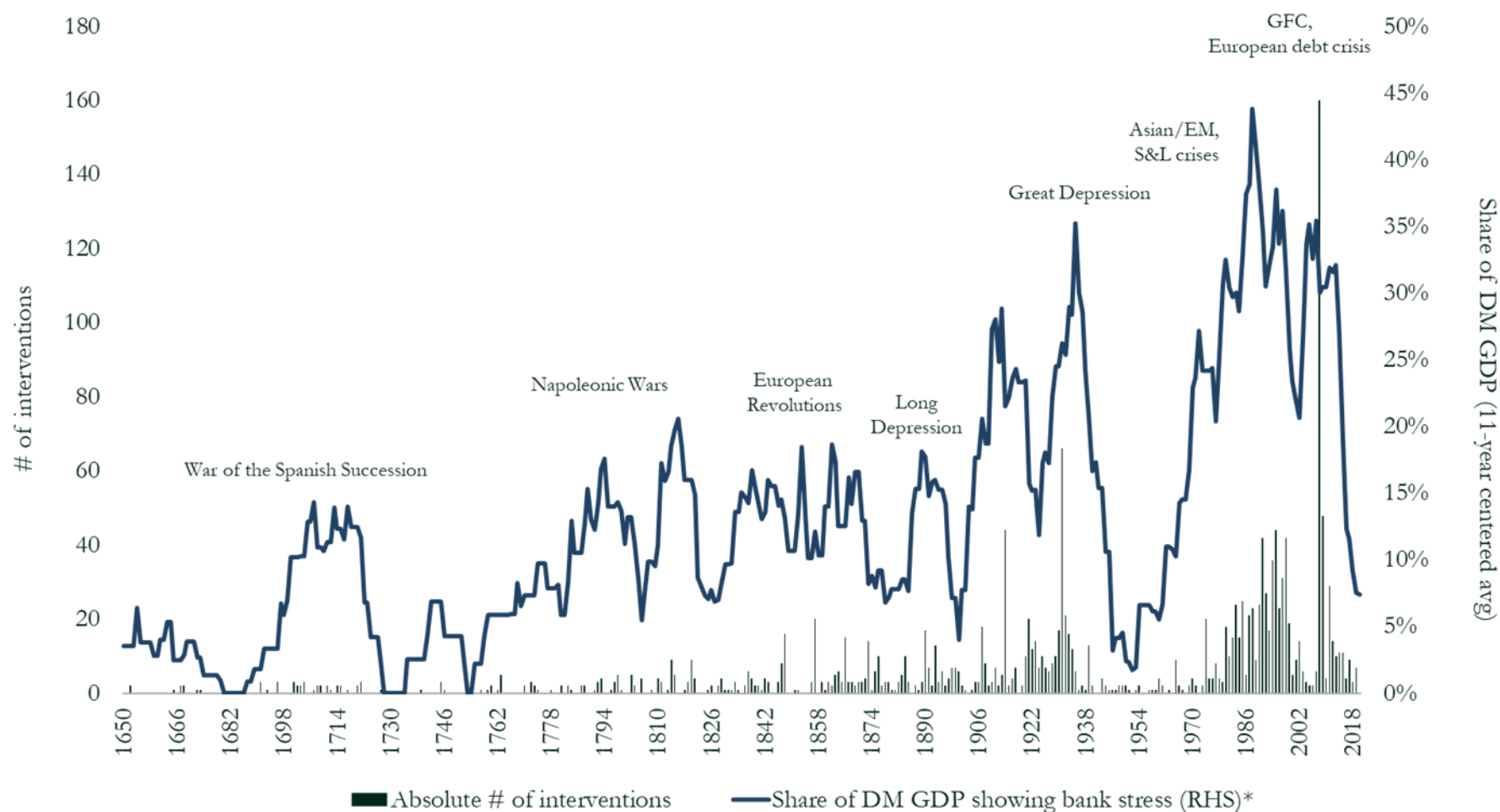
With this analysis, we can place 20th and 21st century bank-stress events into a very long historical context. We observe that, indeed, advanced-economy bank distress appears to be becoming gradually more and more frequent, from an initial basis in the second half of the 17th century that saw on average 1.7% of DM GDP experiencing bank stress in any given year prior to the outbreak of the War of the Spanish Succession (1701). This figure almost quadruples to 6.1% of DM GDP during the first half of the 18th century, with notable peaks being closely linked to geopolitical tail events: generally, it becomes clear that even prior to the classical gold-standard arrangements, both bank stress episodes and authorities' recourse to a wide menu of policy responses was clearly a regular feature of the international financial system.

In the early industrial era, the two great escalations in bank stress occur during the late phase of the Napoleonic Wars – we count 37 interventions spread across 19 separate bank-stress periods between 1810-1821, many related to public banks in need of recapitalizations, restructurings, or suspensions in the wake of invasions or (post-war) escalating debt monetization – as well as the years 1847-1848 – this latter date marking the high tide of domestic revolutions across Europe, a two-year period that had 25 interventions, but one that has received comparatively little attention thus far relative to its financial importance.²⁶

By this count, the years 1907, 1914, and 1931 mark years of intervention clusters, with 1914 experiencing 47 interventions, clustered in July and August after the declaration of War (1914 thus marking the third largest intervention year on record), and 1907 witnessing a notable number (18) of bank assistances and liquidity programs in- and outside the U.S. The year 1931, meanwhile, with 71 recorded interventions, experiences the largest number of interventions in the entire sample outside of 2008 (when we record 172 individual interventions), and contributes to a total of 137 interventions during the main Great Depression years of 1929 through 1933.

²⁶ Osterhammel (2014) offers a comprehensive account of international political events for these years. Dedicated economic and financial work is rarer given the scale of volatility, but Berger and Spoerer (2001) provide economic context, and Ferguson (2006) documents the pan-European bond market sell-off in 1848.

Figure 6: Distribution of total interventions, by year, and share of advanced economy GDP exhibiting “bank stress”, 1665-2019.



The left axis in the Figure takes an intervention-level view, and reports the total number of interventions in each year (“# of annual events”) for the full database, summing all canonical and candidate crises intervention observations for each respective year. The right axis takes a GDP-weighted view for advanced economies, focused on the subset of eight leading DM countries (Italy, the U.K., Netherlands, France, Germany, Spain, the U.S. [from 1790], and Japan [from 1870]). Canonical or candidate crises intervention observations in the respective year for one of the eight countries results in a positive observation for the year of its respective DM GDP share, with shares for all eight countries then summed for each year. Eleven-year centered moving average is displayed for this measure. GDP weights based on Schmelzing (2020).

Subsequently, while the immediate post-war decades are notable for a relatively muted stress incidence, the post-Bretton Woods period is unique over the four-century period observed here, with a record 20.2% of DM GDP being under bank stress in an average advanced economy year. Indeed, between 1980 and 1999, we record an average of 24 relevant interventions per annum across the globe.

By this evidence, it appears that the post-Bretton Woods banking crisis frequency is higher than that experienced under the classical gold standard (Bordo et al. 2001; Sufi and Taylor 2022): even prior to the 2008 GFC, the international financial system was prone to a gradually but consistently rising intervention frequency persisting across historical regimes, and meaningfully intensifying in the second half of the 20th century.²⁸ On average, the percentage of DM GDP under bank stress over the 1665-2019 period displayed below shows an increase of 3.4 basis points per year, with the uptick from the virtually intervention-free Bretton Woods period to the floating era resembling the reversals of fortune during the quiet 1870s and the immediate pre-WWI years.

VII. Conclusion

In the historical record, crises are like fires and the government interventions in those crises are analogous to firefighting. The existing crisis chronologies were built by looking for direct evidence of the fire. This has been an important exercise for macroeconomics and finance because the historical record is clear about the existence of the most severe crises, and these examples are the most quantitatively important for welfare. But if we are interested in the efficacy of crisis resolutions, we also need to study the cases where we observe the firefighting, but no long-term damage apparent from the fire. This exercise is fruitful because it is often easier to observe trace evidence of firefighting than to directly observe the fire itself. The main goal of our project is to build a database that includes as many interventions as possible, both with and without other indicia of a crisis.

To accomplish this goal, we introduce a classification system for banking-crisis interventions, describe the construction of a database based on that system, and then provide statistics about cross-sectional and time-series patterns from this database. The classification system is mapped onto the financial-sector balance sheet and includes 20 types of interventions in seven major

²⁸ Note that this trend is not explained by a higher responsiveness of authorities to an otherwise static level of bank stress, since we control for “no intervention” responses.

categories. The current version of the database includes 1,946 interventions dating back to Roman times. One contribution of our intervention-based prism is that it allows for the identification of 455 “candidate crises”, where we find evidence of an intervention in the historical record, but no crisis event is found in the canonical chronologies. These candidate crises may have been missed by earlier filters or may instead be examples of successful interventions worthy of further study.

The data show a changing pattern of interventions over time, with governments opting primarily for *rules* and *lending* interventions for most of the sample period, with *capital injections* emerging as the most popular intervention in the last fifty years. Overall, while crisis-fighting might have seemed to be about the “lender of last resort” for much of history, in today’s world governments are intervening all over the balance sheet. Regression evidence suggests that wealthier countries are more likely to engage in several types of interventions, and that countries with limited debt capacity and more autocratic political systems shy away from making guarantees, and those with more rigid currency regimes do less emergency lending.

We feel that the identification of candidate crises is a main contribution of the paper, and the evidence on GDP losses after crises suggests that there is much more to learn about these events. We compute a GDP gap for all crises and find that the universe of candidate crises falls right in between the control group and the universe of canonical crises. Importantly, there are economically significant differences between candidate crises and non-crisis years. We also find that post-crisis GDP losses are larger for wealthier countries, with some evidence that these losses are lower in countries with more democratic political systems and more liberal currency regimes.

Finally, the intervention-prism allows for a longer historical view about the “crisis problem”; intervention frequencies suggest that the crisis problem in the financial sector has indeed reached an apex during the post-Bretton Woods era, but our evidence suggests that it is part of a more deeply entrenched development that saw global intervention frequencies and sizes gradually rise since at least the late 17th century.

Online Appendix Material (in separate file):

Appendix A – Notes on Sample Selection and Identification Process of Historical Crises.

Appendix B – Database Elements and Structure.

Appendix C – Robustness Checks for Regression Results.

Appendix D – Full Intervention Chronology, 1,946 Cases, 33 A.D. – 2019.

Appendix E – Appendix Bibliography (Covering Appendix A-B, D, F).

Appendix F – Details on Long-Run GDP and Intervention Size Calculations.

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Online Appendix Material to

Banking-Crisis Interventions across Time and Space

Note: Appendix sections D and E are added here purely for referential purposes.

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Appendix A: Notes on sample selection and identification process of historical bank crises interventions.

Irrespective of the fact whether a banking crisis was already catalogued in an existing chronology, we also analyze historical primary document collections: for instance the British *Calendar of State Papers*, and the extensive early modern *Making of the Modern World* series, which we searched for all titles relating to the banking industry, and more narrowly to banking crises since the year 1500.²² Items including the 1869 *Bombay Bank Inquiry*, W.R. Bisschop's (1910) *Rise of the London Money Market, 1640-1826*, and Adam Kirkaldy's (ed. 1921) *British finance during and after the war, 1914-21* have all yielded new intervention events to us through this channel.

²² See Trivellato (2019, 228f.) for a brief discussion of the database and its relevance for early modern economic sources.

In addition, we systematically searched the historical archives of business periodicals such as, for instance, the *The Commercial and Financial Chronicle*, *Hunt's Merchants Magazine*, the well-known London *Banker's Magazine* (and its U.S. equivalent of the same name), *The Economist* and the *Financial Times*, as well as foreign-language dailies or weeklies known for an extensive foreign-correspondent network, such as the *Neue Zürcher Zeitung* – such industry-specific sources often provided crucial nuance on particular intervention measures; next, we systematically evaluated the published central-bank histories for policy-intervention evidence, including those for smaller or peripheral institutions such as Robert Bigo's (1927) history of the *Caisse d'Escompte 1776-1793*, the Cuban *Banco Espanol de la Isla de Cuba* (Montaud 2004), the Ottoman *Banque Imperiale Ottomane* (Autheman 1996), or the Finnish *Suomen Pankki* (Kuusterae and Tarkka 2011), as well as country-level banking history compendiums published during the 19th and 20th centuries, such as James Gilbart's (1836) *History of Banking in Ireland*, Heinrich von Poschinger's (1878) history of Prussian banking, Ernst Arndt's (1928) *Banking and currency development in South Africa (1652-1927)*, or Herbert Luethy's (1959) Genevan banking history. A representative case for the emerging market level may be Charles Brown's (1966) study on the (post-war) *Nigerian banking system*. From the bibliographies in such works, we obtain another large number of events and references.

A third major group of sources are business history and institutional studies on the individual bank level, including, for instance, Edwin Perkins' (1976) investigation of the *House of Brown*, or Marten Buist's (1974) detailed study of the *Hope & Co.* enterprise – in addition to compendia such as the detailed *Handbook on the History of European Banks* edited by Manfred Pohl (ed. 1994).

For the more distant past, we increasingly utilize primary-source collections, printed primary banking-specific registries (with a certain bias on Italian and German merchant bankers and court financiers), and biographical accounts of prominent bankers in the early-modern period to identify interventions – examples being the accounts of the prominent London merchant banker (and Lord Mayor) Thomas Lodge (Sisson ed., 1933), Mario Chiaudano’s (1935) contribution on the “Rothschild of the 13th century”, Orlando Bonsignori, Claude Badalo-Dulong’s (1951) biography on Bartholome Hervart, or Goetz von Poelnitz studies (1958-1986) on *Anton Fugger*. Such accounts often shed light on ad hoc privately-organized emergency actions, which otherwise escape official accounts prior to the full establishment of modern monetary institutions.

For these earlier times, we also partially fall back on source collections – for instance the British *Calendar of State Papers*, Alfonso Silvestri’s (1953) *Sull’attivit  bancaria napoletana durante il periodo aragonese* which documents the activities of Neapolitan banking houses in the second half of the 15th century, Elia Lattes’ (1869) Venetian banking source collection, or Francesco Ferrara’s (ed. 1871) “Documenti per servire alla Storia de’ Banchi Veneziani”, which documented official Venetian communication and decrees with regards to major banks in the city Republic, including the famous *Soranzo* and *Garzoni* Banks. Occasional references to banking crises and political responses can even be found in early-modern royal inventories, such as Charles VIII of France’s official letters (Pelicier ed. 1898-1905). Another useful resource are comprehensive historical works primarily aimed at political history, especially when they are based on extensive archival research, such as Robert Davidsohn’s (1896-1927) sweeping 2,800 page history of Florence (*Geschichte von Florenz*), which contains valuable details on financial dynamics and policy responses.

We utilize such printed primary and secondary sources wherever possible, and apart from English sources, we are confident to have covered a critical share of the German literature available including and prior to the 20th century. Yet, for the pre-1700 period in particular, it is likely that even when applying our minimum thresholds, an unknown number of interventions will still elude us for a lack of surviving or accessible sources. Against this backdrop, we make no claims of full historical comprehensiveness, even within the confines of our minimum threshold criteria.

There are two classes of documents in particular where further research is likely to add particular nuance and/or breadth to our current database:

1. Despite our forays into Italian-, French-, and Spanish-language sources, we have not yet searched a wide body of less prominent literature in these languages – especially when it comes to pre-1945 publication dates, and especially when they fall outside of the rather prominent periodicals and publication houses. When it comes to the emerging-market space, a meaningful share of international banking activity was led and operated by European houses; in many countries – such as the Ottoman Empire – even the central bank was de facto European-owned. Similarly, significant banking events would likely have left some traces in the case of South American, Indian, Ottoman, South African, and other colonial geographies. Nevertheless, we would speculate that a systematic investigation of Chinese and Japanese historical sources could yield a number of relevant historical additions to the database.²³

²³²³ For instance, the absence of a comprehensive English language history of the Bank of Japan is surely responsible for various omissions thus far in the international literature on its de facto LLR interventions.

2. Archival documents. While we have utilized printed primary documents, we can only speculate how much a full and detailed investigation of archival files could improve our database coverage. We think it likely that a systematic search in the fiscal, monetary, and corporate funds across the geographies covered would add additional relevant granularity, especially when it comes to pre-1800 events. The *Archives Nationales* may well illuminate the revulsions of Parisian (quasi) banks during the Revolutionary Period, or during the particularly volatile mid-17th century; German archives could undoubtedly shed further light on the wave of (merchant-)banking failures during the second half of the 16th century after the Franco-Spanish double default of 1557, and the exceptional financial turbulence during and after the Thirty Years War;²⁴

Still, larger and international banking concerns are usually well documented even during the 15th and 16th centuries, given enduring efforts at the construction specialized studies in our own time, and the fact that contemporary authorities widely recorded and debated such major economic events. In fact, when studying the early-modern debates, one is tempted to conclude that Northern Italian and Flemish politicians during the 14th century already grappled with quite familiar regulatory and moral questions in the face of prominent banking and exchange crashes.

For the interventions in our database that are not associated with an specific crisis, many have a clear preventive quality, and often authorities in such cases act upon small-scale indications of looming bank runs, such as heightened currency demand that is still being met by the banking sector at the time of the policy action, or discreet communication by bank insiders, who make

²⁴ For a source guide on the French side, see Felix (1994, 31-33, 39, 49ff.); on the German side, we would not least expect some insights from the Fugger-Archives in Dillenburg, and from municipal archives in the early modern merchants hubs such as Augsburg, Cologne, and Nuremberg.

authorities aware of a potentially serious financial event at their own institution or the wider market.

A typical example is the swift policy action by U.S. actors in December 1905, after banking industry insiders and authorities are made aware of the looming collapse of three of Chicago's most prominent depository institutions: prior to the public announcement of the suspension of the three banks, the Clearing House Committee has completed an 18-hour session and decided to fully guarantee the deposits at the affected institutions. Both the news of suspension and news of the policy action reach the market at the same time. The Comptroller of the Currency and other market participants here widely share the sentiment that the intervention "has relieved a most critical situation, which, if it had not been taken promptly in hand, might have led to the most serious consequences, not only in Chicago, but elsewhere".²⁵ Such occasions illustrate why existing databases not least tend to overlook *successful* policy interventions.

Sample selection: as indicated, a long-run historical approach that seeks to go beyond established "crises chronologies" faces sample selection issues. Which biases exist in terms of event size, beyond the spatial and temporal biases indicated above? Our data on "intervention sizes" can shed further light on the underlying properties of the "candidate" crises sample in particular.

Appendix Figure I displays the 278 datapoints for liquidity interventions for which the exact "liquidity size" can be calculated between the years 1450 and 2019 (because both the absolute liquidity provision volume, and the current GDP data are available).

²⁵ Financial Times, December 19, 1905, 5.

Shown in addition is a “size/GDP range” that takes as its basis the liquidity “intervention sizes” provided in Laeven and Valencia’s (2020) banking crises sample: the average liquidity size/GDP for their post-1970s sample is calculated at 19.1% of GDP, and includes a wide range of both EM and DM geographies.²⁶ The upper and lower thresholds of the liquidity size sample in Figure 2 now refer to the 5th and 10th percentiles of this post-1970s sample, and apply a (slight) “regime adjustment” for earlier episodes (a simplistic reduction by 20% of the size/GDP threshold in 1971, 1945, 1914, 1850, and 1700, so that the 10th percentile in 1700 and earlier stands at 0.46% of GDP).

We observe that during all historical periods, parts of the intervention sample fall inside and outside such a –fully arbitrary – threshold: even our most recent, post-Bretton Woods sample covered by “canonical” chronologies exhibit a wide range of liquidity sizes, and to our knowledge there are no existing suggestions in the literature what sensible cutoff ought to distinguish “systemic” from “non-systemic”, or “borderline” from “non-systemic” crises.

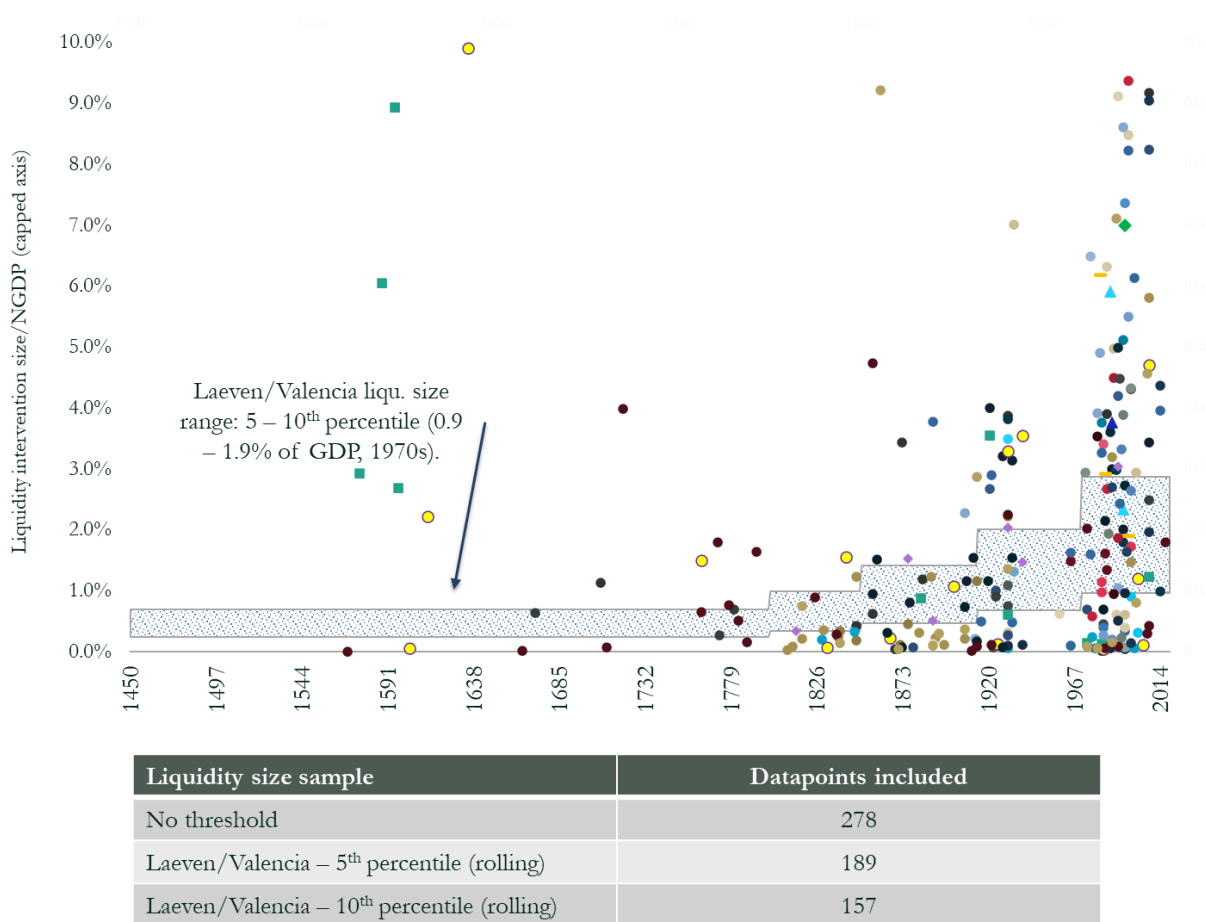
We simply note for the moment that our sample – including the early modern period in particular – encompasses “large” and “small” liquidity interventions which are not displaying any systematic bias when compared to the post-1970s intervention sample. It does not appear that our historical selection methods yield only “sizable” interventions: on the contrary, we appear to be capturing a range of intervention sizes not altogether too different from those of modern subperiods. However, here we simply propose that if future researchers wanted to apply any threshold to capture a “sizable” sub-sample, a 5th percentile cut-off as shown in Appendix

²⁶ Laeven and Valencia (ibid.) denote such “sizes” as “liquidity costs”, but conceptually follow the same procedure as we do, given that the authors record peak liquidity provision over the pre-crisis base year, in gross terms. Refer to the discussion of nuances in the respective methodologies in the main body of the text above. Note that Laeven and Valencia present a wide range of liquidity intervention sizes spanning 0.1% to 156.5% of the change of central bank claims to domestic deposit volumes (a measure we transfer to a current GDP denominator, as elaborated above). No “threshold” is applied by the authors here.

Figure 1 could represent a sensible choice. A similar exercise on the basis of “fiscal intervention sizes” and “guarantee sizes” yields comparable results and implications.

Appendix Figure 1

Liquidity Intervention size/GDP distribution and Laeven/Valencia Size Range, Adjusted for 1450-2019.



Appendix Figure 1 displays the distribution of liquidity size datapoints over the period of 1450-2019 as identified in the database, and as discussed further in the paper section VI in the main body of the paper. Also displayed is the range of liquidity intervention datapoints in the sample of systemic banking crises presented in Laeven and Valencia (2020): the upper and lower bounds of the range correspond to the smallest 5% and the 10% percentiles of the sample in this paper for the period of 1970-2019. As described above, this threshold is then dynamically extrapolated backwards to illustrate the context of our earlier liquidity size datapoints.

Further Notes on Data Construction

1. Often, an existing intervention measure within a given geography is repeated again after a certain interval, or its operational details are tweaked slightly, to address an ongoing concern in the banking of wider financial sector. We employ some discretion in cases where such cases of repeats or tweaks should sensibly be treated as a single historical intervention, with the data recorded at the time of the first initial decision to intervene.
 - Examples include the repeated deployment of emergency liquidity assistance (ELA) lines in a given country during the European debt crisis after 2012. Subsequent to the initial decision to grant ELA to the Greek banking sector, for instance, the ECB governing council decides to raise the maximum ceiling for ELA assistance in follow-up meetings (ECB 2015a; 2015b).²⁷ In our database, in all such cases we record the first known deployment as the intervention date and do not separately record subsequent discretionary drawings.
 - A similar logic applies to stress tests. Whenever it is obvious that no or only minor tweaks have been undertaken after an initial decision to conduct stress tests, we only record the initial decision as the date for this stress-test intervention. For example, the first EU-wide stress test exercise was announced by regulators in May 2009 (CEBS 2009); multiple similar exercises with different degrees of refinement and technical evolutions have taken place ever since; we do

²⁷ The first official ECB press release on Greek ELA assistance dates from February 4, 2015 (ECB 2015a), though it did not specify maximum levels granted at this point. Subsequent ECB or Bank of Greece announcements on raises of ELA ceilings date from July 16, 2015 (ECB 2015b), and September 17, 2015 (BoG 2015), for instance.

not treat such processes as multiple, separate instances, and only record a single intervention dated as May 2009.

2. What do we define as a “bank”? This question is particularly relevant for the pre-1700 domain, when the lines are particularly blurry between individual merchants, industrial family conglomerates, and actual incorporated concerns focusing only on financial business; while we exclude any interventions in the non-financial and industrial sectors, we are using a relatively wide definition of a “bank”, including all individuals or incorporated businesses that at least partly deal in financial matters, even if such business is just a peripheral concern, or just limited to merchant or trade finance; we here follow existing historical literature that has treated such merchant ventures as forming part of a direct evolutionary line preceding modern banking ventures (Lopez 1979).
3. We do not cover any de facto or de jure central bank establishments per se – unless they are associated with a crisis to which the decision to establish this central bank can reasonably be linked.
 - This means that, for example, the founding of the National Bank of Egypt in June 1898 as the country’s “embryonic central bank” (Baster 1935, 73) is not included in the database, since it is not associated with a crisis. we are not able to trace any associated liquidity or financial sector crisis event fulfilling our intervention criteria, we are **not including** the instance in our main database; the same goes for the founding of the Bank of Japan in 1883, and all other similar events not directly associated with banking sector or wider financial instability.

- We do, on the other hand, include the founding of the Danish Rigsbank in January 1813, since it is directly associated with the state bankruptcy and severe liquidity problems in the country (Maercher 2010, 135f.).
4. We do, however, include major bank nationalizations, even if they are not associated with a specific crisis. Our logic here is that such nationalization events involve a significant change of sectoral ownership of the banking industry, and we see such conscious policy decisions therefore as equivalent in their effect to a major restructuring event in the banking sector. Secondly, even though there may not be specific evidence of financial sector strains, such events are historically usually linked to significant political stress events and/or a major de facto reassessment of the country risk profile by the international financial community. Examples are the Russian banking sector nationalization in the wake of the Bolshevik Revolution in 1917, the Indian banking sector nationalization during the 1950s and 1960s in the wake of decolonialization, or the Iranian nationalizations in 1979 in the wake of the Revolution.
- Our bank nationalization interventions fall into either of two categories: “BBCI”, if we can confirm that existing private owners received obvious compensation for their existing ownership, and were de facto bought out from the state (such as in 1982 France and under the Mexican 1982 nationalization, see Maxfield 1992, 92); or else, “RES” – if we cannot confirm that such a formal “buy-out” took place, but that it is not ruled out that existing private owners were simply expropriated (as in the Bolshevik case). We do not include central-bank nationalizations, which involve changes of ownership from traditional privately owned de facto central banks, to formally government-subordinated central banks – transitions which

were particularly prevalent during the interwar and immediate post-war period (Kriz 1948).

Appendix B: Database Elements and Structure.

Appendix Figure 2 below now visualizes the information from section II above, and shows the structure of the database, and the information presented for each banking crises intervention over time – with recourse to several database rows in the years 1906-7.

The rows are organized chronologically, with each “crisis code” being associated with one or more specific intervention measures. Each “narrative” intervention column, meanwhile, provides not just details on the particular crisis context and the measures deployed, but includes the intervention size, wherever such information has been obtained. In a separate column, we provide the full literature that was used to determine the nature of the intervention, with the bibliography appended to the database detailing the full literature.

Further columns provide details on whether the crisis is part of any of the “canonical” crises chronologies, and a further column provides the exact level of the country’s real per capita GDP at the time of the crisis intervention.

Two columns in our associated Excel file record the “crisis” and “intervention” chronology. Column “B” (“crisis code”) displays a country-code followed by a four-digit year code: this code records the crisis start date that is associated with the chronologies in the four existing databases that inform our dating of crises. Since many crises are associated with multiple individual

interventions – which may span multiple years and may be interrupted by other country crises or interventions during parallel crises elsewhere – a single “crisis code” can be associated with multiple intervention rows. Column “C” (“When”) in the excel sheet therefore strictly records the actual single intervention event: in other words, a single intervention has a unique “crisis identifier”, but a single crisis can have multiple “intervention identifiers”.

We record if any single intervention is associated with crises events in any of the four chronologies in the “literature” column in the printed version of our database, and in the separate column “J” (flagged “B/V/X”, “L/V”, “R/R”, or “S/T”) in the associated excel file, with all four tags always referring to the four specific papers by these previous authors.²⁸

We record a grand total of 699 intervention events which meet our minimum thresholds, but are not associated with any “canonical” crisis classification in the four existing databases. In all of these cases, we leave the “J” column blank in the Excel file.

As indicated, various of our individual intervention events are outside the scope of existing databases, and in these instances we always record the first intervention in the respective Column 1 below, and Column “C” in the associated Excel file. Since the first record of a policy intervention may lag the identification of a “crisis start”, these two timelines do not have to overlap: typically, interventions occur subsequent to the beginning of banking crises. However, there are also instances where an intervention precedes a crisis – often because the intervention fails to achieve its goal of actually forestalling such a crisis.

The database includes several other types of information, applicable only for a subset of the cases. We record if the intervention was implemented via the use of a **conduit**. In this case, the “conduit” column distinguishes between an intervention using a “Special Purpose Vehicle”

²⁸ Therefore, when we note a report of a blanket guarantee intervention for Turkey in November 1994 in Laeven and Valencia (2012, 1223), for instance, but not in Laeven and Valencia (2020), we leave the column blank.

(**SPV**), such as an asset management company or designated bank intervention fund; intervention using an “Association” (**ASSOC**), such as a private banking association or any other private ad hoc group of banking institutions with the purpose of pooling resources – but irrespective of the question if the target entity represents a banking association;¹ or, “Sovereign Wealth Fund” (**SWE**), denoting an intervention via the use of a state-owned investment fund. Further, we record if the policy intervention in the first degree targets the non-financial sector (**Industry**), for instance if policymakers aim to aid the banking sector by restructuring non-performing loans of industrial enterprises. Finally, we denote an intervention as a **Market** type if the intervention does not directly involve banking institutions in the first degree, but rather involves an attempt to aid the banking sector indirectly by improving liquidity or other financial conditions: often, our primary “MLA” intervention classification is linked with a “Market” intervention channel, but there are select exceptions. Again, this flag does not include any market actions that just ease financial conditions in a general sense, such as monetary policy rate reductions.

Flags: we provide two further “flags” for each intervention event: first, we record if the intervention was undertaken either predominantly or in part with the participation of other private banks or other private actors (**PRI-PRI**); secondly, we record if the intervention was undertaken either via the *use* of a state-owned enterprise, or if the *target* of the policy intervention was a majority state-owned enterprise or enterprises (**STOW**). If a mixture of public and private banking institutions were involved in the intervention process, such interventions are denoted “PRI-PRI (partly) and “STOW (partly)”, respectively.

¹ Hence, for instance, the Austrian state intervention into the “OVAG” association in 2012 is not tagged as “ASSOC”, see Igan et al. (2019, 48f.) for details.

Variables: as described in the main text, the four subsequent columns in the database record associated fiscal, political, and macroeconomic variables for the crises and intervention event rows. Specifically, the first column in this category records **EXP/GDP**, the total public expenditures relative to GDP, as recorded by Mauro et al. (2015), for the final pre-crisis year. Next, **DEBT/GDP** is recorded on the basis of the data in Reinhart and Rogoff (2009), again using the final pre-crisis annual observation. The following column, “**POLITY**”, records the polity value of the respective country-year, as defined by the POLITY V project, via Marshall and Gurr (2020). The variable starts in 1800 and records an annual numerical value to rank a country’s “regime authority spectrum” on a 21-point scale, ranging from -10 (strongly authoritarian, hereditary monarchy) and +10 (strongly democratic, consolidated democracy) for a total of 167 countries; we also choose the final pre-crisis observation for this value. Next, the **GDP GAP** column records the real per capita GDP losses associated for each crisis, as defined in the main text. Specifically, for every “base year”, we estimate the trend (geometric) growth of GDP per capita using the prior 15 years of data. We do not use data from the base year itself. Next, we extrapolate that trend growth for five years, beginning at the end of the base year. This step yields an extrapolated GDP prediction for each of the next five years. We then compare the actual GDP in each of those years with this extrapolated GDP. The sum of the (percentage) differences for these five years represents the GDP gap for that base year. The reported number is thus the “area under the trend GDP line”.

Outline of Database Structure, and Content.

Monthly/annual
intervention date

Total no of
countries: 138

Details on intervention, and
intervention size, and literature.

Intervention associated with
existing crises chronology?

Code/Crds	When	Where	Monetary government response	When	Country	Flow	Literature	EXP/GDP, Real p.c. GDP at time of intervention	DEBT/GDP, Real p.c. GDP at time of intervention	POLITY variable, Real p.c. GDP at time of intervention	GDP GAP associated with crisis	Intervention associated with existing crises chronology?			
PRE-MODERN ERA, 1200-1600															
US-1023	Mar-1923	United States	Bank run on Federal Reserve in New York, including NY, Pennsylvania, Georgia, New Jersey, Virginia.	SEH	0	0	Jul 2015, A-4.	2469	1						
	Spring 1924	United States	Run on Baltimore bank, "local emergency panic" - Alexander Brown declares publicly full support for Baltimore bank, warns Union Bank of Maryland to reach for funds.	BEEL	0	PRD-FBI	Further 1975, 21.	3295	1	1	-0.1447959	1			
IRE-1024	Mar-1924	Ireland	Agricultural and Commercial Bank of Ireland collapses, leading to the formation of the Irish Land Commission.	BEEL	0	0	Hall 1949, 10; O'Grada 2010; Reinkensmeyer	1554	0		-0.1447959	1			
UK-1027	Dec-1924	United Kingdom	Bank of England intervenes to support the Bank of Ireland, leading to the formation of the Irish Land Commission.	AMEL	0	0	Hall's Magazine, 1996, 10, 407.	2927	0			1			
CAN-1027	Jul-1927	Canada	By legislative act, bank of Canada is established as a central bank, with the Bank of Canada as its agent.	SEH	0	0	Reich 1913, 404ff.; Reinkensmeyer	1775	0		-0.19612629	1			
US-1027	Mar-1927	United States	Indiana State Bank intervenes to support the Bank of Indiana, leading to the formation of the Indiana State Bank.	SEH	0	PRD-FBI	Columbo 1990, 237; Jul 2015, A-5.	2341	1	2.035	0.191	10	1		
UK-1027	Apr-1927	United Kingdom	Bank of England intervenes to support the Bank of Ireland, leading to the formation of the Irish Land Commission.	AMEL	RES	0	Lyster 2003, 171ff.; Reinkensmeyer	2197	0	10.533	10.432	3			
	Apr-1927	United Kingdom	Bank of England intervenes to support the Bank of Ireland, leading to the formation of the Irish Land Commission.	BEEL	CPL	0	Lyster 2003, 171ff.; Reinkensmeyer	2197	0	10.533	10.432	3			
SE-1028	1928	Sweden	Bank of Sweden intervenes to support the Bank of Sweden, leading to the formation of the Bank of Sweden.	AMEL	0	STOW	Leander 1928, 23.		1				1		
FRA-1028	Dec-1928	France	Bank of France intervenes to support the Bank of France, leading to the formation of the Bank of France.	HOR	0	0	Reinkensmeyer	2211	0			-1	0.159465479	1	
BEEL-1028	Jan-1929	Belgium	Bank of Belgium intervenes to support the Bank of Belgium, leading to the formation of the Bank of Belgium.	AG, AMEL, SEH	0	STOW (cont)	Conant 1910, 14; Reinkensmeyer	2460	0	4.325	11.634	-4		1	
IRE-1028	Feb-1929	Ireland	Bank of Ireland intervenes to support the Bank of Ireland, leading to the formation of the Bank of Ireland.	AMEL	0	0	Hall 1949, 170.	1942	1				1	3	
US-1029	Oct-1929	United States	Special government order of the United States Bank of Philadelphia, followed by a general order in U.S. West and South, including Indiana.	SEH	0	PRD-FBI	Hummel 1997, 315; Columbo 1990, 237.	2492	1	0	1.342	0.191	10	-0.2102637	1
	Feb-1940	United States	New York "Safety Fund" intervenes in City Bank of Buffalo failure, reimbursing one dollar on each dollar.	OLG	SPI, ASSDCC	PRD-FBI	Bedeckman 1944, 240.	2319	1	0	1.342	0.191	10	-0.2102637	1
	Dec-1940	United States	New York "Safety Fund" intervenes in City Bank of Buffalo failure, reimbursing one dollar on each dollar.	OLG	SPI, ASSDCC	PRD-FBI	Bedeckman 1944, 240.	2319	1	0	1.342	0.191	10	-0.2102637	1
	Mar-1941	United States	Further bank failure and recapitalization of New York "Safety Fund". By October 1941 "Safety Fund" is effectively bankrupt.	OLG	SPI (cont), ASSDCC	PRD-FBI	Bedeckman 1944, 240.	2253	1	0	1.342	0.191	10	-0.2102637	1
	Feb-1942	United States	Insurance bank in Pennsylvania, including Pennsylvania Bank, Private bank firm, "Liquor" to provide mutual liquidity (under 100,000) to mutual security.	AMEL	ASSDCC	PRD-FBI	New York Herald, February 2, 1942.	3223	1	0	1.342	0.191	10	-0.2102637	1
	1942	United States	Liquidation of Pennsylvania Bank, including Pennsylvania Bank, Private bank firm, "Liquor" to provide mutual liquidity (under 100,000) to mutual security.	RES	0	0	Warley 1942, 247ff.	3223	0	0	1.342	0.191	10	-0.2102637	1
BEEL-1042	1942	Belgium	Bank of Belgium temporarily closes all branches except Antwerp to preserve liquidity, government intervenes.	SEH	0	0	Conant 1910, 15; Reinkensmeyer	2447	0			-4		1	1
GER-1042	Mar-1942	Germany	Major fire of Hamburg stock exchange and of commercial bank on 23rd March 1942. Bank of Hamburg intervenes to support the Bank of Hamburg, leading to the formation of the Bank of Hamburg.	BEEL	0	PRD-FBI	Fehse 1942, 41; Bedeckman	2433	1	1					1

EXP/GDP,
DEBT/GDP,
POLITY variable, and
GDP GAP associated
with crisis.

Crisis start
year,
associated
with one or
more
interventions

Intervention type

Private-sector
involvement?

Real p.c. GDP
at time of
intervention

APPENDIX C: ROBUSTNESS CHECKS FOR REGRESSION RESULTS.

Here we report further regression variations for Table 2 – “Regression results for major intervention categories and dependent variables”.

2.A

2.A – DROP DEBT AND EXP							
<i>Intervention type</i>	Guarantees	Lending	Capital injection	Restructuring	Asset mgt.	Rules	Other
<i>Candidate</i>	-1.108 (0.277)	-0.300 (0.241)	-0.668 (0.248)	-0.018 (0.241)	-1.505 (0.397)	0.436 (0.314)	-0.070 (0.554)
<i>INCOME (log)</i>	0.606 (0.163)	0.598 (0.134)	0.353 (0.128)	-0.080 (0.122)	0.287 (0.171)	-0.047 (0.163)	-0.277 (0.301)
<i>Polity</i>	0.091 (0.028)	0.007 (0.018)	-0.009 (0.018)	0.007 (0.018)	-0.041 (0.025)	0.007 (0.024)	0.094 (0.063)
<i>FX regime</i>	-0.010 (0.029)	0.066 (0.026)	-0.044 (0.025)	0.005 (0.025)	0.007 (0.034)	0.044 (0.033)	0.103 (0.063)
<i>DEBT/GDP</i>							
<i>EXP/GDP</i>							
<i>Year</i>	0.009 (0.011)	-0.014 (0.009)	0.021 (0.011)	-0.003 (0.009)	0.036 (0.016)	-0.008 (0.011)	-0.000 (0.021)
<i>Constant</i>	-25.3 (21.1)	21.6 (17.3)	-45.6 (18.9)	6.4 (17.3)	-74.6 (32.4)	13.2 (21.4)	-2.4 (41.5)
<i>N</i>	357	357	357	357	357	357	357

Tables 2.A-E display the results of logit regressions at the crisis level, where each crisis (candidate or canonical) is one observation. Data begins in 1800. Each column represents a single regression, with the dependent variable given in the top row. The intervention categories in the first row follow the category definitions introduced in Section II. For each regression, the dependent variable is equal to one if that category of intervention is present in a crisis, and zero otherwise. INCOME is measured in logs, using data from the same year as the dependent variable. CANDIDATE takes on a value of one for a candidate crisis, and zero for a canonical crisis. Sources for the income data are discussed in Appendix E. *DEBT/GDP* = total gross central government debt/GDP (domestic+external), sourced from Reinhart and Rogoff (2009). *EXP/GDP* = non-interest government expenditure/GDP, sourced from Mauro et al. (2015). For tables 2.D-E, we exclude all observations where at least one of the variables in income, *DEBT/GDP*, or *EXP/GDP* is missing. All variables are measured for t-1, the year preceding the crisis start date

2.B

2.B – DROP DEBT AND EXP – CANDIDATE ONLY							
<i>Intervention type</i>	Guarantees	Lending	Capital injection	Restructuring	Asset mgt.	Rules	Other
<i>Candidate</i>							
<i>INCOME (log)</i>	0.281 (0.254)	0.448 (0.215)	-0.221 (0.211)	0.021 (0.206)	-0.565 (0.422)	-0.356 (0.244)	-0.317 (0.468)
<i>Polity</i>	0.068 (0.043)	-0.008 (0.022)	-0.024 (0.023)	0.009 (0.024)	-0.082 (0.039)	0.018 (0.035)	0.135 (0.128)
<i>FX regime</i>	-0.016 (0.046)	0.102 (0.042)	-0.093 (0.043)	0.008 (0.041)	0.063 (0.090)	0.066 (0.055)	0.079 (0.099)
<i>DEBT/GDP</i>							
<i>EXP/GDP</i>							
<i>Year</i>	0.008 (0.022)	-0.010 (0.011)	0.021 (0.012)	-0.006 (0.011)	0.077 (0.037)	-0.000 (0.013)	-0.007 (0.025)
<i>Constant</i>	-20.3 (24.7)	14.5 (20.6)	-40.3 (22.3)	11.2 (20.6)	-150.5 (71.7)	0.5 (25.4)	11.8 (49.7)
N	137	137	137	137	137	137	137

2.C

2.C – DROP DEBT AND EXP – CANONICAL ONLY							
<i>Intervention type</i>	Guarantees	Lending	Capital injection	Restructuring	Asset mgt.	Rules	Other
<i>Candidate</i>							
<i>INCOME (log)</i>	0.749 (0.216)	0.619 (0.185)	0.601 (0.183)	-0.117 (0.167)	0.369 (0.209)	0.287 (0.248)	-0.195 (0.398)
<i>Polity</i>	0.089 (0.037)	-0.025 (0.030)	-0.015 (0.030)	0.007 (0.029)	-0.029 (0.036)	-0.027 (0.041)	0.070 (0.079)
<i>FX regime</i>	0.018 (0.040)	0.042 (0.034)	-0.010 (0.035)	0.000 (0.032)	-0.026 (0.039)	0.025 (0.046)	0.130 (0.084)
<i>DEBT/GDP</i>							
<i>EXP/GDP</i>							
<i>Year</i>	0.017 (0.019)	-0.013 (0.017)	0.050 (0.018)	0.001 (0.017)	0.022 (0.020)	-0.013 (0.023)	0.019 (0.040)
<i>Constant</i>	-42.5 (38.2)	20.3 (34.5)	-104.6 (36.7)	-1.8 (34.0)	-48.3 (40.7)	22.1 (46.6)	-40.9 (80.4)
N	215	215	215	215	215	215	215

2.D

2.D – KEEP DEBT AND EXP – CANDIDATE ONLY							
<i>Intervention type</i>	Guarantees	Lending	Capital injection	Restructuring	Asset mgt.	Rules	Other
<i>Candidate</i>							
<i>INCOME (log)</i>	0.343 (0.338)	0.736 (0.305)	-0.555 (0.314)	-0.488 (0.322)	0.370 (0.523)	-0.367 (0.360)	0.712 (0.679)
<i>Polity</i>	0.087 (0.053)	0.056 (0.044)	-0.128 (0.046)	0.142 (0.078)	-0.125 (0.070)	0.022 (0.059)	0.208 (0.156)
<i>FX regime</i>	-0.023 (0.053)	0.088 (0.048)	-0.105 (0.053)	0.013 (0.049)	-0.014 (0.103)	0.047 (0.062)	0.035 (0.117)
<i>DEBT/GDP</i>	-0.022 (0.010)	0.009 (0.007)	0.001 (0.007)	0.002 (0.007)	0.018 (0.011)	0.015 (0.008)	0.003 (0.018)
<i>EXP/GDP</i>	0.002 (0.028)	-0.053 (0.026)	0.048 (0.027)	0.049 (0.026)	-0.040 (0.056)	-0.036 (0.034)	-0.190 (0.079)
<i>Year</i>	0.008 (0.014)	-0.012 (0.012)	0.017 (0.014)	-0.016 (0.013)	0.046 (0.034)	0.018 (0.017)	0.006 (0.026)
<i>Constant</i>	-19.5 (27.6)	17.6 (24.0)	-29.3 (26.8)	32.5 (25.9)	-90.7 (67.3)	-33.3 (33.1)	-18.7 (51.3)
N	118	118	118	118	118	118	118

2.E

2.E – KEEP DEBT AND EXP – CANONICAL ONLY							
<i>Intervention type</i>	Guarantees	Lending	Capital injection	Restructuring	Asset mgt.	Rules	Other
<i>Candidate</i>							
<i>INCOME (log)</i>	0.764 (0.325)	0.586 (0.292)	0.715 (0.314)	-0.365 (0.279)	0.549 (0.313)	0.304 (0.426)	-0.479 (0.559)
<i>Polity</i>	0.090 (0.045)	0.018 (0.038)	-0.038 (0.039)	0.002 (0.038)	-0.070 (0.043)	0.071 (0.068)	0.049 (0.089)
<i>FX regime</i>	-0.000 (0.048)	0.084 (0.044)	-0.021 (0.045)	-0.013 (0.043)	0.024 (0.047)	0.049 (0.068)	0.192 (0.096)
<i>DEBT/GDP</i>	-0.013 (0.006)	-0.009 (0.005)	0.002 (0.006)	-0.014 (0.006)	0.000 (0.006)	0.001 (0.009)	0.010 (0.009)
<i>EXP/GDP</i>	-0.007 (0.021)	-0.009 (0.020)	0.006 (0.020)	0.024 (0.020)	-0.025 (0.022)	-0.053 (0.031)	-0.190 (0.039)
<i>Year</i>	0.030 (0.022)	0.005 (0.020)	0.044 (0.021)	0.004 (0.020)	0.046 (0.024)	0.016 (0.032)	0.022 (0.042)
<i>Constant</i>	-65.7 (43.2)	-16.1 (40.1)	-94.1 (42.0)	-5.0 (39.3)	-97.7 (48.0)	-36.0 (63.6)	-44.6 (84.6)
N	151	151	151	151	151	151	151

**Appendix D: Full Intervention Chronology,
1,946 Cases, 33 A.D. – 2019.**

Key to categories (column 5):

Guarantees:

- ✧ **BG:** Blanket guarantees
- ✧ **AG:** Account guarantees
- ✧ **ASG:** Asset guarantee
- ✧ **OLG:** Other liability guarantee

Lending:

- ✧ **AHEL:** Ad hoc emergency liquidity
- ✧ **BBEL:** Broad-based emergency liquidity
- ✧ **MLA:** Market liquidity assistance

Capital injections:

- ✧ **BBCI:** Broad based capital injection Program
- ✧ **AHCI:** Ad hoc capital injection Program

Asset management:

- ✧ **AHAM:** Ad hoc asset management program/asset purchases
- ✧ **BBAM:** Broad based or individual asset management Program/asset purchases

Restructuring:

- ✧ **RES:** Restructuring/resolution, or liquidation
- ✧ **BAIL:** forced bail-in, stakeholder intervention program

Rules:

- ✧ **SBH:** Stock market closures/bank holidays/suspension of convertibility
 - ✧ **DPM:** Debt or other payment moratoria
 - ✧ **CRL:** Capital and regulatory rules
 - ✧ **ORL:** Other rules

Other:

- ✧ **ST:** stress testing
- ✧ **MC:** major communication
- ✧ **Other:** other intervention, suasion, coordination

NO/I: no intervention found, or “laissez faire”/”hands-off” approach by authorities

Conduit (column 6):

ASSOC: Intervention via the involvement of a private banking industry association, fund, or body.

Industry: Intervention via resources targeted at the non-banking industry, for instance to address business NPLs.

Market: Intervention via resources targeted at the wider financial market, rather than banking institutions directly.

SPV: Intervention via the establishment of a new or use of existing Special Purpose Vehicle.

SWF: Intervention via the use of a Sovereign Wealth Fund.

Flags (column 7):

PRI-PRI: intervention with participation of the private sector, either exclusively or partially.

STOW: intervention into (majority) state-owned entity, or intervention using primarily a state-owned bank as a vehicle.

“Reinhart/Rogoff” – always refers to Reinhart and Rogoff (2009).

“Schularick and Taylor” – always refers to Schularick and Taylor (2012).

“Baron/Verner/Xiong” – always refers to Baron, Verner, and Xiong (2021).

“Laeven and Valencia” – always refers to Laeven and Valencia (2020).

Crisis code	When	Where	Monetary/government response	What	Conduit	Flags	Literature
PRE-MODERN ERA, 33 A.D.-1693							
IT-33 A.D.	33 A.D.	Roman Empire	Financial crisis triggered by Caesar's new usury law: widespread calling of loans and plunge in real estate values; banking commission decides to make available 100M sesterces to distressed landowners. Crisis subsides afterwards.	other			Frank 1935.
IT-1257	January 1257	Genoa	Series of high-profile bank failures over 1256-1259, including Nicola Calvo, Oberto di Nizza, and Leccacorvo Bank. From 1257, Boccanegra government intervenes actively in the crisis, overseeing arbitration between creditors and debtors, organizing the recall of debtors from abroad. Aim is to “soften the blow and save what can be saved” (“ammortizzare le cadute e salvare il salvabile”).	other			Lopez 1956, 88ff.
IT-1259	March 1259	Genoa	Boccanegra government mandates liquidation of Lercari, Ghisolfi and Rovegno Banks, and appoints liquidation committee to oversee dissolution, creditor satisfaction.	RES, other			Lopez 1956, 90f. [and docs. no. 25, 27].

UK-1290	1290	England	Riccardi Bank difficulties. O’Sullivan (1962) posits a stealth bailout by Irish exchequer payments to firm. Kaeuper (1973) disputes such a bailout. ⁱ	AHEL			Re 1914; O’Sullivan 1962; Kaeuper 1973, 212f.
IT-1298	1298	Siena	Buonsignori Bank on brink of default: repeated requests to Comune of Siena for help in debt haircuts, interventions at Papacy. But Comune rebuffs requests.	NO/I			Cassandro 1987, 128f.

ES-1299	November 1299	Barcelona	Banking crisis instigated by war with Sicily and crown financial problems, spilling over to Berenguer de Finestres and other merchant bankers. Crown reacts with debt moratoria and pardons granted to some bankers, and (weak form of) deposit insurance (via Cortes 1300).	AG, DPM			Bensch 1989, 325ff.
IT-1307	1307	Siena	Bankruptcy of Buonsignori Bank. Philip IV of France guarantees selected deposits, including a 58,000 livres deposit by Franzesi Bank.	AG			Davidsohn, IV/2, 1925, 331.
	November 1308	Siena	Franzesi Bank defaults itself, with significantly above 12,000fl liabilities. City of Siena grants three-year moratorium on all liabilities, including Franzesi's guarantors.	DPM			Davidsohn, III, 1912, 350f.
BEL-1309	November 1309	Bruges	Hanseatic Leagues receives full guarantee on all subsequent banking system losses from city council. Provision not honored until 1359.	AG, OLG			De Roover 1948, 336; Greve 1996, 7-10.
IT-1309	1309	Florence	T.S. de Mozzi default: Florentine state buys out selected assets, injecting capital (incl. 14,000fl. real estate portfolio). Eventual default in 1321.	AHAM, AHCI			Meltzing 1906, 35.

IT-1312	April 1312	Siena	Run on Tolomei Bank: Sienese Podesta (city council) grants several debt moratoria until July 1313 and aids attempted reconstruction efforts.	DPM			English 1988, 84ff.
IT-1326	August 1326	Florence	Scali Bank default (liabilities ca. 400,000fl.). Bankruptcy proceedings in four countries; Charles Duke of Calabria declares four-month debt moratorium from Aug. 1326; Edward II arrests bank representatives and confiscates assets. Public mediation yields 44.2% liability settlement.	BAIL, DPM		PRI-PRI (partly)	Davidsohn III, 1912, 778f.; Meltzing 1906, 23f.
IT-1342	October 1342	Florence	Banking panic. Walter of Brienne enacts three-year moratorium on all bank debt, announced on 26 October.	DPM			Barbadoro 1929, 622f.
BEL-1351	1351	Bruges	City covers bankruptcy of Van der Buerze money exchanger (reimbursement only for local merchants).	AG, OLG			Greve 1996, 7-10.
BEL-1359	June 1359	Bruges	City provides full guarantee for all Hanseatic League merchants for losses arising from banking and innkeeper failures, extending 1309 provisions.	AG			De Roover 1948, 338.

ES-1360	June 1360	Barcelona	Default of major municipal banker, Jaume dez Vilar: city offers 100 Pound to competitors Aymeric d'Usay and Jaume de Gualbes to take over accounts.	AHEL, RES			Roustit 1954, 150.
BEL-1359	January 1362	Bruges	June 1359 provisions extended to include Nuremberg merchants suffering any banking and exchange losses.	AG			De Roover 1948, 336.
BEL-1368	1368	Bruges	Sconebergh innkeeper default: city reimburses creditors with 520 pounds groot.	AG			Greve 1996, 7- 10.
IT-1370	1370s	Venice	Selective assistance to bank depositors: at Baffo-Trevisan Bank, authorities cover 35% of deposit liabilities outstanding (ca. 7,000 ducats). Other systemic banks not covered (Alvise Viario). Regulatory response: prohibitions for banks to speculate in commodities market, or to finance in silver, lead, fustian, saffran, and honey. Prohibitions for banks to act as a straw man (“ <i>tanxare</i> ”) in commodity speculation.	AG, other			Mueller 1997, 140-154.
1T-1374	August 1374	Venice	Default of Zancani and Brothers: Consoli dei Mercanti (private sector body) takes over orderly liquidation, audit, and resolution of bank (total liabilities: 208,000 ducats).	RES	ASSOC	PRI-PRI	Mueller 1997, 151ff.

ES-1380	1380	Catalonia	Bank default wave in Barcelona, Girona, and Perpignan: Caus y Olivella Banks, Pascual y Esquerit, Ramon Madir, and Bartomeu Gari Banks default. Authorities reign in on FX speculation, i.e. by 1395 trading in florin prohibited.	ORL			Feliu 2000, 131.
BEL-1398	1398	Bruges	Van den Walle innkeeper default: city reimburses creditors with 107 pounds groot.	AG			Greve 1996, 7-10.
BEL-1411	December 1411	Bruges	June 1359 provisions extended to include all Portuguese merchants suffering any banking and exchange losses.	AG			De Roover 1948, 336.
IT-1453	September 1453	Venice	Soranzo Bank suspension by city <i>Provveditori</i> – moratorium and various liquidity measures, including decree to force existing debtors to directly reimburse Bank, under penalty of 200 ducat fines.	AHEL, DPM			Ferrara ed. 1871, no. 12-15.
IT-1465	April 1465	Florence	Wave of bank defaults. Medici Bank provides 12,000fl emergency loan to Salviati Bank to prevent bankruptcy.	AHEL		PRI-PRI	De Roover 1963, 359f.
IT-1466	1466-1474	Naples	Bankruptcy of Di Gaeta Bank: King Ferrante of Naples guarantees deposits after failure. ⁱⁱ	AG			Silvestri 1953, 91.

IT-1478	1478	Florence	Medici Bank troubles: Lorenzo de Medici diverts 74,498fl in public <i>Monte</i> funds to prevent bankruptcy.	AHEL			De Roover 1963, 366f.
NL-1480	December 1480	Amsterdam	Death of Duke Charles the Bold triggers default wave of creditors and moneychangers across Burgundy. City of Amsterdam in response implements deposit guarantee for Hanse merchants of up to 6,000 crowns. Guarantee revoked 1486.	AG			De Roover 1948, 336.
FRA-1490	December 1490	Lyon	Bardi Bank default: King Charles VIII and Lorenzo de Medici reimburse individual depositors and lenders from state funds upon appeal. I.e. Etienne d'Andrea's 510 ecus advance.	AG, OLG			Pelicier (ed.), 1905, no. DLXXXIX.
IT-1499	February 1499	Venice	Government Revenue Office grants “surety” on 50,000 ducats of liquid and illiquid assets of Garzoni Bank, to help with restructuring. Additional 20,000 ducat loan and pledge of “other sums to be given in the future”. ⁱⁱⁱ	AHEL, ASG			Ferrara ed. 1871, no. 136; Mueller 1997, 249.
	May 1499	Venice	Signoria grants 10,000 ducat emergency loan to Lippomano Bank amid deposit run – but bank fails. Venetian authorities set up 320,000 ducat public-private “guarantee fund” for Venetian deposits, which restores confidence. Banks granted moratorium and put into 1-year restructuring/receivership: 92,000/285,000 ducats recovered, but both ultimately wound down.	AG, AHEL, DPM, RES	SPV		Lattes 1869, 16f.; Mueller 1997, 60, 230-241, 243.

IT-1514	January 1514	Sicily	Bank of Battista Lombardi collapses, with 70,000fl liabilities: authorities fear revolt from depositors and guarantee reimbursements of all deposits <2 ounces.	AG			Cusumano 1887, 292.
IT-1518	June 1518	Florence	Imminent default of Frescobaldi Bank: Cardinal Campeggio intervenes at Court in London (Cardinal Wolsey) to “protect” Frescobaldi from creditors; intervention successful, accord struck, default around 1530. ^{iv}	other			BL, Cotton Vitellius B/III, no. 221, f.127; Ehrenberg 1922, 280f.
GER-1529	June 1529	Augsburg	Hochstetter Bank default (40,000fl losses) after attempt to corner world mercury market. Augsburg authorities confiscate all bank and personal property of partners, organize breakup and takeover by competitors.	BAIL, RES		PRI-PRI (partly)	Ehrenberg 1922, 215ff.; Roessner ed., 2012.
IT-1550	September 1550	Sicily	Bank of Antonio Xirota fails: Senate issues decree ordering all bank debtors to immediately pay back debts.	other			Cusumano 1887, 295.
IT-1552	July 1552	Naples	Ravaschieri Bank on brink of default: viceroy of Naples passes decree that bans capital exports until August 1552, and enacts debt moratorium on bills of exchange.	DPM, other			Delumeau 1959, II, 906.
ES-1553	1553	Sevilla	Lizzarazas Bank difficulties: private Sevillian banks provide 200,000 ducats in guarantees, but bank still fails.	OLG		PRI-PRI	Steele 1991, 199.
UK-1564	January 1564	England	First Thomas Lodge conglomerate bankruptcy: “great alarm” and fear of spread to “whole merchant community”; appeal to Lords of the Council is successful – GBP 600 payment moratorium until 1571 on City debts.	DPM			Sisson ed. 1933, 32ff.; Ramsey 1962, LVIf.

GER-1564	April 1564	Augsburg	Manlich merchant-bank default (uncovered liabilities: 39,500fl.): various interventions by city authorities to seize international assets of the company, and confiscate personal property.	BAIL		PRI-PRI	Seibold 1995, 108ff.
UK-1569	March 1569	England	Second Thomas Lodge conglomerate bankruptcy: Aldermen provide GBP 200 emergency loan and collateral.	AHEL			Sisson ed. 1933, 33f.
GER-1572	March 1572	Stettin	Major bankruptcy of Bankhaus Loitz (~2m Thaler liabilities): confiscation of goods and coordination of liquidation by Stettin city authorities.	BAIL, other			Papritz 1957.
	1573	Strassbourg	Fallout from Israel Minckel collapse: Mathieu and Isaac Wicker, Strassbourg financiers, seek help from Strassbourg Magistrate. Magistrate grants 7,000 livres emergency loan for four years. Wicker Bros. still default on 36,312 l. debts.	AHEL			Fuchs 1974, 123f.
	June 1574	Augsburg	Second bankruptcy of Manlich merchant-bankers: Augsburg City Council coordinates European-wide confiscation of assets of Manlichs and associates. Failure leads to creation of new bankruptcy code. Ca. 730,000fl total liabilities.	BAIL, ORL		PRI-PRI	Seibold 1995, 146ff.
ES-1576	March 1576	Seville	Espinosa and De Morga Banks fail in Seville: rival private banks help De Morga with guarantees via “fiador” guarantee system. Both banks still fail.	OLG		PRI-PRI	Steele 1991, 190f., 199.

IT-1576	July 1576	Venice	After bank run, Mint is ordered by Supreme Venetian Council to make 3-month emergency loan to Pisani-Tiepolo Bank of 65,000 ducats at 4%.	AHEL			Mueller 1997, 126f.; Ugolini 2017, 129.
IT-1583	November 1583	Bologna	Major Gandolfi Bank collapses with 103,000 lire in uncovered liabilities; local authorities refuse to rescue Bank, and seize all Gandolfi assets, incl. personal assets.	BAIL		PRI-PRI	Carboni and Fornasari 2013, 115f.
IT-1584	1584	Venice	Major merchant-broker Andrea Dell'Oste defaults, with debts amount to 15% of total PT bank assets; run of depositors of Pisani-Tiepolo Bank ensues. Venetian state solicits transfer of deposits to new public state bank, <i>Banco della Piazza di Rialto</i> (est. April 1587).	AG, RES			Pullan 1973, 384-386.
IT-1588	February 1588	Rome	Panzani Bank defaults "with considerable liabilities": Grand Duke (Juan de Zuniga) sends "more than 100,000 ecus" in early repayment of debts to stimulate business.	AHEL			Delumeau 1959, II, 899;
IT-1595	October 1595	Bologna	Lucchini and Scappi banks on the brink of collapse: authorities float special 500,000 monte fund to "prevent financial meltdown"; guarantee recapitalization, debt restructuring, and cover interest payments for banks.	AHEL, DPM			Carboni and Fornasari 2013, 116f.
IT-1597	February 1597	Tuscany	Spanish sovereign default triggers severe bank crisis in Northern Italy, high-profile defaults at fairs of Lisbon and Plaisance (Carnesecchi Bank), and in Milan. Grand Duke of Tuscany distributes 500,000 ecus among bank-merchant community to ease strains.	BBEL			Delumeau 1959, II, 902f.

	May 1597	Genoa	Genoese Senate grants debt moratorium to August 31 amid ongoing bank crisis: 20 banks accept help.	DPM			Delumeau 1959, II, 903.
GER-1603	November 1603	Nuremberg	Looming default of Werdemann Bank: Imperial Chamber intervenes to unfreeze various assets in Baden, to provide emergency liquidity. Ca. 93,500fl. Volume.	AHEL			Peters 2011, 243ff.
GER-1613	December 1613	Augsburg	Looming default of Welser merchant-bank. Augsburg city council grants 14,000fl emergency loan in Dec-1613; in Jan-1614 maturity is prolonged by council; but council then rejects further requests for emergency lending.	AHEL			Mueller 1903, 217ff.
IT-1622	March 1622	Naples	Looming wave of bank defaults after mint reform and conversion requests. 4.4M ducats in bank losses. Viceroy Zapato issues moratorium, limiting creditor payments. Bail-in and bail-out measures between Nov. 1622 – Apr, 1623. Banco del Popolo is nationalized (“municipalized”), with two-thirds of bank losses eventually paid back.	AHCI, BAIL, DPM		PRI-PRI (partly) STOW	Constabile and Nappi 2018, 41ff.
GER-1631	1631	Augsburg	Looming Fugger default on ca. 550,000 ducats: King Philip IV grants debt moratorium for one year, renewed in 1632, to protect Fugggers from creditors.	DPM			Ehrenberg 1922, 185f.
GER-1635	January 1635	Nuremberg	Bankruptcy of Nuremberg Bancho Publico: joint public-private restructuring, including mandatory 6-month interest-free deposits required from merchant community. City commits to early repayment of 80,000fl. debts.	AHEL, ORL, RES		PRI-PRI (partly)	Denzel 2012, 128f.

IT-1639	November 1639	Genoa	Bankruptcy of Moneglia Bros. on 242,000 Ecus: Genoese Senate issues debt moratorium and decides to cover interest payments to creditors until settlement is reached.	AHEL, DPM			Marsilio 2018, 40f.
IT-1648	May 1648	Venice	Bancogiro suspends convertibility amid war outbreak with Candia. Resumes convertibility 1666.	SBH		STOW	Roberds and Velde 2016, 338.
ES-1652	July 1652	Spain	Spanish sovereign debt suspension, heavy bank stress: Crown agrees to partly reimburse depositors whose deposits were used for sovereign loans – others are largely wiped out. Banks receive permit to repay creditors in depreciated currency (<i>vellon</i>).	AG, ORL			Dominguez Ortiz 1960, 104.
UK-1665	July 1665	England	Run on Edward Backwell's bank. Navy Treasury provides GBP 4,000 in cash emergency liquidity to satisfy creditors.	AHEL			Clark 1938, 48f.
UK-1667	June 1667	England	"Financial panic", run on goldsmith bankers in London following Raid on the Medway: Charles II issues statement that "he will make good all their assignments"; various goldsmiths who suspend convertibility are indemnified by additional royal decree.	ASG, DPM			CSP, Charles II, Vol. 7 – SP 29//207, fol. 128; Milevsky 2017, 128ff.
SWE-1668	September 1668	Sweden	Collapse of Palmstruch Bank: purchase by Riksdag and reorganization forms public central bank, Riksbank. Total covered losses put at 200,000 dalers specie.	AHCI, RES			Flux 1910, 15; Brisman 1918.
NL-1672	June 1672	Holland	Massive capital flight, bank runs amid French advance. Bank of Amsterdam saved by "prompt action of the municipal government". Guilders 890,000 est.	AHEL			Barbour 1963, 57ff.; Quinn and

							Roberds 2014, appendix, 16.
GER-1673	June 1673	Hamburg	Senate restricts private withdrawals at Bank of Hamburg to 100 Taler to protect liquidity amid financial instability.	SBH			Sievecking 1934, 134f.
IT-1691	1691	Venice	Senate orders Bancogiro (de facto central bank) to suspend convertibility amid war outbreak (attacks on Morea, Candia).	SBH		STOW	Dunbar 1892, 332.
ES-1691	1691	Naples	Looming default of Banco dello Spirito Santo after embezzlement, accounting fraud: authorities grant two week bank holiday and emergency aid from Banco della Pieta to resume operations.	AHEL, SBH		STOW	Avallone 2013, 102f.; Avallone 2017, 9ff.
UK-1696	May 1696	United Kingdom	Goldsmiths run on newly-established Bank of England. Government sanctions temporary limits to deposit withdrawals.	SBH			Gup 2003, 6.
	June 1696	Scotland	Run on Bank of Scotland, instigated by Darien Company, and general financial uncertainty. No intervention reported in Checkland (“crisis dissipates”).	NO/I			Checkland 1975, 33ff.
	July 1696	United Kingdom	Additional bill prohibiting protestation of Bank bills for 14 days; “rapid distribution” of newly issued Exchequer bills across country to substitute scarce metallic currency.	MLA, ORL			Acres 1931, 72.

ES-1701	December 1701	Naples	Emergency lending by Banco dei Poveri, Banco della Pieta, and Banco di San Giacomo to tumbling Annunziata Bank – 262,000 ducats granted.	AHEL		PRI-PRI'	Demarco and Nappi eds. 1985, 19; Demarco 2000, V, 31ff. Ferrandino 2009, 87.
	1702	Naples	Default of Annunziata Bank (largest bank in Naples by market share) amid outbreak of War of Spanish Succession: Viceroy Medina Coeli orders remaining assets to be transferred to Banco dei Poveri, after persuasion attempts do not stop broader bank runs.	MC, other			Balletta, Balletta, and Nappi 2018, 100f.
GER-1703	April 1703	Austria, Germany	Default of Oppenheimer bank: Leipzig authorities extend Easter trade fair by eight days to support emergency efforts; Austrian authorities decide to establish Wiener Stadtbank to support market liquidity post-default (actually incepted: 1706).	ORL, RES			Bidermann 1859, 352ff.
FRA-1704	September 1704	France	Severe liquidity crunch after money debasements, run on Caisse d'Escompte (CdE): royal order suspends CdE until April 1705, recaps bank via new tax assignments.	SBH, AHCI		STOW	Felix 2018, 59.
UK-1704	December 1704	Scotland	Run on Bank of Scotland, suspension on Dec. 18: Scottish government inspects books and decides to guarantee note issuance and interest payments until liquidity crisis abates (GBP 50,847). Bank reopens May 1705.	OLG			Checkland 1975, 38f.

UK-1707	1707	United Kingdom	Run on Bank of England upon rumors of French invasion. Queen Anne and Godolphin/Marlborough government provide emergency loans.	AHEL		STOW	Gup 2003, 6.
AT-1708	February 1708	Austria	Liquidity crisis at Wiener Stadtbank, looming default. Emergency decree in Jun-1708 enables liquidity assistance (333,000fl advanced by end-1710); decree by end 1708 prolongs guaranteed assigned income by three years (“Gefaelle”, ca. 1.55M fl.).	AHEL, OLG		STOW	Fuchs 1998, 53ff.
SWE-1709	1709	Sweden	Riksbank’s loan bank freezes deposits after run on bank.	SBH		STOW	Fregert 2014, 361.
FRA-1709	April 1709	France	Banking crisis in Paris, Lyon, and Geneva, amid weakening of King’s credit, and default of Barnard & Nicolas. Various bankers receive provincial assignment letters and public rentes as liquidity assistance. Barnard himself receives total of 24.3M livres in assignments and aid in “one of the most costly bail-outs in history” (Rowlands 2015, 159).	AHEL			Luethy 1959, I, 222ff.; Flandreau et al. 2009, 189; Rowlands 2015, 158ff.
UK-1711	January 1711	United Kingdom	Heavy discounting of public and private securities amid fear of wider financial crisis. BoE receives GBP 45,000 from Treasury to buy exchequer bills at face value.	MLA	Market		Scott 1912, 384ff.
	1711	United Kingdom	“‘A particular person’, being a large discounter with the Bank, whose possible failure would ‘occasion more disorders in General Credit’, receives GBP 20,000 for six months, on ‘sufficient security’.”	AHEL			Bindseil 2019, 141.

SZ-1712	1712	Switzerland	Solothurn magistrate extends 20,000Fr. loan to Facio banking house amid bankruptcy wave.	AHEL			Buechi 1916, 81.
UK-1715	September 1715	Scotland	Bank runs during panic of Jacobite rising. Bank of Scotland suspends convertibility, resuming payments by May 1716.	SBH			Checkland 1975, 47.
FRA-1715	September 1715	France	Standstill on French government debt, financial crisis. Not clear if specific interventions occurred.	NO/I			Flandreau et al. 2009, 189.
ES-1714	September 1714	Spain	Bourbon troops invade Barcelona: (partial) bank suspensions, Old Bank of Deposit of Barcelona is forced to suspend and liquidated.	SBH, RES			Usher 1943, 501.
	1715	Spain	Banking crisis coinciding with end of War of Succession: additional key public banks, including Taula di Canvi di Cervera fail. No evidence of interventions.	NO/I			Esteve 1991, 976f.
IT-1717	June 1717	Venice	Senate orders Bancogiro (de facto central bank) to suspend convertibility amid war outbreak (to 1739).	SBH		STOW	Dunbar 1892, 332.
UK-1720	September 1720	United Kingdom	South Sea Bubble causes some bank failures (i.e. Sword Blade Company): BoE “lends freely, very freely on its own stock”, draws down vault reserves by 25%, assumes parts of South Sea portfolio. GBP 3.7M total capital raise, advances to South Sea suggested by Clapham (1958, 83ff.).	BBEL			Clapham 1958, 1, 84ff., 228-230.
SZ-1720	September 1720	Switzerland	South Sea crash spills over to Berne: Malacrida & Comp. Bank of Berne applies for public help, but is rejected (at	AG, NO/I			Landmann 1903, 31ff.

			least 893,000 Taler liabilities). Berne authorities partly reimburse private creditors from liquidation receipts.				
FRA-1721	January 1721	France	Technically, French Indies Company is the French bank of issue (minority state-owned) and is bailed out by Louis XV, who assumes 1M Livres debt at par Jan-1721. Restructuring and new share issuance via “Operation of the Visa”.	OLG, RES	SPV (partly)		Velde 2018, 126ff.
AT-1727	June 1727	Austria	Wiener Stadtbank on the brink of collapse: Viennese city council and Upper Austrian Estates provide emergency liquidity (at least 100,000fl).	AHEL		STOW	Mensi 1890, 598f.; Fuchs 1998, 76f.
IT-1739	May 1739	Venice	Venetian Senate recapitalizes Bancogiro in order to end long suspension of convertibility, with 250,000 Ducats.	AHCI		STOW	Rota 1874, 116; Dunbar 1892, 333f.
UK-1745	September 1745	United Kingdom	Bank runs amid advance of the Highlanders. BoE convenes meeting between city merchants, who sign declaration to accept BoE notes in lieu of all payments due. Temporarily, the Bank “block[s] up the doors with its own friends to gain time”. Scottish banks close temporarily.	ORL, SBH		PRI-PRI	Westminster Review 1847, 245; Culloch 1858, 456; Checkland 1975, 72f.
SWE-1745	1745	Sweden	Bank run forces Riksbank’s exchange bank to make deposits and notes inconvertible.	SBH		STOW	Fregert 2014, 349.

DK-1745	October 1745	Denmark	King declares suspension of convertibility for Kurantbank (de facto privately-owned central bank), amid financial volatility. In effect till spring 1747.	SBH			Rasmussen 1955, 277; Maercher 2010, 130f.
IT-1746	September 1746	Genoa	Austrian occupation of Genoa during War of the Austrian Succession: Casa di San Giorgio suspends payments indefinitely.	SBH		STOW	Roberds and Velde 2016, 329.
DK-1757	October 1757	Denmark	Suspension of convertibility at Kurantbank (almost 2M rix-dollars liabilities) with royal assent, given Seven Years War instability. Only fully revoked by 1845.	SBH			Rasmussen 1955, 279; Maercher 2010, 131.
FRA-1759	November 1759	France	Major financial crisis ensuing after de facto bankruptcy of French state: leading banks including <i>Beaujon</i> , <i>Goossens & Cie.</i> fail. Government declares bank debt moratorium.	DPM			Bosher 1986, 127ff.
IRL-1760	April 1760	Ireland	Banking crisis: La Touche and Son, Gleadowe & Co., and Finlay & Co. are deemed “solvent” and receive GBP 50,000 Treasury emergency aid (as indemnification), with notes made partial legal tender.	OLG, ORL			Hall 1949, 11.
UK-1762	June 1762	Scotland	“Major liquidity crisis” in Scotland as English funds are recalled from Scotland in context of Seven Years War. Scottish banks activate “optional clauses” in note issuance, preventing convertibility for six months.	SBH		PRI-PRI	Checkland 1975, 108f.
NL-1763	August 1763	Holland	Liquidity crisis in aftermath of Seven Years War among leveraged exchange dealers. Amsterdam public bank	BBEL, CRL			Quinn and Roberds 2015;

			provides (limited) additional secured loans, and widens range of acceptable collateral.				Ugolini 2017, 130.
GER-1763	August 1763	Prussia	Spillover from Dutch/British crises: King Frederick bails out important merchant-banker Gotzkowsky, via 500,000 gulden emergency loan and inflated asset purchase.	AHEL, BBAM			Henderson 1962, 99.
	August 1763	Hamburg	Spillover from Amsterdam crisis: after 84 merchant and merchant bank failures, Hamburg Senate establishes 1M Mark lending fund for six months, to lend against durable goods.	BBEL	SPV		Soetbeer 1866, 39.
FRA-1770	February 1770	France	Severe financial crisis: some major royal financiers go bankrupt, others (Le Maitre, Baudard de Vaudesir, Bouret de Vezelay) apply for emergency help to Treasury.	AHEL			De la Cour 1788, 62f.; Boshier 1972, 25f.
IRL-1770	December 1770	Ireland	Looming panic after downfall of George Colbrook & Co.: Lord Lieutenant of Ireland, merchants, and private banks declare full acceptance of all major bank notes as cash in joint public announcement.	ORL		PRI-PRI (partly)	Gilbart 1836, 15f.; Hall 1949, 13.
UK-1772	June 1772	England	BoE “discounts heavily” and has to hire additional clerks. Government loan of GBP 1.4M to East India Company. Lovell (1957, 9) suggests ca. GBP 580,000 extra BoE discounting.	BBEL, MLA			Lovell 1957; Brunnermeier and Schnabel 2016; Kosmetatos 2019.

	June 1772	Scotland	Failure of Ayr Bank, wave of subsequent failures in Edinburgh. Scottish de facto public banks offer emergency lending on good collateral, including Ayr notes. At least GBP 487,000 in public/private emergency capital raising.	BBEL		PRI-PRI (partly)	Clapham 1958, I, 245ff; Checkland 1975, 131f.
NL-1773	January 1773	Holland	Bank crisis: establishment of <i>Fonds tot Maintien van het Publiek Crediet</i> , jointly administered by Nederlandsche Bank and City of Amsterdam to lend freely against collateral. Fonds liquidated by September. 500,000fl total advances.	BBEL	SPV		De Jong 1934, 332.
DK-1773	March 1773	Denmark	Kurantbank fully nationalized by official purchase of all equity with state bonds.	AHCI			Rasmussen 1955, 284f.; Maercher 2010, 132.
FRA-1774	May 1774	France	Severe financial crisis in Marseilles: King Louis XVI grants debt moratoria to several bankers (i.e. 6 months to Pierre Verdilhon in late May 1774).	DPM			Emmanuelli 1979, 86ff.
UK-1778	August 1778	United Kingdom	Controversies over existence of actual panic: Lovell (1957, 15): “not a real panic”. Joslin (1960): “panic”. But clear uptick in BoE discounting ca. GBP 1.2M.	BBEL			Lovell 1957, 15; Joslin 1960, 173;
NL-1781	1781	Holland	Establishment of City Chamber of Loans during crisis, providing mutual liquidity assistance among private banks. Wisselbank provides backstop. By 1795, 1.2M guilders on loan. Moratorium for Dutch East India debt.	BBEL, DPM	SPV (partly)	PRI-PRI (partly)	Van der Borght 1896; De Jong 1934, 323; Van der Kroef 1948, 132; Ugolini 2017, 130.

FRA-1783	October 1783	France	Run on <i>Caisse d'Escompte</i> , Paris banking crisis. Official decree allows Caisse to suspend convertibility until January 1 st . Some key financiers in difficulties are supported by Treasury (i.e. E-N. Landry by 1784).	AHEL, SBH			Bigo 1927, 76-94; Boshier 1970, 192; Flandreau et al. 2009, 189.
ES-1784	November 1784	Spain	Rumors of impending default of Magon Le Fer Bank, early-stage bank runs in Cadiz: Magon decides to repay all outstanding credit liabilities immediately to demonstrate liquidity. Bank runs ease afterwards.	other		PRI-PRI	Gazeta Madrid, November 19, 1784, 963.
RUS-1787	1787	Russia	Looming bankruptcy of Russian court banker Richard Sutherland after surging bad debts: Hope & Co. of Amsterdam provides “substantial credit” to bail firm out. ^{vi}	AHEL		PRI-PRI	Buist 1974, 94f.; Munro 1989, 329.
FRA-1787	January 1787	France	Five major bankruptcies of financiers: inc. J.-F. Harvoin, Claude Baudard, L.-R.-M. de Saincy, Megret de Serilly; Royal Treasury under Calonne underwrites various liabilities, incl. Harvoin’s (at least 600,000 LT est.).	AHEL			Boshier 1970, 183ff.
UK-1788	March 1788	Scotland	Wave of bankruptcy among distillers provokes bank runs and threatens houses of William Forbes & Co. and Allan the Stewart: Royal Bank provides emergency assistance to the former. ^{vii}	AHEL		PRI-PRI	Checkland 1975, 217f.
FRA-1788	August 1788	France	Further instability at <i>Caisse d'Escompte</i> : Necker grants bank right to suspend payments if run occurs (run and suspension materializes September 1789). Bank notes made legal tender.	SBH, ORL			White 1995, 234ff.

US-1791	August 1791	United States	Bank Scrip Bubble: Alexander Hamilton authorizes USD 348,985 in open market Treasury purchases via BONY (face value USD 560,000), to stabilize bond markets.	MLA			Sylla, Wright, and Cowen 2009, 71f.
NL-1792	February 1792	Holland	City of Amsterdam grants loan to Bank of Amsterdam amid heavy deposit withdrawals.	AHEL			Van Dillen 1934, 114f.
US-1792	March 1792	United States	Alexander Hamilton instigates BONY (Bank of New York) to provide emergency liquidity along Bagehotian lines. Up to USD 1M authorized (ca. USD 250,000 actually spent).	BBEL			Sylla, Wright, and Cowen 2009, 77ff.
IRL-1793	January 1793	Ireland	Amid volatility, “young Bank of Ireland... refuse[s] to discount any paper whatever” for months prior to March, given war fears.	SBH			Clapham 1958, I, 263.
SAF-1793	March 1793	South Africa	Financial crisis: Dutch authorities establish Cape Lombard Bank to provide collateralized emergency credit.	BBEL	SPV		Havemann and Fourie 2015, 12.
UK-1793	April 1793	Scotland	Two de facto public banks (Royal Bank, Bank of Scotland) provide GBP 25,000 emergency loan to Sterling, Hunters & Co. amid wave of bank failures.	AHEL			Checkland 1975, 218.
	May 1793	United Kingdom	Sharp rise in bank failures after French declaration of war: Bank of England gives selective assistance (i.e. to Lord Mayor of London partnership); by May, Pitt adopts a large-scale issuance of GBP 5M commercial exchequer bills to create discountable assets, at recommendation of Bank directors. One-fifth allocated for Scotland.	AHEL, BBEL			Lovell 1957; Clapham 1958, I, 262ff; Checkland 1975, 219.

			Lovell (1957, 15) suggests ca. GBP 3.3M extra discounting by Bank of England in market accommodation.				
IT-1796	September 1796	Naples	Bank runs (“depositor panic”) connected to French invasions: Ferdinand IV decrees that seven public banks of Naples freeze existing deposits. Withdrawals only on the basis of newly accepted (post-decree) deposits.	SBH		STOW	Demarco 2000, IV.I, 240f.
UK-1797	February 1797	United Kingdom	BoE stops gold conversion on 25 February 1797, but lends freely on government securities. Meeting between “hundreds” of bankers and merchants at Mansion House establishing BoE notes as circulating medium instead of gold. BoE issues high volumes of low-denomination notes to replace guinea demand. “Restriction period” lasts until 1821.	BBEL, ORL, SBH	Market (partly)		Feaveryear 1931, 170ff.
	February 1797	Scotland	Scottish banks under “grave threat”; at their own initiative, banks decide to suspend specie convertibility, even though suspensions illegal under Scottish law.	SBH		PRI-PRI	Checkland 1975, 220f.
IRL-1797	March 1797	Ireland	Bank of Ireland restriction along BoE lines enacted on March 2, at the order of the Privy Council.	SBH			Hall 1949, 65.
IT-1798	January 1798	Venice	Bancogiro suspends payments, which are partially lifted August 1799. Closed for good October 1800.	SBH		STOW	Roberds and Velde 2016, 339.
IT-1798	February 1798	Rome	Rome’s banks are closed amid capital flight surrounding French military intervention, including <i>Banco di Santo Spirito</i> . Significant restructuring of liabilities, including	BAIL, DPM, RES, SBH		STOW (partly)	De Matteo 2001, 50ff.

			extinction of coupons and debts, prior to regular resumption in July 1814.				
GER-1798	May 1798	Hamburg	Collapse of Dorner Bank, following death of founder. Fears of panic: eight Hamburg banks establish 1M Mark banco guarantee fund to keep Dorner in existence.	BG	SPV	PRI-PRI	Buist 1974, 173.
	September 1799	Hamburg	Wave of bankruptcies among acceptance houses and merchant-bankers, including <i>Milow & Henckel</i> , and <i>De Dobbeler & Hesse</i> : Hamburg Senate establishes private rescue fund in September 1799, but “measure comes too late” to stem panic. London merchants organize private GBP 1.5M emergency loan, but ship sinks in October.	BBEL	SPV (partly)	PRI-PRI (partly)	Beerbuehl 2007, 362ff.
NL-1802	1802	Holland	City of Amsterdam and Batavian Republic jointly recapitalize Bank of Amsterdam via forced loan. De facto, restructuring as Bank of Netherlands from 1815, with 1M guilders new capital injection by government.	AHCI, AHCL, RES			Van der Borgh 1896; Van Dillen 1934, 115.
	1802	Holland	Cohen Bank of Amsterdam on brink of collapse: Prussian Seehandlung (state bank) negotiates debt moratorium on liabilities on Gulden 2M credit, Tomasachi & Co. guarantees part of liabilities (Gulden 400,000).	DPM, OLG		PRI-PRI (partly)	Schnee 1953, 198f.
FRA-1802	April 1803	France	Forced merger of major commercial bank, <i>Caisse d'Escompte du Commerce</i> , with Banque de France, to centralize French note issuance. Liesse (1909, 26): “slight panic” as pretext for government.	RES			Liesse 1909, 26f.; Reinhart/Rogoff

UK-1803	August 1803	Scotland	Bank runs across country given French invasion rumors: petitions by Scottish banks to be allowed suspension of convertibility (denied). Royal Bank suspends silver conversion. No government interventions.	SBH		PRI-PRI	Checkland 1975, 224.
FRA-1805	September 1805	France	Run on Banque de France after rumors that French silver reserves exhausted by Napoleon's wars. Banque forced into partial suspension. Napoleon de facto nationalizes Banque de France operations, recaps with Fr. 45M private capital. Treasury provides bank with "some" extra specie.	AHCI, AHCL, RES, SBH		PRI-PRI (partly)	Des Essars 1896, 59; Liesse 1909, 29f.; Reinhart/Rogoff
FIN-1808	February 1808	Finland	Run on banks as Russia invades Finland: Swedish Bank of the Estates provides emergency assistance to Turku Discount Office, but quasi-central bank liquidated later.	AHEL		STOW	Kuusterae and Tarkka 2011, I, 60.
GER-1810	October 1810	Prussia	By decree, business of Royal Bank of Prussia is suspended given war outbreak and default wave. Interest payments for existing bank obligations covered by Treasury.	AHEL, SBH		STOW	Poschinger 1878, I, 215ff.
	October 1810	Prussia	After bankruptcy of Seehandlung Bank in October 1806, edict of October 1810 recapitalizes Bank with Taler 15.7M (forced conversion of private liabilities), nationalizing it.	AHCI, BAIL			Schrader 1911, 6f.
FRA-1810	December 1810	France	Wave of industrial and bank failures from Sep.-1810: ad hoc assistance, including Francs 1.5M loan to Bank of Tourton & Ravel, granted in Dec. by Napoleon personally.	AHEL			Darmstaedter 1904, 605f.
UK-1810	April 1811	United Kingdom	Volatility related to tightening of Allies' blockade and Napoleonic Continental System; Brickwood & Co. fails with GBP 600,000 liabilities in July 1810; GBP 600,000 in	MLA			Conant 1915, 615f.; Checkland 1975, 225;

			exchequer bonds extended to merchants upon good security by Treasury.				Ishhizu 2013; Reinhart/Rogoff
SWE-1811	1811-1814	Sweden	Kärlander (2013, 174) indicates pre-1815 lending of last resort to Stockholm discount banks by Treasury, but exact timing unclear.	AHEL			Reinhart/Rogoff; Kärlander 2013, 174.
DK-1813	January 1813	Denmark	State bankruptcy 1813. End of <i>Specie Bank/Depositokasse</i> , founding of Rigsbank with centralized note-issuance. Some quasi state banks are closed, incl. Schleswig-Holstein Specie Bank.	BAIL, other, RES			Maercher 2010, 135f.; Reinhart/Rogoff
FRA-1814	April 1814	France	Banque de France raises Fr. 6M emergency loan from private bankers amid panic, to prevent full suspension.	SBH, AHEL		PRI-PRI (partly)	Liesse 1909, 41f.
NOR-1814	May 1814	Norway	Amid monetary and banking chaos, Rigsbanken's Norwegian branch issues Riksbank Dollar 14M, guaranteed by National Assembly ("Eidsvollsgarantien").	MLA			Eitrheim 2005, 4.
	June 1816	Norway	1814 crisis unveils deep problems over monetary centralization, LLR functions: longer-term remedy by founding of Bank of Norway in 1816 – incl. centralization of note issuance.	other			Grytten and Hunnes 2010, 10; Reinhart/Rogoff
US-1814	April 1814	United States	Widespread bank runs in New Orleans (Planter's Bank, Bank of New Orleans): specie suspension from bank side.	SBH			Nolte 1854, 184ff.

	August 1814	United States	Heavy bank runs across East Coast after British set Washington on fire: invoking New Orleans interventions, general specie suspension announced.	SBH		STOW	Adams 1978, 45ff.; Reinhart/Rogoff
ES-1814	1814-1817	Spain	Suspension of Bank of San Carlos during French occupation; actual restructuring occurs 1829 (s.b.).	SBH			Reinhart/Rogoff
UK-1815	1815	United Kingdom	No interventions reported in Conant (1915) or Clapham (1958).	NO/I			Reinhart/Rogoff
GER-1815	April 1815	Prussia	Prussia guarantees deposits in Royal Bank of Prussia, and other liabilities, upon re-opening of Bank and continued financial volatility. Total assets ca. 17.3M Thaler.	BG		STOW	Poschinger 1878, I, 217ff.
FRA-1815	June 1815	France	After defeat at Battle of Waterloo, severe volatility on Parisian markets. French Treasury “loans freely” to speculators, with emergency loans.	MLA			Conant 1915, 619.
SWE-1815	November 1815	Sweden	New bank runs in Stockholm, centered on Malmoe Diskont and Gothenburg Diskont: Treasury grants 700,000 daler emergency loan to Malmoe to meet redemptions. Further 500,000 daler loan granted in Sep. 1817, after which bank is liquidated.	AHEL, RES			Kärrlander 2013, 168ff.
FRA-1818	1818	France	Banque de France engages in emergency discounting during financial crisis, with Leclercq (2010, 267) suggesting 0.21% of GDP provided.	BBEL			Leclercq 2010, 267.

NL-1819	1819-1829	Netherlands	No interventions reported in Conant (1915, 287ff.) and others.	NO/I			Reinhart/Rogoff
US-1818	October 1819	United States	Liquidity measures to aid Bank of the United States: including de facto US\$ 1.8M Treasury loan on Louisiana stock. Aid from Sinking Fund Commission and 3-year payment moratorium for BUS creditors.	AHEL, DPM		STOW (de facto)	Browning 2019, 168ff.
	January 1820	United States	Bank of Kentucky notes de facto declared legal tender, Bank of Kentucky issues US\$ 768,000 in “own relief effort” and suspends specie payments. Kentucky independent bank law repealed: 40 banks forced to close amid banking volatility.	RES, SBH			Sumner 1896, 122; Royalty 1979, 94.
	February 1820	United States	Charters of five Pennsylvania banks are declared void.	RES			Sumner 1896, 112.
IRL-1820	May 1820	Ireland	Severe banking panic throughout Cork, Limerick, Dublin, Belfast. Lord Lieutenant approves up to GBP 500,000 in emergency loans for merchant and bank concerns: eventual bank aid limited to GBP 80,000 loan to Cork-based Leslie & Co. Select banks receive accommodation from Bank of Ireland upon good bills or gvt. stock.	AHEL			Hall 1949, 130-133.
US-1818	July 1820	United States	Establishment of Tennessee State loan office amid banking defaults to provide general liquidity, up to USD 1.75M note issue.	BBEL		STOW	Moore and Foster 1923, 453f.; Rothbard 1962, 125ff.; Browning 2019, 259f.

	November 1820	United States	Kentucky senate establishes state-owned Bank of the Commonwealth, up to USD 3M note issue granted.	ORL			Rothbard 1962, 136f.; Browning 2019, 261.
	February 1821	United States	State Bank of Illinois established via takeover of private Bank of Illinois, to provide general liquidity after bank closures, up to USD 300,000.	BBEL, RES		STOW	Rothbard 1962, 133f.; Browning 2019, 259f.
	June 1821	United States	Missouri sets up state loan office, authorized to issue USD 300,000 to ease money and bank strain.	AHEL	Market (partly)		Rothbard 1962, 118f.
BRL-1821	March 1821	Brazil	Looming default of Banco do Brazil: government decree assumes all bank liabilities as public debt, against guarantee for diamond deliveries. Later repudiated.	BG			Cardoso 2010, 173f.
UK-1825	December 1825	United Kingdom	<p>Crisis of country banks. BoE restrictive on collateral, raises rates in Dec-1825, providing some general emergency liquidity through advance window in 1Q-1826 – after commercial defaults have already peaked.</p> <p>Selected extra BoE liquidity assistance for banks, including GBP 400,000 for Peter Pole. Ca. GBP 4M in total lending.</p> <p>Ackrill and Hannah (2001, 30f.) suggest LLR extensions among Quaker banking community.</p>	BBEL		PRI-PRI (partly)	<p>Neal 1998; Ackrill and Hannah 2001, 30f.; Reinhart/Rogoff; Anson et al 2017.</p>
AUS-1826	May 1826	Australia	Bank of New South Wales receives pounds 20,000 government loan after troubles. Repaid by 1827.	AHEL			Fitz-Gibbon and Gizycki 2001, 11.

	December 1828	Australia	Bank of New South Wales applies for further pounds 15,000 government loan, which is granted.	AHEL			HRA, I, Vol. 14, 549; Fitz-Gibbon and Gizycki 2001, 12f.
PT-1828	1828	Portugal	Banco do Lisboa suspension. No government intervention reported in Conant (1915) or Reis (1994).	NO/I			Reis 1994, 821; Reinhart/Rogoff
US-1829	April 1829	United States	Establishment of New York “Safety Fund” to co-insure noteholders among member banks. Places limits on total note issuance (200% of paid-in capital). Establishment of quarterly member bank inspection & audit mechanism.	OLG, ST	SPV (partly)	PRI-PRI	Bodenhorn 2002, chapter 7.
ES-1829	July 1829	Spain	Collapse of Bank of San Carlos: government offers restructuring and Reales 40M in capital, in exchange for write-down of old state liabilities. Rebranded as “Bank of San Fernando”.	AHEL, BAIL		PRI-PRI (partly)	Reinhart/Rogoff; Martin-Acena 2018, 174f.
FR-1830	July 1830	France	State provides FRF 30M for “relief of houses in difficulties” after outbreak of Revolutionary crisis. Partly channeled through new “Discount Bureau” at BdF.	BBEL	Industry (partly)		Des Essars 1896, 62.
IRL-1831	January 1831	Ireland	Banking crisis, especially affecting Cork and Waterford. Bank of Ireland unsuccessful in containing spread. Merchant community in Waterford jointly declares to fully accept private bank notes, containing crisis.	ORL		PRI-PRI	Hall 1949, 152f.

GER-1832	December 1832	Prussia	350,000 Taler emergency loan by Prussian authorities to Ritterschaftliche Privatbank Stettin. Further 125,000 loan in Feb. 1833.	AHEL			Poschinger 1878, I, 249.
US-1833	November 1833	United States	Bank runs and suspensions in various states, including NY, Pennsylvania, Georgia, New Jersey, Virginia.	SBH			Jalil 2015, A-4.
	Spring 1834	United States	Run on Baltimore banks, “local monetary panic”: Alexander Brown declares publicly full support for solvent banks, assists Union Bank of Maryland in search for funds.	BBEL		PRI-PRI	Perkins 1975, 31.
IRL-1836	November 1836	Ireland	Agricultural and Commercial Bank crash. Bank of Ireland advances ca. GBP 500,000 in emergency funds to Agricultural itself and other banks. Liberal discounting against private bills and government stock.	BBEL			Hall 1949, 160ff.; O Grada 2010; Reinhart/Rogoff
UK-1837	December 1836	United Kingdom	Northern and Central Bank of Manchester close to default: Bank of England grants GBP 1.37M emergency assistance, upon condition that bank is gradually wound down.	AHEL			Hunt’s Magazine, 1850, VI, 607f.
CAD-1837	July 1837	Canada	Per legislative act in July, banks ordered to suspend convertibility beyond value of own capital stock until 1839, amid runs in Canada and New York. Lower Canada banks suspend at own initiative in May.	SBH			Redish 1983, 406ff.; Reinhart/Rogoff
US-1837	March 1837	United States	Indiana State Bank Insurance Fund suspends convertibility; bank runs and suspensions of specie payments in New York, New Orleans.	SBH		PRI-PRI	Calomiris 1990, 287; Jalil 2015, A-5.

UK-1837	April 1837	United Kingdom	Bank of England bailout of Wildes & Co., which liquidates; Other banks receive liquidity assistance without usual collateral requirements (Wilson & Co.; Wiggins & Co.).	BBEL, CRL, RES			Lepler 2013, 171ff.; Reinhart/Rogoff
SZ-1838	1838	Switzerland	Wider banking crisis engulfs Berne Kantonalbank: state more than doubles deposits at bank to ease liquidity squeeze.	AHEL		STOW	Leuenberger 1912, 33.
BEL-1838	January 1839	Belgium	Bank of Belgium on verge of collapse, suspends payments. January 1839 government credit of 4M Bel. Francs to meet note and deposit redemptions.	AG, AHEL, SBH		STOW (part)	Conant 1910, 14; Reinhart/Rogoff
IRL-1839	February 1839	Ireland	Run on Provincial Bank: Bank of Ireland grants emergency assistance, including GBP 150,000 to Provincial, GBP 80,000 to National Bank, GBP 10,000 to Royal Bank. Further GBP 25,000 aid in Dec. 1839.	AHEL			Hall 1949, 170f.
US-1839	October 1839	United States	Specie payment suspensions at Unites States Bank of Philadelphia, followed by suspensions in U.S. West and South, including Indiana.	SBH		PRI-PRI	Hammond 1957, 511; Calomiris 1990, 287.
	February 1840	United States	New York “Safety Fund” intervenes in City Bank of Buffalo failure, reimbursing creditors and noteholders.	OLG	SPV ASSOC	PRI-PRI	Bodenhorn 1996, 24f.
	November 1841	United States	Further bank failures and recapitalization of New York “Safety Fund”. By October 1842 Fund “effectively	OLG	SPV (partly)	PRI-PRI	Bodenhorn 1996, 24f.

			bankrupt”. Over 1840-2 Safety Fund outlays ca. US\$ 2.571M, see Bodenhorn (1996, 25).		ASSOC		
	February 1842	United States	New runs on banks in Pennsylvania, including on Moyamensing Bank. Private banks form “league” to provide mutual liquidity (unclear if actual payments occurred).	AHEL	ASSOC	PRI-PRI	New York Herald, February 2, 1842.
BEL-1842	1842	Belgium	Bank of Belgium temporarily closes all branches except Antwerp to preserve liquidity, government approves.	SBH			Conant 1910, 15; Reinhart/Rogoff
GER-1842	May 1842	Hamburg	Major Fire of Hamburg threatens survival of numerous merchant and banking houses. Bank of Hamburg restricted in LLR provision. Private banker Salomon Heine steps in to offer full bill discounting at pre-crisis rates (at least Mark 0.3M volume).	BBEL		PRI-PRI	Faulwasser 1892, 41; Baecker and Hecker 2017, 6f.
AUS-1843	May 1843	Australia	Bank of Australia fails, after private loans from other banks help creditor repayments. State guarantees for depositors and (fwd) loans to NSW Savings Bank, at least Apounds 50,000.	AG, AHEL, OLG		PRI-PRI (partly)	Fitz-Gibbon and Gizycki 2001, 14ff.; Reinhart/Rogoff
PT-1846	November 1846	Portugal	Banco do Lisboa (private de facto central bank) on brink of collapse amid general bank runs: arranged merger with Companhia Confianca Nacional to form Bank of Portugal.	RES			Reis 1994, 821, 834; Reinhart/Rogoff
ES-1846	1846-1847	Spain	Liquidity crisis spills over from London: Bank of Isabel II and Bank of San Fernando on verge of bankruptcy, with latter restricting operations to protect reserve. Treasury oversees merger of both banks to stave off crisis.	RES, SBH			Reinhart/Rogoff; Martin-Acena 2018, 176.

	February 1847	Spain	Cabinet approves extra issuance of Reales 20M by new bank amid liquidity squeeze in Madrid.	MLA			Tedde de Lorca 1999, 202.
UK-1847	January 1847	United Kingdom	Default wave and bank runs accelerating in October. BoE, after lending freely over the course of Jan-Sep 1847, decides to no longer lend on stocks and exchequer bills: “widespread panic” as a result. Bank Act suspended late Nov: afterwards, BoE once more lending freely. Selective attempts to rescue important firms by BoE such as Copper Miners Co. (GBP 150,000 – failed attempt).	AHCI, MLA, SBH			Evans 1848; Clapham 1958, II, 204-210; Reinhart/Rogoff
MAU-1847	August 1847	Mauritius	Severe spillover from U.K. volatility to Mauritian banks and merchants: Bank of Mauritius alongside multiple others fails; no interventions reported.	NO/I			Evans 1848, XVff.
FRA-1848	June 1847	France	Law of June 1847 reduces lowest denomination bills (100 and 200 Franc notes), to increase general liquidity. Forced merger of nine regional banks of issue; founding of new discount bank <i>Comptoir d'Escompte</i> .	MLA, RES			Liesse 1909, 54ff., 109ff.
	February 1848	France	Paris stock exchange closes amid financial crisis and revolutionary panic. Banque de France suspends payments by March, before and after BdF and branches facilitate discounting and widen collateral, at least Fr 153M over Feb-Mar.	BBEL, SBH			Liesse 1909, 59; Bonin 1997.
	March 1848	France	Continued runs on savings banks: government issues decree pledging to protect deposits in coin and treasury bills.	AG			The Economist, March 18, 1848, 314.

BEL-1848	March 1848	Belgium	Bank of Belgium and Societe Generale suspend payments. Authorities temporarily make bank notes of affected institutions legal tender, and guarantee BEF 30M of note issue. Main private banks to deploy BEF 4M in sector aid.	AHEL, OLG, ORL, SBH		PRI-PRI (partly)	The Economist, March 18, 1848, 316; Buyst and Maes 2008, 157f.; Reinhart/Rogoff
AT-1848	March 1848	Austria	Short moratorium on FX and other exchange debts amid political volatilities and bank runs.	DPM			Pressburger 1966, 52.
	May 1848	Austria	Nationwide restrictions on convertibility amid bank runs and reserve drain. Attempts at public suasion.	SBH			Pressburger 1966, 55.
	May 1848	Austria	Austrian Central Banks grants ca. 400,000fl emergency lending to Kosice Savings Bank and Savings Bank of Brastislava amid bank runs.	AHEL			Jobst 2014, 16f.
GER-1848	March 1848	Prussia	Default of A. Schaaffhausen Bank: restructuring, recapitalization, and 10-year public dividend guarantee (on 5.2M Taler equity stock) for re-organized “A. Schaaffhausen’sche Bankverein”. ^{viii}	OLG, RES		PRI-PRI (partly)	Feldenkirchen 1982, 89.
ES-1846	1848	Spain	Further troubles at Bank of San Fernando: bank restricts operations, government declares its notes partial legal tender for payment of taxes, and “arranges loan” to replenish reserves.	AHEL, ORL, SBH			Martin-Acena 2018, 176.

TK-1848	1848	Ottoman Empire	Unspecified government “assistance” to Banque de Constantinople as French backers are impacted by financial crisis at home. ^{ix}	Other			Baster 1935, 78f.
FRA-1851	December 1851	France	Banque de France grants assistance to Paris Bourse which faces liquidity crisis, discounts Bons de Tresor.	AHEL			White 2011, 79f.
AUS-1852	June 1852	Australia	Government of South Australia declares private bank notes legal tender for one year to support liquidity, rescue Bank of South Australia.	ORL			Fitz-Gibbon and Gizycki 2001, 17.
IRL-1856	February 1856	Ireland	Tipperary Bank failure – Bank of Ireland grants ad hoc assistance over course of year, incl. GBP 30,000 to La Touche’s Bank in August 1856.	AHEL			Hall 1949, 230f.; Reinhart/Rogoff
IT-1856	1856	Italy	Amid loss of confidence, Papal government guarantees note issue of Banco dello Stato Pontificio.	OLG		STOW	Magee 1911, 432.
FRA-1856	May 1856	France	Henri Place of Noel Place & Cie defaults with 19M Francs liabilities. Rival Pereire Bros. intervenes to make creditors full – prompting Commerce Tribunal to revoke default.	AHEL		PRI-PRI	Vitu 1882, 450.
CB-1857	August 1857	Cuba	Banking panic threatening El Banco Espanol de la Habana. Governor Gutierrez de la Concha orders early repayment of public loan and 500,000 pesos emergency loan to prevent suspension.	AHEL			Montaud 1995, 287.

US-1857	September 1857	United States	Amid panic and bank failures, including Welsey & Co., Board of Brokers restricts time sales to 80 days.	ORL	ASSOC	PRI-PRI	NY Press ed. 1857, 40f.
	October 1857	United States	Supreme Court declares suspension of deposit convertibility during bank panics as legal. Various interbank assistance schemes via state bank insurance funds (inc. Ohio).	BBEL, ORL		PRI-PRI (partly)	Calomiris 1990, 288; Gorton and Tallman 2018, 31.
UK-1857	November 1857	United Kingdom	Scotland bank runs: private assistance to Western Bank, but bank fails together with City Bank of Glasgow (which suspends temporarily). BoE refuses direct aid.	AHEL		PRI-PRI	The Economist, November 14, 1857, 1259.
	November 1857	United Kingdom	Panic of 1857: BoE first tightens credit to prevent own reserve drain (from 5.5 to 10% for bill discounts Oct-Nov). Then 1844 Bank Act suspended, allowing BoE to lend freely. Major banks are not rescued (Borough Bank of Liverpool, Western Bank), but BoE assists some discount houses and Overend Gurney (total advances: 35m GBP).	BBEL, SBH			Hughes 1956; Calomiris and Schweikart 1991.
AT-1857	November 1857	Austria	Central bank grants liquidity assistance to Creditanstalt and Niederoesterreichische Escompte-Gesellschaft, at least 5M Gulden.	AHEL			Pressburger 1966, 89f.
DK-1857	1857	Denmark	Government sets up “Temporary Loan Fund for the Kingdom” as Nationalbank hesitant to act as a LLR. Loan Fund grants assistance to deposit banks, local governments, and merchants. Eventual ca. 4.5M DKR peak lending via Nationalbanken, including Hamburg’s Pontoppidan.	BBEL	Industry (partly) SPV (partly)		Hansen 1968, 257ff.; Abildgren et al 2011, 6; Reinhart/Rogoff

SWE-1857	November 1857	Sweden	<p>In November, Bank of Sweden declares support for credit market: to adhere to silver standard, BoS cooperates with Swedish Stock Exchange to issue foreign bills of exchange via Hamburg, which BoS then buys or discounts.</p> <p>BoS mandate amended to include foreign bills of exchange as official reserves.</p> <p>State Loan Fund (<i>Statslånefonden</i>) is set up with 12M SEK to provide short-term loans to banks. Special 500k SEK loan to <i>Skånes Enskilda Bank</i>.</p>	BBEL, ORL			Oegren 2018, 54ff.
BEL-1857	December 1857	Belgium	NBB de facto provides emergency liquidity by supporting newly-established private discounting SPV, <i>Comptoir de prêts sur marchandises</i> .	AHEL	SPV	PRI-PRI (partly)	Buyst and Maes 2008, 165.
GER-1857	November 1857	Prussia	Wave of bank and merchant failures in Stettin, and house of Hirsch & Moses in Berlin: Prussian state suspends usury laws to enable Bank of Prussia to grant emergency lending, on bonds shares and merchandise, at penalty rates.	BBEL, ORL			Mori et al. 2017, 123.
	November 1857	Hamburg	Spillover from global crisis. Hamburg merchant community creates public exchange guarantee fund (5M Bancomarc).	AG	SPV	PRI-PRI	Ahrens 1978, 9f.
	December 1857	Hamburg	Public authorities stabilize eight merchant-bank houses via 10M Bancomarc loan. Eventual net fiscal cost: 180,000 BM. Some additional private discounting initiatives.	BBEL			Ahrens 1978; Reinhart/Rogoff; Baecker and Hecker 2017, 8f.

FIN-1857	1857	Finland	Liquidity strains from intl. 1857 crisis: Bank of Finland pursues “active lending policy” via discounts and hypothecary fund; approves debt moratoria and lengthening of credit repayments.	BBEL, DPM			Kuusterae and Tarkka 2011, I, 254.
NOR-1857	December 1857	Norway	Multiple bank failures in December: Norwegian government approves USD 1M in assistance, approves (unspecified guarantees) to merchant and bank community.	BBEL, OLG			Grytten and Hunnes 2010, 13; Mori et al. 2017, 141.
SZ-1859	April 1859	Switzerland	Run in Geneva on Banque Générale Suisse de Crédit International Mobilier et Foncier: bank has to meet withdrawal of 75% of all deposits. Bank receives unspecified “help” to meet depositor demands. Bank is liquidated by 1871 after continued losses. ^x	AHEL		PRI-PRI	Jöhr 1915, I, 162ff.
RUS-1859	June 1859	Russia	1857 crisis leads to collapse of old banking system, wave of defaults, and eventually to founding of new Russian State Bank by 1860 via liquidation of State Loan Bank, and Credit Note Bureau. Partial deposit conversions into state bonds. Up to 100M Rubles granted in public funds to cover deposit withdrawals in June 1859.	BBEL, BAIL, RES		PRI-PRI (partly)	Garvy 1972, 878f.; Hoch 1991, 805; Kuusterae and Tarkka 2011, I, 217ff.
CAD-1861	1861	Canada	After heavy losses in railroad business, <i>Upper Canada Bank</i> on brink of collapse: government commits to holding minimum 1.2M CAD deposits at bank going forward.	AHEL			Baskerville (ed.), 1987, CXXXVII.
US-1861	December 1861	United States	Banks in New York, Philadelphia, and Boston suspend gold convertibility after weeks of war-related “panic” among depositors. Implicit backing of Chase/Treasury.	DPM			Hammond 1970, 140ff.

	December 1861	United States	Upon outbreak of Civil War, banking panic looms. NYCH member banks agree to pool reserves to avert bank runs. Total paid-in pool (Sep. 30, 1861): US\$ 383.4M.	BBEL	ASSOC	PRI-PRI	Camp 1892, 687; Wicker 2005, 44.
CL-1862	August 1862	Chile	Emergency loan to <i>Mortgage Bank</i> from Treasury amid financial sector volatility.	AHEL		STOW	Brock 2016, 15.
RUS-1862	1862-1863	Russia	Various restructurings of banks (i.e. St. Petersburg and Moscow Savings Banks) and forced conversions of demand deposits from mid-1859, to prevent withdrawals; temporary ban on new loans.	BAIL, ORL, RES, SBH		PRI-PRI (partly)	Hoch 1991, 805ff.; Reinhart/Rogoff
CN-1863	1863	China	No interventions found in standard literature or contemporary news (i.e. Horesh 2009).	NO/I			Reinhart/Rogoff (updated)
TK-1863	February 1863	Ottoman Empire	Founding of Imperial Ottoman Bank to battle recurring financial turbulence and capital flight. De facto recap.and restructuring of existing Ottoman Bank.	AHCI, RES			Autheman 1996, 22ff.
RUS-1863	November 1863	Russia	Run on banks in St. Petersburg, rumors of impending war against Britain, France, and Austria. Suspension of convertibility at Russian State Bank as reserves bled.	SBH			Kuusterae and Tarkka 2011, I, 224.
IN-1863	1863-1866	India	Spillover from Overend & Gurney, and separate Bank of Bombay failure. Subsequent parliamentary inquiries, but no evidence of immediate policy action.	NO/I			House of Commons 1869; Conant 1915, 574ff.; Reinhart/Rogoff

BRL-1864	September 1864	Brazil	<p>Failure of J. Souto Bank and widespread financial panic – Bank of Brazil suspends convertibility. 60-day general bank suspension. Bank of Brazil provides Milreis 30M interbank emergency liquidity.</p> <p>Bank of Brazil and others are granted authority to boost private note issuance, reaching up to four times <i>fundo disponivel</i>.</p>	BBEL, CRL, MLA, SBH		PRI-PRI (partly)	Baster 1935, 138; Mettenheim 2010, chapter 3; Villela 2020, 147.
ES-1864	October 1864	Spain	Two large bank failures including Banca de Valladolid, and Banca Castellano, sharp stock market fall. No intervention by BdE or Treasury.	NO/I			Tortella 1975, 243ff.
CL-1865	1865	Chile	Run on <i>Banco de Chile</i> and others leads government to declare bank note issue legal tender for tax purposes.	ORL			Brock 2016, 29.
SZ-1865	1865	Switzerland	Banque Cantonale de du Valais is supported with at least 2.77M SFR in exchange bills over 1865-1869 from Canton Wallis treasury, amid liquidity problems. Bank fails in Dec. 1870, when Canton refuses further aid.	AHEL			Jöhr 1915, I, 173.
SAF-1865	1865-1869	South Africa	Bank crisis triggered by drought and overexpansion: multiple failures and liquidations (i.e. Montagu Bank Nov 1868, Frontier Commercial and Agricultural Bank 1869).	NO/I			Arndt 1928, 271ff.; Reinhart/Rogoff
IRL-1866	March 1866	Ireland	Spillover from Overend crisis. La Touche, Royal Bank, Munster Bank, Hibernian Bank request extra GBP 180,000 overdrafts at Bank of Ireland, which are granted. Union Bank of Ireland and European Bank fail.	AHEL			Hall 1949, 248ff.; O Grada 2010.

UK-1866	May 1866	United Kingdom	Overend-Guerney crisis: BoE lends freely upon “legitimate” collateral via advances and discounts (GBP 4m on May 11 th), until reserves dangerously low. Bank Act suspended May 1866, BoE lends freely at penalty rate, and once more to bill brokers, but in fact carefully manages collateral and counterparty risks (Flandreau and Ugolini).	BBEL, SBH			Clapham 1958, 1; Flandreau and Ugolini 2011.
IT-1866	May 1866	Italy	Government declares inconvertibility of bank notes (“corso forzoso”) in May 1866 after heavy runs and doubts over sovereign debt.	SBH			Toniolo and White 2015, 9f.; Reinhart/Rogoff
UG-1866	June 1866	Uruguay	Widespread bank runs after Overend Gurney collapse: Maua Bank on brink of collapse. Government aids Maua by allowing suspension of convertibility for six months.	SBH			Joslin 1963, 56; Marchant 1965, 185f.
GER-1866	June 1866	Saxony	Major bank runs and stock market crash upon outbreak of Austro-German war. Saxonian government advances 430,000 Thaler to Chemnitz Stadtbank to ease credit strain, Leipziger Bank offers systemic discounting.	BBEL			Poschinger 1877, 79, 92ff.
AUS-1866	July 1866	Australia	Spillover of volatility from U.K.: amid run on savings banks, public Treasury issues public guarantees (rhetorically, not in legal form).	BG, MC		STOW (partly)	Fitz-Gibbon and Gizycki 2001, 18.
ES-1866	July 1866	Spain	Bank of Spain on verge of suspending payments: restriction of withdrawals and negotiation of Rothschild loan to replenish metallic reserve.	AHEL, SBH		PRI-PRI (partly)	Martin-Acena 2018, 180.

BEL-1866	August 1866	Belgium	Spillover from Overend: private banks set up joint discounting facility, <i>Caisse d'avances sur marchandises</i> , but reject need for public involvement.	AHEL	SPV	PRI-PRI	Buyst and Maes 2008, 165.
EG-1866	1866	Egypt	Viceroy of Egypt provides assistance to Anglo-Egyptian Bank by repayment of previous loans at par prices; 50,000 GBP additional compensation for crisis losses.	AHEL			Baster 1935, 68.
BRL-1866	1866	Brazil	Government authorizes help for London Bank amid run from Overend volatility spillover, via Bank of Brazil and by discounting own Treasury notes at London Bank.	AHEL			Baster 1935, 140; Joslin 1963, 72.
CB-1866	December 1866	Cuba	Multiple suspensions of banks, threatening Banco Espanol de la Habana: captain general Joaquin de Manzano authorizes imposition of withdrawal limits and relaxes note coverage requirements. In 1867, permission to increase note issuance, capital raises.	CRL, SBH			Montaud 1995, 293ff.
CN-1866	1866-1867	China	At least six major banks fail in Hong Kong after Overend crash, including Agra and Masterman Bank, and Asiatic Bank. Accounts taken over by HSBC, CMBILC, and CBIAC. Agra Bank restructured. Shanghai banking guild engages in emergency lending to members, ca. 60-70,000 Tls.	AHEL, RES		PRI-PRI	McElderry 1976, 83; King 1987, 78ff.; Reinhart/Rogoff; Horesh, 2014, 151f.
IRL-1867	February 1867	Ireland	Concerns over La Touche Bank: Bank of Ireland grants several emergency loans, starting with GBP 45,000 advance in Feb. 1867. Eventual sale to Munster Bank.	AHEL			Hall 1949, 255ff.

CAD-1867	September 1867	Canada	Run on Commercial Bank: government persuades Montreal Bank to grant CAD 300,000 emergency loan.	AHEL		PRI-PRI	Breckenridge 1895, 307; Reinhart/Rogoff
FRA-1867	September 1867	France	Credit Mobilier bankruptcy: Banque de France “reluctantly” supports bank prior to demise, but demands FRF 10M owner participation.	AHEL, BAIL		PRI-PRI (partly)	Stoskopf 2002, 5.
IT-1868	1868	Italy	Upon declaration of Austro-German War, National Bank granted authority to suspend specie payments, but required to provide circulating notes to rest of banking system free of charge. In 1868, commercial banks’ note issuance liberalized and made legal tender.	BBEL, ORL, SBH			Conant 1915, 19f.; Reinhart/Rogoff
AT-1869	September 1869	Austria	Central bank grants liquidity assistance to Anglo-Oesterreichische Bank (400,000 Gulden).	AHEL			Pressburger 1966, 135f.
	September 1869	Hungary	Liquidity crunch in Hungary: banker’s association of Pest demands Gulden 3M emergency assistance, but central bank refuses broader assistance for Hungary.	NO/I			Popper 1911, 26.
BEL-1870	July 1870	Belgium	National Bank of Belgium affected by Franco-German war outbreak. Specie convertibility restricted to Brussels and Antwerp branches. Significant public suasion to prevent conversions.	SBH, other		STOW	Conant 1910, 20ff.; Reinhart/Rogoff
SZ-1870	August 1870	Switzerland	Establishment of private market mutual guarantee funds to sustain liquidity (i.e. <i>St. Gallische Garantie-Verein</i>). Crisis abates with end of Franco-German war.	AHEL	SPV	PRI-PRI	Gygax 1907, 171ff.; Reinhart/Rogoff

GER-1871	March 1871	Alsace-Lorraine	Credit crisis of savings banks after German annexation of Alsace-Lorraine: German authorities declare 7-month moratorium on all bills, then provide banks with FRF 4.2M in emergency funds.	BBEL			Des Essars 1896.
US-1871	December 1871	United States	Ocean Bank fails: New York Clearing House provides assistance, up to USD 2.6M. ^{xi}	AHEL		PRI-PRI	NY Tribune, December 13, 1871; Gorton and Tallman 2018, 77.
PR-1872	1872-1876	Peru	Gold coinage suspended; switch to silver. Legislation restricting issuance of bank notes, and requiring domestic debt coverage of bank bills. Banks are granted nitrate sales income in exchange for loans; Banco de Lima fails 1878.	BBCI, ORL			Camprubi Alcazar 1957, 142ff., 175ff.; Greenhill and Miller 1973, 117f.; Reinhart/Rogoff
BEL-1872	December 1872	Belgium	Fear of bankruptcy of Banque de l'Union: private banks establish discounting fund, with BEF 5M capital. NBB guarantees 20% of potential SPV losses.	AHEL, OLG	SPV	PRI-PRI (partly)	Crombois 1994, 15; Buyst and Maes 2008, 168.
AT-1873	May 1873	Austria	Central bank and leading Viennese banks establish assistance fund with 18M Gulden capitalization (central bank: 5M share), to provide emergency bank loans. Vienna stock exchange closed in May. Maerz (1982, 188): up to 88M Gulden discounting advances by "Aushilfs-Comite".	BBEL, SBH	SPV	PRI-PRI (partly)	Pressburger 1966, 140; Maerz 1982, 188; Charwarth 2011.

	May 1873	Austria	Government suspends Bank Act to enable full emergency lending by central bank (equivalent to Peel Act suspension). Suspension ends Oct-1874.	ORL			Pressburger 1966, 141.
	June 1873	Austria-Hungary	Public-private consortium founded to stabilize equity prices via joint purchases (12M Gulden fund, 1M central bank share), including Boden-Credit Anstalt equity.	BBEL	SPV	PRI-PRI (partly)	Pressburger 1966, 143f.; Baron, Verner, Xiong 2021.
US-1873	September 1873	United States	Amid bank runs, from September 1873, Treasury offers to redeem government bonds in bank portfolios at price not exceeding par in currency, ca. US\$ 13M volume taken up.	MLA			Sprague 1910, 40ff.; Reinhart/Rogoff
	September 1873	United States	New York Clearing House suspends publication of bank data between September-December 1893, and issues loan certificates. NY stock exchange closed for 19-29 th September.	BBEL, ORL, SBH		PRI-PRI	Gorton and Tallman 2018, 47, 50.
GER-1873	1873	Germany	Multiple high-profile bank failures over 1873-1875 amid “Gruenderkrise”, including Rheinische Effektenbank. Latter is not saved. No evidence of specific interventions.	NO/I			Krueger 1925, 83; Schularick and Taylor 2012.
IT-1873	1873	Italy	Credit and deposit contractions noted in De Bonis and Silvestrini (2014) – but no evidence of interventions.	NO/I			Schularick and Taylor; De Bonis and Silvestrini 2014.

CN-1873	1873	Canada; China	Crisis in Shanghai reported in McElderry (1976, 84f.), but no indications of interventions, including in King (1987) and others.	NO/I			McElderry 1976, 84f.; Reinhart/Rogoff
SZ-1873	1873	Switzerland	Global crisis affects Swiss banks and commerce: Berne Kantonalbank creates CHF 1M in 6-month “sola bills” to aid markets and meet surge in (emergency loan) demand.	MLA	Industry (partly)		Leuenberger 1912, 59.
BRL-1875	May 1875	Brazil	Financial crisis in Brazil: government extends Milreis 16M emergency loans to “salvageable” banks (Banco de Brazil, Banco Rural e Hypothecario, and Deutsch-Brasilianische), lets others fail.	AHEL			Summerhill 2015, 193.
CL-1875	July 1875	Chile	Banking crisis: government declares four-month suspension of payments and changes in accounting practices.	SBH, ORL			The Economist, Sep 18, 1875, 1107f.
RUS-1875	October 1875	Russia	“Strousberg failure”, default of Commerce and Loan Bank of Moscow. Assistance from Russian Treasury amid runs.	AHEL			The Economist, Nov 6, 1875, 1307f.; Reinhart/Rogoff
UG-1875	November 1875	Uruguay	Severe banking turbulence after suspension of debt payments and May decree on legal tender: all but two major banks survive. Private “compact” between Comercial, London and River Plate banks and merchants to transact in gold only and refuse new government money.	ORL		PRI-PRI	Joslin 1963, 58f.

BEL-1876	March 1876	Belgium	Crisis around collapse of “Philippart industrial empire”: private “Consortium d'assistance” formed to channel aid partly via Societe de Construction (BEF 17.2M), and directly to Banque de Belgique (BEF 9M). Treasury provides some guarantees on losses.	AHEL, OLG		PRI-PRI (partly)	Crombois 1994, 18f.; Buyst and Maes 2008, 168f.
PT-1876	April 1876	Portugal	“Several smaller financing houses” in Oporto receiving assistance by Bank of Portugal after loss of confidence (300,000 GBP). <i>Caxia Geral de Depositos</i> founded as additional public lender and state-guaranteed deposit bank.	AG, AHEL, ORL			Reis 1995, 474; Silva 2019; Baron, Verner, and Xiong 2021.
ARG-1876	May 1876	Argentina	Bank runs in Buenos Aires and Santa Fe: Banco de la Provincia suspends convertibility; Rosario government liquidates London Bank branch. Banco Nacional and Banco de la Provincia notes made legal tender.	SBH, ORL, RES			Baster 1935, 133ff.; Joslin 1963, 43ff.
SWE-1876	1876-1879	Sweden	Riksbank engages in heavy commercial bill and bond discounting in first phase of crisis; by mid-1879, bank recapitalization fund (financed by BoS) established to swap bad railroad bonds for public capital (<i>Jernvägshypoteksfonden</i>), SEK 23M volume.	BBAM, BBCI, BBEL	SPV (partly)		Oegren 2018, 58ff.; Reinhart/Rogoff
DK-1877	1877	Denmark	Danmark’s Nationalbanken provides emergency loans to “a few” banks. Ca. Dkr 6.7M total.	AHEL			Svendsen et al. 1968, 333f.; Abildgren et al 2011, 6; Reinhart/Rogoff

SAF-1877	1877	South Africa	General depression in South Africa and multiple bank failures. Some private consolidation, i.e. absorption of London and South Africa Bank by Standard Bank in 1877.	RES		PRI-PRI	Arndt 1928, 276ff.; Reinhart/Rogoff
CL-1878	July 1878	Chile	Government declares all bank notes legal tender amid run on <i>Banco Nacional de Chile</i> .	ORL			Brock 2016, 29.
UK-1878	October 1878	United Kingdom	City Bank of Glasgow crash. BoE acts as LLR through purchase of private securities, lends cash to individual banks upon collateral in Consols (London and County Bank 1879). Some ongoing debate over extent of LLR. ^{xii}	BBEL			Collins 1989, 523-525; Kynaston 2017, 211f.
AUS-1879	May 1879	Australia	Associated Banks of Victoria (industry body) aids Australian and European Bank, City of Melbourne Bank: at least 90,000 pounds lending offered.	AHEL	ASSOC	PRI-PRI	Fitz-Gibbon and Gizycki 2001, 19ff.
LUX-1879	1879	Luxemburg	Bankruptcy of Banque Nationale de Luxembourg in 1881, and subsequent bank failures during 1880s, but no reports of interventions in Lehnars (1994).	NO/I			Lehnars 1994;
GER-1880	1880	Germany	Some broad preferential lending by Reichsbank.	MLA	Market		Bopp 1953, 17ff.; Reinhart/Rogoff
SAF-1881	1881	South Africa	Collapse of Oriental Bank in 1879 includes South African subsidiaries. Reorganized locally as Bank of Africa in 1880. Multiple other bank failures in 1881 as diamond bubble bursts (i.e. Cape Commercial Bank, South African Bank).	RES		PRI-PRI	Arndt 1928, 281ff.; Jones 1996, 33f.; Reinhart/Rogoff

FRA-1882	January 1882	France	Collapse of railroad underwriters amid speculative boom, Union Generale and near-collapse of Suez. Banque de France refuses aid to Lyon Bourse, but aids Bourse de Paris, FRF 80M loan, with private risk-sharing.	AHEL		PRI-PRI (partly)	Liesse 1909, 176f.; Reinhart/Rogoff; White 2011, 81f.
	January 1882	France	Lyon Bourse forms private guarantee syndicate to calm fallout and enable loss-sharing: participation of Rothschild, Demachy, and Seilliere banks, at least FRF 60M volume.	OLG		PRI-PRI	Vitu 1882, 458ff.; Juglar 1889, 327.
EG-1882	January 1882	Egypt	For remainder of year, Egyptian international banking heavily distressed and almost wholly suspended given British invasion, rebellions.	SBH			Baster 1935, 71.
CN-1883	January 1883	China	Silk sector crisis and outbreak of Sino-French War destabilizing banks. Failure of Hu-Kwang Yung banker in December 1883 and collapse of up to 88 local Shanghai banks; by May 1884, Oriental Bank fails in China. Some private emergency lending for healthier banks, incl. HSBC.	AHEL		PRI-PRI	King 1987, 311; Reinhart/Rogoff; Sheehan 2018, 46ff.
MX-1883	March 1883	Mexico	Run on Banco Nacional Mexicano: bank saved by continued support from Banco de Londres and Banco Mercantil via pledge to keep accepting notes.	ORL		PRI-PRI	McCaleb 1920, 21.
ES-1883	June 1883	Spain	Heavy capital outflows threaten Bank of Spain and other banks after French stock market crash. Spain in response leaves gold standard and floats FX. ^{xiii}	SBH, other			Martin-Acena 2018, 183.
CB-1884	1884	Cuba	De facto suspension of convertibility and debt moratoria, amid major currency-cum-banking crises.	DPM, SBH			Fernandez 1987, 109ff.

IN-1884	1884	India	Default of Oriental Bank Corporation (OBC). Various intl. guarantee programs at counterparties: Indian guarantee for Chartered Mercantile Bank; Colonial governments in Ceylon, Burma, and Mauritius guarantee OBC notes to limit local crisis fallout.	AG, OLG			Horesh 2009, 51f.; Sheehan 2018, 61f.
MX-1883	April 1884	Mexico	Prior to Monte Piedad collapse, Banco Nacional Mexicano loans Pesos 232,000 in final attempt to stem reserve drain at competitor.	AHEL		PRI-PRI	McCaleb 1920, 23.
	May 1884	Mexico	Suspension of Monte Piedad. Forced merger of Banco Nacional and Banco Mercantil into Banamex.	RES			Maurer and Gombert 2004; Reinhart and Rogoff.
US-1884	May 1884	United States	New York Clearing House facilitates US\$ 3m private stabilization loan to Metropolitan National Bank; Clearing House suppresses release of bank-specific data in May 1884, and issues extra loan certificates.	BBEL, MLA, ORL		PRI-PRI	Sprague 1910; Reinhart/Rogoff; Gorton and Tallman 2018, 52f.
AT-1884	December 1884	Austria	Default of Prager Bank and crisis at Niederoesterreichische Escomptegesellschaft: central bank relaxes collateral requirements to prevent bank runs, and assists with ca. 15M Gulden total escompte (discount) expansion.	BBEL			Pressburger 1966, 194ff.
BEL-1885	1885	Belgium	No intervention reported in Buyst and Maes (2008) or contemporary news accounts.	NO/I			Schularick and Taylor 2012

DK-1885	1885	Denmark	“Liberal lending” on the part of the Danish central bank, amid wave of bankruptcies.	BBEL			Abildgren et al 2011, 6; Reinhart/Rogoff
IRL-1885	July 1885	Ireland	Munster bank crisis. Bank of Ireland grants special overdrafts of GBP 400,000, but bank fails by July 1885, with shareholders and creditors wiped out. (Later re-established as <i>Munster and Leinster Bank</i>).	AHEL			Hall 1949, 282ff.; O Grada 2010.
FIN-1887	1887	Finland	No interventions reported in Kuusterae and Tarkka (2012).	NO/I			Schularick and Taylor 2012.
IT-1887	November 1887	Italy	Real estate bust in Rome area: Tiber Bank, Naples Building Association and Italian Mortgage Bank Society receive at least Lira 103M in emergency loans from National Bank.	AHEL			Des Essars 1896, 167; Reinhart/Rogoff
NZL-1888	1888	New Zealand	At present, no evidence of interventions.	NO/I			Baron, Verner, Xiong 2021.
FRA-1889	March 1889	France	<i>Comptoir</i> crisis. Banque de France (BdF) “lifeboat operation”: direct 140m Francs BdF loans to <i>Comptoir</i> to satisfy depositors; Est. 195m Francs additional liquidity provision to Paris market by BdF in March-April 1889 (ibid., 113).	AHCI, BBEL, RES	SPV (partly)		Hautcoeur, Riva, and White 2014.
	March 1889	France	At insistence of BdF, creation of private bank syndicate to guarantee first 40m Francs of potential BdF loan losses;	AG	ASSOC	PRI-PRI	Hautcoeur, Riva, and White 2014.

			orderly liquidation of <i>Comptoir</i> over the medium term, under BdF supervision (Hautcoeur, Riva, and White 2014).				
BRL-1890	January 1890	Brazil	Emergency credits to Banco do Brazil and other banks by Barbosa Treasury amid liquidity squeeze.	BBEL			Mettenheim 2010, chapter 3.
ARG-1890	March 1890	Argentina	Bank runs on Banco Nacional and Banco de la Provincia de Buenos Aires. Government provides assistance, authorizes additional note issuance. By August, assistance extended to National Mortgage Bank and others.	AHEL			Della Paolera and Taylor 2001, 70ff.; Reinhart/Rogoff
	April 1890	Argentina	Suspension of Argentine Bank Act amid continued heavy runs centered around National Bank, Provincial Bank of Buenos Ayres.	SBH			The Economist, July 19, 1890, 920f.
JP-1890	May 1890	Japan	Major credit contraction, wave of bank failures: from May 1890, BoJ relaxes collateral requirements and significantly increases discounting activity. Est. JPY 36M extra discounts. ^{xiv}	BBEL			Schularick and Taylor 2012; Nakabayashi 2017, 233f.
UK-1890	November 1890	United Kingdom	Baring's crisis: GBP 15.7m in unfunded liabilities at bank, speculative assets in Argentine debt. BoE funds 7.5m credit line in Nov. 1890, after government agrees to share losses.	AHEL			Reinhart/Rogoff; White 2016.
	November 1890	United Kingdom	"Guarantee Fund" syndicate set up to share wind-down of bad assets (White 2016: essentially "good bank, bad bank" model).	BBAM	SPV	PRI-PRI	White 2020.

US-1890	November 1890	United States	New York Clearing House suspends publication of weekly data in November over Baring crisis spillovers; approves issuance of clearing house certificates (ca. USD 12.5M).	BBEL, ORL		PRI-PRI	Gorton and Tallman 2018, 45, 51.
SWE-1890	November 1890	Sweden	Riksbank aids commercial banks amid liquidity squeeze, by discounting freely. Est. at SEK 880k (net).	BBEL			Fregert 2018, 114ff.
FIN-1890	November 1890	Finland	Bank of Finland rescues Kansallis Bank via LLR operation, along Bagehotian lines. Peak est. at FIM 3.5M.	AHEL			Pipping 1969, 291; Kuusterae and Tarkka 2011, I, 325f.
ES-1890	1890	Spain	At present, no crisis interventions identified: BdE balance sheet broadly unchanged.	NO/I			Schularick and Taylor; Martin-Acena 2018, 182ff.
PG-1890	1890	Paraguay	Political revolts and general volatility over 1890-91. Financial panic reported at Asuncion in June 1891. At present, no specific crisis interventions identified.	NO/I			Annual Register 1891, 421; Reinhart/Rogoff
PT-1890	1890	Portugal	Financial crisis ending in state default by 1892: Treasury extends bank guarantees via Banco do Portugal to aid commercial banks (at least 1,044 <i>contos</i> by 1892); Two-month moratorium declared May 1891.	BBEL, DPM, OLG			Lains 2008, 501; Reinhart/Rogoff; Branco, Sousa, and Valerio 2012, 7.
ARG-1890	July 1891	Argentina	Further heavy bank runs and wave of failures: general debt moratorium declared.	DPM			Baster 1935, 147; Reinhart/Rogoff

SAF-1890	July 1890	South Africa	Bubble bust related to gold market speculation, toppling Union Bank in July, and Paarl Bank. Rescue attempts for Cape of Good Hope Bank from De Beers in conjunction with government and Standard Bank – some minor support of bank's share price, but bank fails. Private emergency recap for Stellenbosch District Bank to enable re-opening.	AHCI		PRI-PRI	Arndt 1928, 288ff.; Reinhart/Rogoff
IT-1891	1891	Italy	Real estate bust, taking some banks with it. Tariff war with France. Interventions follow in 1893-4 (s.b.).	NO/I			Reinhart/Rogoff
FRA-1891	March 1891	France	Failure of <i>Societe des Depots et Comptes Courants</i> : Private banker syndicate advances 15m Francs; Banque de France rediscounts 50m Francs of Societe's loans to secure depositors and creditors.	AHEL, AG, OLG		PRI-PRI (partly)	Liesse 1909, 190;
BRL-1890	1891	Brazil	More than GBP 2M in emergency loans to four private regional banks by Lucena Treasury.	AHEL			Mettenheim 2010, chapter 3.
GER-1891	November 1891	Germany	Bank runs triggered by default of <i>Hirschfeld & Wolff</i> , and <i>E. Maass</i> after speculative bets on contracts for difference. Government reacts belatedly (over 1892-1896) with stock market reforms and curbs on futures speculation.	ORL			Reinhart/Rogoff; Tilly 2013, 189ff.
HK-1892	1892	Hong Kong	Major bank failures from April 1891 (B. and A. Hormusjee, Dickson & Co. and Browne & Co. of Penang); New Oriental Bank failure by 1892; HSBC assists some affected local shareholders, i.e. in Kechang Filature Association. ^{xv}	AHEL		PRI-PRI	King 1987, 404ff., 438ff; Baron, Verner, and Xiong 2021.

AUS-1893	March 1892	Australia	Associated Banks of Victoria (industry body) declares full mutual assistance during bank crisis in March 1892.	BG	ASSOC	PRI-PRI	Fitz-Gibbon and Gizycki 2001, 24; Merrett 2013.
	May 1893	Australia	Victorian state government declares bank holiday in May 1893; several banks receive permission to restructure by converting deposits into preference shares. Government of New South Wales declares bank notes legal tender via 'Bank Issue Act' of May 1893. In April, New South Wales declares no further banks in the state will be allowed to fail; 50% of deposits at suspended banks reimbursed in Treasury notes.	SBH, BG, ORL			Hickson and Turner 2002, 162ff.; Reinhart/Rogoff
	May 1893	Australia	Government makes large deposit into City Bank of Sydney for six months.	AHEL			Hickson and Turner 2002, 162ff.;
US-1893	June 1893	United States	New York Clearing House issues loan certificates in August 1893 amid market turbulence (USD 37.4M by Aug.17). In August, New York banks suspend deposit convertibility.	BBEL, SBH	Market	PRI-PRI	Gorton and Tallman 2018, 55, 113; Reinhart/Rogoff
IT-1893	August 1893	Italy	<i>Banca Romana</i> is liquidated through founding of new Banca d'Italia, which takes over all assets and liabilities. Total government costs ca. 60M lire to bail out creditors, asset write-downs.	AG, AHCI, RES			Toniolo 1995, 297; Pani 2017.

	August 1893	Italy	Amid bank runs, banks are allowed to issue notes above existing legal limits, paying a tax below the discount rate. Metallic reserve requirement upheld. Several failures.	MLA, ORL			Magee 1911, 436.
NL-1893	1893	Netherlands	Spillover from global panic in Amsterdam, but no evidence of interventions at present.	NO/I			Schularick and Taylor 2012.
MX-1893	1893	Mexico	Sovereign debt crisis and domestic agrarian stress, some market spillover from New York financial fallout - but no interventions mentioned in Marichal (1995, 369ff.) and others.	NO/I			Marichal 1995, 369ff.
UG-1893	1893	Uruguay	Failure of the National Bank. Various legal responses, including renunciation of private banks to issue notes, restriction of further bank establishments.	ORL			Conant 1915, 516f.; Reinhart/Rogoff
CB-1893	September 1893	Cuba	Widespread bank suspensions (incl. Banco del Comercio), liquidity squeeze since June; Havana City Council provides Pesos 4M loan guarantee to Banco Español de la isla de Cuba, inducing private recap, as well as partial (1/3) note guarantee.	OLG			Montaud 2004, 151ff.
NZL-1893	June 1894	New Zealand	Government guarantee on BNZ's GBP 2M preference shares issued in London.	AHCI			David (ed.) 1894, 4ff.; Hunt 2009, 30; Reinhart/Rogoff.

CAD-1894	December 1894	Canada	Collapse of Commercial Bank and Union Bank of Newfoundland: via passing of emergency Bank Note Act, Union Bank notes are guaranteed at 80 cents on Dollar, Commercial notes at 20 cents on Dollar.	AG, OLG			Boston Globe, December 11, 1894.
CL-1895	February 1895	Chile	Widespread bank runs amid Chilean transition to gold standard. Government extends Pesos 8M to banks of issue to stabilize situation.	BBEL			Financial Times, July 12, 1898.
TK-1895	1895	Ottoman Empire	Run on Ottoman Imperial Bank by Armenians in Constantinople: debt moratorium and suspension of convertibility declared.	DPM, SBH			Baster 1935, 99.
NZL-1893	September 1895	New Zealand	Recapitalization of BNZ with GBP 500,000 government participation. Asset Realization Board (ARB) established to outsource bad assets.	AHCI, BBAM	SPV		Hunt 2009, 30; Reinhart/Rogoff.
	October 1895	New Zealand	“Good assets” at troubled institution, Colonial Bank, taken over by BNZ with tacit government involvement.	AHAM			HRNZ 1896, LIXff.
FRA-1896	February 1896	France	Banque de France extends emergency liquidity on good collateral to brokers after gold crash, financial volatility, ca. FRF 30.493M.	BBEL			White 2011, 84f.
IN-1897	March 1897	India	Reports of severe financial crisis resulting from the closure of the Mint. Unclear if interventions occurred.	NO/I			Financial Times, March 22, 1897.

RUS-1896	1896	Russia	[other literature dates crisis from 1899, c.f. below]				Reinhart/Rogoff
BRL-1897	1897	Brazil	Triner (2000) and Summerhill (2015) report no interventions.	NO/I			Reinhart/Rogoff
CN-1897	1897	China	Refers to “Discount Storm” that sees bankruptcy of up to 26 discount houses. No government intervention reported.	NO/I			Zhaojin 2002, 91f.; Reinhart/Rogoff.
NL-1897	1897	Netherlands	No interventions found in standard literature.	NO/I			Reinhart/Rogoff
AUS-1897	November 1897	Australia	Queensland issues one-year deposit guarantee, fearing bank run on Queensland National Bank.	AG			Fitz-Gibbon and Gizycki 2001, 32.
UG-1898	1898	Uruguay	Bank runs from September 1898, but no reports of interventions in Conant (1915, 517f.), Yaffe (2003) and others.	NO/I			Reinhart/Rogoff
NOR-1898	July 1898	Norway	“Kristiana Crash”: Norges Bank over 1889-1901 provides LLR support, organizes restructuring and liquidation process for banks: Lie (2020, 102) suggests peak provision of NOK 117M. Reimbursement of depositors and other creditors of <i>Depositbanken</i> and later <i>Industriebanken</i> .	AG, BBEL, RES			Reinhart/Rogoff; Gerdrup 2003, 18f.; Lie 2020.
	July 1899	Norway	Private guarantee on NOK 1.2M of troubled <i>Den Nordiske Aktienbanken</i> liabilities, as precondition for public liquidity support.	OLG		PRI-PRI	Lie 2020, 103.

	December 1899	Norway	Separate attempts over 1899-1901 to save <i>Industribanken</i> : overnment provides support partly via placement of deposits (NOK 4M). Norges Bank provides ca. NOK 3.25M in extra discounting. Eventual liquidation. ^{xvi}	AHEL, RES			Lie 2020, 104.
CL-1898	August 1898	Chile	Heavy bank runs in Santiago; moratoria granted to banks in July; by August, government guarantees all bank note issuance. Switch to paper money and USD 50M legal tender note issuance to stabilize banks.	BG, MLA, SBH	Market (partly)		Subercaseaux 1911, 683f.; Reinhart/Rogoff; Brock 2016, 29.
SWE-1897	1899-1909	Sweden	Riksbank established special lending facility to aid note-issuing banks (enskilda banks) in transition to withdraw own notes. Not associated with runs on banks.	BBEL			Reinhart/Rogoff; Fregert 2014, 357.
RUS-1896	June 1899	Russia	Systemic banking crisis: Russian State Bank provides extensive LLR support (ca. 2.7BN Roubles to 1902), as well as direct liquidity provision to private investor community (call loans) and own security purchases.	BBCI, BBEL, MLA		STOW (partly)	Lychakov 2018, 82ff.
CN-1900	June 1900	China	Wave of capital flight from Shanghai after Boxer Rebellion outbreak: Shanghai officials, Bankers guild, and foreign banks strike “compact” to prevent financial collapse by issuing non-redeemable paper money, committing to continued private liquidity provision (via “chop loans”).	BBEL, other		PRI-PRI (partly)	McElderry 1976, 92f.
BRL-1900	September 1900	Brazil	GBP 900,000 emergency loan and restructuring of Banco da Republica amid runs, including swap of bank debt with Treasury notes (ownership remains mixed public-private).	AHEL, RES			Reinhart/Rogoff; Mettenheim 2010, chapter 3.

FIN-1900	November 1900	Finland	Bank of Finland intervenes in Bank of Agriculture and Industry: special Lombard credits and management change in autumn 1900; enforced shut-down in winter 1902 after orderly liquidation fails. At least 1.5M Markka public losses by 1917. ^{xvii}	AHEL, RES			Kuusterae and Tarkka 2011, I, 348f.
GER-1901	June 1901	Germany	Crisis at Prussian and Pfandbrief banks. Private emergency help for Pomeranian Mortgage Bank from Deutsche Bank and Darmstaedter Bank; Prussian mortgage banks provide 15M Mark aid to Preussische Hypothekenbank and Deutsche Grundschuld Bank. Bopp (1954, 202) suggests RM 323M extra lending by Reichsbank at height of volatility in June to stop runs.	BBEL		PRI-PRI	Kritzler 1903, 4ff.; Financial Times, June 11, 1902; Bopp 1954; Reinhart/Rogoff
JP-1901	April 1901	Japan	Wave of failures in Osaka and Central/Southern provinces, including run on Yokohama Specie. Suasion by government to encourage mergers among smaller banks; unspecified “assistance” from Bank of Japan to banks.	other		PRI-PRI (partly)	Financial Times, April 27, 1901; Patrick 1999; Reinhart/Rogoff
DK-1902	1902	Denmark	Abildgren et al (2011, 6) and others do not report interventions. Nationalbanken lending y-o-y actually down.	NO/I			Reinhart/Rogoff
US-1905	December 1905	United States	Failure of Chicago National Bank, Home Savings Bank, and Equitable Trust Companies: Clearing House announces full guarantee for depositors (vol. ca. USD 27.1M) to prevent banking panic.	AG		PRI-PRI	Financial Times, December 19, 1905.

RUS-1905	1905	Russia	Amid revolutionary upheaval, run on Savings Banks. Government issues order limiting gold withdrawals for all funds at State Bank and branches.	SBH			Bernatzky 1928, 349.
NOR-1905	August 1905	Norway	Dissolution decision with Sweden leads to spike in uncertainty: “fairly large cash withdrawals at banks...banks had to resort to loans from Norges Bank”.	BBEL			Gjedrem 2005, 4.
CAD-1906	1906	Canada	Fraudulent Ontario Bank is arranged to be taken over by Bank of Montreal, which guarantees deposits. Other banks in turn jointly guarantee Bank of Montreal (CAD 4.3M vol.). Royal Bank of Canada coordinates.	AHCI, BG, other		PRI-PRI	Ferrier 1913, 39ff.; Reinhart/Rogoff; Martin 2014, 5f.
EG-1907	January 1907	Egypt	Runs on banks ensue from January 1907 (prior to NY troubles), including failure of Alexandria Bank. Stock exchange limits trading permits in April to curb speculation.	ORL			The Economist, April 27, 1907; Noyes 1909; Reinhart/Rogoff
IT-1907	August 1907	Italy	<p>“Ramifera affair” and general sharp financial volatility: Banca d’Italia intervenes from autumn 1906 to support money markets, and over 1907 guarantees equity of sliding consortium (SBI), with private participation. Pledges to ensure general market liquidity.</p> <p>At least Lira 140M fiscal aid, of which 100M advance coupon payments.</p>	BBEL, MLA, OLG		PRI-PRI (partly)	Bonelli 1982, 56ff; Valeria 2016, 15ff.; Reinhart/Rogoff
SWE-1907	September 1907	Sweden	Banks under strain since May 1907; Riksbank steps in as lender of last resort and discounts bills freely from	BBEL			Schoen 2000, 263f.; Reinhart/Rogoff; Grolecka-Messi,

			September 1907 (est. SEK 320M in extra support via domestic bills). At least 16 banks still allowed to fail.				Kenny, and Oegren 2021.
US-1907	October 1907	United States	Treasury shores up balances of New York City national banks amid Knickerbocker panic: US\$ 36M in gold. “Arrangement” between Treasury and large banks to facilitate cash disbursements to trust companies.	AHEL, other			Gorton and Tallman 2018, 69.
	October 1907	United States	New York Clearing House issues up to US\$75M in loan certificates from Oct.	BBEL		PRI-PRI	Gorton and Tallman 2018, 47.
NL-1907	October 1907	Netherlands	Severe spillover to Amsterdam market from Knickerbocker failure; “numerous failures and liquidations” but no evidence of relevant interventions.	NO/I			The Economist, October 19, 1907; Schularick and Taylor.
GER-1907	October 1907	Germany	Severe spillover of Knickerbocker crisis in Hamburg (“biggest crisis since 1857”); failure of Haller & Soehle Bank. No reported interventions.	NO/I			The Economist, October 26, 1907; Schularick and Taylor.
FRA-1907	October 1907	France	Banque de France discounts French commercial paper in return for own gold reserves, accepting 80M Francs in gold outflows to stabilize London and French markets. Additional domestic emergency lending from Banque de France, ca. 0.2% of GDP.	BBEL, MLA			Liesse 1909, 230f.; Reinhart/Rogoff; Leclercq 2010, 267; Rodgers and Payne 2014, 424ff..

JP-1907	1907	Japan	Severe instability in aftermath of Russo-Japanese War. Bordo and Eichengreen (1999) report BoJ “interventions” into several banks, but exact nature unclear. No interventions reported in Tamaki (1995).	BBEL			Bordo and Eichengreen 1999, 65f.; Reinhart/Rogoff
SZ-1907	October 1907	Switzerland	Knickerbocker crisis spills over: multiple small banks fail. Newly-established SNB discounts freely, at comparatively low rates (“leaning against unruly waves”).	BBEL			Bachmann, Schnyder, Weber 1932, 52, 62ff.
CAD-1906	October 1907	Canada	Government offers CAD 10M in emergency credit for banks amid panic spillover from U.S. (CAD 5.1M drawn).	BBEL			Martin 2014, 10f.
CL-1907	December 1907	Chile	Looming default of Mobiliario Bank. Government “grants facilities” to stem deposit runs: short-term public bill issuance forwarded to troubled banks.	BBEL			Financial Times, December 9, 1907; The Economist, December 21, 1907; Reinhart/Rogoff
MX-1907	1907-1908	Mexico	Spillover from U.S. volatility: intervention by National Bank of Mexico and Banco Central into Yucatan Banks, forced mergers and forced balance sheet clean-up.	RES			Conant 1910, 90f.; Reinhart/Rogoff
	1908	Mexico	Ca. Pesos 0.47M emergency lending by Banamex to Banco de Michocan and Banco de Campeche.	AHEL		PRI-PRI	Maurer 2002, 58f.

	June 1908	Mexico	Government establishes <i>Caja de Préstamos para Obras de Irrigación y Fomento de Agricultura</i> , capitalized with Pesos 50M, which aids banking system amid continued financial volatility. Direct purchases of bad loans.	BBAM, BBEL	SPV		Conant 1910, 97; Maurer 2002, 66ff.
DK-1907	February 1908	Denmark	“Lending fund” for struggling banks established by Treasury and Nationalbanken, 20M crown volume.	BBEL	SPV		Svedsen and Hansen 1968, 377.
	February 1908	Denmark	Failure of Freeholder’s Bank, looming failure of Detailhandlerbank. Treasury and leading private banks provide guarantee for liabilities at both banks, 20M crown volume (50:50 split).	BG		PRI-PRI (partly)	Conant 1915, 300f.; Abildgren et al 2011, 6; Reinhart/Rogoff
ID-1908	April 1908	India	“Crop failures and excessive obligations to European banks”. Indian government “freely offers” Sterling drafts on London to help merchants, drawing down London gold reserve. GBP 8M taken up by August, when crisis subsides.	BBEL			Conant 1915, 583ff.; Reinhart/Rogoff
CAD-1906	January 1908	Canada	Sovereign Bank asks for CBA member bank “open door liquidation” and advances, triggering multi-year liquidation process.	AHEL	ASSOC	PRI-PRI	Carr, Mathewson, and Quigley 1995, 1139f.
US-1909	September 1909	United States	Failure of Columbia Bank and Trust, largest bank in Oklahoma. Bank taken into bank board management, orderly liquidation. Oklahoma banks recap guarantee fund, fully cover deposits, and bear USD 580k losses.	AG, RES	SPV	PRI-PRI	Robb 1921, 43ff.; Warburton 1959, 30.

SZ-1910	1910	Switzerland	No reports of interventions in Bachmann, Schnyder, and Weber (1932) or others.	NO/I			Reinhart/Rogoff
CN-1910	July 1910	China	Multiple bank failures in Shanghai threatening wider crash: Chinese public authorities, Chamber of Commerce, and private banks jointly broker GBP 400,000 (Tls. 3.5M) foreign emergency loan for native banks. Shanghai Taotai guarantees loan. Separate Tls. 7M public assistance to Yen I-Pin banks.	BBEL, OLG		PRI-PRI (partly)	Financial Times, July 27, 1910; McElderry 1976, 105ff.; Reinhart/Rogoff;
UK-1911	August 1911	United Kingdom	Looming default of Yorkshire Penny Bank: Bank of England coordinates recapitalization and guarantee commitment from private banks: BoE contributes GBP 250,000 to guarantees.	AG, AHCI		PRI-PRI (partly)	Clapham 1958, II, 412.
GER-1911	September 1911	Germany	Agadir Crisis sparks severe bank runs in Berlin and stock market plunge. Reichsbank assists banks with “considerable resources”, two banks in Goettingen fail. Exact extent is unclear, but estimated at “far above Mark 4M”.	BBEL			Gooch and Temperley eds. 1932, 796ff.; Feldman 1993, 30.
EG-1911	September 1911	Egypt	Failure of Bank of Egypt, coupled with Italian invasion of Tripolis creates fears of major banking panic: private consortium, led by National Bank of Egypt, forms to ensure orderly liquidation of Bank of bank Egypt, and reimbursement of depositors, other creditors.	AG, OLG		PRI-PRI	Baster 1935, 77f.
CN-1910	October 1911	China	Revolution breaks out in October – sharp tightening of money, wave of capital flight to foreign banks. Nanking Mint ordered to mint extra ca. Chinese \$ 4M to ease money	DPM, MLA, other		PRI-PRI (partly)	McElderry 1976, 118f.

			tightness – restrictions on interest rates, lengthening of repayment dates.				
SZ-1912	July 1912	Switzerland	Looming default of Thurgauische Hypothekenbank: central bank coordinates CHF 60.6M in emergency loans, with private participation.	AHEL		PRI-PRI (partly)	Bachmann, Schnyder, Weber 1932, 415f.
AT-1912	November 1912	Austria	Austrian Central Bank lends freely in Bagehotian fashion, given bank volatility during First Balkan War. Ca. 400M crowns extra banknote issuance.	BBEL			Jobst and Rieder 2016, 146-149.
MX-1913	September 1913	Mexico	From September, various banks join to provide emergency assistance to stumbling Banco Central: Banamex provides Pesos 2.55M, others further Pesos 3.8M.	AHEL		PRI-PRI	Maurer 2002, 141.
	December 1913	Mexico	Bank runs focusing on London and Mexico Bank; bank holidays announced. Bank notes declared legal tender January 1914; “Guaranty Fund of the Fiduciary Commission” established to guarantee private notes (total 1910: Pesos 295M), financed by private contributions.	OLG, ORL, SBH	SPV	PRI-PRI (partly)	Banker’s Magazine 3/1914, 403ff.; INEGI 1985, ii, 797; Reinhart/Rogoff
IN-1913	1913-1916	India	Recurrent bank failures, including Indian Specie Bank and Credit Bank of India, ca. GBP 300,000 of suspensions in Oct-1913 alone. Delayed regulatory response in new Companies Act. Reports of provincial bank assistance to weaker members via bill accommodation, credit easing.	AHEL		PRI-PRI	Financial Times, November 25, 1913; Reinhart/Rogoff
CAD-1914	January 1914	Canada	Bank of Vancouver receives emergency credits from CBA association, but bank liquidated by December.	AHEL	ASSOC	PRI-PRI	Carr, Mathewson, and

							Quigley 1995, 1141.
SZ-1914	March 1914	Switzerland	Collapse of Banca Popolare Ticinese: emergency loan of CHF 1.5M granted by SNB, but bank fails by March.	AHEL			Bachmann, Schnyder, Weber 1932, 416.
	June 1914	Switzerland	Looming default of Ersparniskasse Kanton Uri: Association of Swiss Kantonalbanks, and SNB jointly assist with CHF 5M. Ersparniskasse survives and is restructured as Urner Kantonalbank.	AHEL	ASSOC (partly)	STOW	Bachmann, Schnyder, Weber 1932, 416f.
BEL-1914	July 1914	Belgium	Brussels stock exchange closed in late July, capital flight upon declaration of war. Banque de Reports, de Fonds Publiques et de Dépôts d'Anvers receives unspecified NBB help in split-up, amid fears of wider panic.	RES, SBH			Sprague 1915, 509; Reinhart/Rogoff; Buyst and Maes 2008, 169, 171.
	August 1914	Belgium	Belgian private banks form BEF 100M lending consortium upon German invasion, to provide mutual help.	BBEL	SPV	PRI-PRI	Crombois 1994, 21.
IRL-1914	July 1914	Ireland	Dublin stock exchange closed until January 1915.	SBH			Thomas 1986.
FRA-1914	July 1914	France	Paris stock exchange closed in late July.	SBH			Sprague 1915, 509; Reinhart/Rogoff

BRL-1914	August 1914	Brazil	Conversion Office closed upon war outbreak; Treasury lends 100,000 contos to banks directly; special commercial paper rediscount facility at Banco do Brazil established by 1915. State of San Paulo intervenes into Bchasp Bank, acquiring 30% stake (fully nationalized by 1926).	AHCI, BBEL, SBH			Triner 2000, 52f., 168; Baron, Verner, Xiong 2021.
EG-1914	August 1914	Egypt	Run on deposit banks upon war outbreak in Europe, capital flight; government decree on August 2 makes currency inconvertible and bank notes legal tender. National Bank of Egypt accommodates emergency liquidity upon application, meeting demand “with full sense of the public office required of them”. Commercial bill moratorium, postponing debts to November; bank holidays enacted.	AHEL, DPM, ORL, SBH			Economic Journal 1915, 84ff.; Baron, Verner, Xiong 2021.
JP-1914	1914	Japan	Tokyo stock exchange remains open during war.	NO/I			Reinhart/Rogoff
NL-1914	July 1914	Netherlands	Amsterdam stock exchange closed from July, until February 9, 1915.	SBH			Jopp 2014, 3; Reinhart/Rogoff
GER-1914	July 1914	Germany	Stock exchanges closed to January 1918.	SBH			Fischer 2007, 146f.
UK-1914	July 1914	United Kingdom	BoE discounts liberally and supplies funds after war outbreak to cover acceptance bills due (ca. GBP 1.8M extra over Aug-Oct.); “general moratorium” on contracted bank payments (freezing deposits); moratorium for acceptance house bills in August via Postponement of Payments Act.	BBEL, DPM			Roberts 2013; Anson et al. 2017; O’ Sullivan 2018, 111; Reinhart/Rogoff

US-1914	July 1914	United States	<p>New York stock exchange closed Jul 31st amid war outbreak.</p> <p>Aldrich-Vreeland Act triggered which enables banks to issue own notes against 3% tax. Act is further amended in August to remove issuance limits, with USD 510M extra issuance to October 31st. New York Clearing House issues some USD 125M extra loan certificates. Treasury provides USD 500M for emergency loans upon application, particularly for state-chartered banks and trust companies.</p>	SBH, BBEL, ORL		PRI-PRI (partly)	Sprague 1915, 513, 517f; Wicker 2005, 44ff.; Silber 2014, 66ff.
ROM-1914	July 1914	Romania	Bucharest stock exchange closed to October 1919.	SBH			Stoenescu et al. 2014, 245.
RUS-1914	July 1914	Russia	Run on private banks upon war outbreak, massive deposit withdrawals. State Bank extends substantial emergency liquidity: est. at RUB 428M over Jul-Aug. alone.	BBEL			Bernatzky 1928, 374ff.
	July 1914	Russia	Multiple regional-level bank debt moratoria and deposit withdrawal limits announced, esp. in Polish provinces.	DPM, SBH			Bernatzky 1928, 374ff.
AT-1914	July 1914	Austria	Vienna stock exchange closed in late July. Central bank restricts convertibility of foreign FX. Moratorium on debt issued prior to August 1, 1914. Kronen 17M in private bank mutual emergency assistance to clear frozen contracts amid fears of broader panic.	AHEL, DPM, ORL		PRI-PRI (partly)	Sprague 1915, 509; Pressburger 1966, 282; Baltzarek 1973, 109.
	August 1914	Austria	Suspension of Bank Act to enable emergency assistance for state and banking sector. Extension of acceptable collateral, to include industrial equity.	BBEL, ORL			Pressburger 1966, 288, 297.

NOR-1914	August 1914	Norway	In August, Norway suspends gold standard, but stock markets are not closed. “Speculative mania” from 1915.	SBH			Knutsen 1991, 46ff.; Reinhart/Rogoff
PR-1914	August 1914	Peru	“Temporary” closure of major banks of issue and financial distress; decree of August 27, 1914, permits free minting of silver for 30 days to boost circulation.	MLA			Banker’s Magazine, 5/1915, 574f.; Baron, Verner, Xiong 2021.
GRE-1914	August 1914	Greece	Fearing bank collapses, NBG fixes stock market prices of listed banks (and other companies): all private sector liabilities required to adjust; government suspends deposit withdrawals.	ORL, SBH			Eulambio 1924, 49ff.
TK-1914	August 1914	Turkey	Most international banks suspend payments from early August; domestic banks, including Imperial Ottoman as de facto central bank, restrict withdrawals.	SBH			Financial Times, August 14, 1914; Baron, Verner, Xiong 2021.
IT-1914	August 1914	Italy	Moratorium on debt payments and limits on deposit withdrawals as bank runs on several institutions ensue from August; Banca d’Italia supplies liquidity freely to reduce risk of bank failures.	DPM, SBH, BBEL			Toniolo 2018, 305f.; Reinhart/Rogoff
ARG-1914	August 1914	Argentina	Severe banking crisis: Banco de la Nacion is equipped with LLR powers via emergency Rediscount Law (Ley 9479), engaging in heavy rediscounting below market rates. Est. Pesos 72M extended in 1914. Bolsa stock market closed in August, September.	BBEL, SBH			Della Paolera and Taylor 2001, 174ff.; Nakamura and Zarazaga

							2001; Regalsky 2015, 53f.
ES-1913	September 1914	Spain	Barcelona stock exchange closed in 1914; in 1914 widespread bank runs, and Banco de Espana provides wider system liquidity after suspension of Credito de la Union Minera, which receives direct Reales 20M loan.	BBEL, SBH			Alonso Olea 2002, 326f.; Martin-Acena 2012, 104f.; Schularick and Taylor 2012.
CL-1915	1915	Chile	Budget strains and geopolitical volatility, but no evidence of bank sector interventions.	NO/I			Reinhart/Rogoff
UK-1914	1915-	United Kingdom	During War, Bank of England guarantees various acceptance bill issuances, including GBP 1.6M Anglo-Austrian bills to “save a panic”.	OLG			Jones 1993, 228.
AT-1916	1916	Austria-Hungary	Government establishes “Geldinstitut-Zentrale” to “protect the interest of the Hungarian financial institutions”: public-private corporation is allowed to provide emergency assistance, discount assets, or arrange liquidations/amalgamations of banks.	BBEL, RES	ASSOC	PRI-PRI (partly)	LoN 1931, 172.
CN-1916	May 1916	China	After government defaults on loans made by Bank of China, banking consortium props up Bank of China to avoid full government intervention.	AHEL		PRI-PRI	Ji 2003, 104.
JP-1916	December 1916	Japan	Securities market collapses in Osaka and Tokyo following German peace proposal. Industrial Bank and Bank of Japan	BBEL			Tamaki 1995, 122; Reinhart/Rogoff.

			provide emergency lending to stock markets and brokers, up to JPY 15M (2x).				
US-1917	July 1917	United States	Upon U.S. entering of World War I, amendment to Federal Reserve Act (1916) allowing member banks wider discounting, with preferential discount rates. Non-member bank notes with proper indorsement conditionally accepted.	BBEL			Bordo and Wheelock 2010, 75, 97.
	July 1917	United States	Federal Reserve pledges “reasonable accommodation” to savings banks and trust companies in case of deposit withdrawals.	AG			Federal Reserve Bulletin 1917, 497ff.
CN-1917	October 1917	China	Expropriation and liquidation of Deutsch-Asiatische Bank (DAB) after Chinese declaration of war against Germany.	RES			Moazzin 2015, 57ff.
RUS-1917	December 1917	Russia	Full nationalization of banking system following Bolshevik Revolution. “Small depositors” to be “fully protected”.	AG, RES			Bunyan and Fisher 1934, 323.
SZ-1917	1917	Switzerland	Joint rescue of Hypothekenbank Basel and Schweizer Bodencredit-Anstalt via de facto SNB guarantees on CHF 37M portfolio, with lead in rescue from private banks.	AHEL, OLG		PRI-PRI (partly)	Bachmann, Schnyder, Weber 1932, 417.
PT-1919	1919-1920	Portugal	Bank of Portugal makes few direct loans to weak institutions, including GBP 100,000 loan in 1919 to BEP (defunct by 1925).	AHEL			Reis 1995, 484; Reinhart/Rogoff
NOR-1919	1919	Norway	At present, no evidence of interventions distinct of 1921 (s.b.).	NO/I			Baron, Verner, Xiong 2021.

US-1920	1920	United States	Cotton price bubble bust and financial panic: Atlanta Fed deploys separate liquidity assistance in district, “rushing cash to the afflicted region”.	BBEL			Richardson and Troost 2006, 6.
	December 1920	United States	North Dakota bank runs: private banker convention agrees to pool resources to stem heavy withdrawals.	AHEL		PRI-PRI	Dana ed., 1920, 2284.
	1921	United States	Fed authorizes reserve banks to discount paper for non-member banks amid bank stress, clear uptick in total bank discounting over 1920-1 amid wider stress.	BBEL			Tallman 2010, 105ff.
	July 1921	United States	Scandinavian American Bank of Seattle crash (USD 15M deposits): SF Fed oversees restructuring attempts - bailing in stakeholders (USD 1M), extra levy of 1.5% of deposit vols. of other banks in guaranty system.	AG, RES	SPV	PRI-PRI	Preston 1922, 352ff.
IN-1920	September 1920	India	“Imperial Bank of India Act” passed after period of severe instability over 1913-18, leading to bank amalgamation and founding of central bank.	ORL			Parameswaran 2001, 7; Reinhart/Rogoff
SZ-1921	November 1920	Switzerland	“Extraordinarily high” emergency credit by SNB to Neuenburger Kantonalbank, to take over troubled Caisse d’Epargne de Neuchatel (est. CHF 107M).	AHEL			SNB 1921, 18; Bachmann, Schnyder, Weber 1932, 417f.
ES-1920	December 1920	Spain	Banco de Barcelona fails. Bank of Spain first resists broader sector aid, then establishes “limited line of credit” after spreading bank runs. Peak of Pesetas 102 M in central bank loans.	AHEL			Martin-Acena 1995, 509; Reinhart/Rogoff; Blasco-Martel

							and Triay 2016, 327ff.
ICE-1920	1920	Iceland	Íslandsbanki and Landsbanki are bailed out via government guarantee on foreign FX loan amounting to 8% of GDP.	BG			Einarsson et al. 2015, 23; Baron, Verner, Xiong 2021.
JP-1920	1920-1927	Japan	Recurrent bank runs and failures in Japan: BoJ “special loan policy” to act as selective LLR provider and mitigate short-term interest rate spikes, providing active consolidation support in industry.	AHCI, RES			Okazaki 2007; Reinhart/Rogoff.
MX-1920	December 1920	Mexico	Compania Bancaria collapse, and runs on Banque France: government approves emergency loans to latter, but refusal to lend to others (i.e. Mercantile Banking Company of Mexico). Total of Pesos 4.6M Treasury loans. New runs in 1922, prompting Banamex emergency assistance. ^{xviii}	AHEL			Merchant 2002, 117; Gomez-Galvariato 2014, 23-28; Reinhart/Rogoff
FIN-1921	March 1921	Finland	Looming collapse of Town Mortgage Fund: Bank of Finland jointly guarantees Fin Markka 7M exchange rate losses, together with Kansallis Bank and Suomi Insurance. Town Mortgage still fails by Jan. 1922. Some central bank and Treasury lending to Mortgage Society of Finland.	AHEL, OLG		PRI-PRI (partly)	Reinhart/Rogoff; Kuusterae and Tarkka 2011, I, 536f.
NOR-1921	1921	Norway	Joint liquidity provisions by Norges Bank, private banks, and Treasury, at least NKR 200M in official provision over 1921-3 according to Knutsen (1991, 57f.);	BBEL		PRI-PRI (partly)	Knutsen 1991, 57ff.; Reinhart/Rogoff

			Centralbanken/Foreningsbanken put under public administration by 1923.				
	1921-22	Norway	Jacobsen (1924, 42) reports granting of NKR 80M in bank guarantees, equally shared between Treasury, Norges Bank, and private banks.	AG		PRI-PRI	Jacobsen 1924, 42.
	March 1922	Norway	Jacobsen (1924, 42) reports NKR 30M capital injection into Norges Bank by government.	AHCI			Jacobsen 1924, 42.
SZ-1921	1921	Switzerland	Ongoing bank instability: SNB grants special CHF 6M support for Schweizerische Bondenkreditanstalt.	AHEL			Bachmann, Schnyder, Weber 1932, 417f.; Kohli ed. 2007, 90f.; Reinhart/Rogoff
CN-1921	1921	China	Banque de Industrielle de Chine on brink of collapse, suspending convertibility. Chinese domestic banks come to rescue by discounting its notes.	AHEL		PRI-PRI	Horesh 2009, 35.
DK-1921	1921-1924	Denmark	Nationalbanken (central bank) by 1921 begins to help banks ad hoc, to address insolvency as well as illiquidity. Includes support for bank equity prices, and provision of capital for new private bank launches. Extra public aid Dkr 241M over 1922-1925.	AHCI, BBEL			Hansen 1991, 38ff.
	1922	Denmark	Country's largest bank, <i>Landmandsbanken</i> , on verge of bankruptcy. State provides emergency liquidity, and establishes "reserve fund", co-funded with private banks.	AHCI, BG	SPV	PRI-PRI (partly)	LoN 1931, 95; Hansen 1991, 36f.; Sjoergen

			Full de facto state deposit guarantee on Dkr 1BN deposits. ^{xix}				and Iversen 2019, 180.
IT-1921	November 1921-1922	Italy	<i>Banco di Roma</i> rescued by Banca d'Italia. Others (i.e. <i>Banca Italiana di Sconto</i>) are granted intermitted advances, but ultimately fail. Up to 3.36BN lira advances to 1926 via Banda d'Italia and Sezione Sepciale Autominia.	AHCI, AHEL			BdI 1922, 33ff.; Toniolo 1978, 289f.; Toniolo 1995, 299.
	December 1921	Italy	Banca d'Italia refuses rescue of Banca Italiana di Sconto, but government grants one-year moratorium to creditors of bank and all joint-stock companies and cooperative credit companies with capital >5m lire.	DPM			The Economist, January 1922.
SWE-1922	March 1922	Sweden	After major credit losses, public fund <i>Kreditkassan</i> established, making 83M SEK in direct bank recapitalizations over 1921-2; additional 77M SEK refinancing of associated portfolio companies. Riksbank/Treasury provide 70M SEK in guarantees.	BBCI, OLG	SPV		LoN 1931, 250; Oegren 2018, 63ff.; Sjoegren and Iversen 2019.
NL-1921	April 1922	Netherlands	DNB refuses to intervene during high-profile bank failures (i.e. Marx & Co.) – but Rotterdam banks (R. Mees and Zoonen, and Rotterdam Bank Assoc.) join to insure full liabilities (Guilders 46.5M) upon Marx & Co. liquidation. Westerhijus and van Zanden (2018, 252): DNB does in fact help Marx & Co. with Guilders 27M.	AHEL, BG, RES			Financial Times, April 4 & 8, 1922; Reinhart/Rogoff; Colvin, de Jong, and Fliers 2015; Westerhijus and van Zanden 2018, 252.
UK-1922	August 1922	United Kingdom	Special BoE advances (GBP 2.4M) to five acceptance houses impacted by WWI bill liabilities. Treasury extends	AHEL			O'Sullivan 2018, 113ff.

			guarantee on advances. Houses with German links are refused assistance.				
	December 1922	United Kingdom	Rescue of Huths: BoE facilitates takeover of Huths by Koenig Bros., providing loan to Koenig and guaranteeing against foreign claims on Huths. Huths bad assets transferred to SPV. Ca. GBP 2M in public aid.	BBAM, AHEL, OLG	SPV		O’Sullivan 2018, 124f.
JP-1922	September 1922	Japan	After earthquake, government issues debt moratorium and organizes discounting program for “Earthquake Bills”: JPY 430.8M extra discounting over 1923-4.	BBEL, DPM			Shizume 2018, 136ff.
MX-1922	October 1922	Mexico	Renewed banking crisis. At least Pesos 793,513 in emergency loans to Banco Credito Espanol and Casa Bancaria Zambrano e Hijos. Liquidation of Banco Frances.	AHEL, RES			Merchant 2002, 126ff.
CAD-1923	March 1923	Canada	Government of Quebec issues CAD 15M in bonds to subsidize merger between Banque du Hochelaga and ailing La Banque Nationale. CAD 3M line of credit by CBA.	AHEL		PRI-PRI (partly)	Carr, Mathewson, and Quigley 1995, 1148f.
NOR-1923	March 1923	Norway	“Bank Administration Act” passed which enables Bank of Norway to place commercial banks into “protective custody” upon application, which involves review of sustainability and possible capital injection or liquidation. By end-1924, 34.8% of system deposits under government administration (ca. NOK 4.89BN).	BBCI, BG, ORL			LoN 1931, 209ff.; Nordvik 1995, 445f.

	May 1923	Norway	Selective deposit guarantee for new depositors at <i>Centralbanken for Norge</i> and <i>Foreningsbanken</i> to protect foreign liabilities.	AG			Nordvik 1995, 446.
BRL-1923	1923	Brazil	No crisis or intervention mentioned in Triner (2000).	NO/I			Reinhart/Rogoff
GRE-1923	June 1923	Greece	Bank panic in Athens: NBG advances at least Dr. 35M to stock brokers, lends freely to banks (Dr. 700-1000M related to “market needs”). Government then aids NBG after “serious illiquidity”, including via forced loans. ^{xx}	BBEL			Eulambio 1924, 158ff.; Dertilis and Costis 1995, 462.
PT-1923	1923	Portugal	“Multiple bank failures occurred”. Bank of Portugal “failed to provide the temporary accommodation to bankers which would have enhanced...stability of the financial system”.	NO/I			Reis 1995, 486; Reinhart/Rogoff
CZK-1923	1923	Czechoslovakia	At present, no crisis interventions identified.	NO/I			Baron, Verner, Xiong 2021.
COB-1923	July 1923	Columbia	Severe deposit runs, first affecting Banco Lopez: government tries to buy off assets (bank building), but bank has to liquidate.	AHAM			Caballero Arguez and Montoya 2006, 75f.
	July 1923	Columbia	Founding of Banco de la Republica is brought forward to allow emergency lending, which is undertaken via discounting to commercial banks from July 21 in various regions, calming depositors.	BBEL, other			Caballero Arguez and Montoya 2006, 75f.

TW-1923	September 1923	Taiwan	Bank of Taiwan tries to bail out Suzuki & Co. and buys bills of Taiwanese corporates at BoJ discount window in the context of earthquake.	MLA	Market (partly)		Shizume 2018, 137-139; Reinhart/Rogoff
CN-1923	1923-1925	China	Young (1971), R/R's source, and others do not mention interventions, though many banks fail.	NO/I			Reinhart/Rogoff
AT-1924	April 1924	Austria	Public-private establishment of assistance committee to save Depositbank and others, central bank provides 21M Goldkronen in funds.	BBEL	SPV	PRI-PRI (partly)	Pressburger 1966, 392f.
NL-1924	July 1924	Netherlands	Robaver crash: DNB agrees to 50M guilder emergency loans, with Treasury supplying 10M guilder to stabilize equity price via intermediary bank. Subsequent internal portfolio restructurings.	AHEL	Market (partly)		Colvin 2014, 322ff.
MX-1924	1924	Mexico	Various failed structural reform efforts amid continued banking volatility. Banxico founded in 1925, and new banking laws 1925.	ORL, RES			Maurer 2002, 170ff.; Baron, Verner, Xiong 2021.
AUS-1924	October 1924	Australia	During liquidity squeeze, Commonwealth Bank offers up to A.Pounds 15M in bank loans, of which A.Pounds 2.8M are taken out.	BBEL			Fitz-Gibbon and Gizycki 2001, 39.
SWE-1925	1925	Sweden	Public <i>Kreditkassan</i> takes 50% stake in Goeteborgs Handelsbanken.	AHCI, RES			Sjoegren and Iversen 2019.

IT-1925	1925	Italy	Bank of Italy advances 500M Lire to bank consortium to buy industrial stocks and stabilize their own blue chip portfolios.	BBAM, MLA	Market		Toniolo 1995, 303.
CAD-1925	June 1925	Canada	House of Commons decides to cover 35% of public liabilities of Home Bank after fraudulent behavior and loss of trust, despite absence of deposit insurance (CAD 5.45M).	AG, OLG			Carr, Mathewson, and Quigley 1995, 1142f.
POL-1924	November 1925	Poland	Amid banking crisis, <i>Fundusz Pomocy</i> (bank investment fund) established to inject up to 65M Zloty into systemic banks; 1924 Banking Law administers liquidations.	BBCI, RES	SPV (partly)		Landau and Morawski 1995, 363f.
ES-1920	1925	Spain	Bank of Spain assists <i>Banco Central</i> , refuses assistance to others.	AHEL			Martin-Acena 1995, 513f.
BEL-1925	1925-1926	Belgium	No crisis or intervention reported in Van der Wee (2012) and others.	NO/I			Reinhart/Rogoff
NL-1925	December 1925	Netherlands	Secret Guilders 10M state guarantee for ACBM after director threatens to resign amid instability. By 1927, forced merger with Boazbank to create NMB.	OLG, RES			Colvin 2011, 219.
GER-1925	1925	Germany	Default of Girozentrale: At least RM 7.1M assistance from DGZ and Bavarian State Treasury.	AHEL	ASSOC (partly)		Reinhart/Rogoff; Fischer 2007, 168.

BRL-1926	1926	Brazil; Chile	Full nationalization of Banespa and recapitalization in Brazil.	AHCI			Triner 2000, 168; Reinhart/Rogoff
CB-1926	1926	Cuba	Bank runs in Cuba: Atlanta Fed deploys liquidity assistance given branch office presence, “rushing cash to afflicted region”.	BBEL			Richardson and Troost 2006, 6.
UK-1926	September 1926	United Kingdom	Bank of England arranges merger between BTC and Anglo-Austrian Bank, and recaps bank with GBP 0.6M.	AHCI, RES		STOW ^{xxi}	Jones 1993, 228ff.
AT-1926	November 1926	Austria	Centralbank der deutschen Sparkassen defaults: government first announces full deposit insurance, but backtracks later; establishment of Schilling 80M public-private “guarantee fund”. 3-month moratorium approved.	DPM, OLG	SPV	PRI-PRI (partly)	Pressburger 1966, 412f; Harrer 2011.
	December 1926	Austria	Default of Postsparkasse: Parliament passes special law to compensate depositors.	AG			Pressburger 1966, 413.
TW-1927	1927-1928	Taiwan	Assistance to Bank of Taiwan from Bank of Japan after emergency Japanese government guarantee for up to JPY 200M. Collateral requirements waived.	AHEL, OLG, ORL			Johnes 1928, 76f.; Reinhart/Rogoff
TK-1927	1927	Turkey	Is Bankasi (“Business Bank”) in “precarious” situation: government-mandated takeover of National Credit Bank to stabilize situation.	RES		STOW (partly) ^{xxii}	Keyder 1981, 105.

JP-1927	March 1927	Japan	Banking Act of 1927 is passed: introducing minimum capital requirements, bank amalgamation, oversight procedures.	ORL, RES			Shizume 2011, 215f.
	April 1927	Japan	Three-week moratorium, April 1927. Peer's Bank receives emergency credits via Bank of Japan.	AHEL, DPM			Johnes 1928, 76ff.
	April 1927	Japan	Consolidation of smaller banks into Showa Bank, with private capital contributions.	AHCI, RES		PRI-PRI	Johnes 1928, 76ff.
	May 1928	Japan	Diet approves JPY 500M guarantee program for financial institutions, administered via BoJ advances.	OLG			Shizume 2009, 3.
IT-1928	1928	Italy	Bank of Italy grants liquidity over two-year period to <i>Banca Agricola Italiana</i> – by 1930 liquidation is arranged.	AHEL, RES			Toniolo 1995, 306f.
DK-1928	April 1928	Denmark	Renewed losses and default fears over Landsmandsbank: April 1928 Law authorizes government to provide Kronor 170M in fresh liquidity aid and 50M in capital injections.	AHCI, AHEL			LoN 1931, 95.
FIN-1928	June 1928	Finland	Emergency lending granted to Atlas Bank. By 1929, bank put into liquidation with debts and assets transferred to Bank of Finland.	AHEL			BoF 1929, 11; Kuusterae and Tarkka 2011, I, 539f. ^{xxiii}
CN-1928	October 1928	China	Chinese government recaps <i>Bank of China</i> , to gain 20% stake.	AHCI			Ji 2003, 176.

SZ-1928	December 1928	Switzerland	Zurich banks Escher Freitz & Co., Wolfensberger & Widmer collapse. Other banks come under pressure: banks around Union Financiere form syndicate assisting Diskontbank, buying shares est. at least CHF 6.1M.	AHCI		PRI-PRI	WSJ, December 18, 1928; Baumann 2007, 143.
IT-1930	1929	Italy	Bank of Italy grants liquidity to “some” ailing Catholic banks, assists in merger or liquidation efforts.	AHEL, RES			Toniolo 1995, 306.
BRL-1929	1929	Brazil	Treasury declares two-week bank holiday in October 1930.	SBH			Triner 2000, 178; Reinhart/Rogoff
GRE-1931	June 1929	Greece	Banking troubles: guarantee syndicate for Bank of Thessaly, incl. Bank of Greece.	AG, OLG	ASSOC	PRI-PRI (partly)	Loizos 2011, 7.
US-1929	July 1929	United States	Florida bank runs related to fly invasion, crop failures. Federal Reserve Bank of Atlanta “rushes” cash to Florida by plane (ca. USD 5M), alleviating runs.	AHEL			Dana ed., 1929, 422.
GER-1929	August 1929	Germany	FAVAG Insurance-Banking group collapses: pressure on Reichsbank to intervene, but support remains limited to assisting in orderly takeover by Allianz. Private banks provide guarantees on part of liabilities (up to RM 100M).	RES, OLG		PRI-PRI	Feldman 2002, 57ff.
COB-1931	December 1929	Columbia	After plunge of Columbian bonds in New York and domestic market rout, from late 1929 to late 1931 "massive" emergency discounting by commercial banks at Banco de la Republica.	BBEL			Caballero Argaez and Montoya 2006, 81, 86.

IN-1929	1929-1931	India	At present, no indications of interventions.	NO/I			Reinhart/Rogoff
ICE-1930	1930	Iceland	Bank volatility – Islandsbanki receives Treasury loan, but as losses spiral, remaining main private bank is taken over by new state-owned entity (<u>Búnaðarbanki Íslands</u> /Útvegsbanka). Full state guarantees for new state banks.	AHEL, OLG, RES			Kjartansson 2011; Einarsson et al. 2015; Baron, Verner, Xiong 2021.
BUG-1930	1930	Bulgaria	State “tries” to save deposits in nineteen failed private banks, transfers assets into new entity, Bulgaria Credit.	AG, BBAM			Berov 1995, 390.
CAD-1930	1930	Canada	Kryzanowski and Roberts (1993) argue multiple Canadian banks are insolvent from 1930, survive through “implicit public guarantees”. Weyburn Bank forced merger 1931.	AG, RES			Kryzanowski and Roberts 1993.
GRE-1931	January 1930	Greece	Liquidity support for Bank of Industry by Bank of Greece to prevent default; afterwards further support by BNG for bigger banks; small banks allowed to fail.	AHEL			Dertilis and Costis 1995, 465; Loizos 2011, 7.
ETH-1930	August 1930	Ethiopia	Nationalization of Bank of Abyssinia (formerly subsidiary of National Bank of Egypt).	AHCI			Baster 1935, 74.
FRA-1930	November 1930	France	First French banking panic: Bank Adam fails, triggering further runs. Depositors are bailed out, and Banque d'Alsace et de Lorraine receives FRF 559M emergency liquidity from Banque de France, and FRF 910M from Treasury. Later CIC purchases good assets, liquidates Bank.	AG, AHEL, AHAM, RES		PRI-PRI (partly)	Lacoue-Labarthe 2005, 637f.

IT-1930	February 1931	Italy	Secret 330M Lira loan by Treasury and Banca d'Italia to <i>Credito Italiano</i> . Semi-public holding company established to take over troubled industrial assets from banks (IRI/ <i>Societa Finanziaria Italiana</i>).	AHEL, BBAM	SPV		League of Nations 1935, 68; Toniolo 1995, 308.
POL-1931	March 1931	Poland	State decree enables direct capital injections, loans, state guarantees, or relief from obligations to big private sector banks. By 1934, 140M Zlotys in state support disbursed. Smaller banks fail.	BBCI, OLG, MLA			Landau and Morawski 1995, 367.
ES-1931	April 1931	Spain	Bank of Spain provides broad LLR assistance during deposit run, discounting all eligible paper.	BBEL			Martin-Acena 1995, 517.
ARG-1931	April 1931	Argentina	Banco de Nacion allowed to rediscount commercial paper from other banks at Caja de Conversion, amid banking panic. Volume exceeds Pesos 100M by May 1931.	BBEL			LoN 1931, 352; Bernanke 2000, 91; Reinhart/Rogoff
AUS-1931	April 1931	Australia	Commonwealth Bank aids Primary Producers Bank of Australia via unsecured overdrafts and loans, pounds 395k. Ca. pounds 3m assistance to Government Savings Bank.	AHEL			Fitz-Gibbon and Gizycki 2001, 40ff.
	May 1931	Australia	Government gives blanket guarantee to Commonwealth Bank amid withdrawals at Savings Bank division.	BG		STOW	Fitz-Gibbon and Gizycki 2001, 45f.; Reinhart/Rogoff

AT-1931	May 1931	Austria	Credit-Anstalt crisis: Austrian National Bank lends indirectly to bank via “cross deposits”, and provides AS 400M in direct loans to mortgage banks.	BBEL			Weber 1995; Aguado 2001; Reinhart/Rogoff
	May 1931	Austria	160M Schilling capital injection into Creditanstalt, with 30M participation from Rothschild. Full credit guarantees (also including foreign creditors by June).	AHCI, OLG		PRI-PRI (partly)	Pressburger 1966, 431.
	June 1931	Austria	Further 30M Schilling credit to Creditanstalt. Treasury by 1932 takes over S 996M in Creditanstalt obligations, to domestic and foreign creditors.	AHEL		STOW (de facto)	JNS 1933, 708; Pressburger 1966, 436.
GER-1931	June 1931	Germany	Spillover from Austrian banking crisis: Reichsbank discounts bills freely until gold reserve position threatened in mid-1931. Treasury gives deposit guarantee for Danat bank.	BBEL, AG			Schnabel 2004; Wixforth 2011.
MX-1931	July 1931	Mexico	General suspension of payments after run on Credito Espanol de Mexico and others.	SBH			Bernanke 2000, 92; Reinhart/Rogoff
HUG-1931	July 1931	Hungary	In Dec., Foreign Creditors Fund established, which covers foreign mortgage debt service for domestic banks. Bank holidays and foreign creditor standstill. HNB meets bank discount demands (est. Pengo 240M over 2H-1931).	BBEL, SBH, DPM	SPV		League of Nations 1935, 62; Reinhart/Rogoff; Macher 2019.
GER-1931	June 1931	Germany	Reichsbank meets heavy liquidity demand by banks given capital flight from June 1931. Until bank holidays, RM 1.5BN increase in “Wechsel” assets. Various additional ad	BBEL	SPV	PRI-PRI (partly)	Born 1967, 65ff.

			hoc emergency lending decisions, including at least RM 374M in liquidity assistance to Dresdner and Hallesche/Kulisch via RKG, RM 50M to Landesbank der Rheinprovinz. Schnabel (2009) and others: Reichsbank discounting overwhelmingly bailout/emergency funding. ^{xxiv}				
	June 1931	Germany	RM 500M private guarantee syndicate for Danat Bank/Golddiskontbank, with equivalent discounting window for participating banks. Government co-establishes “Akzept- und Garantiebank” which underwrites bank drafts, making them eligible for discount.	MLA, OLG	SPV	PRI-PRI	Hardach 1995, 285; Schnabel 2009; Wixforth 2011, 78ff.
	July 1931	Germany	RKG assumes 92.5% equity stake in Dresdner, at instructions and financed by Treasury. Further capital injections via Deutsche Golddiskontbank.	AHCI			Hardach 1995, 285; Schnabel 2009; Wixforth 2011, 78ff.
	July 1931	Germany	Reich Treasury guarantees all Danat liabilities, including deposits, but excluding liabilities vis-a-vis personally liable owners and those associated with corresponding Danat credits. Ca. RM 1.2BN volume.	AG, OLG			Born 1967, 96, 105ff.
	July 1931	Germany	Bank holidays announced, stock exchanges closed to April 1932.	SBH			Born 1967, 99.
BEL-1929	July 1931	Belgium	Threat of default at Noorderbank and Goldzieher & Penso: NBB grants BEF 40M emergency credits, despite doubts over solvency.	AHEL			Van der Wee and Tavernier 1975, 259f.

	December 1931	Belgium	From late 1931, NBB engages in more systematic emergency lending given liquidity crunch: BEF 500M to Banque Diamantaire Anversoise.	BBEL			Van der Wee and Tavernier 1975, 261f.; Buyst and Maes 2008b, 13f.
SZ-1931	July 1931	Switzerland	Private banks form "guarantee syndicate" to enable mutual discounting of assets not accepted by the SNB, after July 1931 emergency laws in Germany freeze Swiss assets.	OLG	SPV	PRI-PRI	Bachmann, Schnyder, Weber 1932, 302.
	July 1931	Switzerland	Federal Council deposits CHF 20M at Diskontbank to provide assistance after failure of Banque de Geneve. Guaranteed by Unifi and BDC.	AHEL		PRI-PRI (partly)	Baumann 2007, 157ff.
	1931	Switzerland	Three major Swiss banks require direct government/SNB assistance amid crash, including <i>Swiss Volksbank</i> (SVB) for CHF 100m – de facto nationalizations.	AHCI			Meier, Marthinsen, and Gantenbein 2013; Reinhart/Rogoff
LAT-1931	July 1931	Latvia	Bank runs on Bank of Liepaja and Riga International Bank: special law of July 21 restricts deposit withdrawals to 5% of total volume per week - in effect until September 1933.	SBH			Reinhart/Rogoff; Karnups 2012, 30.
UK-1931	July 1931	United Kingdom	BoE aids Lazard, which is at brink of bankruptcy: GBP 4.5M direct loans to Lazard and to Pearson & Sons, for latter to increase investment.	AHEL		PRI-PRI (partly)	O’Sullivan 2018, 209.
	July 1931	United Kingdom	Following German and Austrian troubles, run on London merchant banks ensues: in addition to individual assistance (i.e. Pearsons, ASAB), BoE provides emergency liquidity (ca. GBP 30M) and allows rediscounting of German	BBEL			Accominotti 2012, 28ff.

			Standstill Bills by banks (Vol.: ca. GBP 53M in London by mid-1931).				
	September 1931	United Kingdom	BoE aids ASAB with GBP 3M loans, with additional private participations. By 1936, ASAB taken over by BOLSA, with BoE writing down loans.	AHEL		PRI-PRI (partly)	O’Sullivan 2018, 209.
AT-1931	September 1931	Austria	Stock exchange closed amid extreme volatility. In effect to October 27 th .	SBH			Pressburger 1966, 442.
AUS-1931	September 1931	Australia	National Bank of Australasia aids Queensland Deposit Bank during deposit run, with pounds 50,000 loan.	AHEL		PRI-PRI	Fitz-Gibbon and Gizycki 2001, 41.
FIN-1931	September 1931	Finland	Crash of Maakuntain Paaki (“Provincial Bank”): Bank of Finland grants Maarkan 40M emergency loan, and jointly subscribes to Maarkan 60M new shares with Kansallis. Support proves insufficient and Maakuntain is taken over by KOP with further Bank of Finland aid.	AHCI, AHEL, RES		PRI-PRI (partly)	Ikonen, Autio, and Elonen 1992, 70; Reinhart/Rogoff; Kuusterae and Tarkka 2011, I, 540f.
FRA-1930	September 1931	France	Run on BNC, looming crash: Banque de France initially provides FRF 556M, guaranteed by Treasury. Private support syndicate established under Treasury guidance. In October, BdF commits up to FRF 4BN emergency liquidity, private syndicate additional FRF 1.9BN to insure deposits. By Feb-1932, BNC liquidated.	AHEL, OLG, RES		PRI-PRI (partly)	Lacoue-Labarthe 2005, 651.

CN-1931	1931	China	BoC provides various emergency lending lines over 1930-1932 amid bank runs: to Sinhua Trust Savings in 1930 (with BoCOM), to SHCS in 1931, and to National Industrial Bank of China in 1932.	AHEL		PRI-PRI	Peng 2007, 212; Reinhart/Rogoff
DK-1931	1931	Denmark	Capital injections and liquidity assistance from Nationalbank and government sources to several large banks, including Landmandsbanken,	AHCI, AHEL		STOW (partly)	Abildgren et al 2011, 6; Reinhart/Rogoff
TK-1931	1931	Turkey	Turkish Central Bank established June 1931 amid financial volatility.	ORL			Reinhart/Rogoff
EST-1931	1931	Estonia	Temporary moratorium on bank debt declared 1931-2; government interventions via National Mortgage Bank, incl. in <i>Krediitpank</i> (de facto nationalized until 1934).	AHCI, DPM		STOW (partly)	League of Nations 1935, 25.
ROM-1931	July 1931	Romania	“Special Protection Scheme” implemented while consolidation and restructuring efforts ensue. Vorovenci (2015) suggests Lei 1.58BN rediscount support from central bank to Marmorosh to 1930. Purchase of doubtful assets.	AHEL, BBAM, BG			League of Nations 1935, 96ff.; Blejan, Costache, and Aloman 2009, 20; Reinhart/Rogoff
ES-1931	July 1931	Spain	Failure of several Spanish banks: Bauer & Cia relies on heavy BdE assistance leading up to default (ca. 10M pesetas), as well as personal Rothschild emergency loan	AHEL		PRI-PRI (partly)	Jorge-Sotelo 2019, 219ff.

	1931	Spain	Private sector bailout of one savings bank, orchestrated via <i>CECA</i> (Confederation of Spanish Savings Banks).	AHCI	ASSOC	PRI-PRI	Martin-Acena 1995; Reinhart/Rogoff
TN-1931	1931	Tunisia	At present, no indications of interventions.	NO/I			Reinhart/Rogoff
CL-1931	1931	Chile	At present, no indications of interventions.	NO/I			Baron, Verner, and Xiong 2021.
NL-1931	September 1931	Netherlands	Nederlandsche Bank suffers substantial Sterling FX losses after exit from gold in London (ca. 30M guilders); government provides de facto recap, covers losses.	AHCI			De Vries 1994, 727; Baron, Verner, Xiong 2021.
NZL-1931	January 1933	New Zealand	Financial sector volatility after Sterling exit from gold; Bank Indemnity Act of 1933 guarantees bank FX losses. Originally planned GBP 4M guaranteed, but actual funds accumulated ca. 9x higher (Hawke: GBP 36.2M). ^{xxv}	OLG			Tocker 1934; Hawke 1973, 24; Baron, Verner, Xiong 2021.
PR-1931	1931	Peru	At present, no indications of interventions.	NO/I			Baron, Verner, Xiong 2021.
IT-1930	October 1931	Italy	1BN Lira loan by Treasury and Banca d'Italia to <i>Banca Commerciale</i> . Semi-public holding company (<i>Sofinfit</i>) takes over industrial assets from <i>Banca Commerciale</i> , after capital injection from Banca d'Italia.	AHEL, BBAM	SPV (partly)		Toniolo 1995, 309.

GRE-1931	November 1931	Greece	Bank of Greece acts as LLR to multiple banks following instability from German banking crisis spilling over, BoG receives aid including USD 5M loan from NBG (=500M drachmas). Ca. 858.9M drachmas extra central bank lending to private sector to end-1932.	BBEL			Mazower 1991, 154ff.; Dertilis and Costis 1995, 467; Reinhart/Rogoff
POL-1931	1931-1932	Poland	Bank of Poland de facto covers deposit withdrawals at major banks via “indirect credits”, through 1934ff.	BBEL			League of Nations 1935, 90; Reinhart/Rogoff
PT-1931	1931-1932	Portugal	Support given for “too big to fail” <i>Banco Nacional Ultramarino</i> . Smaller banks fail.	AHEL, AHCI			Reis 1995, 492f.
SWE-1931	1931-1932	Sweden	Krueger crisis: emergency loans from Bank of Sweden (BoS), guaranteed via private banks, to stabilize loan portfolios. Individual exposed banks, <i>Skandinaviska Kreditaktiebolaget</i> , stabilized via emergency credit. “Encouragement” to other private banks to deposit funds at weaker rivals. JNS (1933) suggests SEK 232M fiscal, 200M liquidity costs during 1932.	BBEL, OLG		PRI-PRI (partly)	JNS 1933, 704; Ogren 2018, 66ff.; Reinhart/Rogoff
NOR-1931	December 1931	Norway	3-month suspension of deposit withdrawals in December 1931, guarantee on new deposits.	AG, AHEL, SBH			League of Nations 1935, 84f.; Nordvik 1995, 443f.; Reinhart/Rogoff
US-1929	January 1932	United States	Reconstruction Finance Corporation (RFC) established to provide LLR function (in March 1933 mandate extended).	BBEL	SPV		Butkiewicz 1995.

NOR-1931	February 1932	Norway	Norges Bank grants liquidity assistance to banking system after parliamentary approval, placing deposits into DnC and Bergen Privatbank – which is key to then induce private equity injections in weak banks.	BBEL, BBCI		PRI-PRI (partly)	Lie 2020, 149ff.
GER-1931	March 1932	Germany	Reichsbank merges <i>Darmstaedter Bank</i> with <i>Dresdner Bank</i> . Management is dismissed.	RES			Hardach 1995, 286.
BEL-1929	March 1932	Belgium	After failure of five medium-sized banks in Liege region, NBB spearheads incorporation of new regional bank, L'Union Bancaire Liegeoise, to ease liquidity squeeze. Capitalized with BEF 30M, joint with private banks.	AHEL, other		PRI-PRI (partly)	NBB 1932, 190f.; Van der Wee and Tavernier 1975, 261.
CZK-1932	April 1932	Czechoslovakia	Enlargement of <i>Reconstruction Fund</i> , which issues quasi-guaranteed securities on behalf of weaker banks; state cancels deposit claims in two banks, issues partial deposit guarantee.	BBEL, AHEL, AG		PRI-PRI (partly)	League of Nations 1935, 13f.
YUG-1932	April 1932	Yugoslavia	After bank runs, protection scheme for banks enacted: upon application, provision of state funds. Major banks, including First Croatian Savings Bank apply for emergency aid.	BBEL			Bicanic and Ivankovic 2004, 76ff.
US-1929	June 1932	United States	Chicago bank run: Chicago banks cooperate to save Central Republic Bank from liquidation, assuming credit risk on RFC liquidity assistance. Ca. USD 90M total volume. ^{xxvi}	OLG		PRI-PRI	Calomiris and Mason 1997, 868f.

COB-1932	June 1932	Colombia	Corporación Colombiana de Crédito (CCC) founded to act as bad bank (bank portfolios swapped for CCC bonds). General extension of debt maturities.	BBAM, DPM	SPV		Uribe 2000, 59f.; Caballero Argaez and Montoya 2006, 90.
	1932	Columbia	Government makes interest-free deposits at commercial banks to prop up liquidity. Banks in turn agree to accept "internal bonds" and other unconventional assets as payments for liabilities.	BBEL, ORL			Caballero Argaez and Montoya 2006, 88f.
CAD-1932	November 1932	Canada	From November 1932, “forced” emergency lending to Canadian commercial banks under Finance Act provisions, initial CAD 35M, amid sharp money contraction.	BBEL			McIver 1958, 132f.
GER-1931	December 1932	Germany	Establishment of public financial intermediaries (<i>FINAG</i> and <i>TILKA</i>) which are to lend to banks against depreciated or bad assets.	BBAM, BBEL	SPV		Hardach 1995, 287.
FRA-1930	December 1932	France	Run on Banque d’Union Parisienne: private syndicate around Societe Generale de Belgique provides emergency assistance, facilitates merger with Credit Mobilier.	AHEL, RES		PRI-PRI	Lacoue-Labarthe 2005, 639.
IT-1930	January 1933	Italy	IRI, public holding company, established to pool industrial assets formerly held by separate semi-public holding companies and private banks. By 1934, <i>Banca Commerciale</i> and <i>Credito Italiano</i> nationalized via IRI.	AHCI, BBAM	SPV		Toniolo 1995, 311f..

FIN-1933	1932	Finland	Cooperative banks establish mutual security fund, enabling deposit insurance, loans, and subsidies.	AG, AHEL	ASSOC	PRI-PRI	Nyberg and Vihriälä 1993, 26.
	February 1933	Finland	Emergency assistance for Suomen Maatalous-Osake-Pankki via Maarki 25M capital injection; participation of Nordic Union Bank and Bank of Helsinki. Treasury covers exchange losses for Central Lending Fund of Co-operative Credit Societies, Markkaa 249M.	AHCI, OLG		PRI-PRI (partly)	Ikonen, Autio, and Elonen 1992, 70f.; Kuusterae and Tarkka 2011, I, 541ff.
US-1929	March 1933	United States	Roosevelt announces nationwide bank holiday March 5; reopening March 13. FDR “fireside chat” on March 12 as a major communication event.	MC, SBH			Silber 2009.
	March 1933	United States	Reconstruction Finance Corporation (RFC) authorized to invest in banks via preferred stock. FDIC established. By June 1935, US\$ 1.3BN in bank stocks bought.	AG, BBCI, BBEL	SPV		Mason 2000, 18ff.; Silber 2009.
BEL-1929	April 1933	Belgium	Law of April 14, 1933: banks are lend to via new BEF 700M fund at A.N.I.C., which utilizes obligation portfolio. BEF 477.5M actually taken up, mainly by Banque Belge du Travail and Algemeene Bankvereniging.	BBEL			Van der Wee and Tavernier 1975, 262.
DK-1933	May 1933	Denmark	Government establishes assistance fund (<i>Krisefonden</i>) with Kroner 100M, to enable deposit withdrawals at banks. Fund enlarged by extra Kroner 60M in mid-1934.	BBEL	SPV		League of Nations 1935, 21.

LIT-1933	1933	Lithuania	Government restructures <i>Co-Operative Bank</i> and subscribes Litas 2.5 of 3M capital increase.	AHCI			League of Nations 1935, 76.
AT-1933	1933	Austria	Use of “Revisionsgesellschaft” to buy 31.5M Schilling in direct equity and purchase 108M Schilling assets from Escompte-Gesellschaft and Wiener Bankverein.	AHCI, BBAM			Pressburger 1966, 471f.
SZ-1933	1933	Switzerland	Looming collapse of Volksbank/Banque Populaire Suisse (BPS): public subscription to CHF 100M capital increase via Conseil Federale to provide aid.	AHCI			Cassis 1994, 1081; Baumann 2007.
	December 1933	Switzerland	Up to CHF 125M liquidity aid for Volksbank via Darlehenskasse (EDK) and SNB, until actual public capital injections are undertaken.	AHEL			Baumann 2007, 275ff.
BEL-1934	May 1934	Belgium	Banque Belge de Travail failure. Decree to enable banks to swap industrial for central bank-backed NBB bonds, which come with state guarantee (vol. up to 2BN BEF).	BBEL, OLG			JNS 1935, 192; Reinhart and Rogoff; Maes and Buyst 2009, 102.
ARG-1934	September 1934	Argentina	Government-induced merger of four smaller banks after runs. By May 1935, formal central bank is established and comprehensive banking system bailout enacted (s.b.).	BBEL, RES			Bernanke 2000, 93; Della Paolera and Taylor 2001, 137ff.; Reinhart/Rogoff.

BUG-1934	October 1934	Bulgaria	Amalgamation of 8 joint-stock banks into <i>Credit Bulgare</i> , assisted with Leva 50M state capital and special Leva 100M loan. State buyout of Sofia Mortgage Bank by 1936.	AHCI, AHCL, RES			League of Nations 1935, 10ff.; Lampe 1986, 92f.
POL-1934	1934	Poland	Renewed banking volatility: “administrative de-dollarization” of banking system; substantial public recaps of state banks (total ca. Zloty 320M over 1929-1935) and favorable rediscounting; Bank Akceptacyjny SA founded to restructure agricultural/industrial bank assets.	BBAM, BBCI, BBEL, other		STOW (partly)	Landau and Tomaszewski 1985; Landau and Morawski 1995, 365ff.; Reinhart/Rogoff.
CN-1934	March 1935	China	De facto nationalization of BoC and BoCOM from March 1935 via government subscription to fresh equity issuance; management changes. By 1943 further dilution of private stakes (from 50 to 33% private stake).	AHCI			Peng 2007, 59f.; Reinhart/Rogoff
	June 1935	China	Government and Legislative Yuan set up 25M yuan Rehabilitation Fund to recap native banks upon official balance sheet examination. Separate 5M yuan advances to three modern banks: <i>Ningpo Commercial and Savings Bank</i> , <i>Commercial Bank of China</i> , and <i>National Industrial Bank of China</i> .	BBCI, AHCL	SPV		Shiroyama 2008, 166.
IT-1935	1935	Italy	International sanctions after Italian invasion of Ethiopia. 1936 Banking Law significantly alters industry structure, including transformation of Banca d'Italia.	ORL			Hertner 1994, 571ff.; Reinhart/Rogoff

GER-1935	1935-1939	Nazi Germany	Various forced mergers, expropriations, and closures of Jewish-led commercial banks (i.e. <i>Oppenheimer, Mendelssohn</i>). Issuance of Solawechsel and Mefo-bills, partly designed to increase bank liquidity and discountable assets.	MLA, ORL	Market		Balderston 1991, 599ff.
ARG-1934	May 1935	Argentina	Founding of new central bank, and bank restructuring body, IMIB, which facilitates wide-ranging asset swap and "clean up" operations for banking system (incl. asset swap with Banco de la Nacion). Various de facto forced mergers. Della Paolero and Taylor (2001, 253): 787m Pesos volume.	BBAM, RES, other	ASSOC		Della Paolera and Taylor 2001, 174ff.
AT-1936	May 1936	Austria	Phoenix Insurance-Finance group collapses: pressure from government authorities on private sector to guarantee existing debts and ensure orderly liquidation (guarantees granted by private sector).	OLG		PRI-PRI	Feldman 2002, 70ff.
FRA-1937	1937	France	Sharp fiscal and exchange rate crisis. BdF interventions in FX space, but at present, no indications of bank interventions.	NO/I			Margairaz 1991, 285ff.; Baron, Verner, Xiong 2021.
IN-1938	April 1938	India	"South Indian banking crisis" after collapse of TNQ bank: RBI increases maximum borrowing limits and grants some individual emergency loans to Madras banks.	AHEL			Simha 1970, 183-192.
CZK-1939	March 1939	Czechoslovakia	Bank runs trigger restrictive moratorium by authorities.	DPM			Klemann and Kudryashov 2012, 225.

CY-1939	August 1939	Cyprus	Multiple runs on local banks and fears over Bank of Cyprus: government orders banking holidays, and Ottoman Bank and Barclays DCO provide emergency lending with government guarantees.	BBEL, SBH		PRI-PRI (partly)	Phylaktis 1995, 15.
GER-1939	September 1939	Nazi Germany	De facto Reichsbank emergency lending after war outbreak: jump in discounts year-end 1938 – year-end 1939 by RM 3.48BN.	BBEL			JNS 1940, 66.
YUG-1939	September 1939	Yugoslavia	Banking panic amid war outbreak: authorities declare bank holiday.	SBH			Klemann and Kudryashov 2012, 225.
SWE-1939	September 1939	Sweden	Minor bank runs after war outbreak in Europe: banks turn to Riksbank for emergency discounting. Jump in Riksbank discounts from 13M to 197M SEK over Sep-Dec. 1939.	BBEL			JNS 1940, 177.
UK-1939	September 1939	United Kingdom	Stock market closes on September 1 st following German invasion of Poland. Reopening after one week.	SBH			Michie 2006, 206.
US-1939	September 1939	United States	FRBNY's open market desk purchases USD 800M of Treasuries to support Treasury market functioning amid war outbreak and surge in uncertainty.	MLA			Garbade and Keane 2020; Hauser 2021.
BEL-1939	December 1939	Belgium	Collapse of Credit Anversois amid rapid capital flight. Some public aid to compensate depositors.	AG			JNS 1940, 88; Reinhart/Rogoff

ES-1939	December 1939	Spain	Bank Recompensation Fund established to cover losses arising out of revaluation of financial liabilities registered in formerly “Red Spain”.	AG, OLG	SPV		JNS 1940, 83.
FIN-1939	1939	Finland	U.S.S.R. invades Finland: sharp surge in commercial bank rediscounting demand. Bank of Finland meets ca. Markka 400M in extra demand.	BBEL			Kuusterae and Tarkka 2011, 586ff. Reinhart/Rogoff
FRA-1939	1939	France	No specific 1939 interventions in standard literature, but 1936 Banque de France nationalization under Blum government; Paris stock exchange closed June-Oct 1940.	RES, SBH			Einaudi 1948; Reinhart/Rogoff
NL-1939	May 1940	Netherlands	Amsterdam stock market closes till July amid German war against France and depositor concerns.	SBH			Michie 2006, 206; Reinhart/Rogoff.
ES-1942	1942	Spain	De facto nationalization of Bank of Spain via decree.	RES			Martin-Acena 2018, 191.
GER-1943	January 1943	Nazi Germany	“Kursstoppverordnung”: heavy curtailing of nationwide stock exchange and credit market operations amid ongoing volatility. Part reversals only by Aug-1945.	SBH			Fischer 2007, 150.
FRA-1943	September 1943	France	Major monetary crisis from September 1943: Banque de France extends significant open market liquidity to stabilize financial system; later, de Gaulle nationalizes commercial banks by Dec. 1945.	BBEL, RES			Margairaz 2002, 46, 69ff.

NL-1944	September 1944	Netherlands	Anticipation of widespread bank runs as Allies advance on the Netherlands: Dutch Central Bank declares bank payment moratoria on regional level (Zeeland) and Dfl 100 deposit withdrawal limits (not implemented).	DPM, SBH			Barendregt 1993, 39f., 51.
JP-1945	August 1945	Japan	Tokyo stock market closed amid war escalation and financial volatility.	SBH			Michie 2006, 210.
	February 1946	Japan	Bank of Japan Deposit Note Ordinance passed: nationwide deposit freeze amid surging inflation, monetary reform.	SBH			Hamada and Kasuya 1992, 17f.
MODERN FINANCIAL SYSTEM (1945-)							
POL-1946	January 1946	Poland	Bank nationalization decree is issued.	RES			Sharpe 1946, 33ff.
IN-1947	1947-1948	India	At present, no indications of interventions.	NO/I			Reinhart/Rogoff
BUG-1947	December 1947	Bulgaria	“Law on Banking” is passed, nationalizing all domestic and foreign banks in the country, some token compensations to domestic shareholders.	RES			Sipkov 1958, 489f.; Lampe 1986, 130f.
ROM-1948	June 1948	Romania	Bank nationalization law is passed. Banks not covered by nationalization law are forced into liquidation by August.	RES			Stoenescu et al. 2014, 249.

COS-1948	1948-1949	Costa Rica	New Junta government nationalizes country's banking system.	BBCI			Watkins 2020.
ARD-1949	January 1949	Argentina	Major stock market crash and squeeze on stock brokers: "Mixed Commission of Liquid Investments" (IMIM) provides emergency lending of Pesos 170M (>50M direct, then 120M fund replenished).	BBEL	ASSOC		Lewis 1990, 197.
KOR-1950	June 1950	Korea	Outbreak of Korean War sparks widespread bank runs: Bank of Korea implements "Special Decree on Financial Institutions' Deposit Withdrawals", limiting withdrawals. Liquidity crunch associated with war outbreak and deposit runs: Bank of Korea sets up "Emergency Credit Facility", widens eligible assets by special decrees.	BBEL, SBH			Bank of Korea 2010, 157.
IN-1951	1951	India	Nationalization of <i>Imperial Bank of India</i> (transformed into central bank, SBI by 1955).	AHCI			Roland 2008, 17f.
BRL-1953	1953	Brazil	Runs on Rio banks in May 1955. Finance Ministry issues statement: "every resource will be placed at the banks' disposal to enable them to face difficulties". Run subsides.	MC			Financial Times, May 16, 1955.
NG-1954	February 1954	Nigeria	Major indigenous banks teetering on brink of default: substantial capital injections (870,000 GBP) and deposits (30,000 GBP) into ACB via Finance Corporation and Eastern Regional Government.	AHCI, AHCL			Brown 1966, 59ff.

EG-1957	January 1957	Egypt	Nassar government nationalizes operations of Anglo-Egypt Bank (Barclays DCO branch), and other French- and British-owned banks.	BBCI			Ackrill and Hannah 2001, 288f.
US-1958	July 1958	United States	FRBNY open market desk buys USD 1.175BN in Treasury certificates and securities to stabilize disorderly conditions, threats of market instability.	MLA			Garbade and Keane 2020; Hauser 2021.
NG-1959	September 1959	Nigeria	National Bank of Nigeria on brink of default: Western regional boards (WRPBD and WRMB) jointly make ca. GBP 6M deposits over 1959-60 to provide rescue funds.	AHEL			Brown 1966, 62ff.
VN-1960	1960	Venezuela	Systemic crisis following fall of dictatorship in 1958: capital flight and collapse of 16 major institutions – state expends ca. 28% of GDP refloating banks and compensating depositors over 1961-1963.	AG, BBCI, BBEL, RES			De Krivoy 2000, 32.
KOR-1961	May 1961	Korea	"Massive bank runs" following May Coup: military government successively nationalizes majority of commercial banks.	BBCI			Lee, Lee, and Lee 2002, 31; Bank of Korea 2010, 166.
HK-1961	June 1961	Hong Kong	Run on Liu Chong Hing Bank. After several days, run subsides as HSBC and Chartered Bank publicly declare support for Chong Hing at instigation of authorities.	other		PRI-PRI (partly)	Schenk 2003, 143f.; Goodstadt 2007, 147.
BRL-1963	1963	Brazil	"Overaccumulation of capital", economic crisis, and military coup. Monetary authorities (Bank of Brazil,	BBEL			Welch 1993, chapter 3; Reinhart/Rogoff

			Treasury, and SUMOC) “appease...illiquidity of firms through money creation at the discount window”.				
HK-1965	January 1965	Hong Kong	Severe banking panic starting with run on Ming Tak Bank: Hongkong Bank lends ca. HKD 163M to local Chinese-owned banks alone over 1965, with some participation of Chartered Bank; deposit withdrawal restrictions; ex post reimbursement of depositors through public funds, i.e. for Canton Trust.	AG, BBEL, RES, SBH		PRI-PRI (partly)	Schenk 2003, 146ff.; Goodstadt 2007, 147ff.
UG-1965	April 1965	Uruguay	Banco Transatlantico crash. Banco de la Republica takes over bank management after appeal for help. Further takeover of three banks in May by Central Bank. Bank holiday, Private banks establish Peso 850M emergency fund to safeguard against new runs.	BBCI, BBEL, SBH	SPV (partly)	PRI-PRI (partly)	Financial Times, April 28 and May 14, 1965; Yaffe 2003, 23f.
JP-1965	May 1965	Japan	“Bank run-like panic” in Tokyo after major stockbroker Yamaichi reveals large losses: finance ministry demands provision of emergency liquidity: BoJ provides “special loans” from May, inc. JPY 4.5BN to Yamaichi itself. MoF agrees debt moratorium with private creditors of Yamaichi.	BBEL, DPM			NYT, July 8, 1965; Wakatabe 2013, 148.
US-1966	September 1966	United States	Amid “credit crunch” Fed expressly allows temporary advances to member banks for the benefit of nonmember banks (renewed in 1969).	BBEL			Burger 1969; Hackley 1973, 122.
TZ-1967	February 1967	Tanzania	“Arusha Declaration” by Nyerere government nationalizes full banking system, under new National Bank of Commerce (NBC) umbrella. Ca. GBP 3.3M (Shs. 60M) in state compensations to bank shareholders.	BBCI			Mittelman 1978, 611ff.; Nord et al 2009, 39.

IN-1969	July 1969	India	Nationalization of 14 commercial banks via “Banking Companies Ordinance” Bill. Total compensation by government given at Rs. 8,740 laks (Parameswaram 2001).	BBCI			Morris 1985, 3; Parameswaran 2001, 25.
US-1969	1969	United States	As in 1966, Fed “temporarily” allows advances to member banks for the benefit of nonmember banks amid continued problems at savings associations.	BBEL			Hackley 1973, 122.
CL-1970	1970-1972	Chile	Allende government nationalizes at least 26 private banks via purchases of equity through CORFO fund (Escudos 400M). Some resisting banks are liquidated.	BBCI	SPV		Sigmund 1977, 133f.
US-1970	May 1970	United States	FRBNY market intervention amid Vietnam war escalation, bond market sell-off. Total USD 2.7BN in extraordinary repos and bill purchases.	MLA			Garbade and Keane 2020.
	June 1970	United States	Penn Railroad collapse: Fed informs banks that discount window is “wide open”, suspension of interest rate ceilings. Maisel (1973): Fed actions prevented panic. Schwartz: “pseudo-financial crisis”.	BBEL, ORL			Maisel 1973, 4-9; Schwartz 1986, 25.
UG-1971	April 1971	Uruguay	Banco Mercantil failure and nationalization, wave of subsequent mergers and liquidations.	AHCI			Yaffe 2003, 23f.; El Observador, June 6, 2018; Reinhart/Rogoff
PK-1974	June 1971	Pakistan	Demonetization campaign, bank instability: suspension of banking system in June. By 1974, full nationalization (s.b.).	SBH			Siddiqui 2008, 202.

PHP-1971	1971	Philippines	At present, no crisis interventions identified.	NO/I			Baron, Verner, Xiong 2020.
UK-1974	April 1973	United Kingdom	Looming failure of “Scottish Coop Wholesale Society” (listed bank): Bank of England and Scottish and English clearing banks guarantee all its Certificates of Deposits commitments for five years (eventual GBP 29M cost), as well as all deposits (GBP 56M).	OLG		PRI-PRI (partly)	Financial Times, April 21, 1973; Reid 1982, 79f.
MT-1973	December 1973	Malta	Emergency rescue of National Bank of Malta (2 nd largest bank in Malta), by establishment of new M\$ 3M holding company, with 40% stake of Barclays, 60% Treasury.	AHCI		PRI-PRI (partly)	Financial Times, December 11, 1973.
PK-1974	January 1974	Pakistan	Nationalization of 15 private domestic banks via “Bank Nationalization Ordinance Act”, placed under new Pakistan Banking Council, with all deposits guaranteed. Foreign banks banned to open new branches.	AG, RES			Rammal 2008, 343f.
SWE-1974	1974	Sweden	State forces merger between <i>Kreditbanken</i> and <i>Postbanken</i> , into <i>PK-Banken</i> , increasing joint public stake.	AHCI, RES			Sjoegren and Iversen 2019.
UK-1974	1974	United Kingdom	Bank of England coordinates GBP 1.3BN liquidity and loan program by private sector amid continued banking volatility. “Secondary banking crisis”, to 1976.	BBEL, other		PRI-PRI	Turner 2014, 53.
G-1974	September 1974	G10	G10 Communique following Herstatt collapse: “...on...lender of last resort in the Euromarkets...to that end means are available and will be used if and when	MC, OLG			Financial Times, September 9, 1974; Domanski,

			necessary”. De facto agreement to guarantee bank liquidity arising from exchange losses.				Moessner, Nelson 2014, 6.
IT-1974	September 1974	Italy	Sindona Bank failure: formation of public-private bank consortium to assume various obligations and guarantee depositors, coordinated by Banca d’Italia. Move follows separate USD 200M liquidity assistance by Banca di Roma to Sindona. Guarantee volume est. Lire 293.4BN.	AHEL, BG, RES		STOW (partly) PRI-PRI (partly)	Financial Times, September 17, and September 30, 1974.
US-1974	October 1974	United States	Franklin National bank sale via FDIC, including USD 1.75BN bridge loan from Fed.	AHEL			Spero 1999.
AUS-1974	October 1974	Australia	Run on property developers threatens to engulf banking system. Government announces full support to banks providing liquidity. Reserve Bank provides Special Drawing Facility to lend below market rates. At least A\$ 353 drawn.	BG, BBEL			Fitz-Gibbon and Gizycki 2001, 52f.
FRA-1974	December 1974	France	Default of CLAM derivatives clearinghouse. Government approves suspension of sugar trading – de facto creditor bail-in. Participation of professional associations of sugar producers in resolution, enacted by state decree Jan 1975.	BAIL, RES, other		ASSOC (partly)	Bignon and Vuilleme 2020.
SZ-1975	January 1975	Switzerland	Finawas collapse in Geneva (Sindona holding): Swiss authorities close down bank after spiralling losses.	RES			WSJ, January 8, 1975, 8.
PT-1975	March 1975	Portugal	Portugal nationalizes banking system (Law No. 132-A/75), including Banco Pinto & Sotto Mayor, and Banco Borges.	RES			Reis 1994, 825, 844.

UK-1974	May 1975	United Kingdom	Bank of England grants GBP 5M short-term facility to Edward Bates Holding (EBH) amid doubts over solvency.	AHEL			Capie 2010, 565f.; Reinhart/Rogoff
	October 1975	United Kingdom	Bank of England takeover of <i>Slater Walker</i> , with GBP 70M lent and further 40M guarantees.	AHCI, AHAG			Hall 1987.
CAF-1976	1976-1982	Central African Republic	At present, no crisis interventions identified.	NO/I			Reinhart/Rogoff
CL-1976	January 1976	Chile	Failure of Banco Osorno, La Union and others: state guarantees 100% of deposits, despite absence of general deposit insurance.	AHAG			Valdes and Lomakin 1988, 229; Reinhart/Rogoff
UK-1974	May 1976	United Kingdom	Bank of England aids Edward Bates (EBH) depositors via GBP 80M standby facility, together with First Arabian.	AG		PRI-PRI (partly)	Capie 2010, 566.
US-1976	September 1976	United States	Fed emergency loans to American Bank and Trust Company, followed by facilitated takeover of bank by Leumi Bank. FDIC and other regulators extend further USD 10M loan to Leumi to finance takeover.	AHEL, RES			Financial Times, September 17, 1976.
AUS-1977	September 1977	Australia	Queensland Federal Treasury pledges “full support” to building societies after run on Queensland Permanent Building Society (A\$ 838M state assets as of Jan-1976). Metropolitan Building Society rescued via loan.	BG, AHEL			Financial Times, March 25, 1976; Fitz-Gibbon and Gizycki 2001, 57.

ES-1977	November 1977	Spain	Government establishes Deposit Guarantee Fund in response to crisis. Up to 500,000 pesetas per depositor covered. Public and private contributions. From January 1978 direct interventions in Spanish banks (with limited mandate till 1980).	AG, BBCI, RES	SPV	PRI-PRI (partly)	Sheng 1996, 90; Martin-Acena 2018, 196f.
MY-1977	December 1977	Malaysia	Government provides GBP 38M rescue loan to Bank Rakyat as default looms.	AHEL			Financial Times, December 21, 1977.
SAF-1977	1977-1978	South Africa	Banking volatility: rescue operation for Trust Bank of South Africa, taken over by Bankorp. Unspecified “assistance” from Reserve Bank of South Africa to banks overexposed to property sector.	AHEL, RES			Verhoef 1992, 138ff.; Reinhart/Rogoff
GER-1977	1977-1979	Germany	“Giro-Krise”. But no reported interventions. Previous establishment of “Sparkassen-Haftungsverbund” in 1975 (co-insurance fund of savings associations).	NO/I			Reinhart/Rogoff
BEL-1978	January 1978	Belgium	La Banque van Loo bankruptcy: Rediscount and Guarantee Institute retroactively reimburses depositors up to maximum ceiling, in absence of general deposit insurance. Ca. BEF 400M paid out.	AG	ASSOC	PRI-PRI	Goodhart and Schoenmaker 1992, 401.
VN-1978	1978	Venezuela	Collapse of Banco Nacional de Descuento (BND): initially, central bank extends significant liquidity support, by December bank taken over and liquidated. Depositors reimbursed. Total gross costs estimated at at least Bolivares 3.5BN.	AG, AHEL, RES			Ugalde 1979; De Krivoy 2000, 32f.

AUS-1979	May 1979	Australia	Bank of Adelaide receives A\$50M subordinated loan from private banks, and A\$10M liquidity assistance from Reserve Bank to prevent full run (later brokered takeover).	AHEL		PRI-PRI (partly)	Fitz-Gibbon and Gizycki 2001, 60.
IR-1979	June 1979	Iran	Full nationalization of country's banking system, encompassing at least 28 (majority-) public and private institutions amid Revolution and capital flight.	RES		STOW (partly)	Eskridge 1981, 525.
US-1980	April 1980	United States	USD 1.5BN emergency aid to First Pennsylvania Bank, with public and private participation (FDIC, Citicorp) via credit lines; overall loan guarantee by Fed.	AHEL, OLG		PRI-PRI (partly)	Financial Times, April 30, 1980.
ARG-1980	April 1980	Argentina	Significant LLR proves insufficient. Nationalization of Banco International, Banco Oddone, and Banco de los Andes. Significant extension of deposit insurance, retroactively to Nov. 1979.	AG, BBEL, BBCI			Balino 1991, 92.
IN-1980	April 1980	India	Nationalization of six commercial banks, Rs 23BN deposits.	RES			Financial Times, 16 April 1980; Morris 1985, 3.
ARG-1980	October 1980	Argentina	Central Bank establishes special lines of credit lending below market rates to facilitate M&A activity in banking sector to aid restructuring.	AHEL			Balino 1991, 99.

ES-1977	May 1980	Spain	Reform of Deposit Guarantee Fund, financed privately and publicly, to recapitalize and restructure troubled banks. Increase of deposit insurance; Bank of Spain organizes takeover of Banco de Madrid by Banesto.	AG, BBCE, RES	SPV	PRI-PRI (partly)	Financial Times, May 15, 1980; Sheng 1996, 87f.
BEL-1980	June 1980	Belgium	Banque Andes failure: Rediscount and Guarantee Institute grants BEF 200M emergency credit (not drawn), some assets and deposits taken over by other private banks.	AHEL, RES	ASSOC	PRI-PRI (partly)	Goodhart and Schoenmaker 1992, 402.
	1980	Belgium	Geoffrey's Bank failure: Banking Commission and Rediscount and Guarantee Institute facilitate takeover by Gesbanque and grant BEF 15M credit line.	AHEL, RES	ASSOC	PRI-PRI (partly)	Goodhart and Schoenmaker 1992, 402.
UG-1980	1980-1983	Uruguay	Beef price collapse accelerates bank problems: Central Bank provides preferential liquidity in LCY and USD to banks and “absorbs substantial portions of losses” at commercial banks over 1982-3. Direct purchases of foreign bank portfolios in arrears.	BBAM, BBCE, BBEL			World Bank 1989, 72; Morris 1990, 87f.; Reinhart/Rogoff
TH-1980	1980-1987	Thailand	Central Bank creates “Financial Institutions Development Fund” to provide bank liquidity assistance; various finance companies are liquidated; bailout of major share of depositors.	AG, BBEL, RES	SPV (partly)		Alba, Hernandez, and Klingebiel 1999, 14; Reinhart/Rogoff
EC-1981	1981	Ecuador	Debt crisis: “Sucretizacion” enacted to aid private sector (incl. financial system): foreign private debt assumed by public sector, with private sector paying in local FX.	BBEL			Reinhart/Rogoff

MX-1981	1981-1982	Mexico	Nationalization of banking sector by Portillo government (law of September 1, 1982); significant capital flight and financial volatility. Bank owners are bought out.	BBCI			Maxfield 1992, 85ff., 92; Reinhart/Rogoff
PHP-1981	January 1981	Philippines	<p>“Dewey Dee affair” triggers multi-year banking crisis. Widespread LLR, interventions and restructurings.</p> <p>“Industrial Fund” established to alleviate corporate NPL problem. By 1982 replaced by special rediscount facilities, established to provide emergency lending to universal and quasi-banks. Nascimento (1991, 213) suggests PHP 15.1BN in CBP assistance over 1981-3.</p>	BBAM, BBEL, RES	SPV (partly); Industry (partly)	STOW (partly)	Nascimento 1991, 217f.; Reinhart/Rogoff
AT-1981	July 1981	Austria	Collapse of Eumig corporate spills over to Laenderbank (60% state-owned): ASh 4.5BN in losses. State covers ASh 3BN write-offs for bad credits via Treasury, ASh 1.5BN losses absorbed by own Laenderbank reserves - by 1991 bank privatization and merger.	AHCI, BAIL		STOW	Kriechbaumer 2006, 254f.
CL-1981	November 1981	Chile	<p>After CRAV crash in Nov-1981, Chile Central Bank nationalizes 22 national banks and financial institutions over the course of 1982-1985.</p> <p>Deposit and other liability guarantees are extended.</p>	BBCI, AG, OLG			Montiel 2014, 32ff.’ Reinhart/Rogoff
FR-1982	1982	France	Mitterrand bank nationalizations. Includes Banque Vernes and L’Europeenne de Banque. Bank owners are bought out.	BBCI			Maxfield 1992, 85ff, 92.

CAD-1982	1982	Canada	Sharp drop in profitability and equity prices, spillover from U.S. volatility, lawsuits against Bank of Nova Scotia, but no reports of systemic event or interventions.	NO/I			Bordo, Redish, and Rockoff 2015; Baron, Verner, Xiong 2021.
GH-1982	January 1982	Ghana	7 of 11 main audited banks collapse; reports of public asset purchases. By 1988 creation of dedicated AMC (“NPART”).	BBAM	SPV		Antwi-Asare and Addison 2000, 2ff.; Kane and Rice 2001, 40; Laeven and Valencia.
DK-1982	April 1982	Denmark	Three main commercial banks form consortium to rescue Henriques Bank after major losses – via subscription to new share capital. Dkr 36M total aid.	AHCI	SPV	PRI-PRI	Financial Times, April 20, 1982.
BEL-1980	May 1982	Belgium	Failure of Banque Copine: interventions by Rediscount and Guarantee Institute, and Banking Commission, who require reorganization of bank and grant total of BEF 1.9BN in emergency credit [must have occurred pre-June, given Dermine 1982, 39]. By December, partial assumption of deposits/assets by Famibanque.	AHEL, RES	ASSOC	PRI-PRI (partly)	Dermine 1982; Goodhart and Schoenmaker 1992, 402.
COB-1982	June 1982	Colombia	Banco Nacional nationalized, depositors and some creditors reimbursed. Bank liquidated.	AHCI, BAIL, AG			Montes-Negret 1996, 102.
SG-1982	1982-1983	Singapore	Government coordinates setting up of lifeboat fund with four major banks. Indirect government guarantees via Singapore Stock Exchange.	BBEL	SPV (partly)	PRI-PRI	Braunstein 2017, 52f.; Reinhart/Rogoff

					Stock exchange (partly)		
IT-1982	July 1982	Italy	Continued banking stress: joint public-private rescue operation by six banks for Banco Ambrosiano, with doubtful loan exposure > USD 1BN, including deposit guarantees and liquidity. Coordination by BdI.	AG, AHCL, RES			Financial Times, July 12, 1982.
TK-1982	July 1982	Turkey	Collapse of Banker Kastelli and subsequent bank runs: Central Bank loans widely to sector and specifically to state-owned Ziraat Bank, total ca. GBP 200M.	BBEL		STOW (partly)	Financial Times, July 13, 1982; Reinhart/Rogoff.
YUG-1982	July 1982	Yugoslavia	Meaningful official assistance to troubled banks, focused on Privredna Bank, at least USD 487M in loans.	BBEL		STOW	Financial Times, July 20, 1982.
US-1982	August 1982	United States	FDIC organizes resolution and takeover of Abilene Bank, and deposits USD 50M with bank for five years to aid takeover.	AHEL, RES			Financial Times, August 20, 1982.
KW-1982	August 1982	Kuwait	Souk al-Manakh crash: all but one Kuwaiti banks technically insolvent from stock market fallout. Trading is halted and government at first rejects bailout. Main interventions over 1983 (s.b.).	BBEL, ORL, SBH			Craig 2019; Laeven and Valencia.
CB-1982	October 1982	Columbia	In emergency move, Banco del Estado is nationalized after it exhausts emergency lending lines from central bank. Decree also introduces variety of new macro-pru laws.	AHCI, AHEL, ORL			Montes-Negret 1996, 102f.

TN-1982	1982-1985	Tunisia	IMF/World Bank programs, “bread riots” over austerity measures; various macro-pru and regulatory reforms for banking sector (interest rate liberalization, NPL accounting).	ORL			World Bank 1988, 18-22; Reinhart/Rogoff
KOR-1983	1983	Korea	Structural problems result in merger or liquidation of 78 firms over 1986-7. No reports of 1983 interventions.	NO/I			World Bank 1989, 71; Reinhart/Rogoff
CB-1982	1983	Columbia	Bank capitalization fund established: participating banks can discount at preferential rates to issue new shares.	BBCI, BBEL		PRI-PRI (partly)	Montes-Negret 1996, 103.
DRC-1983	1983	DR Congo	IMF standby/EFF assistance over 1981-1983, Paris Club private bank debt reschedulings in 1981 and 1983.	BAIL, DPM		PRI-PRI (partly)	Callaghy 1984, 64ff.; Laeven and Valencia.
EQG-1983	1983	Equatorial Guinea	“Virtually defunct banking system”. All state-owned banks liquidated, new commercial banks with foreign participation established.	RES		STOW	World Bank 1989, 71; Laeven and Valencia.
PHP-1981	1983	Philippines	Ongoing banking crisis, fresh bank runs: CBP assumes exchange swap and deposit losses from commercial banks. Widespread debt-equity conversions and STOW-led consolidations.	BAIL, BBCI, BBEL		STOW (partly) PRI-PRI (partly)	Nascimento 1991, 212, 218ff..
ES-1977	January 1983	Spain	Expropriation of Rumasa Conglomerate (comprising 20 banks) via DGF. Administered via Department of National Heritage.	RES	SPV		Sheng 1996, 93f.

CL-1981	January 1983	Chile	Government places seven banks and one <i>financiera</i> , accounting together for 40% of Chilean deposits, under “temporary” management. BG to all intervened banks.	BBCI, BG			Velasco 1991, 149; Laeven and Valencia 2012, 1224.
KW-1982	January 1983	Kuwait	Mayor support program for stock exchange to stabilize prices: KD 270M in gvt. purchases over 1983 – benefiting banks.	MLA	Market		Craig 2019.
	April 1983	Kuwait	New stock market established and technical bodies established to manage all affected financial claims ("CSCFST").	ORL	SPV		Craig 2019.
COB-1982	1983	Columbia	Banco de Bogota shares transferred to fund administered by state-owned banks, financed via central bank loans.	AHCI	SPV		Montes-Negret 1996, 104.
CH-1983	1983	Chad	At present, no crisis interventions identified.	NO/I			Laeven and Valencia.
HK-1983	September 1983	Hong Kong	US\$ 300M bailout of Hang Lung Bank via Sovereign Wealth Fund, 4BN HK\$ guarantees to Ka Wah Bank to achieve private takeover.	AHCI, AHCL, OLG		PRI-PRI (partly)	Financial Times, September 28, 1983; Braunstein 2017, 53f.
IS-1983	October 1983	Israel	Seven major banks are nationalized via US\$ 6.9BN debt-for-equity swaps (at allegedly inflated equity prices) after heavy bank stress and closure of exchange: including <i>Bank Leumi, Poalim, Mizrahi</i> . Special holding company.	BBCI, SBH			Sargent and Zeira 2001.

US-1984	November 1983	United States	Bank runs in Nebraska after forced closure of Commonwealth Savings Company, suspension of deposit withdrawals. Failure of state deposit insurance NDIGC.	SBH			Chen et al. 2020, 47.
GER-1983	November 1983	Germany	SMH Bank collapse: private consortium organizes emergency rescue, ca. DM 600M.	AHEL, AHCI		PRI-PRI	Financial Times, November 8, 1983.
KW-1982	Late 1983	Kuwait	Central Bank deposits KD 200M in support for ailing banks.	BBEL			Craig 2019.
MO-1983	1983-1984	Morocco	Macro-pru and liberalization measures over 1980s documented in Jbili, Enders, and Treichel (1997, 11ff.).	ORL			Jbili, Enders, and Treichel 1997, 11ff.; Reinhart/Rogoff
TW-1983	1983-1984	Taiwan	Recurrent scandals and volatility emanating from “Underground Investment Companies” (UICs). By 1989, legal amendments to bank UICs.	ORL			Lee 1998, 19ff.; Reinhart/Rogoff
MRT-1984	1984	Mauritania	At present, no crisis interventions identified.	NO/I			Laeven and Valencia.
TH-1983	April 1984	Thailand	32 banks receive liquidity assistance, including April 1984 “lifeboat scheme”; five institutions directly rescued.	BBEL, BBCI			Lauridsen 1998, 1578.

US-1984	May 1984	United States	May 1984: Continental Illinois receives US\$ 1.5BN capital infusion from FDIC, supports depositors beyond US\$ 100,000 limit; support for US\$ 4.5BN in bad loans.	AHAG, AHCI, AG			Swary 1986; Reinhart/Rogoff
PHP-1984	June 1984	Philippines	Since early 1984, at least 30 savings banks fail. Run on largest s. bank, Banco Filipino. Central Bank advances emergency funds in ad hoc fashion (949M pesos), but stops aid by July.	AHEL			Financial Times, July 24, 1984.
COB-1982	July 1984	Columbia	“Financial capitalization fund” established at Banco de la Republica to support capitalization of banking system by co-investment schemes with private parties.	BBCI	SPV	PRI-PRI (partly)	Caballero Arguez and Montoya 2006, 115.
UK-1984	September 1984	United Kingdom	Johnson Matthey Bankers (JMB) “lifeboat” operation. Bank of England buys JMB for GBP 1, and provides loan loss guarantees (GBP 75M), as well as loan in form of deposit (GBP 100M).	AHEL, OLG			Hall 1987; Reinhart/Rogoff; Turner 2014, 53f..
MY-1984	September 1984	Malaysia	GBP 835M government rescue package for Bank Bumiputra, via combination of loans, NPL sales and direct capital injections from Petronas.	AHCI	Industry (partly)		Financial Times, September 15, 1984; WSJ September 17, 1984.
DK-1984	December 1984	Denmark	Rescue of Kronebanken via Central Bank (providing liquidity) and three private banks (providing DKr 500M guarantees against losses). Central Bank pledges to cover all liquidity needs. By 1985, merger with Provinsbanken.	AHEL, OLG, RES		PRI-PRI (partly)	Financial Times, December 19, 1984.

CAD-1983	March 1985	Canada	CCB receives CAD 225M aid in March 1985 in joint public-private package. Bank of Canada provides CAD 1.6BN in liquidity till July. Problem assets are identified for purchases.	AHAM, AHEL		PRI-PRI (partly)	Dean 1988, 5f.; Goodhart and Schoenmaker 1992, 403.
	September 1985	Canada	Inspector General advises closure of CCB and Northland Bank following continued weakness. CAD 900M is paid to uninsured depositors.	AG, RES			Goodhart and Schoenmaker 1992, 403.
	October 1985	Canada	Separate CAD 2.9BN liquidity advanced for struggling Continental Bank from October, from BoC and chartered banks. Lloyd's Bank takes over bank in 1986, with government facilitating takeover. Further CAD 975M advances to Bank of British Columbia, which is taken over by HSBC, which receives CAD 200M payment from deposit insurance fund.	AHEL, RES		PRI-PRI (partly)	Goodhart and Schoenmaker 1992, 404f.
US-1984	March 1985	United States	Runs on Home State in Ohio and other banks. Ohio announces est. of new insurance fund, and subsequently bank holiday, reorganization of state deposit insurance.	AG, SBH, ORL			Chen et al. 2020, 47.
PR-1983	1983-1990	Peru	1987 nationalization law by Garcia administration, affecting ten private banks, 23 insurance houses. Some private sector involvement in early phase of crisis (Banco Comercial 1982 assistance).	BBCI		PRI-PRI (partly)	Morris 1990, 98; Liebana 2001; Reinhart/Rogoff
BRL-1985	1985	Brazil	Central Bank commits to honoring overseas short-term debts of <i>Comind</i> and <i>Auxiliar Bank</i> , but banks go into receivership.	OLG			Reinhart/Rogoff

GN-1985	1985	Guinea	Six public banks liquidated, arrangements for recap of private bank; deposit reimbursements 3% of GDP.	AG, AHCI, RES		STOW (partly)	Caprio and Klingebiel 1996, 29; Laeven and Valencia.
VN-1985	1985	Venezuela	Banco de Comercio bankrupt: FOGADE assumes control and liquidates bank; depositors reimbursed.	AG, AHCL			De Krivoy 2000, 33f.
UG-1985	1985-1987	Uruguay	State-owned Banco Republica takes over Banco Comercial and Banco Caja Obrera, as well as local subsidiaries. Substantial public loss absorption after initial debt moratoria prove insufficient.	BBCI, DPM		STOW	Morris 1990, 88f.
US-1984	May 1985	United States	Bank runs in Maryland after fears over Old Court S&L. Government establishes new deposit insurance fund and orders withdrawal limits, deposit insurance reforms.	AG, SBH			Chen et al. 2020, 48.
SAF-1985	August 1985	South Africa	Government closes stock exchange in August; moratorium on short-term debt. R 1.5BN low-interest loan for struggling <i>Bankorp</i> .	AHEL, DPM, SBH			<u>Governor's Panel</u> , 2004; Demirguc-Kurt and Detragiache 2005.
KY-1985	1985-1989	Kenya	Forced mergers and liquidations, including establishment of Consolidated Bank of Kenya in 1989.	RES			Mutuota 2000, 2ff.; Reinhart/Rogoff

KOR-1985	1985-1988	Korea	Structural problems result in merger or liquidation of 78 firms over 1986-7. Preferential liquidity provision by central bank. USD 5.9BN net uncovered bank liabilities.	BBEL, RES			World Bank 1989, 71; Reinhart/Rogoff
MY-1985	December 1985	Malaysia	Stock exchange holiday following Pan-Electric collapse and repeated bank runs. Bank Negara begins ad hoc emergency lending.	AHEL, SBH			Sheng 1996, 114; Reinhart/Rogoff.
ICE-1985	December 1985	Iceland	Útvegsbanki is supported by central bank after bankruptcy of major client. Restructuring and eventual privatization in 1990.	AHEL, RES		STOW	Einarsson et al. 2015, 22.
COB-1982	December 1985	Columbia	Amid deterioration of bank system solvency, Law 117 establishes FOGAFIN fund to recapitalize banking system and (selectively) guarantee deposits. Banco de Colombia, Granfinanciera, and Pronta are nationalized via FOGAFIN in the first days of 1986. Further “guarantee capital” deployed for Banco del Colombia.	BBCI, AG, ASG	SPV		Caballero Argaez and Montoya 2006, 117f.
PT-1986	1986	Portugal	At present, no crisis interventions identified.	NO/I			Demirguc-Kurt and Detragiache 2005.
MY-1985	July 1986	Malaysia	Beginning of DTC wave of failures (KOSATU collapse): central bank freezes assets of affected cooperatives and places selected ones under receivership/administration. Wide-ranging probes and auditing.	RES, ST			Sheng 1996, 114ff.

	August 1986	Malaysia	Central Bank injects capital and restructures three tumbling medium-sized banks, alongside new private equity subscriptions and subordinated loans. Depositors in failing DTCs are fully reimbursed.	AG, AHCI, BBEL, RES		PRI-PRI (partly)	Sheng 1996, 118; Reinhart/Rogoff.
KW-1986	1986	Kuwait	Ca. 40% of bank loans are NPLs, threat of systemic banking collapse. “Highly concessional loans” are provided to sector via government.	BBEL			World Bank 1989, 71.
DK-1987	March 1987	Denmark	Rescue of 6th July Bank: Danish Banking Association guarantees non-bank deposits, and central bank provides liquidity to Sydbank for takeover. Capital injections by two mortgage banks.	AG, AHEL, BAIL	ASSOC (partly)	PRI-PRI (partly)	Goodhart and Schoenmaker 1993, 405f.
BOL-1987	June 1987	Bolivia	Major commercial debt restructuring agreement under IMF auspices; broader currency/inflation crises. Under Supreme Decree 21660 (June 10, 1987), Banco Central de Bolivia assumes debts of three major state-owned banks, Banco del Estado, Banco Agrícola, Banco Minero.	BBAM, other		STOW	Reinhart/Rogoff; Kehoe, Machicado, and Peres-Cajias 2019.
US-1984	October 1987	United States	Greenspan Fed engages in open market operations directly following crash, publicly affirms liquidity provision, and liberalizes policies of lending own UST securities from Fed portfolio to ease market concerns on counterparty risks. Fed orchestrates continued private lending behind the scenes, succeeds in restoring confidence.	MLA, ORL	Market	PRI-PRI (partly)	Garcia 1989; Carlson 2007, 17-22.
DK-1987	October 1987	Denmark	Collapse of C&G Bank: private recaps prove insufficient, as does unsecured central bank liquidity assistance. By	AG, AHCI, AHEL, RES			Goodhart and Schoenmaker 1993, 406.

			special parliamentary decree, DKR 50M in deposits are guaranteed.				
COS-1987	November 1987	Costa Rica	Bank runs after collapse of Consorcio Cretiticia: central bank lowers reserve requirements to provide liquidity and lends Colones 950M to state-banks to buy general regulated bank certificates across the market.	BBEL, CRL		STOW (partly)	Financial Times, April 14, 1988; Reinhart/Rogoff
CM-1987	1987	Cameroon	Rise in bad loans amid oil price plunge; intl. bank disinvestments; state gradually privatizes state banks, major bank reform package in 1989 –focused on liquidations, public deposit write-offs, and bank debtor compensations.	BBCI, RES		STOW	IMF 2007, 32; Laeven and Valencia.
BA-1987	1987	Bangladesh	Significant share of NPLs reported. L/V report some associated debt/GDP and liquidity costs.	BBEL			Laeven and Valencia.
PR-1987	October 1987	Peru	Widespread financial sector crisis amid external default in 1987 and capital flight; bank nationalization law in October 1987, but subsequent attempts at implementation flounder. No attempt at realistic private owners' compensation.	RES			Maxfield 1992, 93ff.
SZ-1987	1987	Switzerland	Swiss “Regional Bank Crisis” over 1988-1995; various cantons recapitalize or restructure state-owned banks (see below). Berner Kantonalbank transfers SFR 6.6BN bad assets to AMC (“Dezennium Finanz AG”) with public loss guarantees.	AHAM, OLG	SPV (partly)	STOW	Staub 1998, 655; Birchler 2007; Stünzi 2018.
MY-1985	1987	Malaysia	Cooperative Central Bank put into receivership; central bank provides M\$ 323M liquidity facility.	AHEL, RES			Sheng 1996, 120.

DK-1987	1987-1992	Denmark	Multiple direct rescues (capital injections) and large-scale liquidity support, incl. DKR 850M for Sjøvinnubanken and various others. In some cases, authorities demand private recap efforts by shareholders (i.e. C&G Banken, 1987).	BBEL, BBCI		PRI-PRI (partly)	Financial Times, February 3, 1993; Reinhart/Rogoff; Abildgren 2010, 170ff.
NZL-1987	1987-1990	New Zealand	Privatization program includes Bank of New Zealand float; some increase in daily cash liquidity by RBNZ in November 1987 following U.S. crash (to USD 30m). Further interventions in November 1990 (s.b.)	BBEL			RBNZ 1988, 32; Reinhart/Rogoff
NIC-1987	1987-1996	Nicaragua	Deep economic and financial crisis, inflation >15,000% p.a. Central Bank assumes FX losses, reimbursed by Treasury.	BBEL		STOW	Ocampo 1991; Reinhart/Rogoff
NOR-1987	March 1988	Norway	Sunnmørsbanken failure in March triggers first phase of banking crisis: privately-funded SBGF fund guarantees all Sunnmørsbanken liabilities, and further provides capital support (via capital certificates) and facilitating mergers.	AHCI, OLG, RES		PRI-PRI	Sandal 2004, 87; Haare, Lund, and Solheim 2016.
	March 1988	Norway	Norges Bank begins providing selected liquidity support.	AHEL			Sandal 2004, 87; Haare, Lund, and Solheim 2016.
SEN-1988	November 1988	Senegal	Major bank restructuring program initiated: government stakes limited to 25% of total equity; weak banks put into receivership, other recapitalized with private sector participation (i.e. Credit Lyonnais-Senegal, May 1989). AMC established.	BBAM, BBCI, RES	SPV (partly)	PRI-PRI (partly)	World Bank 1989, 8f.; Klingebiel 2000.

BEN-1988	1988	Benin	Major banking system restructuring, with liquidation of substantial share of system assets. AMC established.	BBAM, RES	SPV (partly)		Klingebiel 2000; Laeven and Valencia.
NP-1988	1988	Nepal	Surge in arrears at major banks and IMF program; RBB and NPL (main banks) are restructured and recapitalized in 1990.	BBCI, RES			Ozaki 2014, 2ff.; Laeven and Valencia.
IS-1988	1988	Israel	Shl 3.85BN monetary+government support program for banking sector after mounting losses, including acceleration of public recaps, and including loan restructuring program. Lowering of reserve requirements. ^{xxix}	AHCI, BBEL, CRL, RES			BoI 1989, 282ff.; Gurkov 1994.
CDI-1988	1988	Cote d'Ivoire	Major recapitalizations of four largest banks, accounting for 65-70% of banking system assets. Various restructurings, some of which end in liquidation (i.e. BNDA). AMC established.	BBAM, BBCI	SPV (partly)	STOW (partly)	Popiel 1994, 58; Caprio and Klingebiel 1996, 21; Klingebiel 2000.
MAG-1988	1988	Madagascar	Restructuring, privatization, and liquidation efforts – interest-free loans from Treasury for banks under restructuring. Recaps by new private owners.	AHEL, BBCI, RES			Popiel 1994, 58f.; Laeven and Valencia.
CAF-1988	1988-1999	Central African Republic	Restructuring of two largest national banks, comprising 90% of system assets; multiple smaller bank liquidations.	RES			Kane and Rice 2001, 39ff.; Reinhart/Rogoff

PA-1988	1988-1989	Panama	Several months of banking holiday after U.S. intervention in Panama.	SBH			Reinhart/Rogoff
ELS-1989	1989	El Salvador	Nine state-owned commercial banks with deteriorating NPL balances.	NO/I			Reinhart/Rogoff
SAF-1989	1989	South Africa	“Some banks experienced problems”. International sanctions, debt crisis from 1986 and international bank disinvestments from S.A., but no evidence of domestic bank interventions.	NO/I			Feinstein 2005, 224ff.; Reinhart/Rogoff
SRL-1989	1989-1993	Sri Lanka	State-owned banks with deteriorating NPL balances. Central Bank provides emergency liquidity to pay depositors, some restructurings. In 1993, recapitalizations of state banks (incl. Bank of Ceylon).	BBEL, BBCI, RES		STOW (partly)	Hemachandra 2011, 21; Reinhart/Rogoff
NOR-1987	May 1989	Norway	Norion Bank under fraud investigation and put under public receivership. De facto full reimbursement of depositors by Norges Bank (which takes NOK 47M loss).	AG, RES			Ongena, Smith, and Michalsen 2003, 86; Haare, Lund, and Solheim 2016, 23f.
SEN-1988	June 1989	Senegal	Amid banking crash, all outstanding bank sector liabilities to central bank (BCEAO) are restructured or liquidated. AMC is established to manage asset recovery (“Societe National de Reccouvrement”).	BBAM, BBEL	SPV (partly)	STOW (partly)	World Bank 1989, 8f.; Popiel 1994, 59.

JOR-1989	August 1989	Jordan	Bank runs: central bank grants overdrafts for banking sector up to 10% of GDP.	BBEL			Caprio and Klingebiel 2003, 17.
US-1984	August 1989	United States	President Bush signs “Thrift Bailout Bill”.	ORL			Madura, Tucker, and Zarruk 1993.
GH-1990	1990	Ghana	Establishment of NPRAT to manage bad assets (ca. 6% of GDP transferred), major bank restructurings and operational interventions. Various official sector bank recapitalizations over 1988-1992.	BBAM, BBCI, RES	SPV (partly)		Popiel 1994, 59; Antwi-Awasare and Addison 2000.
BUK-1990	1990	Burkina Faso	Mergers instituted among affected banks. AMC established to manage NPAs.	BBAM, RES	SPV (partly)		Popiel 1994, 59; Laeven and Valencia.
AUS-1989	June 1990	Australia	Farrow Corporation liquidation sparks liquidity assistance for depositors and pledge to assist other banks. A\$ 1.3BN in Farrow deposits guaranteed. In October, Reserve Bank publicly supports Metway and Melbourne banks.	AG, AHCL			Financial Times, July 4, 1990; Fitz-Gibbon and Gizycki 2001, 63, 65.
MX-1990	July 1990	Mexico	FOBAPROA established to purchase bad bank debts via private insurance contributions (initially).	BBAM	SPV	PRI-PRI	Sandoval 2010, 549.
AUS-1989	August 1990	Australia	State Bank of Victoria sold to Commonwealth Bank, which is part-privatized (30%) to finance deal. State government of Victoria covers bad debts in merchant arm (Tricontinental, A\$ 700M), with de facto federal gvt recap.	AHCI, RES		STOW	Gizycki and Lowe 2000; <u>Official A.</u>

BRL-1990	March 1990	Brazil	“Collor Plan” sees freezing of bank deposits above 50,000 Cruzados for 18 months (de facto expropriation and conversion to bonds).	BAIL, SBH		PRI-PRI	Crabtree 1991, 180; Reinhart/Rogoff
GT-1991	1991	Guatemala	“Two small state-owned banks closed”.	RES			Reinhart/Rogoff
POL-1991	1990	Poland	1BN Zloty stabilization fund established by intl. donors to aid bank transition.	BBCI	SPV	STOW	Thorne 1993.
ID-1990	September 1990	Indonesia	Bank Duta rescued after foreign exchange losses. Quasi government institutions bail Duta out (President Soeharto’s foundations).	AHCI			Abdulgani-Knapp 2007, 179.
FIN-1991	October 1990	Finland	<i>Skopbank</i> receives FIM 1.8BN capital injection from savings bank association.	AHCI	ASSOC	PRI-PRI	Sandal 2004, 85.
US-1984	October 1990	United States	Run on Rhode Island banks, incl. Heritage Loan. RISDIC injects capital. Some borrowings by banks from RICUL-CCU, and by Jan-1991 governor freezes deposits. Gradual unfreezing, reimbursements, and reorganization of deposit insurance.	AG, AHCL, SBH		PRI-PRI (partly)	Chen et al. 2020, 49f.
NZL-1987	November 1990	New Zealand	BNZ troubles: following 1989 recap, government USD 250M recap together with Capital Markets Equity Ltd. AMC (“Adbro”) set up to unload USD 2.8BN bad assets.	AHCI, AHAM	SPV (partly)	PRI-PRI (partly)	Hunt 2009, 35.

TW-1990	1990	Taiwan	Further UIC insolvencies after 1989 legal reforms, banning “Underground Investment Companies”.	ORL			Lee 1998, 19f.; Baron, Verner, Xiong 2021.
LB-1990	1990	Lebanon	Eleven banks turn to emergency central bank lending amid financial crisis.	BBEL			Lindgren, Garcia, and Saal 1998, 28; Laeven and Valencia.
SIR-1990	1990	Sierra Leone	Recapitalizations and restructurings of banks; some bank licenses are suspended.	BBCI, RES			Lindgren, Garcia, and Saal 1998, 31; Laeven and Valencia.
IT-1990	1990-1995	Italy	Decree in September 1993 requires mandatory enrollment of Italian banks in national deposit insurance scheme (IDPF); “58 banks merged” and major privatizations under Banking Law 218 of 1990 (i.e. BNL, Banco di Napoli).	AG, RES			Hertner 1994, 613, 629; Reinhart/Rogoff
DJI-1991	1991	Djibouti	Multiple bank failures; At present, no indications of interventions.	NO/I			Lindgren, Garcia, and Saal 1996, 24; Laeven and Valencia.
HK-1991	1991	Hong Kong	BCCI collapse and bank runs on Standard Chartered and Citigroup – government liquidates BCCIHK after unsuccessful attempts to find private buyer.	RES			Baron, Verner, Xiong 2020.

TZ-1991	1991	Tanzania	Creation of “Loans and Advances Realization Trust” (LART) to purchase bad assets from state-owned banks.	BBAM	SPV	STOW	Nord et al 2009, 40f.
GG-1991	1991	Georgia	Large-scale privatizations, liberalizations, restructuring of Gosbank in 1991; new wave of STOW reforms (mergers and liquidations) by mid-1995, after 1993-1994 hyperinflation.	RES		STOW (partly)	Amaghlobeli, Farrel, and Nielsen 2003; Laeven and Valencia.
LIB-1991	1991	Liberia	At present, no indications of relevant interventions.	NO/I			Laeven and Valencia.
DRC-1991	1991	DR Congo	Insolvencies of major national banks amid surge in NPAs. Individual recap of STOW bank with private participation.	AHCI		PRI-PRI (partly) STOW	Kane and Rice 2001, 39ff.; Laeven and Valencia.
CR-1991	1991	Croatia	Yugoslavia central bank seizes Croatian bank and currency reserves; Croatian government passes deposit freeze and issues emergency SOE/bank bonds.	BBEL, SBH	Industry (partly)	STOW	Skreb 2004, 8f.
US-1984	January 1991	United States	Bank of New England bankruptcy: FDIC controversially announces insurance of all deposits, even those >US\$100,000.	AG			Lamm and O’Keefe 1997, 375f.
NOR-1987	January 1991	Norway	Government announces creation “Government Bank Insurance Fund” (GBIF), capitalized with 5BN Kroner to insure depositors – via special loans to private sector guarantee funds.	BBEL, AG	SPV		Steigum 2009, 62; Haare, Lund, and Solheim 2016, 25.

CZK-1991	February 1991	Czechoslovakia	Transfer of 120BN Kcs in non-performing loans to newly established Consolidation Bank (split in 1993 due to country's political split).	BBAM		STOW	Thorne 1993, 21f.; Rod 2015, 413ff.
AUS-1989	1991	Australia	Collapse of State Bank of South Australia sparks capital injections, separation along good bank/bad bank model.	AHCI, RES			Fitz-Gibbon and Gizycki 2001, 66.
UK-1991	July 1991	United Kingdom	Banking instability after forced closure of Bank of Credit and Commerce International in July; fearing bank runs and interbank market vol., BoE sets up lifeboat fund with "several hundred million GBP" extended to smaller banks (incl. Invesco MIM) via clearing bank indemnities. Ca. GBP 115M in eventual BoE losses.	AHEL	Market		Financial Times, May 27, 1993; Logan 2001; Reinhart/Rogoff
EG-1991	1991	Egypt	In wake of BBCI collapse, depositors are granted permission to move funds to state-owned Bank Misr, which is given EGP 1BN public loan. Other private banks required to pay 0.5% of deposits to fund operation.	AG, AHEL		PRI-PRI (partly) STOW (partly)	Mohieldin 1995, 17.
FIN-1991	September 1991	Finland	Bank of Finland takes control of <i>Skopbank</i> after mounting losses, injecting FIM 15BN. Separation along good bank/bad bank model.	AHCI, AHAM			Sandal 2004, 85; Laeven and Valencia.
CZK-1991	Late 1991	Czechoslovakia	50BN Kcs provided for SOE debt relief (channeled via banks), and direct recapitalization of four commercial, two savings banks.	BBCI, OLG	Industry (partly)	STOW	Thorne 1993, 21f.

GRE-1991	1991-1995	Greece	At present, no indications of relevant interventions.	NO/I			Reinhart/Rogoff
TN-1991	1991-1995	Tunisia	Macro-pru measures and focus on financial sector liberalization amid IMF program, privatization wave over 1990s. Central Bank purchases of bad assets, incl. from Banque National de Agricole. State lending to development banks.	BBAM, BBEL, ORL		STOW	IMF 1998b, 12ff.; Jbili, Enders, and Treichel 1999, 11ff.; Reinhart/Rogoff
ALG-1990	1991-1997	Algeria	Repeated bank recapitalizations totaling 5% of GDP; further cash distributions of 11% of GDP to compensate for FX losses. Laeven and Valencia crisis costs differ. Schemes to restructure SOE bank overdrafts into medium-term loans (“dispositive banques enterprises”).	BBCI, BBEL, DPM		STOW	Iradian, Bazzoni and Joly 2000, 38.
ROM-1990	July 1991	Romania	Guarantee on 90 percent of all outstanding bank system NPLs (covered vol. Lei 150BN).	ASG		STOW	Thorne 1993, 25.
SWE-1991	Autumn 1991	Sweden	<i>Foersta Sparbanken</i> slides, receives SEK 8BN in guarantees and loans from government.	AHEL, OLG			Sandal 2004, 90; Reinhart/Rogoff; Laeven and Valencia.
	November 1991	Sweden	<i>Nordbanken</i> receives guarantee on equity issuance, SEK 20BN in restructuring aid. <i>Securum</i> , bank asset management company, capitalized with SEK 34BN.	AHCI, BBAM, BG		STOW	Sandal 2004, 90f.

NOR-1987	October 1991	Norway	Government creates “Government Bank Investment Fund”, to inject direct capital into ailing banks. “Government Bank Insurance Fund” enlarged by additional 6BN Kroner. Fokus Bank and Christiana Bank nationalized via equity capital injections.	ASG, BBCI	SPV		Steigum 2009, 62f.
	December 1991	Norway	De facto nationalization of De Norske Bank via “Government Bank Investment Fund”.	AHCI	SPV		Steigum 2009, 62f.
HUG-1991	December 1991	Hungary	Government guarantee on 50% of outstanding NPLs at three major banks for five years, Ft 10.5BN.	ASG			Thorne 1993, 22.
BUG-1991	Late 1991	Bulgaria	Government guarantees all bank loans, to deal with NPL issue (total: 47% of GDP).	OLG		STOW	Thorne 1993, 24.
US-1984	January 1992	United States	US\$ 1.2BN investment by FDIC as receiver into CrossLand, to facilitate re-sale and keep bank open. Successfully exited Aug-1993.	AHCI, AHCL			Lamm and O’Keefe 1997, 360.
COG-1992	1992	Congo, Rep.	At present, no indications of interventions.	NO/I			Laeven and Valencia.
CH-1992	1992	Chad	Central bank consolidates NPL portfolios at main commercial banks.	BBEL			Lindgren, Garcia, and Saal 1998, 23; Laeven and Valencia.

BOS-1992	1992	Bosnia	World Bank and IMF involvement promoting banking privatization and restructuring of state-owned banks.	RES		STOW (partly)	World Bank 2004, 12ff.; Laeven and Valencia.
KY-1992	1992-1995	Kenya	Looming collapse of Trade Bank and Pan African Bank. Public-private bank consortium, led by Kenya Commercial Bank, provides KSH 600M in emergency lending in Feb. 1992; substantial central bank liquidity support or via Deposit Protection Fund. Various banks liquidated.	BBEL, RES		PRI-PRI (partly)	Financial Times, February 14, 1992; Brownbridge 1998, 182; Reinhart/Rogoff
NG-1992	1992-1995	Nigeria	Nigeria Deposit Insurance Corporation assumes control of distressed National Bank of Nigeria in Jan. 1992;	RES			Financial Times, January 7, 1992; Reinhart/Rogoff
ANG-1992	1992-1996	Angola	“Two State-owned commercial banks close to insolvency”. Liquidations and gradual reform of dominant banks, including NBA.	RES		STOW	Ferreira and De Oliveira 2018; Reinhart/Rogoff
CN-1992	1992-1999	China	Significant capital injections into State-owned commercial banks (SOCBs), ca. US\$ 33BN in 1998 alone.	BBCI		STOW	Garcia-Herrero, Gavila, and Santabarbara 2006.
FIN-1991	March 1992	Finland	FIM 8BN capital injection into banking sector via preferred capital certificates.	BBCI			Sandal 2004, 86.

	April 1992	Finland	GGF authorized to lend to banking sector via capital certificates and loans, and to guarantee bank credit.	BBEL, OLG	SPV		Sandal 2004, 86.
SWE-1991	April 1992	Sweden	<i>Gota Bank</i> receives SEK 20BN capital injection, transfer of bad assets to <i>Retriva</i> AMC.	AHCI, BBAM	SPV		Sandal 2004, 91.
EST-1992	April 1992	Estonia	Bank of Estonia takes over Savings Banks after it suspends non-Russian payments, assumes Moscow Saving's Bank assets.	AHCI, BBAM			Fleming, Chu, Bakker 1996, 10.
IN-1993	April 1992	India	RBI uncovers fraud at Harshad Mehta Group (HMG) - personal assets frozen and group and affiliates put under receivership and liquidated.	RES			News India, June 19, 1992.
SZ-1987	June 1992	Switzerland	Establishment of regional bank crisis fund: SNB, invoking LLR mandate, contributes CHF 30M in funding, amid continued financial volatility.	AHEL	SPV	PRI-PRI (partly)	Birchler 2007, 396.
FIN-1991	August 1992	Finland	Parliament announces blanket guarantee for banking sector – announcement renewed until 1998.	BG			Sandal 2004, 86.
SWE-1991	September 1992	Sweden	Swedish Parliament announces blanket guarantee for banking sector (in effect until July 1996). Riksbank uses FX reserves to make deposits into bank sector.	BG, BBEL			Sandal 2004, 91.
JP-1992	September 1992	Japan	Private creditor bailout for three affiliates of Nippon Credit Bank, with NPAs reported at JPY 1.1TN.	AHEL		PRI-PRI	American Banker 9 1992, 12.

EST-1992	November 1992	Estonia	Bank of Estonia places moratorium on TCB, UBB, and NESB amid liquidity crisis.	DPM			Laeven and Valencia.
DK-1987	November 1992	Denmark	Looming collapse of Varde Bank: Nationalbanken cooperates with private banks to set up Kr 750M guarantee fund (on loan losses), pledges liquidity support.	ASG, OLG		PRI-PRI (partly)	Abildgren 2010, 175f.
ID-1992	November 1992	Indonesia	Distressed Summa Bank supported by consortium of 17 private banks to guarantee small depositors and prevent spillover: ca. Rp 150BN volume.	AG, AHEL		PRI-PRI	Financial Times, November 20, 1992; Reinhart/Rogoff
HUG-1991	December 1992	Hungary	Credit consolidation program after fresh bank failures: government covers credit losses on existing credits, and balance sheet clean-up costs for banks with CAR <7.5% NBH provides emergency assistance to Konzumbank and IBH.	AHEL, BBAM, ASG			Abel and Szakadat 1997, 174ff.
ICE-1993	1993	Iceland	<i>Landesbanki</i> (state-owned) receives 1%/GDP capital injection after slide.	AHCI		STOW	Einarsson et al. 2015, 22; Reinhart/Rogoff
ER-1993	1993	Eritrea	At present, no indications of interventions.	NO/I			Laeven and Valencia.
TG-1993	1993	Togo	At present, no indications of interventions.	NO/I			Laeven and Valencia.

POL-1991	February 1993	Poland	Decree for the recapitalization of Ten state-owned banks amid continued banking system problems, via 5- and 15-year government bonds.	BBCI		STOW	NBP 2001, 17.
SRL-1989	March 1993	Sri Lanka	Government issues bonds equivalent to 4.8% of GDP to recapitalize two major commercial banks with significant NPL problems.	AHCI		STOW	Goodhart et al. 1998, 28f.
SLV-1993	April 1993	Slovenia	Founding of Bank Rehabilitation Agency to restructure main banks: bad debt transfers, swapped for state bonds up to DM 2.2BN; equity replaced with subordinated claims on banks; various restructurings/liquidations.	BBAM, BBCI, RES	SPV	PRI-PRI (partly)	Stiblar 2004, 213ff.
JP-1992	August 1993	Japan	Daiwa Bank bails out Cosmo Securities after USD 700M loss, to prevent market disruptions.	AHCI		PRI-PRI	The Economist, August 21, 1993.
ROM-1990	1993	Romania	Bank recapitalization program, Lei 50BN.	BBCI		STOW	Thorne 1993, 26.
GI-1993	1993	Guinea	Various insolvent banks restructured; private banks' past losses absorbed, recapped, and placed under interim administration.	BBCI, RES			Caprio and Klingebiel 1996, 22; Laeven and Valencia.
GY-1993	1993	Guyana	At present, no indications of interventions.	NO/I			Laeven and Valencia.
MAC-1993	1993	Macedonia	At present, no crisis interventions identified.	NO/I			Laeven and Valencia.

IN-1993	1993-1998	India	Ca. 165BN Rupee capital injections into national banks over 1993-1999 (i.e. ca. 1.6%/GDP); partial privatizations via amendment of 1955 SBI Act.	BBCI, other		STOW	Nandy 2010, 40ff.; Reinhart/Rogoff
ES-1993	December 1993	Spain	Banesto intervention by Bank of Spain. Later sold to Banco de Santander.	AHCI, RES			Tortella 1997, 243.
SZ-1987	December 1993	Switzerland	Banque Vaudoise de Credit on brink of default: Canton extends full guarantee to prevent closure, and integrates bank into BCV.	BG, RES			Birchler 2007, 397f.
FRA-1994	March 1994-1995	France	Credit Lyonnais state support by government: FFr 40BN asset management program (via <i>OIG</i> and <i>CDR</i>), with losses partially covered by public; FFr. 4.9BN capital increase subscribed by public. FRF 190BN guarantee.	AHCI, ASG, BBAM, RES	SPV (partly)	STOW	EC, July 26, 1995.
TK-1994	May 1994	Turkey	“Blanket guarantee” on all savings deposits. ^{xxx}	AG			Laeven and Valencia 2012, 1223.
KZ-1994	July 1994	Kazakhstan	Establishment of public debt resolution agencies (de facto bad banks cum state lenders): Rehabilitation Bank (RB), Agricultural Support Fund (ASF), and Exim Bank, which begin to take over private sector NPLs, other bad assets.	BBAM	SPV		Hoelscher 1998, 12f.
EST-1995	August 1994	Estonia	Social Bank on verge of bankruptcy: BOE places Bank into moratorium, provides liquidity assistance. By 1995 split into good bank/bad bank.	AHEL, DPM			Fleming, Chu, Bakker 1996, 10.

MX-1994	September 1994	Mexico	Government assumes control of Union and Cremi Bank via FOBAPROA after frauds discovered. Later Banpais added.	AHCI	SPV		Graf 1999.
	1994-2000	Mexico	<p>12 banks nationalized and NPL portfolios cleaned up by FOBAPROA between end-1994 and August 1997.</p> <p>FOBAPROA buys NPL portfolios above market value – supplies banks with promissory note assets in return.</p> <p>FOBAPROA mandates subordinated debt issuance by systemic banks, acquires these debt stocks via loans from central bank (volume ca. USD 1BN by March 1995).</p>	BBAM, BBCI, RES			Graf 1999; Reinhart/Rogoff
HT-1994	1994	Haiti	At present, no indications of interventions.	NO/I			Laeven and Valencia.
MOG-1994	1994	Mongolia	Bank crisis triggered by collapse of CMEA trading system: Bank of Mongolia places banks under conservatorship and provides liquidity assistance of ca. 2% of GDP.	BBEL, RES			World Bank 2005, 2f.
DRC-1994	1994	DR Congo	“Two state-owned banks liquidated and two privatized. In 1997, 12 banks had serious financial difficulties.”.	RES			Kane and Rice 2001, 39; Reinhart/Rogoff; Laeven and Valencia.
ID-1994	1994	Indonesia	Surge in NPAs to 17% of bank system assets, concentrated at STOWs. No interventions reported at present.	NO/I			Reinhart/Rogoff

ETH-1994	1994	Ethiopia	Restructuring, purchase of bad assets by government at one bank.	AHAM, AHCI		STOW	Kane and Rice 2001, 40; Reinhart/Rogoff
BUR-1994	1994	Burundi	Civil War Period and 1994 jump in inflation distressing banks. No relevant interventions mentioned in Nkurunziza, Ndikumana, and Nyamona (2012) or others.	NO/I			Nkurunziza, Ndikumana, and Nyamona 2012; Laeven and Valencia.
VN-1994	1994	Venezuela	FOGADE, deposit insurance provider, quadruples coverage of insurances. Several institutions nationalized, with some liquidations. Guarantee Fund provides assistance to 15 institutions.	AG, BBCI, BBEL			Jacome 2008, 46; Laeven and Valencia.
BOL-1994	November 1994	Bolivia	Initial central bank LLR support from Tequila crisis fallout. Later increasingly discretionary deposit guarantees via non-interest-bearing certificates.	BBEL, AG			Jacome 2008, 39.
POL-1991	December 1994	Poland	Law on the Bank Guarantee Fund: formalization of deposit guarantee system and solvency assistance framework for banks.	AG, ORL			NBP 2001, 18f.
BRL-1994	December 1994	Brazil	BANESPA and BAERJ emergency interventions by Brazilian central bank. ^{xxxi}	AHCI, AHCL		STOW	Mettenheim 2010, 31; Laeven and Valencia.

JAC-1994	December 1994	Jamaica	“Blaise Financial Entities” (BFE) put under temporary state management after frauds revealed. Full reimbursements of depositors and restructuring efforts led by new entity (FIS).	AG, RES	SPV (partly)		Kirkpatrick and Tennant 2002, 9.
JP-1992	December 1994	Japan	Public-private resolution of two major urban credit cooperatives (Tokyo Kyowa & Anzen Bank): establishment of <i>Tokyo Kyoudou Bank</i> with JPY 40BN capital.	AHCI, RES		PRI-PRI (partly)	Nakaso 2001; Gandrud and Hallerberg 2017.
COS-1994	December 1994	Costa Rica	<i>Banco Anglo Costarricense</i> (BAC) is closed, with full deposits guaranteed by central bank (BCCR). Remaining deposits transferred to public sector banks. Colones 30,000M volume.	AG, RES		STOW	Alvarado and Peralta 1996; Jacome 2008, 43f.; Reinhart/Rogoff
ARM-1994	1994	Armenia	At present, no crisis interventions identified.	NO/I			Laeven and Valencia.
GIB-1995	1995	Guinea-Bissau	Sharp rise in NPAs, up to 45% of total assets. No interventions reported.	NO/I			Kane and Rice 2001; Laeven and Valencia.
HUG-1995	1995	Hungary	Magyar Hitel Bank, Mezőbank split into good bank bad bank and sold off, after bank recapitalizations for at least 8 banks and bailouts. Various interventions into underlying corporate debtors to address NPAs.	BBCI, RES	Industry (partly)	STOW (partly)	Abel and Szakadat 1997, 179ff.; Hawkins and Turner 1999, 69; Baron, Verner, Xiong 2021.

CM-1995	1995	Cameroon	Several bank closures and restructurings amid rise in NPAs.	RES			Kane and Rice 2001, 39ff.; Laeven and Valencia.
UA-1995	1995	Uganda	Government interventions and recap for Nile Bank and Sembule Bank.	AHCI			Kane and Rice 2001, 49.
RUS-1995	1995	Russia	Actual intervention chronology begins with some delay, see events from 1997 below.	NO/I			Reinhart/Rogoff
ZB-1995	1995	Zambia	Commerce Bank, Meridian Bank, African Commercial Bank collapse. Ca. 1.4% of GDP restructuring/recap costs.	BBCI, RES			Kane and Rice 2001; Laeven and Valencia.
ZI-1995	1995	Zimbabwe	Commercial Bank of Zimbabwe taken over by central bank.	RES			Kane and Rice 2001; Laeven and Valencia.
KYR-1995	1995	Kyrgyz Republic	Sharp rise in NPAs after end of SOE loan support from central bank; DEBRA established as AMC to manage bad assets, macro-pru reforms implemented. Liquidation of problem banks.	BBAM, RES	SPV (partly)	STOW (partly)	Siegelbaum et al 2002, 17ff.; Aseinov and Karymshakov 2018, 75ff.; Laeven and Valencia.

AZ-1995	September 1996	Azerbaijan	Bank reforms in context of IMF program: four main state-owned banks put under ANB supervision and restructuring programs initiated to liquidate or privatize banks.	RES		STOW	IMF 1997, 7; Laeven and Valencia.
EST-1995	1995	Estonia	Protracted volatility and structural banking weakness over 1992-1998 amid IMF involvement: Bank of Estonia intervenes via repeated capital injections and assumptions of liabilities (i.e. Foreksbank); weaker institutions (i.e. Maapank) are shut down.	BBCI, OLG, RES			Fleming, Chu, and Bakker 1997, 43f.; Eestipank 1998.
BRL-1994	January 1995	Brazil	Intervention into Banerj and Banespa state banks by central bank after mounting losses. Heavy recourse to liquidity assistance from 2H-94 already.	AHCI, AHEL		STOW	Flynn 1996, 419.
ARG-1995	January 1995	Argentina	US\$ 1,040M establishment of private sector “safety net” for illiquid wholesale banks, in return for lower reserve requirements by central bank. Use of private sector deposits to fund illiquid banks via public <i>Banco de la Nacion</i> .	BBEL, CRL		PRI-PRI (partly)	Carrizosa, Leipziger, and Shah 1996.
UK-1995	February 1995	United Kingdom	Barings collapse: Bank of England attempts weekend bailout, but fails.	NO/I			BoE 1995, 12; Reinhart/Rogoff
AT-1995	March 1995	Austria	Two well-known institutions, BHI of Graz and Roessler Bank, default. Private guarantee fund is set up to make whole 98% of deposit volumes not covered by state deposit scheme – but Schilling 30M losses still ensue. ^{xxxii} Roessler is taken over and restructured.	AG, RES		PRI-PRI	Pilz 1995, 31f.; Riffert 2005; Baron, Verner, Xiong 2021.

SWA-1995	March 1995	Swaziland	Central Bank takes over Meridien BIAO, as well as Swaziland Development and Savings Bank.	RES			Caprio and Klingebiel 2003, 13.
ARG-1995	March 1995	Argentina	Establishment of US\$ 2BN “Trust Fund” which advances favorable (subordinated) bank loans upon meeting prudential capital guidelines. Trust Fund can also cover outstanding central bank rediscounts.	BBEL, RES	SPV		Carrizosa, Leipziger, and Shah 1996.
LAT-1995	April 1995	Latvia	Bank of Latvia provides “modest liquidity support” to struggling <i>Bank Baltija</i> , subsequently takes over management of bank. Depositor recompensation enacted: maximum of US\$ 1,000 per depositor, spread over four years.	AHEL, AHCI, AG			Fleming and Talley, 1996.
BUG-1996	May 1995	Bulgaria	Severe bank crisis affecting state-owned and private banks; Bulgarian Central Bank (BNB) and State Savings Bank (SSB) provide extensive liquidity (ca. 5.8% of GDP), and Treasury provides broad recapitalization by overpaying for “zonk bonds”; freezing of foreign deposits, and conservatorship of several banks by May 1996.	BBCI, BBEL, RES, SBH		STOW (partly)	IMF 1999, 84ff.; Laeven and Valencia.
PG-1995	June 1995	Paraguay	Central Bank of Paraguay (CBP) intervenes in banks making up more than 15% of national deposit base; from June, CBP offers “massive liquidity support” to distressed banks to cover deposit outflows and other liabilities due. Deposit guarantees for institutions wound down.	BBCI, BBEL, AG			Garcia-Herrero 1997; Jacome 2008.

KZ-1995	Mid-1995	Kazakhstan	Emergency lending by central bank (NBK) to Turan Bank, as broader liquidity crisis underway. Special “liquidation department” inside NBK closes down circa 60 smaller banks over course of year.	AHEL, RES			Hoelscher 1998, 11, 20f.
BRL-1994	August 1995	Brazil	Rescue of <i>Economico</i> , <i>Nacional</i> banks, and establishment of federal deposit insurance fund via <i>PROER</i> (up to R\$ 20k).	AG, AHCI	SPV (partly)		Mettenheim 2010, 30ff.
TW-1995	August 1995	Taiwan	Takeover of Changhua City Bank by state-owned Cooperative Bank of Taiwan. Ca. 1BN USD provided to eight other banks to stem deposit outflows. String of additional restructurings/bailouts follows into 1996.	BBEL, RES		STOW	<u>AP 1995</u> ; Lee 1998, 20f.; Reinhart/Rogoff
BOL-1994	September 1995	Bolivia	FONDESIF, bank assistance fund, is founded. Ad hoc capital injections into stressed banks, including <i>Bolivian American Bank</i> .	AHCI	SPV		Jacome 2008, 39.
ROM-1990	November 1995	Romania	Romanian Central Bank places Banca Felix under supervision and advances at least GBP 215M in emergency loans.	AHEL			Financial Times, May 29, 1996. Reinhart/Rogoff.
LIT-1995	December 1995	Lithuania	Moratorium by Central Bank on Innovation Bank, Litimpex, and Vakarų liabilities.	DPM			Fleming, Chu, Bakker 1996, 12.
BRL-1994	March 1996	Brazil	R\$ 8BN recapitalization of Banco do Brazil after significant losses. Already majority state-owned.	AHCI		STOW	Flynn 1996, 420; Cardoso and Helwege 2001, 162.

TH-1996	May 1996	Thailand	Bank of Thailand assumes control of Bangkok Bank of Commerce (BBC).	AHCI			Dreyer 2020, 1.
CR-1996	1996	Croatia	Recapitalization and reorganization of four big banks, totaling USD 473M.	BBCI, RES			Skreb 2004, 9f.
CZK-1996	June 1996	Czech Republic	De facto guarantee on deposits at 18 banks.	AG			Laven and Valencia 2012, 1224.
JAC-1996	July 1996	Jamaica	Runs on “Century Financial Entities” (CFEs) which are placed under temporary state management. Full reimbursement of 43,000 depositors.	AG, RES			Kirkpatrick and Tennant 2002, 9f.
EC-1996	1996	Ecuador	Central Bank of Ecuador intervenes into <i>Banco Continental</i> via subordinated loan after broader liquidity assistance to banks proves insufficient in its case. Deposits are guaranteed throughout the process.	BBEL, AHCI, AG			Jacome 2004; Jacome 2008, 39.
DOR-1996	1996	Dominican Republic	LLR and finance bank resolution applied to <i>Banco del Comercio</i> .	AHEL, AHCI.			Jacome 2008, 40.
YM-1996	1996	Yemen	High level of NPLs, political instability through 1990s; Banking Law of 1998 introduces range of macro-pru and regulatory reforms. Privatization efforts (incl. National Bank of Yemen).	other			Enders et al 2002, 41ff.; Laeven and Valencia.

KZ-1995	September 1996	Kazakhstan	Further NBK emergency lending to select institutions, incl. Turan and Kramds, and suspension of prudential requirements; forced merger of Turan and Alem banks (into TAB) and liquidation of Kramds by end of year.	AHEL, RES			Hoelscher 1998, 20f.
MAU-1997	1996	Mauritius	Two commercial banks closed by authorities.	RES			Kane and Rice 2001, 41; Reinhart/Rogoff
MOG-1996	1996	Mongolia	Bank of Mongolia injects large amounts of liquidity after sharp rise in NPAs and two small bank collapses; three banks either liquidated by BOM or placed under conservatorship; deposit rate floor abolished.	BBEL, ORL, RES			World Bank 2005, 3.
CN-1992	October 1996	China	Everbright Trust and Investment Company close to bankruptcy: PBoC orders RMB 5BN debt-to-equity conversion for state creditors to keep bank alive.	AHCI, BAIL		STOW	Xie 1999, 125.
PG-1995	December 1996	Paraguay	Continued banking sector volatility: Corfan Bank nationalized via merger with BNT (state-owned).	AHCI			IMF 2000, 11.
KZ-1995	January 1997	Kazakhstan	Government recaps restructured TAB Bank (Turan and Alem) with USD 90M.	AHCI			Hoelscher 1998, 20.
PG-1995	January 1997	Paraguay	Social Security Institute (IPS) nationalizes Banco de Desarrollo with G 26BN injection.	AHCI			IMF 2000, 11.

JAC-1996	January 1997	Jamaica	FINSAC established to provide banking recaps and liquidity assistance to entire financial sector. For some institutions, FINSAC purchases bad assets, but high degree of discretion involved.	BBCI, BBEL, BBAM	SPV		Kirkpatrick and Tennant 2002, 9ff.
	February 1997	Jamaica	Gvt issues blanket guarantee for all deposits in licensed deposit-taking institutions, pension funds managed by authorized institutions, and policy-holders funds in insurance companies.	AG			Laeven and Valenica 2012, 1223.
TH-1996	February 1997	Thailand	Bank of Thailand begins BHT 200BN emergency lending program to distressed banks via Financial Institutions Development Fund (FIDF).	BBEL			Radelet and Sachs 2000, 135.
	March 1997	Thailand	Forced merger by <i>Finance One</i> with Thai Danu Bank to stave off collapse. BHT 40BN capital injection into Finance One by FIDF.	AHCI, RES			Lauridsen 1998, 1581
JP-1992	April 1997	Japan	Bailout of <i>Nippon Credit Bank</i> : public-private capital injections, with JPY 80BN BoJ contribution via preferred shares. Full nationalization by Dec-1998.	AHCI		PRI-PRI (partly)	Nakaso 2001, 14f.
TH-1996	June 1997	Thailand	Suspension for 30 days of 16 finance companies, organization of consolidation plans.	SBH			Lauridsen 1998, 1582.
PHP-1997	June 1997	Philippines	From mid-1997 banking sector under increasing stress, resorting to central bank emergency liquidity (peak in May 1998); additional macro-pru responses.	BBEL			Lindgren et al 1999, 18ff.; Laeven and Valencia.

NG-1997	1997	Nigeria	CBN orders recapitalization or liquidation of dozens of banking institutions over 1998-1999; various macro-pru responses (minimum paid up capital doubled, to NGN 1BN).	other, RES			CBN 1999, 18ff.; Reinhart/Rogoff
TW-1997	1997	Taiwan	Rising NPLs at banks and equity losses, but no exceptional crisis intervention identified.	NO/I			Reinhart/Rogoff
TN-1997	1997	Tunisia	Structural Adjustment Facility (SAF I) set up to restructure balance sheets and NPLs. Public subscription to equity increase at <i>Banque Nationale Agricole</i> (BNA).	BBAM, AHCI	SPV	STOW	Hibou 2011, 32f.
TH-1996	August 1997	Thailand	Suspension of further 42 finance companies by authorities. Creditors at banks and finance comps. receive guarantee on all deposits, contingent and foreign liabilities, with minor exceptions.	BG, RES			Lauridsen, 1998, 1582, 1584;
	October 1997	Thailand	Establishment of Financial Restructuring Agency (FRA) to oversee suspended finance companies. Establishment of Asset Management Company (AMC) to pool bad debts and organize asset disposal. Blanket guarantee for remaining private finance companies and local banks.	BBAM, BG, RES	SPV (partly)		Lauridsen 1998, 1583.
ID-1998	November 1997	Indonesia	16 private banks closed after IMF agreement.	RES			Sato 2005, 102.

VT-1997	November 1997	Vietnam	Volatility from mid-1997; Law on the State Bank and Law on Credit Institutions passed in 1998, focusing on macro-pru, capital adequacy, and supervision reforms;	ORL			Tam 2000; Laeven and Valencia.
KOR-1997	November 1997	Korea	Government announces establishment of bad bank inside KAMCO (Korean Asset Management Company), focusing on NPL purchases from private sector.	BBAM	SPV		He 2004, 4.
	November 1997	Korea	Significant extension of emergency liquidity over Nov-Dec 1997.	BBEL			Lindgren et al 1999, 19.
JP-1992	November 1997	Japan	BoJ provides emergency liquidity to interbank market after failure of Sanyo Securities. Purchase of bills, repos, bilateral lending.	BBEL ^{xxxiii}			Nakaso 2001, 23; Laeven and Valencia 2012, 1223.
	November 1997	Japan	BoJ provides liquidity support to stem deposit outflows from <i>HTB</i> after failure. Peak: JPY 2.6TN in uncollateralized support; BoJ provides liquidity support for <i>Yamaichi Bank</i> after failure. Peak: JPY 1.2TN in support by December.	AHEL			Nakaso 2001, 23f.
ROM-1990	December 1997	Romania	USD 1BNcapital injection into ailing <i>Bancorex</i> and <i>Banca Agricola</i> by government.	AHCI			Bonin and Wachtel 2005.
KOR-1997	December 1997	Korea	Korea First Bank and Seoul Bank recapitalized, with at least KRW 13.2TN.	AHCI	SPV		Kataoka 2001.

MY-1997	Early 1998	Malaysia	Up to Ringgit 35BN in emergency liquidity provided in the form of bank deposits (13% of GDP). Guarantee on all deposits at commercial banks and finance companies. ^{xxxiv}	AG, BBEL			Lindgren et al 1999, 18f.
TH-1996	January 1998	Thailand	Government takes over four medium-sized banks, including <i>Bangkok Metropolitan Bank</i> (BMB) via converting existing short-term loans into equity.	BBCI			Lauridsen 1998, 1585; Laeven and Valencia.
ID-1998	January 1998	Indonesia	IBRA (Indonesian Bank Restructuring Agency) established, blanket guarantee for deposits and other credits (ex-shareholder cap.) implemented. Liquidity support loans via central bank between Jan-Apr. total 4.5% of GDP.	BBEL, BBAM, BG	SPV		Sato 2005, 102, 112.
	1998	Indonesia	Full nationalization of 12 private banks, including majors <i>Bank Danamon</i> , <i>Bank BCA</i> , <i>Tiara Asia</i> , which are later sold on to international bank consortia. Recapitalization of some private banks, recapitalization of state banks.	BBCI		STOW (partly)	Sato 2005, 103.
JP-1992	March 1998	Japan	JPY 400BN capital injection into <i>MUFJ Group</i> entities via subordinated bonds. JPY 449BN capital injection into Mizuho via subordinated bonds and preferred shares. JPY 200BN injected into <i>Sumitomo</i> .	BBCI			Nakaso 2001, 14ff.
FRA-1998	1998	France	FFr 125BN state aid package for <i>Credit Lyonnais</i> : funds earmarked to cover losses related to non-core asset sales, with aim of privatization.	AHAG, RES		STOW	EC 1998, 221/30ff.

CR-1998	March 1998	Croatia	Run on Dubrovacka Banka triggers systemic runs: volatility ends with bailout of two banks by taxpayers, six others go bankrupt; Croatian National Bank establishes new liquidity facility for distressed banks January 1999. ^{xxxv}	AHCI, BBEL		STOW (partly)	Kraft and Galac 2007; Deskar-Skrbic et al. 2019, 190ff.
MOZ-1998	March 1998	Mozambique	Protracted bank system instability amid World Bank-IMF involvement: BCM privatization and assumption of liabilities by Central Bank (BdM).	OLG		STOW	Caprio and Klingebiel 1996, 14; Hanlon 2002, 59f.
EC-1996	April 1998	Ecuador	Emergency LOLR-style loans from April 1998 and use of open market operations. Widening of existing deposit guarantees.	BBEL, AG			Jacome 2004 and 2008, 44; L/V (2018).
MY-1997	June 1998	Malaysia	Establishment of asset management company Danaharta Nasional Berhad, with mandate to purchase NPLs. Fully owned by central bank (BNM).	BBAM	SPV		Lindgren et al. 1999, 83.
HK-1998	August 1998	Hong Kong	HKMA intervenes in equity market to shore up stock values amid speculative attack: est. USD 15BN – boosting depressed bank indices.	BBCI	Market		Raymond 2010, 130f.
UKR-1998	August 1998	Ukraine	General bank volatility spillover from Asian crisis; NBU sets up guarantee-and-loan fund to address NPAs. IMF agreement focuses on bank resolution, liberalization measures and ensures NBU liquidity facilities.	BBEL, ASG, RES	Industry (partly)		IMF 1998; ITAR-TASS, October 26, 1998.

US-1998	September 1998	United States	LTCM default: Fed aids the brokering of private consortium solution, comprised of 14 key counterparties taking over ownership and operational control.	Other		PRI-PRI (partly)	Department of Treasury 1999; Lowenstein 2000.
LAT-1998	September 1998	Latvia	Spillover from Russian crisis to Latvian banks: central bank provides liquidity support to Rigas Komercbanka, as well as capital injection.	AHCI, AHCL			De Luca et al. 2021.
COB-1998	October 1998	Colombia	Government nationalization of <i>Granahorrar Bank</i> via 157BN Pesos capital injection.	AHCI			IMF 2005, 16ff.
CN-1999	October 1998	China	Guangdong International Trust and Investment Company (GITIC) is closed by authorities with RMB 14.7BN uncovered liabilities. No compensations.	RES			Jun 1999, 313.
RUS-1998	November 1998	Russia	Establishment of public bank management and restructuring company ARCO, provided with RUB 10BN for equity injections, asset purchases, or loans. Banks are referred to ARCO upon CBR inspection.	BBAM, BBEL, ST	SPV		Fuchs 2002, 287ff; Laeven and Valencia.
EC-1996	December 1998	Ecuador	Blanket guarantee (“AGD law”) to ease banking stress. De facto central bank (CBE) only starts covering deposits from April 1999. Deposit freezes. Nationalization of <i>Filanbanco</i> by AGD (“too big to fail”), closure of other banks.	BG, AHCI, SBH			Jacome 2004, 19f.; Ennis and Keister 2009.

PR-1999	December 1998	Peru	Nationalization of <i>Banco Latino</i> by SBS, subsequent debt-to-equity swap to restore solvency.	AHCI			Liebana 2001; Reinhart/Rogoff
BRL-1998	1998	Brazil	Bank rating downgrades from agencies and spillover from Asian volatility; Bemge state bank privatization; multiple international bank takeovers of domestic banks (ABN Amro, Credit Suisse).	RES			IMITI, October 7, 1998; Baron, Verner, Xiong 2021.
ROM-1990	February 1999	Romania	Bad bank established to pool assets from <i>Bancorex</i> and <i>Banca Agricola</i> , at least US\$ 3.7BN assets at book value transferred.	BBAM	SPV		Bonin and Wachtel 2005, 150.
LAT-1998	March 1999	Latvia	Rigas Komerbanka is declared insolvent after previous support fails to resolve distress.	RES			De Luca et al. 2021.
JP-1992	March 1999	Japan	Various capital injections under new Financial Strengthening Law, via preferred shares, subordinated bonds, subordinated loans: JPY 1.8TN injection into MUFJ entities; JPY 2.5TN injection into Mizuho; JPY 1.3TN injected into Sumitomo. Various bank resolutions under Financial Reconstruction Law to Oct 1999.	BBCI, RES			Nakaso 2001, 15f.
ROM-1990	April 1999	Romania	Liquidation of <i>Bancorex</i> and forced merger with state owned commercial bank.	RES			Bonin and Wachtel 2005, 150.
PR-1999	June 1999	Peru	Second intervention into Banco Latino after newly uncovered losses: doubtful portfolios moved to Banco de la Nacion.	AHAM		STOW	Congreso Peru 2002; Liebana 2001.

COB-1998	May 1999	Colombia	Central bank (BoR) provides liquidity support. Government facilitates bank debt relief program, liquidity support and FOGAFIN (deposit insurance institution) assumes control of seven medium-size institutions and lends to existing shareholders to recap banks.	BBEL, BBCI, OLG	SPV (partly)	PRI-PRI (partly)	World Bank 2002, 3; Jacome 2008, 43.
	May 1999	Colombia	Resolution, privatization, or liquidation of major STOWs in the banking sector; dissolution of Caja Agraria.	RES		STOW	World Bank 2002, 6f.
	August 1999	Colombia	Regulatory forbearance and major reform law on intervention practices and FOGAFIN (Ley 510) in August 1999.	ORL			Caballero Arguez and Montoya 2006, 145.
	1999	Colombia	FOGAFIN establishes sub-directorate managing and disposing bad assets acquired as part of clean-up operations, with participation of asset resolution company CISA.	BBAM	SPV		World Bank 2002, 17, 20f.; Laeven and Valencia.
HO-1999	September 1999	Honduras	<i>Bancorp</i> receives liquidity assistance from central bank until forced to close. Deposit guarantee applied on all system deposits, as well as guarantee for Bancorp Trust liabilities.	AHEL, AG, OLG			Jacome 2008, 41; Reinhart/Rogoff
CN-1999	1999-2000	China	China creates four asset management companies for major state-owned commercial banks (SOCBs), transferring ca. US\$ 170BN in bad assets at book value.	BBAM	SPV	STOW	Garcia-Herrero, Gavila, and Santabarbara 2006, 313.

RUS-1999	1999-2000	Russia	Major capital injections into state-owned <i>VTB</i> , ca. US\$ 1.4BN.	AHCI		STOW	Fuchs 2002, 177.
MOG-1999	1999-2002	Mongolia	Sharp deterioration in financial system conditions: IMF/World Bank/ADB program to reform sector: privatization program, macro-pru actions, establishment of MARA (Mongolian Asset Recovery Agency) to manage NPAs; some recap for Agricultural Bank.	AHCI, BBAM, RES, ORL	SPV (partly)	STOW (partly)	World Bank 2005, 3ff.
EC-2000	January 2000	Ecuador	New depositor runs in Ecuador: mere announcement of dollarization policy immediately reverses runs and stabilizes banking system, argue Levy Yeyati and Schmukler (2002, 13).	MC, ORL			Levy Yeyati and Schmukler 2002, 12ff.
NIC-2000	August 2000	Nicaragua	Government issues guarantee for inter-bank deposits.	AG			Laeven and Valencia 2012, 1223.
TK-2000	November 2000	Turkey	CBT for several weeks supplies bank liquidity to stem loss of confidence, but reverses course by December at IMF insistence.	BBEL			Akyuez and Boratav 2003, 1555f.
	December 2000	Turkey	TL 3.8 quadrillion issued in gvt securities to recapitalize state banks, and private banks taken over by SDIF. Blanket guarantee to all bank liabilities except owner deposits, subordinated debt and equity.	BBCI, BG		STOW (partly)	IMF 2001, 10; Kenc, Turhan, and Yildirim 2011, 4f.; Laeven and Valencia 2012, 1223.

NIC-2000	January 2001	Nicaragua	Government extends deposit guarantees to all deposits “except for related parties”.	AG			Laeven and Valencia 2012, 1223.
GT-2001	2001	Guatemala	Bank of Guatemala (Banguaat) grants open line of credit in support of ailing smaller banks, plus LLR function enacted. Banguaat authorized to inject capital or purchase assets from banks. Deposit fund (FOPA) not ready to operate.	BBAM, BBCI, BBEL			Jacome 2008, 17, 20, 40.
JP-2001	2001	Japan	At present, no indications of interventions separate from 1992-1999 events.	NO/I			Baron, Verner, Xiong 2021.
RUS-1998	April 2001	Russia	Recapitalization of <i>Sberbank</i> via repeated CBR subscriptions to US\$ 140M new equity issuance.	AHCI		STOW	Sberbank, April 8, 2001; Fuchs 2002, 165ff.
ARG-2001	April 2001	Argentina	Amendments to central bank charter de facto enable unlimited LOLR engagement by public/monetary sector.	BBEL, ORL			Levy Yeyati and Schmukler 2002, 9.
GER-2001	August 2001	Germany	Landesbank Berlin (LBB) receives EUR 1.8BN capital injection plus state guarantees on EUR 21BN real estate portfolio. Capital rises to EUR 9.7BN by February 2004.	AHCI, ASG		STOW	Schwintowski 2005, 60ff.; <u>Official A. (EC 2006).</u>

US-2001	September 2001	United States	FRBNY steps in to provide liquidity in interbank market between 09/12 – 09/17, after temporary shutdown in private markets related to terror attacks. Provision through Repo agreements “well below the new target level of 3 percent”; Ca. USD 79BN extra liquidity deployed/	MLA			Neely 2002; Martin 2009, 400.
TH-2001	October 2001	Thailand	Establishment of Thai Asset Management Company (TAMC).	BBAM	SPV		Dreyer 2020.
ARG-2001	December 2001	Argentina	Deposit freeze, withdrawal capped at 1,000 pesos per month and account. Forced deposit conversions to LCY.	BAIL, SBH			Ennis and Keister 2009, 1594f.
	January 2002	Argentina	Time deposits are “reprogrammed” (term lengthening).	BAIL			Levy Yeyati, Soledad Martinez, and Schmukler 2004, 9.
	2002	Argentina	Bank resolution for three banks.	RES			Jacome 2008, 41; Laeven and Valencia.
SAF-2002	February 2002	South Africa	Run on Saambou Bank, subsequent “small bank crisis”. Emergency liquidity assistance to BOE, Saambou put under “curatorship”. Full Guarantee on BOE assets in Mar-2002.	AHEL, ASG, RES			Havemann 2020.
CR-2002	March 2002	Croatia	Run on Rijecka Bank – CNB Central Bank provides HRK 558M in emergency lending.	AHEL			IMF 2002, 15.

HO-2002	May 2002	Honduras	Nationalization of <i>Banco Sogerin</i> and <i>Banco Capital</i> by deposit insurance institution, FOSEDE, via injection of government bonds. Est. 4.2BN lempiras.	AHCI, RES			FOSEDE 2003, 31ff.; Jacome 2008, 41; Reinhart/Rogoff
PG-2002	June 2002	Paraguay	Banco Aleman is intervened into and closed after spillover from Uruguay. Ca. 30,000 depositors guaranteed by Central Bank (BCP) for up to Guaranies 20M.	AG, RES			Jacome 2008, 42; Reinhart/Rogoff
UG-2002	July 2002	Uruguay	Government announces four-day bank holiday after continued and escalating bank runs.	SBH			Levy Yeyati, Soledad Martinez, and Schmukler 2004, 10ff.
	August 2002	Uruguay	FESB fund established to provide guarantees to dollar sight deposits. Dollar time deposit maturities extended by law, and four private banks suspended. ^{xxxvi}	AG, BAIL, RES	SPV (partly)		Levy Yeyati, Soledad Martinez, and Schmukler 2004, 10ff.; Plaza and Sirtaine 2005.
IS-2002	August 2002	Israel	Collapse of Trade Bank, run on Industrial Development Bank. Bank of Israel assists latter, via provision of special credit line.	AHEL			Paroush 2007, 146ff.
NOR-2002	November 2002	Norway	Finance Credit scandal: collapse of industrial group spills over to creditor banks. Several consolidations (inc. Nordlandsbank via DnB).	RES			Jahr 2005; De Luca et al. 2021.

UG-2002	December 2002	Uruguay	Further significant legal amendments on central bank macro-pru and liquidation powers. Total of USD 2.4BN in liquidity assistance deployed by year-end.	ORL			Levy Yeyati, Soledad Martinez, and Schmukler 2004, 12; Plaza and Sirtaine 2005, 28.
MN-1996	February 2003	Myanmar	Lingering crisis since 1996 (R/R timeline). Universal withdrawal limits for banks amid deposit runs (50-100k Kyat per week and customer); emergency 25BN Kyat loan by Central Bank to Asia Wealth, Yoma, Kanbawza Bank (disputed if actually disbursed).	AHEL, SBH			Turnell 2003, 275f.; Reinhart/Rogoff
UG-2002	March 2003	Uruguay	Asset Management Company established to absorb credits from Banco Montevideo, Banco Caja, and Banco Comercial. USD 1BN total asset volume initially.	BBAM			Brun and Licandro 2005, 17f.
DOR-2003	April 2003	Dominican Republic	Emergency loans and “abundant liquidity assistance” by central bank (BCRD) for three banks. Depositors included in de facto BG to intervened banks.	AHEL, BG			Jacome 2008, 44; Laeven and Valencia 2012, 1224.
CN-2003	December 2003	China	US\$ 22.5BN capital injection into China Construction Bank (CCB) and Bank of China (BoC) in the form of transfer of US government bond ownership. Subsequent sale of US\$ 34BN in NPLs to AMCs.	AHCI	SPV (partly)	STOW	Garcia-Herrero, Gavila, and Santabarbara 2006, 313.
RUS-2004	July 2004	Russia	“Mini financial crisis”: Guta Bank taken over by state-owned Vneshtorgbank, after mounting losses. Later also	AG, AHCI, CRL		STOW	Johnson 2004, 4; ECB 2004, 24.

			Pomstroiibank taken over. Duma extends deposit insurance, Bank of Russia sharply cuts reserve requirements.				
CN-2005	April 2005	China	US\$ 15BN capital injection into Industrial Commercial Bank (ICB) in the form of USD reserves.	AHCI		STOW	Garcia-Herrero, Gavila, and Santabarbara 2006, 314.
GER-2005	November 2005	Germany	Private bank consortium provides EUR 2.5BN emergency liquidity to AHBR, with guarantees from private German bank association fund (BdB).	AHEL, OLG	ASSOC (partly)	PRI-PRI	BaFin 2006, 23f.
GT-2006	October 2006	Guatemala	Bancafe and Banco del Comercial liquidated. Orderly wind-down, coupled with deposit guarantees and small liquidity support. Deposits transferred to other lenders.	AG, RES			Reinhart/Rogoff 2009, 366.
AUS-2008	March 2007	Australia	Australian state SWF ("Australian Future Fund") begins providing medium- and long-term funding for local banks amid first signs of Lehman problems. Total up to AUD 1.8BN.	BBEL	SWF		Raymond 2010, 150.
GER-2008	July 2007	Germany	IKB Bank (minority state-owned) bailed out via KfW Group and private lenders. KfW takes over Rhineland SPV which is holding U.S. MBS, absorbing losses. Loan-basis first, later capital injections by November 2007.	AHEL, AHCI		PRI-PRI (partly)	Mitchell 2016, 78ff.
US-2007	August 2007	United States	Fed institutes Term Discount Window Program amid first inter-bank market volatility - but little uptake; FHLB begins to act as "lender of next to last resort".	MLA			Ashcraft, Bech, and Frame 2010.

UK-2007	September 2007	United Kingdom	BoE emergency liquidity to Northern Rock, collateralized by MBS portfolio.	AHEL			Domanski, Moessner, Nelson 2014, 8. <u>Official A.</u>
US-2007	December 2007	United States	TAF established by Federal Reserve, providing 28-day auction-basis loans. Lending to “financially sound” institutions continues through April 2010	BBEL			Domanski, Moessner, Nelson 2014, 7. <u>Fed 2020.</u>
US-2007	January 2008	United States	Kuwait Investment Authority (KIA) invests US\$ 12.5BN into Citibank as “white knight” amid default fears.	AHCI	SWF		Gordon and Niles 2012, 44.
	March 2008	United States	Separate USD 12.9BN bridge loan for Bear Stearns from FRBNY upon default fears;	AHEL			Federal Reserve Board, December 1, 2010.
	April 2008	United States	“Maiden Lane LLC” incorporated to manage assets from defunct Bear Stearns, with JP Morgan capital participation; subsequent Maiden Lane II and III extensions. Direct 29BN loan to Citi to help acquisition in March.	AHEL, BBAM	SPV (partly)		Federal Reserve Board December 1, 2010; Financial Crisis Inquiry Commission 2011; Gorton and Metrick 2013, 58;

ARG-2008	2008	Argentina	Liquidity provision via LEBAC and NOBAC markets; new BCRA liquidity window for non-traditional collateral.	BBEL			BCRA 2010, 103ff.
GER-2008	January 2008	Germany	SoFFin extends guarantee for EUR 6.7BN capital raise of private bank association's insurance fund to compensate Lehman Brothers Bankhaus AG [German subsidiary] clients.	OLG	SPV		EC, January 21, 2009.
TH-2008	February 2008	Thailand	Deposit guarantee scheme, initiated February, extended into 2011 by October. Provision of FX swaps by CB.	AG			BoT 2009, 383ff.
US-2007	March 2008	United States	Establishment of TSLF and PDCF to provide liquidity to non-bank primary dealers and aid tri-party repo market.	BBEL, MLA	Market		Domanski, Moessner, Nelson 2014, 14.
UK-2007	April 2008	United Kingdom	BoE introduces Special Liquidity Scheme, enabling banks to swap illiquid assets for UK Treasury bills on one-year basis.	BBEL			Domanski, Moessner, Nelson 2014, 14.
GER-2008	April 2008	Germany	Private German Bank Association (BdB) and Auditing Association of German Banks (PdB) take over Duesseldorfer Hypo as default looms. Sold to Lone Star by 2010.	AHCI	ASSOC	PRI-PRI	Financial Times, April 22, 2008.
SZ-2008	May 2008	Switzerland	SNB doubles amount of USD repo transactions to counter continuing liquidity pressures in Swiss markets.	MLA			SNB, May 2, 2008.

DK-2008	July 2008	Denmark	Joint public-private support for Roskilde Bank, restructuring and sale of business to other banks.	AHCI, RES		PRI-PRI (partly)	IMF 2009a, 108.
PT-2008	October 2008	Portugal	Bank debt guarantee scheme announced, up to EUR 35BN for non-subordinated debt and other “financing agreements” (actual use >EUR 20BN).	OLG			EC, December 17, 2008; McNamara et al. 2019.
CAD-2008	August 2008	Canada	Multiple new liquidity facilities (including Term Loan Facility TLF), and widening of accepted collateral, also including money market participants and primary dealers (via PRA facilities).	BBEL	Market (partly)		Longworth 2009, 2ff.; Zorn, Wilkins, and Engert 2016.
COB-2008	2008	Colombia	Reduction of reserve requirements, liquidity provision; BANCOLDEX receives extra funding to provide liquidity to banking and corporate sector; deposit insurance raised.	AG, BBEL, CRL			IMF 2009b, 9.
EST-2008	September 2008	Estonia	Run on Swedbank’s Estonian branch. Riksbank widens range of acceptable collateral for Swedbank, which channels funds to subsidiary.	AHEL			OECD 2011, 21f.
US-2007	September 2008	United States	Fed provides USD 85BN credit line to AIG, secured by AIG assets, partly managed via Maiden Lane extension (s.a.).	AHEL, AHAM	SPV (partly)		Domanski, Moessner, Nelson 2014, 7.
	September 2008	United States	Treasury announces money market Guarantee Program, guaranteeing stable value per share upon “guarantee event”.	MLA, OLG	Market		Murphy et al. 2009, 395f.

CN-2008	September 2008	China	Huijin, China's sovereign wealth fund, purchases 2mn shares in each of China's top three banks, and separate USD 20BN injection into ABC in November.	BBCI	SWF	STOW	IMF 2009a, 8.
HK-2008	September 2008	Hong Kong	HKMA supplies emergency interbank liquidity amid run on Bank of East Asia and broader banking and currency market volatility. Extra USD 12BN issuance of Exchange Bills.	BBEL	Market		HKMA 2009, 6, 53.
	October 2008	Hong Kong	Authorities "threaten" to deploy Exchange Fund (SWF) in 1998 fashion to boost equity markets. Not used.	MC	Market		Raymond 2010, 131f.
BEL-2008	September 2008	Belgium, France	Joint government subscription to EUR 6BN capital increase by <i>Dexia Bank</i> .	AHCI			Igan et al. 2019.
IRL-2008	September 2008	Ireland	EUR 440BN government guarantee on bank liabilities enacted for two years; superseded by ELG scheme in Dec-2009. Allows for capital injections. Significant ELA build-up, reaching EUR 90BN by Jan-2010.	BBCI, BG, BBEL			Honohan et al 2010, 152ff.; Laeven and Valencia.
MOG-2008	September 2008	Mongolia	Zoos Bank nationalized in November 2009. Issuance of unlimited guarantee on all deposits in November 2008 (inter-bank deposits excluded by 2010).	AHCI, AG			IMF 2011, 25ff.; Leaven and Valencia.
BEL-2008	September 2008	Belgium, Netherlands, Luxemburg	Joint government capital injection of EUR 11.2BN into Fortis and its subsidiaries for 49% stake. In November, Royal Park Investments (AMC) established.	AHCI, AHAM	SPV (partly)		Igan et al. 2019, 78f.

UKR-2008	September 2008	Ukraine	Eight private banks nationalized by NBU in consultation with EBRD/World Bank after “sudden stop” (Prominvestbank reprivatized in early 2009). US\$ 2.5BN bank recap package finalized April 2009.	BBCI			Aslund 2009, 381; Laeven and Valencia.
	September 2008	Ukraine	Recapitalization of two major state banks, Oshchadbank and Ukreximbank.	BBCI		STOW	Aslund 2009, 381.
IN-2008	September 2008	India	Some market liquidity initiatives, mainly to ease absorption of fiscal measures in financial sector. RBI synchronizes “MSS” schemes with debt issuance. Statutory Liquidity Ratio (SLR) is lowered (Nov. 2008).	CRL, MLA			IMF 2009b, 29f.; Sinha 2011, 227ff.
IRL-2008	September 2008	Ireland	Issuance of blanket guarantee to Anglo-Irish Bank, together with EUR 5BN private liquidity assistance, publicly-guaranteed. CIFS scheme	AHEL, BG		PRI-PRI (partly)	Honohan et al. 2010, 123ff.
	September 2008	Ireland	CIFS scheme to cover deposits at building societies, and banks by 100% (to Sep. 2010). Deposit Guarantee Scheme (DGS) limits raised from EUR 20,000 to 100,000.	AG			Honohan et al. 2010, 150f.
SAR-2008	October 2008	Saudi Arabia	Supervisors meaningfully reduce deposit reserve requirements; direct placement of deposits by state vehicles at banks; RIs 40BN “provided” to special credit institutions. SAMA provides liquidity “whenever needed”.	BBEL, CRL		STOW (partly)	SAMA 2009, 27.
RUS-2008	October 2008	Russia	Interbank deposit guarantees, widening of deposit guarantee; extra CBR lending facilities, and capital allocated for recaps via VEB.	AG, BBCI, BBEL		STOW (partly)	IMF 2009a, 58.

AZ-2008	October 2008	Azerbaijan	Government moves to exempt banks from profit tax.	BBCI			Masimli 2009, 82.
G-2008	October 2008	All member states	IASB fair value rules (IAS 9 and IFRS 7) are eased, mainly benefitting European Union incorporated banks.	CRL			Bischof, Brueggemann, Daske 2010.
SZ-2008	October 2008	Switzerland	Swiss Confederation injects CHF 6BN into UBS via subscription to convertible notes. “StabFund” established by SNB to manage CHF 39BN in UBS assets. CPFF commercial paper backstop by U.S. authorities used by UBS.	AHCI, BBAM, ASG	SPV		IMF 2014, 37; Laeven and Valencia.
US-2007	October 2008	United States	TARP approved, authorizing up to USD 700BN in “troubled asset” purchases. Includes asset guarantee program (AGP), SSFI, and capital purchase program (CPP) which undertakes ca. USD 205BN in equity or debt injections. Several discretionary items, including USD 5BN loss absorption on Citigroup assets, mortgage program.	BBCI, ASG			Calomiris and Khan 2015, 55ff.
	October 2008	United States	Congress temporarily raises FDIC insurance limit to USD 250,000 as part of ESSA legislation.	AG			Ashcraft, Bech, and Frame 2010, 577.
	October 2008	United States	FDIC establishes TLGP, guaranteeing non-interest-bearing transaction deposits and selected senior unsecured bank debt issuance.	OLG			Ashcraft, Bech, and Frame 2010, 577.

	October 2008	United States	MMIFF program launched to ultimately support term money market instruments and secure liquidity; CPFF program to enhance liquidity in secondary markets.	MLA	Market		Rhee et al. 2020.
MY-2008	October 2008	Malaysia	Blanket guarantee on all ringgit and foreign currency deposits announced, in effect to December 2010. BNM pledges extra liquidity, in domestic RMB and USD FX.	AG, BBEL			Ibrahim 2011, 274f.
NZL-2008	October 2008	New Zealand	Retail deposit guarantee scheme, and guarantee of other bank liabilities, with ca. USD 2BN eventually paid out until end-2011.	AG, OLG			IMF 2017b, 14ff.
FIN-2008	October 2008	Finland	EUR 50BN bank debt guarantee scheme announced November 2008 for new issuance;	OLG			EC, November 14, 2008.
BRL-2008	October 2008	Brazil	Extra USD and BRL liquidity provision, lowering of reserve requirements, and Deposit Guarantee Fund purchases of certificates of deposit; Guaranteed Time Deposit Scheme (DPGE) in Mar-2009. Banco do Brazil and Caxia Federalto allowed to buy financial firm stakes.	AG, BBICI, BBEL, CRL			Mesquita and Toros 2009, 117f.; IMF 2009b, 7; IMF 2018b, 47ff.
KOR-2008	October 2008	South Korea	Substantial liquidity provision amid capital outflows, multiple FX swap agreements from 2008; bank foreign debt guarantee scheme announced in October 2008.	BBEL, OLG			Kim 2009.
CAD-2008	October 2008	Canada	Insured Mortgage Purchase Program (IMPP) announced to offload risky securitized assets from banks. Initial CAD 25BN, raised to CAD 125BN by Jan 2009.	BBAM			Longworth 2009, 2ff.; Zorn, Wilkins, and Engert 2016.

	October 2008	Canada	Canadian Lenders Assurance Facility (CLAF) enables public guarantees on senior unsecured wholesale debt.	OLG			Simon 2020.
TW-2008	October 2008	Taiwan	Blanket deposit guarantee announced, including inter-bank deposits and foreign FX deposits. Repo facility access expanded and lowering of required reserve ratios.	AG, CRL	Market (partly)		CBC 2009, 87f.
MX-2008	October 2008	Mexico	Mexico uses Federal Reserve swap lines to hold special USD 500M FX auctions, special USD 4BN auction to banks to maintain dollar financing. New discount facilities for local currency.	BBEL			Sidaoui 2014, 101ff.
NL-2008	October 2008	Netherlands	EUR 20BN bank support fund announced, with subsequent injections into ING, Aegon, SNS; deposit insurance raised to EUR 100,000; interbank deposit and loan guarantee for up to EUR 200BN.	AG, BBCI, OLG	SPV		IMF 2009a, 50f.; Laeven and Valencia.
ES-2008	October 2008	Spain	Establishment of debt issuance guarantee scheme for credit institutions resident in Spain or subsidiaries with substantial presence, as of Oct 2008. Solvent banks only, total funds limited to EUR 100BN initially.	OLG			EC, December 23, 2008.
	October 2008	Spain	Establishment of “Fund for the Acquisition of Financial Assets” (FAAF), up to EUR 50BN volume.	BBAM	SPV		EC, November 4, 2008.
UK-2007	October 2008	United Kingdom	Guarantee on short-to-medium-term debt (max. 36m) for eligible institutions, including guarantee on Northern Rock and Bradford & Bingley wholesale deposits.	OLG			IMF 2009a, 69f.; Laeven and Valencia.

	October 2008	United Kingdom	Up to GBP500BN mobilization for bank recaps: Treasury begins GBP 45.5BN in equity investments in RBS. Asset protection scheme covers GBP 282BN in RBS assets.	AHAG, BBCI			IMF 2009a, 69f.; IMF 2014, 36.
	October 2008	United Kingdom	Bank of England provides ELA to HBOS and RBS: swapping UK Treasury bills for impaired mortgage and loan assets.	AHEL			Domanski, Moessner, Nelson 2014, 28.
GER-2008	October 2008	Germany	EUR 42BN loan guarantee scheme for Hypo Alpe Adria (40% public share, 60% private consortium), via creation of new SPV.	OLG	SPV	PRI-PRI (partly)	EC, October 2, 2008.
BEL-2008	October 2008	Belgium, France, Luxemburg	Dexia intervention: EUR 6.4BN recap, and joint guarantees of EUR 100BN for new Dexia financial liabilities. Extra EUR 17BN asset guarantee on structured credits. ^{xxxvii}	AHCI, ASG, OLG			Igan et al. 2019, 77.
	October 2008	Belgium	Short-term bank debt guarantee scheme for “systemic” banks, including bonds, inter-bank deposits.	OLG			IMF 2009a, 5; NBB 2009, 181f.
DK-2008	October 2008	Denmark	Deposit insurance for full domestic amounts outstanding and guarantee for all senior debt. Initial 2-year period.	AG, OLG			IMF 2009a, 10f.
AUS-2008	October 2008	Australia	Deposit insurance for domestic banks, building societies, both retail and wholesale, of all FX denominations up to AUD 1M, for 3 years.	AG			IMF 2009a, 3f. <u>Official A.</u>
AT-2008	October 2008	Austria	Unlimited deposit insurance; EUR 85BN guarantee for interbank market. EUR 100BN approved for potential capital injections, with EUR 2.7BN injection into Erste,	AG, AHAM,			Rechnungshof 2012, 35ff.

			and injections into Kommunalkredit (KA), BAWAG Some separation of good-bad assets at KA.	ASG, BBCI, OLG			Hebesberger 2017, 46ff.
	October 2008	Austria	Österreichische Clearingbank established to guarantee bank debt issuance, facilitate interbank lending.	BBEL, OLG		PRI-PRI (partly)	Simon 2020.
IT-2008	October 2008	Italy	Establishment of EUR 20BN bank recapitalization fund, to invest in subordinated bank debt. Expires unused end-2009; interbank deposit guarantee, other liability guarantees and new EUR 40BN asset swap facility by Banca d'Italia to provide bank liquidity ('CSLF').	AG, BBCI, BBEL, OLG	SPV (partly)		IMF 2013, 17ff.
FRA-2008	October 2008	France	Up to EUR 320BN made available to guarantee interbank lending: paper issued before December 31, 2009, is eligible. Further EUR 40BN made available for capital injections via preferential shares or subordinated debt.	BBCI, OLG			Levy and Schich 2010, 49; Igan et al. 2019, 54f.
	October 2008	France	Establishment of "SFEF" to provide emergency liquidity to domestic banks, guaranteed by Treasury. More than EUR 75BN extended to September 2009.	BBEL	SPV	PRI-PRI (partly) xxxviii	Levy and Schich 2010, 49; Igan et al. 2019, 54f.
ICE-2008	October 2008	Iceland	Kaupthing and Glitnir closed by Icelandic authorities. Establishment of run-off entities, asset separations ("old bank/new bank" model).	BBAM, RES			IMF 2014, 31; Laven and Valencia.
LUX-2008	October 2008	Luxembourg	Guarantees on Dexia's debt.	OLG			Laeven and Valencia.

	October 2008	Luxembourg	Supervisors close three Icelandic subsidiaries with parents sliding in Iceland. Deposit fund pays out EUR 300M to depositors. Deposit insurance limits significantly enlarged.	AG, RES			OECD 2010, 103, 113.
TK-2008	October 2008	Turkey	CBRT provides emergency liquidity to banking sector after Lehman collapse, lowers reserve requirements. Reclassification of NPL and government bond accounting rules to provide liquidity.	BBEL, CRL			IMF 2010b, 16f.; Kenc, Turhan, Yildirim 2011, 6f.
UAE-2008	October 2008	United Arab Emirates	Announcement to guarantee all bank deposits for three years, including foreign banks with “core” operations in UAE, pledge to “protect” interbank liquidity.	AG, OLG			Raymond 2010, 140.
	October 2008	United Arab Emirates	Dirham 25BN bank liquidity package approved, second Dirham 25BN tranche announced Nov. 2008.	BBEL			Reuters November 6, 2008.
CY-2008	October 2008	Cyprus	Deposit guarantees raised from EUR 20,000 to 100,000.	AG			Demirguc-Kunt, Kane and Laeven 2014, 34.
SWE-2008	October 2008	Sweden	SEK 2.4BN liquidity assistance to Carnegie Bank from Riksbank. Further assistance to Kaupthing Bank Sverige.	AHEL			EC, December 16, 2008; Elmer et al. 2012, 2ff.
	October 2008	Sweden	Establishment of general financial system liquidity assistance, via USD and SEK provision, and long-maturity provision.	BBEL			Elmer et al. 2012, 2ff.

	October 2008	Sweden	SEK 1,500BN bank security guarantee scheme announced (peak usage SEK354BN).	OLG			EC, December 16, 2008; Elmer et al. 2012, 2ff.
AUS-2008	October 2008	Australia	Unlimited wholesale funding guarantee scheme announced, Financial Claims Scheme guaranteeing large deposits. Peak actual use of capital guarantee at A\$ 170BN.	AG, OLG			Schwartz and Tan 2016, 39ff.
JP-2008	October 2008	Japan	To support banks, BoJ suspends stock selling program for stocks previously bought from banks.	MLA			BoJ 2020.
	October 2008	Japan	Meaningful relaxation of collateral requirements for BoJ funding.	ORL			BoJ 2020.
EU-2008	October 2008	Euro member countries	ECB begins substantial open lending to “risky” banks, applying below-market haircuts on collateral. Later supplemented with LTROs programs (s.b.).	BBEL			Carpinelli and Crosigniani 2021; Drechsler et al. 2016.
ID-2008	October 2008	Indonesia	Maximum guarantee for deposits under Limited Guarantee scheme raised from 100M Rp to 2BN Rp.	AG			Hadad et al. 2011.
HUG-2008	November 2008	Hungary	Refinancing Guarantee Fund to secure refinancing on 3m-5y maturity; Capital Base Enhancement Fund to recapitalize weak banks.	BBCI, OLG	SPV		IMF 2009a, 27f.

POL-2008	November 2008	Poland	EUR 15BN inter-bank debt guarantee scheme announced (later raised to EUR 56BN; no subsequent take-up by banks).	OLG			Reichardt 2011, 41; McNamara et al. 2019.
IT-2008	November 2008	Italy	EUR 20BN bank support facility launched to raise tier 1 capital via subordinated debt, eventually EUR 4.05BN “Tremonti bonds” issued, including EUR 1.9BN to Monte Paschi (BMPS), EUR 1.45BN to Banco Popolare.	MLA, BBEL			EC, December 23, 2008. IMF 2013, 21.
PHP-2008	November 2008	Philippines	Lowering of reserve requirement ratio, additional LCY and dollar liquidity windows from November 2008. Regulatory forbearance.	BBEL, CRL, ORL			Guinigundo 2011, 332ff.; Baron, Verner, Xiong 2021.
GER-2008	November 2008	Germany	Capital injection into Commerzbank, EUR 8.2BN “silent participation”, via German bank fund SoFFin.	AHCI	SPV		IMF 2009a, 113; <u>Official A.</u>
SWE-2008	November 2008	Sweden	Swedish National Debt Office (“Riksgaelden”) replaces SEK 2.4BN liquidity assistance to Carnegie Bank with SEK 2.4BN emergency loan, with equity pledged as collateral. De facto nationalization, to May 2009.	AHCI			EC, December 16, 2008.
GRE-2008	November 2008	Greece	Three-pillar bank support scheme: [1] recap scheme (EUR 5BN total vol. via preference shares); [2] guarantee scheme, up to EUR 15BN; [3] Bond loan scheme to provide banks with sovereign collateral, up to EUR 8BN in zero coupon bonds.	BBCI, BBEL, OLG			EC, November 19, 2008.

ID-2008	November 2008	Indonesia	Indonesian deposit insurance corporation seizes control of Bank Century after mounting losses and emergency assistance. Ca. USD 740M in loss absorptions and other public outlays.	AHCI, AHEL, RES			IMF 2009a, 30; Basri 2018, 28.
ROM-2008	November 2008	Romania	Lowering of reserve requirements for banks to aid liquidity.	CRL			IMF 2009a, 58.
JAC-2008	November 2008	Jamaica	Bank of Jamaica announces special loan facility and FX intermediation facility in light of liquidity / FX volatility.	BBEL, other			ECLAC 2009, 254f.
US-2007	November 2008	United States	Fed/Treasury/FDIC provision of non-recourse loan for Citigroup to insure against asset value decline, if losses exceed USD 44BN. Not drawn.	AHEL			Domanski, Moessner, Nelson 2014, 8.
LAT-2008	November 2008	Latvia	Parex Bank nationalization, along with asset guarantees, recaps, and other credit guarantees; by September 2010, split into good bank/bad bank and restructuring.	AHAM, BG, RES	SPV (partly)		Igan et al. 2019, 65; Laeven and Valencia.
KW-2008	December 2008	Kuwait	KIA (SWF) bails out faltering banks including 16% stake in Gulf Bank.	AHCI	SWF		Subacchi 2012, 91.
GER-2008	December 2008	Germany, Austria	Hypo Alpe Adria EUR 1.6BN joint Bavarian-Austrian capital injection.	AHCI			IMF 2014a, 32f.
	December 2008	Germany	EUR 10BN capital injection by state of Bavaria into Bayern LB (Landesbank). Additional EUR 4.8 guarantee	AHCI, ASG, OLG	SPV (partly)	STOW	EC, December 18, 2008; EC, July 25, 2012.

			on ABS portfolio. Bayern LB also receives EUR 15BN liquidity guarantee via SoFFin (de facto credit guarantee).				
FRA-2008	December 2008	France	Up to EUR 21BN SPPE (public investment fund) scheme to invest in French banks via hybrid capital. Six French banks draw EUR 10.5BN in first funding round, incl. Credit Agricole, BNP Paribas; May 2009: 5BN for Natixis.	BBCI	SPV		EC, December 8, 2008; Xiao 2009, 15ff.
QT-2008	December 2008	Qatar	Qatar Investment Authority (QIA) takes US\$ 5.3BN stakes in local banks, including Doha Bank, Commercial Bank of Qatar. Selected equity portfolio purchases and recaps via subscriptions to new equity issuance into 2011.	AHAM, BBCI	SWF		IMF 2009a, 125; Subacchi 2012, 90.
KOR-2008	December 2008	Korea	KRW 20TN recapitalization fund announced to inject capital on “voluntary basis” various injections in January 2009 (i.e. Korea Development Bank, Industrial Bank of Korea).	BBCI			IMF 2009a, 45.
IRL-2008	December 2008	Ireland	Introduction of “Eligible Liabilities Guarantee (ELG)”, replacing previous CIFS program, guaranteeing deposit and non-deposit (subordinated bond) liabilities.	OLG			Ryan, Hart-Moran, and Preston 2015.
	January 2009	Ireland	Nationalization of Anglo-Irish Bank, after previous issuance of blanket guarantee.	AHCI			Honohan et al. 2010, 123ff.
BUG-2009	January 2009	Bulgaria	Oman State General Reserve Fund buys 30% stake in Corporate Commercial Bank of Bulgaria.	AHCI	SWF		Monitor Group 2010, 37.

DOR-2009	January 2009	Dominican Republic	Substantial emergency liquidity provision via repo and lowering of reserve requirements. Est. Pesos 17BN.	BBEL, CRL			ECLAC 2009, 238f.
US-2007	January 2009	United States	Federal Reserve, Treasury and FDIC provide protection to USD 118BN Bank of America portfolio via non-recourse loan, if losses exceed USD 18BN.	AHEL			Domanski, Moessner, Nelson 2014, 29.
GER-2008	January 2009	Germany	Further 8.2BN capital injection into Commerzbank via SoFFin, plus 1.8BN equity subscription.	AHCI	SPV		IMF 2009a, 20f.; <u>Official A.</u>
NL-2008	January 2009	Netherlands	Dutch government guarantees 80% of ING's "Alt A" U.S. mortgage portfolio. Considered EUR 5BN state aid by European Commission.	ASG			IMF 2009a, 51; <u>Official A.</u>
DK-2008	January 2009	Denmark	DKK 100BN fund established to inject capital into banks upon application, in the form of hybrid tier one capital: take up of DKK 46BN over program life, 43 institutions. State-guaranteed debt issuance by domestic banks. Take up: DKK 193BN across 50 institutions.	BBCI, OLG	SPV		IMF 2014b, 21.
	February 2009	Denmark	DKK 1BN capital injection into Fionia Bank. Additional DKK 5.1BN credit facility.	AHCI, OLG			EC, May 20, 2009.
IRL-2008	February 2009	Ireland	EUR 7BN capital injection into Bank of Ireland (3.5BN), and Allied Irish Bank (3.5BN) via preference shares.	AHCI			<u>Official A. (via press).</u>

TT-2009	February 2009	Trinidad Tobago	Central Bank takes over CLICO Financial after spiralling losses and threat of systemic event: TT\$ 12.8BN total short-term claims, partially swapped with government bonds.	AHCI, BAIL			TT Finance 2011.
GT-2009	February 2009	Guatemala	Monetary Board authorizes USD 290M in emergency liquidity for banking sector, and more discretion in FX management.	AHEL, other			ECLAC 2009, 180.
JP-2009	February 2009	Japan	BoJ announces JPY 1TN stock purchase program for stocks held by banks, with minimum BBB- rating.	MLA			BoJ 2020.
	March 2009	Japan	BoJ announces direct provision of subordinated loans to banking sector, JPY 1TN volume, 10-year maturity.	BBEL			BoJ 2020.
KW-2008	February 2009	Kuwait	Government and Central Bank announce 50% guarantee on US\$ 13.8BN credit facility to encourage bank lending. KIA instructed to buy preference shares of weakening institutions.	BBCI, OLG	SWF (partly)		Subacchi 2012, 91.
KZ-2008	February 2009	Kazakhstan	Nationalization of BTA Bank via public Samruk-Kazyna Fund.	AHCI	SWF		Ansar and Ahearn 2015.
GY-2009	February 2009	Guyana	Government takes control of CLICO Guyana after financial meltdown, expanding USD 34M in guarantees.	BG, RES			ECLAC 2009, 243.
UK-2007	February 2009	United Kingdom	Banking Act implemented: special resolution regime (SSR) enacted; subsequent application in Dumferline (2009) and	MLA, RES			Financial Times, March 30, 2009 and June 17,

			Southsea (2011). Asset purchase program (APP) to secure liquidity in non-bank financial market.				2011; Brierley 2009; Rhee et al. 2020.
NOR-2009	February 2009	Norway	NOK 50BN State Finance Fund is established to provide bank capital; Norges Bank provides liquidity via bond swap facility, corporate bond support, and foreign FX funding (“State Bond Fund”).	BBEL, BBCI	SPV (partly)		IMF 2010a, 39f.; Baron, Verner, Xiong 2021.
US-2007	February 2009	United States	Announcement of SCAP (annual stress test framework).	ST			Fernandes, Igan, Pinheiro 2020, 3.
ES-2008	March 2009	Spain	Intervention in <i>Caja de Ahorros de Castilla</i> : Banca d’Espana grants emergency liquidity assistance and state guarantee on EUR 9BN of bank’s liabilities.	AHCI, AHCL, OLG			BdE 2017, 126f.
AT-2008	March 2009	Austria	Series of recaps: Erste, RZB, Oesterreichische Volksbanken, EUR 4BN over March-May 2009 via capital injections and participation certificates.	AHCI			Homar 2016, 39.
HUG-2008	March 2009	Hungary	USD 130M capital injection into minority state-owned FHB Mortgage Bank after liquidity assistance proves insufficient.	AHCI, AHCL			Igan et al. 2019, 59f.
ICE-2008	March 2009	Iceland	Straumur Bank nationalized via Financial Supervision Authority, subsequently reorganized as ALMC.	AHCI, RES			FME 2009 (<u>Official A</u>).
US-2007	March 2009	United States	PPIP program to aid price discovery and market functioning in legacy assets, via TARP capital.	MLA	Market		Rhee et al. 2020.

UK-2007	March 2009	United Kingdom	CBSMS program to enhance liquidity and market-making via purchases of UK IG corporate bonds.	MLA	Market		Rhee et al. 2020.
HO-2009	April 2009	Honduras	Policy package to mitigate financial crisis: reduction of reserve requirements, sharing of credit risk for industrial and agricultural bank loans.	CRL, OLG			ECLAC 2009, 187.
CY-2008	April 2009	Cyprus	EUR 1BN capital injection into commercial banks.	BBCI			IMF 2009a, 10.
IRL-2008	April 2009	Ireland	Creation of NAMA as bank AMC announced by Treasury (signed into law November 2009). Nominal asset values transferred est. at EUR 54BN initially.	BBAM	SPV		Honohan et al. 2010, 13, 19.
ES-2008	June 2009	Spain	Spain sets up “Fund for the Orderly Restructuring of the Banking Sector (FROB), capitalized with EUR 9BN. During “FROB I” phase, FROB makes EUR 9.7BN investments in preference shares between Mar-Dec. 2010 upon application of individual banks which document failure to recap successfully in private market. FROB to provide asset protection aid upon application: i.e. EUR 392M provided in July 2010 to <i>Cajasur</i> .	AG, BBCI, BBEL, OLG	SPV		BdE 2017, 110ff., 126f.
NG-2009	August 2009	Nigeria	NGN 620BN capital injection by CBN into eight banks with solvency issues. 5 main banks liquidated after stress tests.	BBCI, RES, ST			Financial Times, August 15, 2009; Alford 2010, 5ff.

CR-2009	2009	Croatia	Hrvatska Postanska Banka, largest domestically-owned bank, recappped from 2009-2015 with HRK 1.06BN public injections, partly via subscription of state companies.	AHCI		STOW	Igan et al. 2019, 51.
LAT-2008	2009	Latvia	Multiple interventions into LHZB, including recap, asset guarantees, and later split into good bank/bad bank.	AHAM, AHCI, ASG		STOW	Igan et al. 2019, 65.
CY-2008	October 2009	Cyprus	Bank liquidity scheme via provision of zero-coupon government bond collateral, up to EUR 3BN volume.	BBEL			EC, October 22, 2009.
UK-2010	March 2010	United Kingdom	UK Asset Resolution Limited established October 2010 (announced March), managing NR, B&B assets; no specific actions during 2011 itself.	BBAM	SPV		Lawson 2021.
NG-2009	July 2010	Nigeria	Asset management company founded by decree, AMCON, to buy distressed bank assets, including NPLs (eventual: >NGN 1.7TN).	BBAM	SPV		Makanjoula 2015.
ES-2010	2010	Spain	Numerous interventions over 2009-2012 via FROB/SAREB (s.b.). In 2010, actions include EUR 525M recapitalization of Banco CEISS via equity, CCM EUR 1.6BN package of loans and equity.	BBEL, BBCI	SPV		Igan 2019, 70ff.; Baron, Verner, Xiong 2021.
AT-2011	2011	Austria	In April 2012, further EUR 220M equity injection into Hypo Tirol, and EUR 250M into ÖVAG, with latter receiving EUR 3BN asset and liquidity guarantees.	AHCI, ASG, OLG			Igan et al. 2019, 48f.; Baron, Verner, and Xiong 2021.

DK-2011	2011	Denmark	Numerous interventions over the course of 2008-2012. For 2011, interventions (via Finansiel Stabilitaet) include Amagerbanken, Fjordbank Mors, Eik Bank, and Max Bank. Combination of capital, credit, and liquidity facilities deployed. Some ad hoc asset guarantees (i.e. to Eik Bank).	AHCI, AHCL, ASG, OLG	SPV		Igan et al 2019, 52f.; Baron, Verner, Xiong 2021.
CY-2011	2011	Cyprus	From mid-2011, Cypriot banks resort to ELA liquidity assistance; sharp stock market correction.	BBEL			IMF 2014c, 43ff.; Laeven and Valencia.
ES-2010	February 2011	Spain	“FROB II” phase in Spain after passing of new laws: FROB now authorized to buy ordinary shares of banks upon application. EUR 4.75BN equity injected into three banks over 2011.	BBCI	SPV		BdE 2017, 124f.
PT-2011	May 2011	Portugal	IMF bailout program signed May 2011; includes EUR 12BN recapitalization line for banks; subsequent drawees include Millennium BCP, BPI and Banif.	BBCI			Kroeger 2011, 18, 22; Baron, Verner, Xiong 2021.
GRE-2010	June 2011	Greece	Recapitalization of ATE Bank, gross EUR 1.1BN. Further EUR 0.3BN injection via capital rights in November.	AHCI		STOW	Homar 2016, 40.
TK-2011	June 2011	Turkey	Financial Stability Committee (FSC) formed to coordinate between members. Some tweaks in FX rules and CBRT FX interventions. No direct bank interventions reported.	other			Uysal 2017, 351ff.
NG-2009	August 2011	Nigeria	Full nationalizations of <i>Mainstreet</i> , <i>Keystone</i> , and <i>Enterprise</i> Banks.	AHCI, AG			Makanjoula 2015.

			CBN guarantees deposits of banks with AMCON stakes.				
ES-2010	September 2011	Spain	FROB recaps Catalunya Bank with EUR 1.7BN (=90% stake), as part of “FROB II” process (s.a.).	AHCI	SPV		BdE 2017, 192.
IN-2011	October 2011	India	State Bank of India receives USD 1.8BN government capital injection after Moody’s downgrade and rise in NPAs hits wider sector;	AHCI		STOW	Financial Times, February 22, 2012.
FRA-2011	October 2011	France	Main recaps and other interventions date from 2008-2010 via SPPE (incl. Societe Generale, BNP, s.a.). France participates in new Dexia guarantees – recap by Belgium.	OLG			Igan et al 2019, 54f., 77f.
BEL-2011	October 2011	Belgium	Ethias recap with EUR 278M debt instruments, after 2009 equity injection. [Unable to locate in official sources]. Dexia is fully nationalized with new EUR 55BN guarantee agreement for new liabilities.	AHCI, OLG			Igan et al 2019, 50, 77f.; Baron, Verner, Xiong 2021.
EU-2011	December 2011	Eurozone	ECB conducts LTRO, with main auctions in December 2011 and Feb. 2012. Liquidity provision equivalent to 10.8% of Eurozone 2011 GDP.	BBEL			Darracq-Paries and De Santis 2015.
IT-2011	December 2011	Italy	Main wave of interventions in 2009 and 2015-2017; for 2011, BPM receives EUR 1BN guarantee (December decree law 201).	OLG			BPM 2012, 623; Igan et al 2019, 62f.
GRE-2010	December 2011	Greece	Capital injections into NBG, Piraeus, and TT Hellenic Postbank. EUR 1.4BN and in TT case compensation for funding gap (not officially counted as recap).	AHCI			Homar 2016, 40.

	May 2012	Greece	“Bridge recapitalization” for four Greek banks, via HFSF provision of floating notes totaling EUR 18BN, of which EUR 4.7BN to Piraeus Bank.	BBCI	SPV		<u>EC 2012a.</u> <u>EC 2012b.</u>
LUX-2012	March 2012	Luxemburg	Dexia second round bailout in 2011-2013 (joint with Belgium and Netherlands). Luxembourg with minor contribution to new guarantee package, but no recap participation. Luxembourg subsidiary privatized.	OLG, RES			Igan et al 2019, 78.
NL-2011	May 2012	Netherlands	Passing of “Special Measures Financial Companies Act” granting wide range of new intervention powers, incl. expropriation and transfer of shares of affected banks.	ORL, RES			DNB 2012, 48.
CY-2011	June 2012	Cyprus	Nationalization of Laiki Bank, via 84% stake through EUR 1.8BN bond-for-equity transaction. Split into good bank-bad bank.	AHCI, RES			IMF 2014c, 34.
PT-2012	June 2012	Portugal	EUR 4.5BN recaps of BCP and Banco BPI via hybrid securities under Portuguese recap scheme.	AHCI			Homar 2016, 42.
EU-2012	July 2012	Eurozone	“Whatever it takes” speech by Mario Draghi: significant compression of risk premia and European bank outperformance. ^{xxxix}	MC			Alcaarez et al. 2019.
FRA-2012	September 2012	France	EUR 18BN state guarantee to Credit Immobilier de France (CIF). EC approval February 21, 2013.	ASG, OLG			EC, February 21, 2012.

CR-2012	October 2012	Croatia	Croatia Bank recapitalized with HRK 250M in equity.	AHCI		STOW	Igan et al. 2019, 51.
ES-2010	September 2012	Spain	EUR 4.5BN capital injection into BFA-Bankia via FROB.	AHCI	SPV		BdE 2017, 191.
	December 2012	Spain	EUR 13.5BN capital injection into BFA-Bankia via FROB: “non-monetary aid in form of ESM securities”.	AHCI	SPV		BdE 2017, 191.
IT-2013	February 2013	Italy	Second state recapitalization for BMPS, net increase of EUR 2.2BN from 2009 gvt. subscription, via new “Monti bonds”.	AHCI			<u>EP (2018) documentation.</u>
NL-2013	February 2013	Netherlands	Bail-in of junior bondholders at SNS Reaal, and nationalization of bank (EUR 3.7BN).	AHCI, BAIL			World Bank 2016, 45ff.
CY-2011	March 2013	Cyprus	Bail-in of equity and bondholders, and recap of Bank of Cyprus via deposit-to-equity conversion; other demand deposits restructured into time deposits. New Resolution Regime Law passed, bank holiday and daily withdrawal limits.	BAIL, ORL, RES, SBH		PRI-PRI (partly)	IMF 2014d, 43ff.
UK-2013	June 2013	United Kingdom	Cooperative Bank recapitalization under LME framework - private "consensual" bail-in.	BAIL			World Bank 2016, 73ff.
SLV-2013	December 2013	Slovenia	BAMC (Bank Asset Management Company) established as bad bank and recap vehicle.	AHCI, BAIL, BBAM	SPV	STOW	Arnesen 2014; World Bank 2016, 61ff.

			Recapitalizations of state-owned NLB, NKBM, and Abanka with bail-in measures.				
	December 2013	Slovenia	Sovereign guarantee on central bank ELA credits (EUR 1.03BN).	BBEL, OLG			World Bank 2016, 61ff.
UKR-2014	February 2014	Ukraine	Ca. 1.7% of GDP in bank recapitalization costs over 2014, multiple interventions to strengthen sector.	BBCI			IMF 2015c, 10f., 35.
	March 2014	Ukraine	Deposit freeze for 40 months.	SBH			IMF 2014c, 10f.; Laeven and Valencia.
BUG-2014	June 2014	Bulgaria	BGN 3.3BN emergency credit line to Bulgarian banking system to counter speculative attacks, including to FIB.	BBEL			EC, June 30, 2014.
EU-2014	June 2014	Eurozone	TLTRO I announced.	other			ECB, June 5, 2014.
GIB-2014	2014	Guinea-Bissau	Government in 2015 assumes losses for problem loans at Banco da Africa Oriental and Banco da Uniao, ca. 5.5% of GDP. Later backtracked under IMF pressure.	AHEL			IMF 2016b, 6; Laeven and Valencia.
MD-2014	November 2014	Moldova	EUR 870M (MDL 14.5BN) bank bailout via secret emergency loans for three banks after placed under special administration, amid fraud scandal.	AHEL			IMF 2016a, 8; Laeven and Valencia.

HUG-2014	November 2014	Hungary	MARK asset management company established to purchase real estate loans on voluntary basis; initial HUF 300BN (USD 1.3BN) approved volume.	BBAM	SPV		IMF 2015b, 7.
RUS-2014	December 2014	Russia	Launch of bank recapitalization program of 1.2% of GDP to counter international sanctions impact. Offering government bonds (OFZ) in exchange for debt or pref shares.	BBCI		STOW (partly)	IMF 2015b, 16.
PT-2014	August 2014	Portugal	BES resolution: Portuguese Resolution Fund and some minor private recapitalization contributions to new bridge bank Novo Banco; EUR 3.5BN bank bond guarantee.	AHCI, BAIL, OLG	SPV	PRI-PRI (partly)	Igan et al. 2019, 67f.; World Bank 2016, 52ff.
VN-2014	2014	Venezuela	Main interventions occur 2009 and 2010: creation of Banco Bicentario 2009, takeover of Banco Federal in June 2010.	AHCI, RES			Baron, Verner, Xiong 2020.
GRE-2015	February 2015	Greece	Bank of Greece begins extending ELA liquidity assistance to Greek banks, with implicit (later explicit) ECB support.	BBEL			ECB, February 4, 2015.
GER-2015	March 2015	Germany	Private German Bank Association (BdB) assumes control of Duesseldorfer Hypo (EUR 11BN assets) from Lone Star after looming default.	AHCI	ASSOC	PRI-PRI	FAZ, March 16, 2015; BaFin 2016, 25.
DK-2015	March 2015	Denmark	Renewed bank stress: resolution of Andelskassen under BRRD regime.	BAIL		PRI-PRI (partly)	World Bank 2016, 26f.

UKR-2014	March 2015	Ukraine	IMF approves USD 17.5BN support program which mandates comprehensive banking sector resolution and recapitalizations, major recaps include Dec.2016 UAH 116BN Privat Bank nationalization and others. Various refin loans extended (UAH 15BN to Privat Bank).	AHEL, BBCI		STOW (partly)	<u>IMF 2015c.</u> ; Igan et al 2019, 73.
TN-2015	August 2015	Tunisia	Capital injections into Société Tunisienne de Banque and Banque de l'Habitat, with participation from IMF/World Bank.	AHCI		STOW	Manek 2015.
IT-2015	November 2015	Italy	Banca d'Italia intervention into Banca Marche, Banca Poppolare dell'Etruria, Cassa di Risparmio di Ferrara and di Chieti: EUR 3.6BN recap from "Resolution Fund" private contributions via BRRD regime.	AHCI, BAIL, RES	SPV	PRI-PRI (partly)	Banca d'Italia, November 22, 2015; World Bank 2016, 38ff.
	November 2015	Italy	National Resolution Fund established: asset transfer and EUR 400M asset guarantee (qualifies as state aid).	BBAM, ASG	SPV	PRI-PRI (partly)	EC, November 22, 2015.
GRE-2015	November 2015	Greece	EUR 2.72BN capital injection into Piraeus Bank, via combination of equity and contingent convertible capital. Bail-in components under BRRD.	AHCI, BAIL			EC, November 29, 2015; World Bank 2016, 29ff.
BRL-2015	November 2015	Brazil	Concerns over BTG Pactual: Real 5BN emergency assistance by FGC, as central bank deems potential failure "systemic threat".	AHEL			IMF 2018b, 40.
HUG-2014	December 2015	Hungary	MKB bank resolution and asset transfer: bail-in of state owners, no subordinated debtors.	BAIL		STOW	EC, December 16, 2015.

EU-2016	March 2016	Eurozone	ECB announces TLTRO II program, to be conducted over June 2016 – March 2017.	other			ECB, March 10, 2016.
UKR-2014	December 2016	Ukraine	Bail in at NBU amid sector-wide recapitalization moves (see above).	BAIL			Sadowski 2017, 21.
IT-2015	December 2016	Italy	Third <i>BMPS</i> state recap., for new EUR 5.4BN, in return for discounted equity. EUR 1.5BN state compensation for retail investors. EC approval in July 2017.	AHCI			EC, July 4, 2017; IMF 2020, 19.
	January 2017	Italy	First gvt. liquidity support line for Veneto Banca, and Popolare di Vicenza. Second line in April 2017.	AHEL			IMF 2018c, 12.
KZ-2017	March 2017	Kazakhstan	Public bad bank (“Problem loan fund”) purchases USD 2.4BN in bad assets from KKB, to enable restructuring and takeover by Halyk Bank.	BBAM	SPV		IMF 2018a, 24, 26.
COS-2017	May 2017	Costa Rica	Intervention into Bancredito after persistent losses: takeover by regulatory SUGEF, then absorption by Banco Nacional de Costa Rica. Colones 2BN loans.	AHEL, RES		STOW	OECD 2018, 49.
RUS-2017	August 2017	Russia	Bail out of Otkritie, and later B&N Bank, via USD 14BN injections from “Fund for Banking Sector Consolidation”.	AHCI	SPV		Dobryshevsky, Trunin, and Khromov 2017, 11ff.
IN-2017	October 2017	India	Government announces USD 33BN bank recapitalization, aimed at state-owned institutions, to clean up balance sheets, foster NPL resolution. Disbursal starts 2018.	BBCI, ORL		STOW	IMF 2017a, 86.

			Modifications of 2015-6 corporate debt restructuring schemes.				
RUS-2017	December 2017	Russia	Bailout of PSB, ca. USD 2.5BN injection from “Fund for Banking Sector Consolidation”. All but subordinated debt liabilities honored.	AHCI	SPV		Dobryshevsky, Trunin, and Khromov 2017, 11ff.
CY-2018	June 2018	Cyprus	EUR 3.5BN state guarantee to CCB, including asset protection scheme, related to liquidation, transfer of assets to Hellenic.	ASG		STOW	EC, June 19, 2018.
IT-2015	November 2018	Italy	Deposit insurance fund (FITD) subscribes to EUR 320M capital increase; Jan.-Dec 2019 sees state guarantee to bond issuance, and sees further equity issuance, led by FITD.	AHCI, OLG	SPV		IMF 2020, 19.
CN-2019	May 2019	China	Government takeover of <i>Baoshang Bank</i> , guarantee on all interbank liabilities below CNY 50M and corporate deposits. <i>China Construction Bank</i> takes over operations.	AHCI			<u>Caixin 2019</u> ; PBoC (official <u>A.</u>).
KY-2019	August 2019	Kenya	Treasury bails out Consolidated Bank of Kenya, partially covering corporate debt payments (via KSh 1.6BN capital injection).	AHCI		STOW	Business Daily Nairobi, September 5, 2019; CB 2020.
GER-2019	December 2019	Germany	State guarantee over 0.8BN EUR assets for HSH Nordbank.	ASG		STOW	EC, December 5, 2019.

CN-2019	December 2019	China	Bailout of <i>Hengfeng Bank</i> via SWF and other state lenders, RMB 100BN.	AHCI	SWF (partly)		<u>The Wall Street Journal, April 6, 2020.</u>
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Appendix E: Full Bibliography (for Appendices A-B, D, F).

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Appendix E: Details on Long-Run GDP, FX, and Intervention Size Calculations.

1. ADVANCED ECONOMIES

- **Australia:** From 1870, annual current GDP data in LCY is based on Jorda, Schularick, and Taylor (2017) [labelled “JST” throughout].
- **Austria:** From 1913, annual current GNP is reported (in schilling) in Mitchell (2013, 4828f.); our pre-1913 current GDP estimates are based on Kausel (1979, 717ff.; “Republik” series) on which we also base the Gulden-Kronen exchange rate.
- **Belgium:** Prior to 1870, we rely on Horlings (1997; value-added current GDP basis); from 1870, annual current GDP data in LCY is based on “JST”.
- **Canada:** continuous current GDP figures are only reported in Mitchell (2013) from 1926 – we use “JST” prior to this year; the 1861 crises cost (code “CAD-1861”) is put into relation to the 1867 current GDP figure in Mitchell (ibid.).
- **Cyprus:** current GDP figures are reported (in pounds) from 1950 via Mitchell (2013, 1977ff.).
- **Denmark:** current GDP from 1818 is based (in kroner) on Mitchell (2013, 4818ff.).
 - For liquidity costs of “DK-1877” we add the Dkr 3.7M extra Lombard credit provision over September-December 1877, plus the Dkr 3M raise of the note issuance ceiling, reported via Svendsen and Hansen (1968, 333f.).
- **Finland:** current GDP from 1860 is based (in Finnish Markka) on Hjerpe (1991, table 3. A1).
 - For “FIN-1900”, Kusterae and Tarkka (2011, 349) note that the final accounts following the bankruptcy of the Bank of Agriculture and Industry were not drawn up until 1917, with the Markka 1.5M loss figure for the Bank of Finland referring to this 1917 audit: this loss figure may therefore be inflated from the loss figure at market prices in 1900. Finnish current GDP more than tripled over the period of 1900-1917. However, the same authors also indicate additional “substantial” deposit exposure by the Treasury to the Bank, and record total unfunded liabilities of the Bank at Markka 5.74M: at the 1917 current GDP of Finland, this latter figure would still come to 15.2% of GDP – only a marginal difference to our base estimate.
- **France:** from 1815, current GDP is based on Mitchell (2013, 4820f.); for the 1810 emergency loan (code “FRA-1810”), we use 1815 current GDP via Mitchell (ibid.); current GDP prior to 1815 is based on the new series in Nuvolari and Ridolfi (2020).
- **Germany:** prior to 1815 – until the dissolution of the “Holy Roman Empire” – we relate intervention sizes to current GDP estimates for the respective free cities or states (such as Prussia), as there exists no centralized fiscal or monetary Imperial authority, and Imperial stakeholders have virtual autonomy on all detected intervention policies (see above and Isenmann 1980); current (per capita and aggregate) GDP data is based on Pfister (2022), who reports figures in Mark; we use Gulden/Rfl – Mark conversions reported in Sander (1902, 750); from 1870, we

consolidate all German intervention costs and annual current GDP data in LCY is based on “JST”;

- For “GER-1798”, a GBP – Hamburg Mark Banco exchange rate of 1:13.5 is used, following Fenn and Nash (1874, 117).
- **Prussia:** Prussian current GDP prior to 1870 follows the German per capita estimates in Pfister (2021), using population figures in Hohorst (1978) and Buesch and Neugebauer (1981);
- **Saxony:** Saxonian current GDP for “GER-1866” is based on Pfister (2021).
- **Greece:** current NNP from 1927 (reported in drachmae) is based on Mitchell (2013, 4831ff.).
- **Iceland:** current GDP data is sourced via Statistics Iceland (2021).
- **Ireland:** Irish current GDP at factor cost from 1700 is separately reported in Dimsdale and Thomas (2017, sheet A.9), which we use for Irish interventions; from 1924, current GNP (reported in pounds) is based on Mitchell (2013, 4832ff.).
- **Italy:** As in the German case, we do not consolidate intervention sizes on any national level prior to 1870, but rather on the city state or state level, where full fiscal, monetary, and political autonomy lies; from 1300, current per capita GDP is based on Malanima (2011), who reports figures for Northern Italy in Florentine lire, as well as the silver content of the lire in annual terms – the currency conversion to the gold basis is undertaken based on Karaman, Pamuk, and Yildirim-Karaman (2019); we only use Malanima’s figures for Northern Italian city-states at this point, with Malanima (2006) arguing that pre-1800 per capita GDP figures for Northern and Southern Italy are closely aligned. From 1870, we begin consolidating intervention costs on the national level, with annual current GDP data in LCY based on “JST”; “IT-1595” assumes a 0.35 grams gold content of the Bolognese lire; “
 - For the Bolognese cases (“IT-1583” and “IT-1595”), we rely on exchange rates of the Bolognese lira based on Salvioni (1909), recording a gold content of 0.671 grams per lire.
 - For “IT-1597”, we calculate with a population in Tuscany in 1597 of 800,000 (see Breschi and Malanima 2002); for “IT-1588” and “IT-1593” we calculate with a weight of the French Ecus of 3.23g of gold.
 - For “IT-1622” we use the Spanish per capita GDP via Alvarez-Nogal and Escosura (2012), and work with a population for the Kingdom of Naples of 3M, based on Beloch (1937, 225), reaching an overall current GDP of Ducats 89.1M; Some authors (e.g. Malanima 2006) have posited that Southern and Northern Italian GDP prior to 1800 is closely comparable – for the Bank of Annunziata crash (“IT-1701”), Malanima’s (2011) Northern Italian figures are used, per arguments in Malanima (2006).
 - The Venetian population figures are based on Pezzolo (2013, 257), while figures for all other cities and city states are based on Bairoch (ibid.).
 - For “IT-1974” our estimate of a USD 400M (Lire 293.4BN) guarantee volume is based on various contemporary media estimates, including those in Businessweek (1974, 46).
 - For “IT-1982”, we distribute intervention costs (USD 1BN) equally between liquidity costs and guarantees.
- **Japan:** current GNP is reported on the basis of Mitchell (2013) from 1885 – we estimate the 1890 BoJ intervention (code “JP-1890”) on the basis of Nakabayashi’s (2018, 235) data.

- **Holland/Netherlands**: Between 1347 and 1807, current GDP data is based on van Zanden and van Leeuwen (2012), reported in guilders, where we interpolate decadal figures; current GDP between 1807-1913 is based on Smits, Horlings, and van Zanden (2000, table I.2, market prices); current GDP in Euros from 1998 are taken from ECB SDW.
- **New Zealand**: current GDP prior to 1935 is based on Greasley and Oxley (2000, taking “model 5” approach, in pounds), and is reported between 1935-1938 on an API basis, from 1938 also on the “clean” GDP basis in Mitchell (2013).
 - For “NZL-1931”, our guarantee size – following the official Treasury assumptions detailed by Tocker (1933, 124f.) – works with a loss provision of 25% on the accumulated (actual) FX purchases: hence, GBP 9.05M.
- **Norway**: current GDP is sourced via Mitchell (2018) from 1865.
 - For “NOR-1857”, we use a current GDP figure of Kroner 420M, adjusting Mitchell’s (ibid.) 1865 figure (Kroner 480M); intervention size is put at Kroner 4.25M, adding the foreign currency loan and the Kroner 1.6M payouts recorded in Grytten and Hunnes (2010, 13).
 - For “NOR-1898” our total liquidity aid stands at NOK 124.25, composed of NOK 4M aid to *Industribanken* in the form of deposits, NOK 3.25 liquidity aid via Norges Bank for *Industribanken*, and NOK 117M in general liquidity aid over 1898-1901, all based on Lie (2020, 104ff.).
 - For “NOR-1991” we note that Steigum (2009, 63) estimates significantly higher gross fiscal costs than Laeven and Valencia (2020), but for consistency purposes we take the latter’s estimates as our base case. We take the Government Bank Insurance Fund’s total 1991 capitalization (NOK 11BN, via Steigum ibid., 62) as our guarantee cost, though the Fund is also reported to have undertaken capital injections with these (ibid.).
- **Portugal**: current GDP data is sourced via “JST” from 1870; at least one intervention size is reported in GBP (code “PT-1919”), which we convert to PTE via Dollar/GBP crosses in “JST”.
- **Scotland**: prior to the Act of Union of 1707, we treat Scotland as a separate fiscal and political entity and use the residual of GB-English current GDP at market prices in Broadberry et al. (2015); afterwards, intervention costs are consolidated and put into relation to Great Britain current GDP at market prices in Broadberry et al. (ibid.).
- **Sweden**: current GDP data between 1620 and 2012 is based on Edvinsson (2014); from 2013, current GDP data is based on “JST”.
 - For “SWE-1890”, the excess annual growth in Riksbank private loans over 1890 is 1.3%, over the average 2.1% annual growth rate for 1879-1889; hence, SEK 880k is our liquidity cost estimate. Data via Fregert (2014).
 - For “SWE-1907” we base our liquidity cost figure on the monthly Riksbank discount volumes for domestic bills presented in Grodecka-Messi, Kenny, and Oegren (2021, appendix figure A.2), working with a “normal” pre-crisis discount level of SEK 120M, and total liquidity costs of SEK 320M.
- **Switzerland**: we rely on current GDP figures in Halbeisen, Mueller, and Veyrassat (2012) for 1851-1869, and on “JST” (reported in CHF) from 1870.
 - For “SZ-1859”, our estimate of the total liquidity assistance amounts to CHF 12.75M, based on the total liabilities of the Paris branch that led to the bank run, and the information that 75% of the deposits were withdrawn (via Jöhr 1915, I, 162ff.).

- liquidity costs for “SZ-1907” are estimated on the basis of data in Bachmann, Schnyder, and Weber (1932, 56).
- For “SZ-1921”, our estimate of the total liquidity support by the SNB to Neuenburger Kantonbank is based on the values of the transferred assets from Caisse d’Epargne detailed in SNB (1921, 18), and put there at CHF 107M.
- For “SZ-1928”, our cost estimate is based on the report that Diskontbank incurred at least CHF 6.1M in losses from the collapse of Wolfensberger, and Escher & Freisz, see Halbeisen (2001).
- **United Kingdom/England:** current GDP data to 1870 is based on Broadberry et al. (2015) via Dimsdale and Thomas (2017, sheet A.9); we use English current GDP (at market prices) in the same source to 1706 to relate English intervention costs separately: from 1707, we use aggregate current GDP figures (at market prices) for Great Britain as a whole; liquidity outlays are reported in the IFS on the basis of “monetary authority claims on the private sector” rather than “claims on other depository institutions”;
- **United States:** between 1789 and 1869, current GNP is reported in Mitchell (1983, 886ff.); from 1870, annual current GDP data in LCY is based on “JST”.
 - For “US-1861”, we take as the amount of committed liquidity the volume of total paid-in capital of NYCH member banks, with the members agreeing to pool reserves upon the war outbreak. Camp (1892, 687) reports NYCH paid-in balances for the year ending September 30, 1861 of US\$ 353.4M.
 - For “US-1890” we estimate the peak liquidity provision by the NYCH at USD 12.5M, based on the figure in Gorton and Tallman (2018, 47).
 - For “US-1914” we add the USD 500M Treasury emergency liquidity offer, the USD 510M in extra circulation by currency associations (table 1 in Wicker 2005, 48f.), and the USD 125M in loan certificate issuance upon war outbreak by the NYCH (Wicker *ibid.*, 45).
 - For “US-1932”, for the RFC total loans, we follow the USD 1.237BN in total authorized funds over Feb-1932 to Mar-1933 compiled in Butkiewicz (1995, table 1), for equity purchases, we follow the USD 1.3BN purchased until the termination of the program in June 1935, stated in Olson (1988, 82).

2. EMERGING ECONOMIES

- **Argentina:** current GDP is reported from 1935 (in pesos) in Mitchell (2013, 3309ff.).
 - Liquidity costs for “ARG-1990” are a lower-bound estimate, given a lack of data for 1989.
- **Azerbaijan:** no current GDP data is reported via IFS or Mitchell (2013);
- **Bangladesh:** current GDP is reported from 1973 (in taka) in Mitchell (2013, 1953ff.);
- **Brazil:** current GDP from 1861 (reported in milreis) is based on Mitchell (2013, 3309ff.); a number of interventions (i.e. “BRL-1900”) are reported on a GBP cost basis – currency conversions are undertaken here via Global Financial Data (annual average rates), starting with 1970 on the IFS basis;

- **Bulgaria**: current NNP from 1924 (reported in leva) is based on Mitchell (2013, 4828f.).
- **Czechoslovakia**: current GDP from 1913 (reported in kotura) is based on Mitchell (2013, 4829ff.); as with other post-Communist economies during the 1990s, the current GDP figures involve sharp breaks – for the 1991 intervention (code “CZK-1991”) we have used Mitchell’s (ibid.) 1990 NMP figures in kotura;
- **Chile**: current GDP from 1940 (reported in pesos/escudos) is based on Mitchell (2013, 3309ff.).
- **China**: current GDP from 1962 (in yuan) is based on Mitchell (2013, 1952ff.); pre-1962 intervention costs as a share of current GDP are currently not covered.
- **Colombia**: current GDP is reported from 1945 (in pesos) in Mitchell (2013, 3014ff.).
- **Congo, Republic**: for “COGR-1994”, we take the 1994-5 change in monetary claims on depository institutions for the liquidity cost basis, against 1994 current GDP, given FX basis changes. Sourced via IFS.
- **Costa Rica**: current GDP is reported from 1950 (in colones) in Mitchell (2013, 3283ff.).
- **Cuba**: current GDP is reported (in pesos) from 1903 in Mitchell (2013, 3274ff.); for “CB-1893” we take the year 1903 as the current GDP reference.
- **Ecuador**: current GDP is reported (in sucres) from 1939 in Mitchell (2013, 3283ff.).
- **Egypt**: current GDP from 1950 (reported in pounds) is based on Mitchell (2013, 1918ff.).
- **El Salvador**: current GNP from 1939 is reported (in colones) via Mitchell (2013, 3277ff.).
- **Guyana**: current GDP is sourced via IFS; for “GY-1993” we use changes in depository institution liabilities to the central government as our liquidity volume (via IFS).
- **Hong Kong**: current GDP reported from 1961 (in HK\$) in Mitchell (2013, 1955ff.).
- **Hungary**: current NMP is reported (in forint/pengo) from 1950 in Mitchell (2013, 4847ff.); for “HUG-1931”, we base our liquidity cost estimate on the figures in Macher (2019, 661ff.) by summing up the deposit withdrawals between July and November 1931, and the associated index change in HNB discounts over 1931.
- **India**: from 1970, we use current GDP via IFS (2000; 2014).
 - For “IN-1969”, we use the 1970 current GDP figure.
- **Indonesia**: current NNP is reported (in guilders) from 1921 in Mitchell (2013, 1950ff.).
- **Israel**: current GDP is reported (in new shekels) from 1950 in Mitchell (2013, 1971ff.).
- **Jamaica**: for “JAC-1996”, we rely on “depository institutions’: credit from monetary authorities”, reported via IFS, to obtain liquidity costs.
- **Jordan**: in the case of “JOR-1989” we take changes in government deposits at deposit money banks over the crisis period as our proxy for liquidity costs, given absent monetary authority claims data in IFS.
- **Kazakhstan**: current GDP in USD is reported via World Bank, which we convert to USD via IFS year-average figures.
- **Latvia**: current GDP figures are reported via IFS in Euros.
 - For “LAT-2008”, we convert LCV liquidity figures at the rate used by the IMF (0.782 lat per Euro); a 1924-33 GNI estimate is taken from Clark (1938).
- **Lithuania**: the 1924-33 GNI estimate is taken from Clark (1938) for “LIT-1933”.
- **Mexico**: Between 1895-1924, current GDP is reported in INEGI (1985, I, 311); current GDP from 1925 is reported (in pesos) in Mitchell (2013, 3279ff.).

- For the note guarantee volumes of “MX-1913”, we use the 1910 note figures in INEGI (1985, II, 797), and 1910 current GDP (INEGI, I, 311).
- **Mongolia**: current GDP in USD is reported via World Bank, which we convert to USD via IFS year-average figures.
- **Paraguay**: current GDP is reported (in guaranies) from 1950 in Mitchell (1983, 902ff.).
- **Peru**: current GDP from 1942 is reported (in soles) in Mitchell (1983, 903ff.).
- **Philippines**: current GDP from 1946 (in pesos) is reported in Mitchell (2013, 1979ff.).
- **Poland**: current NMP from 1950 is reported (in zloty) in Mitchell (2013, 4853ff.); a 1924-33 GNI estimate is taken from Clark (1938) for “POL-1931”; the GDP figures for the immediate post-Communist transition period (1989-1993) until the Polish currency stabilization are highly inflated and not representative – we have still calculated the 1990 intervention (code “POL-1990”) on the Mitchell (ibid.) basis.
- **Russia/USSR**: for 1885-1913, we rely on Gregory’s (1982, table 3.2) current NNP figures (in credit roubles); current GNP from 1928 (reported in roubles) is based on Mitchell (2013, 4834ff.).
- **Slovak Republic**: current GDP is sourced via IMF IFS.
- **Tanzania**: current GDP from 1955 is sourced via Mitchell (2013).
- **Uruguay**: current GDP from 1955 is reported (in pesos) in Mitchell (1983, 903ff.).
 - “UG-2002” is reported with a “zero” liquidity cost value, given that the IFS reports declining central bank claims on depository institutions over the timeframe.
- **Venezuela**: current GDP from 1950 is reported (in bolivares) in Mitchell (1983, 904).
 - for “VN-1960” we split the 28% of GDP cost equally between “fiscal” and “liquidity” costs; for “VN-1978”, we apply a total 3.5BN bolivares as a fiscal cost to authorities (which de facto assume all liabilities), following Ugalde (1979).
- **Vietnam**: “VT-1997” – the episode reports declining central bank claims on depository institutions, as per IFS data, we rely on Laeven and Valencia’s estimates.
- **Yugoslavia**: current NMP from 1923 is reported (in dinari) in Mitchell (2013, 4836ff.); for historical FX conversions, we take black market rates to US Dollars reported by Global Financial Data.

If not otherwise specifically stated, our default source for historical current GDP data is Mitchell (2013), and for modern data IFS statistics. Note that T-1, the year immediately preceding our first “crisis year”, is always taken as the basis for the current GDP figure.

Refer to “Appendix E” for all associated references.

ⁱ After weighing the evidence, including recourse to the material in Re (1914), we regard it as likely that the Riccardi by 1290 were dependent on discretionary liquidity assistance, from fellow merchants or from public authorities. The Bank comes close to formal bankruptcy repeatedly between the 1280s and ca. 1307/8. Therefore, we classify the intervention as “AHEL” rather than “NO/I”.

ⁱⁱ The bankruptcy and King Ferrante’s deposit guarantee took place some time between January 1466 and 1474, as Silvestri (1953, 91) reports that the event must have happened between the default of Francesco Strina’s Bank in 1475, and some dealings of Di Gaeta with the merchant Dionisio de Scorno in 1466.

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- ⁱⁱⁱ Mueller (1997, 241-249) implies that the Venetian liquidity assistance and asset guarantee was only passed after the one-year moratorium passed, in February 1500. The official decision by the Venetian Government Revenue Office is dated January 30, 1499, however, in the original file via Ferrara (ed. 1871, no. 136).
- ^{iv} The exact nature of Cardinal Wolsey's assistance, and the content of the "accord" struck is not clear. Most likely, it prevented the Frescobaldi creditors from seizing assets, and may have involved a form of liquidity assistance, too.
- ^v The Neapolitan Banks are technically "non-profit" institutions, but independent from government control.
- ^{vi} Buist (1974, 94) and Munro (1989, 329) differ in the dating of the Sutherland bailout, with the latter putting the operation into the year 1784. We have decided to follow Buist (ibid.) here.
- ^{vii} Checkland (1975, 217) does not provide an exact month for the 1788 assistance to William Forbes & Co. But the wave of Scottish distillery failures that triggered the banking system threat is conventionally seen to have been triggered directly by the July 1788 Lowland License Act which banned Scottish whisky exports to England (i.e. Dietz 1997). We have thus chosen July as the intervention date.
- ^{viii} Technically, the intervention was announced as a dividend yield guarantee.
- ^{ix} There are some indications that the Ottoman support was in the form of liquidity assistance, but as in all cases where the exact form of aid is not sufficiently clear, we opt for the "other" classification.
- ^x Jöhr (1915, 162) does not specify the "help" that the Bank received in April 1859: from the context, we regard a liquidity assistance (50:50 from private and public authorities) as the most plausible form of "help" that took place. Our cost estimate for the assistance is CHF 12.75, based on the total liabilities and equity capital outstanding (ibid.)
- ^{xi} The USD 2.6M refer to total loans outstanding at the Ocean Bank on December 10, 1871, just prior to its expulsion from the NYCHA see NY Tribune, December 13, 1871, 1. Figure thus represents a maximum amount.
- ^{xii} As Kynaston (2017, 211f.) notes, despite the ongoing academic debate, the balance of opinions leans towards affirming the de facto LLR operations during the 1878 crisis – despite few changes in the balances of Bank branches outside of London, as argued by Ziegler (1992).
- ^{xiii} The Spanish suspension of gold standard adherence is often dated to the "summer 1883". We follow Alquist and Chabot (2010, 33) in dating it to June 1883, but the authors and others stress some remaining uncertainty.
- ^{xiv} We here estimate the total additional rediscounting volume over 1890-1 on the basis of Nakabayashi (2017, 235).
- ^{xv} While King (1987, 406) does not elaborate on the exact nature of HSBC's "assistance", there is no evidence of any capital injections in affected corporations from the presented balance sheets, leading us to treat the intervention as a form of liquidity assistance (not necessarily one focused on, but including, banking sector corporations).
- ^{xvi} Based on Lie (2020, 104), we put the deposits injected by the government authorities into *Industriebanken* at an extra NOK 4M, based on the claim that "a third of the share capital [out of NOK 6M] was intact".
- ^{xvii} Kusterae and Tarkka (2011, 349) note that the final accounts following the bankruptcy of the Bank of Agriculture and Industry were not drawn up until 1917, with the Markka 1.5M loss figure for the Bank of Finland referring to this 1917 audit: this loss figure may therefore be inflated from the loss figure at market prices in 1900. Finnish current GDP more than tripled over the period of 1900-1917. However, the same authors also indicate additional "substantial" deposit exposure by the Treasury to the Bank, and record total unfunded liabilities of the Bank at Markka 5.74M: at the 1917 current GDP of Finland, this latter figure would still come to 15.2% of GDP – only a marginal difference to our base estimate.
- ^{xviii} The estimate for the Pesos 3.5M intervention size represents a lower floor, and is based on reports in Gomez-Galvariatto (2014, 24) who estimates Pesos 2.5M as the amount of deposit withdrawals in the final days of December. The newspaper *Excelsior* mentions a further Pesos 1M shortfall at banks, via January 7 edition, p.7.
- ^{xix} We count as a direct fiscal cost here only the Dkr 50M in capital injections provided by the State Law of April 1928 (assigned to "DK-1928"); DKr 241 are fully counted as liquidity costs over 1922-4 (assigned to "DK-1921"); the guarantees on *Landsmandsbanken* deposits is valued at a Dkr 1BN, on the basis of the balance sheet data for 1921 in League of Nations (1931, 94).
- ^{xx} Eulambio (1924, 164) reports that in 1924, Dr. 200M are repaid from the government to NBG: he does not refer to a recapitalization of the NBG or lending to the NBG by the government, as Dertilis and Costis (1995, 462) do: given these differences, we do not count the alleged government help to NBG in the intervention size currently.
- ^{xxi} While the Bank of England only holds one quarter of Anglo-Austrian's equity at the time of (re-)inception in 1922, the Articles of Association gave it majority voting power, c.f. Jones (1993, 229).
- ^{xxii} Is Bankasi ("Business Bank") exhibits a sizable private merchant ownership structure, but it is not clear if it is majority-state-owned. Close ties throughout to the Turkish government and Treasury, and various special state privileges. See Keydar (1981, 105f.) for details.
- ^{xxiii} Kuusterae and Tarkka (2011, I, 539f.) do not provide us with a month during which official assistance (in the form of an approval of extra emergency rediscounting) to Atlas Bank started: we infer the intervention start date with reference to the monthly rediscounting volumes provided by the Bank of Finland annual report (see BoF 1929,

11). June 1928 saw a first major expansion of BoF rediscounting volumes. Where we do not have such contextual data in these instances, we do not provide an intervention month.

^{xxiv} For our cost calculations, we regard the RM 1.5BN in Reichsbank “Wechsel” asset increases over May-July 1931, plus the RM 374M in liquidity distributed via RKG, and the separate RM 50M for the Rheinische, as the “GER-1931” liquidity cost total, all on the basis of Born (1967, 65ff.) and sources above. We estimate the guarantee amount approved for the Danat liabilities in July 1931, which covered all liabilities except the stakes of the personally liable owners, at RM 1.2BN, with Born (1967, 96, 105ff.) putting total liabilities at RM 1.5BN. Subsequent estimates may modify this particular estimate substantially.

^{xxv} Our guarantee cost – following the official Treasury assumptions detailed by Tocker (1933, 124f.) – works with a loss provision of 25% on the accumulated (actual) FX purchases: hence, GBP 9.05M.

^{xxvi} RFC interventions are subsumed under the separate respective intervention row, to avoid double-counting.

^{xxix} We assign the 3.85BN shekel support fully to monetary authorities in this case given the figures in BoI (1989, 282ff.).

^{xxx} The Turkish case of May 1994 is one of the examples for which we arrived at a narrower “asset guarantee” classification as opposed to a “blanket guarantee”, given that only deposits, and no other liabilities were covered by the guarantee; “blanket guarantees” in our “BG” classification are consistent with the action, for instance, in the Thai and Indonesian cases during 1997, which saw all but minor creditor groups covered, notwithstanding the depositor losses in the closure of 16 Indonesian banks in October 1997 (c.f. Lindgren et al 1999, 18ff.).

^{xxxix} The specific 1994 Banespa/Banerj assistance is not entirely clear from the sources – instead of a pure liquidity program, it is possible in this case that recapitalizations have occurred alongside of, or instead of, liquidity assistance.

^{xxxii} After protracted legal proceedings lasting more than seven years, depositors in BHI not initially covered were eventually compensated in full by the Austrian state, see details (in German) in Austrian OHG, decision of March 25, 2003 [[online version](#), accessed October 1, 2020].

^{xxxiii} Again, we note that Laeven and Valencia (2012, 1223f.) in this instance regard the intervention as a “blanket guarantee”, but we retain our “AG” classification given authorities’ sole deposit focus.

^{xxxiv} As opposed to the Thai and Indonesian cases, the Malaysian “blanket guarantee” only covered depositors – we classify the intervention as “AG” therefore, in contrast to the description in Lindgren et al (1999, 18f.).

^{xxxv} Thus far, we were not able to identify standalone asset purchases by authorities in this instance, as suggested by Laeven and Valencia (2020).

^{xxxvi} For the calculation of the guarantee size, we operate with the USD 2.2BN in USD-denominated time deposits reported in Plaza and Sirtaine (2005, 13), and using the 2002 year-average FX rate for the peso at 1:21.2, via GFD.

^{xxxvii} We classify the Dexia intervention as a “Belgian” crisis given that Belgium accounts for 60.5% of the 2008 total guarantee volume, even though France and Belgium contribute equally to the recap volume. Belgium exclusively leads the recap efforts in 2011, see Igan et al 2019 (77f.).

^{xxxviii} The ownership of the SFEF at inception was broken down as 34% public, 66% private (seven commercial banks); given the underlying state guarantees on debt issued, we still consider the vehicle as a joint public-private enterprise, see further Braakmann and Forster (2011, 13f.).

^{xxxix} On the day of Mario Draghi’s speech, July 26, 2012, the European bank equity index (Eurostoxx SX7P) gained 4.2% versus the broader Eurostoxx gain of 0.4%; over a 7-day period, the gains are +10.8% and 4.4% respectively (closing prices, via Global Financial Data, accessed September 2020). Note that we do not employ any systematic analysis of bank equity index performance as a condition to classify intervention events at this point – Draghi’s speech fulfills our qualitative conditions of a “major communication”, however.