Two Centuries of Systemic Bank Runs[†]

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Abstract

We study the macroeconomic causes and consequences of bank runs in 184 countries over the period of 1800-2022. A new narrative chronology of bank run events coupled with a newly constructed historical dataset on banking sector deposits allows us to distinguish between *systemic* bank runs—those associated with substantial declines in aggregate deposits—and non-systemic episodes. We find that bank runs are typically associated with large contractions in deposits, credit, and output, as well as exchange rate crashes and sudden stops. Whether deposits contract during runs, in turn, predicts the severity of output declines, highlighting that bank runs are particularly costly when they are systemic in nature. Using several sources of historical and contemporary bank-level data, we show that systemic bank runs are associated with a wide dispersion in deposit growth rates and a flow of deposits from more leveraged to safer banks. Taken together, our analysis highlights a key role for the liability side of banks in financial crises, and our new quantitatively validated measure of bank runs provides unprecedented scope for studying such episodes.

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1 Introduction

Banks play an important role in the allocation of capital in the economy by providing long-term loans funded by short-term deposits. At the same time, this maturity transformation also gives rise to an inherent vulnerability: the possibility of bank runs (Diamond and Dybvig, 1983). Despite the prominence of runs in economic theory, and renewed interest in better understanding them in the wake of the Silicon Valley Bank and Crédit Suisse failures, there is surprisingly limited empirical work studying their interaction with the real economy. Have bank runs become more or less common over time? Are all banking crises accompanied by runs, and all runs by crises? What happens to the macroeconomy in the aftermath of bank runs, and what determines which runs end badly?

We study these questions using a newly constructed cross-country chronology of bank runs, covering 240 run episodes in 184 countries for the period 1800-2022. At the heart of our work are two data contributions. First, we collect narrative evidence on the incidence of bank runs from many dozens of individual sources, such as historical newspapers, central bank publications, specialized scholarship on the banking history of specific countries, and existing chronologies of financial crises. Second, we construct a new dataset on the outstanding deposits of the banking sector in 179 countries for the period 1800-2022, which overlaps with 1644 instances of aggregate deposit contractions. The full chronology of bank runs is documented in a publicly available Appendix B.

By combining our newly collected narrative information with statistical data on deposit withdrawals, we are able to construct an objective, quantitatively-validated measure of bank runs. In particular, we define *systemic* bank runs as episodes of clearly identified cases of bank runs that are *also* accompanied by a contraction in deposits. The idea is that, while bank runs may be idiosyncratic events that only affect a few individual institutions, they may be especially relevant for the macroeconomy if they are systemic in nature, meaning that they affect the banking sector as a whole. We identify 135 such systemic bank run episodes over the past two centuries. Our approach of drawing on both narrative and quantitative evidence has the crucial advantage that it mitigates severe cases of both false negatives and false positives in identifying bank runs. On one hand, it mitigates the likelihood that we miss important historical episodes of runs. On the other hand, it avoids falsely classifying deposit outflows as evidence of bank runs when they are driven by other factors such as changes in monetary policy. Having a statistical measure of run intensity also has the additional advantage that we can study episodes of deposit contractions in the absence of narrative evidence of a bank run, which may sometimes be avoided because of swift interventions by the government or central banks (see, e.g.,

Metrick and Schmelzing, 2021).

Using our newly collected data, we document that the average unconditional frequency of bank runs over the period 1800-2022 is about 1%. The frequency of bank runs trended upwards until World War II, fell considerably during the relative financial calm of the 1940-1970s, followed by a turbulent two decades during 1980-2010. We are also able to present the same chronology for a unified measure of banking crises by combining the four influential existing crisis lists of Baron et al. (2021), Laeven and Valencia (2018), Jordà et al. (2017), and Reinhart and Rogoff (2009). We find that, while banking crises and runs often coincide, there are many episodes of runs without crises and vice versa. While crises and runs often coincided until World War II, there is a strong divergence during the 1980-2010 period when an increase in the number of crises coincided with a much lower incidence of runs. Interestingly, we find that the historical time-series patterns of runs and crises are similar in advanced and emerging economies. Bank runs also tend to be precursors of other types of crises, such as sovereign debt or currency crises, and occasionally follow them.

Our key empirical result is to document the macroeconomic ramifications of (systemic) bank runs. The macroeconomic costs of bank runs are substantial: real GDP is on average 10% lower five years after a bank run relative to its pre-existing trend. This order of magnitude is similar to what has been previously recorded for financial crises more broadly (Hoggarth et al., 2002; Cerra and Saxena, 2008; Schularick and Taylor, 2012). As we show, bank runs are particularly damaging when they are *systemic*, meaning accompanied by a deposit contraction, or when they occur together with a banking crisis. However, deposit contractions by themselves and non-systemic bank runs are also associated with a substantial drop in output, suggesting an important role for the liability side of bank balance sheets for the macroeconomy. The data on deposits we collect also allows us to size up the potential severity of a bank run. We show that output declines considerably more after a large contraction in deposits relative to more limited contractions, highlighting the usefulness of quantitative data in identifying episodes of liability-side distress in the banking sector.

We also explore the role of institutional and macroeconomic factors in determining which types of bank runs become systemic. Broadly speaking, we find that both the existence of a central bank and deposit insurance are associated with a large reduction in the probability that a bank run is associated with deposit outflows. Systemic episodes are also more likely to happen when runs are accompanied by a banking crisis or preceded by a significant expansion in credit or deposits.

To study what happens during systemic bank runs on a more granular level, we

supplement our cross-country analysis with detailed bank-level data from two historically distinct episodes in the United States: the period 1867-1904, for which we have data on bank balance sheets from Carlson et al. (2022), and the period 1976-2020 for which we have data from the Call Reports. As we show, there is significant heterogeneity in deposit growth rates across different types of banks, and the sensitivity of lending to deposit outflows was larger in the 19th century.

More importantly, differences in bank leverage and size are highly predictive of which institutions experience outflows during systemic bank runs. More leveraged banks in particular experience larger outflows of deposits when a systemic run starts, both in the historical period before the advent of deposit insurance and more recent data starting in 1976. This is consistent with the view that leverage is a robust predictor of conditional value at risk of the financial system (Adrian and Brunnermeier, 2016), and with the positive association between leverage-driven credit booms and banking crises (Schularick and Taylor, 2012; Gourinchas and Obstfeld, 2012; Boissay et al., 2016; Fouliard et al., 2020; Müller and Verner, 2023). Comparing banks with and without deposit outflows during bank runs, we show that affected banks lose short-term funding for up to two years, manifesting itself further in lower leverage ratios and an overall larger contraction of the balance sheet (and credit), thus exhibiting "leverage cycle" type behavior (Geanakoplos, 2010). In line with our aggregate evidence, systemic bank runs differ from mere deposit contractions, in that the narrative evidence helps to identify episodes of banks losing deposits, but not necessarily other types of funding. This also holds in modern times with more liquid interbank markets.

Finally, we analyze the flow of funds around bank runs on the aggregate level by focusing on two distinct episodes in the US: the Great Depression and the early 1990s. We determine the exact timing of aggregate deposit contractions around runs and the reallocation of these deposit outflows in the financial sector by using monthly and quarterly data. We show that runs are usually preceded by a stop of deposit inflows, or even outflows of deposits, multiple months before the narrative run date. The strongest decline in aggregate deposits, however, occurs after bank runs. Our interpretation is that runs mark the beginning of aggregate banking distress and potentially further amplify any adverse effects on the real economy. Aggregate contractions in total deposits around runs are often followed by an increase in currency in circulation. In addition, in the 1990s aggregate deposit contractions are also accompanied by increased investments into money market funds.

Related literature. Our paper belongs to the broad literature on the role of financial factors in the macroeconomy, building on the seminal work of Bernanke and Gertler (1989), Kiyotaki and Moore (1997), Holmstrom and Tirole (1997), and Allen and Gale (2000). Our focus is on the empirical measurement of financial fragility in general and (retail) bank runs in particular, building in this regard on the seminal foundations of Bryant (1980) and Diamond and Dybvig (1983).

Our empirical approach differs from the existing literature examining banking crises in three important ways. First, we focus entirely on the occurrence of bank runs rather than other sources of banking sector distress, which may also stem from bank failures (Calomiris and Mason, 2003), an erosion of bank capital (Jordà et al., 2021), or a more general panic (Baron et al., 2021).[1] As we show, many banking crises are *not* associated with runs, and runs are likewise not always the source of a crisis. What our results highlight is that, as also argued by Admati and Hellwig (2014), the liability side of the banking sector's balance sheet matters for the real economy as much as if not more than bank equity (e.g. Gertler and Kiyotaki, 2010; He and Krishnamurthy, 2013; Brunnermeier and Sannikov, 2014; Rampini and Viswanathan, 2019) and losses on the asset side (e.g. Greenlaw et al., 2008).

Second, we propose a quantitatively-validated measure of systemic bank runs, defined as bank runs accompanied by a drop in the outstanding deposits of the banking sector as a whole. To do so, we construct a new dataset on outstanding banking sector deposits for 179 countries covering 1800-2022 from 49 sources. The critical advantage of using objective, quantitative data on deposit withdrawals is that it allows us not only to validate our narrative bank run measure but also to show that more severe deposit withdrawals are associated with a larger macroeconomic outfall of bank runs, thus granting us an intensive margin in the analysis—something that is typically missing in the literature.

Third, our chronology of bank runs considerably extends the coverage of existing work trying to measure episodes of financial sector distress. With 24319 country-year observations, our data has substantially more coverage than any other measure. Importantly, we have information on bank deposits for 12914 of these observations, which allows us to identify systemic bank runs using an objective, quantitative measure. As such, we also provide a new quantitatively-validated measure for banking crises that we believe can

[1] As we discuss throughout the paper, we focus entirely on runs involving retail deposits. Put differently, our chronology of runs does not include episodes where we only have evidence of a "wholesale funding run", meaning runs on interbank deposits or other short-term debt. This emphasis is mainly dictated by a lack of available cross-country data on non-deposit liabilities of the banking system that we could use to validate the incidence of such wholesale funding runs with a statistical measure. Nevertheless, our focus on retail deposits still turns out to be relevant for bank runs throughout most of recorded history as well as in the majority of countries in modern times.

serve as a useful input for future research.

We are not the first to think about bank runs as episodes of deposit contractions. Bordo and Wheelock (1998) describe what they call a "monetary approach" to financial stability as identifying "financial crises with banking panics that either cause or aggravate monetary contractions" (Bordo and Wheelock, 1998, p.44). The most prominent proponents of this view are perhaps Friedman and Schwartz (1963), who propose the ratio of outstanding deposits to currency in circulation as a statistical indicator of banking sector problems (also see Bernanke and James, 1990). Reinhart and Rogoff (2009) also propose using deposit contractions as an "objective criterion for the incidence of banking sector distress" but cite a lack of data; our work overcomes this limitation through a new data collection effort.

Our work takes these ideas seriously and proposes bank run episodes accompanied by deposit withdrawals as a reasonably objective and quantifiable approach to measure the incidence of banking crises. As shown by Bordo and Meissner (2016) and Baron et al. (2021), existing chronologies of such crises frequently disagree with one another, which gives rise to "classification uncertainty."[2] To overcome this limitation, we build on Baron et al. (2021) in proposing a statistical measure to complement the more subjective classification of crisis episodes. Baron et al. (2021) identify banking crises by incorporating information on banks' stock returns. However, as they acknowledge, there are several important limitations to this approach. Even today, most banks are not listed on a stock exchange, and some countries do not have a sufficiently developed stock market to make banks' stock prices a reliable proxy. This issue is particularly important for developing countries, where the majority of crises occur, and for historical crises. Our approach overcomes these limitations by using data on deposits, for which historical data are widely available and usually cover the entirety of a country's banking sector.

Finally, our paper and database complement the rich theoretical literature on bank runs and can create new avenues for future work. Gertler and Kiyotaki (2015) develop an influential macroeconomic model of systemic bank runs that has spurred an active literature (Gertler et al., 2020a,b; Robatto, 2019). A crucial ingredient in this class of models is the unconditional probability of systemic runs, which is notoriously hard to estimate. Our paper can provide a readily available estimate of this probability that covers many countries and years. Dávila and Goldstein (2023) study the optimal design of deposit insurance, a crucial policy instrument for the prevention of bank runs. They show that a small number of sufficient statistics—namely the probability of bank failure and the level of conditional losses—affects the optimal policy. With our database, we

[2]See also Jalil (2015) for a similar perspective with a focus on historical banking crises in the US.

can compute both the probability of bank runs (both systemic and non-systemic) and the elasticity of output with respect to runs. Finally, an important literature studies self-fulfilling bank runs (Cole and Kehoe, 2000; Amador and Bianchi, 2024). The probability of a crisis becoming self-fulfilling—which is relevant to this literature—can be approximated with the quantitative fraction of deposit withdrawal episodes that turn into systemic runs conditional on the arrival of negative narratives (e.g., newspaper headlines, rumors).

2 Measuring Systemic Bank Runs

This section describes a central contribution of our study: the creation of a new chronology of bank runs and statistical measures of deposit withdrawals covering 184 countries for the period 1800 to 2022.

2.1 A New Chronology of Bank Runs Around the World

Bank run definition. For the purpose of this paper, we define a bank run as a situation where "depositors rush to withdraw their deposits because they expect the bank to fail" (Diamond and Dybvig, 1983, p. 401). The distinguishing feature of bank runs relative to the regular ebb and flow of deposit withdrawals is their sudden and severe nature, which causes the affected institution to run into liquidity problems. Because our chronology varies by country, rather than by bank, we record both runs on individual institutions or clusters of institutions, and we also do not require the banks experiencing a run to be large. As we will discuss in Section 2.3, we use changes in outstanding deposits of the entire banking sector as a statistical measure to identify whether runs were *systemic* in nature or only affected (possibly immaterial) parts of the financial system.

We focus on events that were not exclusively driven by runs on the wholesale liabilities of banks, i.e., interbank deposits and other types of short-term debt. Although such episodes of "wholesale funding runs" played a prominent role in the 2007-08 Global Financial Crisis, it is difficult to identify them in many historical sources. In addition, data on interbank deposits and other types of non-deposit liabilities also do not appear to be systematically available for most countries. As a result, we will focus entirely on runs on "retail" deposits by households and non-financial firms.

In some cases, we found several distinct bank runs in close succession. If these runs were not part of the same clustered episode, we documented them as separate events even if they were in adjacent years. In our empirical analysis, we only retain the first such run episode within a three-year window to avoid duplicating the observations we use to

study macroeconomic changes around these events.

Narrative evidence. Following the existing literature, we rely on qualitative evidence to identify episodes of bank runs. Whenever possible, we try to identify contemporaneous accounts of runs rather than exclusively relying on ex-post historical descriptions. This approach should help in overcoming the natural tendency for bank run events to be more prominently reported if they preceded or accompanied a severe recession.

Why rely on such qualitative evidence at all? As argued by Romer and Romer (2017, p. 3073), "purely statistical indicators may misidentify financial disruptions." The reason is that any particular financial variable may be affected by many factors even in the absence of problems in the financial sector. In our case, we will rely on changes in outstanding banking sector deposits as a statistical measure. But a decline in deposits does not necessarily mean there is a bank run; it could also reflect tight monetary policy or a recession without sudden withdrawals by panicked depositors. This is why we use a "hybrid" approach similar to Baron et al. (2021) in combining (subjective) narrative evidence with an (objective) statistical indicator.

Comparison with other definitions of banking crises. Our approach to identifying bank runs differs from that in existing cross-country chronologies. Reinhart and Rogoff (2009) and Reinhart and Rogoff (2011) classify banking crises either as (1) bank runs that lead to the closure, merging, or takeover of one or more financial institutions by the government or (2) periods without runs where the government provides assistance to an important financial institution or group of institutions with the goal of preventing spillovers to other financial entities. Laeven and Valencia (2018) classify a systemic banking crisis as a period of large-scale defaults affecting the financial sector by eroding banking sector capitalization. They mention that "[i]n some cases, the crisis is triggered by depositor runs on banks." Jordà et al. (2017) classify a period of banking distress by identifying major bank failures, banking panics, substantial losses in the banking sector, significant recapitalization, and/or significant government intervention. Baron et al. (2021) classify a banking crisis as the banking sector's ability to intermediate funds is severely impaired, where a large decline in bank equity is usually a necessary requirement for a banking crisis. Baron et al. (2021) define a "panic" episode when there is evidence of "sudden salient funding pressures," which may originate from deposit withdrawals, "strains in interbank lending markets," or "foreign-currency capital outflows from the banking sector" (Baron et al., 2021, p. 76).

The central conceptual difference we make is a strict focus on bank runs. In theory,

this should mean our bank run episodes are a strict subset of banking crises that may have many other causes, such as bank failures, non-performing loans, an erosion of bank capital, or more general panics. In practice, we uncover many episodes of bank runs that are not part of existing crisis chronologies.

Example bank run narratives. Before proceeding, we briefly showcase the value of the narrative approach to bank run identification by depicting three peculiar cases. In September 1893, New Zealand experienced a run on the Auckland Savings Bank. Customers withdrew more than £41,000, the equivalent of about $8 million in today's money, because of unfounded rumors about the bank's bad investments. The rumors originated with an eccentric woman called Margaret Sanders, who was ridiculed by young people for her peculiar behaviour and clothing. When she stumbled outside the bank after being pushed by some youths, a large crowd gathered, leading to the rapid spread of false rumors the bank was facing a run, according to Lewis (2015) and other sources.

Another peculiar incident is a run on the Dutch bank DSB in October 2009. The run was apparently triggered when Pieter Lakeman, a lawyer purporting to represent a collective of aggrieved clients in financial distress due to their investments in DSB financial products, appeared on Dutch public television and urged all depositors to participate in a mass withdrawal from the bank. In response to Lakeman's appeal, thousands of depositors heeded the call and withdrew their liquid deposits en masse (Dutchnews, 2009). This particular case highlights the possibility of sun-spot-like coordination shocks to trigger chains of events that may not be necessarily be driven by fundamentals.

Finally, the 2023 U.S. regional banking crisis is a recent, salient event that led to the collapse of the Silicon Valley Bank. The event had bank-run-like features when a run on SVB was triggered after it solved its Treasury bond portfolio at a large loss. A full-scale run was eventually avoided by the combination of various government interventions, such as when the Federal Reserve created a Bank Term Funding Program to offer liquidity to eligible depository institutions with assets pledged as collateral. As this incident was accelerated by tweets from high-profile entrepreneurs, it has been dubbed "the first Twitter-fuelled bank run" (Gompers, 2023).

Sources of narrative information. All in all, we have identified 240 bank run episodes in 184 countries by drawing on a grand total of 458 sources. These include standard narrative accounts of crises but also many new sources (e.g., historical newspaper articles, government reports, banking history books, or IMF reports). We have applied two guidelines to minimize false negatives (i.e., missed run events) and false positives (e.g., crisis

events without runs). First, our aim is to be as comprehensive as possible. To minimize the probability of missing run events, we searched for evidence of bank runs on a country-by-country basis. We also researched every single episode classified as a banking crisis by Reinhart and Rogoff (2009), Jordà et al. (2017), Laeven and Valencia (2018) and Baron et al. (2021), as well as the list of banking crisis interventions by Metrick and Schmelzing (2021). Second, we always look for explicit evidence of bank runs by looking for key phrases such as "run," "sudden depositor withdrawals," or "panic among depositors." We avoid classifying more general mentions of "drying up of liquidity" and similar descriptions that could also refer to wholesale funding problems (on which we have no reliable statistical measures). This reflects the spirit of spotting events that were clearly identified as periods of bank runs by contemporary observers rather than short-lived phenomena that were immediately stopped by the intervention of policy makers.[3]

Documentation. Appendix B contains episode-by-episode descriptions for each of the 240 bank runs we identified with the narrative approach and the underlying sources. This should enable others to follow the logic we used to classify a particular episode as a bank run. For each episode, we describe the background of the run, the involved institutions (if known), the month in which the run occurred, and the sources we draw on.

2.2 Measuring Episodes of Deposit Withdrawals

Data sources and coverage. To measure the extent of withdrawals from a country's banking sector, we construct a new dataset on outstanding deposits for 179 countries for the time period 1800 to 2022. In total, we draw on 49 primary and secondary sources, many of which were sourced from historical archives or produced for country-specific statistical compendia.

The resulting dataset covers some 13130 country-year observations. As such, our deposit data cover essentially the universe of banking systems since 1800 subject to data availability constraints. The time series go back to the 19th century for many countries, including Argentina, France, Germany, Japan, Russia, Sweden, Switzerland, United Kingdom, and United States.

Definition of deposits. The statistics we draw on in almost all cases refer only to "retail deposits" by non-bank customers and exclude various forms of wholesale or interbank

[3]We regard our global chronology of bank runs as a work in progress, and would be grateful for any pointers to additional run events we may have missed such that we can incorporate them in future iterations of the data.

funding. As we discuss in appendix A.1.1, there is some evidence of an upward trend in banks' reliance on non-deposit liabilities in advanced economies, but most banks in both advanced and emerging economies overwhelmingly continue to rely on deposit funding (see International Monetary Fund, 2013).

Wherever possible, we collect data on total deposits, which we further split into demand and time deposits. Demand deposits refer to all types of deposits that can be redeemed at par without delay; time deposits refer to those with a lock-in period of any length, which may also include various types of savings deposits. We have data on total outstanding deposits for 13130 observations, data on demand deposits for 12197 observations, and data on time deposits for 10044 observations.[4]

Time series construction. Like any historical cross-country dataset, the raw data on deposits from different sources do not always agree. Furthermore, individual time series sometimes exhibit sudden jumps that stem from changes in statistical methodology or changes in the reported currency rather than "true" economic events. To create a consistent time series, we carefully investigated the time series from each individual source and combined them depending on our assessment of their reliability for a given time period. We also adjusted for breaks stemming from a change in sources or methodological changes by chain-linking overlapping time series.[5]

2.3 Defining Systemic Bank Runs

Conceptual definition. The discussion above shows that the existing literature has used narrative evidence of bank runs at least partially to validate whether a country experienced a banking crisis. Our qualitative chronology of runs differs from these existing approaches in that we explicitly do *not* require such bank runs to be widespread or "systemic." Instead, we rely on objective, quantitative data on deposit outflows from the banking sector to determine how "systemic" a bank run episode was.

The idea is the following. If a bank run event is sufficiently severe to affect the banking

[4]We construct total deposits as the sum of demand and time deposits where both are available. In some cases, historical data for total deposits is spliced using time series that only refer to demand or time deposits. In these cases, we do not calculate the other deposit category as residual to avoid creating mechanically constant shares of the different deposit types. This explains why we have a slightly different observation count for demand and time deposits.

[5]The IMF data in particular require adjustments because of erroneous entries and classification changes. Wherever possible, we tried to find alternative sources and identify the reason for changes in the IMF data to make sure we do not overly "smooth" the time series. Where we have no overlapping data for chain-linking two series, we calculate the median deposit growth rate for the three years before and after a break and use it to adjust a series break.

sector as a whole, either because it happens at large banks or many small banks, we should see that it is accompanied by a substantive contraction in *aggregate* deposits. We call episodes where we have narrative evidence of a bank run that is also associated with an outflow of deposits from the banking sector *systemic* bank runs. We visualize the intersection of bank runs with aggregate deposit contractions in Figure 1 as a Venn-diagram.

Note that whether or not a bank run is the direct *cause* of the deposit contraction is irrelevant for our purposes. Suppose that a small bank experiences a bank run, which then causes a wider financial panic. During the course of the year, there is a freezing of interbank markets, several banks fail, credit supply contracts, and the banking sector as a whole experiences an outflow of deposits. While the run on the small bank may not have directly caused the aggregate decline in deposits, these events nevertheless happened in close succession. As such, they jointly capture exactly the kind of broader issues in the banking sector we would like to exploit and differentiate from more idiosyncratic episodes of isolated runs on individual institutions that are not associated with wider banking sector distress. We would thus classify this example as a *systemic* bank run.

Empirical implementation. To distinguish systemic bank runs from more idiosyncratic cases, we need to define what exactly we mean by a substantive contraction in deposits. Our baseline definition simply defines such contractions as cases where the year-on-year change in nominal deposits ΔD_{it} is negative. A systemic bank run is thus a bank run episode that is accompanied by a contraction in aggregate banking sector deposits. We can make this differentiation for 135 out of the 240 bank runs in our chronology that overlap with the deposit data.

Why use nominal instead of real deposits? Our rationale is that we want to avoid classifying periods of stable deposits accompanied by mild deflation as episodes of deposit outflows. Using nominal numbers may raise the concern that nominal deposits are not contracting despite widespread bank runs because of rampant inflation. We account for this in robustness exercises in Section A.9, where we show that our findings are similar when we define deposit contractions based on real (rather than nominal) deposits.

Another concern with using nominal outstanding deposits is that they show a clear upward trend over time. This suggests that any "contraction" should potentially be calculated relative to some trend. Alternatively, one may want to consider more severe contractions of deposits, defined either as absolute thresholds or relative to some measure of average deposit growth rates. In Section A.9, we show that using such alternative definitions yields similar results to our simple baseline measure.

Runs on demand vs. time deposits. For most of our dataset, we can differentiate between the outstanding demand and time deposits of the banking sector. Intuitively, demand deposits should be more run-prone given they are immediately redeemable; indeed, deposits in the Diamond and Dybvig (1983) model are of that nature. On the other hand, there is evidence that time deposits were more stable than demand deposits during the German crisis of 1931 (Blickle et al., 2022) and the 2007-08 crisis in the United States (Acharya and Mora, 2012).

Our data allow us to test whether during a typical bank run episode, demand or time deposits are more affected from a system-wide perspective. This also allows us to construct additional measures of systemic bank runs akin to our baseline indicator (which is based on total deposits).

What happens to the the funds depositors withdraw? In a situation where the banking sector as a whole sees a contraction of deposits, a natural question is what depositors are doing with the money. Historically, one might expect that they simply keep the money in coins or bank notes, or exchange it directly for precious metals more broadly. In modern times, they might deposit the withdrawn funds with other financial institutions, such as better-protected banks or money market mutual funds (e.g., Acharya and Mora, 2015).

2.4 Comparison with Other Chronologies

Table 1 compares the coverage of our measures of bank runs, deposit withdrawal episodes, systemic bank runs, and idiosyncratic bank runs to several existing chronologies of banking crises. We focus on four prominent sources of crisis dates: Reinhart and Rogoff (2009), Laeven and Valencia (2018), Jordà et al. (2017), and Baron et al. (2021). Based on these datasets, we construct a set of dates that refer to the starting year of a systemic banking crisis.[6]

An important conceptual difference between our bank run dates and the crisis chronologies of Reinhart and Rogoff (2009), Laeven and Valencia (2018), and Jordà et al. (2017) is that their dating of events is based entirely on narrative evidence. The inherently subjective nature of identifying these events gives rise to "classification uncertainty." As Jalil (2015), Bordo and Meissner (2016), and Baron et al. (2021) show, existing narrative classifications of crises can frequently disagree, use inconsistent coding, lack a proper

[6]To be precise, we use the most recently available update of these crisis chronologies. For Reinhart and Rogoff (2009), we use data published on Carmen Reinhart's website. Laeven and Valencia (2018) provide the most recent version of the data originally published in Laeven and Valencia (2008). The data in Schularick and Taylor (2012) are frequently updated as part of the Macrohistory Database (Jordà et al., 2017), and we use the 6th version of these data.

documentation, or even identify entirely spurious "crises" based on an incorrect reading of secondary sources.

Baron et al. (2021) make progress on this front by combining a qualitative reading of sources with a statistical measure of banking sector distress (declines in bank equity indices). Because data on banks' stock prices are not always available, they can construct an indicator of crises that is quantitatively validated for around two-thirds of their sample of narrative crises covering 46 countries.

Our chronology of (systemic) bank runs makes progress in three dimensions. First, our data have unprecedented coverage. With 184 countries, we essentially cover the universe of economies that frequently publish economic data, considerably more than the 68 countries in Reinhart and Rogoff (2009) and 156 countries in Laeven and Valencia (2018). We can also identify historical runs by starting in 1800 like Reinhart and Rogoff (2009), which adds many episodes relative to the limited time coverage in Laeven and Valencia (2018). In total, the chronology of bank runs we introduce covers 24319 country-year observations, which is around four times the coverage of Baron et al. (2021) or Laeven and Valencia (2018) and considerably more than Reinhart and Rogoff (2009).

Second, our indicator for *systemic* bank runs not only incorporates qualitative sources but also the quantifiable, objective measure of contractions in the banking sector's deposits. Our sample includes 135 episodes of systemic runs, roughly the same as the 139 systemic banking crises in Laeven and Valencia (2018). Importantly, the systemic run indicator covers 179 countries over the period 1800-2022 and a similar number of country-year observations as the purely narrative measure of Reinhart and Rogoff (2009).

Third, we focus on a single, specific source of banking sector distress in our narrative classification, and look for unambiguous evidence to support it using a comprehensive documentation of sources. This differs from existing work, which usually considers a multitude of possible causes of banking crises (including bank failures, bailouts, government interventions, a rise in the cost of intermediation, spikes in non-performing loans, or liquidity issues). The advantage of our more narrow definition is that it is more closely aligned with the large body of theoretical literature studying bank runs, or short-run funding fluctuations of banks, and further allows us to use a quantitative measure (deposit contractions) to validate the narrative evidence.

The conclusion we draw is that our new chronology of bank runs introduces, to the best of our knowledge, the most comprehensive available measure of banking sector distress. By combining a consistent narrative definition of bank runs with quantitative, objective information based on banking sector deposits, we believe it should also be relevant for those interested in studying financial crises more broadly.

2.5 A Unified Measure of Financial Crises

An important question we are interested in is how (systemic) bank runs compare with banking crises in general. To do this, we need an indicator for whether a country experiences a banking crisis in a given year, ideally with a similarly comprehensive coverage as our bank run chronology.

We construct a unified indicator variable of systemic banking crises by combining the widely used chronologies mentioned above. The measure proposed by Baron et al. (2021) has the advantage of incorporating an objective, quantitative measure of poor banking sector health (a decline in bank equity prices). We thus prioritize their measure, and subsequently use the crisis lists of Laeven and Valencia (2018), Jordà et al. (2017), and Reinhart and Rogoff (2009), in that order, to determine the first year of a systemic banking crisis. To be clear, this means we use the crisis dates from Baron et al. (2021) for all country-year observations they cover, and then add the other sources in a similar way.

For some exercises, we are also interested in the occurrence of other types of financial crises. In particular, we consider currency and sovereign debt crises, on which we take data from Laeven and Valencia (2018) and Reinhart and Rogoff (2009). We combine these chronologies in the same manner as banking crises, where we prioritize the data from Laeven and Valencia (2018) where it is available.

One issue when combining several crisis chronologies is that they may assign the start date of the same crisis event to different years. For example, Reinhart and Rogoff (2009) identify a systemic banking crisis in the United States lasting from 1984 to 1991, which Baron et al. (2021) classify as two separate events in 1984 and 1990, and Laeven and Valencia (2018) treat 1988 as the crisis year. To address this issue, we apply a filter that sets the occurrence of a crisis to zero in case we already record a crisis within the past three years. Put differently, we only treat as a "new" event any banking crisis that was not preceded by another one within the last three years.

2.6 The JKMS List of Bank Runs

Table 2 presents our list of 240 narrative bank runs. For each episode, we report the drop in deposits (in %) during the year of the run as a measure of run severity, and the type of deposits seeing the largest drop. If a bank run is accompanied by a contraction of deposits, we call it a *systemic* bank run, in line with the methodology developed in section 2.3. Whenever we can find information on it, we also include the month in which the bank runs started.

We also report whether or not a given bank run is associated with a systemic banking

crisis as identified by the existing literature, and whether there is evidence of a banking panic as classified by Baron et al. (2021). This way, we can distinguish between runs that are accompanied by crises and panics from those that are not.

An interesting finding from Table 2 is that not all bank runs are accompanied by banking crises or panics, even where the comprehensive coverage of our data overlaps with that of existing datasets. This is important because, as we will discuss in more detail in section 3.3, many consider runs to be the very definition of a crisis. Yet even many systemic runs occur without there being a banking crisis as recorded by existing chronologies.

We also find an imperfect overlap between bank runs and the banking panics from Baron et al. (2021). These differences could arise for three reasons. First, they include cases of "wholesale" bank runs arising from disruptions in the interbank market, while we focus on "retail" bank runs. Second, they determine how systemic a panic is by making a qualitative judgement based on reading narrative sources. In contrast, we use deposit contractions as an objective, quantitative criterion of how systemic a bank run event is. Third, there may be cases where we find unambiguous evidence of a (systemic) bank run, but they do not classify it as a panic without a clearly stated reason.

3 Bank Runs Around the World: New Stylized Facts

Have bank runs become more or less common over time? How does their frequency compare to that of a garden-variety banking crisis? Are all crises driven by runs, and all runs by crises? There is surprisingly limited evidence to help answer these questions. Using our newly collected data on (systemic) bank runs, this section introduces a new set of facts to address them.

3.1 How Frequent Are Bank Runs? The Long View

Figure 2 plots the share of countries experiencing a bank run since 1800 based on our new chronology. To keep things legible, we calculate the average number of runs for each decade. We also plot the number of countries experiencing a banking crisis using our unified measure that is described in Section 2.5.

Several features stand out. Most obviously, we find essentially no episodes of bank runs from the 1940s to 1970s. For most countries, this period was one of relative financial calm, consistent with existing evidence on the absence of financial crises during that time (e.g., Reinhart and Rogoff, 2009).

The 1980s saw a considerable increase in the likelihood of runs, which kept increasing well into the 2000s. Our measure of bank runs thus captures the well-known emerging market crises and the 2007-08 Global Financial Crisis, both of which were at times accompanied by panic among depositors.

What is perhaps most striking is the decoupling in the likelihood of banking crises and bank runs over the past four decades. In the 19th century, the share of countries experiencing a crisis or a run moved in lockstep, with both increasing in frequency between 1800 and the Great Depression. The recent spike in crises starting in 1980, however, was not accompanied by an equivalent increase in the likelihood of runs. While it is true that bank runs were much more prevalent in the 1980s to 2000s, they were not more common than in the 1920s or 1930s.

Rather interestingly, the patterns above are roughly similar for the advanced and emerging economies, where "advanced" means a country falls into the top quartile of real GDP per capita in PPP terms for a given decade. For both groups of countries, Figure 3 portrays the same pattern: an increase in runs until the Great Depression, limited runs in the post-World War II era, and a spike in the number of runs after 1980 (but less than the increase in the number of banking crises).

Table 3 presents additional statistics on the frequency of bank runs (in percent). We split the sample into two distinct subperiods: before the introduction of deposit insurance in 1933, and the period afterwards. We also divide the sample based on region, income level, financial development, and whether or not a country has deposit insurance. Note that "N/A" denotes cases where we have no data for a given subperiod and sample.

Several facts stand out. On average, runs were considerably more likely before the advent of deposit insurance, and they were more likely to become systemic. While most of the bank runs we identify took place in Europe or North America, we record episodes on all continents in (almost) all time periods. Overall, runs are more likely to occur in emerging than advanced economies, but the share of systemic runs is somewhat higher in advanced economies before 1933.

We also find an interesting pattern with regard to financial development, which we measure here using the ratio of credit to GDP, split into three groups based on the tercile values for a given decade. After 1933, runs happen most frequently in countries with relatively developed financial markets.

Finally, an interesting pattern emerges with regard to deposit insurance. While the overall probability of a run has gone down after 1933, this reduction mainly comes from countries *without* deposit insurance. We will revisit this pattern later in section 4.6.

3.2 Bank Runs and Deposit Withdrawals

The premise of our measure of systemic bank runs is that we can differentiate bank runs based on the severity of deposit outflows. A natural starting point to gauge the plausibility of this approach is to investigate the behavior of the banking sector's aggregate deposits during bank runs and "normal" times. This acts as an important validation test of our quantification approach.

Figure 4 provides two pieces of evidence. Panel (a) shows a density plot of the year-on-year percentage change in deposits. We draw separate graphs for times when countries experience a bank run and for "normal times." We focus on changes in outstanding nominal deposits because this will serve as our baseline metric to identify deposit contractions, but the figure looks similar if we look at changes in real deposits (see Figure A.2).

During normal times, there is a broad distribution of deposit growth rates. On average, deposits grow at a rate of 15.42 % per year, with a standard deviation of 21.2 %. Deposits rarely contract, around 12.26 % of the time in our sample.

When a country experiences a bank run, the distribution of deposit growth rates exhibits a clear shift to the left. During a run, the probability the banking sector experiences an outflow of deposits is 12.26 %. The mean deposit growth rate of 9.57% is considerably lower than during normal times with a lower standard deviation of 22.13%. These differences in the mean of the deposit growth rates are also statistically significant at the 1% level ($t = 3.85$).

Another pattern that is clear from Figure 4 is the enormous variation in deposit growth rates during bank runs. Some runs are accompanied by a contraction in deposits of 20% or more, while others see a continuing steady increase. It is exactly this variation that we use to differentiate systemic bank runs destabilizing the entire banking sector's short-term funding base from more isolated episodes.

To get an idea of the dynamics of deposit contractions during runs, Panel (b) of Figure 4 plots the estimates of an event study specification. In particular, we relate log(deposits) to the incidence of the exact timing of a bank run, captured by a sequence of indicator variables referring to a time window of ±5 years around a run episode. Before a bank run, deposits expand relative to other periods. Once the run begins, there is a large reversal and a deposit contraction, and these negative growth rates persist for several years afterward.

Do depositors run more on demand or time deposits? Figures A.3 and A.4 provide some evidence. It seems clear that demand deposits are drawn down more quickly during runs, which is partially mechanical because they have no lock-up period. But we also find a decline in time deposits, both in the event study and when looking at the shift in the distribution of deposit growth rates around runs.

Figure 5 presents another way to understand the relationship between deposit growth rates and bank runs. For each country, we create decile bins based on the growth rate of real deposits, and then calculate the probability of a bank run in each of these bins. Banks runs are much more frequent when deposit growth rates are low, and the magnitude of these differences is large: a bank run has a probability of 3% in the first decile of bank deposit growth but considerably below 1% for higher deposit bins.

3.3 Do Runs and Crises Coincide?

What differentiates a bank run from a banking crisis, particularly one that is driven by a collapse in equity values? In the large literature following Diamond and Dybvig (1983), these are generally one and the same thing and hard to differentiate: by definition, a crisis is the undesirable equilibrium in which depositors withdraw their funds from the banking sector independent of fundamentals. This view is also shared by others. Gorton (2012), for example, argues that "all financial crises are at root bank runs" (also see Schwartz, 1987). Not everyone agrees, however. There is a literature arguing that it is bank equity that is the key state variable for macro-financial linkages (He and Krishnamurthy, 2013; Brunnermeier and Sannikov, 2014). The central idea is that an erosion of bank capital constrains banks' capacity to lend independent of the behavior of depositors.

A first step in evaluating these two different—albeit not completely contradicting—views is to understand the extent to which bank runs overlap with different types of financial crises. Table 4 plots the average probability of a run within three years of different types of financial crises. We differentiate between banking crises, the banking panic episodes taken from Baron et al. (2021), currency crises, and sovereign debt crises.

Several features stand out. When a banking crisis occurs, the likelihood of a run is 49%. Unsurprisingly, this ratio is higher for banking panics (which refer to both major runs and other kinds of liability-side issues that banks may face). Put differently, not every episode classified as a banking crisis by some of the leading chroniclers of such events fulfills the standard of Gorton (2012) of being a run.

Systemic bank runs, meaning those affecting the banking sector as a whole as measured by a drop in deposits, occur after 38% of banking crises, considerably more frequently than more isolated episodes without a deposit contraction (15%). Since the classifications of banking crises require such events to have a systemic dimension, this finding provides some reassurance that our new measure of systemic bank runs is able to pick up broader disruptions as compared to more isolated, idiosyncratic events.

While all types of crises are frequently followed by a contraction of deposits, bank runs are considerably less likely after currency and sovereign debt crises relative to banking

crises. But these conditional likelihoods are not low: around 17% of sovereign debt crises are followed by a bank run.

Figure 6 plots the dynamic probability of a bank run around different types of financial crises using an event study design. When a run happens, it is usually in the exact year of a banking crisis, or in the year before and after, with no clear lead-lag relationship. Interestingly, bank runs are considerably more likely to happen *before* currency or sovereign debt crises.

Table 5 plots the results from a panel regression relating the likelihood of bank runs to different types of financial crises in a multivariate setting. This exercise confirms that banking crises are considerably more predictive of runs than other types of crises. It also gives a sense of the imperfect overlap between crises and runs. For this purpose, we use the Area Under the Curve (AUC). The AUC is the integral under the Receiver Operating Characteristic (ROC) Curve, which plots the true positive rate (sensitivity) and the false positive rate (1−specificity) for various threshold settings. A model with an AUC of 0.5 suggests no ability to discriminate between crisis times and other periods equivalent to flipping a coin. When measured by the AUC, the classification ability of crises to differentiate between episodes of bank runs and other times is reasonably high ($AUC = 0.72$), but far from perfect.

These findings suggest that runs are a common feature of banking crises, but perhaps not a necessary condition. A natural question is to then turn this question around and ask: if a bank run occurs, what is the probability of this being followed by a financial crisis of some sort?

Table 6 answers this question by showing the probability of different types of crises within three years of a bank run. A key finding is that 71% of bank runs in our sample are followed by a banking crisis and an even higher fraction of systemic bank runs (78%). Consistent with our previous findings, more isolated run episodes are much less likely to precede banking crises (in 60% of cases). It is also interesting that while sovereign debt crises are not particularly frequently followed by runs, they are often preceded by them. The data suggest that 19% of sovereign debt crises in our sample are preceded by a bank run.

3.4 The Correlates of Bank Runs

The previous two subsections provided some evidence that bank runs are often accompanied by systemic financial crises and deposit outflows. To lend further credence to our new measures, we next investigate a number of factors one would plausibly expect to correlate with bank runs.

Figure 7 plots a selection of variables around the onset of systemic bank runs. These event studies are estimated using panel regression models of the variable of interest on a set of dummies referring to the time periods five years before and after a run event.

Bank runs are routinely preceded by a credit expansion, similar to what others have documented for banking crises (see, among others, Reinhart (2002); Borio and Lowe (2002); Gourinchas and Obstfeld (2012); Schularick and Taylor (2012); Müller and Verner (2023)). Before a run, countries experience a capital inflow (as measured by a current account deficit), which then reverts into a "sudden stop." The real exchange rate also shows a predictable pattern of (slight) appreciation before the run starts, followed by a currency crash. The ratio of gross fixed capital formation to GDP, as a proxy for investment, also experiences a sharp contraction in the year of a bank run.

We also find strong patterns of asset prices around bank runs. Bank equity returns, which Baron et al. (2021) use to proxy for negative shocks to the health of the banking sector, see a large drop in the year before a bank run begins which further accelerates when the run takes place. Credit spreads, in turn, only spike once the run started. This could reflect improved price discovery in the equity market (e.g., Longstaff et al., 2005) but also that banks react to a run on their deposit base by contracting their lending.

Table 7 extends this analysis using an event-level analysis. We compare the average peak-to-trough values of several relevant variables as well as the probability of different types of government interventions for bank runs relative to banking crises.

First, bank runs are typically associated with a decline in real GDP. These downturns are more pronounced for systemic bank runs than for isolated episodes. The contractions associated with systemic bank runs are similar to those of banking crises or the panics identified by Baron et al. (2021).

Second, bank runs differ from other crises in that they are associated with a somewhat larger decline in deposits relative to GDP. This provides some reassurance that we are indeed capturing episodes where liability-side problems of banks are particularly important. The ensuing credit crunch and spike in non-performing loans, on the other hand, is less pronounced for (systemic) bank runs than other types of banking crises.

Third, a look at government interventions is instructive, for which we use data from Laeven and Valencia (2018) and Metrick and Schmelzing (2021). Guarantees—inclusive of but not limited to those of deposits –, bank holidays, and liquidity support are much more common during bank runs relative to a more typical banking crisis. The widespread nature of these interventions tells us that governments are specifically concerned about the spread of runs. Relative to other crises, we also find that bank runs are associated with a higher likelihood of recapitalizations and nationalizations.

4 The Macroeconomic Aftermath of Bank Runs

Equipped with our new chronology of bank runs, we ask how these episodes are related to real economic activity. Our emphasis is on understanding the macroeconomic costs of bank runs: Are they large? Are they similar or even worse to those of regular banking crises? We start our investigation by looking at the average patterns of real GDP around bank run events and other crises and then use variation in deposit growth rates to differentiate between runs of varying severity. Finally, we study the role of deposit insurance and the presence of a lender of last resort in shaping the aftermath of bank runs.

4.1 Data

We complement our new datasets on bank runs and deposits with information on real and nominal GDP, the current account, investment, credit, real effective exchange rates, bank equity returns, and various measures of credit spreads.

Macroeconomic data. We obtain data on real and nominal GDP, the current account, and gross fixed capital formation (to proxy for investment) from the World Bank, International Monetary Fund, Organisation for Economic Co-operation and Development, Penn World Tables, Jordà et al. (2017), and additional country-specific sources. Real effective exchange rates are taken from the Bank for International Settlements and Bruegel (Darvas, 2012).

Credit and asset prices. We take data on credit to the private sector from the Global Credit Project (Müller and Verner, 2023). These data are defined similarly to those on deposits in that they measure the outstanding stock of credit. Data on bank equity returns, credit spreads, and mortgage spreads are all taken from Baron et al. (2021).

4.2 The Average Output Losses from Bank Runs

In this section, we investigate the average output losses that accompany bank runs. First, we compute the path of real GDP both around systemic runs and non-systemic runs by using an event study approach. Second, we analyze the effects on real GDP and additional macroeconomic variables by using a more formal local projection regression approach to control for potential confounding factors. Out of the total of 240 bank runs in our chronology, we have data on real GDP for 187 bank runs. The sample has a total of 13022 country-year observations. The year of the bank run is marked as $t = 0$. Our benchmark are periods without bank runs.

Figure 8 visualizes the result of the event study. We plot the path of real GDP around both systemic runs and non-systemic runs. In the left panel of the figure, the event study depicts a severe drop in real GDP one year after systemic runs occur. We observe a persistent decline in real GDP of 10% five years after the systemic run implying a long-lasting shift in the trend of real GDP. This pattern is qualitatively similar to the well-established finding that financial crises tend to have severe output costs (see, e.g., Cerra and Saxena, 2008; Reinhart and Rogoff, 2009). Non-systemic runs, which are depicted in the right panel of the figure, also coincide with a drop in real GDP. However, the decline of real GDP around non-systemic runs is with 80% less severe than the effect from systemic runs. Figure A.6 in the Appendix provides a more granular look at demand and time deposits, with similar quantitative conclusions.

To more formally examine the relation between bank runs and output losses, we estimate impulse responses using local projections following Jordà (2005) for the horizons $h = 1, ..., 5$:

$$\Delta Y^r_{i,t+h} = \alpha^h_i + \beta^{run,h} \mathbf{1}^{run}_{i,t} + \sum_{k=1}^{3} \gamma^{k,h} \Delta Y^r_{i,t-k} + \epsilon^h_{i,t} \text{ with } h \in [0,4], \tag{1}$$

where i subscripts countries, t years, and h the forecast horizon. Y^r_t denotes an outcome of interest, such as real GDP. The indicator variable $\mathbf{1}^{run}_{c,t}$ is equal to one for any systemic bank runs in either one of the three different deposit categories: total deposits, demand deposits, or time deposits. α_i denotes country fixed effects.

Specification (1) provides us with a flexible framework to control for past realizations of $Y_{i,t}$, e.g., real GDP growth, as well as for contemporaneous and lagged values of other predictors contained in X_{it}. In our baseline specifications, we include three lags of the dependent and independent variables. For robustness, we also consider alternative numbers of lags or adding year fixed effects. Standard errors are double-clustered by country and year, which corrects for serial correlation and residual correlation across countries from common shocks.

We are particularly interested in the sequence of coefficient estimates $\beta^{run,h}$, which capture the impulse response of the outcome $Y_{i,t}$ to the occurrence of a bank run. These estimates do not necessarily capture the causal effect of bank runs, because runs are not necessarily exogenous events. In some cases, the catalyst is clearly an idiosyncratic event, such as a (false) rumor, an isolated fraud case at a well-known bank, or policy changes in other countries (e.g. the the run on the Dutch Bank DSB that was caused by an aggrieved lawyer's TV appearance). Other bank runs are an endogenous response to news about the poor state of the banking sector or the outbreak of war. For our baseline exercises, we do not take a stand on what drives bank runs in the first place. Instead, we are interested

in characterizing the aftermath of bank runs while taking their occurrence as given.

Figure 9 shows the impulse response functions of real GDP, the credit-to-GDP ratio, the level of real deposits, and the deposits-to-GDP ratio. We observe that bank runs are generally associated with a -9.49% loss in output and a -19.22% drop in deposits after four years. Because deposits contract more than GDP, the ratio of deposits to GDP also declines. Similarly with the ratio of credit to GDP. The aftermath of an average bank run can thus be described as severe.

Next, we show in Figure 10 that the severity of the aftermath of non-systemic runs or deposit contractions are several magnitudes lower than the aftermath of systemic runs. Non-systemic runs do not coincide with significant contractions in real deposits and lead to a -3.72% decline in real GDP, which is half the impact that emanates from systemic runs. This result gives us confidence that our classification of systemic runs as the intersection of narrative evidence and aggregate deposit withdrawals indeed picks up bank run events with large-scale implications for the countries' banking systems and real economies as a whole.

4.3 Sizing Up Bank Runs Using Deposit Withdrawals

Relying purely on our narrative chronology to estimate the output losses stemming from bank runs has clear limitations. For one, it is subject to the usual critique that any such classification of a crisis event is inherently subjective. The particular concern in our case may be that we cannot possibly capture every single bank run episode in world history since 1800. To overcome this issue, our proposal is to use variation in the extent of deposit withdrawals as an objective, statistical measure for the severity of a run. Incorporating a quantitative measure allows us to ask whether the events we classify as a bank run are particularly costly for the macroeconomy when they are systemic in nature, by which we mean being accompanied by an outflow of deposits from the banking sector.

We examine the predictability of bank runs accompanied by different deposit growth rates for real GDP growth using a flexible local projection framework:

$$\Delta Y^r_{i,t+h} = \alpha^h_i + \sum_{j=1}^{6} \beta^h_j \mathbf{1}[d_{i,t} \in B_j] + \sum_{k=1}^{3} \gamma^{k,h} \Delta Y^r_{i,t-k} + \epsilon^h_{i,t} \text{ with } h \in [0,4], \tag{2}$$

where $\mathbf{1}[d_{i,t} \in B_j]$ is an indicator denoting whether the country i's nominal deposit growth rate is within bin j, α_i denotes country fixed effects, and $Y^r_{i,t}$ denotes real GDP for country i in year t. $Y^r_{i,t-k}$ controls for three lags of real GDP growth, the real growth rate of loans, and the real growth rate of real deposits.

Figure 11 shows that the extent of deposit withdrawals during a bank run is highly informative about the future path of real GDP. When bank runs are accompanied by a deposit contraction that lies within the bottom 20% percentile, which corresponds to a contraction of more than 10%, their aftermath is typically a deep and long-lasting recession of -9.609999999999999% in real GDP. Smaller outflows of deposits or expansions of deposits during a bank run are associated with a recession of more muted severity. These patterns highlight the crucial distinction between bank runs that are systemic in nature, i.e., those associated with a large drop in aggregate deposits, and non-systemic runs without aggregate outflows.

Table 8 presents a version of Figure 11 where we predict changes in real GDP relative to the year before the run. For the sake of legibility, we focus on a simplified specification that only differentiates between three types of events: (1) deposit contractions, an indicator variable equal to one as periods where the year-on-year growth in outstanding nominal deposits $\Delta D_{i,t}$ is negative, (2) bank runs accompanied by deposit contractions (*systemic* runs), and (3) bank runs that are not accompanied by deposit contractions (*non-systemic* runs). This yields the following regression specification:

$$\Delta Y^r_{i,t+h} = \alpha^h_i + \beta^h_1 \mathbf{1}[\Delta D_{i,t} < 0] + \beta^h_2 \mathbf{1}[Run^{Systemic}_{i,t}] + \beta^h_3 \mathbf{1}[Run^{Nonsystemic}_{i,t}] + \sum_{k=1}^{6} \gamma^{k,h} \Delta Y^r_{i,t-k} + \epsilon^h_{i,t} \text{ with } h \in [0,4], \tag{3}$$

where $\mathbf{1}[\Delta D_{i,t} < 0]$ is a dummy for deposit contractions, $\mathbf{1}[Run^{Systemic}_{i,t}]$ a dummy for systemic bank runs, and $\mathbf{1}[Run^{Nonsystemic}_{i,t}]$ a dummy for non-systemic bank runs, α_i denotes country fixed effects, and $Y^r_{i,t}$ denotes real GDP for country i in year t.

When classifying bank runs into systemic and non-systemic events, we do not require deposit contractions to perfectly overlap with the incidence of a run. In our baseline definition, we categorize a bank run as systemic if it coincides with a deposit contraction at any point between the year before and after the bank run:

$$\mathbf{1}[Run^{Systemic}_{i,t}] = \mathbf{1}[Run_{i,t}] \times max(\mathbf{1}[\Delta D_{i,t-1} < 0], \mathbf{1}[\Delta D_{i,t} < 0], \mathbf{1}[\Delta D_{i,t+1} < 0]) \tag{4}$$

Non-systemic runs are then defined as the residual number of bank run episodes with non-missing deposit data that are not systemic. We consider alternatives in the Appendix, which yield similar results.

The results in Table 8 are consistent with Figure 11. Systemic bank runs have a considerably higher degree of predictability for future real GDP growth than do deposit contractions and non-systemic runs. The coefficient on systemic bank runs at $h = 4$ suggests that these types of runs are associated with a -9.773% contraction in real GDP

within four years.

4.4 Deposit Contractions Without Narrative Runs

Are deposit growth rates informative about future output growth even in the absence of bank runs? In this subsection, we examine this question to document a potential role for the liability side of banks' balance sheet in economic fluctuations independent of panic-like events.

Looking at deposit growth rates directly without relying on our new bank run chronology addresses a reasonable objection that despite our best efforts, our list of runs is bound to be incomplete. Of course, this issue is not unique to our work; it also applies to any other narrative chronology of banking crises. The downside is that whether the banking sector's deposits expand or contract has a myriad of reasons, only some of which may be related to potentially unobserved run events missing from our chronology.

Periods of deposit outflows without a narrative run may also be informative about cases where early government intervention stopped a bank run before it could get going, for example through bank holidays, increases in deposit insurance limits, emergency liquidity provisions, or other policies. In those cases, the lack of narrative evidence of a run may incorrectly give the impression that depositors were not worried about the health of the banking system when it really reflects the speed of intervention.

Figure 12 plots the estimates from (2), where we now exclude observations within a ± three-year window around bank runs. This exercise shows that the magnitude of deposit growth rates also predicts real GDP independent of runs. A deposit outflow within the bottom 20% percentile is associated with a -4.3% drop in output over the next four years, while an expansion in deposits predicts higher real GDP.

One crucial difference between these results and those conditioning on a bank run is the role of non-linearities. The results above suggest that the impulse response of real GDP is almost symmetric with regard to deposit growth rates outside of bank runs. This is in stark contrast to the results in Section 4.2, which showed that bank runs accompanied with large deposit contractions are associated with deep recessions, while real GDP remains approximately flat if deposits continue to grow. These results imply that the existence of a bank run narrative strongly affects the interpretation of aggregate deposit flows, and asymmetrically so for expansions vs. contractions. Thus, conditional on a run, non-linearities in deposit growth rates are important for understanding the depth of the ensuing recession. This pattern is consistent with models such as Brunnermeier and Pedersen (2008) and Brunnermeier and Sannikov (2014), where the relationship between the health of the banking sector and risk premia or output is highly non-linear.

4.5 Comparing Output Losses from Bank Runs, Crises, and Panics

A natural question is how the macroeconomic aftermath of bank runs compares to that of banking crises more generally. To shed light on this issue, we compare the macroeconomic aftermath of bank runs, banking crises, and banking panics.

Figure 13 compares the aftermath of three different types of events: banking crises without systemic runs, systemic runs without a banking crisis, and systemic runs with a banking crisis. We operationalize this comparison by running a set of local projections. To focus on the impulse response of macroeconomic outcomes to one type of event, we consider events within a time window of three years before and after as coinciding. When we focus on systemic runs outside of crisis periods, we thus drop all country-year observations where a banking crisis happens between three years before and after a run. For crises without systemic runs, the opposite applies. And for systemic runs with crises, we consider these events equally as coinciding if they happen within three years of each other.

We are interested in the coefficients on the indicator variables $\mathbf{1}_{c,t}^{crisis}$ capturing the set of events above from the following empirical specification:

$$\Delta Y_{i,t+h}^{r} = \alpha_i^h + \beta^{crisis,h}\mathbf{1}_{i,t}^{crisis} + \sum_{k=1}^{3}\gamma^{k,h}\Delta Y_{i,t-k}^{r} + \epsilon_{i,t}^{h} \text{ with } h \in [0,4], \tag{5}$$

where Y_t^r denotes either real GDP, credit-to-GDP, real deposits, or deposits-to-GDP.

The results in Figure 13 show a clear pattern. Both systemic runs and banking crises are independently associated with a decline in output and a credit crunch, and the magnitudes are roughly comparable. Importantly, output losses are the largest if systemic runs and crises occur concurrently.

There are substantial, important differences in the impulse response of deposits to these events. Systemic bank runs are always associated with a large contraction in deposits, even outside of banking crises. If a banking crisis occurs without evidence of a systemic run, the extent of deposit outflows is limited. Relative to GDP, deposits if anything slightly *increase* during crises without runs. These findings provide some additional validation for our classification of systemic runs, which appear to identify periods that are quite different from other types of banking crises.

We also compare systemic runs with the banking panics identified by Baron et al. (2021) in Figure 14 using the same methodology as above. Again, we find that deposits decline considerably less during banking panics without systemic runs. The output costs of panics are similar whether or not they overlap with systemic runs, while the latter alone

are associated with a stronger contraction of credit-to-GDP, suggesting potentially more severe balance sheet issues. This is symptomatic of both comparisons—i.e., in Figures 13 and 14—in that banking crises or panics are associated with more severe drops in real GDP, potentially capturing aspects of broader economic crises, whereas systemic bank runs truly zoom in on the aggregate ramifications of quantitatively relevant deposit outflows. The latter turn out to be less severe, but more clearly tied to deposit contractions as the potential underlying cause.

4.6 Which Bank Runs Become Systemic?

A natural question to ask is why some runs turn systemic while other remain more isolated in a few individual institutions. To examine this question, we estimate a linear probability model where the unit of observation is a bank run j in country i:

$$Systemic\ run_{ij} = \alpha_i + \beta X_{ij} + \varepsilon_{ij}. \tag{6}$$

In specification (6), the dependent variable $Systemic\ run_{ij}$ is a dummy variable equal to 1 if a bank run is systemic and 0 if it is not. X_{ij} is a predictor variable defined at the time the run takes place. α_i denotes country fixed effects, although we also consider specifications without these. Standard errors are clustered by country.

We consider two types of predictors. First, we consider the role of the existence of a central bank and deposit insurance. In our large historical sample, many countries in fact had no central bank for many years. Deposit insurance is an even more recent phenomenon. We begin by asking whether these institutions are associated with a lower probability a run turns systemic which, as we showed above, is associated with considerably worse macroeconomic outcomes.

Table 9 presents the results of using a dummy variable for whether a country has a central bank or deposit insurance as predictor in columns 1-4. Overall, having a central bank is associated with a considerably lower likelihood of bank runs turning systemic. The coefficient of -0.24 in column 2 of Panel A suggests that once country fixed effects are taken into account, the probability of a bank run being systemic drops from an average of 0.64 to 0.40 if a country has a central bank. We also find negative coefficients for the existence of deposit insurance, but the importance is particularly important if we restrict the sample to episodes before the Global Financial Crisis of 2007-08. A potential reason is that there were many systemic bank runs during that time despite the relatively widespread existence of deposit insurance. The coefficient of -0.29 in column 4 of Panel B suggests that before 2007 having deposit insurance is associated with a drop in the

likelihood of a run being systemic from 0.68 to 0.39, a large magnitude.

Columns 5-10 of Table 9 consider several other potential predictors of whether runs turn systemic. We find that runs are more likely to be systemic when they are accompanied by a banking crisis or an expansion in credit or deposits relative to GDP before the run. These findings are consistent with the existing literature showing that expansions in the balance sheets of banks may signal periods of easy credit that at times turn into financial disruptions (e.g., Schularick and Taylor, 2012; Müller and Verner, 2023).

5 Bank-Level Evidence

How do bank-level characteristics impact the proliferation of bank runs? In this section, we move beyond aggregate analysis and adopt a more granular, bank-level approach. We use our series of systemic bank runs and fathom how individual banks fared during those episodes, separately for those that experienced deposit outflows and those that did not.

5.1 Data

OCC dataset The first data source we use is the Office of the Comptroller of the Currency (OCC) dataset from Carlson et al. (2022). It covers the period between 1867 and 1901 on an annual frequency. The dataset allows us to analyze the effects of three individual bank run episodes within the U.S. banking system. The dataset includes over 100,000 individual balance sheet entries of national banks that were digitized by using the methodology from Correia and Luck (2023). Our final OCC dataset on historical bank balance sheet items includes 94,998 bank-year observations for 5,690 individual national banks.

Call Reports The second dataset is the call reports for U.S. banks between 1976 and 2020. By using call reports, we can analyze the bank-level implications of three run episodes within the US for a more recent period. After cleaning the call reports data we are left with 477,672 individual bank-year observations and 23,581 unique banks.

Section A.2 in the Appendix provides a detailed description of the data cleaning process for both datasets. In Table 10 we report the data moments of key variables for our OCC sample and the Call Reports sample. US banks between 1867 and 1901 were in many aspects similar to modern banks between 1976 and 2020. However, some differences are still worth noting. First, historic banks from the 19th century until the early 20th century were less leveraged than modern banks. Second, bank deposits were more volatile, resulting in a higher degree of heterogeneity in deposit growth rates.

5.2 Runs and the Cross Section of Deposit Outflows

Zooming in on the cross-section of deposit outflows during systemic bank runs in Figure 15, we observe a greater mass of deposit outflows in the older OCC data than in more recent call reports. This, in turn, explains a greater sensitivity of lending to deposit outflows in the OCC data. This is furthermore consistent with the fact that the difference between systemic bank runs and other episodes in terms of the distribution of deposit outflows and inflows is much more pronounced in the OCC data (Figure A.15), with systemic bank runs showcasing a greater mass of deposit outflows and a smaller mass of deposit inflows. The figures illustrate that systemic runs are not only periods in which depositors reallocate their deposits from one bank to another but they are also periods of declining aggregate bank deposits.

5.3 Which Banks Do Depositors Run On?

In Figure 16, we consider the correlation between observed deposit outflows around systemic bank runs and lagged bank-level characteristics. In the OCC data, there is a clear linear relationship between deposit outflows and multiple measures of banks' liability structure as well as the size of their balance sheet. Banks with relatively more deposits or debt in general, experience larger outflows of deposits during systemic runs. These correlations continue to hold up at least qualitatively in the more recent data, possibly with the exception of the correlation between deposit outflows and bank size. The importance of bank leverage as a correlate of bank invulnerabilities and runs is particularly consistent with a vibrant theoretical literature that links bank risk-taking with financial instability (Coimbra and Rey, 2023).

5.4 The Consequences of Systemic Runs for Banks: An Event Study Approach

In Figure 17, we finally consider the heterogeneous bank-level ramifications of systemic bank runs using an event study approach and the two datasets.

While magnitudes vary across the two very different time periods, the balance sheets of banks that experience a bank run vs. those that do not exhibit similar patterns. Following almost overlapping trends during the pre-period, deposits drop markedly in the first post-crisis year for banks on which depositors run, and the difference to the group of banks without a run typically persists for at least two years. The same holds for leverage, total liabilities, loans, and assets. The difference in non-deposit liabilities is the smallest

of all the effects, which points to a low substitutability between deposits and non-deposit funding sources, which is ultimately reflected in the large drop in affected banks' leverage and total liabilities following systemic bank runs.

For comparison, we also consider quantitative-only runs in contrast to systemic runs, which are the intersection of quantitative and narrative runs. In the OCC data, the differences are somewhat less pronounced across the board, pointing to an important element inherent to narrative runs for historical episodes. On the other hand, in the more recent data, the only difference between banks with and without a run that remains more pronounced for systemic runs rather than quantitative runs is the relative drop in demand deposits. The differential effects on leverage, total liabilities, loans, and total assets are similar, however, banks that experience deposit outflows during quantitative run episodes also see relatively decreasing non-deposit funding. This hints at the idea that narrative runs emphasize the outflow of deposits in the system even when there is also an active non-deposit funding market, e.g., the interbank market, operating at the same time.

6 Flow of Funds around US Bank Runs

In this section, we study the flow of funds around select bank runs in the US. In particular, we measure the exact timing of aggregate deposit contractions around bank runs and the reallocation of these deposit outflows in the financial system. For this purpose, we use data at higher frequencies—monthly and quarterly—and focus on two periods of several bank runs in the United States: the Great Depression and the early 1990s. Deposit-insurance funds were not introduced until 1933, rendering the three waves of bank runs that occurred around the Great Depression until 1932 an interesting case study. In turn, we pick financial distress in 1991 and 1992 as a modern-time example with available deposit insurance. We obtain the monthly and quarterly US data from the FRED. We will show that preceding runs the inflow of deposits into the US banking system declines. Runs on individual banks are then the starting point of massive aggregate deposit outflows. The outflow of funds out of the US banking system is often accompanied by an increase in the currency in circulation, and in more modern times by an increase in investments into money market funds.

6.1 Bank Runs during the Great Depression

We first study deposit flows around the three bank run episodes in the wake of the Great Depression in the US. While the bank runs in July 1929, November 1930, and November

1932 are relatively close together, they were all separate run episodes. Further, deposit-insurance funds had not been introduced yet.

We visualize the path of the three nominal deposit variables and the change in currency in circulation around the three waves of bank runs in Figure 18. As we are interested in the exact timing of aggregate deposit contractions and where funds are reallocated within the financial system, we use the highest available frequency for this analysis, monthly deposit and currency in circulation data.[7]

The first bank runs during that period happened in July 1929, three months before the Great Crash in October 1929, when there were widespread runs in the Florida banking system due to the citrus crop failure (see Appendix B for a detailed description). While the effects of the Florida bank runs in July 1929 on the aggregate economy remained limited, they took place during a period in which the inflow of aggregate deposits into the US banking system already came to a stop after a longer period of steady positive growth of aggregate total deposits. The month after Black Thursday in October 1929 marks a short period of inflows of demand deposits into the US banking system that reversed in 1930, turning into a total decline of demand deposits of about 5% until the end of 1930. Until November 1930 though, one month after Black Thursday, we do not observe any contraction in total deposits mainly because time deposits remained stable.

In November 1930 depositors ran on the bank Caldwell and Company of Nashville, which was the starting point of widespread runs on multiple banks across the US. This run event is visualized as a red dashed line in Figure 18. Those runs in November 1930 were accompanied by a massive contraction across all deposit categories in the following months. Deposits contracted by more than 35% relative to mid-1929 and stabilized around this lower level around mid-1932. Immediately following the runs and corresponding to the outflow of deposits, the currency in circulation grew rapidly, with annual growth rates in excess of 20% in 1931. This indicates that depositors withdrew their money and held significant amounts in cash.

In November 1932 a third wave of bank runs occurred following concerns about a devaluation of the dollar after the election of Franklin D. Roosevelt (see Appendix B for a detailed description). We visualize those runs in the event study graphs of Figure 18 as an orange dotted line. We observe a strong decline in any type of deposits and a sharp increase in currency in circulation.

The bank runs during the Great Depression indicate that runs are usually preceded by a stop of deposit inflows, or even outflows of deposits, starting multiple months

[7]We do not have monthly data on real outcomes and credit, however. Instead, in Figure A.21 of Appendix A.12 we depict output losses, credit, and real currency in circulation in an event study for the bank runs during the Great Depression at the annual frequency.

before the actual run date. Bank runs are events that are followed by even more severe contractions in aggregate deposits that surpass the milder contraction before the run. The increase in the currency in circulation indicates that depositors hold more coins and notes in cash following a run. We can rule out that the increase in nominal currency in circulation is due to inflation. The period from 1930 to 1932 was rather characterized by deflationary pressure. As depicted in Figure A.21 in the Appendix, real currency in circulation increased even more in 1932.

6.2 Modern-Time Runs

Next, we turn to two bank runs that occurred in the early 1990s as a modern-time case study of bank runs in the US under the existence of a deposit-insurance fund. We investigate whether the timing of deposit contractions differs from that during the Great Depression. In addition, we also study whether there was an inflow into money market fund shares around the bank runs. Since we only have quarterly data for money market fund shares, the following event study is also at the quarterly frequency.

In 1991Q1 (January) the Bank of New England faced a mass withdrawal of deposits. In Figure 19, we visualize the macroeconomic ramifications around the run on the Bank of New England as an event study graph at the quarterly frequency. We do so by indexing the variables to 1990Q4. First, we observe a contraction in demand deposits one year before the run. The run on the Bank of New England is then accompanied by aggregate output losses of about one percent and a constant contraction in total loans within the following two years. The distress on aggregate deposits in the US is further amplified by a second bank run in 1992Q2. In April 1992 the Metro North State Bank faced a run due to rumors concerning the closure of the bank by the regulators. We mark this second run in 1992Q2 as a dashed line in Figure 19. There is a strong decline in total deposits driven by the contraction in time deposits after 1992Q2, five quarters after the first run on the Bank of New England. Especially non-financial firms reallocate their funds from time deposits to money market fund shares. While the total currency in circulation remained relatively stable before 1992Q2, it increases sharply thereafter.

In line with the bank run episodes from the Great Depression, we observe the strongest decline in aggregate total deposits after the runs occur. This indicates that runs are likely to mark the beginning of aggregate banking distress and potentially further amplify any adverse effects on the real economy. Total deposit liabilities flow out of the banking system and into currency in circulation and money market funds.

7 Conclusion

Bank runs have been widely studied in theory but empirical evidence has been scarce, mostly because an objective measure of bank runs is difficult to come by. We provide a first comprehensive evaluation of the frequency of bank runs around the globe and their macroeconomic consequences. The principal contribution from our study is three-fold. First, we provide a credible measure of bank runs which combines a qualitative narrative-based approach with a quantitative statistical indicator of deposit withdrawals. Second, we quantify the impact of bank runs on individual banks and the economy across space and time. Third and finally, we document that *systemic* bank runs—i.e. deposit contractions that are also accompanied by narrative evidence—are associated with severe economic downturns.

Our results provide novel insights into what happens to individual banks during systemic bank run episodes. As we show, there is substantial variation in deposit growth rates across banks during these runs. Highly levered institutions see a rapid outflow, which in turn benefits banks with healthier levels of capitalization. Importantly, the banks experiencing outflows cannot compensate for the negative shock to their liability side with other sources of funding, resulting in a sizable balance sheet contraction, including in their loan book. This evidence, based on data from both the 19th century and modern times, suggests a key role for bank runs in explaining the credit crunch accompanying periods of financial sector distress.

The new chronology of bank runs and the dataset on deposits we introduce open up many possibilities for the study of financial crises. For one, these data have a much more comprehensive coverage than existing crisis lists, spanning close to the universe of modern economies since 1800. Different from previous work, our measure of systemic bank runs is not purely based on narrative evidence but also validated using a statistical measure: a contraction of aggregate deposits. We hope that there will be many other applications of these data in finance and macroeconomics.

Taken at face value, our findings suggest an important role for the liability side of banks in periods of financial sector disruptions. But it also shows that bank runs and banking crises capture the same phenomenon. As such, policies such as deposit freezes or bank holidays may be instrumental in stabilizing the banking system during panic episodes in addition to concerns about its capitalization. A careful monitoring of bank deposit flows, and not only measures of imbalances in credit markets, may thus be a useful seismograph for the state of the banking sector.

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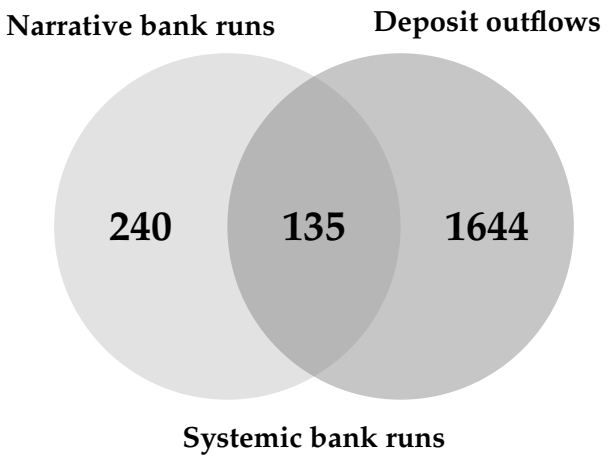
Òscar Jordà, "Estimation and Inference of Impulse Responses by Local Projections," *American Economic Review*, March 2005, *95* (1), 161–182.

Figure 1: Defining Systemic Bank Runs



Notes: The figure visualizes the total number of bank runs for which we have narrative evidence and the total number of observations for which we observe a contraction in any of the following deposit categories: time deposits, demand deposits, or total deposits. We define the intersection of both measures as systemic bank runs. The number in the intersection of both circles denotes the total number of systemic bank runs in our sample.

Figure 2: Frequency of Bank Runs and Banking Crises

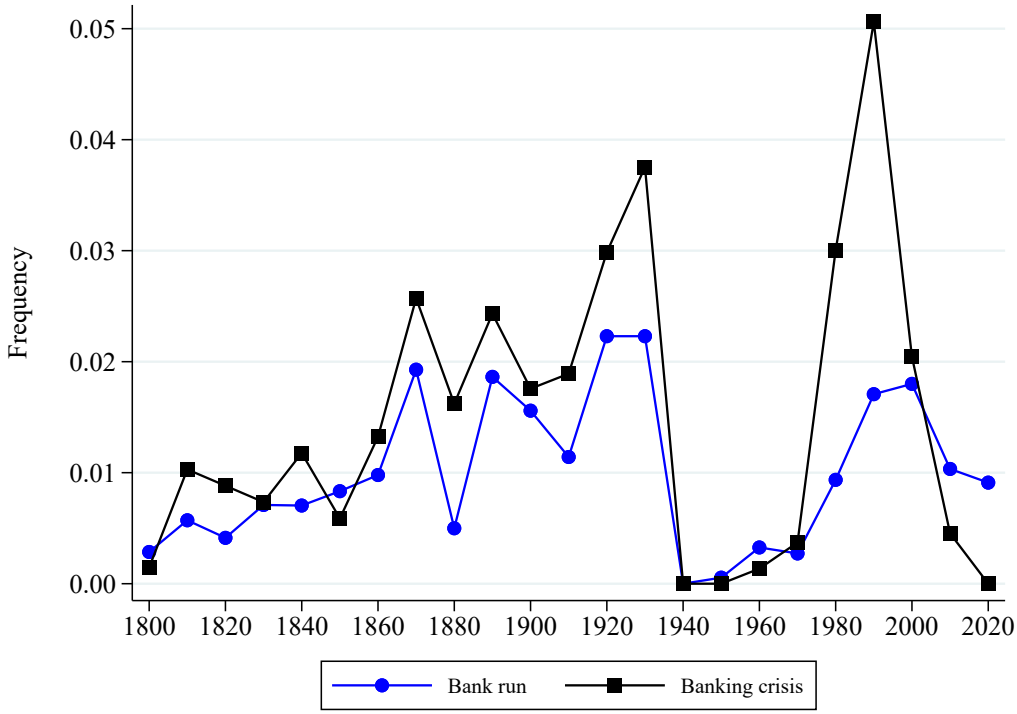


Figure 3: The Frequency of Bank Runs and Banking Crises, By Income

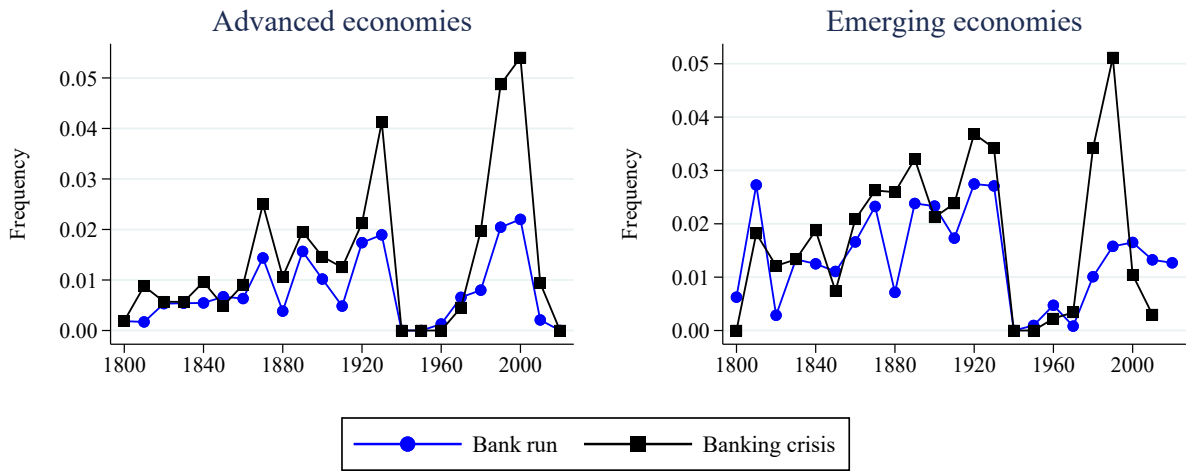
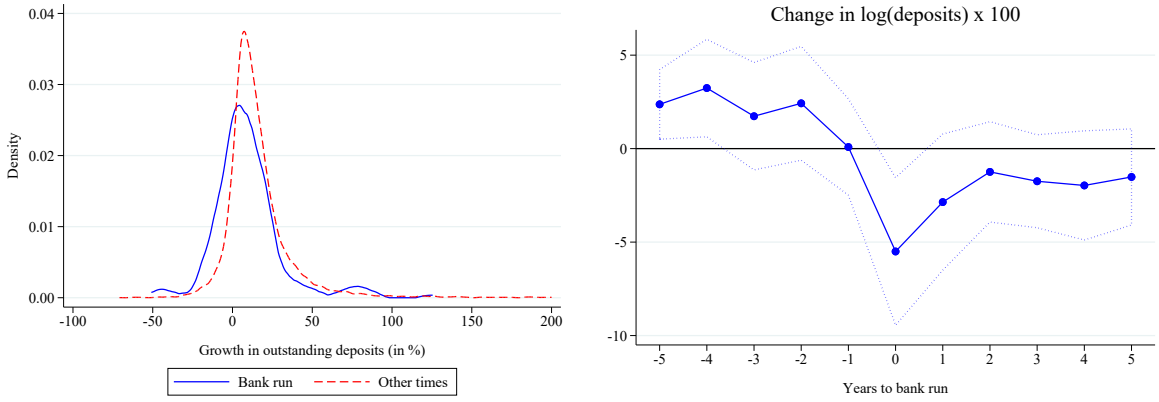


Figure 4: Bank Runs and Deposit Contractions

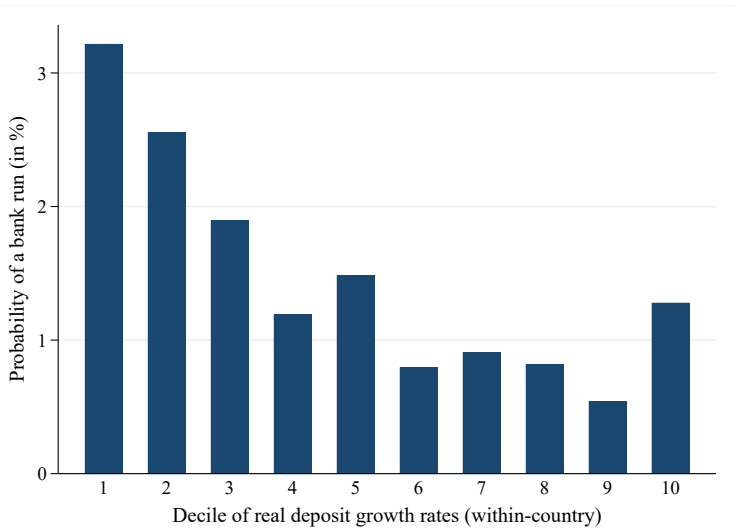
(a) Distribution of deposit growth rates

(b) Deposit contractions around runs



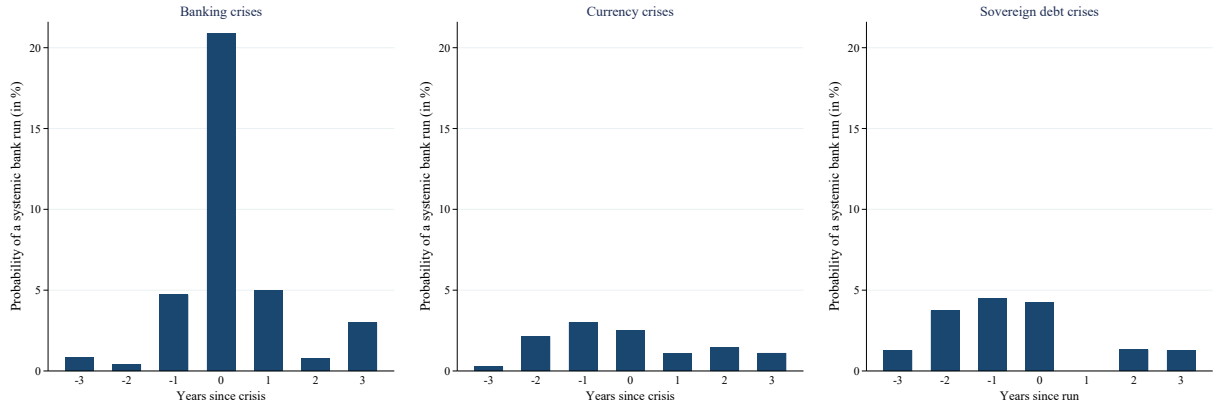
Notes: These figures plot measures of the growth in deposits around the incidence of bank runs. Panel (a) shows the distribution of nominal deposit growth rates during periods of bank runs vs. other times. We trim nominal growth rates at 200% to abstract from the influence of major inflation episodes. Panel (b) plots the estimates of an event study specification relating *log*(deposits) to the exact year a bank run starts.

Figure 5: Bank Run Frequency by Real Deposit Growth Deciles



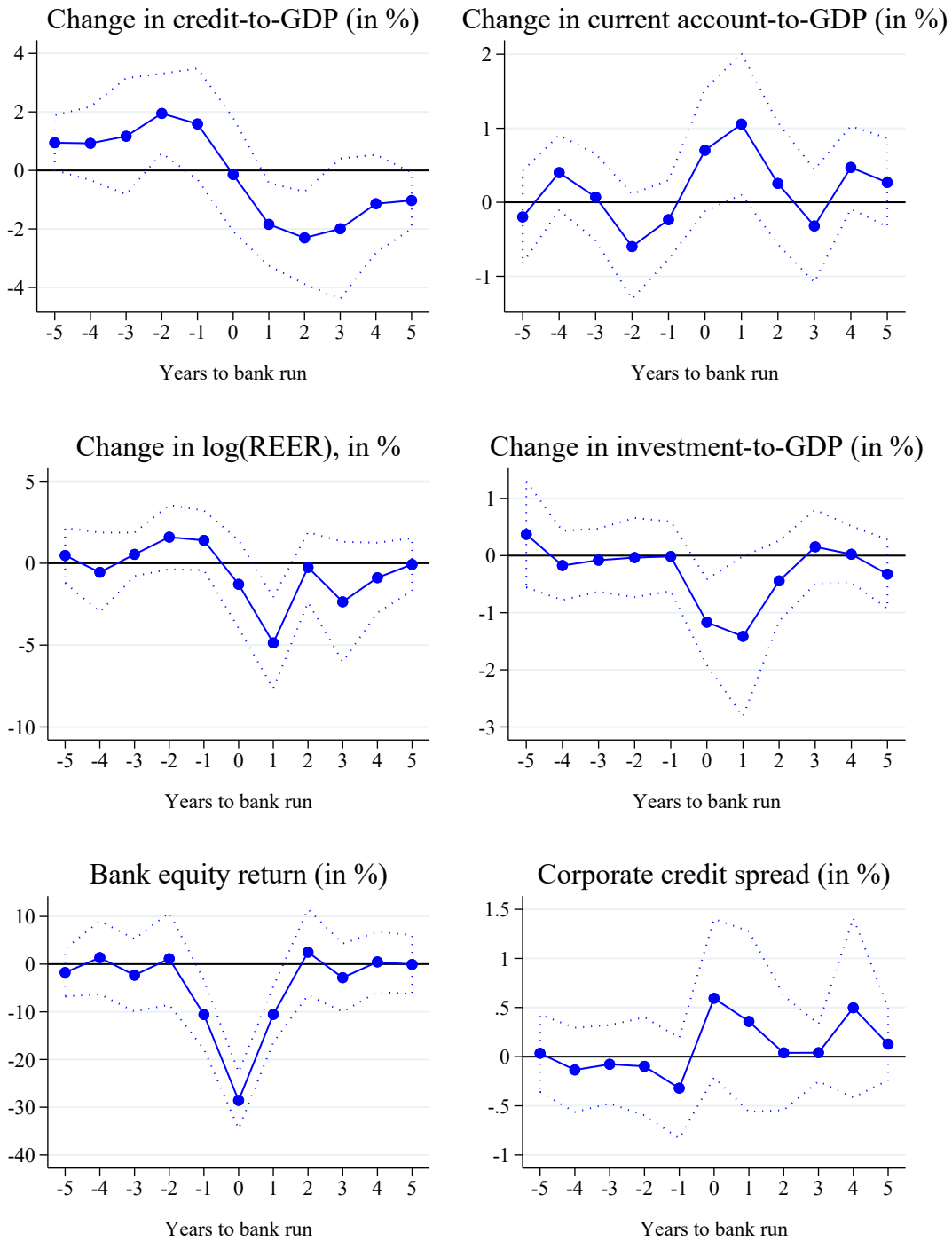
Notes: This figure plots the frequency of a bank run for deciles of real deposit growth rates, where deciles are calculated by country.

Figure 6: The Probability of a Bank Run Around Financial Crises



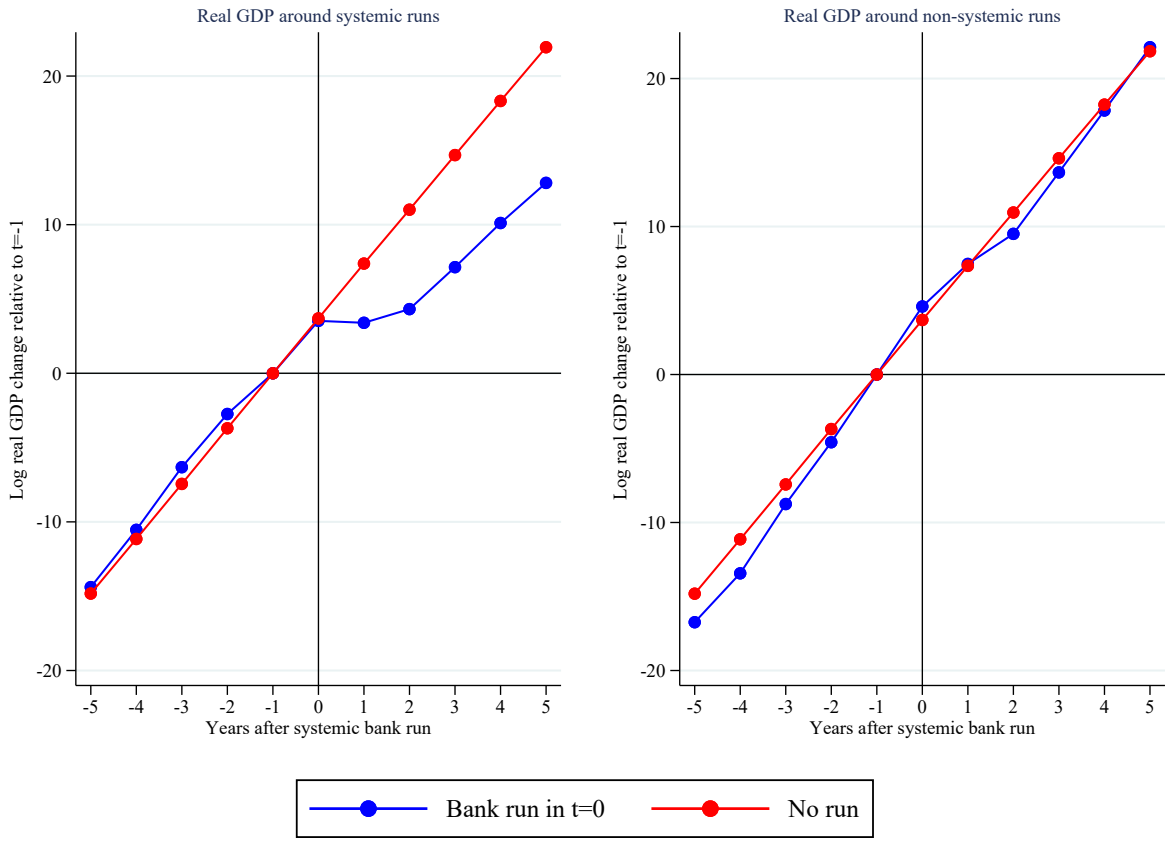
Notes: These figures plot the probability of a bank run around periods of (other) financial crises. We define the dates of financial crises by combining several chronologies as described in section 2.5. Banking crisis dates are taken from Baron et al. (2021), Laeven and Valencia (2018), Jordà et al. (2017), and Reinhart and Rogoff (2011), in that order. Dates for currency and sovereign debt crises are from Laeven and Valencia (2018) and Reinhart and Rogoff (2011). Banking panics are from Baron et al. (2021).

Figure 7: Bank Run Correlates—Event Study Evidence



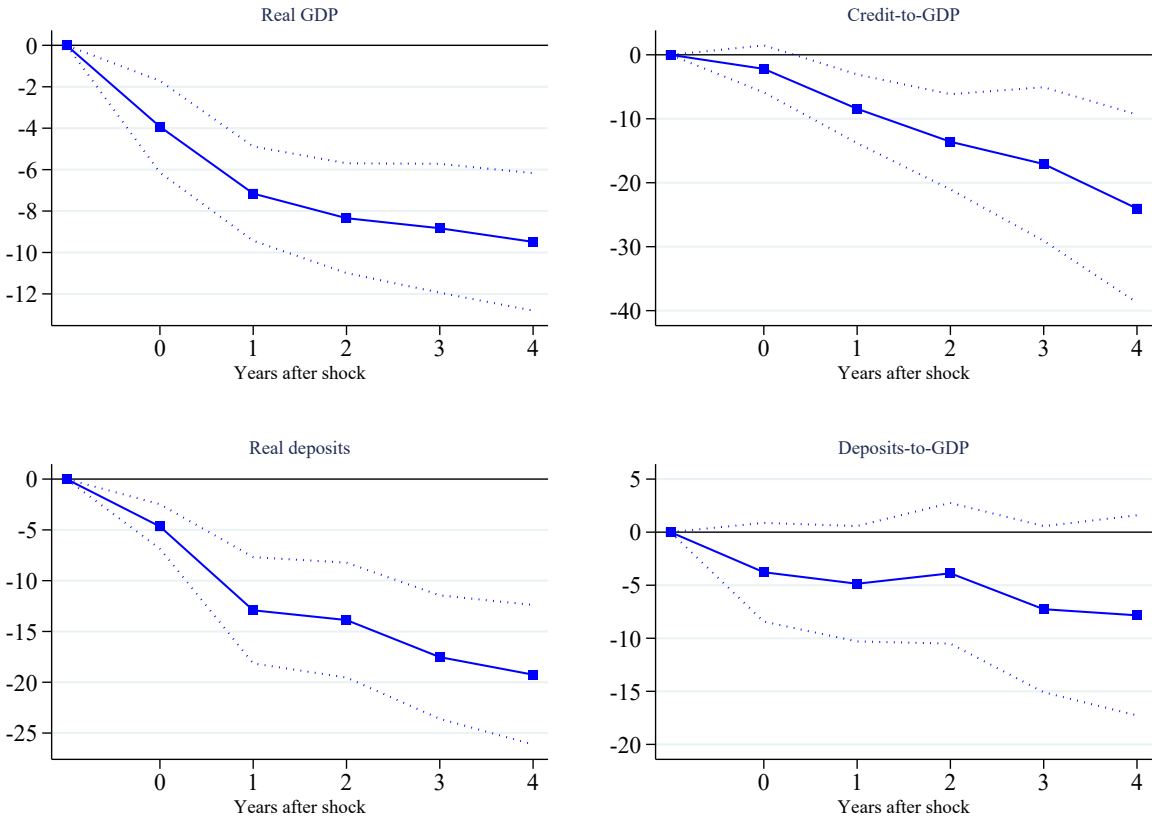
Notes: These figures report the results of the following event study regression: $\Delta Y^r_{i,t} = \alpha_i + \sum_{k=-5}^{5} \beta^k \mathbf{1}^{run}_{i,t+k} + \epsilon_{i,t}$. Standard errors are double-clustered by country and year.

Figure 8: Path of Output Around Systemic and Non-Systemic Bank Runs



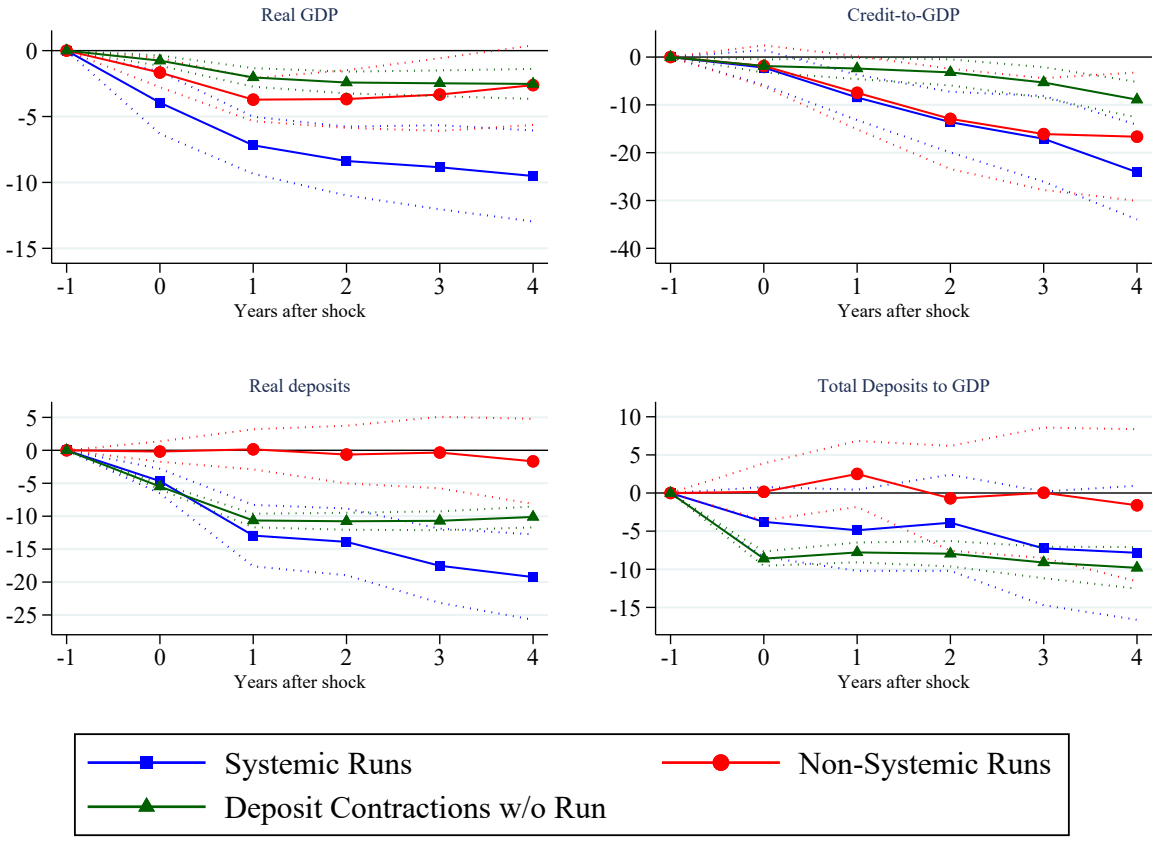
Notes: These figures plot the path of real GDP around systemic bank runs (left panel) and non-systemic bank runs (right panel). Blue lines visualize real GDP around bank runs and red lines depict the counterfactual path based on periods where no runs occurred.

Figure 9: Macroeconomic Aftermath of Systemic Bank Runs



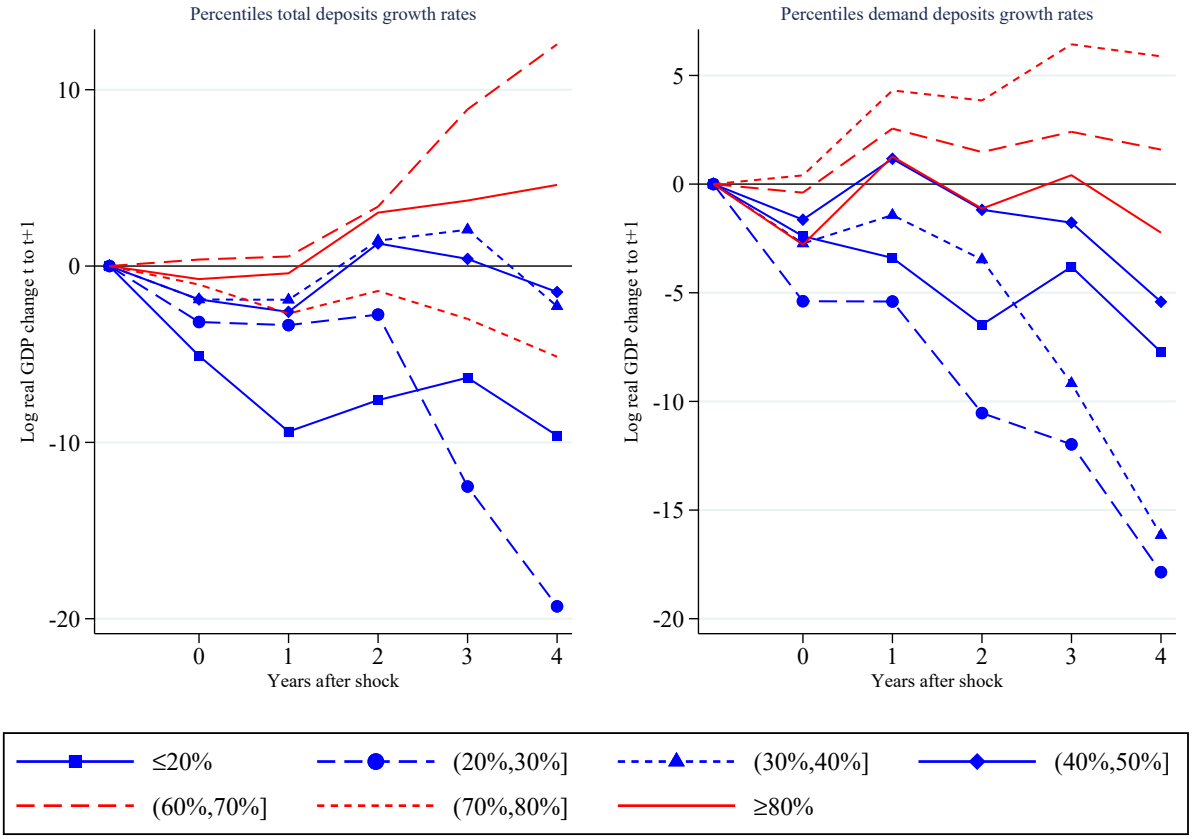
Notes: These figures plot the impulse response function of real GDP growth rate, changes in credit-to-GDP, real total deposit growth rates, and changes in total deposits-to-GDP to a systemic bank run in either one of the three different deposit categories: total deposits, demand deposits, and time deposits. The blue bands depict 95% confidence bands based on standard errors double-clustered by country and year. These estimates are based on the local projection specified in (1).

Figure 10: Bank Runs, Deposit Contractions, and Output



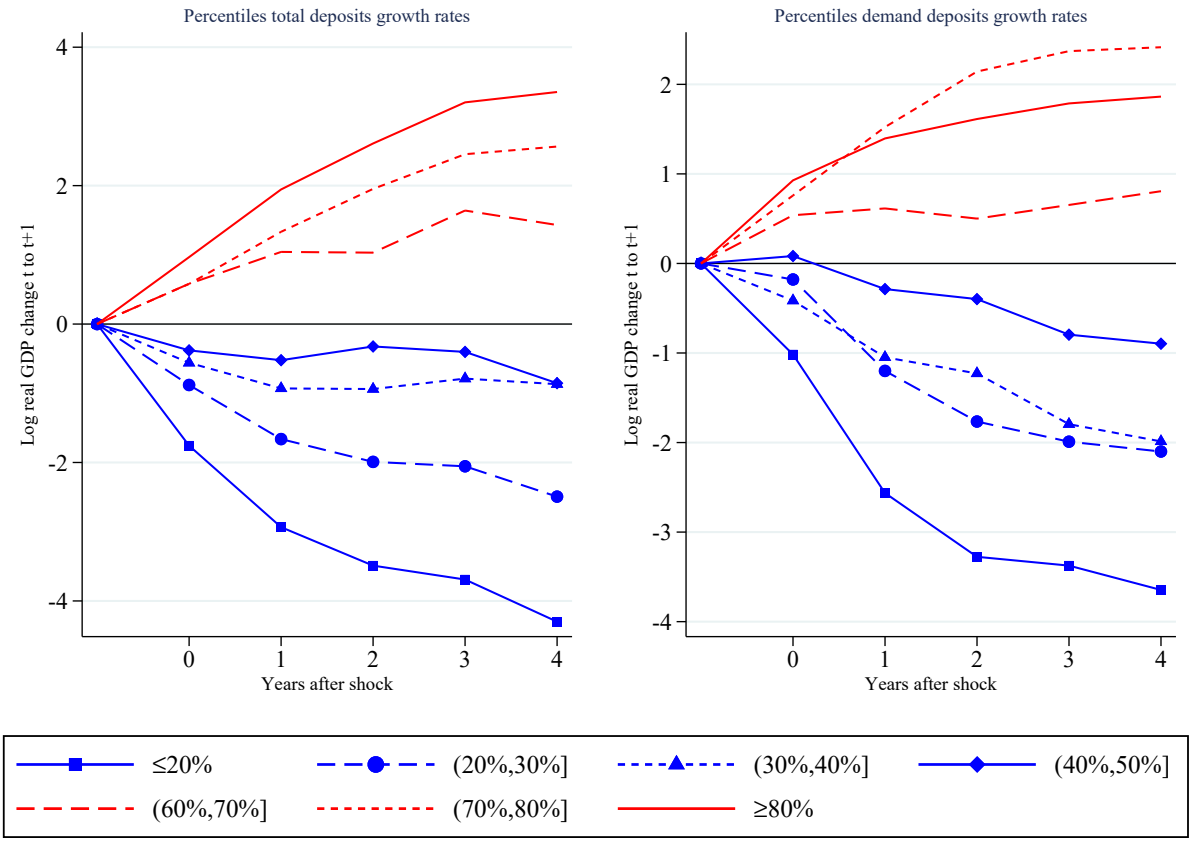
Notes: These figures plot the impulse response function of real GDP growth rate, changes in credit-to-GDP, real total deposit growth rate, and changes in total deposits-to-GDP to systemic bank runs, non-systemic runs, and deposit contractions outside of run episodes. The blue bands depict 95% confidence bands based on standard errors double-clustered by country and year. These estimates are based on the local projection specified in equation 1.

Figure 11: Deposit Growth Rate Percentiles and Output Around Bank Runs



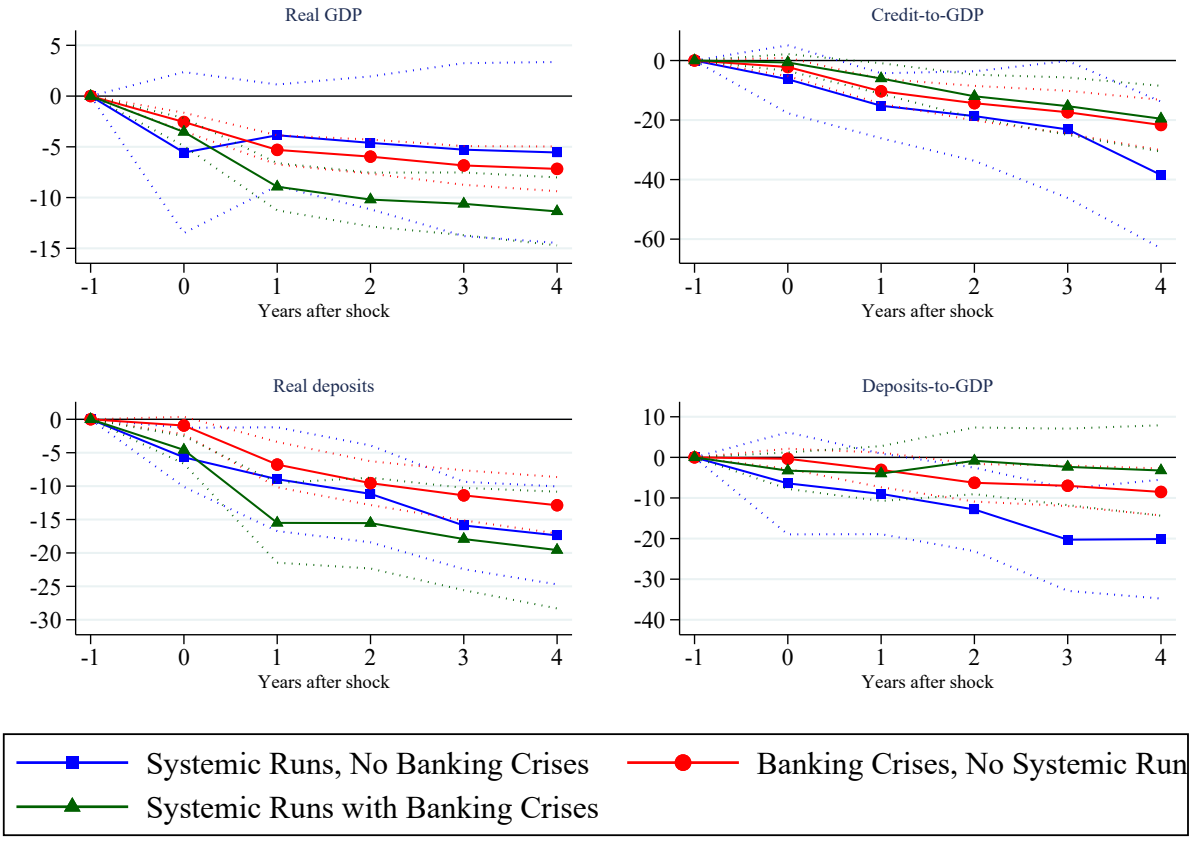
Notes: These figures plot the log difference in real GDP for different percentiles of the growth rate of total deposits and demand deposits. The blue lines depict the bottom 50% percentiles and the red lines depict the top 50% percentiles of aggregate deposit growth rates. The results are based on the local projection specified in equation 2.

Figure 12: Deposit Growth Rate Percentiles and Output Outside of Bank Runs



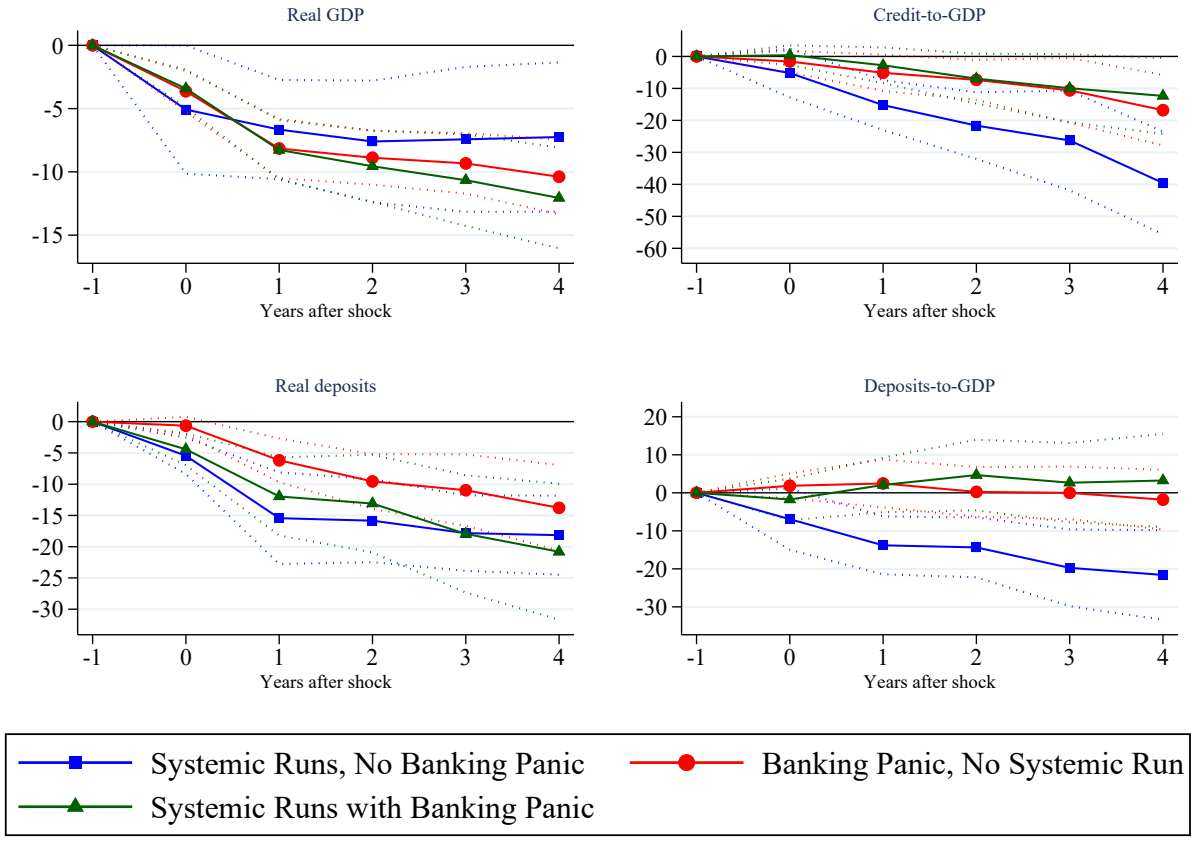
Notes: Responses of real GDP for different deposit growth rate bins outside of bank runs. The blue lines depict the bottom 50% percentiles and the red lines depict the top 50% percentiles of aggregate deposit growth rates. The results are based on the local projection specified in equation 2.

Figure 13: The Aftermath of Systemic Bank Runs and Banking Crises



Notes: These figures visualize the responses of real GDP growth rates, credit-to-GDP, real total deposits growth rate, and total deposits-to-GDP for (i) systemic runs outside of banking crises (blue line), (ii) banking crises without runs (red line), and (iii) systemic runs that coincide with banking crises (green line). The blue bands depict 95% confidence intervals . Standard errors double clustered on both the country and the year level. The results are based on the local projection specified in equation 5.

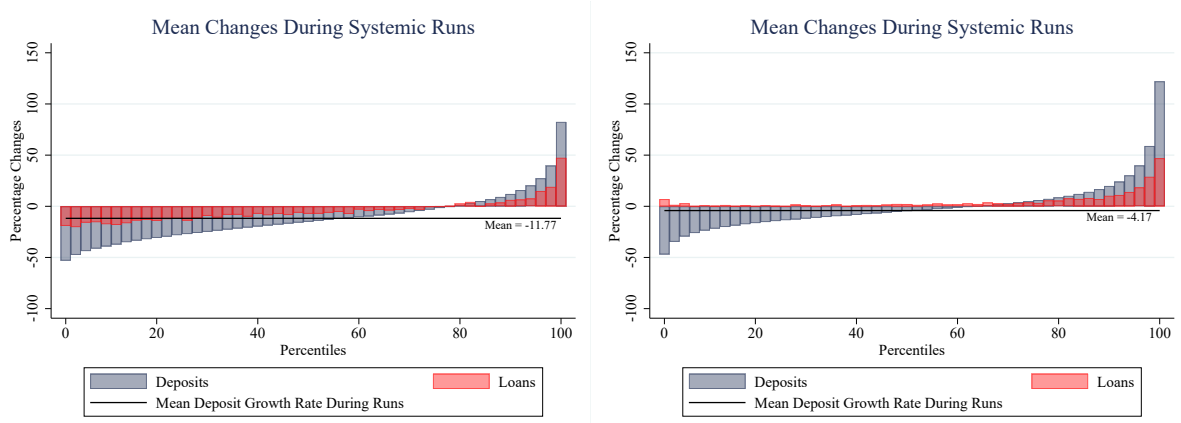
Figure 14: The Aftermath of Systemic Bank Runs and Banking Panics



Notes: These figures visualize the responses of real GDP growth rates, credit-to-GDP, real total deposits growth rate, and total deposits-to-GDP for (i) systemic runs outside of banking panics (blue line), (ii) banking panics without runs (red line), and (iii) systemic runs that coincide with banking panics (green line). The blue bands depict 95% confidence intervals. Standard errors double clustered on both the country and the year level. The results are based on the local projection specified in equation 5.

Figure 15: Dispersion in Deposit and Loan Growth During Systemic Bank Runs

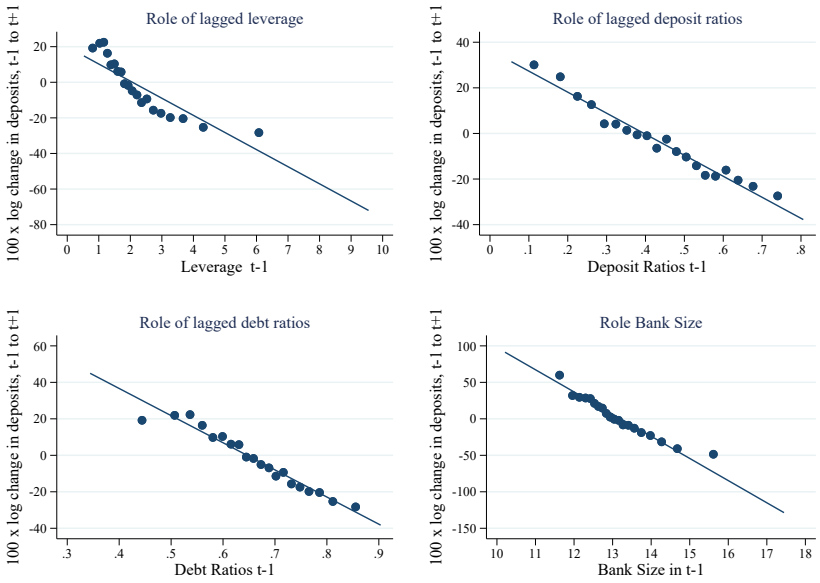
(a) US banks 1867-1901 **(b)** US banks 1976 - 2020



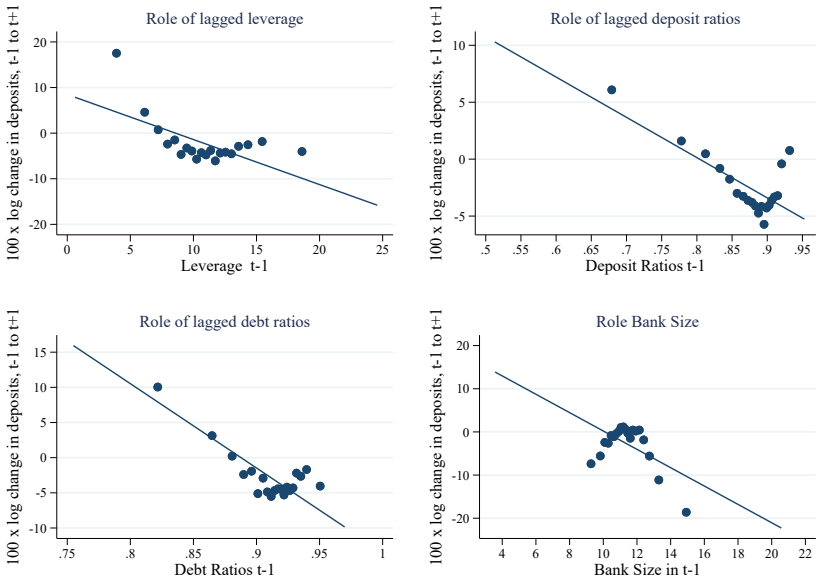
Notes: These figures report bank-level growth rates of deposits and loans during periods of systemic bank runs in the United States. We plot both deposit and loan growth rates for percentile bins of deposit growth rates. The left panel visualizes the results for the OCC dataset covering the period 1867-1901. The right panel depicts the results based on Call Reports data for the period 1976 - 2020. The black solid line plots the average deposit growth rate in the period of the systemic bank run.

Figure 16: Which Banks Experience Deposit Flows During Systemic Bank Runs?

(a) US banks 1867-1901



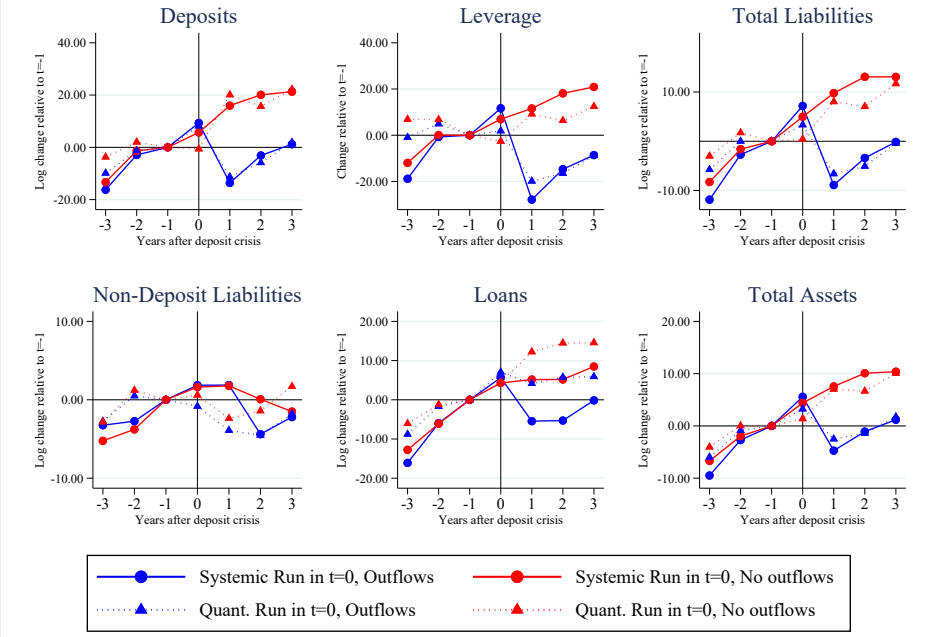
(b) US banks 1976 - 2020



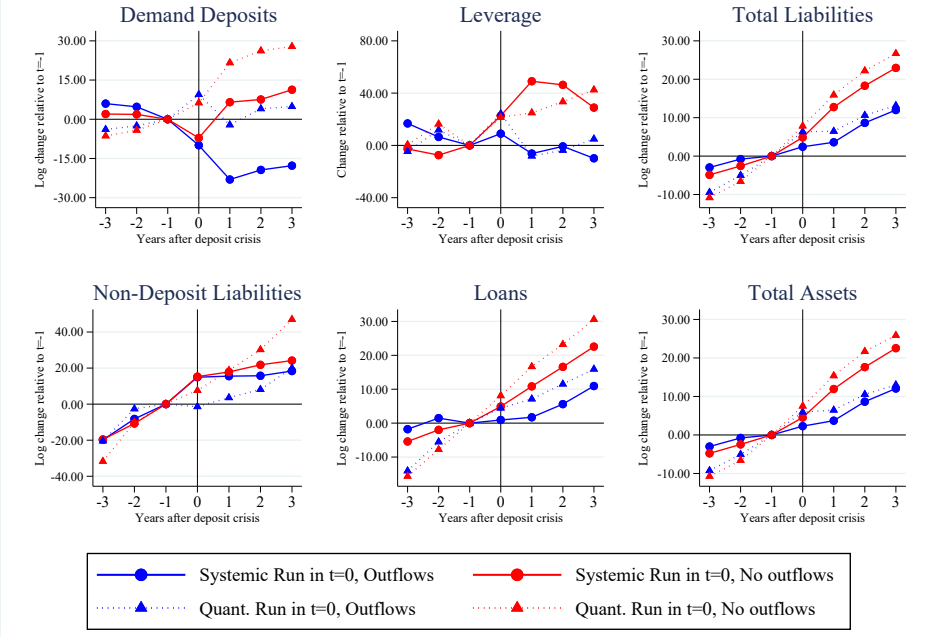
Notes: These figures report the bank-level relationship between deposit growth rates and pre-run balance sheet characteristics during periods of systemic bank runs in the United States using binscatter plots. We calculate the changes in deposits between period $t-1$ and $t+1$, with period t defining the date of the bank run. The top panel visualizes the results for the OCC dataset covering the period 1867-1901. The bottom panel depicts the results based on Call Reports data for the period 1976 - 2020.

Figure 17: Bank-Level Aftermath of Deposit Outflows around Systemic Bank Runs

(a) US banks 1867-1901

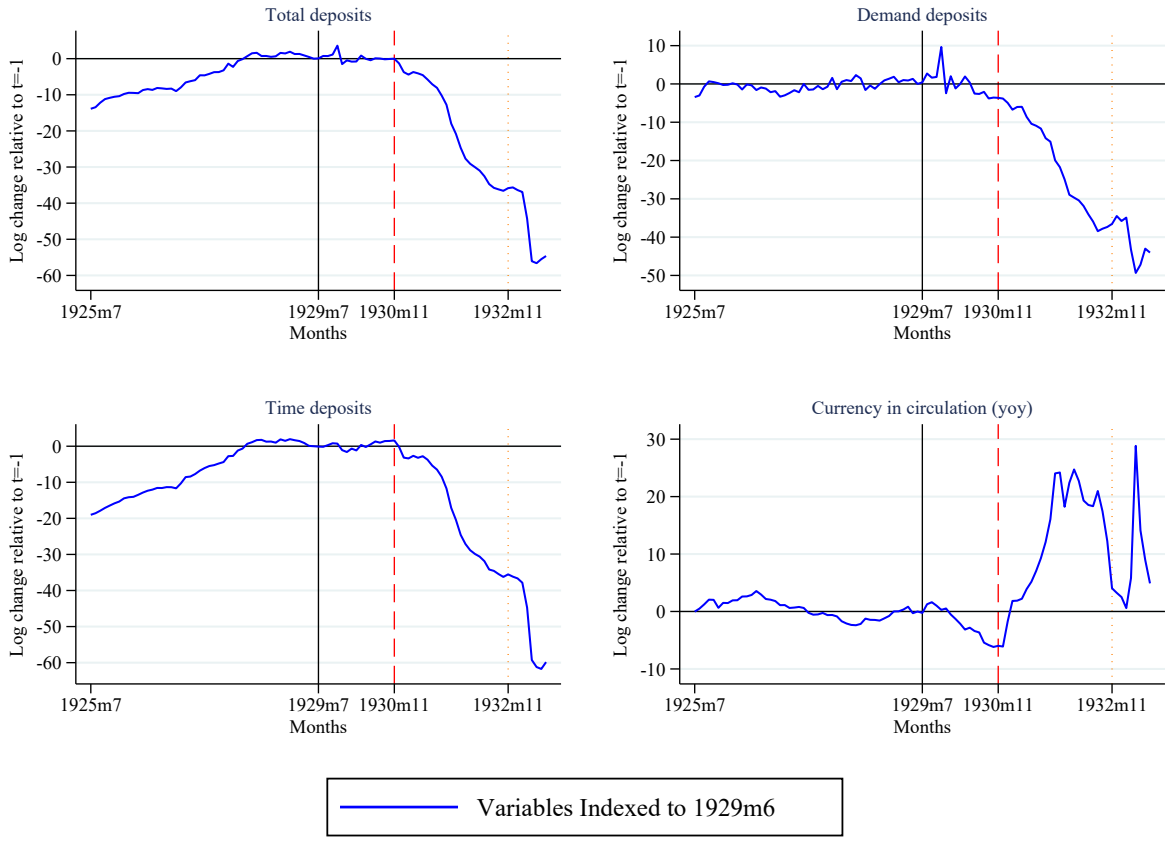


(b) US banks 1976 - 2020



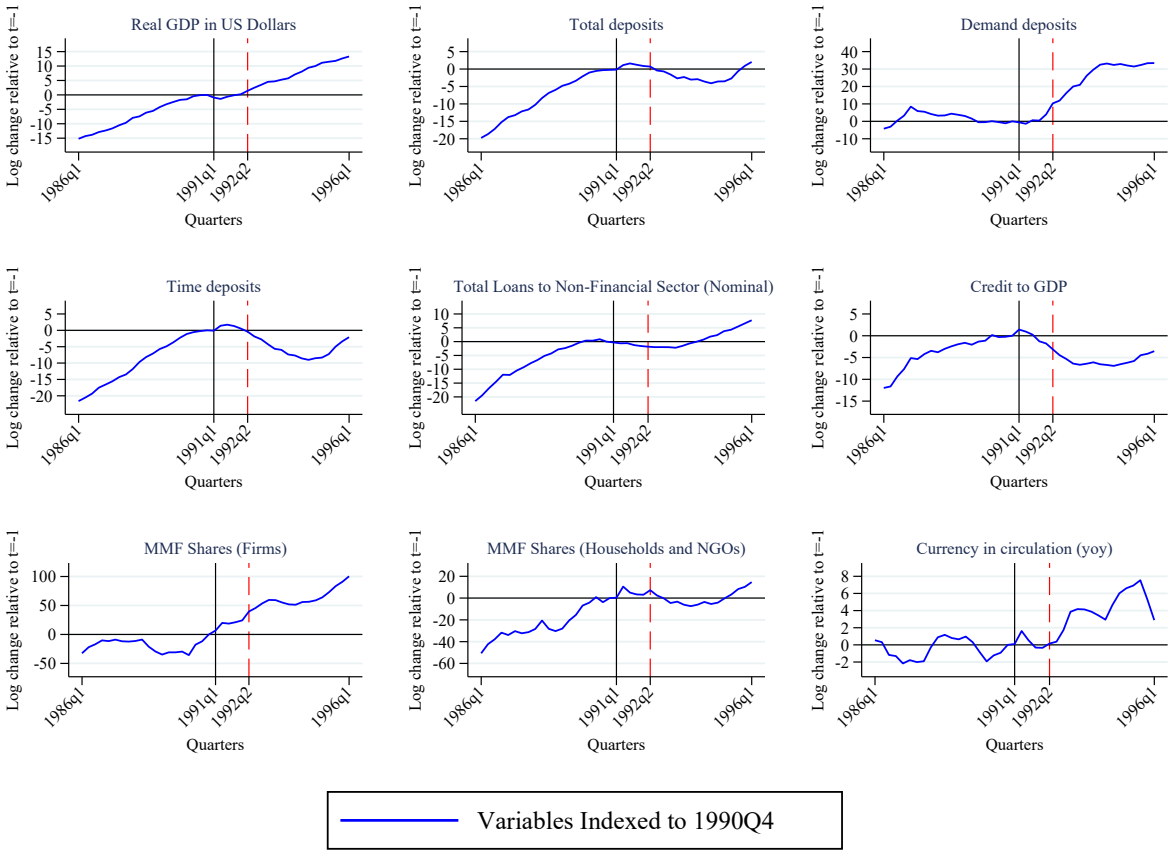
Notes: These figures plot the cumulative log change in bank balance sheets items relative to the year before a systemic bank run in the United States. The blue lines refer to banks experiencing an outflow of deposits during a systemic run, and the red lines to banks experiencing inflows. The top panel visualizes the results for the OCC dataset covering the period 1867-1901. The bottom panel depicts the results based on Call Reports data for the period 1976 - 2020.

Figure 18: Deposits and Currency in Circulation in the US around Bank Runs During the Great Depression



Notes: The figure visualizes the nominal deposits and the year-on-year change in total currency in circulation around the three bank runs during the period of the Great Depression. The first wave of runs in July 1929 within the banking system of Florida is visualized as a solid vertical line at 1929m7. The second wave of bank runs started with the run on the bank Caldwell and Company of Nashville in November 1930. We mark this second wave of runs as a dashed, red vertical line at 1930m11. The third wave of bank runs started in November 1932 and we visualize this event as an orange dotted line at 1932m11.

Figure 19: Macroeconomic Aftermath in the US around the Run on the Bank of New England in 1991Q1



Notes: The figure visualizes the path of real GDP, real loans, credit-to-GDP, nominal deposits, real money mutual fund shares, and the year-on-year change in total currency in circulation around the run on the Bank of New England in 1991Q1. The run event on the Bank of New England is visualized as a solid vertical line in 1991Q1. In 1992Q2, there was a second bank run on the Metro North State Bank. We highlight the event as a red dashed vertical line in 1992Q2.

Table 1: Coverage of the Bank Run Chronology with Other Crisis Lists

Dataset	Crisis definition	Narrative only	No. of countries	No. of events	Start Year	End Year	Obs.
Reinhart and Rogoff (2011)	Banking crisis	Yes	68	286	1800	2014	13,751
Laeven and Valencia (2018)	Banking crisis	Yes	156	139	1970	2017	7,373
Jordà et al. (2017)	Banking crisis	Yes	18	87	1870	2020	2,454
Baron et al. (2021)	Banking crisis	No	46	205	1870	2016	6,146
Baron et al. (2021)	Bank equity crash	No	46	259	1870	2016	4,269
Baron et al. (2021)	Banking panic	No	46	173	1870	2016	4,310
JKMS	Bank run	Yes	184	240	1800	2022	24,319
JKMS	Deposit contraction	No	179	1,644	1801	2022	12,914
JKMS	Systemic bank run	No	179	135	1801	2022	12,914

Notes: This table compares the coverage of the JKMS bank run chronology introduced in this paper with a selection of existing lists of banking crises.

Table 2: The JKMS Bank Run List

Country	Year	Systemic run	Deposit contraction	Affected deposits	Banking crisis	BVX panic
Afghanistan	2010	No	>0			
Albania	2008	Yes	-0.7	Demand	No	
Antigua and Barbuda	2009	Yes	-25.1	Demand		
Argentina	1876				No	No
	1890				Yes	Yes
	1914	Yes	-15.7	Total	Yes	Yes
	1934	Yes	-5.1	Total	Yes	Yes
	1980	Yes	-19.1	Demand	Yes	Yes
	1985	No	>0		Yes	Yes
	1995	Yes	-4.7	Time	Yes	Yes
	2001	Yes	-19.2	Time	Yes	Yes
Australia	1828				Yes	
	1842	Yes	-13.8	Total	Yes	
	1893	Yes	-12.4	Total	Yes	Yes
	1931	Yes	-20.6	Total	Yes	Yes
	1974	Yes	-7.5	Demand	No	No
	1989	No	>0		Yes	Yes
Austria	1873				Yes	Yes
	1924	No	>0		Yes	No

Continued on the next page

Country	Year	Systemic run	Deposit contraction	Affected deposits	Banking crisis	BVX panic
	1931	Yes	-31.0	Total	Yes	Yes
Bahrain	1990	Yes	-20.1	Time		
Belgium	1838	Yes	-39.2	Demand	Yes	
	1870				Yes	Yes
	1914	Yes	-24.5	Total	Yes	Yes
	1925	No	>0		Yes	No
	1931	No	>0		Yes	Yes
Belize	2016	Yes	-7.2	Time	No	
Bolivia	1994	No	>0		Yes	
Bosnia and Herzegovina	2008	No	>0		No	
Brazil	1864	No	>0		No	
	1900	Yes	-19.4	Total	Yes	Yes
	1914	Yes	-18.1	Demand	Yes	Yes
Bulgaria	1996	No	>0		Yes	
	2014	Yes	-5.8	Time	No	
Canada	1837				Yes	
	1867	Yes	-6.7	Total	Yes	
	1879	No	>0		No	No
	1893	Yes	-8.7	Demand	No	No
	1914	Yes	-8.1	Demand	Yes	
	1921	Yes	-17.7	Demand	Yes	Yes

Continued on the next page

Country	Year	Systemic run	Deposit contraction	Affected deposits	Banking crisis	BVX panic
	1982	No	>0		Yes	Yes
	1996	No	>0		No	No
Chile	1865	Yes	-50.9	Total	No	
	1878	Yes	-12.3	Total	Yes	Yes
	1895	Yes	-15.5	Total	No	No
	1907	Yes	-8.0	Total	Yes	Yes
	1914	Yes	-2.3	Total	Yes	Yes
	1983	No	>0		Yes	Yes
China	1903				No	
	1916				No	
	1921				Yes	
	1928	No	>0		No	
	1997	No	>0		Yes	
	2019	No	>0			
Colombia	1923				No	
	1982	No	>0		Yes	No
	1998	Yes	-9.3	Demand	Yes	Yes
Costa Rica	1987	Yes	-4.9	Demand	Yes	
	2004	Yes	-39.5	Time	No	
Cote d'Ivoire	2011	No	>0		No	
Croatia	1998	Yes	-7.3	Demand	Yes	

Continued on the next page

Country	Year	Systemic run	Deposit contraction	Affected deposits	Banking crisis	BVX panic
Cyprus	1939					
Czech Republic	1923	Yes	-11.8	Total	Yes	Yes
	1931	Yes	-13.6	Total	No	No
	1939					
	1994	Yes	-0.4	Time	Yes	Yes
	2000	Yes	-1.5	Time	No	No
Denmark	1908	Yes	-6.8	Demand	Yes	Yes
Dominican Republic	2003	No	>0		Yes	
Ecuador	1998	Yes	-66.5	Time	Yes	
Egypt	1907				Yes	Yes
	1914				Yes	Yes
	1931				Yes	Yes
Estonia	2008	Yes	-11.7	Demand	No	
Ethiopia	2016				No	
Finland	1939	Yes	-0.4	Total	Yes	No
France	1805				Yes	
	1838				Yes	
	1847				Yes	
	1871				Yes	Yes
	1881				Yes	Yes
	1889				Yes	Yes

Continued on the next page

Country	Year	Systemic run	Deposit contraction	Affected deposits	Banking crisis	BVX panic
	1914				Yes	Yes
	1930	Yes	-5.9	Total	Yes	Yes
	1938	No	>0		Yes	Yes
Germany	1873	Yes	-9.5	Total	Yes	Yes
	1891	Yes	-1.1	Total	Yes	Yes
	1901	Yes	-0.3	Total	Yes	Yes
	1911	No	>0		No	No
	1929	Yes	-8.5	Total	Yes	Yes
Greece	1931	Yes	-11.2	Total	Yes	Yes
	2012	Yes	-18.0	Demand	Yes	Yes
Hong Kong	1892	Yes	-12.5	Total	Yes	Yes
	1961	No	>0		No	No
	1965	No	>0		Yes	Yes
	1982	Yes	-2.9	Demand	Yes	Yes
	2008	No	>0		No	No
Hungary	1873				Yes	Yes
	1930	Yes	-18.8	Total	Yes	Yes
Iceland	2008	Yes	-13.5	Time	Yes	Yes
India	1913	Yes	-3.3	Total	Yes	Yes
Indonesia	1991	Yes	-11.4	Demand	Yes	Yes
	1997	No	>0		Yes	Yes

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Country	Year	Systemic run	Deposit contraction	Affected deposits	Banking crisis	BVX panic
Iran	2022					
Ireland	2008	Yes	-15.5	Demand	Yes	Yes
Italy	1907	No	>0		Yes	Yes
	1914	Yes	-5.2	Total	Yes	Yes
	1921	No	>0		Yes	Yes
	1930	Yes	-5.5	Total	Yes	Yes
Jamaica	1996	Yes	-3.2	Demand	Yes	
Japan	1871				Yes	Yes
	1900	Yes	-1.4	Demand	Yes	Yes
	1907	Yes	-14.8	Demand	Yes	Yes
	1920	Yes	-8.1	Time	Yes	Yes
	1927	Yes	-3.2	Time	Yes	Yes
	1997	No	>0		Yes	Yes
Jordan	1989	Yes	-2.7	Demand	Yes	
Kazakhstan	2014	No	>0		No	
Kenya	2016	Yes	-9.7	Time	No	
	2022	No	>0			
Kuwait	2008	No	>0		No	
Latvia	1931					
	2011	Yes	-19.7	Time	No	
Lebanon	1966	Yes	-12.5	Demand		

Continued on the next page

Country	Year	Systemic run	Deposit contraction	Affected deposits	Banking crisis	BVX panic
Libya	2011	Yes	-22.5	Time	No	
Lithuania	1995	Yes	-14.0	Time	Yes	
Macao	2005	Yes	-8.0	Demand		
Malaysia	1997	Yes	-14.3	Demand	Yes	Yes
Mexico	1883				Yes	Yes
	1913				Yes	Yes
	1921				Yes	Yes
	1931	Yes	-27.3	Total	Yes	No
Montenegro	2008	Yes	-27.1	Demand		
Myanmar	2003	Yes	-74.4	Demand	Yes	
	2021					
Nepal	2006	No	>0		No	
	2011	Yes	-5.3	Demand	No	
Netherlands	1914	No	>0		Yes	Yes
	1921	Yes	-13.4	Total	Yes	No
	2009	Yes	-5.4	Time	Yes	Yes
New Zealand	1894	Yes	-3.5	Total	Yes	No
	1988	No	>0		Yes	Yes
Nicaragua	2000	Yes	-28.3	Demand	Yes	
Nigeria	1996	No	>0		Yes	
Norway	1857	Yes	-19.3	Demand	No	

Continued on the next page

Country	Year	Systemic run	Deposit contraction	Affected deposits	Banking crisis	BVX panic
	1899	No	>0		Yes	Yes
	1923	Yes	-16.2	Demand	Yes	No
Pakistan	2008	Yes	-8.4	Demand	No	
Panama	1987	Yes	-30.5	Demand	Yes	
Paraguay	2002	Yes	-4.6	Time	Yes	
Philippines	1968	No	>0		No	No
	1974	No	>0		No	No
	1981	Yes	-9.1	Demand	Yes	Yes
	2000	Yes	-0.5	Demand	No	No
Poland	1926	No	>0		No	
	2018	Yes	-5.3	Time		
Portugal	1876				Yes	Yes
	1891				Yes	Yes
	1920	No	>0		Yes	Yes
	1930	Yes	-15.7	Demand	Yes	Yes
	1935	Yes	-0.9	Demand	No	No
Qatar	2017	Yes	-7.7	Time		
Romania	1931	Yes	-43.3	Total	Yes	
Russian Federation	1859				No	
	1875	Yes	-18.3	Total	Yes	Yes
	1899	Yes	-2.2	Total	Yes	Yes

Continued on the next page

Country	Year	Systemic run	Deposit contraction	Affected deposits	Banking crisis	BVX panic
	1905	Yes	-13.5	Total	No	No
	1914	No	>0		No	
	1998				Yes	Yes
	2004	No	>0		No	
	2008	Yes	-2.7	Demand	Yes	Yes
	2022					
Serbia	2008	Yes	-6.0	Demand	No	
Singapore	1974	No	>0		No	No
South Africa	1890				Yes	Yes
	1997	No	>0		No	No
	2002	No	>0		No	No
South Korea	1950				No	
	1961	Yes	-52.9	Time	No	
Spain	1864	Yes	-15.8	Total	No	
	1913	Yes	-13.8	Time	Yes	Yes
	1920	No	>0		Yes	Yes
	1924	Yes	-12.5	Demand	Yes	Yes
	1931	Yes	-20.3	Demand	Yes	Yes
	1994	No	>0		No	No
St Vincent and the Grenadines	2013	No	>0			
Sweden	1808	No	>0		No	

Continued on the next page

Country	Year	Systemic run	Deposit contraction	Affected deposits	Banking crisis	BVX panic
	1817	Yes	-3.8	Total	No	
	1857	No	>0		No	
	1878	Yes	-4.1	Total	Yes	Yes
	1907	No	>0		Yes	Yes
	1912	No	>0		No	No
	1932	Yes	-2.1	Demand	Yes	No
	1939	Yes	-1.8	Demand	No	
	1992	No	>0		Yes	Yes
Switzerland	1859	No	>0			
	1865	Yes	-7.3	Total		
	1870	Yes	-5.5	Total	Yes	Yes
	1914	No	>0		Yes	Yes
	1931	Yes	-5.7	Time	Yes	Yes
	1991	Yes	-3.5	Demand	Yes	Yes
Taiwan	1985	No	>0		Yes	Yes
	1995	Yes	-17.2	Total	Yes	Yes
	2000	No	>0		Yes	No
	2007				No	No
Thailand	1984	Yes	-13.8	Demand	Yes	Yes
	1996	Yes	-16.3	Demand	Yes	Yes
	2014	No	>0		No	No

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Country	Year	Systemic run	Deposit contraction	Affected deposits	Banking crisis	BVX panic
Trinidad and Tobago	1939					
	1988	Yes	-20.2	Demand	No	
Turkey	1895				No	No
	1914				Yes	Yes
	1931	Yes	-3.4	Demand	Yes	Yes
	1981	No	>0		Yes	Yes
	1991	No	>0		Yes	Yes
	2001	No	>0		Yes	Yes
Uganda	1999	No	>0		No	
Ukraine	1998	No	>0		Yes	
	2008	Yes	-17.0	Time	Yes	
	2014	Yes	-8.1	Time	Yes	
United Arab Emirates	1990	Yes	-14.4	Demand		
United Kingdom	1815				Yes	
	1820				No	
	1825				Yes	
	1840	Yes	-11.2	Total	No	
	1847	Yes	-38.9	Total	Yes	
	1857	Yes	-2.7	Total	Yes	
	1866	Yes	-12.6	Total	Yes	
	1878	Yes	-3.3	Total	Yes	Yes

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Country	Year	Systemic run	Deposit contraction	Affected deposits	Banking crisis	BVX panic
	1914	No	>0		Yes	Yes
	1973	Yes	-18.4	Demand	Yes	Yes
	2007	Yes	-2.2	Demand	Yes	Yes
United States	1814	Yes	-10.0	Total	Yes	
	1819	No	>0		Yes	
	1833	No	>0		No	
	1837	Yes	-23.2	Total	Yes	
	1841	Yes	-18.5	Total	Yes	
	1854	Yes	-1.3	Total	No	
	1873	No	>0		Yes	Yes
	1884	Yes	-1.2	Total	Yes	Yes
	1893	Yes	-4.4	Total	Yes	Yes
	1907	Yes	-4.2	Total	Yes	Yes
	1929	Yes	-6.7	Demand	Yes	Yes
	1974	No	>0		No	No
	1982	Yes	-11.4	Demand	Yes	Yes
	1991	Yes	-4.7	Time	Yes	No
	2007	Yes	-6.0	Demand	Yes	Yes
Uruguay	1866				No	
	1890				No	
	1898				Yes	

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Country	Year	Systemic run	Deposit contraction	Affected deposits	Banking crisis	BVX panic
	1964	Yes	-28.3	Time	No	
	1982	Yes	-7.4	Demand	Yes	
	2002	Yes	-4.9	Time	Yes	
Venezuela	1993	No	>0		Yes	Yes
	2009	Yes	-42.7	Time	Yes	Yes
Vietnam	2012	No	>0		No	
	2022	Yes	-5.0	Total		
Zimbabwe	2003	No	>0		No	
	2016	Yes	-9.9	Time	No	

Table 3: How Frequent Are Bank Runs?

	Pre-1933		Post-1933	
	Run prob.	Share systemic	Run prob.	Share systemic
Average	1.2	75.9	0.8	59.1
By region:				
East Asia and Pacific	0.9	90.9	1.7	43.3
Europe and Central Asia	2.3	71.7	0.9	67.6
Latin America and Caribbean	0.6	85.7	0.9	76.0
Middle East and North Africa	0.3	N/A	0.5	85.7
North America	6.3	73.3	3.6	42.9
South Asia	0.3	100.0	0.6	50.0
Sub-Saharan Africa	0.1	0.0	0.2	25.0
By income level:				
Advanced economies	0.8	82.5	0.7	57.1
Emerging economies	1.9	70.2	0.9	60.0
By financial development:				
Low	7.0	77.8	0.4	38.5
Medium	6.1	62.5	1.3	68.4
High	6.8	77.8	1.7	51.9
By deposit insurance:				
No	1.5	76.2	0.6	61.8
Yes	N/A	N/A	1.9	62.1

Notes: This table plots the probability of a bank run for two subperiods: before 1933 (before the introduction of deposit insurance), and after 1933. "Share systemic" is the share of systemic bank runs, meaning those accompanied by a contraction in outstanding deposits. We determine income levels based on real GDP per capita in PPP terms, where countries with median values in the top quartile in any given decade are treated as "advanced economies" and the remainder "emerging economies". Financial development is defined as the ratio of credit to GDP (taken from Müller and Verner, 2023), where we split countries into the low, medium, and high categories based on the tercile they fall in for any given decade. All values are in percent.

Table 4: How Common Are Bank Runs After Financial Crises?

	Number of crises	Narrative bank run prob.	Deposit contraction prob.	Systemic bank run prob.	Non-systemic run prob.
Banking crises	328	0.49	0.85	0.38	0.15
Banking panics	173	0.67	0.88	0.51	0.22
Currency crises	496	0.16	0.69	0.13	0.07
Sovereign debt crises	253	0.17	0.73	0.18	0.07

Notes: This table plots the probability of a bank run, deposit contraction, systemic bank run, and non-systemic bank run within three years of a financial crisis. We define the dates of financial crises by combining several chronologies as described in section 2.5. Banking crisis dates are taken from Baron et al. (2021), Laeven and Valencia (2018), Jordà et al. (2017), and Reinhart and Rogoff (2011), in that order. Dates for currency and sovereign debt crises are from Laeven and Valencia (2018) and Reinhart and Rogoff (2011). Banking panics are from Baron et al. (2021).

Table 5: Predicting Bank Runs With Financial Crises

	Dependent variable:			
	Narrative bank run	Systemic bank run	Deposit contraction	Non-systemic run
Banking crisis	0.251***	0.186***	0.166***	0.058***
	(0.032)	(0.029)	(0.030)	(0.016)
Currency crisis	0.014*	0.007	0.018	0.004
	(0.007)	(0.007)	(0.024)	(0.006)
Sovereign debt crisis	0.020	0.021	0.007	0.009
	(0.012)	(0.013)	(0.027)	(0.010)
Country FE	Yes	Yes	Yes	Yes
# Countries	161	156	156	156
# Run episodes	212	119	1,231	60
Observations	18,182	10,041	10,041	10,041
R^2	0.11	0.10	0.02	0.03
AUC	0.71	0.73	0.52	0.62

Notes: The table plots the estimated coefficients of the following panel regression: $\mathbf{1}_{i,t}^{run,j} = \alpha_i + \beta^{bcrisis}\mathbf{1}_{i,t}^{bcrisis} + \beta^{curr}\mathbf{1}_{i,t}^{curr} + \beta^{sovDebt}\mathbf{1}_{i,t}^{sovDebt} + \epsilon_{i,t}$. The variable α_i denotes country fixed effects, $\mathbf{1}_{i,t}^{run,j}$ denotes any of the four indicator variables for a bank run of type j: narrative runs, systemic runs, deposit contractions, and non-systemic runs. The dummy variables on the right-hand side are (i) any banking crisis, (ii) any currency crisis, and (iii) any sovereign debt crisis. Standard errors are double-clustered by country and year.

Table 6: How Common Are Financial Crises After Bank Runs?

	Number of runs	Banking crisis prob.	Sovereign debt crisis prob.	Currency crisis prob.
Narrative runs	240	0.71	0.19	0.32
Deposit contractions	1644	0.24	0.12	0.25
Systemic runs	135	0.78	0.23	0.38
Non-systemic runs	69	0.60	0.17	0.34

Notes: This table plots the probability of different types of financial crises within three years of a bank run or deposit contraction. We define the dates of financial crises by combining several chronologies as described in section 2.5. Banking crisis dates are taken from Baron et al. (2021), Laeven and Valencia (2018), Jordà et al. (2017), and Reinhart and Rogoff (2011), in that order. Dates for currency and sovereign debt crises are from Laeven and Valencia (2018) and Reinhart and Rogoff (2011). Banking panics are from Baron et al. (2021).

Table 7: Comparing the Characteristics of Bank Runs and Banking Crises

	Systemic runs	Narrative runs	Quantitative runs	Any Banking crisis	BVX panics
Peak-to-trough values					
Credit to GDP (%)	-14.7	-11.6	-11.4	-15.3	-9.8
Current account to GDP (%)	-3.3	-3.0	-4.9	-3.4	-2.5
log(REER) (%)	-17.6	-13.5	-9.9	-20.7	-14.2
Investment to GDP (%)	-22.9	-14.2	-17.3	-20.1	-20.4
Bank equity returns (p.p.)	-0.4	-0.5	-0.4	-0.5	-0.6
Corp. credit spread (p.p.)	-0.0	-0.0	-0.0	-0.0	-0.0
Interventions					
Guarantees (%)	52.6	41.7	40.9	37.4	52.9
Nationalization (%)	40.8	30.6	25.9	32.0	42.2
Recapitalization (%)	36.0	36.1	27.1	28.3	35.5
Liquidity support (%)	89.5	83.3	74.8	80.1	79.5
Bank holidays (%)	24.0	16.7	11.6	14.1	13.8
Restructuring (%)	38.7	41.7	33.7	41.7	40.1
Asset purchase program (%)	24.0	19.4	18.1	19.2	18.4
N	125	65	1461	318	204

Notes: This table reports mean peak-to-trough values for selected variables around periods of bank runs, banking crises, and banking panics. We arrive at these values by first calculating the peak-to-trough values for the selected variables and then taking the mean of the peak-to-trough values around a time window of two years before and two years after an event.

Table 8: Bank Runs and Output Losses

	ΔGDP^r_t	ΔGDP^r_{t+2}	ΔGDP^r_{t+4}
Deposit Contractions w/o Runs	-0.709**	-2.091***	-2.014***
	(0.216)	(0.449)	(0.600)
Non-Systemic Runs	-1.912*	-3.726**	-4.192*
	(0.804)	(1.296)	(1.855)
Systemic Runs	-4.087***	-8.427***	-10.50***
	(1.203)	(1.243)	(1.906)
$R2$	0.113	0.154	0.202
Number Countries	177	177	177
Number Systemic Runs	75	75	75
Number Deposit Contractions	901	901	899
Number Non-Systemic Runs	51	51	50

Notes: This table plots the estimated coefficients from the following panel regression: $\Delta GDP^r_{i,t+h} = \alpha_i + \beta^{run}\mathbf{1}^{run}_{i,t} + \sum_{k=0}^{3}\gamma^k \Delta GDP^r_{i,t-k} + \epsilon_{i,t}$ with $h \in [0, 2, 4]$. The variable α_i denotes country fixed effects and $\mathbf{1}^{run}_{i,t}$ denotes one of the three indicator variables for quantitative runs, narrative runs, and systemic runs. Standard errors are double-clustered by country and year.

Table 9: What Predicts Whether Runs Become Systemic?

	Central bank exists		Deposit insurance exists		Banking crisis		Δ_3Credit/GDP		Δ_3Deposits/GDP	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Full sample										
β	-0.11***	-0.24	-0.09	-0.14	0.17***	0.17**	0.40**	0.75**	0.35**	0.44**
	(0.07)	(0.14)	(0.07)	(0.12)	(0.06)	(0.08)	(0.18)	(0.28)	(0.15)	(0.20)
Country FE	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Mean of DV	0.66	0.64	0.69	0.67	0.67	0.65	0.62	0.59	0.66	0.63
Observations	197	153	173	141	183	144	113	69	158	112
R^2	0.01	0.28	0.01	0.22	0.03	0.29	0.04	0.47	0.03	0.37
Panel B: Pre-2007										
β	-0.13***	-0.25***	-0.22**	-0.29***	0.18***	0.19**	0.34	0.63***	0.35**	0.33
	(0.07)	(0.15)	(0.11)	(0.14)	(0.07)	(0.08)	(0.23)	(0.36)	(0.15)	(0.21)
Country FE	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Mean of DV	0.66	0.65	0.68	0.68	0.65	0.65	0.60	0.57	0.65	0.65
Observations	160	128	144	117	155	126	85	53	122	91
R^2	0.01	0.29	0.04	0.25	0.04	0.31	0.02	0.48	0.03	0.36

Notes: This table reports the estimated coefficients from running bivariate OLS regressions as in equation 6. The dependent variable is an indicator equal to 1 for bank runs that are systemic, meaning they are accompanied by a deposit contraction, and 0 for non-systemic bank runs. The predictor variable $X_{i,t}$ is listed in the top row. Country fixed effects are included where indicated. Standard errors clustered by country are reported in parentheses.

Table 10: Bank-Level Summary Statistics

	Mean	Median	S.D.	10th Perc.	90th Perc.	Obs.
Panel A: OCC data (1867-1901)						
Total assets gr.	4.90	3.02	14.67	-10.49	21.80	88,313
Loans gr.	6.55	3.67	21.06	-14.61	29.47	88,308
Total liabilities gr.	6.93	4.17	21.45	-15.78	31.69	88,311
Total deposits gr.	10.05	6.06	30.14	-21.84	44.55	88,290
Non-deposit liabilities gr.	7.23	1.36	35.46	-22.75	39.38	88,312
Bank Size	13.08	12.92	0.96	12	14.37	89,283
Leverage	2.32	1.95	1.35	1.06	4.07	94,050
Debt ratio	0.66	0.66	0.11	0.51	0.80	94,050
Deposit ratio	0.44	0.44	0.17	0.20	0.66	94,050
Reserves ratio	2.29	1.95	1.39	1.09	3.77	93,475
Panel B: Call reports (1976 - 2020)						
Total assets gr.	5.45	2.58	14.89	-6.76	18.99	443,069
Loans gr.	6.82	3.48	21.26	-11.60	25.31	381,579
Total liabilities gr.	5.79	2.52	16.70	-7.32	20.06	442,376
Total deposits gr.	15.61	1.44	71.26	-13.27	27.76	437,058
Demand deposits gr.	5.68	1.74	27.28	-19.15	31.52	433,809
Non-deposit liabilities gr.	42.44	1.63	162.54	-45.64	135	423,344
Bank Size	11.64	11.48	1.40	10.11	13.33	452,260
Leverage	10.39	10.22	3.59	6.20	14.54	457,452
Debt ratio	0.90	0.91	0.05	0.86	0.94	457,453
Deposit ratio	0.85	0.88	0.10	0.77	0.92	459,334

Notes: This table summarizes the key bank-level variables for the call reports sample and the OCC sample. All growth rates are reported in real terms.

Online Appendix for "Two Centuries of Systemic Bank Runs"

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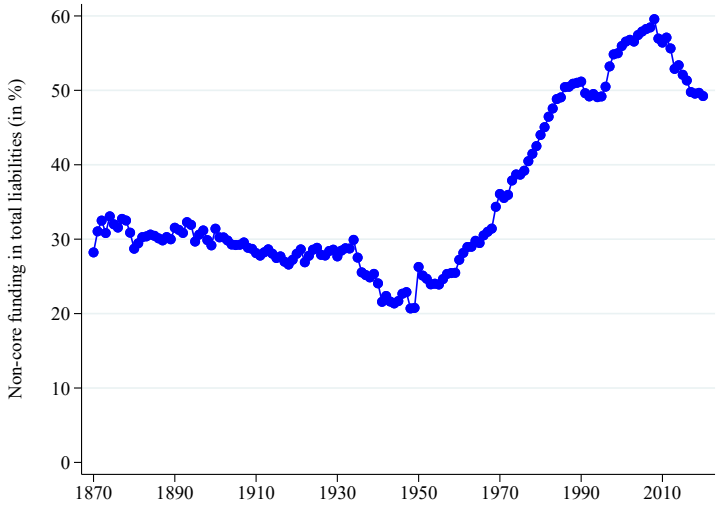
March, 2024

Contents

Figure A.1: The Share of Non-Core Funding in Total Liabilities.



Notes: This figure plots the arithmetic average share of non-core funding in total liabilities in 17 advanced economies, taken from Jordà et al. (2021).

A Supplementary Data and Results

A.1 Bank Run and Deposit Data

A.1.1 How Important Is Deposit Funding For Banks?

Figure A.1 plots the share of non-core funding in total bank liabilities using data on 17 advanced economies over the period 1870 to 2020 from Jordà et al. (2021). Consistent with their analysis, different types of non-deposit funding have become increasingly important in some countries, but played only a limited role historically.

A 2013 article in the International Monetary Fund's Global Financial Stability Report provides a detailed discussion of changes in the liability structure of banks around the world (International Monetary Fund, 2013). They document that deposits account for the overwhelming majority of bank liabilities. In emerging economies, customer deposits typically make up 60-80% of banks' funding mix. These numbers can be closer to 40-50% in the Euro Area and some other advanced economies, which rely heavily on bonds and interbank deposits. In Japan, the share of customre deposits in total liabilities is close to 80% in Japan.

These facts show that banks around the world continue to rely heavily on (retail) deposits, and this reliance was almost certainly greater in the past. As such, understanding runs on these deposits is important to understand not only historical events but also modern-day financial stability issues.

A.2 Bank-Level Data Description and Cleaning Steps

For the bank-level analysis outlined in Section 5, we rely on two different bank-level datasets for the US. The first dataset is the Office of the Comptroller of the Currency (OCC) dataset and the second dataset is the call reports for US banks. In section A.11.2 of the appendix, we extend our bank-level analysis to non-US banks using the Orbis dataset. In the following, we describe the three datasets in more detail and elaborate on how we cleaned the datasets step-by-step.

A.2.1 Office of the Comptroller of the Currency (OCC) Data

The OCC dataset covers the period of the national banking era in the US in annual frequency. The data ranges from 1867 to 1904 and includes over 100,000 individual balance sheets of national banks. The bank balance sheets were digitized were first used in Carlson et al. (2022) using the methodology outlined in Correia and Luck (2023). We made the following adjustments to the original dataset to control the potential influence of outliers:

1. We exclude observations with bank equity or total liabilities equal to zero.
2. We exclude any observations for which the difference between the asset side and the liability side (equity and total liabilities) of banks is larger than 5%.
3. We trim the 99.5'th percentile of the log differences for the following variables:
    - Total liabilities
    - Non-deposit liabilities
    - Loans
    - Deposits
    - Total Assets
4. We trim the 0.5'th and the 99.5'th percentile of the following variables:
    - Leverage
    - Reserve Ratio
    - Debt Ratio
    - Deposit Ratio

In our final dataset we are left with 95,000 bank-year observations that include 5,690 individual bank over 38 years.

A.2.2 Call Reports Data

The second dataset are the Call Reports for US banks between 1976 and 2020, which allow us to analyze the bank-level implications of three bank run episodes. We clean the raw data by applying the following steps:

1. We exclude observations with bank equity, total assets, or total liability smaller equal zero.
2. We exclude negative observations in total loans, total deposits, time deposits, or demand deposits.
3. We trim on the 1st and 99'th percentile of the log differences for the following variables:
    - Total liabilities
    - Non-deposit liabilities
    - Loans
    - Deposits
    - Demand Deposits
    - Total Assets
4. We trim on the 0.5'th and the 99.5'th percentile of the following variables:
    - Leverage
    - Debt Ratio
    - Deposit Ratio

Finally, for the baseline analysis highlighted in section 5, we transform the call reports data to annual frequency to make the comparison to the OCC sample easier. We annualize the data by only keeping the end of the fourth quarter values of all relevant stock variables. After applying these steps, our final dataset includes 477,672 bank-year observations with 23,581 unique banks.

A.2.3 Orbis Data

The dataset we use is a subset of the original Orbis dataset. The raw dataset includes only financial firms between 1990 and 2022 on an annual frequency. We entirely focus on banks and drop all other financial companies (non-banks). Further, we drop all US banks from the sample since we already cover the same banks in the more comprehensive call reports dataset. We then clean the raw dataset by following the steps outlined in Kalemli-Ozcan et al. (2015). The steps of our data cleaning process are:

1. Removing duplicates on the bank-year level by following the procedure of Kalemli-Ozcan et al. (2015)
2. Dropping observations with missing currency units
3. Dropping observations for which the BvD's country code and the ISO code contradict each other
4. Removing large jumps in total assets that do not originate from changes in the measurement units

5. Harmonizing the units in which the variables are reported across time and banks
6. Dropping observations for which the reported currency neither coincides with the domestic currency, currencies of neighboring countries in the same region, the US dollar, or the Euro.
7. Transforming the currencies in which each bank balance sheets items is measured to domestic currency
8. Dropping bank-year observations for which either assets, operational income, net income, or employment are missing
9. Dropping banks with negative assets, or employment
10. Dropping observations with negative values in assets, total liabilities, equity, deposits, loans, leverage, or other securities
11. Dropping observations before 2005 due to poor data coverage
12. Eliminating bank-year observations with a leverage larger than 100, a debt ratio smaller than 0.4, or a difference between the asset side of the balance sheet and the liability side (total liabilities + equity) larger than five percent
13. We trim on the 98'th percentile of the log differences for the following variables:
    - Deposits
    - Loans
    - Total liabilities
    - Assets
    - Non-deposit liabilities
14. We trim on the 1'st and the 99'th percentile of the following variables:
    - Leverage
    - Debt Ratio
    - Deposit Ratio
    - Reserve Ratio

We are left with 63,831 bank-year observations that include 8,772 unique banks across 133 countries. Out of these countries, 19 individual countries experienced a bank run between 2005 and 2020. The total number of bank runs overlapping with the Orbis sample is 20. We report the key variables for the Orbis sample in Table A.1.

Table A.1: Summary Statistics Orbis Bank-Level Data

	Mean	Median	S.D.	10th Perc.	90th Perc.	Obs.
			Orbis Bank Data			
Total assets gr.	3.31	1.77	15.08	-13.02	21.35	52,058
Loans gr.	3.72	2.07	17.98	-14.48	23.06	51,282
Total liabilities gr.	3.40	1.73	16.06	-13.71	22.30	52,049
Total deposits gr.	4.07	1.97	18.80	-14.52	24.41	51,279
Non-deposit liabilities gr.	5.53	3.41	16.37	-11.99	24.94	51,273
Bank Size	19.62	18.86	3.74	16.14	25.21	54,226
Leverage	11.69	10.04	7.53	4.29	20.82	62,539
Debt ratio	0.89	0.91	0.08	0.81	0.95	62,540
Deposit ratio	0.77	0.85	0.19	0.51	0.92	61,623
Reserves-to-Deposits	0.04	0.02	0.09	0.00	0.08	61,623

Notes: This table summarizes the key bank-level variables for the Orbis sample. All growth rates are reported in real terms.

A.3 Overlap of Bank Runs and Financial Crises

A.4 Comparing Precursors of Runs and Other Crises

A large literature studies the precursors of financial crises. Financial factors such as credit growth, capital inflows, or real exchange rate appreciations are widely considered to contribute to a build-up of vulnerabilities that can expose the financial system to shocks (see, e.g., Kaminsky and Reinhart, 1999; Gourinchas and Obstfeld, 2012; Schularick and Taylor, 2012). A related strand of literature links the outbreak of bank runs directly to the business cycle (see, e.g., Gorton, 1988; Calomiris and Gorton, 1991).

To understand how these patterns differ from those observed during bank runs, we run a set of predictive panel regressions that take the following form:

$$\Delta P(Bank\ run)_{i,t} = \alpha_i + \beta X_{i,t-3,t-1} + \epsilon_{i,t} \tag{A.1}$$

where $P(Bank\ run)_{i,t}$ is a dummy variable equal to 1 for the first year t a country i experiences a bank run event (or, analogously, another type of banking crisis). $X_{i,t}$ is some crisis predictor, where we consider the growth rate of real GDP between three years to one year before the run/crisis occurs, and the changes between three years to one year before the run/crisis in the following variables: bank equity returns, the credit spread, credit-to-GDP, and deposit-to-GDP. α_i denotes country fixed effects. We evaluate the performance of the predictors in an univariate regression. We estimate equation A.1 using OLS and double-cluster standard errors by the country and year level.

We are particularly interested in the ability of these different predictors to distinguish between periods of crisis and calm. We compare the classification ability of different

Table A.2: Conditional Probabilities of a Bank Run Following a Financial Crisis.

	Number of crises	Narrative bank run prob.	Deposit outflows prob.	Systemic bank run prob.	Only narrative run prob.
Banking crises	.	.	.	.	.
Combined chronology	328	0.44	0.77	0.34	0.13
Reinhart and Rogoff (2014)	286	0.44	0.69	0.32	0.13
Laeven and Valencia (2018)	139	0.31	0.74	0.23	0.11
Jordà et al. (2017)	87	0.59	0.81	0.43	0.18
Baron et al. (2021)	205	0.56	0.78	0.40	0.16
Baron et al. (2021) panics	173	0.62	0.80	0.46	0.17
	.	.	.	.	.
Currency crises	.	.	.	.	.
Combined chronology	496	0.13	0.60	0.11	0.05
Reinhart and Rogoff (2014)	585	0.11	0.56	0.10	0.04
Laeven and Valencia (2018)	227	0.13	0.50	0.09	0.06
	.	.	.	.	.
Sovereign debt crises	.	.	.	.	.
Combined chronology	253	0.14	0.63	0.15	0.05
Reinhart and Rogoff (2014)	226	0.14	0.57	0.16	0.04
Laeven and Valencia (2018)	138	0.19	0.55	0.13	0.08

Notes: This table visualizes the conditional probabilities of a bank run within two years following a financial crisis. We define the dates of financial crises by combining several chronologies as described in section 2.5. Banking crisis dates are taken from Baron et al. (2021), Laeven and Valencia (2018), Jordà et al. (2017), and Reinhart and Rogoff (2011), in that order. Dates for currency and sovereign debt crises are from Laeven and Valencia (2018) and Reinhart and Rogoff (2011). Banking panics are from Baron et al. (2021).

models, we again use the Area Under the Curve.

Table A.3: Conditional Probabilities of Banking Crises Following a Bank Run

	Number of runs	Banking crisis JKMS	Banking crisis R&R	Banking crisis L&V	Banking crisis JST	Banking crisis BVX	Banking panics BVX
Narrative runs	240	0.71	0.75	0.56	0.80	0.82	0.80
Deposit contractions	1644	0.24	0.29	0.20	0.31	0.34	0.36
Systemic runs	135	0.78	0.83	0.63	0.83	0.88	0.86
Non-systemic runs	69	0.60	0.67	0.42	0.74	0.73	0.70

Notes: This table visualizes the conditional probabilities of a banking crisis within two years following a bank run. We define the dates of financial crises by combining several chronologies as described in section 2.5. Banking crisis dates are taken from Baron et al. (2021), Laeven and Valencia (2018), Jordà et al. (2017), and Reinhart and Rogoff (2011), in that order. Dates for currency and sovereign debt crises are from Laeven and Valencia (2018) and Reinhart and Rogoff (2011). Banking panics are from Baron et al. (2021).

	Bank Runs AUC	Systemic Runs AUC	Banking Crises AUC
Real GDP growth, $t-3$ to $t-1$	0.510	0.510	0.560
Bank equity returns change, $t-3$ to $t-1$	0.530	0.540	0.590
Credit spread change, $t-3$ to $t-1$	0.610	0.690	0.570
Credit-to-GDP change, $t-3$ to $t-1$	0.620	0.660	0.580
Total Deposits-to-GDP change, $t-3$ to $t-1$	0.570	0.610	0.550

Table A.5: What Predicts Runs, What Predicts Crises?

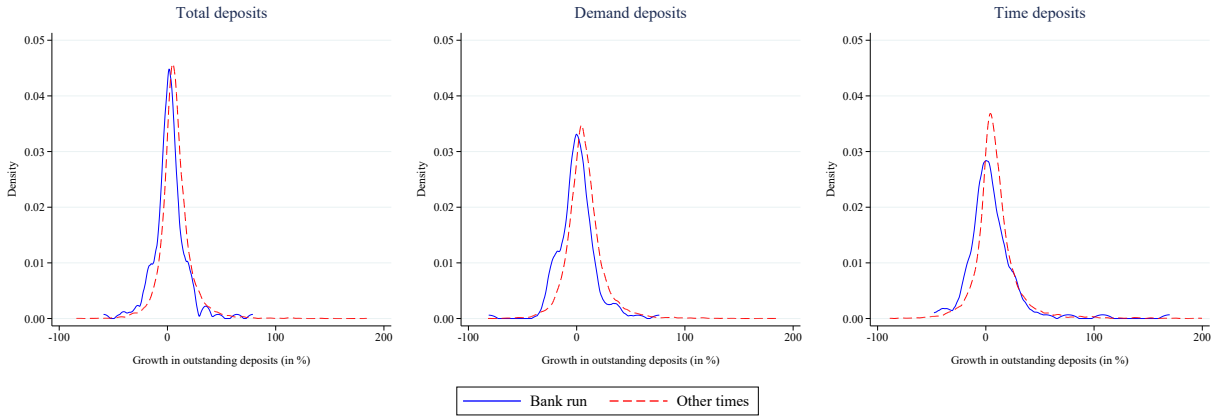
Notes: This table reports the Area Under the Curve (AUC) values for different early warning models of indicators for the onset of bank runs or banking crises. These results are based on univariate specifications, such that each cell refers to the result of one empirical model.

We base our evaluation on the value of the Area Under the Curve of the Receiver Operating Characteristic (ROC) curve that we report in Table A.5. For the ROC analysis, we use the list of bank runs, systemic bank runs, and the list of banking crises as the *true* events that we try to predict by using a set of business cycle indicators $X_{i,t-1,t-3}$.

The ROC is defined as the ratio of predicted true positives to predicted false positives for a specific probability threshold setting when using indicator X. We obtain the ROC curve for indicator X by varying the probability threshold from highest to lowest. The area under the resulting ROC curve (AUC) measures the overall performance of the classifier. The higher the AUC value the better the classifier performs even under conservative (high) thresholds.

Bank runs and systemic runs coincide more often with large contractions of bank balance sheets such as contractions in deposit-to-GDP or loans-to-GDP. Classical business cycle indicators such as the growth rate of real GDP are more informative about

Figure A.2: Distribution of Real Deposit Growth Rates During Bank Runs

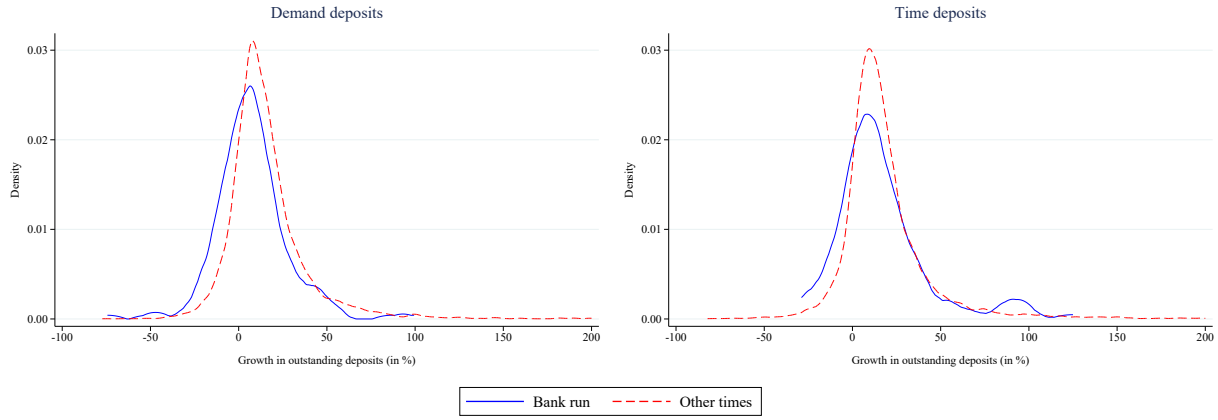


Notes: These figures plot the distribution of real growth rates in demand, time, or total deposits during periods of bank runs vs. other times.

banking crisis. The same holds for bank equity returns. Bank equity returns perform better in indicating future banking crisis. The results support our strategy to use deposit contractions for identifying periods of systemic bank runs since these run periods are indeed accompanied by larger deposit contractions than one would observe during banking crises.

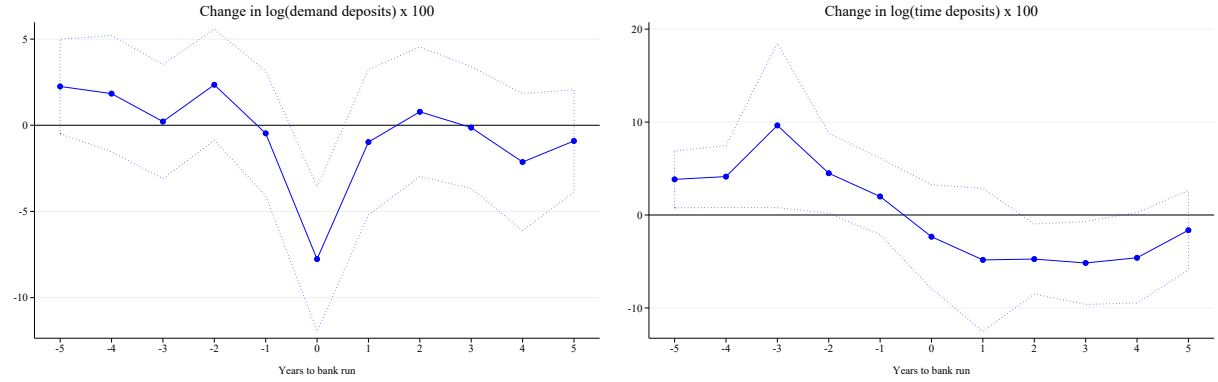
A.5 Robustness: Bank Runs and Deposit Contractions

Figure A.3: Distribution of deposit growth rates



Notes: These figures plot the distribution of nominal growth rates in demand or time deposits during periods of bank runs vs. other times. Growth rates are trimmed at 200% to abstract from the influence of major inflation episodes.

Figure A.4: Contractions of Demand and Time Deposits During Runs



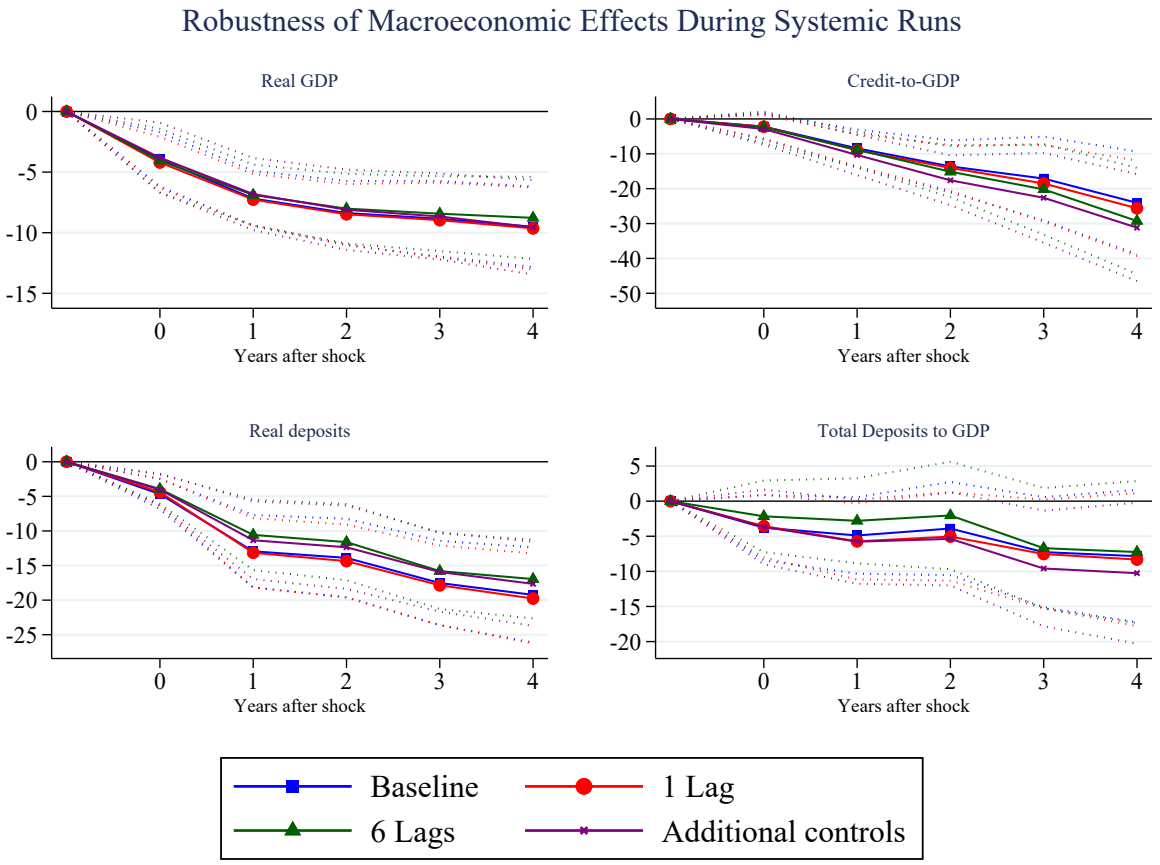
Notes: These figures report the results of the following event study regression: $\Delta Y^r_{i,t} = \alpha_i + \sum_{k=-5}^{5} \beta^k \mathbf{1}^{run}_{i,t+k} + \epsilon_{i,t}$. Standard errors are double-clustered by country and year.

Table A.4: Predicting Bank Runs With Lagged Financial Crises

	Dependent variable:			
	Narrative bank run	Systemic bank run	Deposit contraction	Non-systemic run
L.Banking crisis	0.054***	0.034*	0.021	0.020
	(0.015)	(0.016)	(0.022)	(0.010)
L2.Banking crisis	-0.006	-0.010	0.022	0.000
	(0.009)	(0.006)	(0.023)	(0.006)
L.Currency crisis	-0.004	0.001	0.013	-0.002
	(0.005)	(0.006)	(0.020)	(0.004)
L2.Currency crisis	0.007	0.003	0.013	-0.002
	(0.007)	(0.006)	(0.018)	(0.004)
L.Sovereign debt crisis	-0.010*	-0.015***	0.022	-0.001
	(0.005)	(0.003)	(0.031)	(0.007)
L2.Sovereign debt crisis	0.008	-0.001	-0.050*	0.006
	(0.008)	(0.009)	(0.020)	(0.008)
Country FE	Yes	Yes	Yes	Yes
Number Countries	161	156	156	156
Number Run episodes	207	117	1,199	57
Observations	17,661	9,845	9,845	9,845
R^2	0.02	0.02	0.02	0.02
AUC	0.56	0.56	0.51	0.58

Notes: Lagged financial crises as predictors of bank runs. The table summarizes the regression coefficients of the following panel regression: $\mathbf{1}_{i,t}^{run,j} = \alpha_i + \sum_{k=1}^{2}(\beta^{bcrisis,k}\mathbf{1}_{i,t-k}^{bcrisis} + \beta^{curr,k}\mathbf{1}_{i,t-k}^{curr} + \beta^{sovDebt,k}\mathbf{1}_{i,t-k}^{sovDebt}) + \epsilon_{i,t}$. The variable α_i denotes country fixed effects, $\mathbf{1}_{i,t}^{run,j}$ denotes any of the four bank run dummies: narrative runs, systemic runs, quantitative runs, and runs with narrative evidence only. The dummy variables on the right-hand side are (i) any banking crisis, (ii) any currency crisis, and (iii) any sovereign debt crisis. Standard errors are double-clustered by country and year.

Figure A.5: Robustness of Local Projections for the Macroeconomic Aftermaths of Systemic Runs.



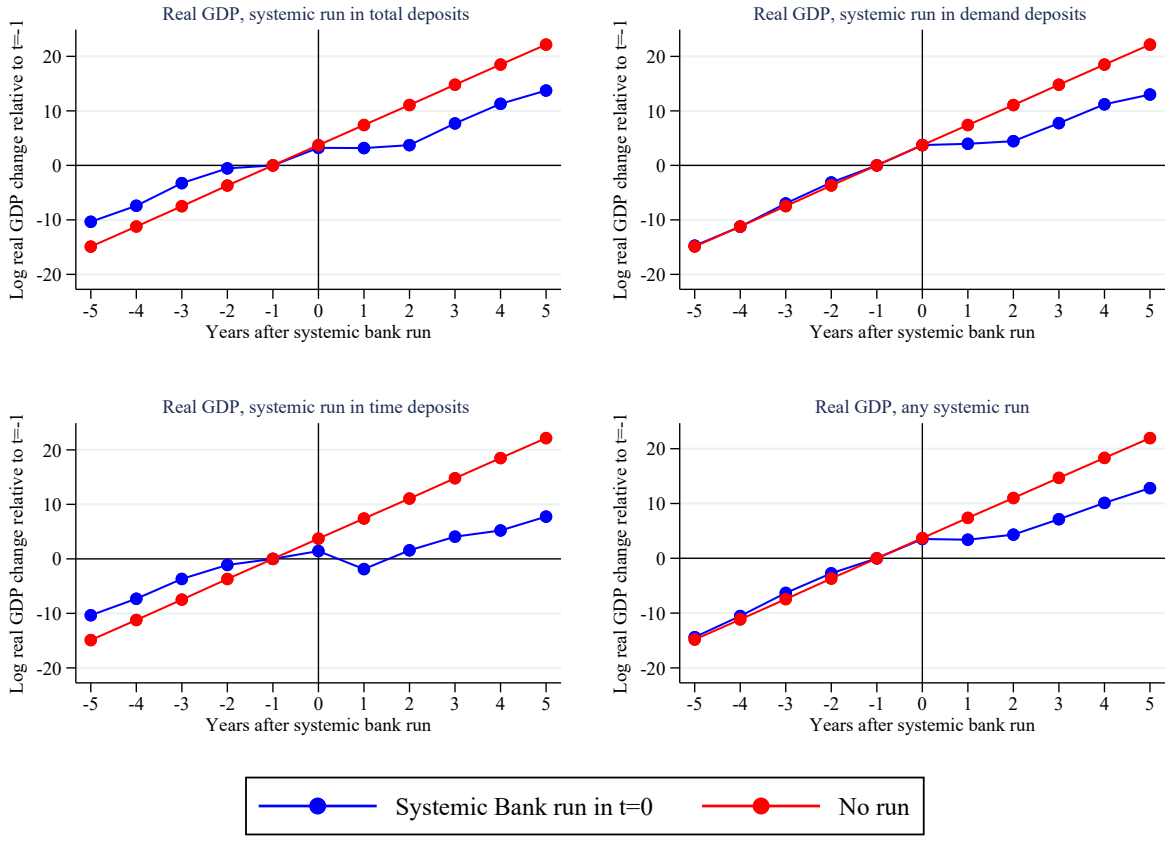
Notes: The robustness checks include the reduction of lags for the control variables (red lines), an increase of lags of the control variables (darkgreen lines), and the inclusion of additional macroeconomic controls (purple lines). Standard errors are double clustered by country and by year. We report 95% confidence bands.

A.6 Robustness: The Macroeconomic Aftermaths of Bank Runs

In this section, we shed light on the robustness of the macroeconomic aftermaths that we depict in Section 4.2. We focus on the robustness of the local projections from the baseline regression equation (1) and visualize the robustness exercises in Figure A.5. The blue lines in the figure depict the baseline results from the main body of the paper (see equation (1)). The results depicted by the red lines are based on the same set of control variables but we only allow for one lag of control variables. The dark green graphs visualize the outcome of local projections for the same set of control variables but for up to six lags. For the specification visualized by the purple lines, we use again three lags of lagged macroeconomic control variables but extend the set of variables to include lagged values of demand deposit growth rates, time deposit growth rates, and changes in credit-to-GDP.

We find the estimated macroeconomic aftermaths of bank runs to be very robust to changes in the number of lags and the inclusion of additional macroeconomic control

Figure A.6: Path of real GDP and credit-to-GDP around Systemic Runs



Notes: The figures plot the real GDP path around periods of systemic bank runs (blue line). We differentiate between systemic runs in specific deposit categories and runs in any of the three categories (i) demand deposits, (ii) time deposits, and (iii) total deposits. The red line depicts the counterfactual path during periods of no runs.

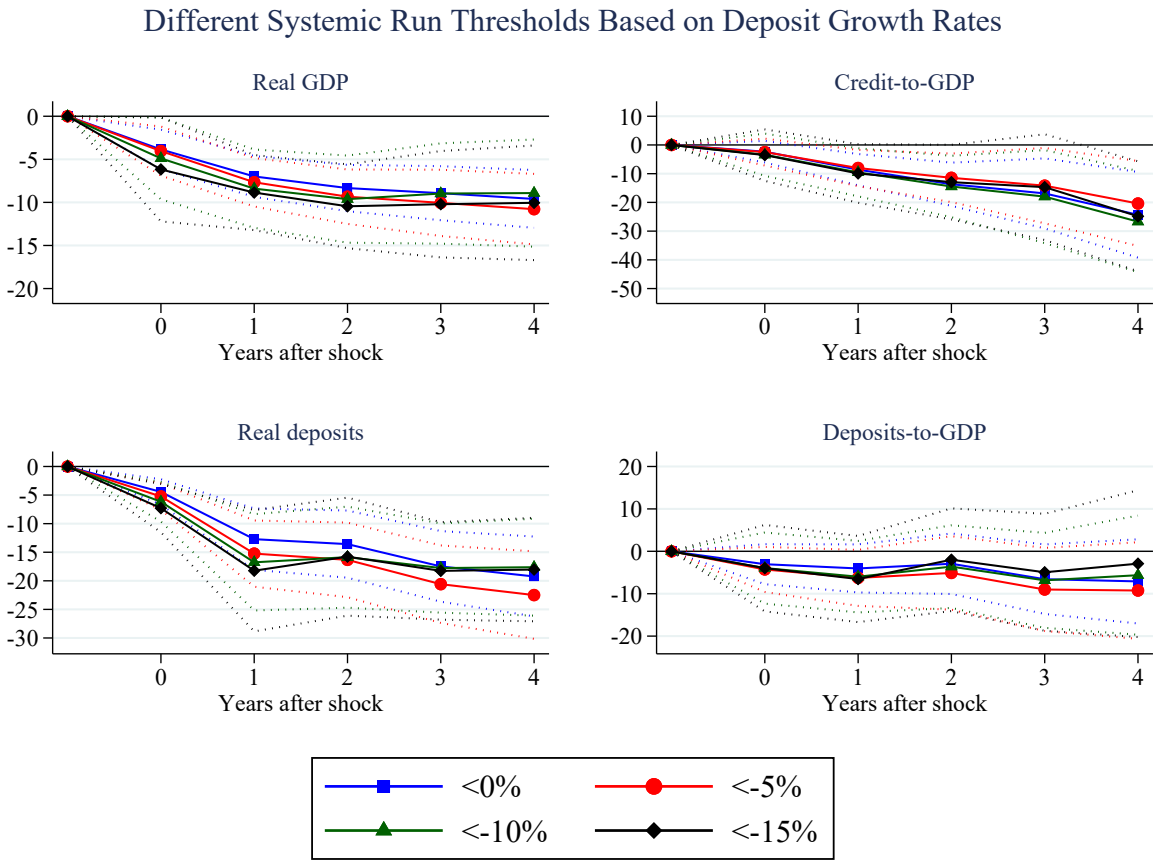
variables. All estimated local projections are significant on a 95% confidence interval.

The persistent output losses shown in the local projections imply a trend shift in GDP after a systemic bank run. Hence, in Figure A.6 we look in detail at the path of real GDP around systemic bank runs per deposit category. We validate that all systemic bank runs, regardless on which deposit category the run occurs, imply always large shifts in the trend of GDP after bank runs.

A.7 Output Responses for Alternative Systemic Run Definitions

In the main body of the paper, we define systemic bank runs as the intersection of narrative evidence for a bank run and an aggregate outflow of nominal deposits (either total deposits, demand deposits, or time deposits) within a one-year time window around the narrative run. In this section, we evaluate the robustness of the macroeconomic after-

Figure A.7: Macroeconomic Aftermaths around Systemic Runs When Classifying System Runs via Alternative Deposit Contraction Thresholds Measured in Percentage Points

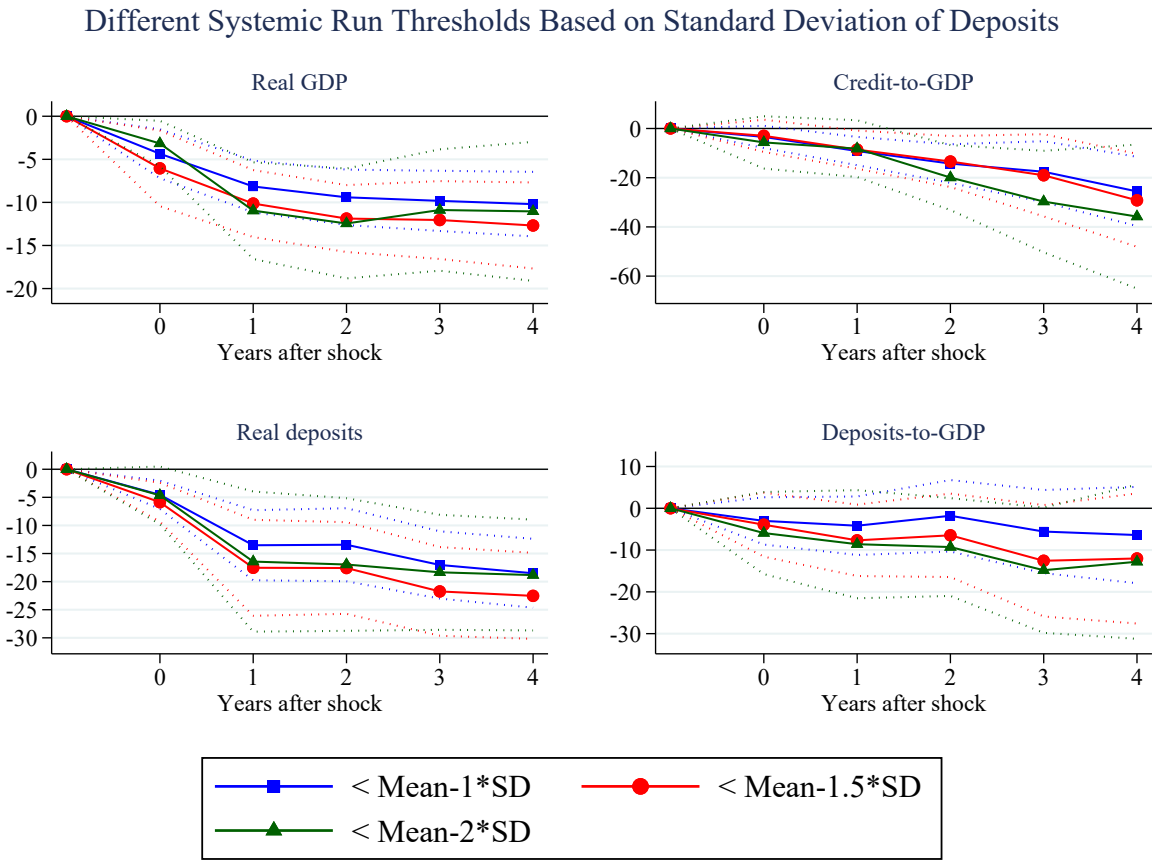


Notes: For the exercises visualized in the figure, we classify systemic runs via different thresholds for deposit contractions. Thresholds are denoted in percentage points of the annual deposit growth rate. We plot the responses of real GDP growth rate, changes in credit-to-GDP, real total deposit growth rate, and changes in total deposits-to-GDP. The blue bands depict 95% confidence bands. Standard errors are double clustered on both the country and the year level.. The results are based on the local projection specified in equation 1.

maths of systemic ban runs, when using alternative thresholds for quantifying distress in aggregate deposits. In the first exercise, we look at the responses of key macroeconomic figures to systemic runs when setting the quantitative threshold for determining systemic runs to either (i) any contraction, (ii) a contraction of 5%, (iii) a contraction of 10%, or (iv) a contraction of 15%.

We plot in Figure A.7 the local projections for real GDP growth, credit-to-GDP, real deposit growth rate, and total deposits-to-GDP to the different systemic bank runs definitions (i)-(iv). We make two observations. First, the adverse effects of systemic runs are stronger when conditioning on larger deposit contractions. Second, the magnitude of the responses of all four variables are very similar and the responses are significant on 95% error bands.

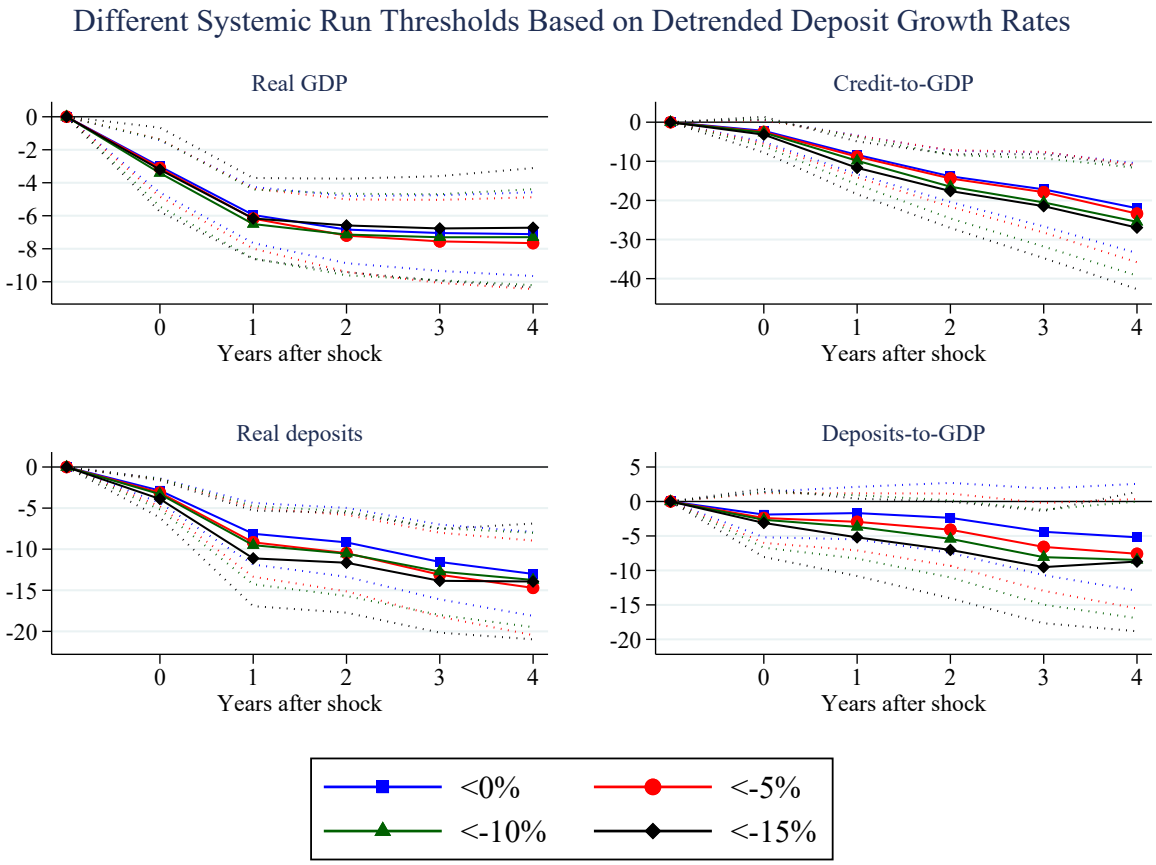
Figure A.8: Macroeconomic Aftermaths around Systemic Runs When Classifying System Runs via Standard Deviations Below the Country's Average Deposit Growth Rate



Notes: For the exercises visualized in the figure, we classify systemic runs via different thresholds for deposit contractions. Thresholds are denoted in standard deviations from the country's mean annual deposit growth rate. We plot the responses of real GDP growth rate, changes in credit-to-GDP, real total deposit growth rate, and changes in total deposits-to-GDP. The blue bands depict 95% confidence bands. Standard errors are double clustered on both the country and the year level.. The results are based on the local projection specified in equation 1.

Conditioning on concrete negative percentage points as threshold values for defining systemic runs doesn't account well for heterogeneity in the volatility of countries' deposit growth rates. Thus, for the second exercise, we define systemic bank runs as the intersection of narrative evidence of a run and a growth rate of any type of nominal deposit that is (i) one standard deviation below the country mean, (ii) one-and-a-half standard deviations below the country mean, and (iii) two standard deviations below the country mean. In figure A.8 we summarize the results from this exercise. The magnitude of the real effects in response to systemic runs are all very similar. Under all specifications, we observe a significant drop in real GDP. A run with narrative evidence and a deposit growth rate two standard deviations below the country mean is rare which results in wider error bands on the medium-to-long horizon.

Figure A.9: Macroeconomic Aftermaths around Systemic Runs When Classifying System Runs via Alternative Deposit Contraction Thresholds Measured in Percentage Points for Detrended Deposits

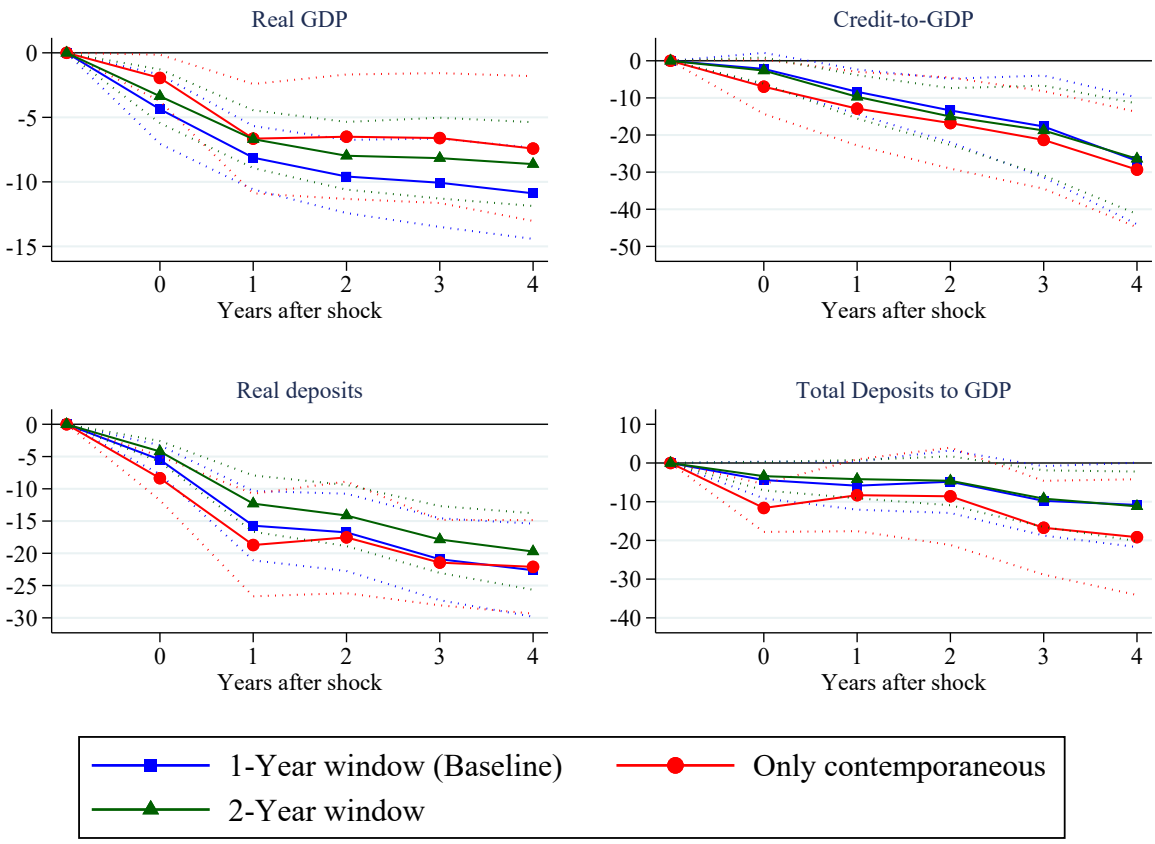


Notes: For the exercises visualized in the figure, we classify systemic runs via different thresholds for contractions in detrended nominal deposits. Thresholds are denoted in percentage points of the detrended annual deposit growth rates. We plot the responses of real GDP growth rate, changes in credit-to-GDP, real total deposit growth rate, and changes in total deposits-to-GDP. The blue bands depict 95% confidence bands. Standard errors are double clustered on both the country and the year level.. The results are based on the local projection specified in equation 1.

As a third exercise, we use again the same concrete threshold values in percentage points as in the first exercise ($< 0\%$, $< -5\%$, $< -10\%$,$< -15\%$) but this time we detrend nominal deposit growth rates on the country level. As one can see in Figure A.9, the results are qualitatively similar to the case when we did not detrend the deposit series. All responses of the four dependent variables are similar in magnitude and significant on a 95% confidence level.

In the last exercise we vary the time window around bank runs to capture deposit contractions to classify the systemic runs. We use two alternative definition to classify systemic runs. The first alternative definition classifies a bank run as systemic only if there was a deposit contraction in any deposit category within the same year of the narrative

Figure A.10: Macroeconomic Aftermaths around Systemic Runs When Classifying Systemic Runs Using Alternative Time Windows to Capture Deposit Contractions.



Notes: The figure visualizes the macroeconomic aftermaths around systemic runs when classifying systemic runs using wider or smaller time windows to capture accompanying deposit contractions around narrative runs. We plot the responses of real GDP growth rate, changes in credit-to-GDP, real total deposit growth rate, and changes in total deposits-to-GDP. The blue bands depict 95% confidence bands. Standard errors are double clustered on both the country and the year level.. The results are based on the local projection specified in equation 1.

evidence. The second definition allows for a two-year window around the narrative evidence. We then compare in Figure A.10 the aftermaths of systemic runs from the main body of the paper using a one-year time window, with the two alternative systemic run definitions. We find stronger contractions on deposits when using the contemporaneous definition but smaller effects in terms of GDP. The results for systemic runs using the one-year or the two-year window are nearly identical.

A.8 Output Response During Systemic Runs in High- versus Low-Income Countries

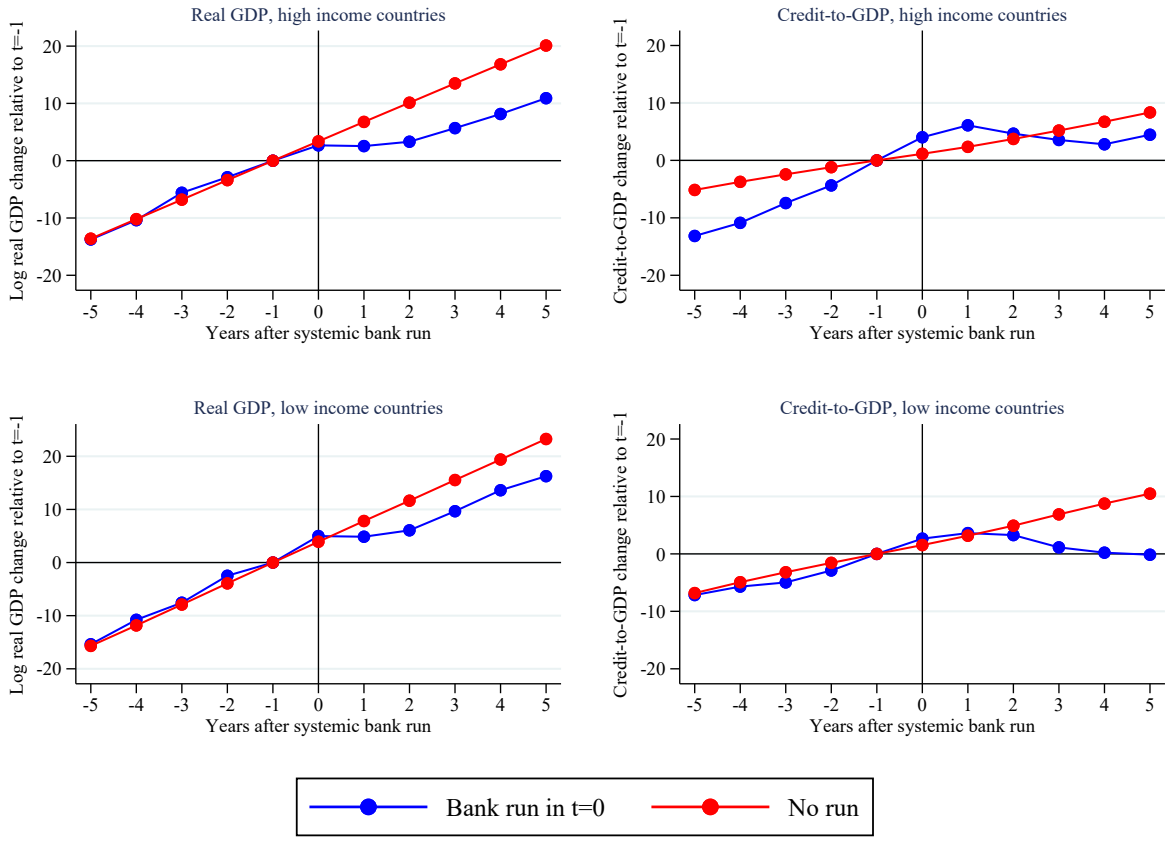
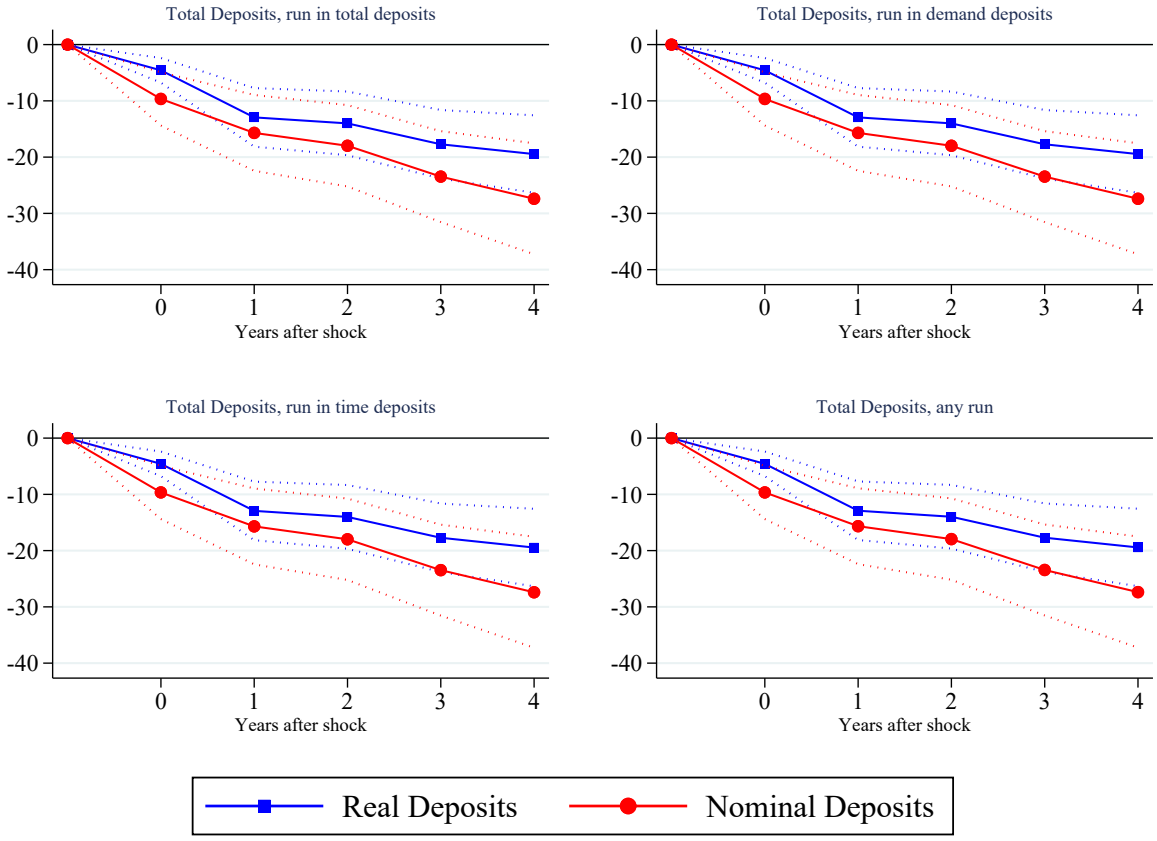


Figure A.11: Real GDP paths and credit-to-GDP paths of high-income and low-income countries during any systemic bank runs (blue lines). The red line depicts the counterfactual path during periods of no runs.

A.9 Output Response During Bank Runs, Banking Crises, and Banking Panics

A.9.1 Real vs Nominal Deposit Contractions

Figure A.12: Contractions in Real and Nominal Deposits Around Systemic Runs.



Notes: The figure compares the growth rates of both nominal deposits and real deposits around four different systemic run categories: (i) a systemic run in total deposits, (ii) a systemic run in demand deposits, (iii) a systemic run in total deposits, or (iv) any run in either one of the three categories. The error bands depict 95% confidence intervals. Standard errors are double clustered on both the country and the year level.. The results are based on the local projection specified in equation 1.

A.9.2 Wars, Conflicts, and Natural Disasters

Wars between countries or intra-state conflicts such as civil wars might overlap with periods that we identified as bank runs. The same holds true for large natural disasters. In such cases banking distress, such as runs, panics, or banking failures might originate from shocks such as wars or large natural disasters (see, e.g., Baron and Dieckelmann, 2021). In this section, we hence investigate the robustness of the macroeconomic aftermaths after systemic runs when controlling simultaneously for (i) inter-state wars, (ii) intra-state conflicts (e.g. civil wars), and (iii) large natural disasters. We construct one dummy variable that combines evidence for both inter-state and intra-state conflicts, by using the correlates of wars dataset from Sarkees and Wayman (2010). The dummy variables define whether there existed a conflict within a given year or the previous two years in a specific country. Next, we construct another dummy that provides us with the information whether for a specific year or the previous two years, a country was hit by

a large natural disaster. We gather the data on natural disasters from Delforge et al. (2023).

We are interested in the following analysis of how much of the output effects of systemic runs, non-systemic runs, and deposit contractions can be explained by large natural disasters or wars and conflicts that occur around the same time as the bank runs. We extend the local projections equation 1 from the main body of the paper by adding the dummies for wars and natural disasters:

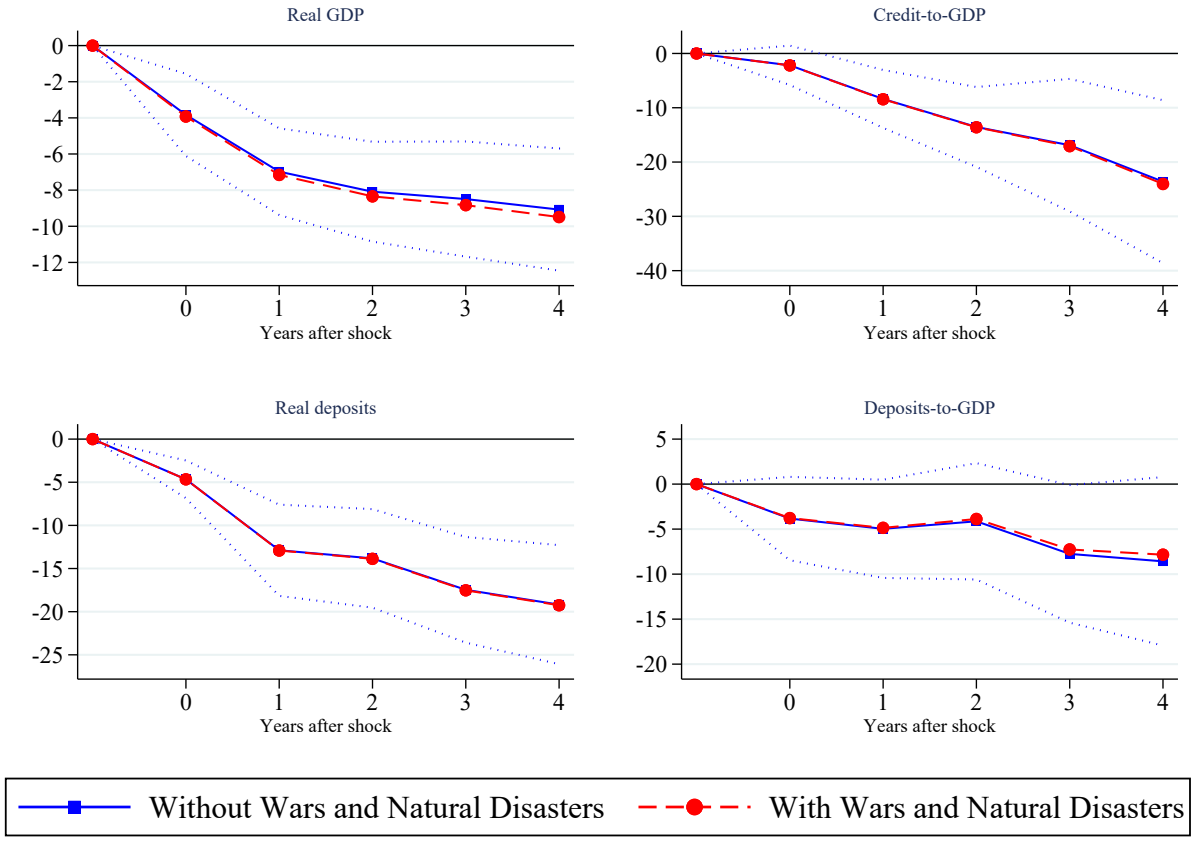
$$\Delta Y_{i,t+h} = \alpha_i + \beta^{run}\mathbf{1}^{run}_{i,t} + \beta^{wars}\mathbf{1}^{wars}_{i,t} + \beta^{ndis}\mathbf{1}^{ndis}_{i,t} + \sum_{k=1}^{3}\gamma^k \Delta X^r_{i,t-k} + \epsilon_{i,t} \text{ with } h \in [0,2,4] \quad \text{(A.2)}$$

The vector $Y_{i,t+h}$ contains the following variables: real GDP growth rates, credit-to-GDP, real deposit growth rates, and total deposits-to-GDP. The variable α_i denotes country fixed effects, $\mathbf{1}^{run}_{i,t}$ denotes any of the three bank run dummy variables, $\mathbf{1}^{wars}_{i,t}$ is a dummy for inter-state conflicts (wars) and intra-state conflicts (civil wars), and $\mathbf{1}^{ndis}_{i,t}$ denotes a dummy variable for large natural disasters.

Figure A.13 visualizes the output losses, and real growth rates of total deposits, together with the changes in credit-to-GDP and total deposits-to-GDP after systemic runs when controlling simultaneously for large natural disasters and conflicts. We observe that systemic runs that overlap with conflicts or natural disasters coincide with larger contractions in real deposits. The output losses and credit-to-GDP are not affected by controlling for wars and natural disasters.

Next, we focus on the potential confounding effects of natural disasters and wars for the output losses associated with systemic runs, non-systemic runs, and deposit contractions. We summarize the output losses that we calculated via the local projections in equation A.2 in Table A.6. We find a negative and significant effect of conflicts on real GDP growth. However, the coefficients on any bank-run dummy variable and deposit contractions remain the same regardless of whether we control for wars and disasters or not.

Figure A.13: Macroeconomic Aftermaths Around Systemic Runs Outside of Periods of Conflicts and Natural Disasters



Notes: The figure visualizes the robustness of the macroeconomic aftermaths around systemic runs when controlling for large natural disasters and inter-state conflicts. We plot the responses of real GDP growth rate, changes in credit-to-GDP, real total deposit growth rate, and changes in total deposits-to-GDP. The blue bands depict 95% confidence bands. Standard errors are double clustered on both the country and the year level. For the results depicted by the red lines, we do not control for wars and natural disasters.

Table A.6: Output Losses Around Runs and Banking Crises Outside of Wars and Natural Disasters

	(1)			(2)		
	ΔGDP^r_t	ΔGDP^r_{t+2}	ΔGDP^r_{t+4}	ΔGDP^r_t	ΔGDP^r_{t+2}	ΔGDP^r_{t+4}
Deposit Contractions	-0.900***	-2.553***	-2.713***	-0.898***	-2.546***	-2.705***
	(0.259)	(0.470)	(0.558)	(0.257)	(0.474)	(0.561)
Non-Systemic Runs	-2.104***	-4.588***	-3.742*	-2.054***	-4.573***	-3.777*
	(0.501)	(1.179)	(1.701)	(0.511)	(1.203)	(1.689)
Systemic Runs	-4.217***	-9.021***	-10.08***	-4.197***	-9.007***	-10.09***
	(1.200)	(1.299)	(1.667)	(1.199)	(1.308)	(1.684)
Conflicts				-0.969***	-0.601	0.255
				(0.255)	(0.717)	(1.196)
Large Natural Disasters				-0.0814	0.324	0.522
				(0.207)	(0.528)	(0.792)
R^2	0.121	0.193	0.244	0.123	0.193	0.244
Number Countries	156	156	156	156	156	156
Number Systemic Runs	62	62	61	62	62	61
Number Depo. Contractions	748	748	745	748	748	745
Numer Non-Systemic Runs	42	42	42	42	42	42
Number Conflicts	984	984	971	984	984	971
Number Disasters	1935	1935	1924	1935	1935	1924

Notes: The table summarizes the output losses from bank runs, deposit contractions, conflicts and wars, and large natural disasters from regression equation (A.2). When not controlling for conflicts or large natural disasters we still conditioning the sample on conflicts and large natural disasters to be non-missing.

A.10 Comparing bank runs with Baron et al. (2021) banking panics

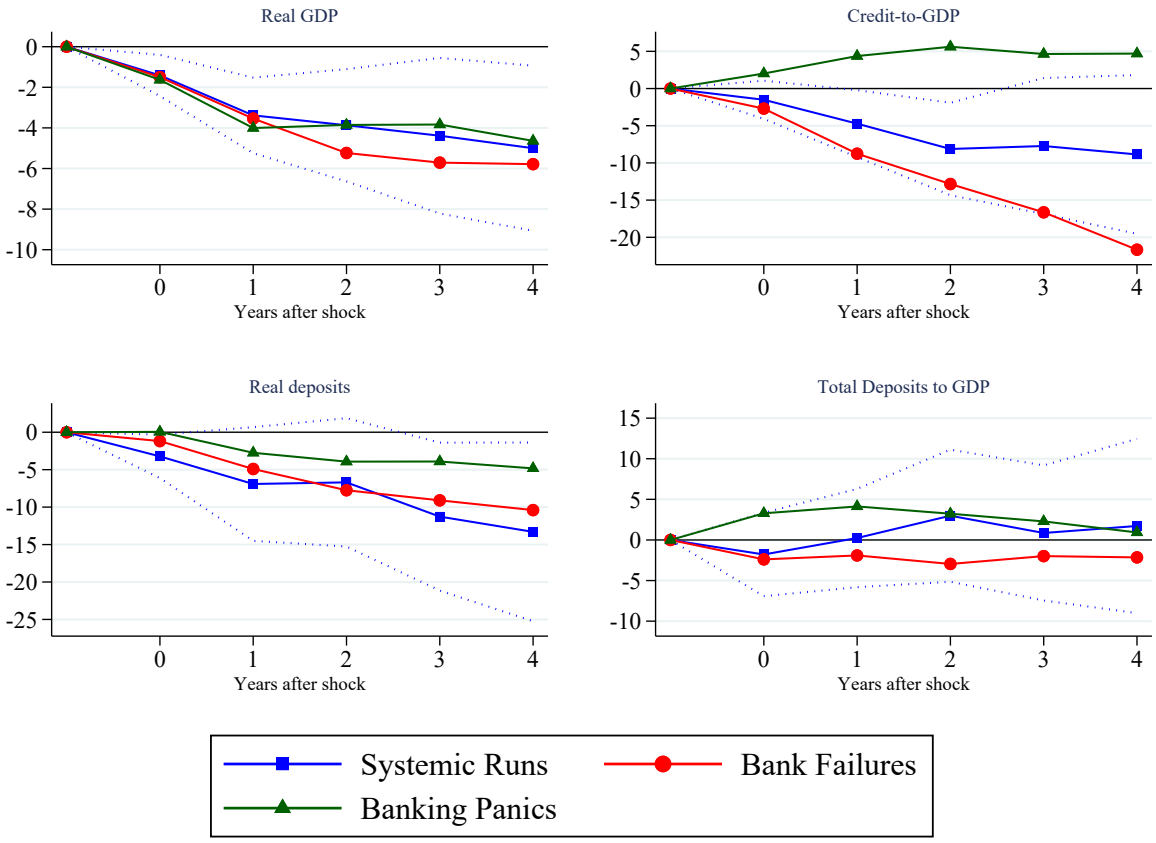
In this section, we explore the output losses of systemic bank runs when controlling for the Baron et al. (2021) banking panics or widespread banking failures. We specify the following local projections:

$$\Delta Y^r_{i,t+h} = \alpha^h_i + \beta^{run,h}\mathbf{1}^{run}_{i,t} + \beta^{run,h}\mathbf{1}^{panic}_{i,t} + \beta^{run,h}\mathbf{1}^{fail}_{i,t} + \sum_{k=1}^{3}\gamma^{k,h}\Delta Y^r_{i,t-k} + \epsilon^h_{i,t} \text{ with } h \in [0,4] \quad \text{(A.3)}$$

where Y^r_t denotes either real GDP, credit-to-GDP, real deposits, or deposits-to-GDP. The indicator variable $\mathbf{1}^{run}_{c,t}$ is one for any systemic bank runs in either one of the three different deposit categories: total deposits, demand deposits, and time deposits. The indicator $\mathbf{1}^{panics}_{c,t}$ denotes periods of banking panics and the indicator variable $\mathbf{1}^{fail}_{c,t}$ is one for periods with widespread banking failure. The variable α_i denotes country-fixed effects.

As depicted in Figure A.14, we find significant output losses after systemic runs even when controlling for wide-spread bank failures or Baron et al. (2021) banking panics. All three dummy variables - runs, panics, and wide-spread failures - have a similar magnitude of output losses. However, systemic runs coincide with the largest contractions in real deposits.

Figure A.14: Macroeconomic Aftermaths During Systemic Runs, Bank Failures, and Banking Panics



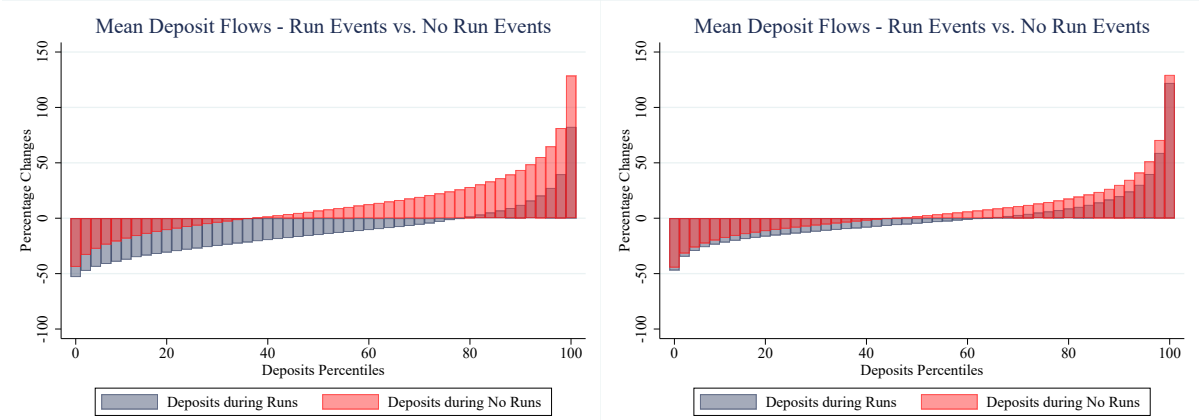
Notes: The figure visualizes the macroeconomic aftermaths of systemic runs when simultaneously controlling for periods of banking panics and periods of significant banking failures. We plot the responses of real GDP growth rate, changes in credit-to-GDP, real total deposit growth rate, and changes in total deposits-to-GDP to any systemic bank runs, around periods of severe banking failures, and periods of banking panics coming from Baron et al. (2021). The blue bands depict 95% confidence bands. Standard errors are double clustered on both the country and the year level. The results are based on the local projection specified in equation A.3.

A.11 Bank-Level Appendix

A.11.1 Additional Bank-Level Evidence Using OCC and Call Reports Data

Figure A.15: Dispersion of Deposit Flows During Runs and Other Times

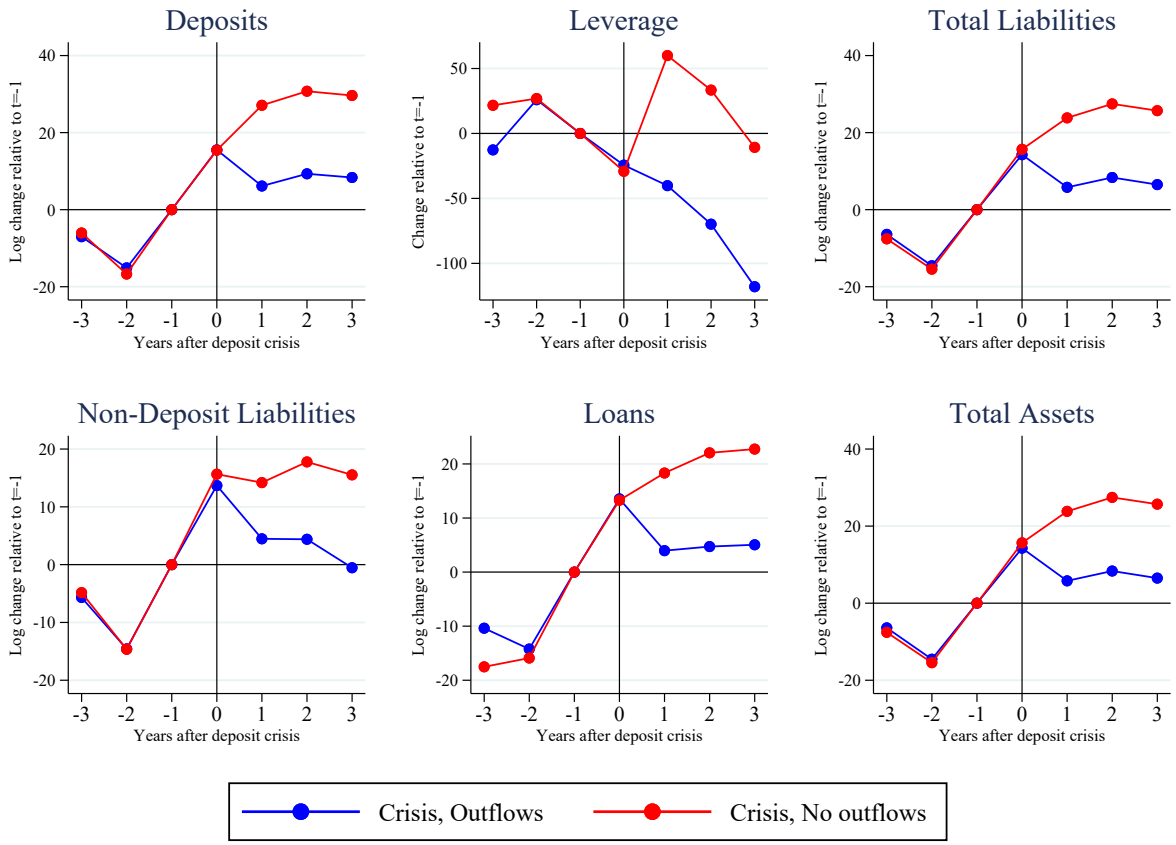
(a) US banks 1867-1901 **(b)** US banks 1976 - 2020



Notes: These figures report bank-level growth rates of deposits during periods of systemic bank runs and "normal times" in the United States. We plot percentile bins of deposit growth rates. The left panel visualizes the results for the OCC dataset covering the period 1867-1901. The right panel depicts the results based on Call Reports data for the period 1976 - 2020.

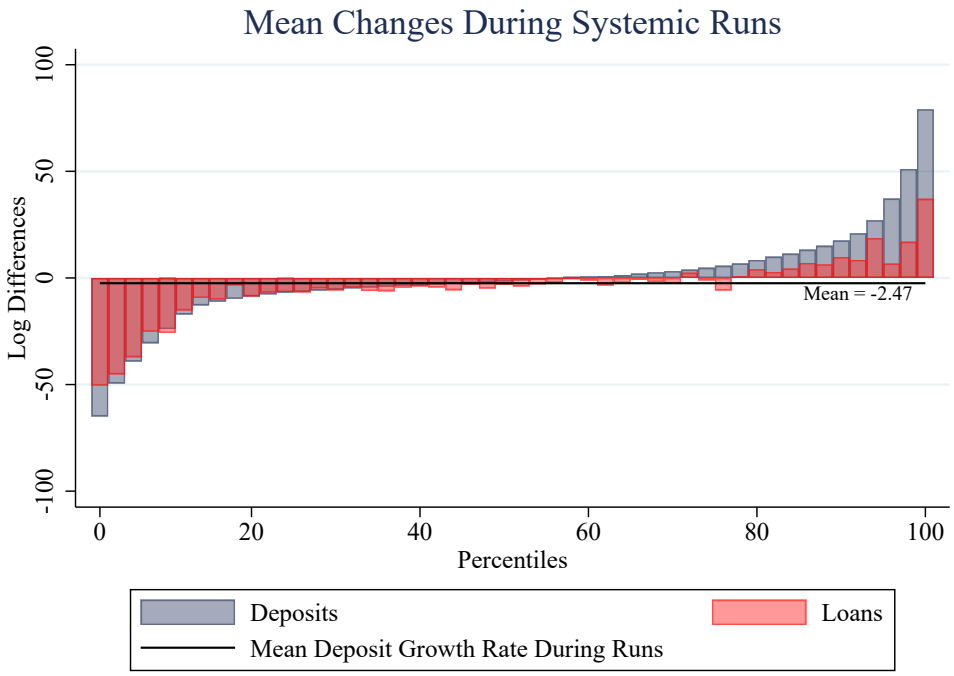
A.11.2 Global Bank-Level Evidence Using ORBIS Data

Figure A.16: Non-US Bank-Level Aftermaths of Deposit Outflows Around Systemic Runs



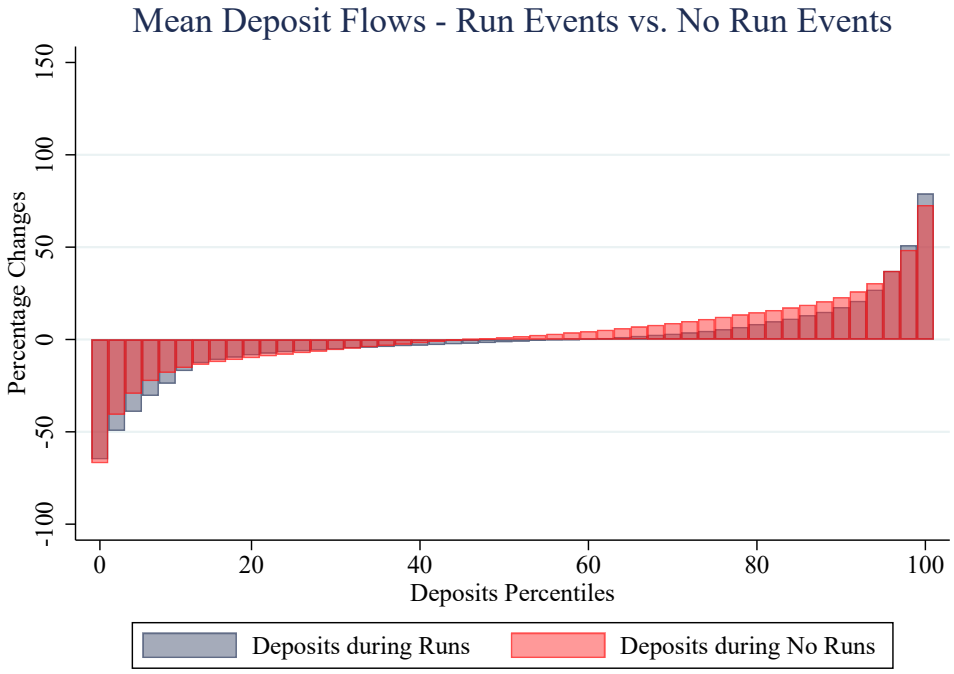
Notes: The figure visualizes the paths of key bank balance sheet items during a systemic bank run for banks outside the US. The results are based on the Orbis dataset. The blue lines depict paths of banks experiencing an outflow of deposits during a systemic run. The red lines depict balance sheet items of banks experiencing a deposit inflow during the run episode.

Figure A.17: Deposit Growth Rates and Loan Growth Rates DUring Systemic Runs for Non-US Banks



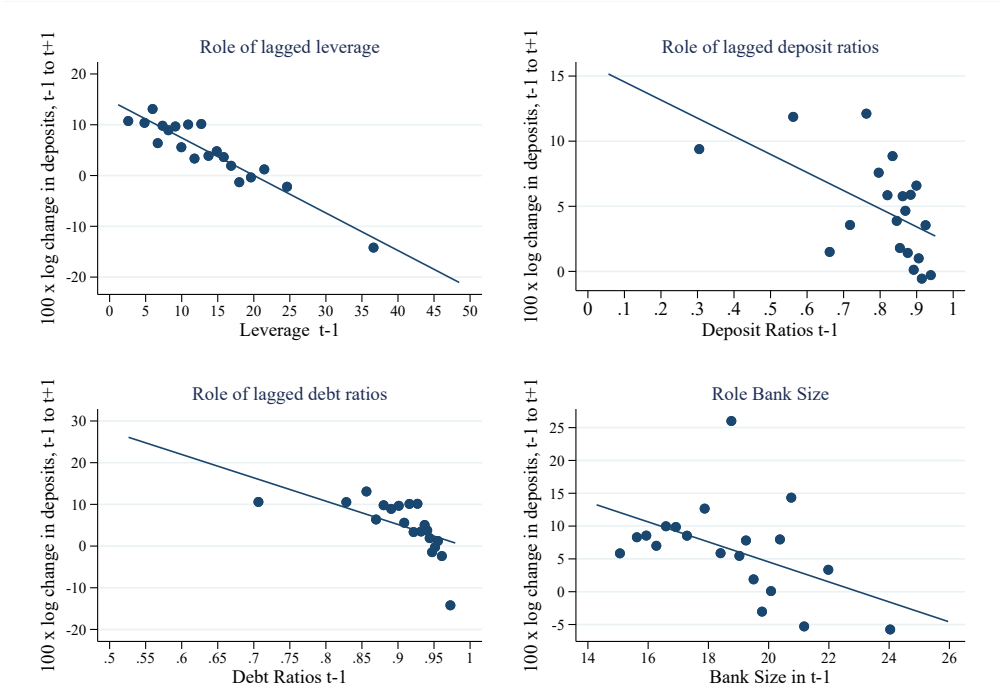
Notes: The figures report the mean deposit growth rates and the mean loan growth rates in the period of a systemic bank run. The results are based on the Orbis dataset.

Figure A.18: Dispersion of Deposit Inflows and Outflows During Run Episodes



Notes: The figures plot the dispersion of the deposit growth rates in the period of a systemic bank run against the volatility outside of runs. The results are based on the Orbis dataset for non-US banks.

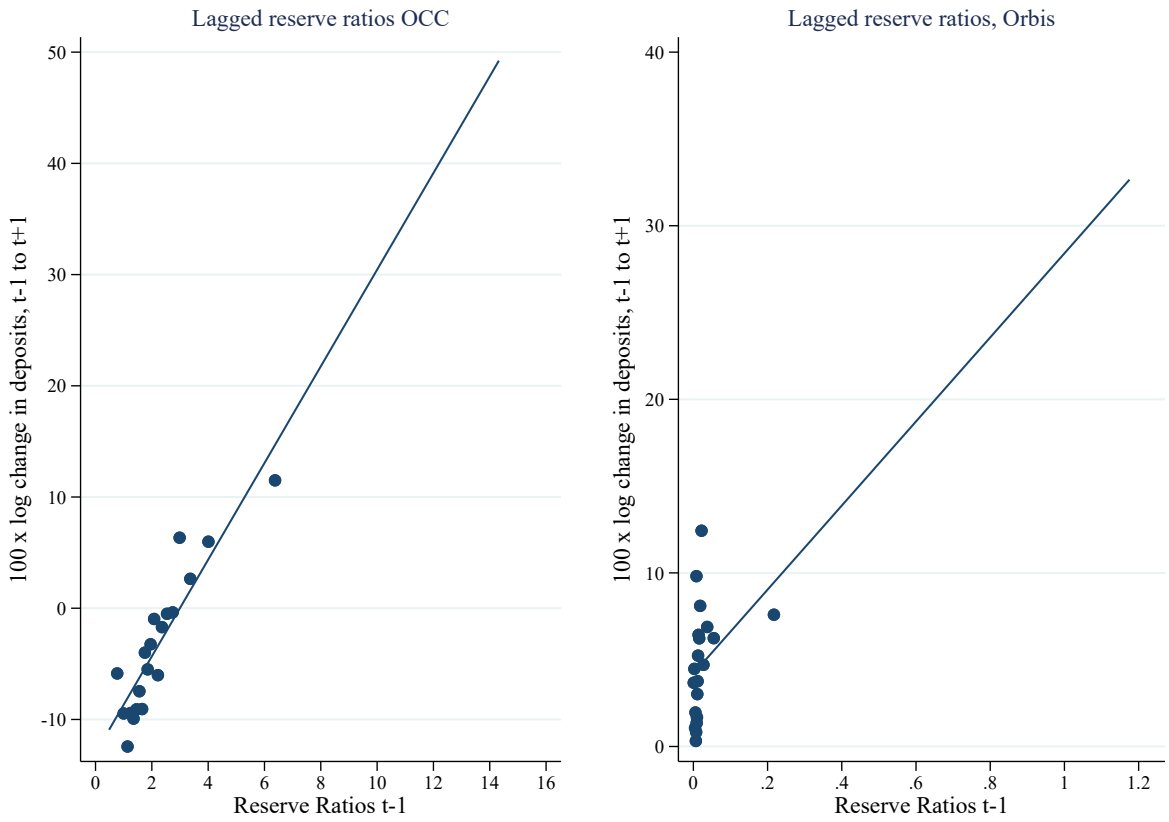
Figure A.19: Deposit Flows Around Bank Runs Against Bank Characteristics for Non-US Banks



Notes: We visualize the bin scatter plots for the percentage changes in deposits around bank runs against the pre-crisis levels of bank leverage, deposit ratios, debt ratios, and bank size. We calculate the changes in deposits between period $t-1$ and $t+1$, with period t defining the date of the bank run. The results are based on the Orbis dataset for non-US banks. We use demand deposits for the Call report data and total deposits for the OCC sample.

A.11.3 The Role of Bank Reserves for Deposit Outflows During Runs

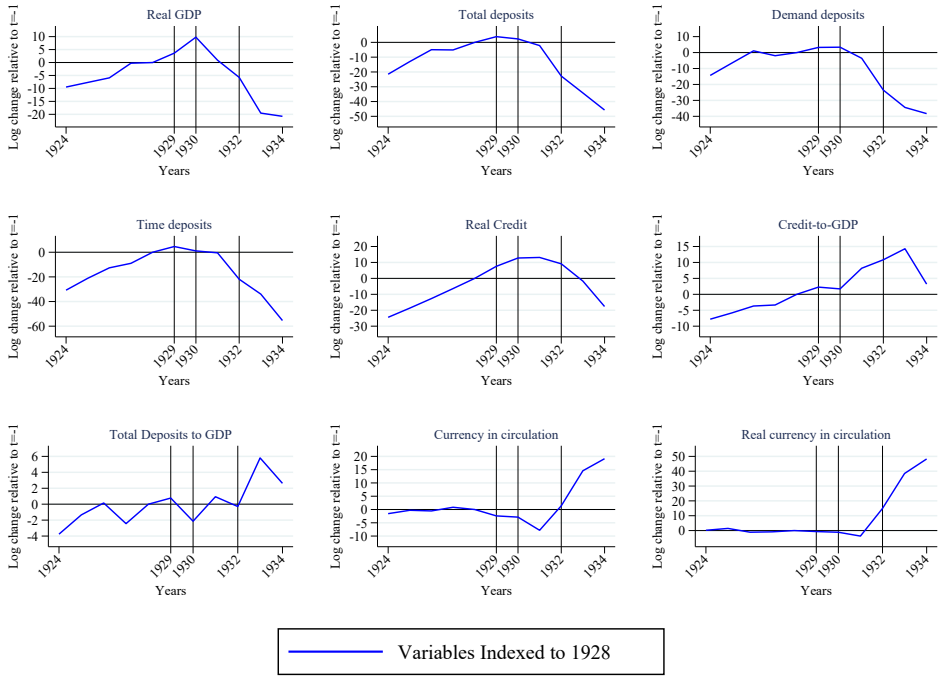
Figure A.20: Role of Bank Reserves Around Systemic Runs for Deposit Flows



Notes: We visualize the bin scatter plots for the percentage changes in deposits around bank runs against the pre-crisis levels of bank reserves. We calculate the changes in deposits between period $t-1$ and $t+1$, with period t defining the date of the bank run. The results in the left panel are based on the OCC sample for historic banks. The results in the right panel are based on the Orbis dataset for non-US banks. We use demand deposits for the Call report data and total deposits for the OCC. sample.

A.12 Runs in the US During the Great Depression

Figure A.21: Aftermaths in the US Around Runs During the Great Depression



Notes: The figure visualizes the path of real GDP, real credit, credit-to-GDP, nominal deposits, total deposits-to-GDP, and nominal and real currency in circulation around the three bank runs during the period of the Great Depression. The first wave of runs in 1929 within the banking system of Florida is visualized as a solid vertical line in 1929. The second wave of bank runs started with the run on the bank Caldwell and Company of Nashville in 1930. We mark this second wave of runs as a dashed, red vertical line in 1930. The third wave of bank runs started in 1932 and we visualize this event as an orange dotted line in 1932.

A.13 Banking Crisis Definition in Canonical Papers

Baron et al. (2021)

Banking crisis

Our conceptual definition of a banking crisis is an episode in which the banking sector's ability to intermediate funds is severely impaired. Because equity holders are the first to suffer losses from a banking crisis that damages banks' intermediation capacity, we assume that conceptually, a large bank equity decline is necessary for a banking crisis.

Panics

By panics, we mean episodes of severe and sudden withdrawals of funding by bank creditors from a significant part of the banking system. We assume that panics are a subset of banking crises, because not all banking crises necessarily feature panics.

Bank equity crash

> 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.

Laeven and Valencia (2018)

Systemic Banking Crisis

> In a systemic banking crisis, a country's corporate and financial sectors experience a large number of defaults and financial institutions and corporations face great difficulties repaying contracts on time. As a result, non-performing loans increase sharply and all or most of the aggregate banking system capital is exhausted. This situation may be accompanied by depressed asset prices (such as equity and real estate prices) on the heels of run-ups before the crisis, sharp increases in real interest rates, and a slowdown or reversal in capital flows. In some cases, the crisis is triggered by depositor runs on banks, though in most cases it is a general realization that systemically important financial institutions are in distress.

A banking crisis as an event that meets two conditions:

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

Reinhart and Rogoff (2011)

We mark a banking crisis by two types of events:

1. bank runs that lead to the closure, merging, or takeover by the public sector of one or more financial institutions and
2. if there are no runs, the closure, merging, take-over, 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.

Jordà et al. (2017)

Banking distress

An episode of banking distress is coded as a systemic banking crisis if it is characterized by major bank failures, banking panics, substantial losses in the banking sector, significant recapitalization, and/or significant government intervention. Importantly, this definition excludes the failures or losses of individual/small banks without systemic implications from being coded as a crisis episodes.

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B The JMKS Bank Run Narrative Chronology

B.1 Afghanistan

September, 2010

In 2010, Afghanistan experienced a bank run. Around $155 million in deposits were withdrawn from Afghanistan's largest bank in just two days. Afghan government employees, including teachers, soldiers and policemen, lined up outside Kabul Bank branches across the country to demand their money amid rumours that Kabul Bank had violated the country's banking laws by providing hundreds of millions of dollars in loans to influential insiders, including President Hamid Karzai and others with close ties to his government. The bank's chairman admitted that more than $160 million of the bank's assets had been used to buy luxury villas and two residential towers in Dubai, according to an article on NBC News.

Sources: Isikoff (2010), McLeod (2016), Filkins (2010), Boone (2011), Ellick (2010)

B.2 Albania

October, 2008

In 2008, Albania experienced a bank run which wiped several hundred million euros of deposits from the banking system. The global financial crisis had previously affected the credibility of the banking system in Albania, according to Erebara (2009a). Many experts blame the bad loans on poor lending practices in the past, and say the global financial crisis had only exacerbated the situation. Following the collapse of Lehman Brothers in the US, Albania faced a bank run. Deposits in banks fell from 700 billion leks (€5.7 billion) in September 2008 to 638 billion leks (€4.9 billion) in February 2009.

Sources: Erebara (2009a), Fullani (2010), Erebara (2009b)

B.3 United Arab Emirates

August, 1990

In August 1990, the United Arab Emirates experienced a bank run. Between 15 and 30 per cent of customer deposits were transferred out of the UAE as a result of the uncertainty following Iraq's invasion of Kuwait in August 1990, according to a report on photius.com. At least two banks required cash injections from the central bank to maintain liquidity, but confidence and deposits gradually returned. A further crisis rocked the UAE banking sector in 1991 when the Luxembourg-registered Bank of Credit and Commerce International (BCCI) was closed in most of the sixty-nine countries in which it operated.

Sources: Coutsoukis (2004), U.S. Congress (1992), Holmey (2019)

B.4 Argentina

May, 1876

In 1876, Argentina experienced a severe bank run, primarily in Buenos Aires and Santa Fe. The crisis led the Banco de La Provincia to suspend the convertibility of its notes, reflecting a deep liquidity crisis. Simultaneously, the Rosario government liquidated the local branch of the London Bank. In response to these financial upheavals, the Argentine government declared the notes of Banco Nacional and Banco de la Provincia as legal tender, an emergency measure to restore financial stability.

Sources: Metrick and Schmelzing (2021), Goodhart and Delargy (1998)

March, 1890

In March 1890, Argentina experienced bank runs. Banco Nacional, Italian Bank of the River Plate, Banco de La Provincia de BA, and Banco Hipotecario Nacional failed. By 1890 Argentina was heavily indebted and unable to roll over existing debt, most of which was only repayable in gold. A severe public debt crisis ensued. In the first quarter of 1890, the Banco de La Provincia and the Banco Nacional were hit by a run that finally triggered a full-fledged banking crisis. In 1891, the Bank of the River Plate suffered severe runs and later failed. The Bank of the River Plate also suffered a run, but received liquidity from Baron Rothschild, as described by Baron et al. (2021).

Sources: Baron et al. (2021), Reinhart and Rogoff (2011), Metrick and Schmelzing (2021), Goodhart and Delargy (1998)

July, 1914

In July 1914, Argentina experienced bank runs when the outbreak of the war in the end of July 1914 was accompanied by a dramatic flight to liquidity around the globe. Many Argentine banks faced severe pressures as international depositors demanded liquidity. "Total deposits at Argentine banks fell by nearly 20 percent. The brunt of the hardship fell on the private banks, which lost over 45 percent of their deposits" (Nakamura and Zarazaga (2001)). The crisis was precipitated by a land price boom which was fueled by heavy speculation and private indebtedness. Large amounts of credit were extended by European banks. Banco Frances failed in August 1914 (Lough and Field (1916)). In 1912, depositors started to withdraw up to 20% of total deposits from banks in response to real economic disturbances (Nakamura and Zarazaga (2001)). Paolera and Taylor (2001) name this crisis "the worst recession in Argentine history" (p. 190), as described in Baron et al. (2021).

Sources: Nakamura and Zarazaga (2001), Lough and Field (1916), Paolera and Taylor (2001), Baron et al. (2021)

September, 1934

In 1934, Argentina experienced bank runs. There was a government-induced merger of four smaller banks after these runs, according to Metrick and Schmelzing (2021)'s description. The book "The Political Economy of Argentina in the Twentieth Century" by Cortés (2009) states that the bank run occurred in July 1934.

Sources: Metrick and Schmelzing (2021), Cortés (2009), Baron et al. (2021), Laeven and Valencia (2018)

March, 1980

In March 1980, Argentina experienced bank runs following the failure of the Banco de Intercambio Regional, according to the description of Reinhart and Rogoff (2009). Banco de Intercambio Regional, Banco de los Andes, Banco Oddone, Banco International, and at least 64 more banks failed.

Sources: Sims and Romero (2013) Reinhart and Rogoff (2009), Baliño (1991), Laeven and Valencia (2018), Baron et al. (2021)

May, 1985

In May 1985, Argentina experienced bank runs when the first half of the 1980s saw an inflation and public debt crisis that forced the government to adopt drastic reform measures in 1985, known as the "Plan Austral". In late 1983, Argentina received IMF loans, but these were suspended in March 1985 when Argentina failed to meet several economic targets. The resulting economic turmoil and hyperinflation led to severe banking distress and bank runs, forcing the Central Bank of Argentina to close several banks in May 1985. As a result, dollar deposits were frozen for 120 days.

Sources: Sims and Romero (2013), Baron et al. (2021)

April, 1989

In April 1989, Argentina experienced bank runs. Laeven and Valencia (2018) say this was a banking crisis and date the panic to December 1989 when deposits were frozen. Stabilization policies caused a public debt crisis and hyperinflation that resulted in major bank distress (Beckerman (1995)). As a result, "nonperforming assets accounted for 27 percent of the aggregate portfolio and 37 percent of the portfolios of state banks. Failed banks held 40 percent of financial system assets", according to the description in Baron and Dieckelmann (2022).

Sources: Sims and Romero (2013), Laeven and Valencia (2018), Beckerman (1995), Baron and Dieckelmann (2022)

January, 1995

In 1995, Argentina experienced bank runs. Following the devaluation of the Mexican peso in late 1994, there was a wave of uncertainty concerning the sustainability of the currency board in Argentina. This uncertainty, in turn, led to widespread deposit runs and large capital outflows. Peso deposits fell by more than 15 per cent between late December and January 1995. Private sector deposits were used to fund illiquid banks via public Banco de la Nacion. Throughout this episode, at least 40 banks failed (almost one third of total banks).

Sources: Guidotti et al. (2016), Laeven and Valencia (2018), Baron et al. (2021), Reinhart and Rogoff (2009)

June, 2001

In mid 2001, Argentina had accumulated significant fiscal imbalances and was experiencing competitiveness problems following the Brazilian crisis. The restructuring of public debt and the announcement of a change in the parity under the convertibility plan (from a peg to the dollar to a basket of the US dollar and the euro) triggered bank runs, which intensified in the second half of the year, leading to a deposit freeze, a bank holiday, riots and major political instability in December 2001, as described by Laeven and Valencia (2018).

Sources: Laeven and Valencia (2018), Guidotti et al. (2016), BBC (2001a), BBC (2001b)

B.5 Antigua

February, 2009

In 2009, the Bank of Antigua suffered a classic bank run in February 2009. Hundreds of customers lined up outside the bank to withdraw their money. Texas billionaire Allen Stanford and his Bank of Antigua were under investigation for an $8 billion fraud. The US Securities and Exchange Commission (SEC) filed civil charges against Stanford for what it called a fraud "of shocking proportions" in the sale of $9.2 billion in securities that "promised ... improbably high interest rates", according to a report of CNN (2009).

Sources: CNN (2009), The Guardian (2009), Reuters (2009), International Monetary Fund (2010a)

B.6 Australia

December, 1828

In 1828, Australia experienced a run on the Bank of New South Wales, and the bank sought government assistance. In late 1827 and early 1828, divisions among the Bank of New South Wales's management and shareholders further undermined the bank and

public confidence in it. In its weakened state, the Bank of New South Wales was ill placed to withstand the colony's slide into depression in late 1827, according to Fitz-Gibbon and Gizycki (2001).

Sources: Fitz-Gibbon and Gizycki (2001), Metrick and Schmelzing (2021)

December, 1842

In 1842, Australia experienced bank runs when the Colonial Bank's losses in the first half of 1842 led its owners to question whether the bank should be wound up. This triggered a run that cut the bank's note circulation by half and deposits by a third. In an environment where the shareholders themselves were under pressure for cash, they opted to cut their losses and close the bank. In each case, note holders and depositors were quickly repaid.

Sources: Fitz-Gibbon and Gizycki (2001)

May, 1843

In May 1843, Australia experienced bank run on the Savings Bank of New South Wales because of rumours that the Governor, after examining the bank's securities, had declared them to be worthless (Fitz-Gibbon and Gizycki (2001)). There was also concern that the trustees had lost money in the failure of the Bank of Australia.

Sources: Fitz-Gibbon and Gizycki (2001)

April, 1893

In April 1893, the London Chartered Bank of Australia suffered a £300,000 bank run as part of the 1893 banking crisis. This run caused the bank to close abruptly on 26 April, although it was generally considered to be in a satisfactory position and had just announced a proposed dividend. A voluntary winding-up order was granted in London in mid-May, while discussions on reconstruction continued. The process of negotiating and approving a reconstruction plan, which would see a new institution, the London Bank of Australia, take over the assets, liabilities and operations of the Bank, continued through June and July. It reopened under the new name and structure in Australia on 7 August and in London on 8 August, according to a report in the The Sydney Morning Herald (1893c).

Sources: Goodhart and Delargy (1998), The Sydney Morning Herald (1893a), The Sydney Morning Herald (1893b) The Sydney Morning Herald (1893c), Reinhart and Rogoff (2011)

April, 1931

In April 1931, Australia experienced bank runs amid a balance of payments crisis, according to the description of Baron and Dieckelmann (2022). The Federal Deposit Bank and State Savings Bank of Western Australia suffered a runs following a run on another

government savings bank.

Sources: Baron and Dieckelmann (2022), Fitz-Gibbon and Gizycki (2001), The Advertiser (1931), Cava and Price (2021)

October, 1974

In 1974 Oct, the failure of multiple property financiers precipitated runs on building societies in several states, particularly South Australia and Queensland.

Sources: Fitz-Gibbon and Gizycki (2001), Metrick and Schmelzing (2021)

February, 1989

In 1989, Australia experienced runs on several non-bank institutions. The banking industry experienced its worst losses since the 1890s. The State Bank of Victoria and the State Bank of South Australia suffered large losses, and state governments provided significant capital injections in the resolution of these problems, according to the description in Baron and Dieckelmann (2022). Several banks began to suffer large depositor withdrawals, but the Reserve Bank issued statements declaring that it believed the banks were generally safe and that it was prepared to intervene to provide "liquidity" and deposit guarantees, which effectively stopped the runs.

Sources: Baron and Dieckelmann (2022), Dieckelmann (2021)

B.7 Austria

May, 1873

In May 1873, Austria experienced bank runs with massive depositor withdrawals according to the description in Baron and Dieckelmann (2022). The number of banks and banking firms dropped from 141 in 1873 to 45 in 1878. Deepening on the source, up to 100 banks failed or disappeared during this time. This is the well-known Gründerkrach banking crisis. Reinhart and Rogoff (2009) date it to May 1873. Jobst and Rieder (2016) reports massive depositor withdrawals and bank runs.

Sources: Baron and Dieckelmann (2022), Reinhart and Rogoff (2009), Goodhart and Delargy (1998), Jobst and Rieder (2016), Rieder (2014)

May, 1924

In May 1924, Austria experienced bank run when the Allgemeine Depositenbank ran into difficulties due to speculation on the French franc, which led to its liquidation after heavy withdrawals. Some 40,000 savers lost part of their deposits according to the description of Baron and Dieckelmann (2022). Also, the Austro-Polnische Bank, the Austro-Orientbank, as well as the private Union Bank failed. Later, in 1927, Unionbank and Verkehrsbank

failed and were merged with Creditanstalt. Biedermannbank failed in 1927. In 1924 the number of joint stock banks in Vienna dropped from 66 to 36.

Sources: Baron and Dieckelmann (2022), Kangas (2019)

May, 1931

In 1931, Austria experienced bank run, as the Credit-Anstalt announced its financial difficulties, foreign creditors or domestic depositors started a run on the bank. With all potential sources of liquidity exhausted, the only remaining source was the State. Bodencreditanstalt, the second largest bank, failed in 1929 and was merged with Creditanstalt. The largest bank Creditanstalt failed on May 11, 1931. When it became clear to the management of Credit-Anstalt in early 1931 that the pyramid scheme that the Austrian banking sector had become could no longer be sustained, they turned to the authorities for support. They did not do so because they had lost the confidence of their foreign or domestic creditors and depositors, and the flight of capital had triggered this reaction. They were forced to do so because there was no new liquidity behind which to hide the years of insolvency. The carefully maintained facade of stability of the Austrian banking system collapsed and the run began, according to Baron and Dieckelmann (2022)'s description.

Sources: Baron and Dieckelmann (2022), Kangas (2019), Kindleberger (1986)

December, 1838

In 1839, Belgium experienced a significant bank run that primarily affected the Banque de Belgique, the country's second-largest financial institution. This crisis, triggered by the threat of war with the Netherlands and exacerbated by the Banque de Belgique's mismanagement of its note issuance and investments in illiquid assets, reached a critical point in December 1838. Unable to redeem its bank notes during the panic, the bank was compelled to suspend payments on December 17, 1838, and subsequently had to close its doors. Troops were deployed amid fears of the bank being plundered by angry depositors (Buyst and Maes (2008)). The government eventually stepped in with a bailout to prevent the bank's liquidation. Accordingly, we classify this episode as a bank run, in alignment with the views of Ugolini (2021).

Sources: Mardini and Schuler (2014), Buyst and Maes (2008), Ugolini (2021), Reinhart and Rogoff (2009)

1870

In 1870, Belgium experienced a bank run triggered by fears of war between France and Prussia. The Belgian Finance Minister and the governor of the National Bank of Belgium (NBB) hastily relocated the bank's metal reserves, inciting public panic. This led to a surge of people demanding to convert their notes into coins at the NBB, which reacted

by closing most of its counters and significantly reducing discount transactions, causing widespread public outrage.

Sources: Buyst and Maes (2008)

July, 1914

In 1914, Belgium experienced bank runs, when the invasion of Belgium caused panic and a significant demand for cash by the Belgium people. The result of this panic was people losing faith in banknotes and wanting to exchange them for coins, causing a run on National Bank branches in late July 1914, according to Luyten (2014).

Sources: Luyten (2014), Dieckelmann (2021), Baron and Dieckelmann (2022)

1925

In 1925, Belgium experienced a bank run triggered by fears of currency devaluation. This crisis was compounded by the continued depreciation of the Belgian franc, which led to severe financing issues for firms and banks and prompted the government to secure loans in US dollars to back the faltering currency and banking system.

Sources: Jordà et al. (2017)

May, 1931

In 1931, Belgium experienced bank runs caused by rumors about the potential failure of Banque de Bruxelles, the country's second largest bank. This event triggered significant withdrawals from all banks in Belgium, according to Bernanke and James (1990).

Sources: Bernanke and James (1990), Baron and Dieckelmann (2022), Jordà et al. (2017)

December, 1934

According to Jordà et al. (2017), there is narrative evidence of a wave of deposit withdrawals following the bankruptcy of Banque Belge du Travail. Towards the end of 1934, rumors about further bank failures led to mass deposit withdrawals.

Sources: Jordà et al. (2017)

B.8 Bulgaria

January, 1996

In 1996, Bulgaria experienced bank runs due to depreciation of its currency amid a failure of the government to follow up the foreign debt deferment deal that had been negotiated by the previous administration. The ensuing plummeting of Bulgaria's credit rating

caused runs on its banks.

Sources: Kovatchevska (2000), The Sofia Globe (2018), Bulgarian National Bank (1996), Laeven and Valencia (2018)

June, 2014

In 2014, Bulgaria experienced runs on two of its banks according to an article from Bruegel. The first is KTB bank, a bank with a strong political connections involved in a feud of its majority stakeholder (Tsvetan Vassilev) with Delyan Peevski. The trigger of the run at KTB was the unfolding of latent war between those two and Peevski deciding to withdraw its money from KTB. Allies of Vassilev retaliated by spreading rumours about FiB solvency which then caused another run on FiB.

Sources: Ewing and Kantchev (2014)

B.9 Bahrain

August, 1990

In August 1990, Bahrain experienced a significant deposits withdrawal due to Iraqi invasion of Kuwait and the cutting of vital Western and Japanese credit lines. In Bahrain, private customers are believed to have sent abroad 30 to 40 percent of their deposits in commercial banks, or $1.1 billion to $1.5 billion, according to a New York Times article.

Sources: Prokesch (1990)

B.10 Bosnia and Herzegovina

October, 2008

The 2008 Bosnia and Herzegovina bank run, a significant financial crisis, occurred amidst economic stress and declining financial stability. In October 2008, about 12% of bank deposits were withdrawn, causing substantial financial strain. This crisis was a part of wider economic challenges, including unsustainable growth, fiscal imbalances, and vulnerability to the global financial crisis. Stability was restored quickly through liquidity support from foreign parent banks and effective Central Bank measures like reducing minimum reserve requirements, highlighting the financial system's fragility in economic downturns.

Sources: Commission of the European Communities (2009)

B.11 Belize

April, 2016

In 2016, Belize experienced bank run due to de risking of US tax-evasion crack down on banks around the world, one of them is Belize Bank Internasional (BBI). According to Bowers (2016), in April, BBI bosses told the supreme court of Belize it had received unprecedented withdrawal requests. Tough US anti-evasion laws have increased compliance costs for BBI's partners, prompting Bank of America and Commerzbank to terminate relationships with the bank. The departure of these partner banks has in many instances left BBI struggling to maintain basic services for account holders.

Sources: Bowers (2016), Carribean News (2016), Torbati (2016)

B.12 Bolivia

January, 1985

In 1985, Bolivia experienced a bank run due to the "de-dollarization" program, which consisted of converting all obligations contracted in dollars or with value maintenance into national currency, including deposits in the banking system, at the exchange rate determined by the government on a given day. This measure created a mismatch in the banking system, hurting creditors and those with deposits in foreign currency in the banking system, but favoring debtors. The policy of de-dollarization failed because dollar transactions actually increased, and the government had to refinance debts and deposits in dollars with currency creation, thus increasing inflation, according to Kehoe et al. (2019). This program also generated a bank run and a subsequent government bailout of the banks.

Sources: Chavez (1985), Kehoe et al. (2019)

November, 1994

In 1994, Bolivia experienced a bank run as two banks, comprising 11% of the total banking system assets, shut down. Subsequently, in 1995, 4 out of the 15 domestic banks, accounting for 30% of the banking system assets, encountered liquidity issues and grappled with a substantial increase in nonperforming loans.

Sources: Guerschanik Calvo (2005), Latin America Digital Beat (1995), Laeven and Valencia (2018), Reinhart and Rogoff (2009)

B.13 Brazil

September, 1864

In 1864, Brazil experienced a bank run due to the fall of Souto and Company (bank) which prompted runs on all the banking houses, according to Marchant (1950). The streets in

Brazil were full of people trying to withdraw their money. The panic effect was so great that the Bank of Brazil lost its right to issue paper money, which henceforth became a function exclusively of the Treasury.

Sources: Marchant (1950), Banco do Brasil, (2004)

September, 1900

In 1900, Brazil experienced bank run due to the withdrawal from circulation and destruction of domestic currency. This reduction in the money supply in the economy provoked a bank panic in 1900 that almost destroyed the Brazilian banking system that had slowly evolved since mid-century, according to Topik (2007). A run on banks in Rio de Janeiro in September and October of that year forced many financial institutions to fail.

Sources: Topik (2007), Triner (1999), Reinhart and Rogoff (2009), Metrick and Schmelzing (2021)

August, 1914

In July 1914, deposit runs led to the closure of stock exchanges across countries in Latin America, including Brazil, according to Baron et al. (2021).

Sources: Baron et al. (2021), Reinhart and Rogoff (2009), Metrick and Schmelzing (2021)

March, 1990

In 1990, Brazil experienced a run of which the government intervened by freezing deposits, according to Ennis and Keister (2009).

Sources: Ennis and Keister (2009)

B.14 Canada

March, 1837

In 1837, Canada experienced runs when banks were ordered to suspend convertibility beyond the value of their own capital stock until 1839, amid runs in Canada and New York. Lower Canadian banks had already suspended deposits before this government intervention in May, according to Metrick and Schmelzing (2021).

Sources: Metrick and Schmelzing (2021), Foot and Buckner (2016), Calomiris and Gorton (1991), Bunbury (1995), Breckenridge (1895)

September, 1867

In September 1867, Canada experienced a run on the Commercial Bank of Canada which acquired $1,770,000 in 30-year bonds in 1866 but delayed their sale, leading to suspicions about the bank's stability, especially after learning it provided security to major depositors. This distrust culminated in a deposit run. More bank runs occured in October as well, according to Breckenridge (1895) and Artemiw (2017).

Sources: Breckenridge (1895), Artemiw (2017)

May, 1879

In May 1879, Canada experienced a series of bank runs and failures, primarily concentrated in Montreal. It began with the suspension of the Mechanics' Bank on May 28th, followed by La Banque Jacques Cartier on June 16th. The situation worsened in August when the Consolidated Bank suspended payments on August 1st, leading to a domino effect. The Exchange Bank and La Banque Ville Marie followed suit on August 7th and 8th, respectively. Panic spread to other banks, notably in Hamilton and Sarnia, with the Exchange Bank of Canada and the City and District Savings Bank in Montreal experiencing significant runs, the latter seeing withdrawals estimated at $500,000. Additional banks like the Banque de St. Hyacinthe, Banque de St. Jean, Banque d'Hochelaga, Molson's Bank, and the Bank of Hamilton were also affected by rumors or actual runs. This series of events culminated in October with the failure of the Bank of Liverpool.

Sources: Baron et al. (2021), Breckenridge (1895), The New York Times (1879)

May, 1893

In July 1893, Canada experienced a significant bank run, specifically targeting the Commercial Bank of Manitoba. Supported initially by a guarantee fund, other banks in Manitoba continued accepting its notes after suspension, averting public panic and note devaluation. However, the bank's risky business practices and susceptibility to local economic conditions led to a steady increase in debts from 1892. A major withdrawal of deposits began in May 1893, escalating in June, with the bank attempting to manage this by issuing notes to depositors. By mid-September, the public had redeemed most of the bank's notes, but with circulation reduced from $419,135 in July to just $31,835 by November's end, and only $4,130 left in its vaults, the bank could no longer redeem its paper and was compelled to suspend operations. This collapse was a culmination of the bank's risky strategies, mounting debts, and a severe run on deposits (Breckenridge (1895)).

Sources: Breckenridge (1895)

August, 1914

In 1914, Canada experienced multiple bank runs at the onset of WWI. The Home Bank of Canada experienced runs on August 4, 1914 before the war was declared. The Bank of Vancouver suspended payments on 14 December 1914, according to Baron et al. (2021) and other sources.

Sources: Baron et al. (2021), Metrick and Schmelzing (2021), CBC News (2008), Canada War Museum (2008), Turley-Ewart (2004), Curtis (1947), Bank of Canada (2010)

December, 1921

In December 1921, the small bank La Banque Nationale faced large difficulties with the result of sporadic bank runs and millions of deposits that were withdrawn. It was not until the end of the 1923 that the situation became more quiet.

Sources: Baron et al. (2021), Metrick and Schmelzing (2021)

October, 1924

In 1924, Canada experienced runs. Some solvent banks, such as the Dominion and the Imperial, experienced runs in 1924. Between October 12 and 15, hundreds of depositors crowded into Dominion Bank branches in Toronto to shut down their accounts and rescue their money. The banking system was in great difficulty as a result of sporadic bank runs and millions of deposits were withdrawn.

Sources: Baron et al. (2021), Metrick and Schmelzing (2021), Bordo and Redish (1996)

July, 1982

In July 1982, the failures of the Canadian Commercial Bank of Edmonton and the Northland Bank coincided with deposit runs. The Mercantile Bank of Canada also suffered runs and was taken over by the National Bank. The Canadian Commercial Bank of Edmonton and the Northland Bank ultimately failed in 1985. Over 20 trust companies and mortgage corporations failed, as well. In 1986 the Bank of British Columbia had to be rescued and was bought by HSBC.

Sources: Baron et al. (2021), Bank of Canada (2010)

June, 1996

In June 1996, Canada experienced bank runs when the Calgary-based Security Home Mortgage Corporation failed. The failure affected some 2,600 Canadians and $42 million in deposits. The company closed its doors, and customers were alarmed to learn that they would not have immediate access to their savings. According to an article by the Canada

Deposit Insurance Corporation (n.d.).

Sources: Canada Deposit Insurance Corporation (n.d.), Rogers (2023)

B.15 Chile

1865

In September 1865, Chile experienced a run on Banco de Chile and five other deposit-taking banks due to Chile's declaration of alliance with Peru in a war against Spain, according to Brock (2016).

Sources: Brock (2016), Metrick and Schmelzing (2021)

January, 1878

In July 1887, Chile experienced a run on Banco Nacional de Chile. A potential reason might have been comments made by the Finance Minister in front of Congress. These comments indicated that, in the event of a bank's collapse, demand deposits could be considered as subordinated debt, according to Brock (2016). Government declares all bank notes legal tender amid run on Banco Nacional de Chile.

Sources: Brock (2016)

February, 1895

According to Metrick and Schmelzing (2021), Chile experienced widespread bank runs in 1895 amid the country's transition to the gold standard, which prompted considerable uncertainty about the value of the currency.

Sources: Metrick and Schmelzing (2021), Brock (2016)

July, 1898

In 1898, Chile experienced a bank run in Santiago triggered by mounting financial distress. By early July, panic among depositors led to a massive withdrawal of funds from Santiago's banks. This crisis forced the government to declare a moratorium on July 11th, and by August, government guarantees all bank note issuance.

Sources: Brock (2016)

December, 1907

In 1907, Chile saw widespread bank runs, including on Mobiliario Bank. To stem these runs, the government intervened with "grant facilities" and further liquidity support.

Sources: Baron et al. (2021), Metrick and Schmelzing (2021)

July, 1914

In July 1914, Chile experienced bank runs that led to the closure of stock exchanges across countries in Latin America, according to the description of Baron et al. (2021). Reinhart and Rogoff (2009) also consider this to be a systemic banking crisis.

Sources: Baron et al. (2021), Reinhart and Rogoff (2009), Bordo et al. (1999)

January, 1983

Chile experienced bank runs in 1983 shortly after Chile inked a deal with the IMF for urgent financial support, which led depositors to rapidly withdraw cash from Chilean banks. The liquidity crisis forced the government to place seven banks and one financiera, accounting together for 40% of Chilean deposits, under temporary resolution.

Sources: Laeven and Valencia (2018)

B.16 China

February, 1903

In February 1903, Tongshang Bank faced a severe bank run further to the discovery of counterfeit notes. After the news of counterfeit currency spread, money houses refused to accept Tongshang Bank's notes. Despite efforts to reassure the public by displaying the fake notes and extending business hours, panic persisted. Sheng Xuanhuai, overseeing the situation from Beijing, directed immediate cash withdrawals and obtained 700,000 yuan from HSBC using gold and silver as collateral. The crisis deepened when a Japanese individual was caught with counterfeit notes at HSBC, leading to an investigation that uncovered a larger counterfeiting ring in Osaka, Japan. The incident significantly undermined Tongshang Bank's credibility, leading to massive financial losses and the closure of several branches. The crisis culminated in Tongshang Bank withdrawing and destroying all existing notes and issuing new notes in early 1905.

Sources: Sheng (2014), Yan and Yi (2008), The Straits Times (1903), Goh (2020), Rodrigo and Rodrigo (2021)

May, 1916

In 1916, China experienced bank runs when the Republican government, under Yuan Shikai, faced fiscal challenges and suspended bank note convertibility between the Bank of China and the Bank of Communications. According to Ma (2012), widespread financial disruptions across the country were seen.

Sources: Ma (2012)

November, 1921

On November 15, 1921, both the Bank of China and the Bank of Communications in Beijing faced a bank run, largely due to the Beiyang government's financial policies and the repercussions of the 1916 suspension of currency convertibility, according to China Banking and Insurance News.

Sources: Yunchuan (2016), Zhijing (2019), Xiaoxia (2014), Zhihui (2021), Ma (2012), Kan (2012)

December, 1928

On December 10, 1928, the Sino-Japanese joint venture, Zhonghua Huiye Bank, suspended operations having experienced a bank run, leading to widespread panic, rumors, and subsequent runs on several other banks in Beijing and Tianjin, according to Sina News.

Sources: Yunchuan (2016), Ma (2012)

1930

According to Metrick and Schmelzing (2021), there were bank runs on several institutions between 1930 and 1932, including the Sinhua Trust Savings in 1930, SHCS in 1931, and the National Industrial Bank of China in 1932. We assign these events to the first year, which is 1930.

Sources: Metrick and Schmelzing (2021)

1997

In the wake of the 1997 Asian Financial Crisis, there were widespread runs on banks in Guangdong province that quickly spread nationwide. The trigger for these runs was a series of scandals involving local officials and manager at the China Construction Bank, as well as concerns about the financial situation of rural credit cooperatives. Up to 70% of the banking system's assets were deemed insolvent and banks were illiquid. 50 of all loans were underperforming, causing severe liquidity and deposit problems for banks.

Sources: Caprio and Klingebiel (2002), China Ministry of Finance (2014), Cousin (2011), Mufson (1997)

November, 2019

In November 2019, two bank runs were recorded by articles published by Reuters. In the first case at Yichuan Rural Commercial Bank in Henan Province, the investigation of the bank's former chairman led to a wave of depositors withdrawing their funds due to concerns over the bank's stability. The second bank run at Yingkou Coastal Bank was sparked by rumors of a crisis at the bank, leading to a surge in customers withdrawing

their deposits. Yingkou Coastal Bank, a small financial institution predominantly reliant on customer deposits, faced heightened depositor anxiety. This situation mirrored wider concerns affecting small Chinese banks, partly due to the government's previous takeover of Baoshang Bank. In response, Yingkou Coastal Bank increased its deposit interest rates to attract and retain customers, a move that raised questions about its long-term financial stability. The bank also visibly stacked bundles of cash at teller counters to manage withdrawals and reassure customers. Local government officials intervened to ease concerns and stabilize the situation, marking a shift from the central government's direct involvement in similar past incidents. This incident at Yingkou Coastal Bank reflected the broader challenges faced by small banks in China amid rumors and fears about their solvency.

Sources: Reuters (2019)

April, 2022

According to Liu (2022), China experienced a wave of bank runs in April 2022 triggered by a freezing of deposits worth 40 billion yuan ($6 billion) and affecting 400,000 depositors. These bank runs started from three rural village and town banks (VTBs) in Henan province. Three more runs on VTBs happened within a month, including two in neighboring Anhui province. Five of the six troubled VTBs have the same major shareholder bank, Xuchang Rural Commercial Bank. Not being able to withdraw their life savings has led to protests by depositors, triggered panic over the solvency of small banks, and increased the nationwide risk of runs on small banks.

Sources: Liu (2022)

October, 2023

In October 2023, a bank run occurred at Cangzhou Bank, a regional bank in Cangzhou, Hebei Province, China, driven by concerns over the debt crisis of Evergrande Group, a major real estate company that defaulted in 2021. The situation was aggravated by circulating images and videos of depositors queuing for withdrawals, which led to a panic. Local authorities responded by arresting several individuals for allegedly spreading false rumors about the bank's financial troubles related to Evergrande. The Cangzhou government also released statements to reassure the public about the safety of their deposits. This incident is indicative of the broader challenges facing China's financial sector amid an ongoing real estate crisis.

Sources: Shan (2023)

B.17 Ivory Coast

February, 2011

In February 2011, Ivory Coast experienced bank runs amid rumours of a cash shortage in a political crisis in the country, according to an article published in The Guardian. The British bank Standard Chartered suspended operations in Ivory Coast, joining two other banks, BICICI and Citibank, and the regional stock exchange. Two months after a contested presidential election that led the incumbent leader Laurent Gbagbo to refuse to cede power, international financial pressure supported his opponent, Alassane Ouattara, after troops seized the regional stock exchange.

Sources: Harding (2011)

B.18 Colombia

July, 1923

In 1923, Colombia experienced several bank runs, triggered by an initial run on Banco Lopez.

Sources: Metrick and Schmelzing (2021)

July, 1982

In July 1982, Colombia experienced a bank run on Banco Nacional. The bank ran into financial difficulties in 1981 when the companies and owners of Grupo Colombia began to default on their debts. Despite this, the bank continued to lend money to the same companies and owners. When the fraud at Financiera Furatena was discovered in June 1982, the public launched a run on Banco Nacional. The run forced the bank into liquidation later that year. Another run began on the Banco del Estado in August 1982, forcing its bailout and nationalisation in October 1982. This episode is also classified as a banking crisis by Laeven and Valencia (2018), Baron et al. (2021), Reinhart and Rogoff (2009), although Baron et al. (2021) do not classify it as a banking panic.

Sources: Laeven and Valencia (2018), Baron et al. (2021), Reinhart and Rogoff (2009), Hernandez et al. (2022)

June, 1998

Colombia experienced a systemic banking crisis in 1998 that was also accompanied by a bank run, according to Steiner and Barajas (2000). Because these authors do not give a precise date for the run event, we follow the timing in Laeven and Valencia (2018) and Baron et al. (2021) who date the start of the crisis to June 1998 when the first bank failure occurred.

Sources: Laeven and Valencia (2018), Baron et al. (2021), Reinhart (2002), Steiner and Barajas (2000)

B.19 Costa Rica

November, 1987

In 1987, Costa Rica experienced bank runs following the collapse of Consorcia Cretiticia, which triggered a wider financial crisis. Reinhart and Rogoff (2009) also consider this to be a systemic banking crisis.

Sources: Reinhart and Rogoff (2009), Metrick and Schmelzing (2021), Bordo et al. (2001)

August, 2004

In August 2004, Costa Rica experienced a bank run on BAC San José due to a false rumour that regulators had intervened with the bank because of solvency issues, according to Oconitrillo (2023) and S. and D. (2004). The rumors were apparently spread on purpose to hurt the business of what was then Costa Rica's largest bank.

Sources: Oconitrillo (2023), S. and D. (2004)

B.20 Cyprus

1939

Cyprus experienced localized bank runs and uncertainty regarding the position of the Bank of Cyprus, prompting the government to order banking holidays.

Sources: Metrick and Schmelzing (2021)

B.21 Czechoslovakia

May, 1923

In May 1923, Czechoslovakia experienced bank runs when bank failures led to widespread withdrawals of deposits from smaller banks across the country.

Sources: Baron et al. (2021)

May, 1931

The Creditanstalt Bank of Vienna's collapse in May 1931 started the Great Depression in Europe, triggering runs on Austrian Banks, and spread to banks in Hungary, Czechoslovakia, Romania, Poland and Germany. Bernanke and James (1990) also report deposit withdrawals.

Sources: Bernanke and James (1990), Baron et al. (2021), Reinhart and Rogoff (2009)

April, 1994

In April 1994, Czechoslovakia experienced bank runs, among others on Banka Bohemia, according to Baron et al. (2021).

Sources: Baron et al. (2021)

June, 1996

Czechoslovakia experienced multiple bank runs between 1994 to 2000, during its transformation to market economy. The first notable bank run occurred in 1994 following the collapse of Banka Bohemia, due to fraudulent activities. This incident exposed the financial system's fragility and led to the establishment of partial deposit insurance. Subsequently, the failures of Česká Banka and AB Banka in 1995 prompted further runs. These events triggered a broader restructuring aimed at small banks, which were a significant source of vulnerability within the banking sector.

Sources: Laeven and Valencia (2018), Baron et al. (2021)

June, 2000

In 2000, the Czech Republic experienced a significant bank run, involving Investiční a Poštovní Banka (IPB), the third-largest bank at that time. Operational troubles led to a swift run on deposits, and the Czech National Bank was compelled to place IPB under forced administration, followed by a hasty sale to Československá obchodní banka (ČSOB). This event marked a critical point in the Czech banking sector's post-communist transformation, highlighting the ongoing need for regulatory improvements and effective governance to sustain depositor confidence.

Sources: Baron et al. (2021)

B.22 Germany

October, 1873

The 'Gründerkrach' of 1873 was characterised by significant funding withdrawals and numerous bank failures. Rieder (2018) provides a detailed discussion of these events, including the failure of Quistorpsche Vereinsbank. Other banks that failed during this period include Allgemeine Depositenbank, Elberfelder Disconto- und Wechselbank, Unionbank, Dresdner Handelsbank, Sächsischer Bankverein, Sächsische Kreditgesellschaft, Thüringische Bank, and Stuttgarter Bank. The Berliner Bankverein, Berliner Wechslerbank, Frankfurter Bankverein, and the Niederlausitzer Bank were liquidated between 1876 and the 1880s.

Sources: Jordà et al. (2017), Baron et al. (2021), Metrick and Schmelzing (2021) Rieder (2018), Friedman and Schwartz (1963)

September, 1891

In September 1891, Germany experienced bank runs as part of a broader banking crisis. According to Baron et al. (2021), such deposit withdrawals occured in Berlin specifically, likely related to the failures of C. W. Schnöckel, Hirschfeld & Anton Wolf, Hermann Friedländer & Sommerfeld, and Eduard Maass. This interpretation is also supported by descriptions in Metrick and Schmelzing (2021).

Sources: Baron et al. (2021), Metrick and Schmelzing (2021)

June, 1901

In June 1901, Germany experienced bank runs. Two mortgage banks failed in the autumn of 1900. Pommersche Hypotheken Bank, Mortgage Bank of Mecklenburg-Strelitz failed and were saved by discount banks in 1901. Preussische Hypothekenaktienbank, Deutsche Grundschuldbank, Dresdner Creditanstalt and Leipziger Bank failed in 1901, as well, followed by some other smaller banks, according to the description in Baron et al. (2021).

Sources: Baron et al. (2021)

September, 1911

In September 1911, Germany experienced bank runs due to the Agadir Crisis, which sparked a severe stock market plunge in Berlin. The Reichsbank assisted banks with considerable resources, but two banks in Goettingen still failed. The exact extent of the crisis is unclear, but it is estimated to have been far above 4 million Mark, according to the description by Metrick and Schmelzing (2021).

Sources: Metrick and Schmelzing (2021)

July, 1914

According to Baron et al. (2021), who cite Holtfrerich (1980), German banks experienced severe bank runs at the beginning of World War I in July 1914, although these runs were not associated with major bank failures.

Sources: Baron et al. (2021), Holtfrerich (1980)

August, 1929

According to the description of Baron et al. (2021), Germany experienced a severe banking crisis in the summer of 1931, which worsened the economic slump caused by the Great Depression. The crisis was triggered by the collapse of Danatbank, one of Germany's four big universal banks, which had invested heavily in foreign bonds and suffered huge losses. The failure of Danatbank sparked a wave of panic and withdrawals from other banks, leading to the closure of more than 40 banks and the suspension of payments by

the Reichsbank, Germany's central bank. Bernanke and James (1990) report first bank runs and failures of smaller banks in August 1929, which we treat as the start date of the run. Jordà et al. (2017) also report widespread deposit withdrawals in 1930 and 1931, starting in June 1930.

Sources: Baron et al. (2021), Bernanke and James (1990), Jordà et al. (2017)

January, 2008

A bank run on Lehman Brothers Bankhaus AG (German Subsidiary) is reported with capital injection to compensate the bank's clients. Further financial distress and broad illiquidity problems follow.

Sources: Laeven and Valencia (2018), Baron et al. (2021), Reinhart and Rogoff (2011)

B.23 Denmark

February, 1908

According to Baron et al. (2021), Metrick and Schmelzing (2021), and Jordà et al. (2017), Denmark experienced bank runs starting in February 1908 following the failure of Grundejerbank.

Sources: Baron et al. (2021), Metrick and Schmelzing (2021), Jordà et al. (2017)

September, 1922

According to Baron et al. (2021), Denmark experienced a bank run following the collapse of major bank Landmandsbanken in September 1922.

Sources: Baron et al. (2021), Metrick and Schmelzing (2021), Jordà et al. (2017)

B.24 The Dominican Republic

April, 2003

In April 2003, the Dominican Republic experienced bank runs triggered by the collapse of Banco Intercontinental (BANINTER), the country's second largest commercial bank at the time. BANINTER was involved in a fraud and corruption scandal involving several politicians and businessmen, including former President Hipólito Mejía. The bank run led to a wider banking crisis and severe economic crisis, including a sharp devaluation of the Dominican peso.

Sources: Laeven and Valencia (2018), Metrick and Schmelzing (2021), Freedom House (2003), The Dominican Republic (2006)

B.25 Ecuador

April, 1998

In April 1998, Ecuador experienced deposit runs following the closure of Solbanco, a smaller institution. The closure led to runs on other banks including two of the three largest banks. The resulting systemic liquidity crunch due to the contagion developed into a full-fledged banking crisis in August 1998. Metrick and Schmelzing (2021) additionally report bank runs in early 2000, but these seem to be part of the same episode.

Sources: Metrick and Schmelzing (2021), Laeven and Valencia (2018), Reinhart and Rogoff (2009), Jácome (2004)

B.26 Egypt

May, 1907

In May 1907, Egypt experienced bank runs that triggered a panic, according to Baron et al. (2021) and Metrick and Schmelzing (2021).

Sources: Baron et al. (2021), Metrick and Schmelzing (2021), Hu (2020)

July, 1914

In July 1914, Egypt experienced bank runs after the closure of the stock exchange following the beginning of World War I.

Sources: Baron et al. (2021), Metrick and Schmelzing (2021)

July, 1931

In July 1931, Egypt experienced bank runs on the Cairo and Alexandria branches of the Deutsche Orientbank.

Sources: Baron et al. (2021), Reinhart and Rogoff (2009), Bernanke and James (1990)

B.27 Estonia

October, 1998

The shutdown of EVEA Bank and ERA Bank in 1998, with EVEA Bank collapsing due to its significant investments in Russian eurobonds and the ensuing major losses amid the Russian financial market's downfall, exemplifies a scenario akin to bank runs. EVEA Bank's collapse, followed by a swift loss of depositor confidence in ERA Bank, prompted a rush of withdrawals that led to ERA Bank's subsequent closure, demonstrating a classic liquidity crisis triggered by a rapid erosion of trust among depositors.

Sources: International Monetary Fund (1999b)

September, 2008

In September 2008, Estonia experienced a bank run on the Estonian branch of Swedbank.

Sources: Metrick and Schmelzing (2021), OECD (2011), International Monetary Fund (2009)

B.28 Ethiopia

January, 2016

In January 2016, Ethiopia experienced a bank run after the Commercial Bank of Ethiopia (CBE) approved a $2 billion letter of credit request. In such cases, importers are required to deposit a certain percentage in birr with the bank. Over the next few weeks, a bank run occurred as individuals withdrew large sums of money from other banks to deposit in the CBE, according to Kflip (2023).

Sources: Kflip (2023)

B.29 Finland

November, 1900

In November 1900, Finland experienced bank runs following the failure of Maanviljelyspankki according to Baron et al. (2021).

Sources: Baron et al. (2021), Herrala (1999)

November, 1939

In 1939, the outbreak of the Winter War, triggered by the unexpected aggression of the Soviet Union, led to widespread bank runs in Finland. This financial turmoil escalated into a banking panic, prompting the Bank of Finland to impose restrictions on deposit withdrawals.

Sources: Reinhart and Rogoff (2009), Baron et al. (2021), Metrick and Schmelzing (2021), Herrala (1999)

B.30 France

August, 1704

In August 1704, reports of the French military's defeat at the Battle of Blenheim triggered a bank run on the Caisse d'Escompte, exacerbating a severe liquidity crisis following

currency devaluations. In response, a royal decree suspended the operations of the Caisse d'Escompte until April 1705 and recapitalised the bank through new tax allocations.

Sources: Metrick and Schmelzing (2021), Félix (2018)

May, 1720

In 1715, under the regency of the Duke of Orléans, France was on the verge of financial collapse and turned to the Scottish economist John Law for solutions. Law founded the Banque Générale Privée in 1716, advocated a switch from metallic to paper currency, and acquired the Mississippi Company, an integral part of France's colonial trade. He proposed to issue shares in the company in exchange for government bonds to reduce the public debt inherited from the reign of Louis XIV, sparking speculative investment and a surge in public interest. The French government printed vast amounts of paper money to capitalise on this trend, which soon led to severe inflation and the devaluation of both currency and bonds. The stock of the Mississippi Company, which was tied to the national economy, collapsed in 1720, triggering a market crash in France and a widespread bank run that eventually led to a significant market collapse.

Sources: Metrick and Schmelzing (2021), Beattie (2023), Encyclopaedia Britannica (1998), Narron and Skeie (2014)

October, 1783

At the beginning of the French financial and debt crisis (1783-1788), the Caisse d'Escompte experienced a bank run in October 1783. An official decree allowed the Caisse to suspend convertibility until 1 January 1784. This crisis in France was due to the large debts incurred during its participation in the Seven Years' War (1756-1763) and the American Revolution (1775-1783), which led to severe financial turmoil.

Sources: Metrick and Schmelzing (2021)

September, 1789

According to White (1995), France experienced bank runs due to further instability at the Caisse d'Escompte. Finance Minister Necker authorised the bank to suspend payments in the event of a run, and both the run and the suspension occurred in September 1789.

Sources: Metrick and Schmelzing (2021), White (1995)

September, 1805

In September 1805, the Banque de France faced a bank run triggered by rumours of a depletion of French silver reserves due to Napoleon's military campaigns. The bank was faced with a substantial debt of 68 million francs and only 0.782 million francs in specie.

This crisis forced the Banque de France into partial suspension. In response, Napoleon nationalised the bank's operations, injected 45 million francs of private capital and received some support from the treasury to stabilise it. The victory at Austerlitz in December 1805 helped to restore confidence in France's financial stability.

Sources: Reinhart and Rogoff (2009), Metrick and Schmelzing (2021)

1838

According to Reinhart and Rogoff (2009), there were several bank runs in Paris in 1838 and 1839 following the failure of the Banque de Belgique.

Sources: Reinhart and Rogoff (2009)

February, 1847

In 1847, bank runs occurred against a backdrop of economic challenges in France, including an agricultural and cyclical crisis, which caused overstocked businesses to accumulate debt and delay payments. The runs were triggered by an increased demand for credit and a decline in debt payments to banks, leading some banks, such as Bontoux and Delhante in Lyon, to suspend payments. Other bank runs took place during the revolutions of 1848, when France was already facing a deep financial crisis and weakened money markets. The outbreak of the revolution caused panic, the stock exchange was closed and share prices plummeted, leading to a widespread withdrawal of funds from banks. Some 250 banks suspended payments between February and April, and the Bank of France had to suspend cash payments on its banknotes. Despite measures to restore confidence, financial fragility persisted and the subsequent recovery has been slow.

Sources: Reinhart and Rogoff (2009), Bonin (2000), Alessio Moro and Tedde (2013)

1871

In 1871, France experienced bank runs during the Franco-Prussian War, according to Baron et al. (2021).

Sources: Baron et al. (2021)

January, 1881

In 1881 and 1882, France experienced bank runs due to the collapse of the Banque de Lyon and the Union Generale. The crisis was primarily caused by a credit boom driven by stock market speculation. However, Baron et al. (2021) consider that elements of a banking crisis were also present.

Sources: Baron et al. (2021)

March, 1889

In 1889, a speculative bubble in the copper market led to a bank run in France. Led by the industrialist Secrètan, who sought to monopolise the market, speculation relied heavily on bank loans and guarantees. The collapse in copper prices led to significant losses for banks, particularly Comptoir d'Escompte (CdE), which faced insolvency and a subsequent bank run following the suicide of its chairman. To alleviate the crisis, the Bank of France provided a 100 million franc loan to the CdE, which helped to prevent a wider financial disaster.

Sources: Reinhart and Rogoff (2009), Baron et al. (2021), Jordà et al. (2017), Hautcoeur et al. (2014)

October, 1930

In October 1930, the beginning of the French banking crisis was marked by runs on provincial banks, signalling wider systemic financial instability. This turmoil was part of the wider global economic downturn that began with the stock market crash in the United States in 1929. The crisis in France was exacerbated by the country's adherence to the gold standard until 1936, which led to industrial stagnation, falling prices, rising unemployment and a deterioration in the competitiveness of French firms. Notable failures included local banks such as Banque Adam, the Oustric Group and Banque Renauld, as well as the regional Banque d'Alsace-Lorraine and the national Banque Nationale de Crédit between 1930 and 1931. The crisis culminated in the rescue of a major investment bank, the Banque de l'Union Parisienne, by the Bank of France and Parisian banks in 1932.

Sources: Reinhart and Rogoff (2009), Baron et al. (2021), Jordà et al. (2017), Lacoue-Labarthe (2005)

September, 1931

In September 1931, France experienced bank runs when depositors began withdrawing their funds from the BNC (Banque Nationale de Crédit) due to the shaky situation of Comptoir Lyon-Alemand, another bank, according to Lacoue-Labarthe (2005)). Despite government bailouts, BNC went into liquidation after deposit withdrawals reduced its deposits by 53.7%. This run on BNC triggered a panic that affected several other banks, including the Comptoir d'escompte de Reims and the Banque syndicale de Paris, leading to their closure. By November, several long-established provincial banks had failed, and by the end of 1931, according to Lescure (2005), some 230 banks had failed in these financial panics.

Sources: Baron et al. (2021), Lacoue-Labarthe (2005), Lescure (2005)

February, 1932

In 1932, France experienced bank runs as the financial distress of the Banque de l'Union Parisienne and the restructuring of the BNC in 1932 marked another stage of the banking crisis in France, according to Lacoue-Labarthe (2005). Despite government support, the BNC was forced to close following a bank run in February 1932, leading to its amicable liquidation and the creation of a new bank, the National Bank of Commerce and Industry. Rumours of heavy losses by the Banque de l'Union Parisienne on investments in Hungary led to withdrawals of 600 million francs, and the bank merged with the Crédit Mobilier Français in May. Crédit du Nord also took over the troubled Banque Générale du Nord in May 1934, a risky move that ultimately strengthened the bank. The crisis also led to the closure of branches throughout the country, with the total number of branches falling by more than 15% between 1931 and 1932.

Sources: Lacoue-Labarthe (2005), Reinhart and Rogoff (2009)

September, 1938

According to Baron et al. (2021), France experienced bank runs in 1938 due to expplainnat-boldauthorstions of war in Europe. There is evidence of large deposit withdrawals of around 4 billion francs in numerous bank runs on savings banks in the month of September alone.

Sources: Baron et al. (2021)

B.31 Great Britain

May, 1696

In 1696, Britain experienced a bank run when goldsmiths ran out on the newly established Bank of England in May.

Sources: Metrick and Schmelzing (2021)

1707

In 1707, the Bank of England experienced a bank run triggered by rumours of a French invasion, as described by Metrick and Schmelzing (2021).

Sources: Metrick and Schmelzing (2021)

November, 1745

In 1745, as described by Metrick and Schmelzing (2021), England experienced bank runs as a result of the Highlanders' advance.

Sources: Metrick and Schmelzing (2021)

June, 1772

The Ayr Bank Crisis of 1772 was associated with relatively concentrated bank failures, but widespread runs. The Leeds Mercury, for example, reported a "general panic" and a "severe run" on country banks. We date the beginning of the bank runs to June 1772, which is the first primary source mention of the wider panic (in The Scots Magazine).

Sources: Kenny et al. (2021)

May, 1815

The year 1815 saw widespread bank runs and failures in the UK, particularly in England. We record the start of this episode as May 1815, for which we have the first newspaper mention of a bank run (in the Cheltenham Chronicle). Runs are also mentioned in other newspapers until early 1816. Reinhart and Rogoff (2009) also date the crisis to 1814 and report widespread bank failures.

Sources: Reinhart and Rogoff (2009), Kenny et al. (2021)

May, 1820

In 1820 and 1821, the United Kingdom experienced several episodes of bank runs and a wider banking crisis, according to Kenny et al. (2021). We date the start of this episode to May 1820. Kenny and Turner (2019) find that the crisis in Ireland began in late May with the closure of Roches' Bank and Leslie's Bank, which quickly triggered a run on the Cork Savings Bank. In June 1820, the Caledonian Mercury reported bank runs in Scotland. This episode is not mentioned in Reinhart and Rogoff (2009).

Sources: Kenny et al. (2021), Kenny and Turner (2019), Reinhart and Rogoff (2009)

December, 1825

The 'Panic of 1825' has been described as one of the world's first international financial crises (see, for example, Olmstead-Rumsey (2019)). It followed a major boom in credit and speculation in the preceding years, which came to a crashing halt with the drying up of money market liquidity in mid-December, followed by runs on many London banks. Specifically, the panic began on 12 December 1825, when the London bank Pole, Thornton & Co. suspended payments, which in turn triggered panic among depositors at Pole's correspondent banks. By the end of that year, these spillovers were particularly damaging to small "country banks", 30 of which were declared bankrupt by the end of December (and 41 more the following year). Reinhart and Rogoff (2009) also date this as a banking crisis, referring to the "Panic in London".

Sources: Olmstead-Rumsey (2019), Reinhart and Rogoff (2009)

December, 1840

There are several reports of runs during the banking crisis of the late 1830s. Kenny et al. (2021) refer to this episode as the "crisis of 1840-41", while others date it to the late 1830s (e.g. Turner (2014)). Reinhart and Rogoff (2009) put the starting date at 1837. While there were several newspaper reports of bank runs in 1840 and 1841, we date the start of this episode to December 1839, when the Truro & St. Columb Bank (Turner & Co) experienced a run and was subsequently taken over, according to Kenny et al. (2021).
Sources: Kenny et al. (2021), Turner (2014), Reinhart and Rogoff (2009)

October, 1847

The United Kingdom experienced a banking crisis in 1847, caused by the collapse of a speculative boom in railway shares. The crisis led to bank runs that "accelerated" in October, according to Metrick and Schmelzing (2021). After lending freely between January and September, the Bank of England (BoE) stopped lending against shares and treasury bills in October. The Panic of 1847 led to a bank run in London in October 1847, when several large merchant banks and discount houses faced liquidity problems and could not meet their obligations. As described in detail on the basis of primary sources in Kenny et al. (2021), the bank run spread to other cities and regions, causing many banks to fail or suspend payments.

Sources: Metrick and Schmelzing (2021), Kenny et al. (2021)

November, 1857

In 1857, the United Kingdom experienced bank runs. Private assistance was given to the Western Bank, but it failed along with the City Bank of Glasgow (which was temporarily suspended), as described by Metrick and Schmelzing (2021). These events "caused a run on the other banks", according to an article in the Liverpool Mail at the time, as quoted in the appendix by Kenny et al. (2021). The incidence of runs is also mentioned by Reinhart and Rogoff (2009) to have happened in Glasgow, Liverpool and London.

Sources: Metrick and Schmelzing (2021), Kenny et al. (2021), Reinhart and Rogoff (2009), Riddiough and Thompson (2012)

May, 1866

In 1866, the UK experienced bank runs following the unexpected failure of Overend, Gurney & Co, which triggered a systemic banking crisis. Overend & Gurney had been the largest player in the London interbank market at the time. An article in the Banker's Magazine at the time, quoted in Xu (2022), provides clear evidence of runs: "It is impossible to describe the terror and anxiety that seized men's minds ... a run immediately began on all the banks, the magnitude of which ... can hardly be imagined." Overend & Gurney's failure followed a speculative boom in the 1860s. The bank's surprise collapse was due to the fact that it had expanded away from its core business as a discount house rather than

a retail bank, into riskier investments without adequate collateral, and had systematically misled its investors about its financial position.

Sources: Xu (2022), Kenny et al. (2021), The House of Commons (2008)

September, 1878

In 1878, the United Kingdom experienced bank runs starting in late September, when the collapse of the City of Glasgow Bank triggered a wider panic that affected several other banks. While Kenny et al. (2021) do not classify this episode as a systemic banking crisis, their appendix reports clear evidence of runs in, among others, the South Wales Daily News, the Belfast Telegraph and the Cardiff Times.

Sources: Baron et al. (2021), Kenny et al. (2021), The House of Commons (2008)

July, 1914

In 1914, the UK faced bank runs as part of a wider financial crisis triggered by the outbreak of World War I. Austria's ultimatum to Serbia on 23 July was a key triggering event, likely causing a stock market crash and runs on savings banks. The ensuing panic also led to a run on the Bank of England as depositors sought to exchange their notes for gold. A major campaign in the run-up to the opening of the banks on 7 August helped to prevent a further escalation of the runs. Although not counted as a banking crisis by Kenny et al. (2021), who describe the savings bank runs in the Appendix, evidence of runs is also discussed in Roberts (2014) and Baron et al. (2021). Reinhart and Rogoff (2009) also treat this episode as a banking crisis.

Sources: Kenny et al. (2021), Roberts (2014), Baron et al. (2021), Reinhart and Rogoff (2009)

July, 1973

In 1973, the UK experienced the so-called "Secondary Banking Crisis" and there is some evidence that this episode was accompanied by bank runs. As described by Baron et al. (2021), there were bank runs at "some of the fringe banks". Bank of England (1978) also mentions "a run on deposits". In the course of the crisis, many finance companies and secondary banks failed or were rescued, amid widespread intervention such as Operation Lifeboat. 1973 is also marked as a banking crisis by Jordà et al. (2017) and Duca et al. (2021).

Sources: Baron et al. (2021), Bank of England (1978), Jordà et al. (2017), Duca et al. (2021), Reid (1982)

September, 2007

In September 2007, the UK experienced a bank run on mortgage lender Northern Rock. The run followed a report on the BBC evening news that the bank had asked the Bank of England for help, and the central bank announced emergency liquidity support the next

day. The bank was eventually nationalised in February 2008. In the course of the wider banking crisis that followed, several other banks received government bailouts.

Sources: Baron et al. (2021), Jordà et al. (2017), The House of Commons (2008), Shin (2009), Reuters (2008)

B.32 Ghana

September, 1931

Ghana experienced bank runs from 2015 to 2018. This phase was characterized by a substantial number of bank failures, with 20 percent of banks collapsing between August 2017 and August 2018. The financial turmoil incurred a significant cost to the nation, amounting to GH¢9.9 billion (about $2.2 billion), which represented approximately 3.5% of Ghana's GDP, according to Antwi (2020).

Sources: Antwi (2020),

B.33 Greece

September, 1931

In September 1931, Greece experienced bank runs. During this period, 17 of the smaller banks failed or closed, but the larger banks survived.

Sources: Baron et al. (2021), Christodoulakis (2012)

May, 2012

In 2012, fears of a run on Greek banks may have rattled Athens after savers withdrew at least €700 million in one day alone. Since the beginning of 2010, Greek banks have lost 72 billion euros in deposits, or about 30 percent. This slow-moving run on deposits may not have caused panic in Greece. But that could change quickly if there is a sudden loss of confidence in the banks. According to Metrick and Schmelzing (2021), capital injections into the National Bank of Greece (NBG), Piraeus and TT Hellenic Postbank have amounted to 1.4bn and in the case of TT, compensation for the funding gap.

Sources: Metrick and Schmelzing (2021), Financial Times (2012), NBC News (2012)

January, 2015

In 2015, Greece experienced bank runs as many people withdrew their money from Greek banks due to the political and economic uncertainty caused by the debt crisis and the referendum on the terms of the bailout. The Greek government imposed capital controls in June 2015 to prevent the banking system from collapsing, limiting the amount of cash withdrawals and transfers. The Bank of Greece reported that household and business

deposits fell to €133.7 billion in April 2015, the lowest level in a decade. Greek banks also relied heavily on emergency liquidity assistance from the European Central Bank, which reached €86.7 billion by the end of June 2015.

Sources: Financial Times (2015), Smith (2015), Worstall (2015), HuffPost (2015)

B.34 Hong Kong

March, 1892

In March 1892, Hong Kong experienced a bank run on the New Oriental Bank Corporation, which failed three months later, triggering a second wave of bank runs on other banks.

Sources: Baron et al. (2021), Sheehan (2018), Matlach (2010)

June, 1961

In June 1961, Hong Kong experienced a bank run on the Liu Kong Hing Bank that lasted for several days. The run was blamed on malicious rumours spread by rivals of the bank's managing director, Liu Po-sang. The basis of the rumours was that the bank was under police investigation.

Sources: South China Morning Post (2008)

January, 1965

In January 1965, Hong Kong experienced a bank run after new prudential regulations and a property downturn hit local Chinese banks with large exposures to unfinished property projects and other illiquid assets. The bank run continued in phases throughout the year, with one in January, three in April and four in November.

Sources: Cole et al. (1995), Hoffner and Steffen (2022), Chan (1998)

September, 1982

In September 1982, Hong Kong experienced a significant bank run on the Hang Lung Bank, triggered by public mis-perceptions and rumours. The incident began when an elderly woman, mistakenly believing that she could cash in a gold certificate from a local jeweller at any bank, was refused at Hang Lung Bank, leading her to publicly claim that the bank had run out of money. This caused widespread panic and a rush to withdraw funds, despite the bank's strong financial position with a liquidity ratio well above the required threshold. The situation was eventually stabilised by swift action by the bank and the Hong Kong authorities, who worked hard to dispel rumours and restore public confidence.

Sources: South China Morning Post (2008), The Business Times (1982)

June, 1985

In 1985, there was a run on the Overseas Trust Bank, which was close to bankruptcy and was ultimately taken over by the government.

Sources: South China Morning Post (2008), Bruner (2008), Li (1999)

September, 2008

In September 2008, Bank of East Asia, Hong Kong's fifth-largest bank by assets, experienced a bank run after rumours spread about the bank's financial health given its exposure to the ongoing US financial crisis. The run eased after reassurances from officials and the purchase of shares by a high-profile tycoon helped calm panicked depositors, according to ki Kwong (2008).

Sources: ki Kwong (2008)

B.35 Croatia

March, 1998

In March 1998, Croatia experienced bank runs as a result of the failure of the country's fifth largest bank, Dubrovacka (5% of total assets). The problems of this bank triggered political turmoil, which in turn triggered runs on other banks perceived to be indirectly related to Dubrovacka. In July 1998, the sixth largest bank ran into problems, and several medium and small institutions also experienced liquidity problems in the autumn of 1998 and early 1999, as documented in Laeven and Valencia (2018).

Sources: Laeven and Valencia (2018)

B.36 Hungary

July, 1873

In July 1873, Hungary experienced bank runs and massive withdrawals by depositors during the Austria-Hungarian "Gründerkrach."

Sources: Rieder (2017)

October, 1930

In October 1930, Hungary experienced a smaller bank run than the one that followed in 1931, but it seems to have been large enough to be considered a separate panic, according to the documentation in Baron et al. (2021).

Sources: Baron et al. (2021)

July, 1931

In July 1931, Hungary faced significant bank runs, particularly in Budapest, as a result of the collapse of the Creditanstalt bank in Vienna, which marked the spread of the Great Depression in Europe. The crisis centred on the General Credit Bank, with depositors rapidly withdrawing their funds amid growing financial uncertainty. This led to the Hungarian government declaring a bank holiday to stop all banking operations and stabilise the situation. The crisis was further intensified by the withdrawal of foreign investment, leading to a standstill agreement with foreign creditors to manage the escalating financial instability.

Sources: Macher (2015), Bernanke and James (1990)

B.37 Indonesia

July, 1991

In July 1991, Indonesia experienced a bank run at Bank Danamon. The event was triggered by rumours of operational difficulties at the bank. This situation led to a small run on the bank as customers withdrew their funds due to concerns about the bank's stability. In order to stabilise the situation, the Indonesian government had to step in. This incident was part of a series of financial difficulties experienced by various banks in Indonesia in the early 1990s, which pointed to underlying weaknesses in the country's financial sector.

Sources: Moreno et al. (1998), Montgomery (1997), Simorangkir (2012)

November, 1997

During 1997-1999, Indonesia experienced bank runs during the Asian Financial Crisis. We date the beginning of these runs as November 1997 as reported by Wright (2019), which is also supported by data on bank-level deposit outflows reported in Simorangkir (2012). This event is also classified as a systemic banking crisis by Reinhart and Rogoff (2009).

Sources: Wright (2019), Simorangkir (2012), Reinhart and Rogoff (2009), Laeven and Valencia (2018), Baron et al. (2021), Charles Enoch and Kovanen (2001), Watanabe (1998), BBC (1998)

B.38 India

November, 1913

In 1913, India experienced a major bank run that had a significant impact on the country's financial system. This event, often referred to as the "Indian Banking Panic of 1913", was triggered by the failure of the "Bank of Bombay" and the subsequent rumours and panic that led to a widespread crisis.

Sources: Punjab National Bank (n.d.), Palat (2011), Agrawal (2018), Mukherjee (2019)

B.39 Ireland

September, 2008

In 2008, Ireland experienced a severe financial crisis that led to significant upheaval in the banking sector. There is evidence of runs on, among others, Anglo Irish Bank, where "depositors made massive withdrawals" (Chu, 2014). Baudino, Murphy, and Svoronos (2020) also stress the widespread nature of runs on Irish banks and cite September as the beginning of deposit withdrawals. This episode is also classified as a systemic banking crisis by Jordà et al. (2017), Laeven and Valencia (2018), and Reinhart and Rogoff (2009). Baron et al. (2021) treat this as a banking panic.

Sources: Jordà et al. (2017), Laeven and Valencia (2018), Reinhart and Rogoff (2009), Baron et al. (2021), International Monetary Fund (2018a), Patrizia Baudino and Svoronos (2020), RTÉ (2009), Chu (2014), Whelan (2013)

B.40 Iran

December, 2022

In 2022, Iran experienced bank runs due to a severe currency devaluation, which led to customers withdrawing their money from banks (widely supported by nationwide protests).

Sources: Nova News (2022), Iran International (2022a), Iran International (2022b), Witte (2022)

B.41 Iceland

September, 2008

In 2008, Iceland experienced a major banking crisis, which also featured bank runs. In March 2008, runs occurred at Landsbanki's Icesave and Kaupthing's Edge. In late September 2008, Glitnir Bank received a capital injection from the government, which was strongly opposed by a major shareholder, a media magnate, and the resulting media campaign against the bailout triggered a bank run. On 3 October 2008, there were further runs after Professor Gylfi Magnusson said in a radio interview that Iceland's banks were "technically bankrupt".

Sources: BBC (2016), Fenton (2021), Einarsson et al. (2015), University of ICeland (2018)

B.42 Italy

September, 1907

According to Vercelli (2022), the 1907 banking crisis in Italy was accompanied by bank runs on the large mixed banks Banca Commerciale Italiana, Credito Italiano, and Società Bancaria Italiana. That said, these runs were relatively isolated, as there were no runs on cooperative banks, ordinary credit banks, and postal banks. Baron et al. (2021) date a banking panic to occur in September 1907.

Sources: Vercelli (2022), Baron et al. (2021), Jordà et al. (2017), Reinhart and Rogoff (2009), Metrick and Schmelzing (2021)

July, 1914

At the beginning of World War I, Italy experienced widespread bank runs as part of a broader banking panic classified by Baron et al. (2021). Reinhart and Rogoff (2009) also report this event as a systemic banking crisis.

Sources: Baron et al. (2021), Reinhart and Rogoff (2009)

November, 1921

According to Baron et al. (2021) and Jordà et al. (2017), the runs on Banca Italiana di Sconto and Banco di Roma triggered a larger financial panic, leading to the liquidation of the former and the bailout of the latter.

Sources: Baron et al. (2021), Jordà et al. (2017)

December, 1930

According to Baron et al. (2021) and Jordà et al. (2017), Italy's largest banks experienced large deposit withdrawals in December 1930 as part of the spread of the Great Depression to Italy. The government launched a major intervention to support the banking sector in 1931.

Sources: Baron et al. (2021), Jordà et al. (2017)

B.43 Jamaica

May, 1996

Jamaica experienced severe bank runs in 1996-97 in the context of a systemic banking crisis. In particular, depositors withdrew their savings from weak local institutions and placed them in branches of foreign banks. Banks that experienced runs included Century National Bank, Citizens Bank and Eagle Bank. The previous boom had been accompanied

by rapid growth in the less regulated parts of the financial sector and poor supervision.

Sources: International Monetary Fund (1999a), Swaby (2011), George (2022)

B.44 Jordan

August, 1989

According to Laeven and Valencia (2018), Jordan experienced a bank run in 1989 after the country's third-largest bank failed.

Sources: Laeven and Valencia (2018)

B.45 Japan

August, 1871

According to Shizume and Tsurumi (2016), the "exchange companies" (kawase-gaisha) were a prototype of modern commercial banks and started operating in 1869. However, they soon experienced runs, and all but one institutions (in Yokohama) closed down. Because Shizume and Tsurumi (2016) do not explicitly date this event, only specifying that the runs happened "soon" after the kawase-gaisha were set up in 1869, we stick with the dating in Baron et al. (2021), who classify this episode as narrative evidence for bank runs in 1871. This is also consistent with the crisis dating in Jordà et al. (2017).

Sources: Shizume and Tsurumi (2016), Baron et al. (2021), Jordà et al. (2017)

December, 1900

In December 1900, a suspension at Kyushu Ninth Bank was associated with localized bank runs in the Kyushu area, followed by further runs and a full-fledged banking crisis in early 1901. Both Metrick and Schmelzing (2021) and Jordà et al. (2017) classify this as an episode characterized by runs and panic, which is further supported by the discussion in Smitka (1998) and Juro Teranishi (1978).

Sources: Metrick and Schmelzing (2021), Jordà et al. (2017), Smitka (1998), Juro Teranishi (1978)

February, 1907

According to Baron et al. (2021) and Jordà et al. (2017), a run on Nagoya Bank in February 1907 triggered a broader panic, which was associated with subsequent failures of several banks, including the One Hundred Thirty-Eight Bank. In total, 42 banks were affected by runs.

Sources: Baron et al. (2021), Jordà et al. (2017)

April, 1920

After the end of the First World War, the Japanese wartime boom ended with major banking sector disruptions. According to Metrick and Schmelzing (2021), bank runs started in April 1920 following the collapse of Masuda Bank in Osaka, which triggered bank runs in several other regions. Both Jordà et al. (2017) and Baron et al. (2021) also discuss the prevalence of bank runs.

Sources: Metrick and Schmelzing (2021), Jordà et al. (2017), Baron et al. (2021), Shizume (2009)

February, 1922

According to Baron et al. (2021), the failure of Ishii Corporation, a lumber company, triggered a wave of bank runs. First concentrated in Kochi Prefecture and the Kansai region, the runs spread across the country starting in October and developed into a broader banking crisis (Shizume (2009)). This episode is also classified as a systemic banking crisis in 1923 by Reinhart and Rogoff (2009).

Sources: Baron et al. (2021), Shizume (2009), Reinhart and Rogoff (2009)

March, 1927

In 1927, following the Great Kanto Earthquake, the Japanese banking sector experienced several bank runs following a spike in disaster-related non-performing loans. Several sources mention the occurrence of bank runs, including Baron et al. (2021) and Jordà et al. (2017).

Sources: Baron et al. (2021), Jordà et al. (2017), National Graduate Institue for Policy Studies (n.d.)

November, 1997

According to several sources, the 1997 banking crisis in Japan was accompanied by runs. Karube (2017) states that, after the failures of Hokkaidō Takushoku Bank, Sanyō Securities, and Yamaichi Securities, "on November 26 the run on banks followed". The occurrence of runs is also mentioned several times in a "post-mortem" document on the crisis by the BIS (Nakaso (2001)). Also in line with this interpretation, Charles Enoch and Kovanen (2001) mentions that "the perception of weakness in other banks in the system prompted depositors to more aggressively withdraw their funds from weakened depository institutions".

Sources: Karube (2017), Nakaso (2001), Charles Enoch and Kovanen (2001)

B.46 Kazakhstan

February, 2014

In 2014, Kazakhstan experienced bank runs when large number of depositors gathered outside Kaspi Bank, Alians Bank, and Centrcredit Bank to withdraw their money. According to media reporting, the initial trigger were general worries about currency devaluation fuelled by social media rumours about the health of the banks.

Sources: Recknagel (2014), International Monetary Fund. (2018b), Lillis (2014)

B.47 Kenya

April, 2016

In 2016, Chase Bank Kenya, a midsized bank unrelated to the US bank with the same name, experienced a run due to "inaccurate social media reports" after chairman Zafrullah Khan and group managing director Duncan Kabui stepped down following concerns over the credibility of the bank's financials. The fallout was prompted by a restatement of financial results showing a more than doubling of "insider loans" made by the bank. The bank was put into receivership.

Sources: Nyabola (2019), Gathaiya (2017), Business Daily (2016)

October, 2022

In 2022, First Community Bank (FCB) experienced a bank run when a large number of customers withdrew their money. The run followed reports of a disruption in the bank's services, prompting FCB to halt withdrawals. FCB was eventually acquired by Premier Bank.

Sources: Muiruri (2022), Business Daily (2022)

B.48 South Korea

June, 1950

In 1950, South Korea experienced a "heavy run on deposits" following the outbreak of the Korean War. The immediate trigger was the outbreak of the Korean War. In response, the newly established Bank of Korea limited deposit withdrawals to 10,000 won per week and 30,000 won per month per household.

Sources: Metrick and Schmelzing (2021), Bank of Korea (2010)

May, 1961

In 1961, South Korea experienced "massive bank runs" after the May coup, according to Metrick and Schmelzing (2021). After the coup, the military government of Park Chung-Hee gradually nationalised commercial banks.

Sources: Metrick and Schmelzing (2021), Bank of Korea (2010)

B.49 Kuwait

October, 2008

In October 2008, Kuwait's Gulf Bank experienced a bank run after suffering losses on derivatives trading caused by the fall of the euro against the dollar. The bank was subsequently bailed out by the government, as were several other banks.

Sources: Financial Times (2008), Euromoney (2009)

B.50 Lebanon

October, 1966

On 13 October 1966, Lebanon's largest bank, Intra Bank, collapsed after depositors rushed to withdraw their money amid rumours about the bank's solvency. At the time, Intra had a market share of 38% of all deposits, owned nine other banks and controlled 35 other companies. When the bank lost $70 million in one day, leaving only $330,000 in its vaults, the run spread to other banks, prompting the Lebanese cabinet to declare a bank holiday and the stock exchange to close. The bank's founder, Yousef Beidas, blamed the Lebanese government's slow response and the central bank's unwillingness to provide liquidity support on the fact that he had made powerful political enemies.

Sources: Time (1966), Bzeih (2023)

B.51 Libya

February, 2011

During the Libyan revolution, which began in February 2011, there were widespread bank runs across the country. To counter this, the Central Bank of Libya imposed a cash withdrawal limit of LD750 per person per month. The Central Bank of Libya reported that the total amount of cash withdrawn reached LD7 billion.

Sources: Hancock (2012), World Bank Group (2020)

B.52 Lithuania

December, 1995

In 1995, during Lithuania's transition period and following the introduction of a currency board the previous year, the country experienced a systemic banking crisis, including runs on struggling private banks. The first and third largest private banks, Innovation Bank and Litimpeks Bank, were closed in December 1995, triggering large deposit withdrawals from other institutions. The long-term result of the 1995 episode was that three large Nordic banking groups ended up owning most of the banking sector (SEB, Swedbank and Luminor).

Sources: Laeven and Valencia (2018), China-CEE Institute (2020)

B.53 Latvia

July, 1931

In 1931, Latvia experienced runs on the Bank of Liepaja and the Riga International Bank, mainly as a result of the ongoing Great Depression of 1930.

Sources: Metrick and Schmelzing (2021)

December, 2011

In 2011, rumours of financial instability again led to bank runs at Latvia's Swedbank and Latvijas Krajbanka Bank. This came at the heels of large-scale depositor withdrawals following the failure of Parex Bank during the Global Financial Crisis, which left the financial sector in a vulnerable state.

Sources: Associated Press (2011), Heath (2012), Sandstrom (2011)

B.54 Macau

September, 2005

In September 2005, Macau experienced a bank run following the announcement of impending US sanctions against Banco Delta Asia, a Macau-based bank owned by the Delta Asia Financial Group. As a result, the Macau government invoked a banking law to replace the bank's board with government appointees.

Sources: Wan (2005), The Economist (2005)

B.55 Mexico

March, 1883

In March 1883, Mexico experienced a bank run on the Banco Nacional Mexicano amid mounting pressures in the financial system, marking the beginning of the panic.

Sources: Baron et al. (2021), Reinhart and Rogoff (2009), Metrick and Schmelzing (2021), Conant (1909)

November, 1913

In November 1913, Mexico experienced a bank run following the imposition of a compulsory war tax on deposits. The banks were hit even harder because they were the main creditors of the federal government, which defaulted on its debts in 1913. The panic was well under way by the time specie convertibility was suspended in November 1913, as documented in Baron et al. (2021).

Sources: Baron et al. (2021)

December, 1921

In December 1921, Mexico experienced a bank run when the Compañía Bancaria de París y México faced a massive outflow of deposits.

Sources: Baron et al. (2021)

November, 1922

In November 1922, Mexico experienced a bank run following the collapse of the Banque Française du Mexique, as documented in Baron et al. (2021).

Sources: Baron et al. (2021)

July, 1931

In July 1931, Mexico experienced a bank run on Credito Espanolde Mexico and the Banco Nacional de Mexico. According to the documentation in Baron et al. (2021), payments were suspended after a deposit run on these major banks.

Sources: Baron et al. (2021)

B.56 Myanmar

February, 2003

In February 2003, Myanmar experienced a bank run on Asia Wealth Bank, which spread to other major private banks. These runs began following the collapse of small finance companies and widespread rumours about the liquidity of major banks. It led to a liquidity problem and a shortage of kyat (the national currency) in the banks.

Sources: The Economist (2003), Turnell (2003)

2021

In February 2021, Myanmar experienced a bank run following a military coup. Branches of Myawaddy Bank in Yangon saw unusually high numbers of customers withdrawing money this week, despite only being open for a few hours in the morning, after anti-coup protesters called for a boycott of military-related businesses. There was widespread concern that the demand for cash across the country could cause the bank to collapse.

Sources: The Irrawaddy (2021), Margulies (2021), Oo and Crispin (2021), Pakistan Today (2021)

B.57 Montenegro

September, 2008

Following the global financial crisis, Montenegro experienced major bank runs in 2008 when depositors withdrew around 30% of their holdings. Prva Banka was particularly badly affected.

Sources: Tanner (2011), Central Bank of Montenegro (2010)

B.58 Malaysia

September, 1997

In September 1997, Malaysia experienced a bank run on MBF Finance after news spread throughout Malaysia that the elderly Mr Loy, the founder of MBF Finance, was ill. The company experienced a run on its deposits in its 120 branches across Malaysia.

Sources: Kaplan and Ke (n.d.), Fuller (1999), Pura (1999), Bank Negara Malaysia (1999)

B.59 Nigeria

March, 1996

In 1996, Nigeria experienced a bank run on the Allied Bank of Nigeria after the clearing system was suspended due to the bank's overdrawn current account with the CBN, non-performing loans and large-scale fraud. This triggered a run on the bank as most branches were bombarded by depositors trying to withdraw their funds.

Sources: Nigeria Deposit Insurance Corporation (2020)

February, 2023

In 2023, Nigeria experienced a bank run due to a shortage of new banknotes as the central bank replaced old notes. Restrictions on cash withdrawals and businesses refusing to accept old notes led to long queues outside banks waiting for new notes.

Sources: Osae-Brown and Adamu (2023), PYMNTS (2023), Adebayo (2023), Jolaoso (2023), Peter (2023)

B.60 Nicaragua

August, 2000

In August 2000, Interbank, the largest bank in Nicaragua, was seized due to the finding the management had committed fraud. Despite the announcement of full depositor protection, a bank run on other institutions occurred and continued until the Interbank was resolved in October 2000.

Sources: Laeven and Valencia (2018)

B.61 The Netherlands

July, 1914

In July 1914, the Netherlands experienced a bank run following the outbreak of the First World War. At the Rijkspostspaarbank, the national postal savings bank, more than a million guilders were withdrawn on 30 July. On the following two days, the figure rose to two and a half and almost five million guilders respectively. Banks responded by refusing to accept deposits. The government extended the period within which a bank had to honour a request for payment of deposits from two weeks to six months and allowed interim withdrawals of no more than 25 guilders per week.

Sources: Baron et al. (2021), van Zenden (1998), Euwe (2012)

1921

A significant number of banks failed between 1921 and 1922, including reports of runs on smaller banks in 1921 (Stellinga et al. (2021)). To avert a potential system-wide collapse, the authorities intervened to rescue several banks and prevent a more widespread bank run in 1922.

Sources: Baron et al. (2021), Stellinga et al. (2021)

October, 2009

In October 2009, the Dutch bank DSB experienced a major bank run when customers withdrew about one sixth of the institution's deposits. The run was triggered when Pieter Lakeman, a lawyer claiming to represent a collective of aggrieved clients in financial distress due to their investments in DSB financial products, appeared on Dutch public television and urged all depositors to participate in a mass withdrawal from the bank. In response to Lakeman's appeal, thousands of depositors heeded the call and withdrew their liquid deposits en masse.

Sources: Dutchnews (2009)

B.62 Norway

1857

In 1857, several banks experienced runs and banks curtailed lending. Following the bursting of the railway bubble in the United States in 1857, many banks had been hit because of low liquidity and high discount rates.

Sources: Gerdrup (2007)

June, 1899

In the summer of 1899, Norway experienced significant bank runs as part of a wider banking crisis. The immediate trigger for these runs was a combination of factors: the failure of Chr. Christophersen, a large, highly leveraged non-financial company, which triggered a crash in asset markets, and the resulting rumours about the financial health of Oslo's banks. This was compounded by the fact that Norges Bank (NB) had low banknote reserves as a result of extensive credit expansion and vulnerability to gold outflows. These events undermined public confidence in the banking system and caused depositors to rush to withdraw their funds from banks, especially those perceived as weak, thereby exacerbating the crisis.

Sources: Gerdrup (2007)

April, 1923

In April 1923, Norway experienced a bank run when Den norske Handelsbank was forced to suspend payments, followed by a run on the Foreningsbanken. The withdrawal of deposits was accelerated by the Act of 24 March (the Bank Administration Act), as it induced many depositors to withdraw funds from banks that did not seem safe enough and to deposit them in banks under public administration or in banks abroad, according to Baron et al. (2021) and Metrick and Schmelzing (2021).

Sources: Baron et al. (2021), Metrick and Schmelzing (2021)

B.63 Nepal

November, 2006

In November 2006, Nepal experienced a bank run when depositors flocked to branches of the Nepal Bangladesh Bank Limited across the country to withdraw their money following newspaper reports that the bank was on the verge of bankruptcy. In two days, the bank's Nepalgunj branch paid out 80 million rupees in cash to its depositors, according to The Himalayan (2016) and Niraula (2020).

Sources: The Himalayan (2016), Niraula (2020)

June, 2011

In June 2011, a liquidity crisis severely affected five financial institutions in Nepal, including People's Finance Limited (PFL) and Vibor Bikas Bank (VBB). PFL had to close due to insufficient liquidity to pay depositors. VBB faced a crisis when it was unable to secure interbank funding, but was supported by Nepal Rastra Bank (NRB) with a loan of 500 million rupees. VBB's move to seek support from NRB caused panic among depositors and policymakers, who feared a Lehman Brothers-like collapse amid concerns about excessive credit exposure to the real estate and construction sectors.

Sources: The World Bank Group (2014)

B.64 New Zealand

September, 1894

In September 1893, New Zealand experienced a run on the Auckland Savings Bank. Customers withdrew more than £41,000, the equivalent of about $8 million in today's money, because of unfounded rumours about the bank's bad investments. The rumours originated with an eccentric woman called Margaret Sanders, who was ridiculed by young people for her peculiar behaviour and clothing. When she stumbled outside the bank after being pushed by some youths, a large crowd gathered and the false rumours spread

rapidly, according to Lewis (2015) and other sources.

Sources: Lewis (2015), Hunt (2009), The Star Newspaper (1893)

August, 1988

New Zealand experienced a bank run in August 1988, when the United Building Society was faced with heavy deposit withdrawals, according to Baron et al. (2021). This event is also reported as a crisis by Reinhart and Rogoff (2009) and Metrick and Schmelzing (2021).

Sources: Baron et al. (2021), Reinhart and Rogoff (2009), Metrick and Schmelzing (2021)

B.65 Pakistan

September, 2008

In September 2008, Pakistan experienced bank run following rumours in the media about the potential failure of several financial institutions, according to an IMF working paper by Farooq and Zaheer (2015). The deposit withdrawals led to a severe liquidity crunch. Demand deposits in the banking sector continuously fell over a period of seven weeks. In just three weeks, demand deposits declined by 4 percent or 131 billion Pakistani Rupees. The panic was contained within about two months through central bank interventions aimed at restoring liquidity in the banking sector.

Sources: Farooq and Zaheer (2015), Farooq Tirmizi (2018)

B.66 Panama

March, 1987

In March 1988, Panama experienced a run on its banks, following the U.S. move to increase financial pressure on the regime of Gen. Manuel Antonio Noriega. Private Panamanian banks decided not to open next day because they lacked the cash to handle an expected surge in withdrawals. One of the few banks that opened for business, Citibank, experienced a run as customers lined up to make withdrawals, according to an article in the Washington Post.

Sources: Branigin (1988), Jenkins (1988), L.A. Times Archives (1988), Rohter (1988)

B.67 Philippines

August, 1968

According to Patrick and Moreno (1982) and several newspaper articles at the time, there were widespread bank runs in the Philippines in 1968, including on many savings banks

(such as Provident Savings Bank). The run on the Overseas Bank of Manila, which ultimately closed in August 1968, although it was later re-opened under a different name. The run was accompanied by a widespread panic, prompting President Marcos to call for calm among the population.

Sources: Patrick and Moreno (1982), The New York Times (1968), Business World (2017), Lamberte (1989), Jurisprudence (1981)

June, 1974

In 1974, the collapse of Continental Bank precipitated a system-wide bank run, which later spread to other banks. Continental Bank had borrowed heavily in the money market and was involved in lending to affiliates and real estate projects. When the bank's president was arrested for alleged misappropriation of deposits and other irregularities, a run ensued, and the central bank decided to close the institution entirely. To avert a broader crisis, the central banks extended emergency loans and assured the public it would cover any liquidity problems.

Sources: Patrick and Moreno (1982), Dohner and Ponciano Intal (1989)

March, 1977

In March 1977, General Bank and Trust Company (Genbank) experienced a run and was subsequently decalred insolvent. The bank had already experienced a severe liquidity crisis during the time of the Continental Bank failure. Genbank was subsequently sold off and quickly reopened as Allied Bank.

Sources: Patrick and Moreno (1982), Lamberte (1989)

January, 1981

"In January 1981, the Philippines experienced bank run, following the disappearance of well-known business magnate Dewey Dee, who had borrowed heavily in the commercial paper market and left behind an estimated ₱ 500-800 million of debt. These news sent a wave of panic through the system, especially among money market investors and small depositors, causing commercial paper borrowers to default on a large scale. Small depositors shifted their deposits to large commercial banks, perceived as sounder financial institutions. The panic also spread to the thrift banking system that, while small, saw an increase in the number of failed institutions.

Sources: Dohner and Ponciano Intal (1989), Nascimento (1991), Lamberte (1989)

August, 1983

In October 1983, Philippines experienced widespread bank runs following the announcement of a moratorium on external debt payments to foreign commercial banks. This

came at the heels of the panic that had affected other parts of the financial system starting in 1981 at the heels of the "Dewey Dee affair." By the end of this bank run episode, the largest government-owned banks DBP and PNB were among the hardest hit and had to be restructured; several private banks were shut down completely. These banking problems lasted several years, which included bank runs on Marcos-connected banks as reported by the L.A. Times at the time, as well as the collapse of PISO Bank and Manila Bank in 1987.

Sources: Nascimento (1991), Lamberte (1989), L.A. Times Archives (1986)

April, 2000

In 2000, Urban Bank faced a bank run and was closed by the central bank on April 26, 2000. Following the Urban Bank closure, two medium-sized banks, International Exchange Bank (iBank) and the Philippine Bank of Communications (PBCom) in Davao City were also hit by bank runs.

Sources: Mallari and A. (2000), Philippine Daily Inquirer (n.d.), Ebias (2000), Go (2000)

B.68 Poland

July, 1926

According to Bernanke and James (1990), bank runs caused three large banks to suspend payments, causing a crisis that continued through to 1927.

Sources: Bernanke and James (1990)

November, 2018

According to several news reports and a press release by the European Union, Getin Noble Bank experienced a bank run in 2018. In the run-up to the event, the bank had been struggling with low profitability since 2016, leading to the depletion of its capital base. In 2018, the bank experienced a run when around €2.25 billion (PLN 10.7 billion) in deposits were withdrawn in less than three weeks, partially because of worries about risks associated with its mortgage loans denominated in Swiss francs. Both the Getin Noble Bank collapse and failure of Idea Bank were tied to allegations of corruption against the financial regulator KNF, involving Leszek Czarnecki, the owner of both Getin Noble and Idea Bank.

Sources: European Commission (2002), Krajewski et al. (2018), SP Global (2022), Krasuski and Krajewski (2018)

B.69 Portugal

May, 1876

Following strong growth in the number of banks over the preceding decades, Portugal experienced a banking crisis in 1876. The crisis, initially triggered by bank losses on Spanish securities that depreciated in value during the preceding Spanish Financial Crisis, gradually spread from the North of the country. The resulting liquidity shortage caused bank runs starting in May 1876 (Silva (2019), p.8). Baron et al. (2021) classify this as a banking crisis reaching its climax in August 1876 that also featured bank runs.

Sources: Silva (2019)

May, 1891

Portugal experienced a systemic banking crisis starting in 1890, beginning with problems at one of the country's largest banks, Montepia Geral. By May 1851, the "whole banking system was facing a bank run" (Branco et al. (2012), p. 6). Baron et al. (2021) classify this as a banking crisis, as do Reinhart and Rogoff (2009) and Jordà et al. (2017).

Sources: Branco et al. (2012), Baron et al. (2021), Reinhart and Rogoff (2009), Jordà et al. (2017),

1920

In 1920, Portugal experienced a banking crisis amidst high inflation following the First World War. Reinhart and Rogoff (2009), Jordà et al. (2017) and Baron et al. (2021) all classify this episode as a banking crisis, and Baron et al. (2021) explicitly mention the incidence of bank runs.

Sources: Reinhart and Rogoff (2009), Jordà et al. (2017), Baron et al. (2021),

1923

Portugal experienced a banking crisis that also featured bank runs in 1923, as outlined by Baron et al. (2021). Jordà et al. (2017) call this episode a "banking panic." Several factors, including foreign demand shocks and tight monetary policy, were associated with a banking panic and a subsequent recession.

Sources: Jordà et al. (2017), Baron et al. (2021), Reis (1995)

November, 1930

In November 1930, the banking house of Henrique Figueira da Silva on the island of Madeira suspended payments, which created widespread panic and bank runs. The ensuing crisis, largely caused by the global Great Depression that started in the United

States, was accompanied with several bank failures.

Sources: Baron et al. (2021), Jordà et al. (2017), Reinhart and Rogoff (2009)

January, 1935

In January 1935, Portugal experienced bank run on the Banco Micaelense. Shortly after, Banco do Faial suspended payments in April 1935. There was also a temporary suspension of payments by the Caixa Económica and further bank closures. While these events unfold in the Azores, we count them as a Portuguese bank run.

Sources: Lopes and Sequeira Dias (2010)

B.70 Paraguay

1995

The 1995 Paraguayan bank run was initiated by a combination of factors, including economic uncertainty and disruptions within the payments system, rather than a recession. This crisis led to the closure or absorption of 15 out of 19 locally owned banks. Efforts by the government to stabilize the situation, such as honoring deposits without a pre-existing guarantee and providing loans, were unable to prevent a systemic run on deposits, causing widespread financial distress.

Sources: International Monetary Fund (2000), Ostalecka (2008)

July, 2002

In July 2002, Paraguay experienced a severe bank run following the collapse of Banco Aleman, according to an IMF Article IV consultation report. The run on Banco Aleman, owned by an Argentine-Uruguayan consortium, was triggered following reporting of losses at a Paraguyan mutual fund affiliated with the group. During the period from June to August, dollar deposits declined by more than 20% and local currency deposits by 12%. While the central bank stepped in to provide liquidity support, there were widespread banking issues, including at the state-owned national development bank (BNF).

Sources: International Monetary Fund (2003)

B.71 Qatar

October, 2017

In October 2017, Qatar experienced major deposit outflows of non-residents in the aftermath of the economic blockade imposed by Saudi Arabia, Bahrain, the United Arab Emirates, and Egypt. Until the end of 2017, these outflows amounted to around 13% of Qatar's GDP, and the share of non-resident to total deposits dropped from 25 to 17

percent in a short time period. The Qatari banking sector was swiftly downgraded by rating agencies such as Moody's, but quickly recovered because of a large-scale liquidity injection by the government.

Sources: Gillet (2019), Ali (2020), Wheatley (2018)

B.72 Romania

May, 1931

In 1931, Romania experienced bank runs at the heels of the German banking crisis, which spread from Austria to Hungary but also Romania. We date the start of runs as May 1931, in line with the descriptions in Schuker (1974) and Dominique and Nikolay (2022). Several banks experienced runs, including the Banca de Scont, Banca de Credit Roman and Banca Romaneasca.

Sources: Reinhart and Rogoff (2009), Dominique and Nikolay (2022), Schuker (1974), Gavrilă (n.d.), Ferguson and Temin (2001), Temin (2008)

B.73 Russia

June, 1859

In June 1859, Russia experienced "panic and a run on deposits" (Hoch (1991)) when the 1857 crisis led to the collapse of the banking system and a wave of defaults The Russian State Bank was founded in 1860 coming out of the liquidation of the State Loan Bank and Credit Note Bureau.

Sources: Metrick and Schmelzing (2021), Hoch (1991)

October, 1875

In October 1875, Russia experienced bank runs, according to both Baron et al. (2021) and Metrick and Schmelzing (2021). The Moscow Commercial Loan Bank failed in 1875, and the Merchant Bank and Mutual Credit Society were rescued by the government. This episode is also coded as a systemic banking crisis by Reinhart and Rogoff (2009).

Sources: Baron et al. (2021), Metrick and Schmelzing (2021), Reinhart and Rogoff (2009)

August, 1899

The Russian Trade and Industrial Bank faced a bank run in August 1899 and had to be rescued by the State Bank. Petersburg Private Commercial Bank failed and was restructured by a consortium of foreign banks. Petersburg-Azov Bank collapsed in 1902 and Petersburg-Moscow Bank failed in 1904. Moscow International Trade Bank, Orel Commercial Bank, and South Russian Industrial Bank were deemed too important too fail and

were also put under control of the State Bank.

Sources: Baron et al. (2021), Lychakov (2018)

1905

During the Russian revolution in 1905, there were runs on savings banks and government orders to limit gold withdrawals, according to Metrick and Schmelzing (2021).
Sources: Metrick and Schmelzing (2021)

July, 1914

In July 1914, Russia experienced bank runs with the outbreak of World War I, characterized by massive deposit withdrawals, according to Metrick and Schmelzing (2021).

Sources: Metrick and Schmelzing (2021)

August, 1998

"Russia experienced bank runs starting in August 1998 after a massive devaluation of the Ruble. Through a variety of measures, the authorities were able to ultimately stop the run. Nevertheless, nearly 720 banks, representing half of those in operation, ultimately ended up insolvent.

Sources: Laeven Valencia (2021) Reinhart and Rogoff (2009), Baron et al. (2021), Niinimäki (2002), Pyle et al. (2013), Schoors (2003)

July, 2004

Following a longer period of banking sector issues that had started with the 1998 crisis, Russia experienced bank runs in July 2004 starting with massive withdrawals from Guta Bank, Russia's then-22nd largest bank. Within less than a month, depositors had withdrawn 10bn roubles (£188m), causing a liquidity crunch that quickly spread to other private institutions.

Sources: European Central Bank (2004), Crace (2004), Murphy (2004), Nicholson (2004), Bloomberg (2004), Chernykh and Mityakov (2016)

October, 2008

In October 2008, Russia experienced banks runs triggered by massive deposit withdrawals of 3.5 billion roubles ($134.2 million) in only two weeks at Globex bank. Baron et al. (2021) also classify this as a 'panic', and it is classified as a banking crisis in Laeven Valencia (2021) and Reinhart and Rogoff (2009).

Sources: Baron et al. (2021), Reinhart and Rogoff (2009), Bank of Russia (2009), The Economist (2008), Reuters (2008), Financial Times (2008)

February, 2022

In Feburary 2022, Russia experienced bank runs after the ruble dropped dramatically at the beginning of Russia's invasion of Ukraine. There were reports of lines at ATMs and around buildings in Moscow as well as at Russian banks in Europe as depositors rushed to withdraw cash.

Sources: Turak (2022), Schilling et al. (2022)

B.74 Singapore

October, 1974

In October 1974, Singapore experienced a bank run on Chung Khiaw Bank Limited, then part of The United Overseas Bank Limited (UOB) Group. Due to rumours that the financial health of banks in Singapore had taken a hit, Chung Khiaw was rumoured to face liquidity issues and could run out of money soon. Bank officials had to reassure the crowds not to panic, but it was not until 10.30pm before the last customer made a successful withdrawal of deposits.

Sources: Remember Singapore (2014) The Straits Times (1974a), The Straits Times (1974b), The Straits Times (1974c)

B.75 Serbia

March, 1993

In March 1993, Serbia experienced a bank run when thousands of Serbs queued to retrieve their funds from Dafiment Private Bank. The run followed a deposit freeze by another private bank, Jugoskandik, after its president, Jezdimir Vasiljevic, fled the country. In both cases, the banks had initially lured depositors with sky-high deposit rates, which subsequently turned out to be unsustainable.

Sources: R and Al (1993)

October, 2008

According to an IMF country report, Serbia experienced a bank run in October 2008 when depositors quickly withdrew around 18% of the banking sector's total deposits (mostly savings deposits) within a time span of only six weeks. The run was predominantly due to "retail" depositors.

Sources: International Monetary Fund (2010b)

B.76 Spain

June, 1864

In 1864, the Bank of Spain experienced a bank run after the government involved it in the sale of public properties. Concerns about the solvencz of the government led to a tumultuous run, leading the Bank to limit the convertibility of banknotes into specie.

Sources: Alessio Moro and Tedde (2013)

December, 1913

Starting in December 1913, Spain experienced a series of bank runs, including on the Credito de la Union Minera. These runs were triggered by concerns surrounding the outbreak of World War I.

Sources: Baron et al. (2021), Metrick and Schmelzing (2021), Jordà et al. (2017)

December, 1920

In 1920, there is a run on the Banco de Barcelona, which ultimately fails, triggering a further wave of runs on other institutions requiring intervention by the authorities.

Sources: Baron et al. (2021), Metrick and Schmelzing (2021), Jordà et al. (2017)

September, 1924

In September 1924, Spain experienced bank runs that began in the summer of 1924, became acute towards the end of 1924 and lasted until September 1925, according to Baron et al. (2021) and Jordà et al. (2017).

Sources: Baron et al. (2021), Jordà et al. (2017)

April, 1931

In April 1931, Spain experienced bank runs that forced considerable central bank intervention, according to Baron et al. (2021) and Metrick and Schmelzing (2021). Jordà et al. (2017) also call this a "panic".

Sources: Baron et al. (2021), Metrick and Schmelzing (2021), Jordà et al. (2017)

January, 1994

In January 1994, Spain experienced a bank run after Banco Espanol de Credito - Banesto was taken over by the Bank of Spain when it discovered a huge capital shortfall in the bank's finances. Thousands of customers rushed to withdraw their money, according to

Counsell (1994).

Sources: Counsell (1994)

B.77 Sweden

1709

In 1709, a deposit outflow at the lending bank forced the Riksbank to suspend convertibility of the lending bank deposits. The cause was the Swedish loss in 1708 at the battle against the Russians at Poltava in present-day Ukraine.

Sources: Metrick and Schmelzing (2021) Rodney Edvinsson, ed (2018)

1745

In 1745, Sweden experienced a bank run. As described by Metrick and Schmelzing (2021), a bank run forces the Riksbank's exchange bank to make deposits and banknotes inconvertible.

Sources: Rodney Edvinsson, ed (2018)

February, 1808

In February 1808, at the onset of the Finnish War, a conflict between Russia and Sweden over the control of Finland, Sweden experienced bank runs in Stockholm, and spread across the country upon news of the Russian attack reaching the depositors, and more severe runs were recorded in 1809. The war lasted until 1809 and resulted in Russia's annexation of Finland, leading to the creation of the Grand Duchy of Finland as an autonomous buffer state. Further bank runs were recorded in

Sources: Metrick and Schmelzing (2021), Kuusterä and Tarkka (2011)

1817

In 1817, a government audit revealed that Malmoe Diskont was insolvent, triggering a bank run that also spread to Gothenburg Diskont and Gota kanalbolagets. Malmoe was granted an emergency loan by the central bank but was ultimately shut down. While Metrick and Schmelzing (2021) date this event to occur in 1815, a Riksbank publication dates it to 1817, and we use this date.

Sources: Metrick and Schmelzing (2021), Fregert (n.d.)

December, 1857

In 1857, Sweden experienced a bank run on the country's first savings bank, Stockholms Enskilda Bank. The bank had been the first in Europe to issue banknotes in 1661. This triggered widespread deposit withdrawals among other savings bank.

Sources: Wetterberg and Mikiver (2018)

December, 1878

Sweden experienced a major banking crisis in 1878 at the heels of the economic boom of the 1870s. Sweden's largest commercial bank at the time, Stockholms Enskilda Bank, suffered a run because of its large exposure to railway bonds in 1878. Ögren (2003), Baron et al. (2021), and Jordà et al. (2017) agree that the crisis featured bank runs and failures; Reinhart and Rogoff (2009) also count this as a banking crisis.

Sources: Baron et al. (2021), Reinhart and Rogoff (2009), Jordà et al. (2017), Ögren (2003)

October, 1907

In October 1907, Sweden experienced bank runs, in the process of which 16 banks went bankrupt or were reorganized. Among the failed banks were Aktiebolaget Stockholms Kreditbank (1907), AB Sundsvalls Köpmansbank (1910), AB Sundsvalls folkbank (1910), AB Hudiksvalls Folkbank (1910), AB Linköpingsbank (taken over, 1910), AB Gäfle handelsbank (reorganized, 1910), Halmstads Bankaktiebolag (taken over, 1911), AB Sollefteå folkbank (merged, 1911), and Bankaktiebolaget Stockholm Öfre Norrland (taken over, 1911).

Sources: Baron et al. (2021), Reinhart and Rogoff (2009), Jordà et al. (2017), Grodecka-Messi et al. (2021)

1912

In 1912, Sweden's Aktiebolaget Stockholms folkbank experienced a bank run and a subsequent payment suspension. Confidence in the bank only returned in 1914.

Sources: Kenny et al. (2023)

March, 1932

In March 1932, Skandinaviska Kreditaktiebolaget faced a bank run following losses on its exposure to the Kreuger industrial and financial group. The bank had been the group's largest creditor. Jordà et al. (2017) also count this as a crisis, although they do not mention runs.

Sources: Lonnborg et al. (2011), Baron et al. (2021), Reinhart and Rogoff (2009), Jordà et al. (2017)

September, 1939

According to Metrick and Schmelzing (2021), there were 'minor bank runs' in September 1939 after the outbreak of war in Europe, and banks turned to the Riksbank for emergency discounts. There was a jump in Riksbank discounting from 13 million to 197 million SEK during Sep-Dec 1939.

Sources: Metrick and Schmelzing (2021)

April, 1992

In April 1992, Gota Bank, the fourth largest bank in Sweden, experienced a bank run when SEK 2 billion, or 5% of its deposits, were withdrawn in one week, triggered by an announcement from its parent company that it was unwilling and unable to to support the bank any further. This episode is also classified as a systemic banking crisis by Baron et al. (2021), Jordà et al. (2017), Laeven and Valencia (2018), and Reinhart and Rogoff (2009).

Sources: Makhija (2022), Baron et al. (2021), Jordà et al. (2017), Laeven and Valencia (2018), Reinhart and Rogoff (2009), Englund (2015) Urwitz (1998)

B.78 Switzerland

April, 1859

In 1859, there was a run on Banque Générale Suisse in Geneva; the bank faced withdrawals of 75% of all deposits. The bank had to suspend payments in 1859 and was liquidated in 1869.

Sources: Metrick and Schmelzing (2021), Gerlach and Kugler (2018), Jöhr (1915)

1865

In 1865, Banque Cantonale du Valais faced liquidity problems. The eventual run and closure happened in 1870. According to Gerlach and Kugler (2018) the run on Banque Cantonale du Valais was caused by bad investments, causing a political scandal involving the resignation of several local government members). There was also financing of local government deficits.

Sources: Gerlach and Kugler (2018), Jöhr (1915)

July, 1870

Broad banking crisis in Switzerland in 1870, caused by the inability to obtain supply of coin from France, leading to runs and rush to convert notes for coin. Both Baron et al. (2021) and Metrick and Schmelzing (2021) consider this to be an episode characterized by runs.

Sources: Baron et al. (2021), Metrick and Schmelzing (2021), Conant (1915)

March, 1914

In July 1914, Switzerland experienced bank runs amid a panic caused by the outbreak of World War I, which led to large-scale deposit withdrawals until the central bank intervened.

Sources: Baron et al. (2021), Reinhart and Rogoff (2009), Bachmann et al. (1932)

July, 1931

In July 1931, the failure of Banque de Geneve caused deposit runs in Geneva. Many banks were restructured. 3 major Swiss banks required direct assistance from the government and SNB. Federal government directly deposited CHF 20M at Diskountbank to provide assistance due to lack of liquidity.

Sources: Baron et al. (2021), Baumann (2007)

June, 1991

In 1991, amid a major banking crisis, regional savings banks such as Spar & Leihkasse Thun in particular faced bank runs. Jordà et al. (2017) consider this as a systemic banking crisis, characterized by a regional bank crisis fund and large-scale interventions by the central bank. By the end of the crisis episodes, around half of the 200 regional banks had disappeared.

Sources: Jordà et al. (2017)

March, 2023

In March 2023, Switzerland experienced a significant bank run involving Credit Suisse, one of its major financial institutions. This bank run was primarily triggered by a combination of factors, including deep concerns about the bank's financial stability and a series of internal scandals. These internal issues, which involved a spying scandal and the collapse of significant investment funds like Archegos Capital and Greensill Capital, eroded investor and customer confidence. Additionally, the broader financial market instability, particularly following the collapse of Silicon Valley Bank in the U.S., further heightened the sense of insecurity among the bank's customers, leading to the massive

withdrawal of 61 billion Swiss francs (about £55 billion) in the first quarter of the year. This situation ultimately led to a rescue takeover by UBS, another Swiss banking giant, in a deal overseen by Swiss authorities to stabilize the financial system.

Sources: Bhardwaj (2023), Wise (2023)

B.79 Thailand

August, 1984

In August 1984, Thailand experienced a bank run on The Asia Trust Bank, following mismanagement and internal conflicts, which prompted the Ministry of Finance to take over the ownership and management of the bank. Reinhart and Rogoff (2009) explicitly mentions the incidence of runs starting in 1983.

Sources: Reinhart and Rogoff (2009), Baron et al. (2021), Laeven and Valencia (2018), Sundaravej and Trairatvorakul (1989), Johnston (1989)

May, 1996

In May 1996, Thailand's Bangkok Bank of Commerce experienced a bank run and the Ministry of Finance took control of the institution. Further runs ensued, including on the finance companies that had fueled the rapid increase in real estate credit. Quickly after these events evolved into the Asian financial crisis when Thailand floated its currency in July 1997, sparking panic across Asia by October 1997.

Sources: Baron et al. (2021), Laeven and Valencia (2018), Vanikkul (2007), Laplamwanit (1999), Moreno et al. (1998), Adams et al. (1998)

February, 2014

In February 2014, Thailand experienced bank run when the Government Savings Bank (GSB) lent 5 billion baht to the Bank for Agriculture and Agricultural Cooperatives, a bank that runs the government's rice programme, and was nearing insolvency. This decision led to a run on the GSB as depositors were either worried about the stability of the GSB or unwilling to see their money used to help the government, according to an article on Reuters.

Sources: Reuters (2014a), Bangkok Post (2014), The Nation (2014)

B.80 Trinidad and Tobago

1939

According to Wai (2010), Trinidad and Tobago's Barclays Bank DCO suffered a run on its San Fernando operations after the announcement that Britain was going to war with

Germany in 1939.

Sources: Wai (2010)

1988

In 1988, Trinidad and Tobago experienced a bank run following the closure of the Worker's Bank (WB), according to Wai (2010). The run was prompted by a rumour about the impeding collapse of the National Commercial Bank of Trinidad and Tobago (NCB), which led to an abrupt withdrawal of approximately TT$100 million within ten days. The chairman of NCB speculated that this bank run was deliberately instigated by the established banking hierarchy to eliminate the last remaining 'black' bank.

Sources: Wai (2010)

October, 1895

During October 1895, the Ottoman Imperial Bank (the country's only local bank) faced a major run after the bank's shares had tumbled in London and then the Galata Bourse due to the firm's exposure to crashing South African gold mining stocks. Fear of an insolvency of the bank triggered the run, which may have been related to what has been called the 'Armenian crisis', although this is not entirely clear.

Sources: Davutyan (2023), Metrick and Schmelzing (2021), The Argus (1895)

July, 1914

The outbreak of World War I triggered bank runs in the Ottoman Empire. Triggered by an initial run on the local branches of the Wiener Bankverein, panic ensued, leading to runs on other banks as well, including Imperial Ottoman Bank, Oriental Deutschebank, Credit Lyonnais, Bank of Salonika, and the National Bank of Turkey. The run on several of these institutions, including Imperial Ottoman Bank, was caused by the fact that they were majority-owned by French and British interests.

Sources: Baron et al. (2021), Autheman (2018), Roberts (2014)

July, 1931

In July 1931, the Turkish branches of Deutsche Bank experienced a run in response to developments in Germany, according to the company's historical documents and Bernanke and James (1990). This incident is also documented by Reinhart and Rogoff (2009) and Baron et al. (2021), while Metrick and Schmelzing (2021) speak of "financial volatility.

Sources: Historical Association of Deutsche Bank (2009)

December, 1981

Turkey experienced a systemic banking crisis around 1980-82, with existing chronologies disagreeing about the exact dates. An interest rate liberalization in 1980 created a large industry of brokers, which also attracted fraudsters. When Cevher Özden, owner of Turkey's largest brokerage house Banker Kastelli, fled to Switzerland in late June 1982 following the impeding collapse of the institution, this caused widespread runs. By 1984, several major banks had failed.

Sources: Metrick and Schmelzing (2021), Kaminsky (2006), Munir (1982), Gormez (2022), Silverman (2022), Howe (1982)

January, 1991

In January 1991, following the start of the Gulf War in the previous year, Turkey experienced severe bank runs. As a reaction, the government guaranteed all deposits.

Sources: Kaminsky (2006), Reinhart and Rogoff (2009)

February, 2001

Turkey experienced banks runs in February 2001 following failure of the largest 'Special Finance House', Ihlas Finance. The immediate trigger was an announcement that the deposits of special finance houses would not be covered by the Deposit Insurance Fund, which led depositors to withdraw their funds. Kuwait Turk Evkaf Special Finance House (KTEFH) saw the largest amount of withdrawals among these.

Sources: Baron et al. (2021), Reinhart and Rogoff (2011), Laeven and Valencia (2018), Starr and Yilmaz (2007)

B.81 Taiwan

February, 1985

In August 1985, a corruption scandal involving Tenth Credit Cooperative revealed that the chairman was using deposits to speculate in stocks and real estate. Announcements questioning the solvency of the institution led to a run, causing a drop of 6.18 billion yuan in only 5 days. This initial run had knock-on effects and caused massive deposit withdrawals at other institutions. The Cathay Investment and Trust Company, also owned by Cathay, also suffered from withdrawals as a result of involvement in a wider corruption scandal.

Sources: Baron et al. (2021), United Daily News Taiwan (2023), The Central News Agency (2023), The New York Times (1985), Lee (1998)

July, 1995

In July 1995, Taiwan experienced bank runs following the failure of the Chanuga Fourth Credit Union. Ye Chuanshui, general manager of Changhua Fourth Credit Cooperative, misappropriated more than NT$2.8 billion in members' deposits, the news about which triggered a run that also spread to several other institutions. The Chanuga Cooperative was ultimately taken over by the Cooperative Bank of Taiwan.

Sources: Baron et al. (2021), Chinese Television News (1995), Mandy (1995), Lee (1998)

November, 1998

Starting in November 1998, Taiwan experienced bank runs, starting with massive withdrawals at Central Bill Finance Company, Hung-Fu Bill Finance Company, and Taichung Business Bank. Sporadic runs continued to occur in 1999, and several failures were largely resolved through arranged mergers.

Sources: Baron et al. (2021), Montgomery (2002), Montgomery (2003)

January, 2000

Taiwan experienced several bank runs in 2000. In April 2000, it was revealed Zhongxing Bank had engaged in illegal over-lending, leading to a run by its depositors. The amount of abnormal withdrawals exceeded 13 billion. Other institutions that experienced runs were Taiwan Development and Trust Corporation as well as Overseas Chinese Bank. Although these runs came at the heels of a previous episode of banking problems starting in November 1998, they appear to be a separate episode, and we thus classify them as a distinct event.

Sources: Yahui (2000), Chinese Television News (2000), Montgomery (2002)

January, 2007

In January 2007, Taiwan experienced a bank run when Rebar and Jiashihua, two companies under the Rebar Group, filed a petition for reorganization on December 29, 2006. These news were delayed until January 4, 2007, and then triggered a run on Rebar Group's subsidiary China Commercial Bank. In order to avoid a systemic crisis, the government provided liquidity to support the withdrawal of cash by drawers. However, the amount of withdrawals within a single week still amounted to NT$50 billion.

Sources: Wei et al. (2007), Risk (2007), Financial Times (2007)

B.82 Uganda

May, 1999

In May 1999, Uganda experienced a bank run on the Housing Finance Company of Uganda (HFCU), a non-bank financial institution partly owned by the government, which followed the closure of four insolvent institutions. Brownbridge (2002) stresses that this was the only serious run on a (sound) financial institution during this period, and even this run was quickly brought under control by the government's public announcement that HFCU was safe.

Sources: Brownbridge (2002)

B.83 Ukraine

August, 1998

Starting in August 1998, Ukraine experienced bank runs as public confidence in the banking system deteriorated following the Russian crisis. In December, some banks imposed a $500 per day withdrawal limit to stem deposit outflows.

Sources: Laeven and Valencia (2018), Taran (2012)

September, 2008

In September 2008, Ukraine experienced a bank run on its sixth largest bank, Prominvestbank. After experiencing internal problems, there were rumours about the bank's insolvency, causing massive deposit withdrawals and a panic among customers. As a result, several other banks (both large and small) faced runs.

Sources: Shestak (2013), Taran (2012)

February, 2014

In February 2014, Ukraine experienced bank runs accompanied by a drop in bank deposits by 7 per cent of deposits, or 30 billion hryvnias ($3.3 billion), between 18 and 20 February. Because of these runs, central bank reserves dwindled, and the central bank considered lending to five of the country's banks to prevent further runs when a large number of customers withdraw money at the same time. The runs happened against the backdrop of violent insurgencies especially in the Donetsk and Luhansk regions.

Sources: CNBC (2014), NBC News (2014), Reuters (2014b), Gillet (2020), Metrick and Schmelzing (2021)

B.84 Uruguay

June, 1866

In June 1866, Uruguay experienced widespread bank runs following the collapse of Overend & Gurney. Maua Bank was on the verge of collapse and supported by the government by allowing the bank the suspension of convertibility for six months.
Sources: Metrick and Schmelzing (2021), Steinberg (2018)

July, 1890

The Baring Crisis of 1890 led to severe financial repercussions in Uruguay, including a bank run. The National Bank of Uruguay, which had the power to print and issue paper money backed by English pounds, faced difficulties when its notes were refused by other banks, leading to a suspension of specie payments and subsequent panic and bank runs. This event was part of a larger financial crisis that affected not only Uruguay but also other countries in Latin America. The crisis was a result of questionable fiscal and monetary policies, draining the banking system of specie, and provoking multiple banks to experience runs beginning in July 1890.

Sources: Mitchener and Weidenmier (2008), Currency History (2016),

September, 1898

In September 1898, Uruguay experienced bank runs to redeem banknotes due to a government decree to reduce the circulation of notes. These events were part of a broader pattern of financial instability in Latin America during the late 19th century, with Uruguay's financial struggles contributing to the global financial crisis of the 1890s.

Sources: Reinhart and Rogoff (2009) Metrick and Schmelzing (2021)

April, 1964

In April 1964, Uruguay experienced bank runs following problems at Banco Regional. After Banco Regional was taken over by BROU, the bank run spread to other banks, including the Transatlantic Bank of Uruguay and other private banks in December 1964.

Sources: Vaz (1988), Oddone and Marandino (2019), Metrick and Schmelzing (2021)

September, 1982

In September 1982, Uruguay was hit by a wave of bank runs triggered by the nationalization of banks in Mexico. After a brief halt of the runs they flared up again in November, driven by fears of a systemic banking collapse, the abrupt end of the fixed exchange rate policy by the Central Bank of Uruguay due to a scarcity of dollars, and soaring dollar exchange rates. The situation was worsened by political unrest marked by the ruling

party's losses in elections and the Finance Minister stepping down. Discrepancies between what was publicly known and private realities eroded trust, hastening the flight from the Uruguayan peso.

Sources: Vaz (1988), Laeven and Valencia (2018), Reinhart and Rogoff (2009), Metrick and Schmelzing (2021)

January, 2002

In 2002, Uruguay experienced sustained bank runs. In an environment of highly dollarised deposits, many of which were held by non-residents (especially from Argentina), the imposition of capital controls and deposit freezes in December 2001 caused liquidity issues at the two largest private banks, Banco Galicia Uruguay (BGU) and Banco Comercial (BC), which were particularly exposed to Argentina. This triggered a first round of runs, with BGU hit particularly hard. By May, bank runs had also expanded to public banks.

Sources: Laeven and Valencia (2018), Reinhart and Rogoff (2009), Metrick and Schmelzing (2021), Kaminsky (2006), Oddone and Marandino (2019)

B.85 United States of America

April, 1814

According to Reinhart and Rogoff (2009) and Metrick and Schmelzing (2021), there were widespread bank runs in New Orleans, including on the Planter's Bank, Bank of New Orleans, and Louisiana Bank; also see Calomiris and Gorton (1991). Panic ensued among merchants, planters, and other citizens as they rushed to exchange paper bank notes for specie. The panic was likely related to the ongoing trade embargoes and blockades during the War of 1812. Bordo and Wheelock (1998) quote Thorp (1926) as describing this episode as being characterized by "financial chaos".

Sources: Reinhart and Rogoff (2009), Metrick and Schmelzing (2021), Calomiris and Gorton (1991), Keyes (2013), Bordo and Wheelock (1998), Thorp (1926)

May, 1819

In 1819, the contractionary monetary policies of the Second Bank of the United States amplified the effects of declining crop prices and land values. State banks throughout the nation suspended specie redemptions and many were forced into insolvency. The Second Bank lacked the ability to serve as a lender of last resort, which allowed bank runs to spread. Bordo and Wheelock (1998) quote Smith and Cole (1935) in stressing that "[b]anks with extended loans to speculators were now confronted with a demand for specie". According to Rothbard (1962), "New England ... was the only area little touched by bank failures or runs". Thorp (1926) dates the panic to May 1819, which we follow here.

Sources: Bordo and Wheelock (1998), Reinhart and Rogoff (2009), Metrick and Schmelzing (2021), Calomiris and Gorton (1991), Zeretsky (1996), Chambers and Higgins (2023), Rothbard (1962), Smith and Cole (1935)

October, 1833

In November 1833, the United States experienced bank runs and suspensions in several states, including New York, Pennsylvania, Georgia, New Jersey, and Virginia, according to the documentation in Metrick and Schmelzing (2021). Jalil (2015) documents many mentions of bank runs in the Niles Weekly Register, and Thorp (1926) also classifies this as a panic. These runs came at the heels of a political decisions by President Andrew Jackson, a fierce opponent of the Bank of the United States, who decided to withdraw the government deposits from the quasi-central bank, precipitating runs.

Sources: Metrick and Schmelzing (2021), Jalil (2015), Thorp (1926), Zeretsky (1996)

May, 1837

In 1837, the United States experienced bank runs following first signs of distress in New Orleans and New York in March and April (see Metrick and Schmelzing (2021) and Jalil (2015)). Severe bank runs in New York in May led to a suspension of specie payments, following the publication of an investigation by the New York Bank Commissioners in the New York Herald into a fraudulent scheme run by the president of Mechanics Bank, a major Wall Street bank. An initial run on Mechanis Bank quickly spread to other institutions involved in the scheme and eventually led to a general run on all banks in New York City.

Sources: Metrick and Schmelzing (2021), Jalil (2015), Hilt and Liang (2020), Zeretsky (1996), Reinhart and Rogoff (2009), Bordo et al. (1999), Calomiris and Gorton (1991)

April, 1841

Jalil (2015) documents mentions of bank runs in the Niles Weekly Register in 1842, followed by reports of bank failures, and further reports on a banking panic with runs in New Orleans. There is also evidence of isolated runs in March 1842 in Philadelphia, which in turn followed a series of bank runs in April 1841 in several states prompted by the suspension of specie payments at the Second Bank of the United States (also see Reinhart and Rogoff (2009)). We thus treat April 1841 as the start date of this bank run episode. While Jalil (2015) only classifies this episode as a "minor banking panic". For the purpose of our dataset, however, what matters is that there is clear narrative evidence of any run, and we thus treat it as a period where runs occurred.

Sources: Jalil (2015), Reinhart and Rogoff (2009)

September, 1854

Starting in September 1854, the United States experienced bank runs emanating from the interior (especially West and Northwest). The runs followed reports about widespread fraud in the stock market involving several major railroad shares. The panic subsequently also reached New York, triggering a general run on savings banks in January 1855 (Jalil (2015)). In February 1855, after the parent company of Page, Bacon & Co. failed due to speculation in railroad shares, this led to panics in San Francisco, resulting in massive withdrawals from the bank, with $600k being withdrawn in a single day out of the $2M in deposits the bank held. The panic spread to several other banks and led to their failure.

Sources: Jalil (2015), Dematos (2023), Thorp (1926), Gráda and White (2003)

September, 1857

In 1857, United States experienced bank runs following the failure of the Ohio Life Insurance and Trust Company due to mismanagement and fraudulent activities in August. Given Ohio Life's role in the market for margin loans, and given its large depositor base, this event created panic among banks, leading to a first set of runs in September, including on the Bank of Pennsylvania. These runs reached "dramatic" proportions in New York City in October (Jalil (2015)), and banking was suspended entirely on October 14 in New York and throughout New England.

Sources: Jalil (2015), Gráda and White (2003), Calomiris and Gorton (1991), Bordo et al. (1999), Reinhart and Rogoff (2009), Kennedy (2001), Fulfer (2022), Library of Congress (nodate), Klitgaard and Narron (2015)

September, 1873

In 1873, the United States experienced bank runs following the collapse of Jay Cooke Bank, which in turn came at the heels of a stock market crash in Vienna that led investors to dump their American railroad bonds. The banking crisis was the result of a debt-driven railway boom that had come to a standstill. The closure of Jay Cooke, one of the most prestigious merchant banks, on 18 September shocked the city and triggered a widespread panic. On that day, and intensifying until 20 September, depositors rushed to withdraw their funds in a series of bank runs in New York City. Several prominent banks failed and the New York Stock Exchange was closed for 10 days for the first time ever.

Sources: Baron et al. (2021), Reinhart and Rogoff (2009), Metrick and Schmelzing (2021), Jalil (2015), Jordà et al. (2017), Fulmer (2022)

May, 1884

The United States experienced several bank runs in 1884. These events started when, on 8 May 1884, the brokerage firm Grant and Ward failed amid heavy losses on speculative investments, which in turn led to the closure of its large creditor Marine National Bank.

Soon after, the Second National Bank experienced a run when it was discovered that its president had embezzled $3 million and fled to Canada. Another run on Metropolitan National Bank triggered by rumours about fraudulent conduct with depositor funds by the bank's president led to its collapse, even though it later turned out that these rumours had been false. By putting a halt to the publication of bank statistics in order to avoid further runs, the New York Clearinghouse Association likely stopped these in their tracks.

Sources: Jalil (2015), Sprague (1910), Richardson and Sablik (2015), Hoffner and Steffen (2022), Baron et al. (2021)

June, 1893

In 1893, the United States experienced bank runs, which started in May and became especially pronounced over the months of June, July, and August. This instability arose for two key reasons. First, the Sherman Silver Purchase Act of 1890 led to a decrease in the gold reserves maintained by the U.S. Treasury, which fell to about $100 million from $190 million in 1890. This fall in gold reserves raised concerns at home and abroad that the United States might be forced to abandon the gold standard, which prompted some depositors to withdraw bank notes and convert them into gold. Second, different from many other bank runs during this period, there was already a sign of slowing economic activity in the run-up to 1893, with newspapers mentioning an "existing depression". As such, fear of weakened bank balance sheets due to reports of failures and bankruptcies led to a stock market crash and deposit withdrawals, causing widespread bank runs.

Sources: Rothbard (1962), Reinhart and Rogoff (2009), Jordà et al. (2017), Jalil (2015), Sprague (1910), Baron et al. (2021), Carlson (2005), Grossman (2010)

December, 1896

According to Jalil (2015), the failure of the National Bank of Illinois triggered runs on other institutions in the region in December 1896, although the panic was overall short-lived and apparently isolated to the midwest. This episode is also classified as a panic by, among others, Long and Summers (1984) and Calomiris and Gorton (1991).

Sources: Jalil (2015), Long and Summers (1984), Calomiris and Gorton (1991)

October, 1907

In October 1907, United States experienced runs on a group of New York banks that were involved in speculating in the commodities market by misappropriating bank funds. Following a collapse in copper prices, the news caused widespread panic in New York. The subsequent failure of Knickerbocker Trust Company led to a spread of runs across the entire country.

Sources: Jalil (2015), Baron et al. (2021), Sprague (1910), Jordà et al. (2017), Constitutional Rights Foundation (2012)

July, 1929

In July 1929, there were widespread runs in Florida when a Mediterranean fruit fly epidemic destroyed the state's citrus crop. Doubts about farmers' ability to repay their loans, and a lack of response from Congress about compensating them for their losses, triggered bank runs on institutions in citrus-growing areas and the failure of a key correspondent group headquartered in Tampa, Citizens Bank and Trust Company, which served as a regional financial center. While the Federal Reserve Bank of Atlanta was able to halt the panic by providing member banks with currency, these runs foreshadowed the more widespread runs in the following year.

Sources: Carlson et al. (2010), Metrick and Schmelzing (2021)

November, 1930

In 1930, the United States experienced bank runs following the collapse of Caldwell and Company of Nashville, Tennessee in November, the largest financial holding company in the South. These runs quickly became widespread, causing hundreds of banks to ultimately suspend operations in just a few weeks. While these panics came at the heels of the more localized runs in Florida in the previous year, they were entirely separate events, so we code them as such.

Sources: Jordà et al. (2017), Baron et al. (2021), Richardson (2013)

November, 1932

Following the election of Franklin D. Roosevelt as president in November 1932 led to rumours of a possible devaluation of the dollar and heightened concerns about the stability of the currency. Widespread bank runs ensued, first locally in the Fall of 1932 (Kindleberger and Aliber (2005), p. 212), with a banking holiday declared in Nevada on 31 October, and then nationwide. The situation worsened in February 1933 with massive deposit withdrawals among panic and the failure of thousands of banks, leading President Roosevelt to declare a nationwide bank holiday in March. We date this event to start in November 1932 given the importance of the presidential election in triggering many runs. While this event quickly followed the 1930 series of bank runs, it was a separate event, divided by a period of relative calm characterized by bank failures but no outright panics.

Sources: Kindleberger and Aliber (2005), Federal Deposit Insurance Corporation (2018), Silber (2009), Jaremski et al. (2023), Reinhart and Rogoff (2009)

May, 1974

In May 1974, Franklin National Bank experienced rapid deposit withdrawals, characterized as a "run" by McKinley (2014), following the reveal of massive losses on its foreign exchange trading book. The bank was declared insolvent in October, having lost half of

its deposits.

Sources: McKinley (2014), Allan (1974), Frizell (2014)

July, 1982

In July 1982, Penn Square Bank experienced a "full-scale run" according to reporting on NPR, after it was revealed that it took major losses on large risky loans, particularly to the oil industry. Amid the drop in oil prices and rumours of the bank's problems, a panic ensued, leading to a run on the bank's deposits on 2 July. Three days later, the bank was declared insolvent.

Sources: Martin (1982), Wertz (2012)

November, 1983

In November 1983, there were bank runs in Nebraska after the forced closure of the Commonwealth Savings Company and the failure of the state-level deposit insurer NDIGC.

Sources: Metrick and Schmelzing (2021), Horvitz and Pettit (1985), Chen et al. (2020)

May, 1984

Starting on 8 May 1984, United States experienced a sudden bank run on Continental Illinois National Bank. Despite being the seventh largest commercial bank in the US in 1984, Continental's reputation had been tarnished by its acquisition of loans from Penn Square Bank, which had failed in 1982. By 1984, the bank was experiencing declining revenues and profitability. In May, rumours circulated about the bank's possible failure or forced merger, and despite Continental's denials, a sudden and rapid run on the bank occurred.

Sources: Baron et al. (2021), United States General Accounting Office (1997), Carlson and Rose (2016)

May, 1985

Beginning on 5 March 1985, the United States experienced "the most widespread run on depository institutions since the Great Depression" (United States General Accounting Office (1997), p. 47), triggered by the largest of Ohio's privately insured savings and loan institutions, Home State Savings Bank. Highlighting the limits of private (instead of federally-guaranteed) deposit insurance, there were widespread concerns the runs would spread to other states, especially other privately-insured banking systems. There were also widespread deposit withdrawals in Maryland, which also had privately insured savings and loans institutions. By declaring a state-wide bank holiday and putting temporary limits on deposit withdrawals, the panic was calmed, and most Ohio thrifts had reopened

in June 1985 with federal deposit insurance.

Sources: United States General Accounting Office (1997), Robinson (2013)

January, 1991

In January 1991, the Bank of New England experienced massive deposit withdrawals within a short time period, following the revelation of $1.1 billion in losses in 1989. After a projected further loss of $450 million in the fourth quarter of 1990, the bank experienced mass withdrawals of $1 billion from depositors on 4 January 1991.

Sources: McLaughlin (2022), McKinley (2014), The Canberra Times (1991), Bank for International Settlements (2004)

April, 1992

In April 1992, Metro North State Bank in Kansas City, Missouri, experienced a bank run when depositors lined up outside the bank out of fear it was about to fail. The bank's chairman blamed the situation on an "unsubstantiated rumour" that regulators were about to close the bank, according to Norris (1992). The run was, however, calmed the next day.

Sources: Norris (1992), The Associated Press (1992)

August, 2007

In August 2007, Countrywide Financial Corp, the third largest savings and loans bank in the US at the time, experienced a bank run. The fear driving the run was primarily Countrywide's exposure to risky subprime mortgages. When the housing bubble burst and subprime loans started defaulting, it led to significant financial strain. Panic among depositors spread, who rushed to withdraw their money.

Sources: Reckard and Haddad (2007) Baron et al. (2021), Reinhart and Rogoff (2011), Laeven and Valencia (2018)

March, 2008

In 2008, the United States experienced several bank runs on major institutions. One of the first was a run on the mortgage lender IndyMac Bank in late June after the publications of letters by Senator Charles E. Schumer to banking regulators that the bank was likely no longer viable, triggering a drop in 7.5% of deposits over the next days. In September, Washington Mutual (WaMu) depositors panicked when they heard the news of Lehman Brothers' bankruptcy on 15 September 2008, withdrawing $16.7 billion from their savings and checking accounts over the next 10 days (more than 11% of WaMu's total deposits). Wachovia, the fourth largest bank in the United States at the time, lost $5 billion of deposits

in a single day on 26 September 2008 when large depositors withdrew funds.

Sources: Amadeo (2021), CBS News (2008), Stempel and Martinez (2008), Stevenson and Slater (2008)

March, 2023

In March 2023, Silicon Valley Bank (SVB) experienced a major run and subsequently failed. SVB was known for providing lending and deposit services to venture capitalists and start-ups. It had invested heavily in US government bonds, which lost value when the Federal Reserve raised interest rates. The rate hike caused the bank's customers to withdraw their deposits, adding to SVB's financial stress. An attempt to raise funds through a share sale backfired when Founders Fund, a venture capital firm, advised its portfolio companies to withdraw their money from SVB. This led to a rapid outflow of $40 billion, a fifth of SVB's deposits, in a matter of hours. As this incident was accelerated by tweets from high-profile entrepreneurs, it has been dubbed "the first Twitter-fuelled bank run."

Sources: Yerushalmy (2023), Gompers (2023)

B.86 Saint Vincent and the Grenadines

January, 2013

A World Bank report states that the Saint Vincent Building and Loan Association (BLA), the largest mortgage lender in Saint Vincent and the Grenadines, "was able to weather a run on its deposits in 2013." The event occurred in January 2013 and followed the publication of a news report in The Vincentian highlighting governance and financial problems at the institution.

Sources: The Vincentian (2013), The World Bank (2014)

B.87 Venezuela

November, 1993

In November 1993, the Venezuelan Central Bank warned of insolvency in multiple banks, leading to a climate of uncertainty. The president of Venezuela's second largest bank, Banco Latino, resigned on December 22, 1993, and fear of the bank's closure in January 1994 triggered a bank run, causing a wider banking crisis with runs on other troubled banks.

Sources: Baron et al. (2021), Laeven and Valencia (2018), Reinhart and Rogoff (2009), Chirinos (2008), Trigo et al. (2007), Lucas (2023), Anido R. et al. (2014)

February, 2009

Venezuela experienced a banking crisis in 2009-10 that was also accompanied by runs. The crisis was initially triggered by a government crackdown on powerful financiers, including Arné Chacón and Ricardo Fernández Barrueco, amid concerns about their rapid wealth accumulation through close government ties. Several banks were seized among failing, contributing to fears of bank runs as depositors lined up to withdraw money. The first run was likely on Stanford Bank Venezuela in February 2009, which experienced an "online run" triggered by revelation of a massive fraud case by its Texan owner Allen Stanford and was seized by the government. The banking sector's problems continued, leading to a bank run on Banco Federal in June 2010, the country's 11th largest banks.

Sources: Associated Press (2009), Romero (2009), Martinez (2009), Cancel and Pons (2010)

B.88 Vietnam

August, 2012

In 2012, the Vietnamese Asia Commercial Bank (ACB), one of the country's largest, experienced a bank run after the arrest of one of its founders, Nguyen Duc Kien. Depositors withdrew hundreds of millions of dollars within a short time span. The central bank, however, quickly intervened to provide liquidity, apparently stemming pressure on other institutions.

Sources: BBC (2012), Ho (2012)

October, 2022

Saigon Commercial Bank (SCB) faced a major bank run after its founder Nguyen Duc Kien had been arrested on charges of "economic crimes" in a corruption probe. While a wider panic was contained, the incident was significant enough to be reported in the international news media and prompted a statement by Standard & Poor's regarding Vietnam's credit rating.

Sources: Nguyen (2022a), Nguyen (2022b), Yap (2022), Boudreau (2022), Janssen (2023), Retail Banker International (2022)

B.89 South Africa

September, 1890

In 1890, there was a bank run on South Africa's The Natal Bank, once a major independent bank, triggered by the collapse of the Cape of Good Hope Bank. This initial run put further pressure on all banks. The Cape of Good Hope Bank's failure had followed a major bank robbery, which had caused the bank to suspend all payments.

Sources: Baron et al. (2021), Reinhart and Rogoff (2009), Metrick and Schmelzing (2021), The Mercury (1890), The Bathurst Daily Free Press (1890)

September, 1997

In 1997, South Africa's The Islamic Bank Ltd (IBL) faced a bank run and ultimately collapsed, following a longer history of regulatory breaches and loan losses. These problems, along with adverse publicity, led to a bank run due to liquidity concerns.

Sources: Rahman and Zada (2016), Taliep et al. (2012), Nathie (2010)

January, 2002

In January 2002, South Africa experienced bank runs associated with the failures and closures of several small and medium-sized banks, including Regal Treasury Bank, New Republic Bank, and Saambou Bank. The latter in particular, South Africa's seventh largest bank at the time, faced a run by "desperate clients", as did the Board of Executors (BoE), the fifth largest bank. According to Havemann (2021), the 2002-03 crisis led to the closures of half of South Africa's banks.

Sources: Metrick and Schmelzing (2021), Havemann (2019), Havemann (2021), Venter (2008), Ginsberg (2002), Tjiane (2015)

B.90 Zimbabwe

May, 2003

During 2003, Zimbabwe faced repeated episodes of widespread bank runs, likely starting in May. Characterized by long queues of people waiting outside banks, among others in central Harare, there was widespread panic and banks limited cash withdrawals. The central bank, unable to print sufficient new cash to satisfy banks' demands for new notes, added to this panic.

Sources: The Independent (2013), Dzomira (2014), The Mail & Guardian (2003a), The Mail & Guardian (2003b), Makoni (2011), Kairiza (2009), Kupakuwana (2012)

May, 2016

In May 2016, Zimbabwe experienced bank runs due to a prolonged U.S. dollar shortage, with people fearing the replacement of dollars with new local currency. The panic caused daily cash withdrawal limits to drop rapidly, from 1,000 U.S. dollars to as low as 50 U.S. dollars in some cases. Many Zimbabweans, who vividly remembered the hyperinflation crisis of 2008, were wary of using the new 'bond notes' introduced by the authorities.

Sources: Rivett-Carnac (2016), Mavhunga (2016), Vasilogambros (2016), BBC (2016), Kotze (2016)

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