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Bank fragility, "money under the mattress", and long-run growth: US evidence from the "perfect" Panic of 1893

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ABSTRACT

This paper examines how the US financial crisis of 1893 affected state output growth between 1900 and 1930. The results indicate that a 1% increase in bank instability reduced output growth by 2–5%. A comparison of Nebraska, which had one of the highest bank failure rates, with West Virginia, which did not experience a single bank failure, reveals that disintermediation affected growth through a portfolio change among savers: people simply stopped trusting banks. Time series evidence from newspapers indicates that articles containing the words "money hidden" significantly increase after banking crises, then slowly die out.

> [Mr.] Syndowsky had once lost some money through the failure of a savings bank and was consequently possessed of a rooted abhorrence of all banks. So, despite the urging of his wife and children, he refused to put his wealth [$6,500] in a bank. Instead, he kept it in a little safe in his apartment at night and in the daytime he carried it about in his wallet.
> —"Syndowsky's Savings", *Banker's Magazine* (November 1912): 536.[1]

1. Introduction

Over the last two decades a substantial amount of research has investigated the effect of financial development on long-term economic growth.[2] This literature generally finds that a country's long-term growth rate appears to be an increasing function of the country's level of financial development – a finding leading to the conclusion that stimulating financial development can be helpful for promoting growth. But although the literature asserting the finance-growth nexus is voluminous, numerous other papers have questioned the empirical validity of such relationship. Frequently cited as expressing skepticism about this relationship are two well-known economists from several decades ago, Joan Robinson and Robert Lucas.[3] More recently, many other economists have expressed doubt about the robustness of such relationship (Wachtel, 2003; Manning, 2003). In fact, disbelief has permeated the literature enough that a leading proponent of the finance-growth relationship, in his very comprehensive survey, comments, "We are far from definitive answers to the questions: Does finance cause growth, and if it does, how?" (Levine, 2005, p. 3).

Many papers in the literature investigate the relationship between finance and growth by studying the extent to which financial development enhances growth. This paper, in contrast, proposes to study the same relationship but from the other direction – by studying periods of sudden financial disintermediation.

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[1] According to Officer and Williamson (2009), the "purchasing power of money" calculator shows that $6,500 in 1912 is equivalent to $148,880 in 2008.

[2] Since King and Levine's (1993) well-known study, the empirical literature on this issue has essentially ballooned. Hence, it is not practical to even attempt to provide a list here. For a comprehensive survey, see Levine (2005). For more recent studies, see Pang and Wu (2009) as well as Cole et al. (2008).

[3] See, for example, Levine (2005) and Rousseau and Wachtel (2005), who cite Robinson (1952) and Lucas (1988), among others.

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The logic of focusing on periods of sudden financial disintermediation is based on the observation that if financial development enhances growth, a country that experiences financial disintermediation may experience, besides a temporary downturn in its business cycle, a decline in long-term growth as well. This observation, in turn, follows from the possibility that during periods of abrupt financial disintermediation, institutional or other long-lasting changes may take place. For example, a severe banking crisis can instill a behavioral change in the population if people lose trust in the banking system and if, at the same time, no credible mechanism for restoring public confidence exists.[4]

The observation that financial disintermediation may be associated with a decline in long-term growth implies the possibility of evaluating the finance-growth relationship by studying the long-run growth patterns of countries that endured abrupt episodes of financial disintermediation but, for one reason or another, did not implement credible policies aimed at restoring public confidence.

To empirically assess the long-term effects of banking crises on growth, we must fulfill two requirements. First, we must rely on historical episodes: clearly, enough time has to have elapsed to let us ascertain with enough statistical precision the long-term effects the episode had on growth. Second, the episode must be one in which government involvement was at a minimum: the introduction of government policies aimed at restoring public confidence in the banking system could "contaminate" the results (especially if the policies implemented were credible). It is this particular combination of circumstances – a historical episode of financial distress and a lack of restorative government policies – that the present paper seeks to exploit to test the following hypothesis: a period of abrupt financial disintermediation may lead to a decline in long-term growth if people lose trust in the banking system and the government does not take steps to restore their trust.

Fulfilling these two requirements is not as easy as it may seem. Although there have been numerous banking crises in the United States and elsewhere, including the present crisis, for only a few of them could a reasonable claim be made that government involvement was very limited. One crisis that meets our conditions, and that we focus on, is the Panic of 1893. This panic is particularly useful for studying the issue at hand because, although the panic itself was relatively short-lived, its effect on the banking system continued for several more years: by 1896, bank failures triggered by the panic had engulfed most states. Moreover, the government made no orchestrated effort to implement policies aimed at restoring public confidence in the financial system, unlike what happened in the aftermath of the banking crises of the 1930s, and what is happening today as a result of the current financial crisis.

To show how the adverse financial shock of 1893 influenced long-term growth, I focus on the growth experiences of the different states between 1900 and 1930.[5] In particular, I estimate standard growth convergence equations augmented by the inclusion of a variable that measures the aggregate amount of failed bank liabilities relative to total bank deposits. The main results indicate that a 1% increase in the incidence of bank failures in the aftermath of the Panic of 1893 reduced growth by 2–5% between 1900 and 1930. The magnitude of this elasticity range is almost as high as that obtained by the elimination of geographical restrictions on branch banking. In addition, the estimates are robust to the inclusion of the standard set of controls, such as initial income per capita, measures of education, industrial structure, and initial levels of financial development. The results imply that the cost of banking instability goes beyond the short-term macroeconomic consequences that the literature has highlighted. The results may also help to explain why it takes so long to restore growth in countries that experience banking crises and lack credible remedial government policies.

Convergence regressions may be suggestive but, on their own, may not be fully persuasive.[6] To complement the evidence, this paper provides an explanation, with theoretical underpinnings, of why financial disintermediation adversely affects long-run growth. The explanation is supported by two other empirical tests, one based on time series evidence from newspaper articles and the other on a case study.

The explanation of why financial disintermediation affects growth is intuitive and straightforward. In the absence of deposit insurance or any other institutional arrangement that restores confidence on the banking system, depositors who experience losses or whose money becomes illiquid, even temporarily, may become reluctant to keep their money in the banking system. They simply stop trusting banks. This lack-of-trust may affect all depositors, including those who did not experience losses. With a high enough degree of risk aversion and a high enough probability of a bank run or failure, depositors may be induced to reshuffle their liquid asset portfolio away from the banking system.[7] Undoubtedly, some reshuffling takes place within the banking system. That is, some depositors move their money away from a bank perceived to be more vulnerable to closure or failure, to a more secure bank. But if depositors do not know or do not think they know, ex ante, which are the more vulnerable banks, the rational response is to remove at least a portion of their liquid wealth from the banking system. To the extent that the panic induces a portfolio change in asset holdings away from the banking system and into more rudimentary forms of savings, such as keeping the money under the mattress (literally or metaphorically), financial intermediation and therefore growth are adversely affected.[8]

One piece of evidence supporting this argument comes from newspaper articles. In particular, I constructed a yearly index of newspaper articles containing the phrase "money hidden" to gauge the incidence of general distrust in the banking system. The newspaper index starts in 1860 and ends in 1970, spanning all major historical banking crises in the United States. The vast majority of these articles tell tales of the extent to which people hid their savings in cash, often because they simply did not trust banks. The time series evidence indicates three things: (1) the incidence of "money hidden" articles spikes during the years of banking crises; (2) the magnitude of the spike is substantial (about an 80% increase within two years of the crisis), with the effect dying off slowly over time; and (3) the effect appears to have been curtailed after 1935, which coincides with the introduction of deposit insurance at the national level.

Another piece of evidence comes from a comparison between the cases of West Virginia and Nebraska. Studying these two cases is particularly illuminating because West Virginia did not suffer a single bank failure during the panic, whereas Nebraska had one of the highest bank failure rates during the same period. Even though Nebraska was by far the wealthier of the two states in the 1890s, it suffered a very drastic decline in its level of deposits and did not recover until the 1920s, after it introduced state deposit insurance. The finding that Nebraska experienced a long-term

[4] It is actually telling that in response to the financial crisis of 2008–2009, policymakers around the world recommended that proposals aim at restoring confidence in the banking system. See, for example, http://www.cnn.com/2009/BUSINESS/03/14/g20.meeting/index.html?eref=rss_world.

[5] The choice of this time period is explained further in Sections 2 and 4.

[6] The main drawbacks of standard growth convergence regressions are summarized below.

[7] The quotation at the beginning of the paper attests to the significance of this intuitive explanation.

[8] Section 3 below provides a more detailed discussion and the relevant references.