Dealing with Pro-Cyclicality at a Systemic Level

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Introduction

- ERM has systemic side-effects
  - Illustrated by life company capital guarantees
- Need for strong macro intervention
  - The Systemic Risk Supervisor role
- Has financial economics failed?
  - Risk Models need to consider Systems Theory

Introduction

"I come to bury ERM, not to praise it"

ERM's systemic side-effects

- Risk-based capital is inherently pro-cyclical
- The system is not just the sum of its parts
- No incentive to consider systemic effects
- Game theory argues against equilibrium
- Regulation/supervision/intervention needed

Life Company Guarantees

- Providing a guarantee on an equity fund is really a put option
- Three ways of pricing/reserving
  - Hold sufficient reserves
  - Dynamically hedge the option
  - Buy puts from someone else

Life Company Guarantees

"To hedge or not to hedge,

that is the question"

Capital Adequacy Reserves

- How High is High Enough?
- Waiting for Mean Reversion
- Marking to market
- Will shareholders provide support when needed? (ie throw good money after bad?)
- Will the customers believe you?
- Implicit “free” government put option

Dynamic Hedging

- Black Scholes theory
- Buy rising markets, sell falling markets
- Operate as a herd – no judgement involved
- 1987 portfolio insurance experience – where were the buyers?
- Limits and circuit breakers - market failure

Dynamic Hedging

"Beware the ides of October"

"A bourse, a bourse!

My kingdom for a bourse"

Buying Put Options

- Does not alter the systemic problem
- There are few natural counterparties
- Similar to reinsurance – a capacity issue
- Is there enough capital in the system to cover the desired level of option purchases?
- Price maker or price taker? What will be the cost?

Lessons

- Rational behaviour for an individual or firm is often not rational for the system
- Systemic risk does not look after itself
- Despite the systemic dangers, these products are quite popular
- Exhortation is not an effective policy - regulation is needed

Existing Macro Framework

- 1945 - 1975 Keynesian era – resulted in inflation of consumer prices and wages
- 1980 – 2007 Monetarist era – resulted in inflation of asset prices

A New Era

- 2010 - ?
- The new era requires a third policy body focusing on systemic issues
- Monetary policy cannot effectively target multiple goals
- The new era may take many years to evolve, as did monetary policy

A Systemic Risk Supervisor

- Monitors systemic issues
- Power to act, targeting
  - Excessive leverage
  - Asset price bubbles
  - Dangerous products and practices
- Independent of political system
- Independent of fiscal & monetary authorities

Has Financial Economics Failed Us?

- Markets do not always price efficiently
- Liquidity can disappear
- Covariances are unstable
- Diversification doesn't always help
- Models are only models – it is the assumptions that are important

Has Financial Economics Failed Us?

"..economists, as a group, mistook beauty, clad in impressive-looking mathematics, for truth"

Paul Krugman, NYT Sept 5 2009

"Lord, what fools these mortals be"

Puck, A Midsummer Night's Dream

Systems Theory Input

- Think of multiple influencing factors, not single cause and effect
- Focus on feedback loops
- Non-linearity is the norm
- Thresholds, or tipping points, abound
- Recursive – learn as you go – next year's models will be different from this year's

Systems Theory

" Clouds are not spheres, mountains are not cones, coastlines are not circles, and bark is not smooth, nor does lightning travel in a straight line."

- Benoit Mandelbrot, in his introduction to *The Fractal Geometry of Nature*

"There are more things in heaven and earth, Horatio"

- Hamlet