

Wake-Up Call Contagion*



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Financial crises have occurred throughout history and financial contagion is an important phenomenon contributing to the spread and severity of financial distress. Wake-up calls are a prominent channel of contagion that has been documented for currency, sovereign debt and banking crises. The notion of wake-up calls has been introduced informally by Goldstein (1998), whereby a crisis in one region is a wake-up call to investors that induces them to re-assess and inquire about the fundamentals of other regions. We offer a theoretical framework to capture the wake-up call contagion phenomenon. In our model, a crisis in one region is a wake-up call to investors in another region. It induces them to reassess the regional fundamental and acquire information about potential links with the crisis region. Contagion can occur even after investors learn that the other region has no ex-post exposure to the crisis region.

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Forbes (2012) broadly distinguishes between four different, but not mutually exclusive, channels of contagion: trade, banks and financial institutions, portfolio investors, and wake-up calls. Goldstein (1998) informally introduced the notion of wake-up call contagion. After the wake-up call of a crisis elsewhere, investors acquire information about exposures to potential shared vulnerabilities. Such a re-appraisal of risk can lead to a contagious spread of a financial crisis across regions or to other financial institutions. Empirical evidence for the importance of the wake-up call channel of contagion has been documented across markets and over time and the strength of wake-up call contagion has been linked to the ex-ante exposure to the ground zero crisis country (Dasgupta et al. 2011).

A key source of potential ex-ante exposures across regions or banks are institutional similarities that create common vulnerabilities. These include, for currency attacks and sovereign debt crises, the sustainability of specific institutional and developmental models as well as structural and industrial policies in emerging economies that can make a country prone to adverse changes in the international macroeconomic environment (Corsetti et al. 1999). For bank runs, these include similarities in corporate governance and the proneness to financial misconduct, as well as the quality of regulation, and the credibility of deposit insurance (Karas et al. 2013) or government guarantees that can give rise to financial sector vulnerabilities.

Despite its popularity, including among policymakers, there has been little theoretical work on the wake-up call hypothesis. We close this gap in Ahnert and Bertsch (2022) by proposing a theory of wake-up call contagion that allows us to rationalize evidence about contagious currency crises and bank runs. Our work addresses the following research questions:

- 1) How can there be contagion even if there is no discernible exposure across countries or financial institutions ex-post, that is at the time of the contagious spread of a crisis?
- 2) How do the magnitude of the wake-up call contagion effect and the demand for information during a re-appraisal of risk depend on the degree of ex-ante exposure across countries or financial institutions?

A theoretical framework to analyze wake-up call contagion

We develop a global coordination game of regime change (Morris and Shin 2003) with two regions that move sequentially. A financial crisis comprises a currency attack, a bank run, or a debt crisis and occurs when enough investors act against the regime in their region by attacking a currency peg, withdrawing funds from a bank, or refusing to roll over debt. We define contagion as an increase in the probability of a financial crisis in one region due to a crisis in the other region.

In our model, regional fundamentals are linked via the exposure to a common macro shock, which captures common vulnerabilities and institutional similarities of regions. The wake-up call of observing a crisis elsewhere induces investors to acquire costly information about the actual exposure to the common macro shock.

Results from our theoretical analysis

Building on this framework, we rationalize findings on the wake-up call contagion channel and explore normative and testable implications of the model.

Our first main result is that investors have a higher incentive to acquire information about the common macro shock after observing a crisis in the first region. Thus, investors choose to learn only after a crisis. This is because after the wake-up call of a crisis, an investor's benefit of tailoring her attack decision with the help of costly acquisition of better information about the realized macro shock is highest. Figure 1 shows the value of information, that is the benefit from acquiring information, as a function of the proportion of informed investors.

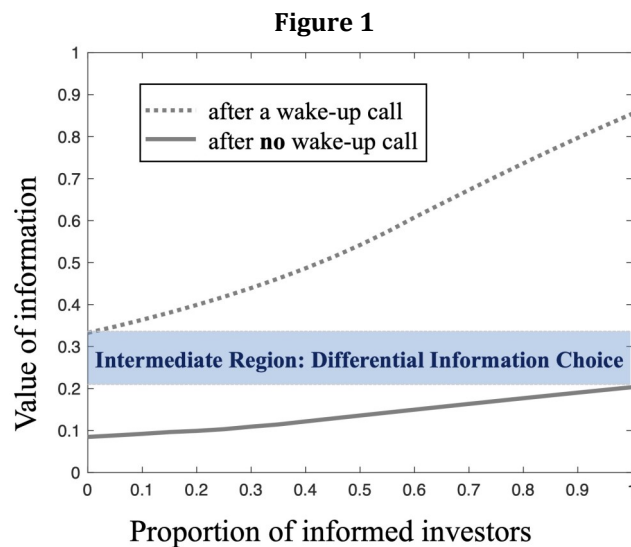


Figure 1: The above figure shows the value of acquiring information and the proportion of investors acquiring information after a wake-up call of a crisis elsewhere and after no wake-up call. For an intermediate region of information costs, investors optimally decide to acquire information only after observing a wake-up call.

The value of information is substantially higher after observing a crisis in the first region than after observing no crisis. Moreover, the value of information increases in the proportion of investors who become informed due to a strategic complementarity in information choices (Hellwig and Veldkamp 2009). Importantly, there is an intermediate region of information costs, as depicted in the shaded area of Figure 1, where investors optimally decide to acquire information about the common macro shock after observing a crisis in the first region while they do not to acquire information after not observing a crisis. This differential information choice underpins the wake-up call contagion effect.

Our second main result is to isolate the wake-up call component of contagion. We show that contagion can occur even if all investors learn that the macro shock is zero. That is, the probability of a crisis in the second region after a crisis in the first region and learning that the second region has no ex-post exposure to the first region is higher than the probability of a crisis in the second region after no crisis in the first region. This result rationalizes an empirical literature that has documented wake-up call contagion in banking and international finance, as reviewed in Ahnert and Bertsch (2022).

Our third main result is to derive a novel testable implication that may inform future empirical work. Information acquisition about the exposure to aggregate or market-wide shocks increases in the extent of ex-ante exposure across regions. We encourage future empirical work on this implication and discuss some directions for future work in the contexts of currency attacks, debt crises and bank runs in the paper.

Discussion

The wake-up call theory of contagion developed in Ahnert and Bertsch (2022) is complementary to other theories of contagion that describe alternative channels of contagion, such as contagion due to balance sheet links (Allen and Gale 2000; Kiyotaki and Moore 2002; Dasgupta 2004), a common discount factor channel (Ammer and Mei 1996; Kodres and Pritsker 2002), wealth effects (Goldstein and Pauzner, 2004), portfolio constraints (Pavlova and Rigobon, 2008) or asset commonality and information contagion (Chen 1999; Acharya and Yorulmazer 2008; Manz 2010; Allen et al. 2012).

In practice, the different contagion channels are not mutually exclusive and empirical work tries to assess their importance for different episodes of contagion. To this end, our paper equips the empiricist with predictions to corroborate the presence of wake-up call contagion, potentially aided by novel measures for the demand of information and for the attention in news, social media or corporate disclosure. ■

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