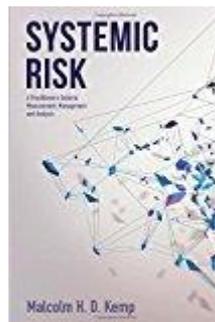


Systemic Risk: A Practitioner's Guide to Measurement, Management and Analysis

Introduction

[Nematrian website page: [SystemicRisk](#), © Nematrian 2017]

This book, published in late Summer / Autumn 2017, provides readers with a wide-ranging practical guide to systemic risk in the financial system. It challenges the notion that systemic risk is exclusively about interconnectivities within the financial system, showing that past systemic risk crises have often involved a broader range of vulnerabilities.



It describes how regulators and governments are seeking to manage systemic risk, and how their concerns are driving change in regulatory and business environments across the financial sector. It sets out how firms and practitioners can effectively respond to these changes (covering topics such as data needs, quantification of risk exposures, management disciplines and skillset requirements etc.). The book highlights the sources and characteristics of systemic risk and the concentrations of exposures to this risk. It also links systemic risk with other risk disciplines including exploring how systemic risk ties in with liquidity risk and credit risk and how it interacts with central clearing, collateralisation and pricing of derivatives.

The book has been well received by some leading commentators, see [here](#).

The intention is that errors the author becomes aware of that have crept into the book either before or as part of the publication process will be summarised [here](#).

References listed in the book are available through the Nematrian reference library, see [here](#) for lists of references appearing in individual chapters or [here](#) for the reference library more generally.

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Endorsements

[\[SystemicRiskEndorsements\]](#)

Endorsements for *Systemic Risk* from leading commentators include:

“What exactly is systemic risk? Why does it matter? Where does it come from? Who should regulators target? How should firms respond? These are the questions this wide-ranging book seeks to answer. It clearly sets out different perspectives from a variety of stakeholders and their implications. It is

recommended reading for anyone who wishes to understand current thinking and likely future developments in this important field.”

Colin Wilson, Deputy Government Actuary, ex-President of the Institute and Faculty of Actuaries

“This book introduces practitioners and, more broadly, non-expert readers to the intricacies of the measurement, management and analysis of systemic risk. Its didactic language and eclectic perspective makes recent complex discussions accessible to a wide audience without renouncing rigour. Interested readers will find opportunities to deepen their understanding through a great deal of supplementary material included in boxes within the text and via up-to-date references.”

Professor Javier Suarez, CEMFI, Madrid

“A very readable and useful book that explores systemic risk in more detail and more rigour than other general texts on this topic.”

Professor Paul Sweeting, University of Kent

Errata

[\[SystemicRiskErrata\]](#)

The intention is that this page will contain any errata noted for this book. The following errata have been noted so far:

Page 222. The first formula defining tail value-at-risk should read:

$$TVaR_{\alpha} = E(L|L \geq VaR_{\alpha})$$

Figures

[\[SystemicRiskFigures\]](#)

This [book](#) provides readers with a wide-ranging practical guide to systemic risk in the financial system.

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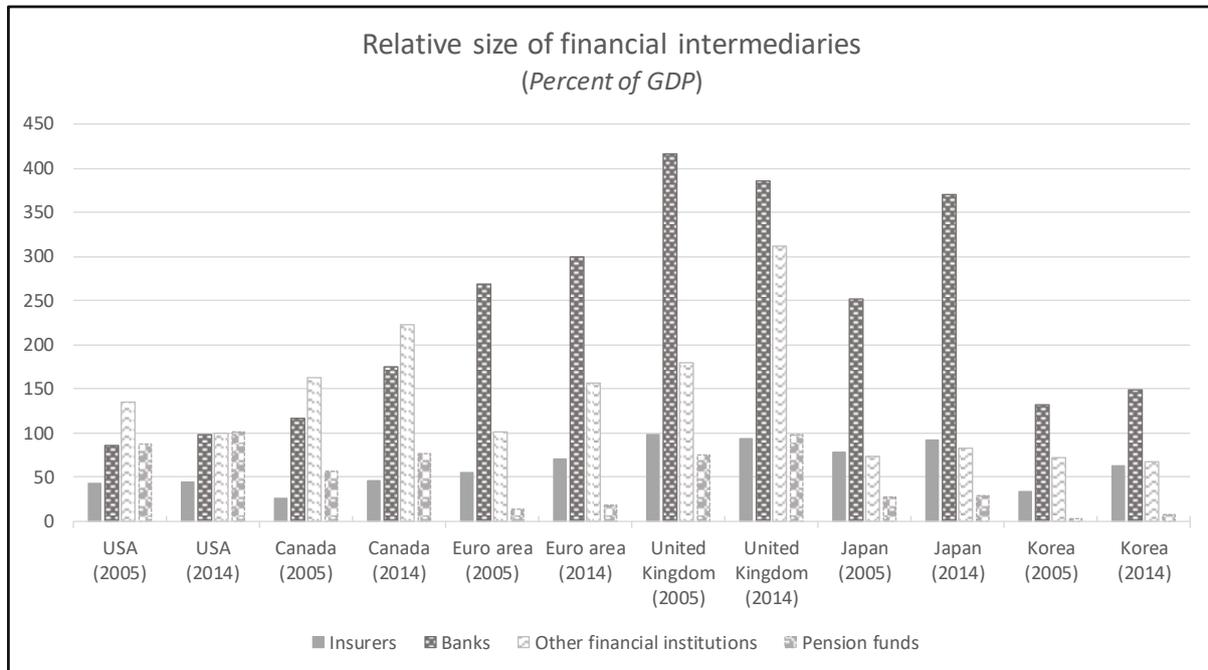
- [Figure 2.1](#): Relative size of financial institutions
- [Figure 2.2](#): Domino versus tsunami views of interconnectedness
- [Figure 2.3](#): Parts of financial sector subject to FinTech disruption
- [Figure 2.4](#): Stylistic representation of the business cycle
- [Figure 3.1](#): Stylised description of balance sheet of a financial organisation
- [Figure 3.2](#): Graphical description of 3 pillar regulatory framework
- [Figure 3.3](#): Structure of a collateralised debt obligation (CDO)
- [Figure 3.4](#): Redemption proceeds of different CDO tranches
- [Figure 3.5](#): Liquidity feedback loops
- [Figure 3.6](#): Financial system hysteresis
- [Figure 4.1](#): Delta hedging of a call option
- [Figure 4.2](#): Total investable capital market (31 December 2011)
- [Figure 4.3](#): Percentage of countries in external default weighted by share of world income
- [Figure 6.1](#): Wider impact of some insurers being deemed globally systemically important

Figure 2.1

[SystemicRiskFigure21]

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Figure 2.1: Relative size of financial institutions



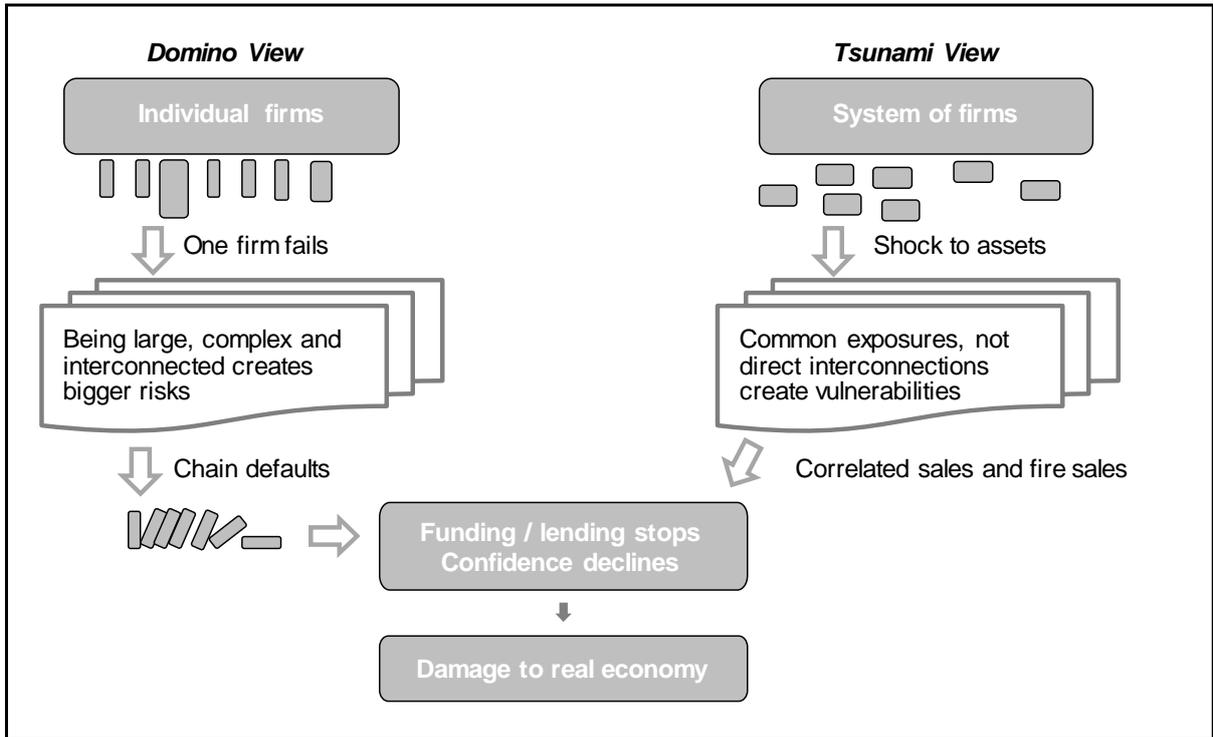
Source: Nematrian. Adapted from [IMF \(2016\)](#). There is no single measure that uniquely identifies the size of the financial system, either globally or within a specific country. The above chart gives approximate sizes of some parts of the financial system in some jurisdictions.

Figure 2.2

[SystemicRiskFigure22]

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Figure 2.2: Domino versus tsunami views of interconnectedness

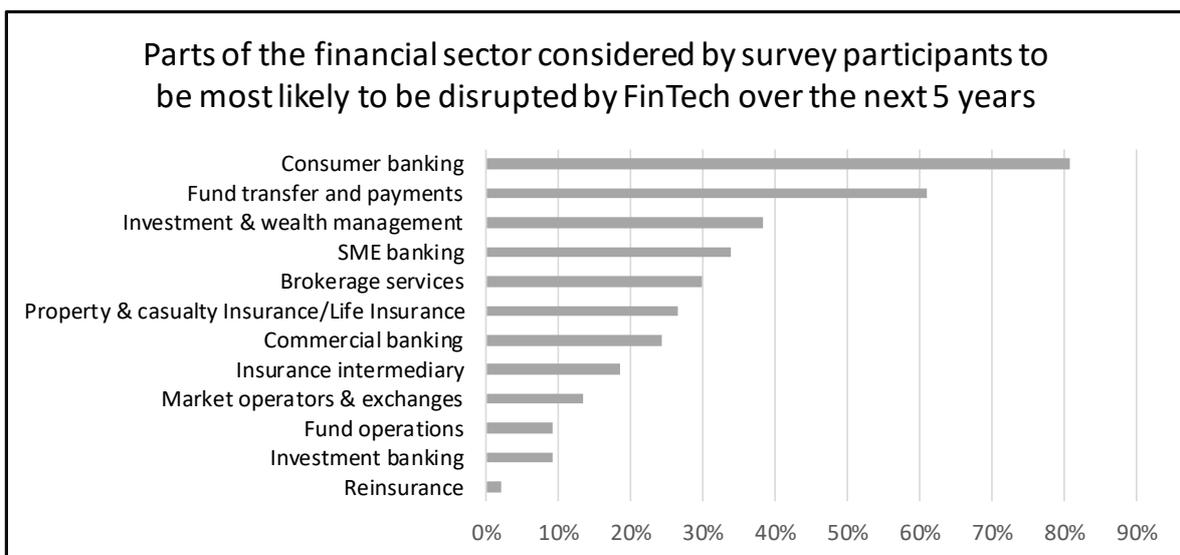


Source: Nematrion. Adapted from [IMF \(2016\)](#).

Figure 2.3
[SystemicRiskFigure23]

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Figure 2.3: Parts of financial sector subject to FinTech disruption



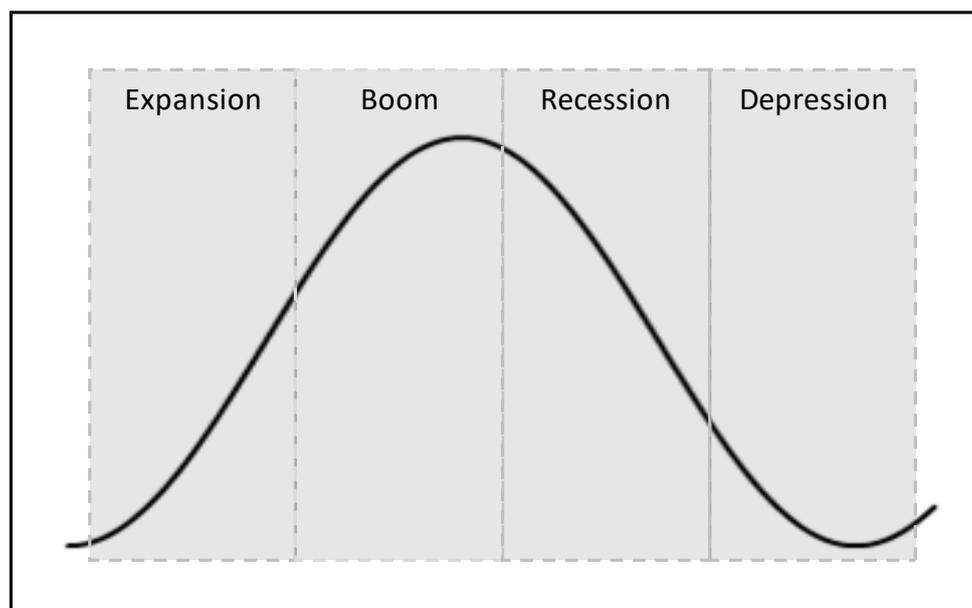
Source: Nematrion. Adapted from [PwC \(2016\)](#)

Figure 2.4

[[SystemicRiskFigure24](#)]

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Figure 2.4: Stylistic representation of the business cycle



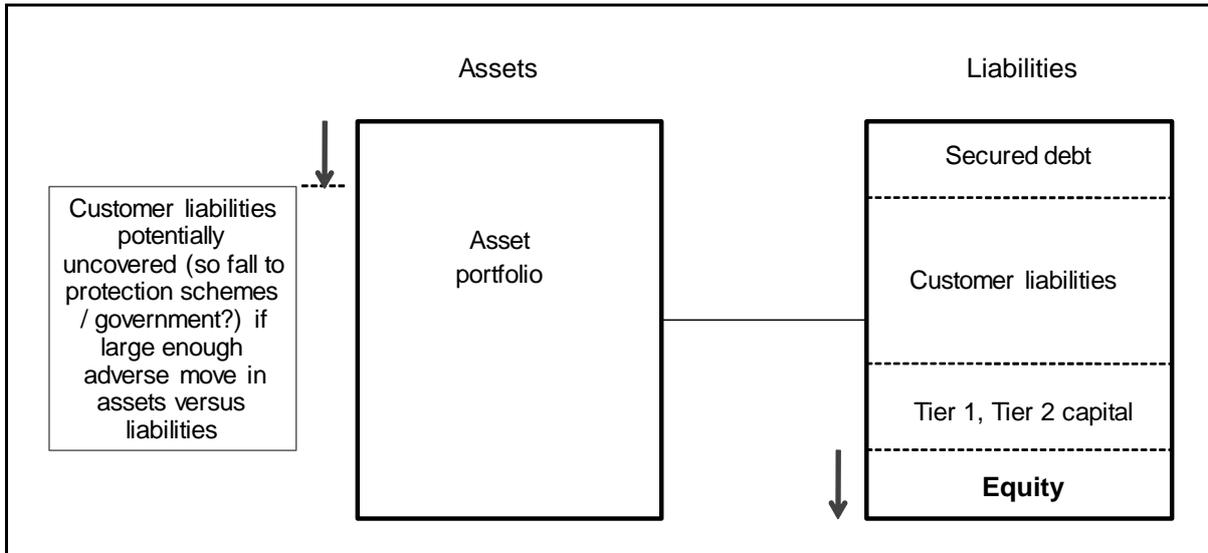
Source: Nematrian

Figure 3.1

[[SystemicRiskFigure31](#)]

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Figure 3.1: Stylised description of balance sheet of a financial organisation

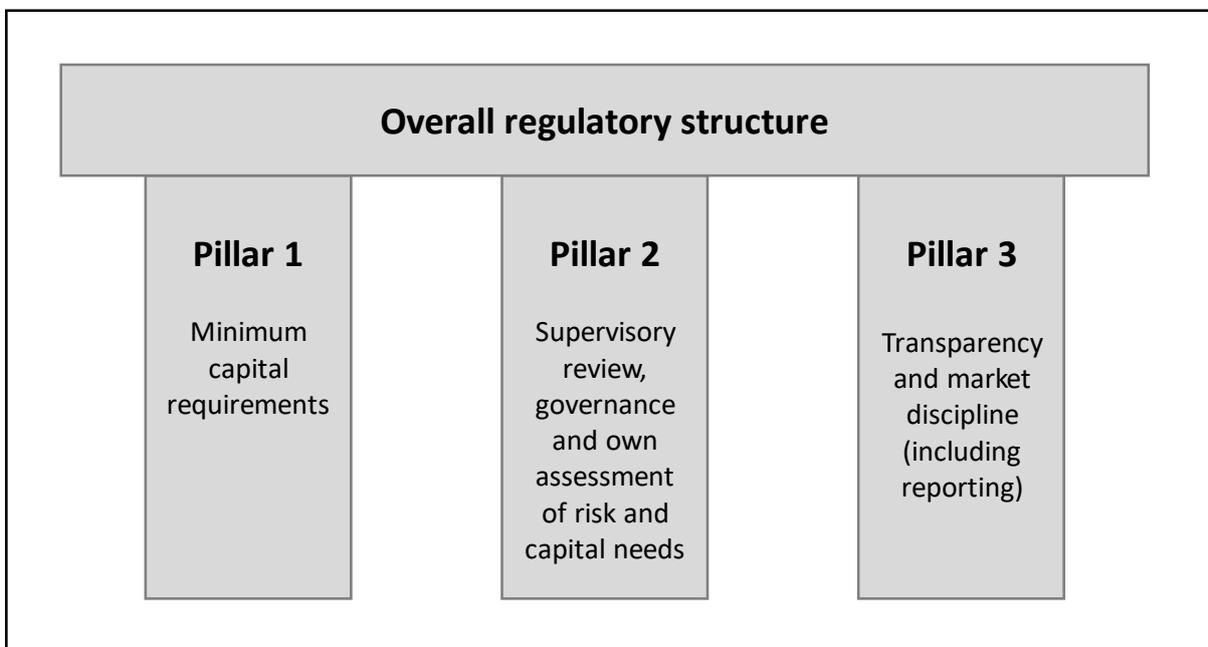


Source: Nematrian

Figure 3.2
[\[SystemicRiskFigure32\]](#)

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Figure 3.2: Graphical description of 3 pillar regulatory framework

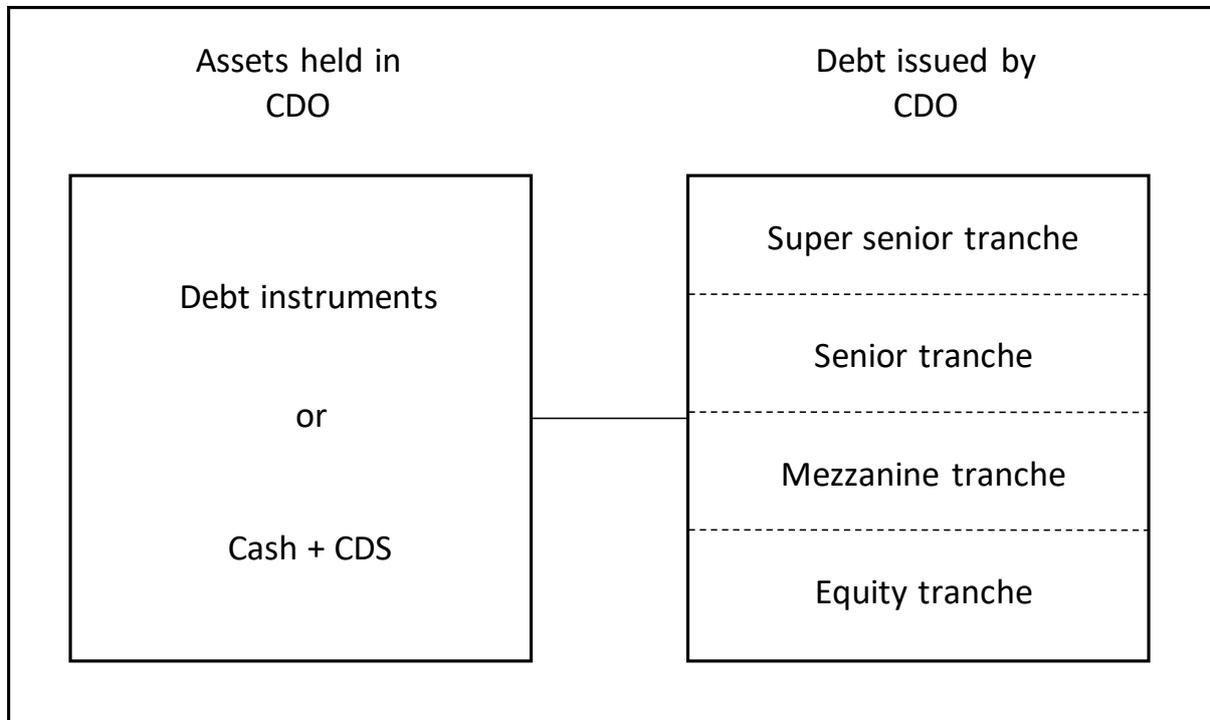


Source: Nematrian

Figure 3.3
[\[SystemicRiskFigure33\]](#)

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Figure 3.3: Structure of a collateralised debt obligation (CDO)

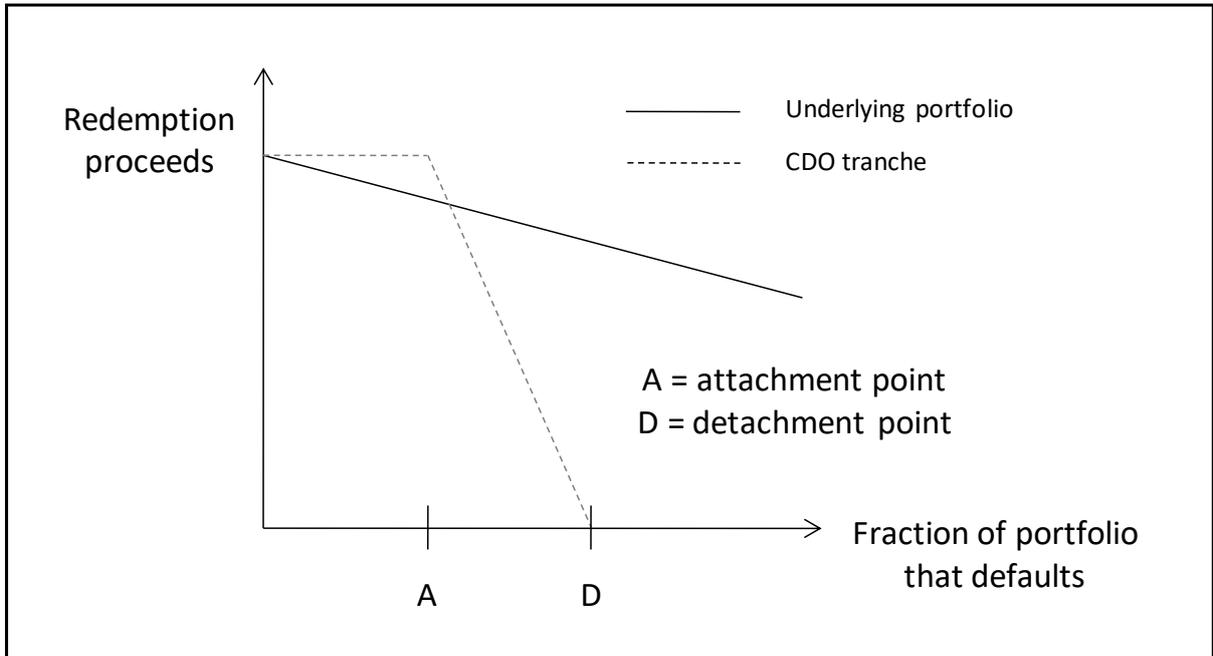


Source: Nematrian

Figure 3.4
[\[SystemicRiskFigure34\]](#)

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Figure 3.4: Redemption proceeds of different CDO tranches



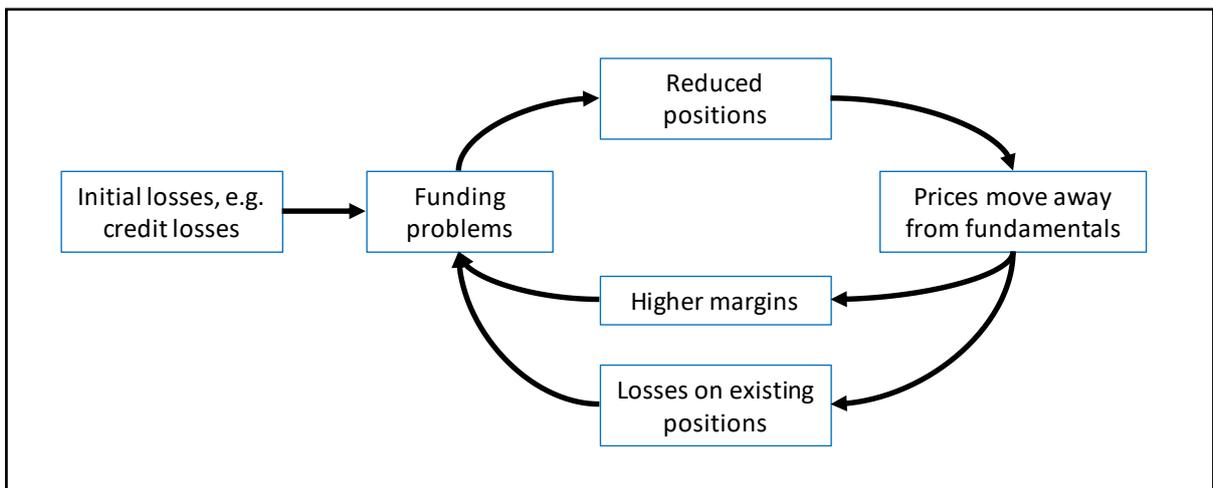
Source: Nematrian

Figure 3.5

[SystemicRiskFigure35]

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Figure 3.5: Liquidity feedback loops



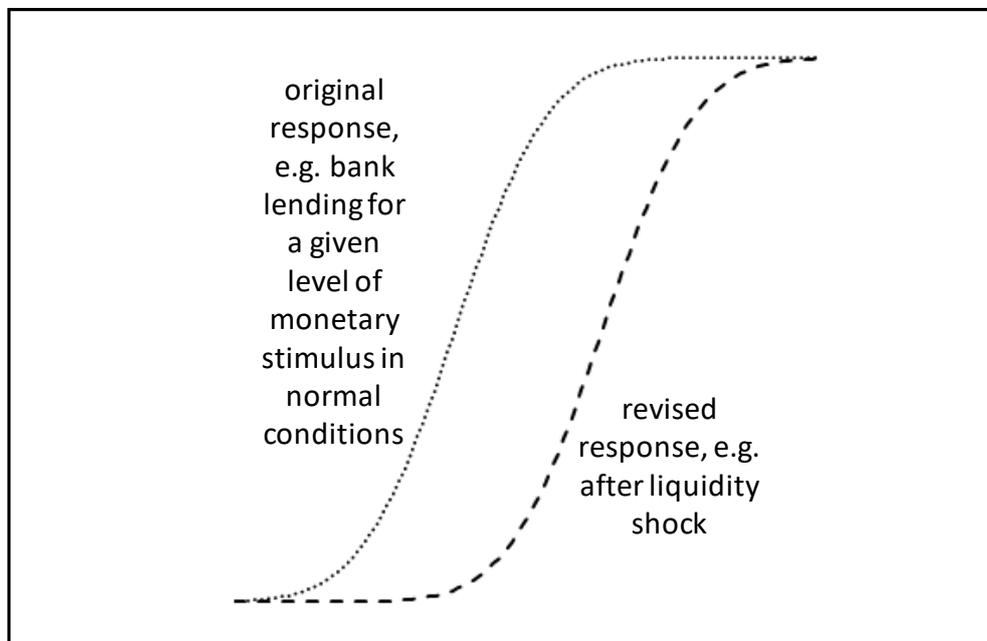
Source: Nematrian. Adapted from [Brunnermeier \(2009\)](#)

Figure 3.6

[SystemicRiskFigure36]

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Figure 3.6: Financial system hysteresis



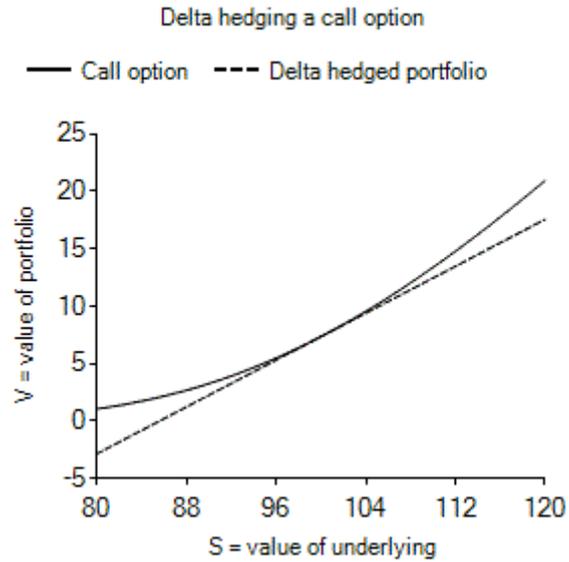
Source: Nematrian

Figure 4.1

[\[SystemicRiskFigure41\]](#)

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Figure 4.1: Delta hedging of a call option



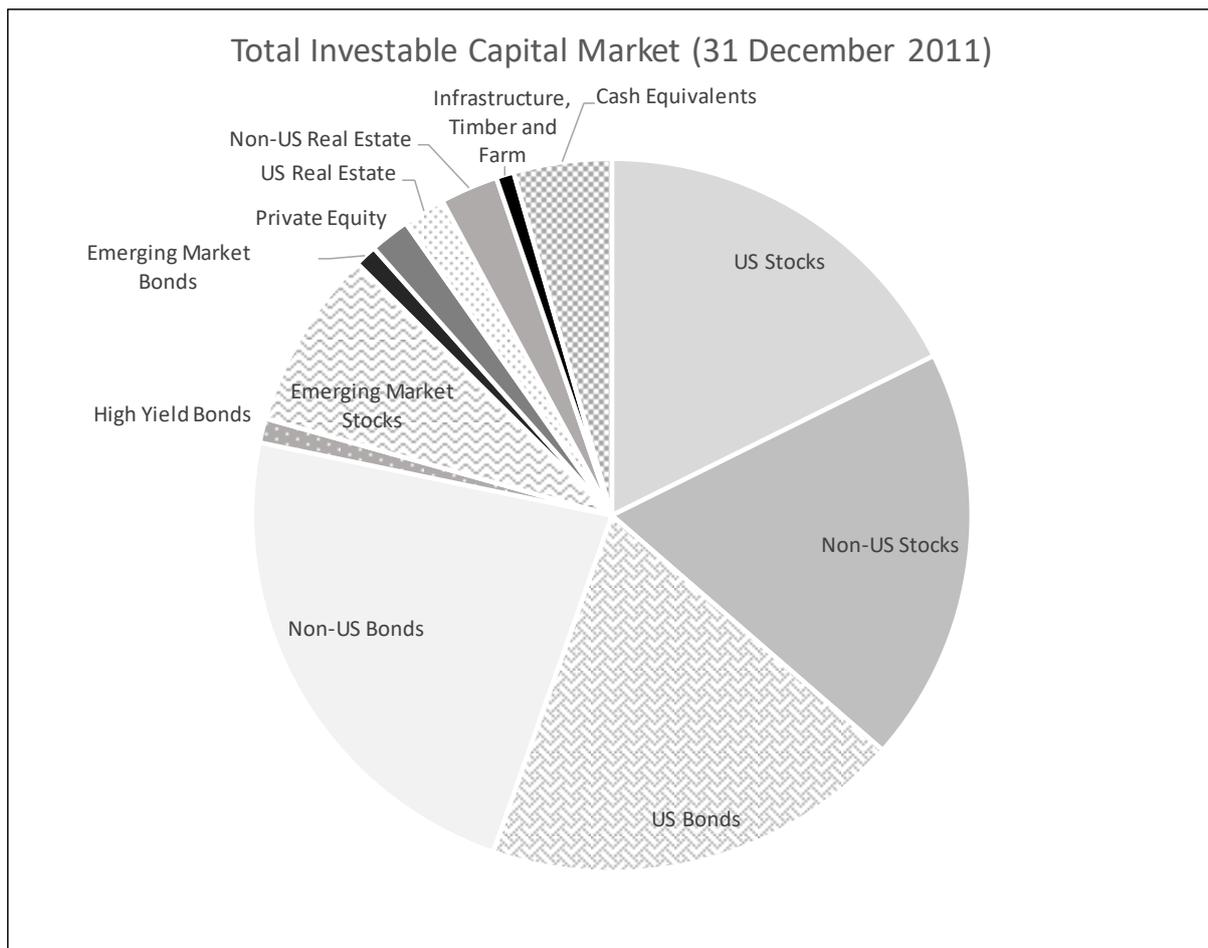
Source: Nematrian

Figure 4.2

[[SystemicRiskFigure42](#)]

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Figure 4.2: Total investable capital market (31 December 2011)



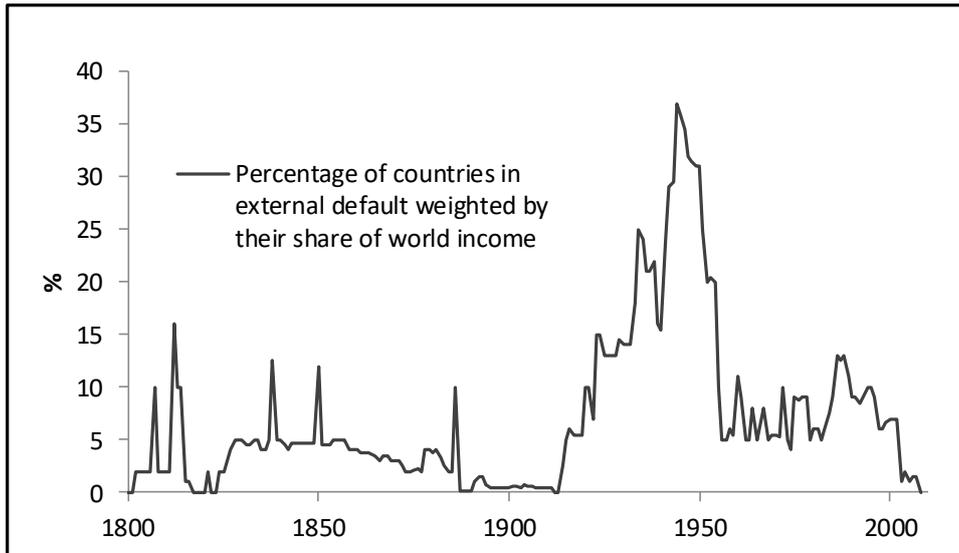
Source: Nematrian. Adapted from [Gibson \(2013\)](#)

Figure 4.3

[\[SystemicRiskFigure43\]](#)

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Figure 4.3: Percentage of countries in external default weighted by share of world income

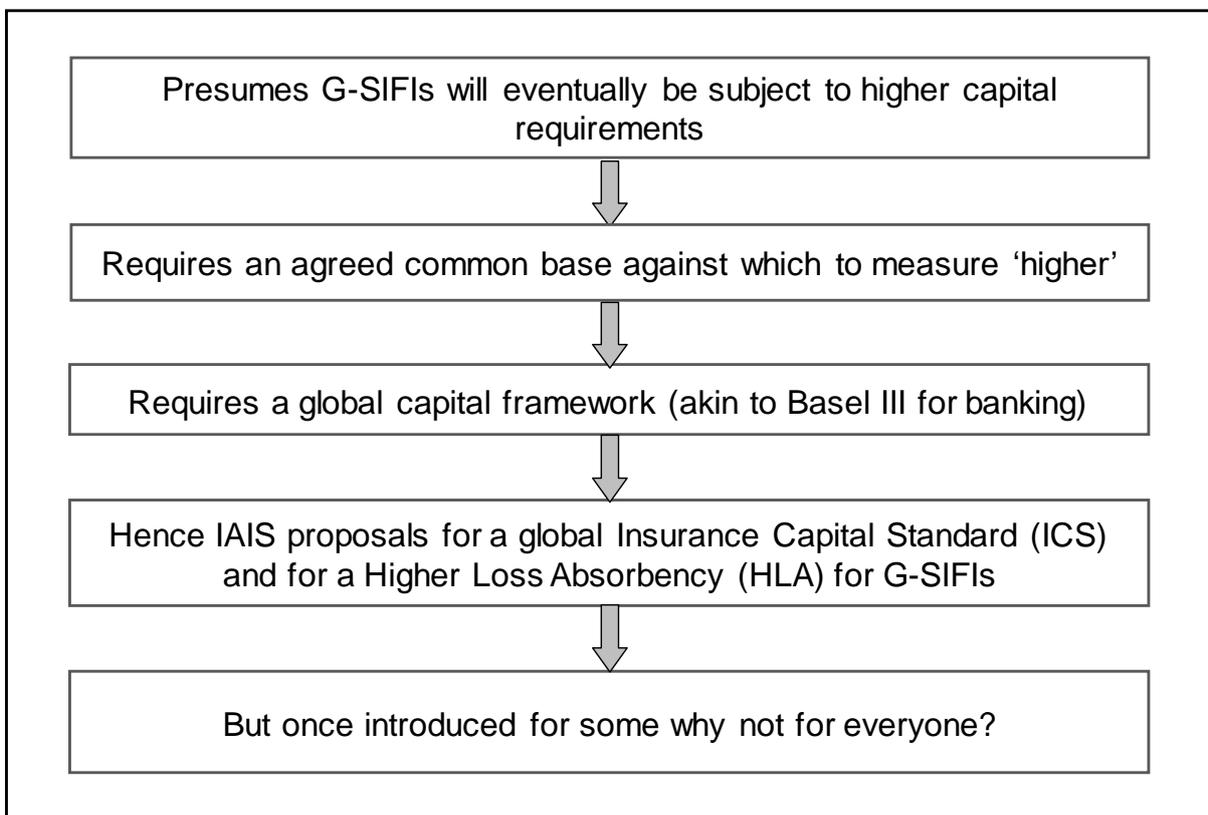


Source: Nematrian. Adapted from [Reinhart and Rogoff \(2009\)](#)

Figure 6.1
[\[SystemicRiskFigure61\]](#)

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Figure 6.1: Wider impact of some insurers being deemed globally systemically important



Source: Nematrian

References

[\[SystemicRiskReferences\]](#)

This [book](#) provides readers with a wide-ranging practical guide to systemic risk in the financial system.

References to other documents in the book are set out below, subdivided by chapter.

- [Chapter 1](#)
- [Chapter 2](#)
- [Chapter 3](#)
- [Chapter 4](#)
- [Chapter 5](#)
- [Chapter 6](#)
- [Chapter 7](#)
- [Chapter 8](#)

References: Chapter 1

[\[SystemicRiskReferences1\]](#)

This [book](#) provides readers with a wide-ranging guide to systemic risk in the financial system. References in Chapter 1 include:

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References in other chapters are available [here](#).

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