

How doing the right thing may be wrong: regulation, reflexivity and markets

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Regulation, reflexivity and markets

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Part I

REFLEXIVITY AND THE MARKETS



REFLEXIVITY NOT PART OF OUR TOOLKIT

Why reflexivity was left out of the modern finance?

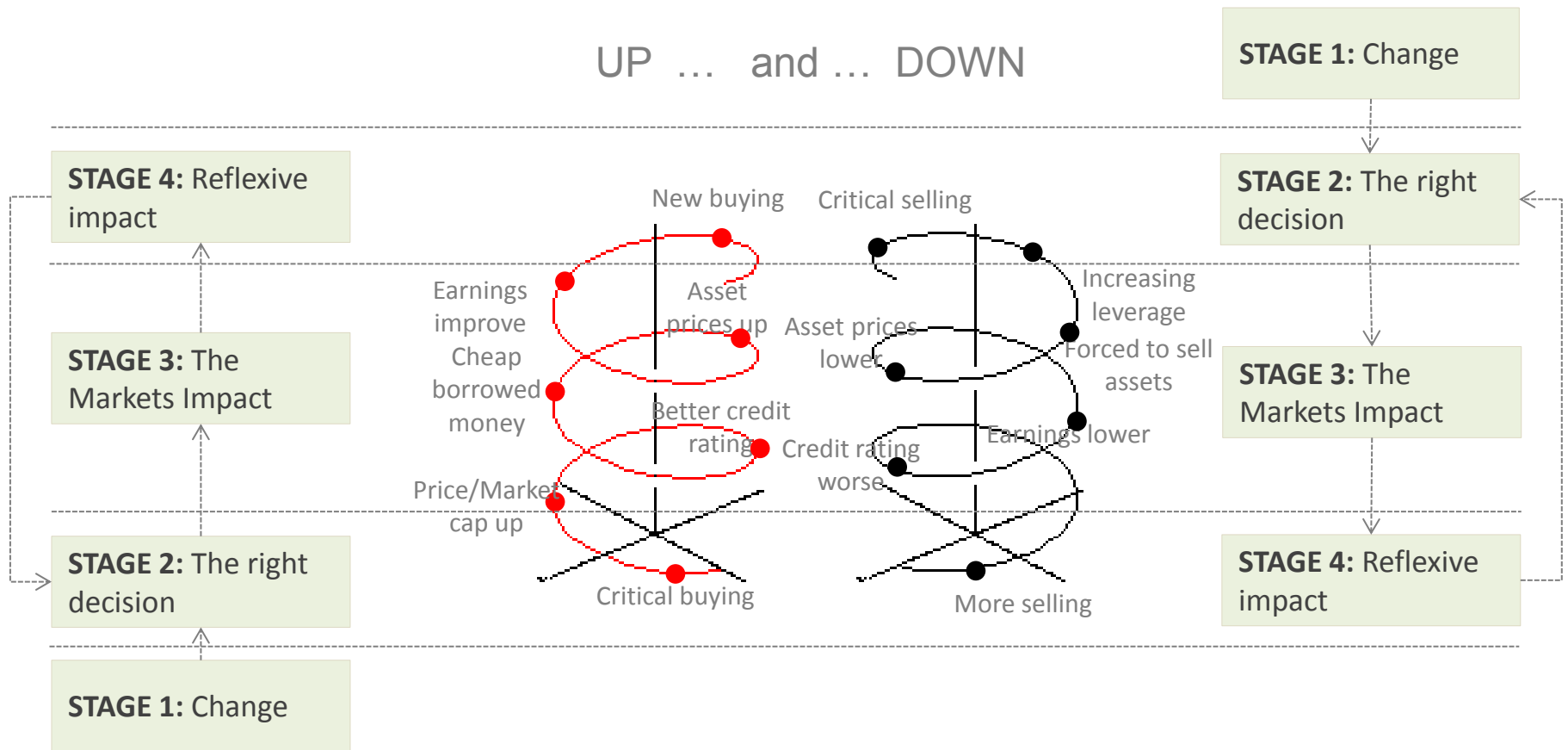
MPT/Modern Finance Components	Field of study
MVA, Markowitz 1952	BA Physics
CAPM, Sharpe, Lintner 1964	Medicine/Economics
EMH, Fama, 1965	BA French/ MBA
OP, Black-Scholes	Physics/Maths/Economics



Starting point: we know nothing about the underlying, but we can observe prices!

THE REFLEXIVE LOOPS: UP & DOWN

Reflexivity is a key feature of social systems



REFLEXIVE MARKETS HAVE CAUSED PROBLEMS IN THE PAST

Plenty of examples of asset bubbles forming on the back of reflexivity

	STAGE 1: Change	STAGE 2: The right decision	STAGE 3: The Markets Impact	STAGE 4: Reflexive impact
Telecoms ↑	Technology: Mobile Data Regulation: License auctions	<ul style="list-style-type: none"> • Bid for 3G licenses • Raise investor expectations 	<ul style="list-style-type: none"> • 3G license prices up • Stock prices up 	<ul style="list-style-type: none"> • Bid for 3G license at all cost • Leverage if necessary
Telecoms ↓	Technology market collapse	<ul style="list-style-type: none"> • Sell assets to pay back debt 	<ul style="list-style-type: none"> • Asset prices lower 	<ul style="list-style-type: none"> • Lower asset prices induce to sell assets
Banks ↑	Technology: Financial engineering Regulation: De-regulation of banking	<ul style="list-style-type: none"> • Cut branches, invest in securitization • Leverage off-balance sheet to increase ROE 	<ul style="list-style-type: none"> • Higher earnings • Higher equity prices 	<ul style="list-style-type: none"> • Competitors HAVE TO emulate
Banks ↓	Housing market collapse	<ul style="list-style-type: none"> • Sell assets to pay back debt 	<ul style="list-style-type: none"> • Asset prices lower 	<ul style="list-style-type: none"> • Lower asset prices induce to sell assets
Property ↑	Technology: Financial engineering – RMBS Regulation: Government support for housing market	<ul style="list-style-type: none"> • Availability of cheap finance enables buying for individuals that could not afford earlier 	<ul style="list-style-type: none"> • Market prices for houses up 	<ul style="list-style-type: none"> • Wealth effect of neighbors induces more property buying
Property ↓	Mortgage refinancing rate increases	<ul style="list-style-type: none"> • Sell assets to pay back debt 	<ul style="list-style-type: none"> • Asset prices lower 	<ul style="list-style-type: none"> • Lower asset prices induce to sell assets

Part II

REFLEXIVITY, ALM AND RISK MANAGEMENT



EXAMPLE: FARMLAND AS A PERFECT DIVERSIFYING ASSET

Farmland has been one of the early real asset experiences of pension funds

1. Good prospects of achieving income through rising agricultural productivity
2. Rising prices of agricultural land
3. Portfolio diversification
4. Hedge against inflation

1. Increasing demand

- Growing world population (7 bn now, 9 bn in 2050 – developing countries, urban areas)
- Rising incomes in developing countries
 - Increased consumption of resource-intensive foods like meat
- Increasing use of biofuels

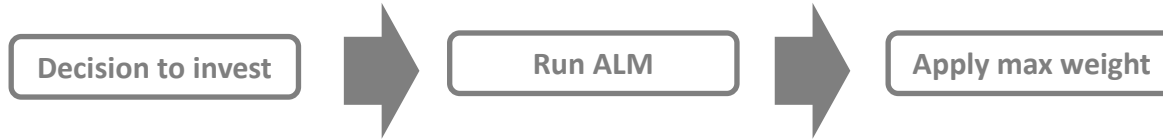
2. Constrained supply

- Water
 - Energy
 - Climate change
- Securing food and agricultural products
- Interest in water

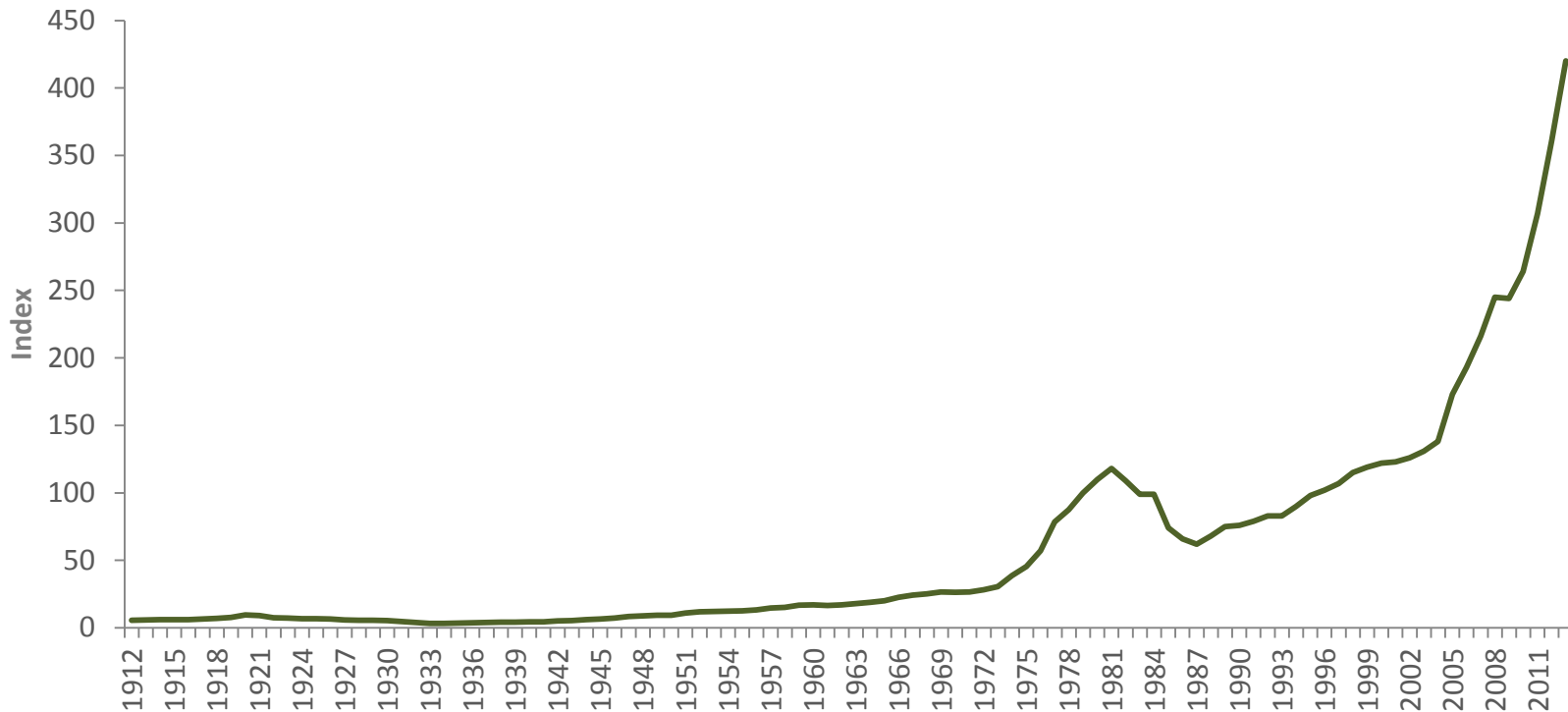


HOW DO WE ASSESS THE ALM INPUTS FOR FARMLAND?

Legacy ALM extrapolates historical trends yielding max weights for overpriced assets



Index Numbers of Farmland Values (1979 = 100)

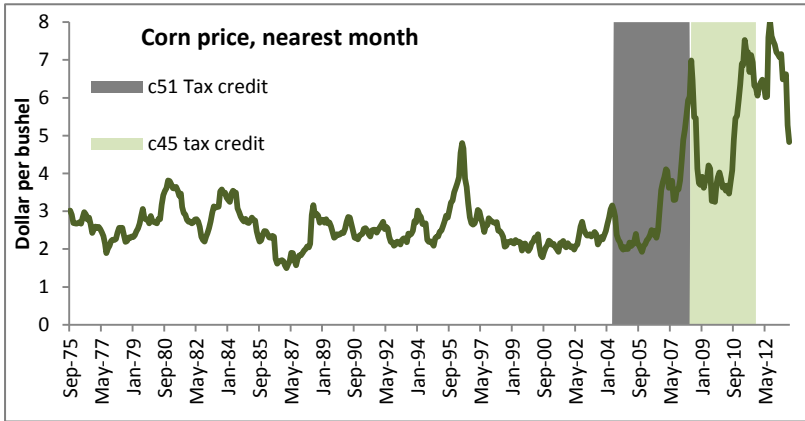


Source: US Department of Agriculture

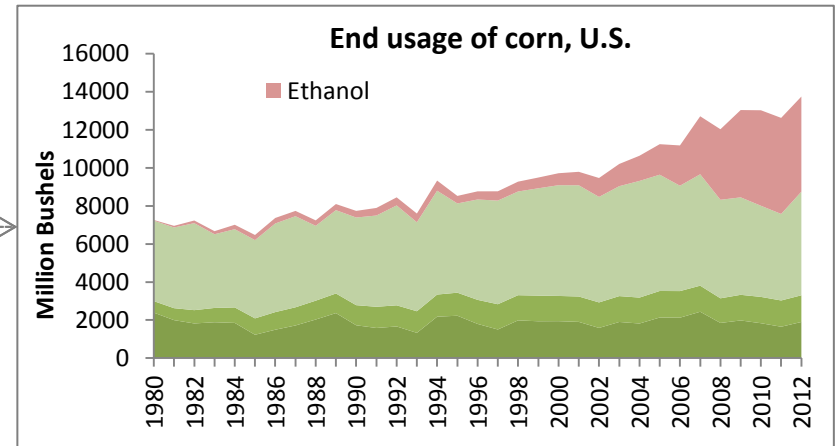
CURSORY LOOK AT THE UNDERLYING MARKETS

The UP reflexive loop will be followed by the DOWN loop soon

STAGE 1: Change



STAGE 2: The right decision

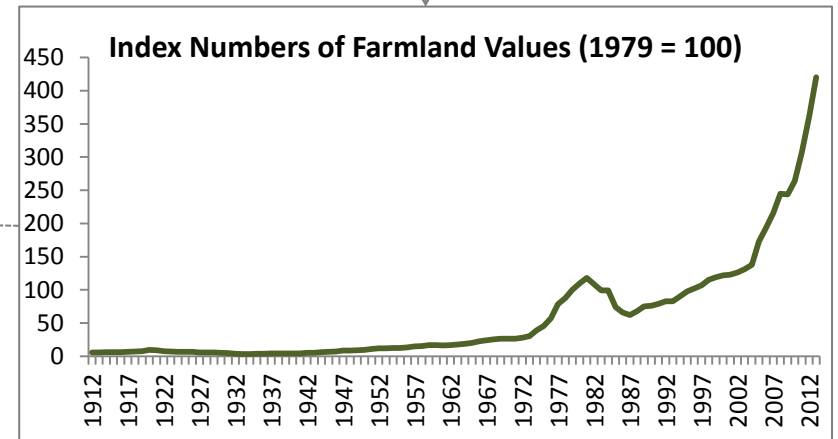


Against the Grain

June 2011

**PENSION FUNDS:
KEY PLAYERS IN THE GLOBAL
FARMLAND GRAB**

Large scale agricultural land acquisitions are generating conflicts and controversies around the world.

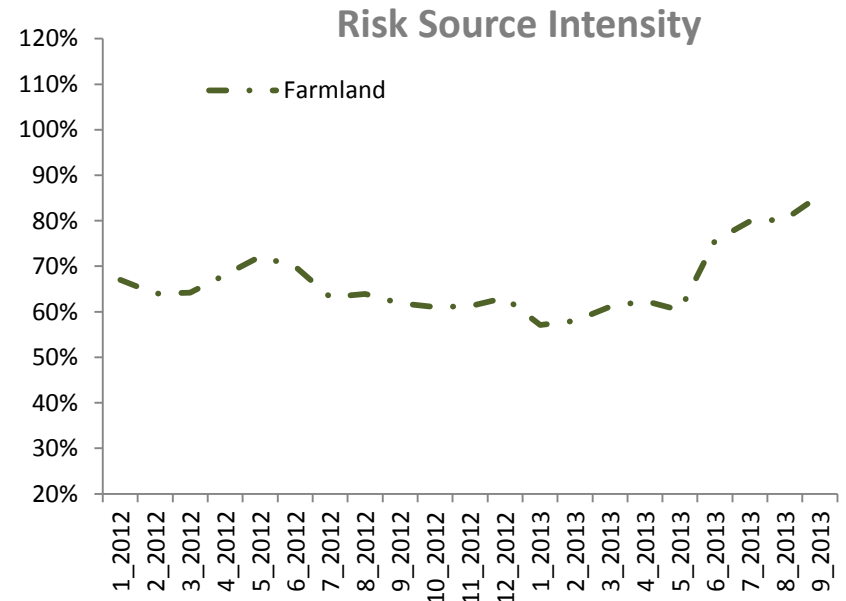
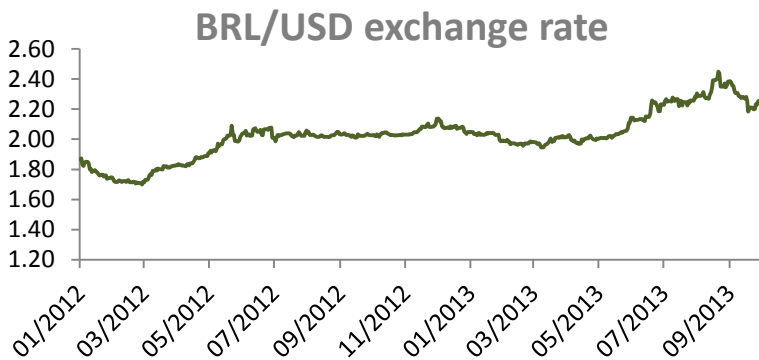
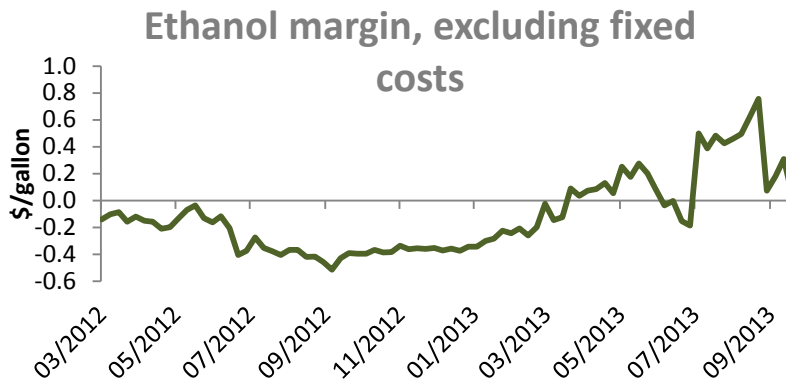
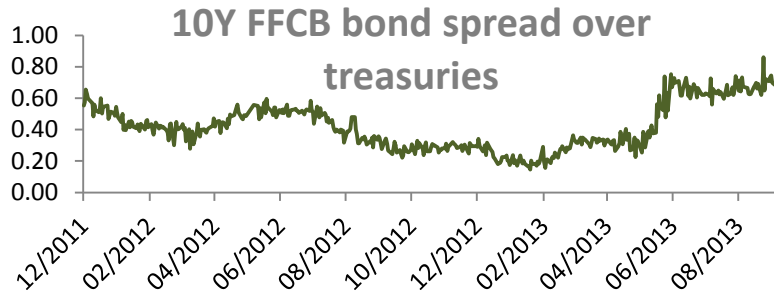


STAGE 4: Reflexive impact

STAGE 3: The Markets Impact

PROBABILITY OF DEFAULT: MONITORING THE RISK INTENSITY

Observable markets help monitor the risks in farmland investing

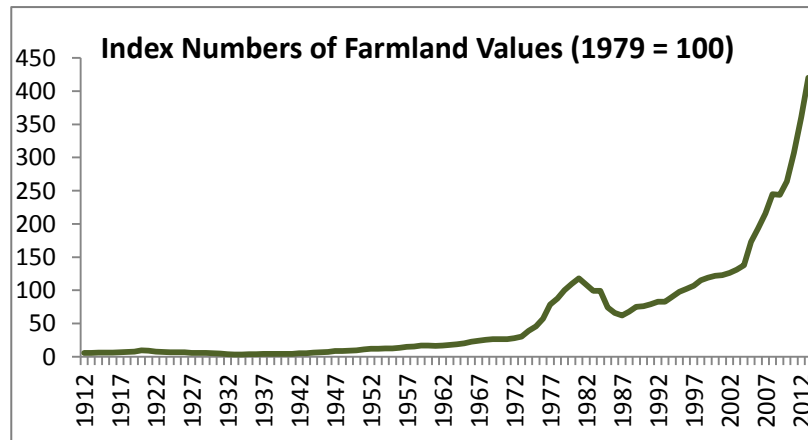


THE ASSESSMENT PROCESS

A structured approach to identifying and gauging intensity of asset bubbles

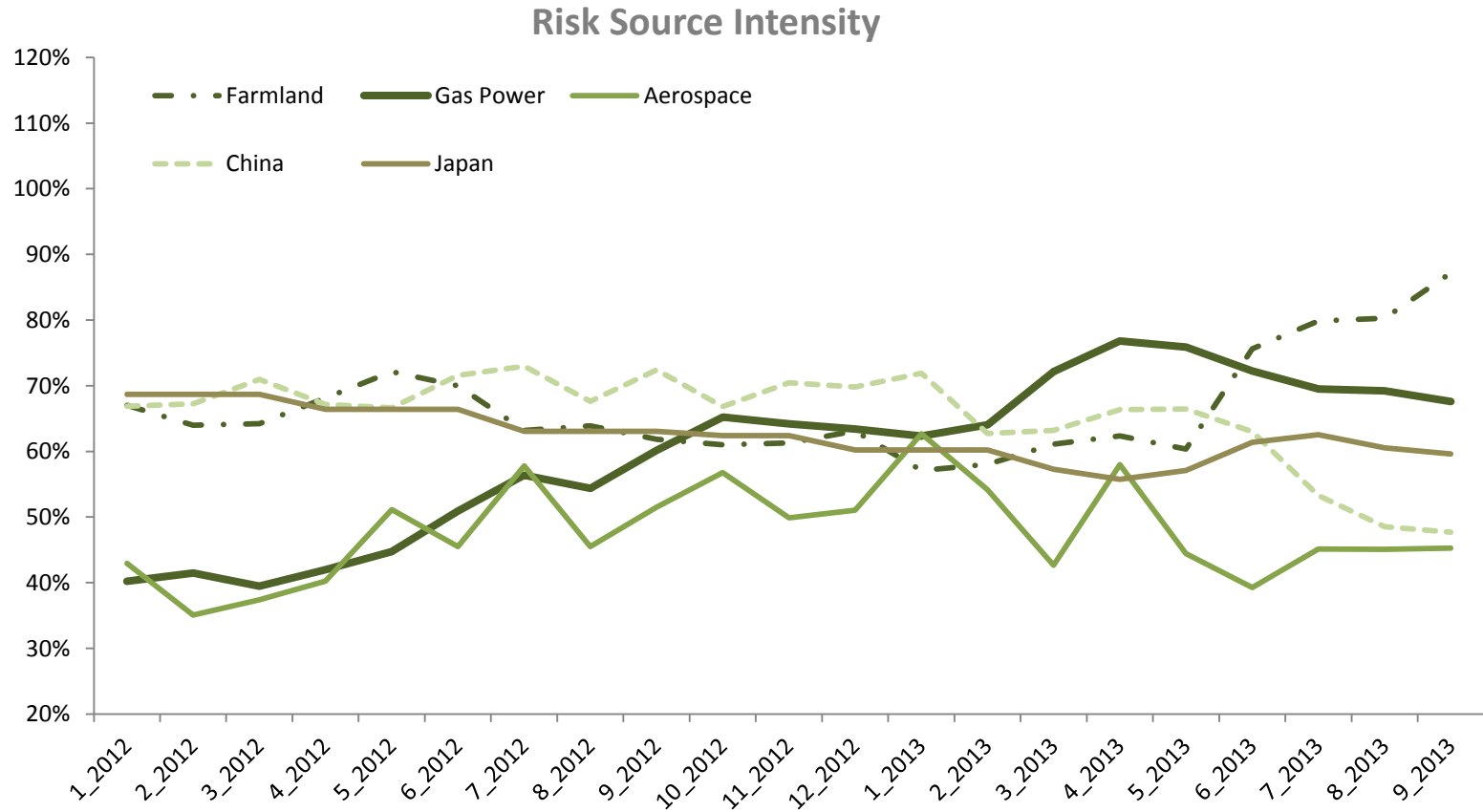
Bubble Asset Checklist:

- High pace of asset price or turnover volume growth
- Sustainability constraints created by this growth
- New entrants with cheap and often borrowed money
- Poor corporate governance or lack of transparency
- Government Intervention or technological change



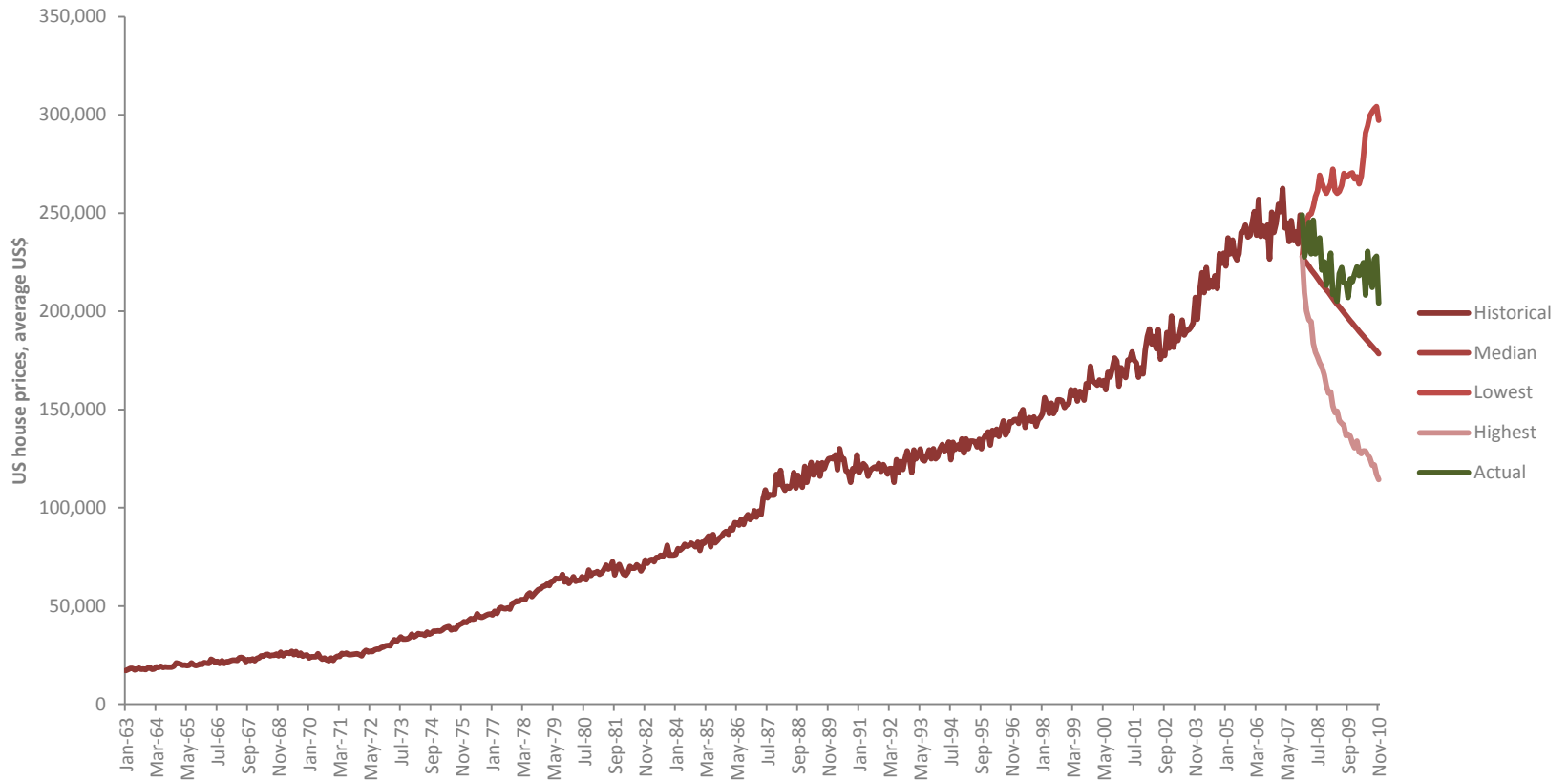
RISK INTENSITIES OF VARIOUS RISK SOURCES

Risk intensity is measured by LINKS on a continuous basis



TRANSLATING DOMAIN KNOWLEDGE INTO ALM INPUTS

Concentrate on assessing the mean return expectations in the near term



Part III

REFLEXIVITY AND REGULATION



HOW ABOUT MULTIPLE STAGE ONES?

Regulatory environment creates a perfect condition for an avalanche of reflexivity

2008



De-regulation is the norm

- 1986 London “Big bang” deregulation
- 1996 Reinterpretation of Glass-Steagall act
- 1999 Repealing of Glass-Steagall act
- 2000 Commodities futures modernization act
- 2004 Basel II – internal models and risk weighting
- 2004 SEC approves voluntary regulation

2008

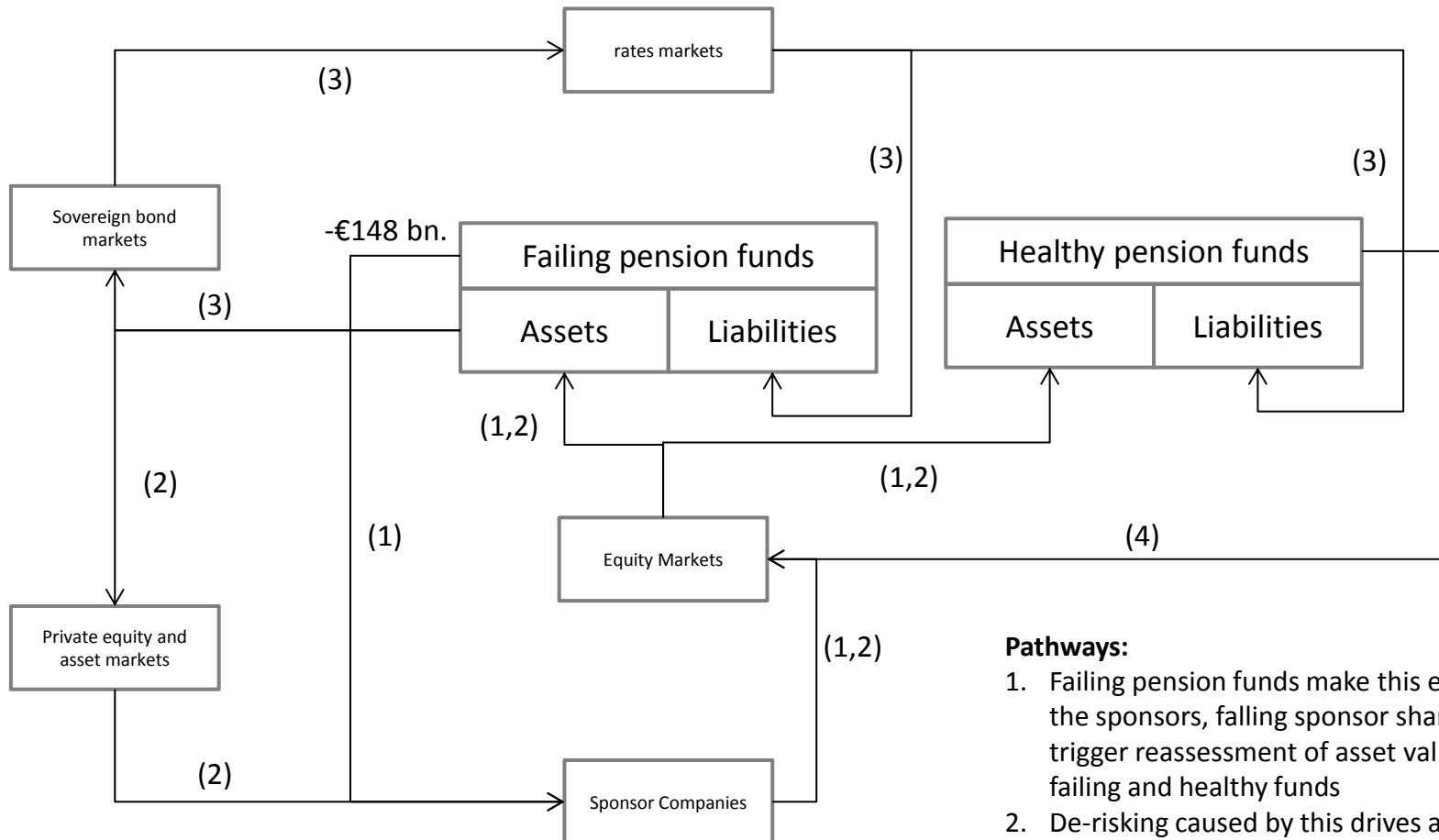


Re-regulation is the norm

- 2012 Volcker rule
- 2013 Dodd-Frank
- 2013 Basel III phased implementation
- 2015 Solvency II
- 2016 Mifid II
- ... IORP II

MULTIPLE LOOPS POSSIBLE UNDER IORP

The QIS exercise does not address the system-wide impact



Pathways:

1. Failing pension funds make this explicit to the sponsors, falling sponsor share prices trigger reassessment of asset values at both failing and healthy funds
2. De-risking caused by this drives asset prices down and impacts equity prices again
3. Bonds rally, driving the rates market and increasing the value of liabilities
4. All funds start the circle again

Part III

CONCLUSIONS



IGNORING REFLEXIVE NATURE OF MARKETS IS PERILIOUS

Legacy models cannot and will not cope with the avalanche

Reflexivity & Markets	Reflexivity & ALM	Reflexivity & Regulation
<ul style="list-style-type: none">• Actively identify reflexive conditions• Use this knowledge in your asset allocation• Adjust the valuation exercises to take into account disequilibria	<ul style="list-style-type: none">• Concentrate on near(er)-term return forecast• Revisit correlation assumptions using holding-level data• Use risk management tools for risk: probability of default / loss-given default	<ul style="list-style-type: none">• Assess strategic vulnerabilities through asset classes to various regulatory initiatives: IORP/Solvency/Basel• Consider “not doing the right thing”• Asset impact:<ul style="list-style-type: none">• Long-dated assets• Equities• Rates• Bonds• Private assets

MISSION STATEMENT

for designing a risk process

Transform the risk process from
looking **inward and backward** into
looking **outward and forward**.