

# Contagion: a misnomer for financial crisis

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It has become commonplace to call the financial institutions at the centre of the most recent financial crisis ‘too big to fail’. This is a misnomer, as institutional size simply happens to be correlated with what really matters: interconnectedness. A big bank that operates in a vacuum is a danger only to itself and its immediate creditors. If it assumes too much risk, it will fail, and the economy will continue to function, uncontaminated by this failure. Indeed, many would see that failure as a net benefit, correctly punishing an entity that was making bad decisions. However, if that financial institution is interconnected with other important institutions—through direct investment, counterparty risk or special protections from governments or central banks—then the failure of a single institution may catalyse a system-wide catastrophe.

The central role of interconnectedness makes it attractive to employ metaphors drawn from the realm of infectious disease when describing financial crises—indeed, as I write this, a recent deal to save Cypriot banks has been described as having ‘proved that “contagion” from one country to another can be contained’.<sup>1</sup> However, as Robert Peckham observes, analogies between financial crises and epidemics of infectious disease frequently involve mistranslations and ‘critical distortions’.<sup>2</sup> The spread of financial panic may look similar to the transmission of infectious disease among and between human populations, but the superficial similarities hide important differences. ‘Contagion’ is as much a misnomer as ‘too big to fail’.

## Asymmetric information and assumed risk

One difference is the role of asymmetries in information and risk. In financial markets, asymmetric information can benefit some at the expense of others. The banks that originated complex financial instruments may have had all the information necessary to judiciously assess their risk, but the ratings agencies, regulatory bodies, and ultimate purchasers of these instruments frequently did not, or chose not to act on what information they had. Originators were thus able to profit

precisely because they were able to shift the bulk of their own financial risk onto their clients. Similarly, fears of ‘contagion’ in the current climate derive from the fact that institutions willingly exposed themselves to greater risk in the hopes of making a profit, thus ensuring that a collapse of, say, the Greek bond market would send Cypriot banks that held those bonds into a tailspin. The critical point here is that in these cases risk was *intentionally transferred* between parties. The ‘contagion’ of financial crisis thus was not an unintended byproduct of already-present interconnections; it was the intended result of the transfer of risk between parties, often on the basis of asymmetric information or understanding.

There is no real analogy to this dynamic in the realm of infectious disease. One institution or population cannot simply transfer disease risk to another through the stroke of a pen or computer key. The transmission of infectious disease is generally an unintended consequence of extant interconnections, as microbes travel through trade and transportation networks.

The danger here is that, in naturalizing the threat of financial ‘contagion’ through facile analogies with epidemic disease, we will ignore or diminish the importance of direct human agency in producing financial crises. In the financial world, the contagious threat is not an uncontrolled product of a given institutional structure, but rather a direct consequence of human beings assuming risk in the pursuit of profit.

## Decision-making and uncertainty

Peckham observes that the analogy between epidemics and financial crises has led some to employ techniques drawn from infectious disease dynamics and social network analysis to the financial sphere, in an effort to explain and predict emergent financial catastrophes. While superficially promising, the importation of these ‘scientific’ techniques may do short-term harm by encouraging a false sense of certainty.<sup>3</sup>

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The misapprehension of risk on the basis of complex models is seen by many as one of the key drivers of the most recent financial crisis. Many financial decision-makers misinterpreted low-probability events—such as a widespread decline in housing values and concurrent defaults on mortgages—as impossible. This misinterpretation was due in large part to the reliance on financial models that used inadequate historical data to predict the likelihood of improbable events. Whether because of lack of sophistication or simple wishful thinking, decision-makers placed far too much faith in quantified risk predictions that carried the veneer of certainty.

Importing techniques from the scientific study of infectious disease may offer the promise of greater certainty and sophistication to those with a stake in understanding financial markets. However, these techniques are highly sensitive to subtle changes in model specification and study design. Christakis and Fowler's 2007 study<sup>4</sup> tracing the 'contagion' of obesity in social networks provides a cautionary tale. This article, which provided scientific support for an analogy between contagious and chronic disease, received extensive media coverage and hundreds of citations. However, reanalysis of the evidence with different specifications pointed to shared environmental factors rather than contagion as the source of the spread of obesity.<sup>5</sup> Given their sensitivity,

financial (not to mention public health policy) decisions based on these kinds of analyses should be taken with great care. Scientific methods can provide provisional explanations of complex phenomena, but rarely guarantee complete certainty.

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