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Securitization of Life Insurance Assets and Liabilities

J. David Cummins

Outline

- Life Insurance Securitization: Introduction
- Drivers of Demand for Securitization
 - Market and regulatory factors
 - A changing business model
- Models for New Financial Products
- Example: Reserve Funding Securitization
- Conclusions

I. Life Insurance Securitizations: Introduction

Elements of Securitization

“Securitization provides a mechanism whereby contingent and deterministically scheduled cash flow streams arising out of a transaction can be unbundled and traded as separate financial instruments that appeal to different classes of investors.”

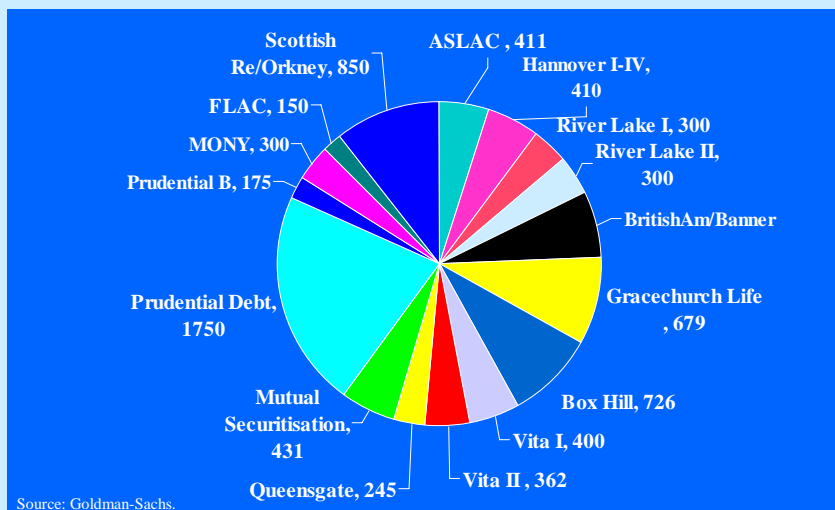
Elements of Securitization

- Repackage cash flows traditionally held on balance sheet, improving market liquidity
- Parties trade cash flow streams to
 - Manage and diversify risk
 - Take advantage of arbitrage opportunities
 - Meet regulatory and financial rating goals
 - Provide alternative source of financing
- Virtually any asset/liability & their underlying cash flows are candidates for securitization

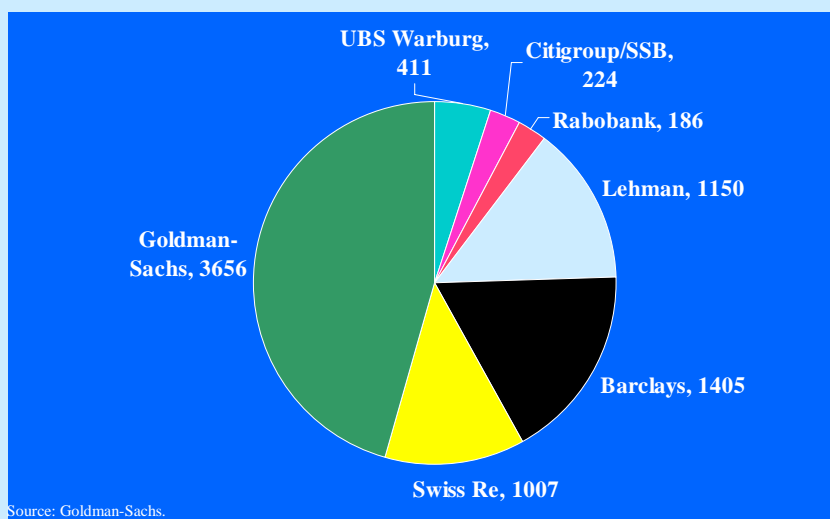
Capital Markets Approaches to Life Insurance Financial Management

- Capital markets transactions becoming important tools for life insurance financial management
 - » Deepening of capital markets experience
 - » Capacity challenges in the life reinsurance market
- Growth in several distinct areas
 - » XXX Reserves: Genworth, Banner, Scottish
 - » Embedded Value Finance: Prudential, Barclays, Friends Provident, MONY, Queensgate
 - » Acquisition Finance: FLAC Holdings, Queensgate
 - » Risk Transfer: Vita I, Vita II

Life Securitizations: \$8 Billion



Life Insurance Securitizations: By Lead Bookrunner



II. Drivers of Demand for Securitization

Sources of Demand for Securitization

- “Efficient demand,” demand that would exist in the absence of serious market imperfections
- “Inefficient demand,” driven by “RRATs” – Regulatory, Rating agency, Accounting and Tax factors



Efficient Demand: Why Securitization Creates Value

- Traditionally, investing in insurance risks was possible primarily by buying insurer stocks
- However, returns on insurer stocks driven by
 - Underwriting risks (mortality, accident rates)
 - Investment risks
 - Regulatory risks
 - Agency costs and mismanagement risks
- “Pure plays” on insurance risks not possible

Why Securitization Creates Value II

- Securitization creates value by creating “pure play” or primitive securities that are removed from the usual firm-wide risks facing insurers
 - Enable investors to improve portfolio efficiency
 - To the extent transparency is achieved, costs of informational asymmetries are reduced
 - Pure costs of securitized risk transfer may be
 - » Less than cost of capital of an insurer
 - » Less than cost of traditional hedging & financing mechanisms such as reinsurance

“RATs” Demand for New Instruments

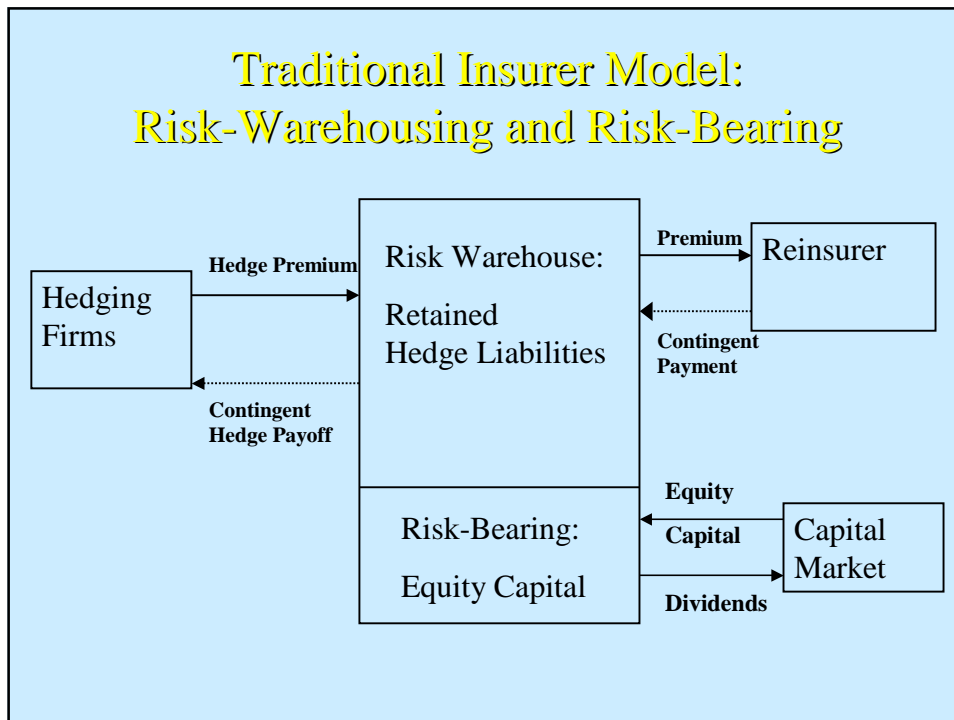
- Tax motives – minimization of taxes due to convexity of tax schedules and “loop-holes”
- Regulatory motives – compliance with regulatory rules such as risk-based capital
- Accounting motives – e.g., securitizing deferred acquisition expenses
 - Improve regulatory balance sheet
 - Achieve higher financial ratings
- “Cleansing” financial statements prior to entering the mergers & acquisitions market

A Changing Business Model: Warehousing vs. Intermediation

- Traditional roles: investment banking and insurance/reinsurance:

“Insurers warehouse risks, banks intermediate.”

- Warehousing vs. intermediation – are significant changes likely?



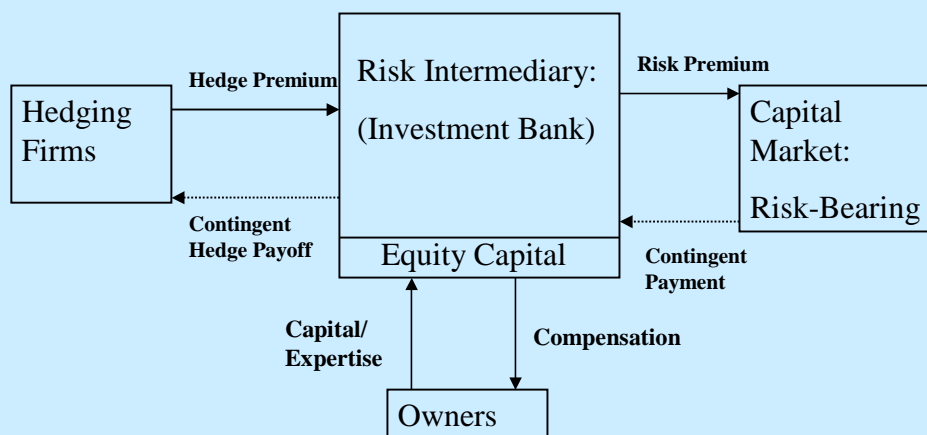
Why Risk Warehouses Developed

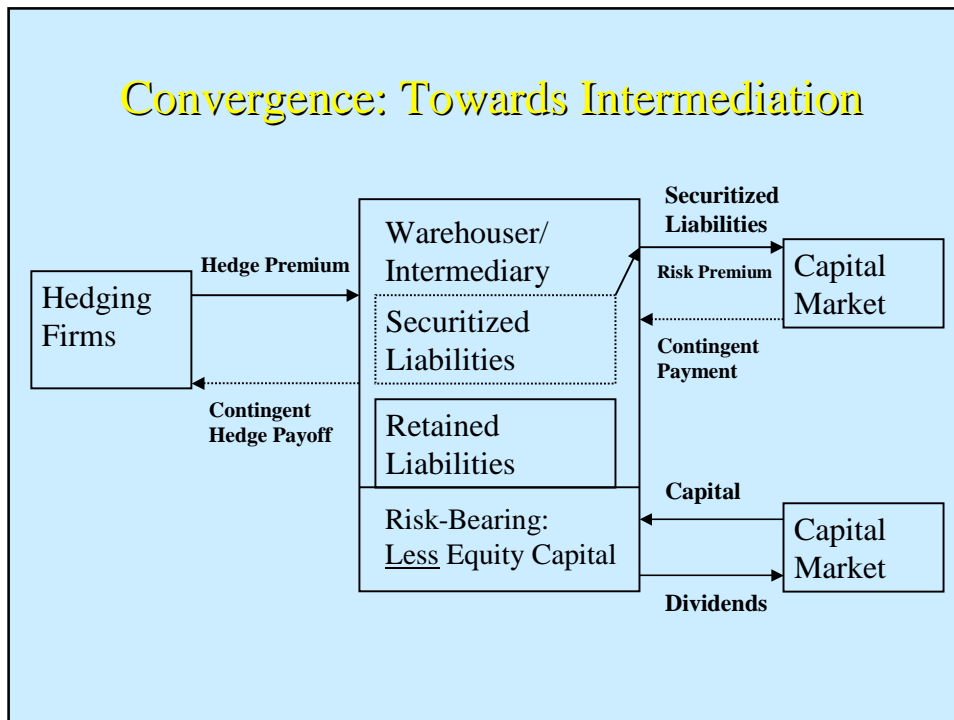
- Insurance is characterized by informational asymmetries – insurer is “opaque”
 - Buyer (debt claimant) cannot judge overall risk exposure, reserve adequacy, etc.
- Opaqueness can be mitigated if insurer holds equity & diversifies over a wide range of risks
 - Reduces income volatility
 - Helps assure debt claimants that probability of bad outcomes has been minimized
- Provides a rationale for holding a large pool of risks on-balance-sheet

Why Risk Warehouses Developed II

- Opacity and market experience generate private information for the (re)insurer
 - Information on overall risk exposures – ability to estimate insurance claims distributions
 - Information on portfolios and underwriting quality of specific clients
 - Therefore, opacity created “economic rents”

Investment Bank Model: Risk Intermediation





Evolving Towards Securitization

- Securitization occurs when reduced financing or hedging costs more than offset the loss of economic rents from reducing opacity
 - Securitization also leverages the reinsurer's information advantage, but differently
 - Reinsurer's new role
 - » Originate pools of risks
 - » Underwrite to create viable tranches
 - » Repackage for sale in securities markets

III. Models of New Financial Products

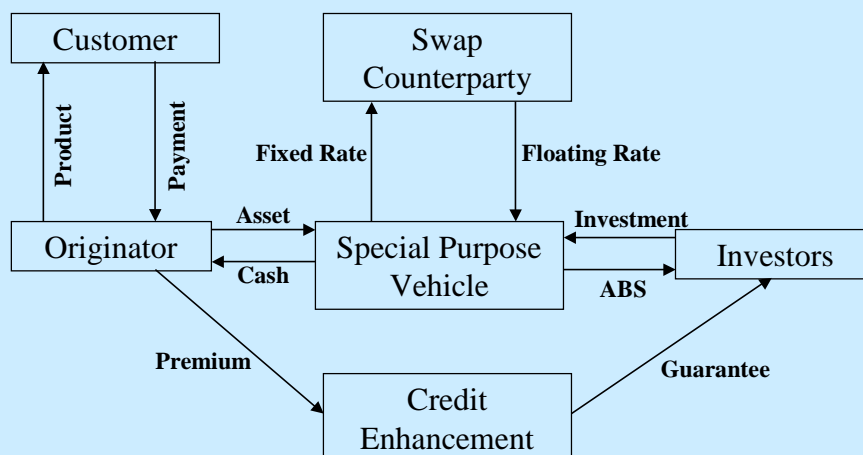
Models of New Financial Products

- Asset-backed structure – collateralized using a single-purpose trust
 - Credit risk low
 - Can create inefficiencies – transactions costs
 - » But costs decline with experience
- Non-asset-backed structure – exchange traded products such as options
 - Transactions costs and liquidity advantages
 - Creates counter-party credit risk

Insurance Securitization Models

- Some non-asset-backed insurance linked securities have been issued
 - CBOT “CAT” options
 - CAT-E-Puts
- However, most insurance-linked securitizations have involved asset-backed securities
 - Reduce counter-party credit risk
 - Permit a “pure play” in the securitized risk

Asset-Backed Security Structure



Asset-Backed vs. Non-Asset-Backed

- The structure of a financial product is determined by several factors including
 - Informational asymmetries about optioned event
 - Opacity of the sponsor
 - » Credit quality
 - » Agency conflicts & other friction costs
 - The magnitude of the optioned risk
- That is, the structure is created to optimally resolve informational and incentive problems

Asset-Backed Security: Discussion

- Originator sells product to customer in return for cash flows
 - Bank issuing auto loans
 - Insurer issuing annuities
 - Credit card company issuing installment debt
 - Industrial firm (e.g., aircraft manufacturer) selling or leasing equipment

Asset-Backed Security: Discussion 2

- Instead of keeping the asset on-balance-sheet, the originator sells the cash flows to investors
- Rights transferred to a “Special Purpose Vehicle”
 - True sale – SPV acquires all rights to asset
 - Originator may retain some residual interest or credit obligation to investors

“True Sale:” Who Bears Credit Risk

- Securitizing assets such as loans
 - The seller (e.g., bank) bears the credit risk, which is passed to the SPV and borne by investors for a risk premium
 - Transaction has no effect on the borrower
- Securitizing liabilities – insurance policy reserves
 - The buyer bears the credit risk of the insurer
 - Therefore, securitization can affect the buyer’s value – more difficult to achieve a true sale
 - Problem mitigated if the transaction is structured as reinsurance

Asset-Backed Security: Discussion 3

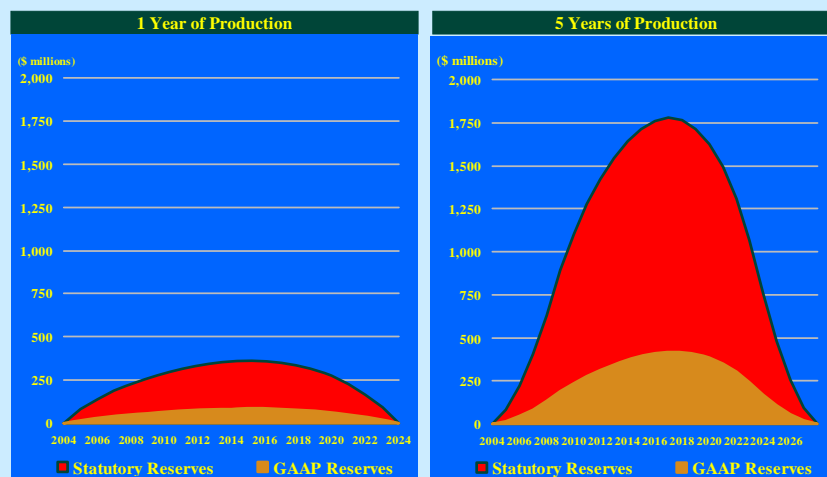
- SPV usually issues several tranches of securities to appeal to investors with different preferences for risk, ranging from
 - Low credit risk “senior” bonds
 - High credit risk “residual” interest
- SPV often arranges to swap fixed interest on underlying asset for floating – protects investors against interest rate risk

IV. Example: Reserve Funding Securitization

Reserve Funding Securitization

- Issuing new term insurance policies requires setting up a reserve (liability account) for adverse mortality (e.g., “XXX” reserves in US)
- If the company is growing, this places a strain on surplus, increasing leverage
- By entering into a securitization transaction, the firm can reduce the liability in return for a promised payment by the SPV in the event of adverse mortality experience

Financing XXX Reserves



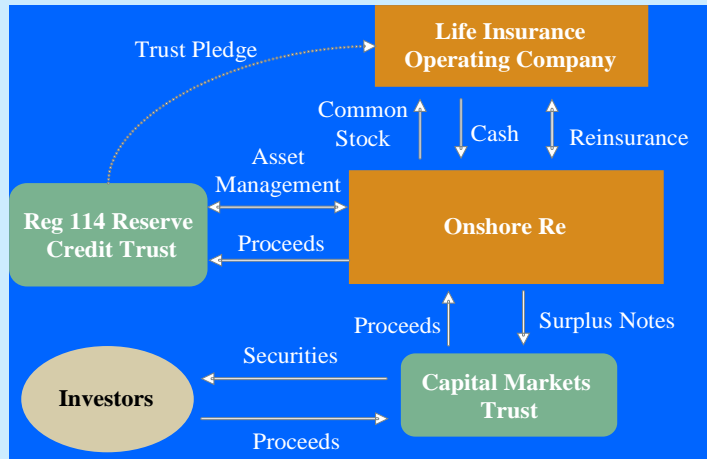
Reserve Funding Securitization II

- SPV raises funds by issuing bonds and equity
- Funds in SPV are pledged as collateral for the reinsured policies
- If adverse mortality experience develops, funds are released to the insurer to pay claims
- Regulators allow treatment of properly structured SPV as equivalent to reinsurance, reducing the reserves that must be held

Reserve Funding Securitization III

- Insurer pays a fixed premium per period for the SPV reinsurance coverage – “buys a mortality experience option”
- Investors are paid a floating rate based on safe securities in SPV plus a risk premium
 - Repayment of principal is contingent on the mortality experience of the reinsured policies
 - Third party guarantee can be used for credit enhancement

Internal Reinsurance Using Non-Recourse Debt



Reserve Funding Securitization: Discussion IV

- Cost-benefit analysis: Transaction undertaken if $\text{Premium} + \text{transactions cost} < \text{Cost of letter of credit or conventional reinsurance}$
- However, securitization has other advantages
 - Covers multiple years at fixed premium
 - Guards against reinsurance and credit cycles
- Possible downside: capital structure implications if it must be consolidated
 - Depends on rating agency treatment

V. Conclusions

Conclusions: Life Insurance Securitizations

- Securitization can enhance both insurance market and capital market efficiency by moving assets and liabilities off-balance sheet
 - Insurance markets
 - » More efficient to transfer risks to capital markets rather than “warehouse” risks
 - » Insurers concentrate on core competencies – origination and underwriting
 - Capital markets: More securitized instruments can improve efficiency of investment portfolios by providing primitive or “pure play” securities

Conclusions:

Life Securitizations to Date

- The bulk of life insurance securitizations to date have had the objective of capitalizing acquisition costs
 - Permit more rapid growth
 - Satisfy regulatory requirements
- Some significant transactions also have been motivated by recovery of embedded value
- Some transactions have generated liquidity but not financing
- Recent reserve funding securitizations provide direct alternative to reinsurance & have financing features
- Swiss Re's Vita transactions show that securitization can be used to raise pure risk capital

Conclusions: The Future

- Vast amounts of assets and liabilities remain “on balance sheet” in the insurance industry
- To realize full potential for securitization
 - Overcome informational opacities
 - Develop “basket” transactions through reinsurers
 - Develop better indices for index linked products
 - Reduce regulatory obstacles
 - Educate insurers and investors

Conclusions: The Future II

- Important to reduce costs of informational asymmetries
 - May require insurers to sacrifice some “private information”
 - Asymmetry costs can be mitigated by structuring
 - » Informationally sensitive tranches that appeal to investors with information advantages
 - » Informationally insensitive tranches for less well informed investors
- Development of a public market needed to achieve full potential

Life Insurance Securitizations Associated With Demutualizations

- Several demutualizing insurers have executed closed block transactions that securitize the cash flows from specified blocks of policies
- Prudential, the largest life insurer in the US, demutualized in December 2001
- Prudential’s was a “whole business securitization” whereby the entire operating business is securitized with cash flows directed to investors

The Prudential Demutualization II

- In Prudential's main transaction, it distributed 456 million shares to policyholders with 110 million offered in the IPO
- Most policyholders received choice of cash or stock
- Prudential raised \$3 billion in IPO in "class A" stock
- "Old" insurance business is isolated in a "closed block," financed by debt and equity that will receive the net cash flows as the policies in the closed block are run-off

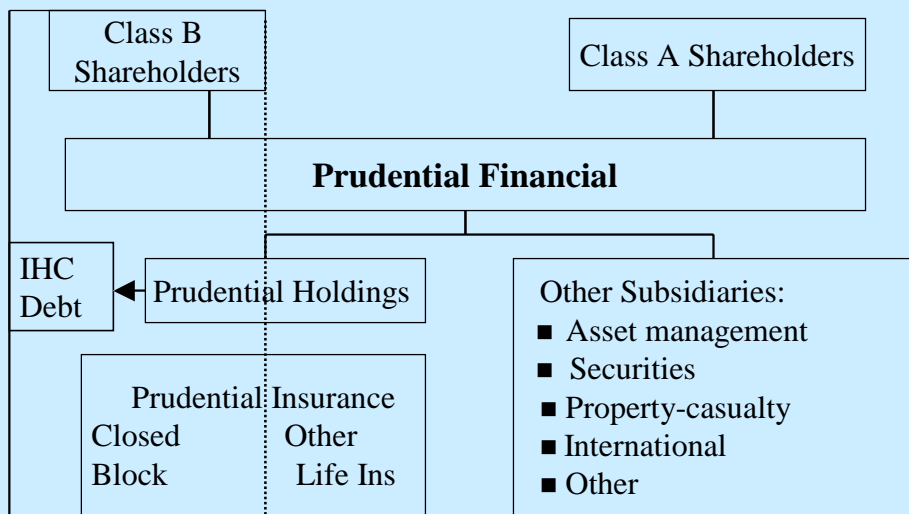
The Prudential Demutualization III

- Motivation for the closed block
 - Isolate "old" insurance business from new financial services operations
 - Capture the "embedded value" in the closed block for use elsewhere in Prudential Financial
 - Objectives accomplished by
 - » Selling bonds backed by the embedded value
 - » Residual equity interest in the block to class B shareholders, entitled to the residual cash flows after debt is retired

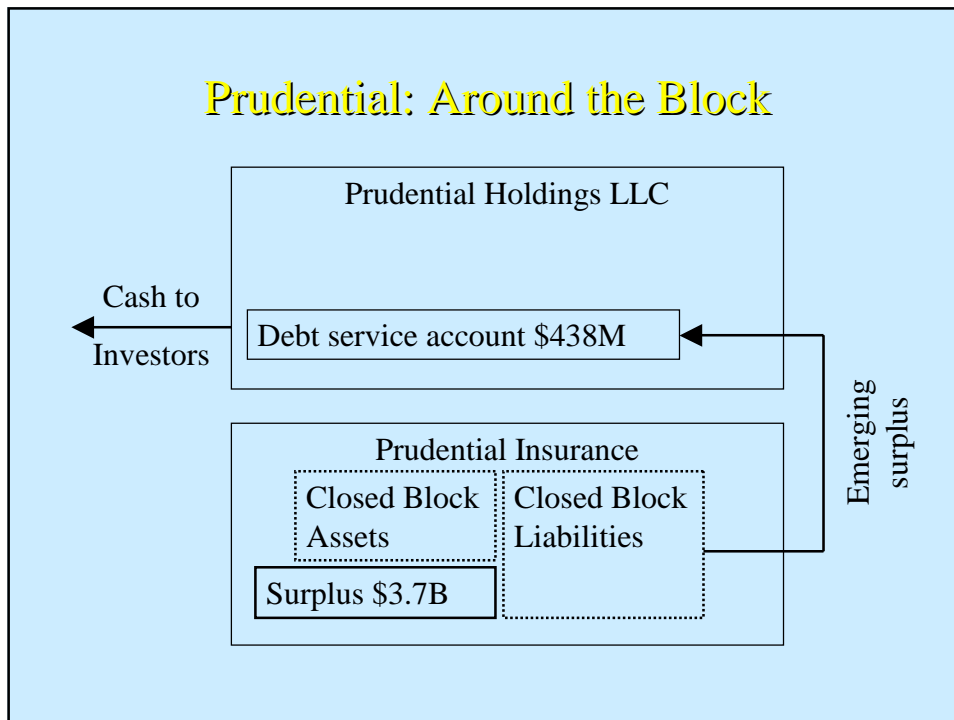
The Prudential Demutualization IV

- Prudential Holdings, LLC formed to hold the closed block business, financed by
 - \$1.75B in debt securities
 - \$175 million of “class B” stock entitled to the residual cash flows of the closed block
- The closed block had initial
 - Assets = \$48.7 B
 - Liabilities = \$50.8 B
 - Equity = \$3.7B
 - Assets < liabilities due to statutory valuation rules

Prudential Financial: After Restructuring



Source: Millette, et al. (2002)



The Prudential Securitization: Comments

- The closed block provides dividends and other payments to policyholders – no new policies are added and the block is run off to zero
- Block liabilities exceed assets due to regulatory liability valuation rules
- Surplus is added to the block to meet regulatory capital requirements
 - Surplus is released as the block is run off
 - The PV of surplus is the EV of the block

The Prudential Securitization II

- Debt service coverage account is established with 25% of the proceeds of the debt issuance (\$438 M)
 - Provides credit enhancement for debtholders
 - Unused balance reverts to Prudential Financial
- Other security also provided to debtholders, e.g., 3rd party financial guarantee insurance policy
- Equity interest in the block sold to class B shareholders in Prudential's IPO
- A wide range of debt covenants and other restrictions further protect debtholders