

Bank networks and suspensions in the 1893 panic: evidence from the state banks and their correspondents in Kansas

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Using individual balance sheet data from the state banks in one state that was deeply impacted by the 1893 crisis, this article presents evidence that correspondent networks played an important role in transmitting the crisis. In particular, the unexpected closure of a single large national bank in Kansas City considerably increased the probability of suspension among the state banks that were connected to it through the correspondent networks. This episode thus illustrates how contagion can spread through interbank networks and sheds new light on the nature of the 1893 crisis.

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JEL classification: N21, G01, G21

When there is a ‘run’ on the banks of one city they must seek temporary assistance from those of another. In doing this the former weaken the latter ... and so if the panic should strike the latter city it finds them that much weaker, and they must in turn borrow from some other city, and thus the burden is shifted from shoulder to shoulder, until in panics of long duration our whole financial fabric is shaken.
C. W. Trickett (1894, p. 43)

I

During the national bank era, the unit banks were linked via a correspondent network that facilitated out-of-town collections, helped them meet reserve requirements and provided commercial banks with access to money markets, among other things (James 1978). These benefits notwithstanding, the correspondent system may have also transmitted instability during periods of banking crises. Using individual balance sheet data from the banks in one state that was deeply impacted by the 1893 crisis, I present

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evidence consistent with the view that the suspensions at correspondent banks – and particularly the unexpected closure of a single large national bank in Kansas City – were important in transmitting the crisis into the state banking system. While a number of factors were at play, one important predictor of suspension was having a correspondent that closed – and the suspension of the National Bank of Kansas City (NBKC) was particularly important. I also provide some details about the July 1893 depositor run on the NBKC, which was driven primarily by out-of-town depositors and financial stringency in other cities. This episode illustrates how instability can rapidly spread both geographically and across banking systems (from federally to state-chartered banks).

Unlike in the other crises of the national bank era, the bank closures in 1893 were concentrated in the interior states; in part, this motivates my focus on the state of Kansas, which had the highest number of state bank suspensions during that year. Most scholarship on banking crises proceeds from a more aggregated level which, while useful in many respects, also obscures some of the important details in what is ultimately a micro-phenomenon, at least in its early stages. Of course, there are some disadvantages to focusing on a single state, but the lack of digitized balance sheet data for individual banks close to the start of the bank runs imposes some limits on the scope of analysis.

There are a number of important advantages in restricting the analysis to a single state. First, the state's banking laws were uniformly applied to each bank in the dataset, so there is no risk of differing legislation or differentially applied enforcement playing a role. Second, the more restricted geographic scope of the present article allows for a more detailed examination of the individual banks involved in the crisis, which is particularly important when trying to trace the possible contagion channels. Finally, we have access to individual bank balance sheet data from early April, which provides us with a useful snapshot of conditions in the state not long before the bank runs began in July.

II

We know from a number of empirical and theoretical studies that interbank markets can play an important role in the contagion process. James (1978) describes the reasons these networks emerged and the benefits they created, but we also know that they can transmit shocks, as Allen and Gale (2000) described in an important contribution to this literature. They use a Diamond-Dybvig model to illustrate how liquidity preference shocks in one region can be transmitted to other regions through interbank markets for deposits even in a perfect information environment, explaining that 'interregional cross holdings of deposits work well as long as there is enough liquidity in the banking system as a whole. If there is an excess demand for liquidity, however, the financial linkages caused by these cross holdings can turn out to be a disaster' (Allen and Gale 2000, p. 4). To avoid costly liquidation of long-term assets, banks may try to liquidate claims on banks in other regions, which introduces the possibility

of spreading a liquidity crisis across regions. Duffy, Karadimitropoulou and Parravano (2016) provide experimental support for the Allen and Gale (2000) model, finding that contagion is possible under both complete and incomplete networks of banks that are linked by interbank deposits, although they are less likely in a complete network. The empirical models used in this article draw on these ideas and provide some support for the view that interbank networks created in the nineteenth-century American banking system played a role in transmitting shocks during the 1893 panic.

Freixas, Parigi and Rochet (2000) showed how interbank lending, which allows individual banks to mitigate against liquidity shocks, also exposes the entire system to a coordination failure even when all banks in the system are solvent. In their model, interbank connections make the system more resilient against the insolvency of individual banks but also create an implicit subsidy that can allow insolvent banks to continue operating.

Acemoglu, Ozdaglar and Tahbaz-Salehi (2015) explored the ways in which the nature of interbank liabilities can contribute to systemic risk. They find that below a certain threshold on the magnitude of shocks, a more interconnected system can be more stable; however, once the magnitude or number of shocks exceeds a certain threshold, a more interconnected system can actually create a more fragile system. As they put it, ‘the same features that make a financial system more resilient under certain conditions may function as sources of systemic risk and instability under others’ (p. 566).

Iyer and Peydró (2010) used the sudden failure of a large cooperative bank in India as a natural experiment, finding that exposure to a failed bank leads to substantial depositor withdrawals and that weak fundamentals exacerbate contagion in interbank markets. As discussed later in this article, the idea that a large bank closure can be the catalyst for a cascade of failures at smaller connected banks is similar in many respects to the events that unfolded in 1893.

Even if the correspondent system did not directly transfer vulnerabilities across the system, customers may have perceived the links between banks as a threat. In their study of the 1893 crisis, Greve, Kim and Teh (2016, p. 403) pointed out that ‘bank customers were usually aware of the correspondent banks associated with their banks, because the location and reputation of correspondent banks were important factors in choosing a bank’. Indeed, the frequency with which official bank statements appeared in local newspapers and the ads that banks often ran in those papers suggest that most customers would have been aware of their bank’s correspondents, especially when that correspondent was a large and prominent institution. Moreover, we know that banks attempted to avoid being connected with bad news associated with other banks by communicating with customers through the local newspapers.¹ The notion that negative information about one failed bank implies negative information about

¹ See Greve, Kim and Teh (2016, p. 405). My own examination of Kansas newspapers also confirms that this happened throughout the crisis period in 1893.

another bank is the focus of theoretical work by Chen (1999), but economic historians have also considered the way in which social networks can transmit contagion, as in the case of Irish immigrant communities in the US during the financial crises of the 1850s (Kelly and Ó Gráda 2000).

Most of the existing historical research on the nineteenth-century correspondent networks, and their contributions to bank instability, focuses on the national banks with particular emphasis on the central reserve cities. This is at least in part because of the easier access to national bank data through the Comptroller of the Currency's annual reports. But even this research is limited; as Calomiris and Carlson (2016) pointed out, the way the networks were structured has received little attention despite their potential importance. They examined how interbank networks within the national banking system (all national banks located in 38 different cities) functioned during the 1893 panic and found that banks with liquidity risk stemming from holding more of their liquid assets with correspondents and those funded to a greater degree by other banks were more likely to suspend.

The correspondent networks that emerged in the nineteenth century to facilitate interregional transfers of funds were a result of the prohibition on branch banking for most state banks and for all national banks in the late nineteenth century (James 1978). These networks were particularly important in dealing with the seasonal drains generated by the agricultural economy since lending to farmers spiked during spring planting and fall harvests. Banks could call on their correspondents whenever there were either regular seasonal needs or whenever there was an unexpected drain of deposits or other problems. While correspondents could in principle be sources of reserves to banks that were experiencing heavy withdrawals, this is not always how it worked in practice. Bordo, Rappoport and Schwartz (1992) argued that the commitment of the New York correspondents to the smaller unit banks in the interior was not as strong as it might have been – and that it was apparently weaker than the commitment of head offices in large Canadian cities to their branches. Indeed this lack of a strong commitment to the interior banks seems to have been a factor in 1893. 'It was on the Western banks that the shock of panic fell in 1893 with greatest violence', as Noyes (1894, p. 15) pointed out. Yet the New York banks severely restricted gold shipments to the interior states on 3 August, creating a currency famine in the part of the country most heavily impacted by the panic (Wicker 2000, pp. 77–8).

III

It was under this structure that the 1893 crisis, one of the worst in American history, unfolded. As a result of the bank runs, a total of 503 banks closed with aggregate liabilities of almost \$150 million – this amounts to 8 percent of all banks and 2 percent of all bank liabilities (Wicker 2000). Close to 4 percent of the national banks suspended in

1893, but over half of them reopened prior to the Comptroller's annual report issued in October.² A total of 149 state-chartered banks closed during the crisis.³

While some triggers for the crisis – weakness in the European economies, the failure of the Philadelphia and Reading railroad, and the breaching of the Treasury's gold reserve safety threshold – occurred earlier, the waves of bank runs began in Chicago during the month of May, quickly thereafter spreading to some of the affiliates of the affected Chicago banks (Wicker 2000). One of the distinguishing features of 1893 as compared to other crises (1873, 1884 and 1907, for example) is that it began in the interior of the country and then spread elsewhere, including New York. In most of the other crises, problems began in New York and then moved to the interior. As the panic unfolded, banks began to convert deposits held at other banks in the network into cash, which led to runs on the large New York City banks and forced some of them into suspension (Wicker 2000). The New York suspensions led to severe liquidity problems in other parts of the country.

As banks closed their doors, the currency-deposit ratio rose by 16 percent, more sharply than in any other of the national bank era crises (Gorton 1988, table 1). As banks closed, the money multiplier and aggregate demand fell (Friedman and Schwartz 1963), and the overall credit allocation system was significantly disrupted (Grossman 1993). As a result, industrial production fell by about 15 percent peak-to-trough (Davis 2004) – a larger decline than in any other crisis of the nineteenth century and only marginally below that of 1907.⁴ The unemployment rate during the depression of the 1890s was among the worst in American history, peaking at 12.4 percent and remaining above 10 percent for five consecutive years (Romer 1986). According to Hoffman (1956), the economy was functioning between 5 and 10 percent below capacity even at the cyclical peaks in 1895 and 1899.

Despite its severity, we know comparatively less about the details of this crisis – especially from the perspective of the state-chartered banks – than we do about other crises of the national banking era. As O'Brien (1999) argued in his review of Steeples and Whitten (1998), 'The depression of the 1890s is the least studied major event in the economic history of the United States.' While there has been some progress since that claim was made, it does capture the general lack of attention to this important period. Yet the impact of the crisis was profound and long-lasting in many ways; for instance, it played an important role in the evolution of the modern US payments system, helping in the transition to more widespread use of checks relative to both bank drafts and cash (James and Weiman 2010). The depression that

² The 3,807 national banks in operation were as of 12 July 1893. See the Comptroller of the Currency's *Annual Report of 1893*, p. 4.

³ For some of the early scholarship on the 1893 panic, see Noyes (1894), Stevens (1894), Lauck (1907), Sprague (1910) and Hoffman (1956). More recent studies include Carlson (2005), Dupont (2007, 2009) and Ramirez (2009).

⁴ See Jalil (2015) for a more formal analysis of these patterns in industrial production and how they compare to other crises in American history.

Table 1. *T*-tests for differences in mean values

	Assets		Capital		Deposits		Total loans		
	\$		\$	% of assets	\$	% of assets	\$	% of assets	% of deposits
Suspending banks									
Mean	89,948		23,188	30.0	41,967	45.1	57,783	59.6	169.0
Std dev	118,798		21,290	13.7	66,038	18.4	76,723	15.2	105.0
Non-suspending banks									
Mean	91,144		27,747	33.4	38,494	41.9	62,189	66.2	197.0
Std dev	114,835		30,841	14.2	60,159	16.4	80,763	14.4	131.9
Difference in means	-1,196		-4,559	-3.4	3,473	3.2	-4,406	-6.6**	-28.0
	Due from other banks		Reserves			Net worth		Correspondent suspended	
	\$	% of assets	\$	% of assets	% of deposits	\$	% of assets		
Suspending banks									
Mean	11,067	15.8	19,207	26.9	61.1	27,332	32.2	0.435	
Std dev	13,407	12.8	23,323	16.0	29.6	33,651	14.2	0.507	
Non-suspending banks									
Mean	10,831	12.8	19,084	23.1	64.9	32,250	37.3	0.201	
Std dev	14,266	11.0	24,564	13.6	84.8	41,464	14.4	0.401	
Difference in means	236	3.0	123	3.7	-3.8	-4,918	-5.1	0.234***	

Statistically significant differences (two-tailed *t*-test) at the ***1%, **5% and *10% levels.

followed also sparked significant social unrest including the Pullman Strike in 1894, and it contributed to the shift toward progressivism that was ultimately realized in the twentieth century. It also marked the climax of the long-running agitation over the monetary standard, which was most visible in William Jennings Bryan's famous 'cross of gold' speech in 1896.

IV

The legally required Kansas state bank reports on 5 April provide us with an ideal snapshot of bank balance sheets just prior to the banks runs, and the dataset used in this article was constructed from those official statements. While the state's official call reports from that date have been destroyed, the banks were also legally required to publish their quarterly bank reports in local newspapers for a period of one week. The balance sheets for most of the state banks were reconstructed from these original newspaper reports.

A total of 25 of the banks chartered by the state of Kansas (nearly 8 percent of the total in operation) suspended in 1893.⁵ These 25 banks represent over 14 percent of all state banks that closed nationwide during the crisis, which is one reason to focus on this particular state. Suspending banks were taken from the 3 October 1893 *Special Report of the Bank Commissioner of the State of Kansas* (duplicated in the *Second Biennial Report* of 1894). Note that other studies have relied on the lists in *Bradstreet's*, but a comparison with the official state reports reveals a number of inconsistencies, so I rely on the official reports. Since I was unable to locate the 5 April balance sheet information for one of the suspending banks and another occurred outside the date range used in this article (but is reported in the *Special Report*) the number of suspensions is 23 for the purposes of the econometric models to follow. There were 172 state bank suspensions nationwide according to the Comptroller of the Currency's 1893 *Annual Report* published in December (p. 14) and 163 according to *Bradstreet's*.

The national banking system in Kansas was much less significantly impacted by the panic, certainly in comparison to other western states like Colorado. In total, only seven national banks in the state closed, although this was the largest number of suspensions in the Comptroller's western region. A total of 158 national banks suspended nationwide (Comptroller of the Currency 1893, p. 10).⁶

⁵ Balance sheet details are missing for 2 of the 25 banks, so the number of suspending banks is 23 for the purposes of the regression models. I was unable to locate balance sheet data for the Finney County Farmer's Bank in Garden City; however, the *Second Biennial Report* of the State Bank Commissioner indicated that this bank was organized in January 1893 from the Finney County National Bank, which 'simply merged into this bank and uploaded' its assets. I therefore use the balance sheet items from the Finney County National Bank here – the results do not materially change when I exclude this bank altogether.

⁶ The Comptroller's 1893 report shows 8 national bank suspensions in Kansas, but only 7 occurred within the timeframe defined here.

Table 1 summarizes t-tests for mean differences in key variables between suspending and non-suspending state banks, while Table 2 shows similar results for a number of indicators of bank lending. The results in Table 1 show that suspending banks had only a slightly smaller level of overall assets than did those banks that remained open during the crisis. Similarly, suspending banks had somewhat lower average capital levels of 30 percent of assets compared to 33.4 percent of assets at non-suspending banks. Perhaps more surprising, suspending banks had higher deposit levels than those that remained open and they also had lower levels of total lending. Deposits averaged 45 percent of assets at the suspending banks compared to 42 percent at others. In addition, while there was an impressive expansion of aggregate bank lending in the five-year period preceding the bank panic (both in the state and nationally), the individual state banks that suspended actually had smaller average levels of lending as reflected in Tables 1 and 2. These tables report the ratio of loans to deposits, which is a commonly used measure of potential bank illiquidity and vulnerability to depositor runs as suggested in a number of prior studies (Jordà *et al.* 2017; Cecchetti *et al.* 2011) and which is used in the regressions discussed later in this article. There is no evidence that the more highly leveraged state banks were subject to greater depositor withdrawals.

What little detail we do have on the nature of bank lending suggests that the composition of the loan portfolio may have in this case mattered more than the size of total outstanding loans; in particular, suspending banks had considerably higher amounts of real estate loans (see Table 2). This result – that real estate lending was a more important part of the loan portfolio at suspending banks – is considerably stronger if we restrict the sample only to those banks that engaged in real estate lending (Table 2). Only about half of the banks in the dataset listed real estate loans in their April 1893 statements. Of those, there were larger differences between suspending and non-suspending banks, as summarized in Table 2: real estate loans were a higher fraction of total lending (13.9 to 11.0 percent) and a slightly higher fraction of total assets (8.0 to 7.4 percent) for the suspending banks.

These results on bank lending are consistent with some of the contemporary reporting from this period. For example, the First Western States Commercial Congress reported that building activity was exceedingly strong in the late 1880s:

The movements in all branches of industry and commerce have been subject to unusual restrictions and embarrassments during the past year throughout the United States. The country had just passed through one of the most exciting eras of activity and speculation known to our history, during which the apparent plentitude of money inflated credits enormously, and new enterprises, investments, speculations and loans were taken up with much less than the usual estimate of results.⁷

Sprague (1910) and Sylla (1991) also both pointed to farm mortgage indebtedness as potentially important factors in 1893.

⁷ *Proceedings of the First Western States Commercial Congress, Kansas City, April 14–17, 1891*, p. 2.

Table 2. *T-tests for differences in mean values, total and real estate loans*

	Total loans			Real estate loans							
				Full sample				Restricted sample ^a			
	\$	% of deposits	% of assets	\$	% of deposits	% of assets	% of total loans	\$	% of deposits	% of assets	% of total loans
Suspending banks											
Mean	57,783	169.0	59.6	5,984	9.1	3.5	6.0	13,763	20.9	8.0	13.9
Std dev	76,723	105.0	15.2	21,813	15.2	5.5	9.5	32,313	17.0	5.9	9.9
Non-suspending banks											
Mean	62,189	197.0	66.2	3,836	12.6	3.7	5.6	7,611	25.1	7.4	11.0
Std dev	80,763	131.9	14.4	8,585	34.3	7.2	10.7	10,856	45.1	8.8	13.0
Difference in means	-4,406	-28.0	-6.6**	-2,148	-3.5	-0.3	0.5	6,152	-4.2	0.6	2.9

Statistically significant differences (two-tailed t-test) at the ***1%, **5% and *10% levels.

^aThe restricted sample includes only those banks that engaged in real estate lending.

There were only small differences in the amount due from other banks between suspending and non-suspending banks. State law allowed banks to count the amounts due ‘from good, solvent banks’ as half of their reserves, so the slightly higher reserve level at suspending banks largely reflects the higher amount due to them from other banks.

Average reserve levels were nearly identical at suspending and non-suspending banks, but were slightly larger as a fraction of total assets at the suspending banks. Suspending banks had a higher average level of reserves to assets but, because they had greater overall levels of deposits, they had a lower ratio of reserves to deposits.

Net worth was notably higher at banks that remained open – net worth at those banks was about 37 percent of assets compared to 32 percent at the suspending banks. As discussed later, net worth is the one balance sheet indicator that is important in explaining suspensions during the crisis.

The focus of this article is on the role of correspondents, and [Table 1](#) suggests how important they were in the panic. There was a large and statistically significant difference in the indicator for suspensions at a corresponding bank. The state banks that suspended were much more likely to have had a correspondent that suspended (over 43 percent of the state banks that closed had a correspondent that also suspended) – and in every case this correspondent was the National Bank of Kansas City. In other words, of the 23 suspended state banks, 10 of them had a correspondent that also suspended – and in every one of those 10 cases, that correspondent was the National Bank of Kansas City. A total of 54 state banks (19 percent of the total in the state) had the NBKC as a correspondent. Ten of those 54 banks (18.5 percent) suspended (all but two of them closed after the 14 July closure of the NBKC), while the other 44 remained open. Among all state banks, even those with no formal correspondent relationship with the NBKC, 74 percent of the suspensions occurred after the 14 July NBKC suspension. Other factors, many of which are simply unobservable, clearly mattered; for example, while a correspondent suspension raised the probability of a state bank suspending, there were 51 banks that had a correspondent suspend yet were themselves able to remain open (see [Table 3](#)). Nevertheless, the correspondent system appears to have been an important vehicle for transmitting the crisis across banks and across systems (i.e. from the national to the state banking system).

The probit regressions summarized in [Tables 4](#) and [5](#) confirm these general results, particularly the importance of the network variables. [Table 4](#) reports the marginal effects coefficients of a number of different specifications that use an indicator for whether a bank’s correspondent closed. This variable takes a value of 1 if the correspondent bank suspended prior to the suspension at the affiliated state bank, and it takes the value of 0 if a correspondent bank did not suspend. Correspondents were identified using the January 1893 McNally *Banker’s Directory* and the *Second Biennial Report* of the State Bank Commissioner.⁸ [Table 5](#) duplicates these models, replacing only the

⁸ The *Second Biennial Report* was published in 1894, after the crisis. The *First Biennial Report* (1892) did not include information on correspondents.

correspondent suspension variable with an indicator for whether the National Bank of Kansas City was listed as a correspondent. Note that I do not impose a timing restriction on the NBKC dummy variable in [Table 5](#) (as is done by requiring the correspondent suspensions in [Table 4](#) to occur prior to the affiliated bank suspension) because the historical evidence indicates that the NBKC was suffering from steady depositor withdrawals for a number of months leading up to its closure. As such, it is possible that an affiliated bank could have closed just before the 14 July NBKC closure and yet still have been in a sense caused by the events that led to the NBKC closure.

The results of both sets of regressions consistently reflect the importance of network connections. In the [Table 4](#) regressions, the prior suspension of a correspondent bank increased the probability of suspension at the affiliated bank by around 8 percentage points. And the results in [Table 5](#) similarly suggest the importance of the most important bank in the network – simply having the NBKC listed as a correspondent increased a state bank’s probability of suspending by about 13 percentage points. As discussed earlier, 10 of the 23 suspending banks had a correspondent that also suspended – in every case the NBKC. While it is conceivable that there could have been a common shock that hit the NBKC and the individual state banks, there is no evidence that this is driving the results. Moreover, the timing lends credence to causality running from the NBKC to the state banks given that nearly all state bank closures happened shortly after the 14 July NBKC suspension.

It is notable that the impact of the main network variable in each set of regressions remains large and statistically significant across all specifications, with the exception of Model 3 where interacting it with the amount due from other banks dilutes its impact. There is no evidence that higher amounts due from other banks has any significant impact on the probability of suspension, which is consistent with anecdotal evidence discussed in the next section. Overall, what appears to have mattered is whether or not a correspondent bank suspended, not how much was due to the individual state banks.

Controlling for bank assets, the ratio of loans to deposits and the ratio of real estate to total loans does not matter in any material way for the results.⁹ But there is one balance sheet measure that has a relatively large impact on the probability of suspension – the ratio of net worth to assets. The estimated coefficient is negative and fairly large in both versions of the regressions presented in [Tables 4](#) and [5](#), and it is statistically significant in three of the four versions that include it. This result is consistent with the observation made earlier, and summarized in [Table 1](#), that there was a relatively large difference in net worth between suspending and non-suspending banks. The estimated coefficients suggest that a one standard deviation increase in the net worth-to-asset ratio would have generated about a 3-percentage point reduction in the probability of suspension, all else constant.

⁹ Other regressions using alternate measures of liquidity, including the ratio of reserves-to-deposits and the ratio of reserves-to-assets, yield similar results. The regression results summarized in [Tables 4](#) and [5](#) are robust to a number of alternative specifications.

Table 3. *Cross tabs on correspondent suspension*

	No suspension at correspondent	Suspension at correspondent	Total
No suspension	201	51	252
Suspension	14	9	23
Total	215	60	275

Note: Suspension at correspondent is defined here as in the probit regressions. It takes a value of 1 if the correspondent suspended prior to the affiliated bank.

County-level data for 1893 are sparse, but Model 5 controls for the percentage of improved acreage in the county where the bank was located as an indicator of general economic development (Haines 2010), and the number of manufacturing establishments per 1,000 population according to the 1890 census. The results indicate that being located in a more economically developed county, as proxied by the number of manufacturing establishments in 1890, slightly reduced the probability of suspension. The coefficient is statistically significant at the 5 percent level in the results summarized in Tables 4 and 5.

V

The empirical evidence points to the importance of network linkages and particularly to the role of the National Bank of Kansas City (NBKC) in transmitting the crisis. As was the case with the national banks (Calomiris and Carlson 2014), the state banks in Kansas had a strong preference for correspondent relationships with nearby banks, particularly in the reserve city of Kansas City. Most of the interbank connections were with larger national banks either in Kansas City or in New York City – and the NBKC was at the center of these connections.

While the Kansas City Missouri Safe Deposit Bank was the first bank in the Kansas City market to suspend, the closure of the NBKC on 14 July was most important for transmitting the crisis to the state banks.¹⁰ The NBKC remained closed for almost three months, and its closure was apparently unexpected. As the *Arkansas City Daily Traveler* noted on the day it suspended, ‘Considerable excitement is caused by the suspension as it has been entirely unexpected. Its president is J. S. Chick, one of the best known financiers in the west.’ Indeed, the unexpected nature of the NBKC closure is consistent with the argument that it prompted depositor fears and runs at affiliated state banks. While it would eventually reopen, there were questions at the time as to the wisdom of doing so; these concerns were verified when the bank permanently closed in 1895. As the *San Francisco Call* reported on 19 March 1895, ‘the closing of the bank can hardly be termed a failure, but simply a gradual dying out’ that was initiated by depositor withdrawals that prompted its suspension two year earlier.

¹⁰ As Wicker (2000) pointed out, Kansas City was one of five cities to experience city-wide bank runs in July 1893. Note this is well before the August 1893 New York City suspensions.

Table 4. *Probit regressions using correspondent suspension*

	(1)	(2)	(3)	(4)	(5)
<i>Interbank linkages:</i>					
Correspondent suspension	0.0849** (0.0492)	0.0822** (0.0480)	0.0238 (0.0630)	0.0824** (0.0486)	0.795** (0.047)
Due from other banks/assets		0.194 (0.150)	0.126 (0.188)		
Correspondent suspension x Due from other banks/assets			0.313 (0.324)		
<i>Bank-specific controls:</i>					
Ln (assets)				-0.0166 (0.0201)	-0.004 (0.018)
Loans/deposits				-0.00122 (0.0142)	-0.0002 (0.0140)
RE loans/total loans				0.139 (0.142)	0.175 (0.134)
Net worth/assets				-0.205 (0.139)	-0.227* (0.129)
<i>County-specific controls:</i>					
Percentage improved acreage					-0.062 (0.107)
Mfg establishment per 1,000 pop					-0.029** (0.013)
Observations	275	275	275	275	275
Pseudo R-square	0.0245	0.0360	0.0412	0.0469	0.082
Wald chi-square	3.997	5.012	6.983	6.654	13.27
Prob > chi-square	0.0456	0.0816	0.0725	0.2477	0.0657

Notes: The coefficients are marginal effects. Robust standard errors in parentheses:

***p < 0.01, **p < 0.05, *p < 0.10.

The NBKC had total assets of \$3.2 million and liabilities of \$4 million according to Bradstreet's 11 November 1893 report. To provide some perspective on its size, its \$3 million in deposits represents three-quarters of the total deposits tied up in all the suspended banks in Kansas City (Wicker 2000, p. 69). The NBKC was the largest bank to suspend in the citywide runs, and it was deeply connected to the smaller national and state banks in Kansas and Missouri, with a total of 108 country bank affiliates (Wicker 2000). The Comptroller of the Currency's 1893 report shows that the NBKC had \$1 million in capital, second only among suspending national banks to the National German-American Bank of St Paul (\$2 million in capital). In fact, the bank held the equivalent of over 5 percent of the total capital held by suspending banks.

Table 5. *Probit regressions using National Bank of Kansas City*

	(1)	(2)	(3)	(4)	(5)
<i>Interbank linkages:</i>					
NBKC	0.126*** (0.0553)	0.125*** (0.0547)	0.0962 (0.0883)	0.132*** (0.0562)	0.131*** (0.055)
Due from other banks/ assets		0.198 (0.147)	0.171 (0.174)		
Correspondent suspension x			0.129		
Due from other banks/ assets			(0.339)		
<i>Bank-specific controls:</i>					
Ln (assets)				-0.0188 (0.0194)	-0.007 (0.017)
Loans/deposits				0.00158 (0.0137)	0.002 (0.014)
RE loans/total loans				0.151 (0.135)	0.190 (0.124)
Net worth/assets				-0.232* (0.135)	-0.251* (0.123)
<i>County-specific controls:</i>					
Percentage improved acreage					-0.031 (0.102)
Mfg establishment per 1,000 pop					-0.030** (0.013)
Observations	275	275	275	275	275
Pseudo R-square	0.0476	0.0602	0.0611	0.0747	0.1119
Wald chi-square	7.770	8.960	9.521	12.03	16.73
Prob > chi-square	0.0053	0.0113	0.0231	0.0344	0.0192

Notes: The coefficients are marginal effects. Robust standard errors in parentheses:

***p < 0.01, **p < 0.05, *p < 0.10.

Given its size, history in the area (it had been established in 1883), and the degree to which it was embedded in the overall banking network of the region, the suspension of the NBKC played a critical role in the panic; its closure sent shockwaves through the state banks to which it was linked and seems to have significantly exacerbated the crisis in the state banking system.¹¹ Newspaper reports at the time indicated as much.

¹¹ In the January 1893 McNally *Bankers' Directory*, the National Bank of Kansas City claims that it has 'the largest business of any bank in the Southwest'.

For example, the *Fort Scott Daily Monitor* reported on 16 July that the NBKC suspension was a shock to public confidence and could contribute to depositor runs at other smaller banks. It also reported that the State Bank Commissioner ‘regards the failure of the National Bank of Kansas City, as serious for its Kansas correspondents’ although he initially downplayed its severity, perhaps as an effort to alleviate growing depositor concerns. It is notable that distress prompted by the NBKC closure even appeared in St Louis newspaper reports, which blamed it for ‘great uneasiness’ in that city’s banks (*St Louis Post Dispatch*, 15 July 1893).

Of the 108 country bank affiliates of the NBKC, 54 were state banks – and 10 of those banks closed during the panic (43 percent of the total suspensions in the state). As noted earlier, having the NBKC as a correspondent in fact raised a bank’s probability of suspending by nearly 13 percent. Contemporary newspaper accounts lend support to the story that comes out of the empirical analysis: they tell us that the Kansas correspondents drew heavily on the Kansas City banks the day after the NBKC suspension.

The evidence does not permit us to definitively determine whether the state banks were forced to suspend because they were unable to obtain funds from the NBKC or because they were tarnished merely by their association with it. Given the frequent appearance of official statements and advertisements in local newspapers, it seems reasonable to assume that many local bank customers would have been aware of connections to the NBKC. It is also interesting that during the crisis, the banks clearly thought that providing statements to depositors would help calm the situation – statements of all the banks in the city were published in the local Kansas City newspapers even though they were not required to do so at that time.

We know that the correspondents were unable to obtain at least some funds, as there was an unmet demand for a total of \$40,000 from the NBKC on the day of its closure, but contemporary news reports also suggest that the main problem for many banks was depositor perception; for example, the *Kansas City Star* reported on 15 July that the oldest bank in Kansas City (Northrup Bank) was forced to suspend not because it was owed money that it could not obtain (in fact Northrup apparently owed money to the NBKC – a grand total of \$15), but because of the very existence of its connections to the NBKC both through the correspondent system and the fact that the same individual served as president of both institutions. And the *Salina Daily Republican* on 14 July made a point to state that none of the banks in that town did any business with the NBKC, apparently in an effort to alleviate depositor concerns. This newspaper also claimed that the NBKC had been in ‘an embarrassing position for the last three years on account of its holdings of real estate upon which it could not realize’.

The NBKC’s deposits had been dwindling for a couple of months prior to its closure, apparently stimulated by the failures in early May of Chemical National Bank, Columbia National Bank and the US Loan and Trust Company, all in Chicago. According to the *Independence Daily Reporter* (16 July 1893), the bank president explained ‘our deposits at one time were about \$4,000,000, but they have been

drawn down so that they are now between \$800,000 and \$1,000,000' (a later official report actually showed the amount was \$1.8 million – see the *Topeka Daily Capital*, 16 July 1893). But the May–June withdrawals from the NBKC were smaller and different in character than the larger panic-driven withdrawals that began on 11 July and ended with its closure three days later. The NBKC panic was prompted by the closure of the Kansas City Safe Deposit & Savings Bank, which had also been experiencing steady depositor withdrawals since early June. According to the president of the Savings Bank, their appeal to New York for assistance was met with 'only a doubtful promise'. It is unclear why the Savings Bank was unable to access funds through its New York or Chicago correspondents, none of which suspended, but no doubt the general financial stringency throughout the Chicago area played a role. The president of the Safe Deposit & Savings Bank attributed his bank's closure to the fact that certificate or time deposits were maturing daily 'and the calls on us are large while it has been impossible for us to collect money that is due us and deposits have been insignificant' (*Kansas City Star*, 11 July 1893).

According to its president, the NBKC asked the clearinghouse for help the day before it closed, a fact that was 'telegraphed to creditors and depositors out of town and caused the run to be heavier'. It would appear then that local depositor withdrawals did not initiate the crisis, but that the local customers grew concerned about reports of the out-of-town withdrawals that arrived via telegraph. By the next day, local depositors were lined up outside the bank but as the *Kansas City Star* reported on 15 July, these 'depositors were lightweights financially and their blows were weak ones'.

In the end, the suspension of the NBKC, one of the most important banks in the region and an important part of the correspondent networks, seems to have been a critical factor in increasing the probability of suspensions within the state banking system. Consistent with some of the literature discussed in Section II, both the historical newspaper accounts and the available empirical evidence suggest that its closure played a key role in transmitting the crisis to the state banks with which it was affiliated.

VI

The idea that the long history of instability in American nineteenth-century banking was largely due to its organization (Calomiris 2009) is consistent with the evidence of the small geographically isolated state banks that were at the heart of the 1893 crisis. While it is true that 'the correspondent banking system was a quite sophisticated structure promoting interregional flows' (James 1978, p. 124), it also acted as a vehicle for transmitting contagion across the country and between the national and state systems. In Kansas, where over 14 percent of all state bank suspensions occurred, the evidence from the 5 April call reports collected from local newspapers suggests that interbank connections through the correspondent banking system were important factors in the crisis. The most important link in the chain of contagion was the National Bank of

Kansas City, whose closure on 14 July was a significant shock to the state-chartered banks, particularly those with which it had a correspondent relationship.

More work needs to be done to determine whether the evidence of interbank networks serving as a vehicle for contagion in the 1893 crisis holds for state-chartered banks elsewhere. There is also an interesting outstanding question surrounding the behavior of the clearinghouses and, in particular, the failure of the clearinghouse to respond to the NBKC's request for funds. For now, it is at least clear that the closure of a single large national bank whose deposit withdrawals were initiated by out-of-town depositors played an important role in the crisis.

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