1. Examples of Safe Assets

- Gold
- Reserves, federal funds
- Government paper (without liquidity risk) due to liquidity management by CB (credible defense line against liquidity/panic/speculative attacks)
  - US Treasury + agency papers
  - German Bund
  - Japanese government bond
- Municipal bonds
- Private short-term assets that are (at least implicitly) back with excessive collateral
  - Repos, securitized debt
  - Commercial paper, Interbank loans, high-grade financial sector debt

*(In trillions of U.S. dollars and percent of total)*

Source IMF: GFSR, April 2012
2. Different Definitions of Safe Assets:

- Classic view: risk-free asset, gold, debt
- Dang-Gorton-Holmstrom: information insensitive debt
  - (no decline in times of crisis due to asymmetric information)
  - Safe in good times, not safe when moving over the kink
- Caballero Farhi: safe asset = Risk-free asset (inflation risk in reality)
  - Infinitely risk averse
  - Wouldn’t hold other risky assets
- Brunnermeier-Haddad: “Good friend analogy”
  - Safe across any horizon
  - Safe across crisis states (appreciates in times of crisis)
  - Safe because perceived to be safe (self-fulfilling multiple equilibrium)
  - Bubble

3. Economic Functions of Safe Assets

3.1. Safe asset = Money (close cousin)

- Store of value
  - Held in addition to more risky high yielding assets

- Reference/benchmark asset
- Good collateral – stable haircut/margins
  - Facilitates financial trades

*Pool of risky high yield assets* - *Deposits*

<table>
<thead>
<tr>
<th>Safe asset</th>
<th>Equity</th>
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<td>- Held in order to produce “safe asset”.</td>
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*Unit of account* - *Transactions role of money*
3.2. Safety versus Risk

- US Treasury downgrade by S&P in 2011 (due to default risk) => yield declines
- German CDS spread versus yields during the Euro crisis

4. Characteristics of “safe” assets

What makes a “safe asset” special?

(Discontinuous versus smooth transition between safe and unsafe asset)

- “Safe Asset Tautology”
  - An asset is safe as long as it is perceived as safe (as a “flight to safety asset”)
  - Endogeneity – multiple equilibria

- Can be a (stochastic) bubble

- “precautionary asset” - tends to appreciate, when one needs resources (negative beta asset)

- Relative stability
  - An asset is safe relative to other assets (not absolute): Tiger analogy

- Demander of safe assets hold profitable risky assets
  - Plot balance sheet (from video)

- IMF GFSR
  - Low credit and market risks
  - High market liquidity
  - Limited inflation risk
  - Limited idiosyncratic risk
5. Long-run Trends

- Safe assets as share of total assets stayed stable since 1952
- Asset to GDP increased by a factor 2.5
  - Equity to GDP ratio was relatively constant (Kaldor 1957)
- Composition of various safe assets changed
  - Treasuries, bank deposits
  - Shadow banking main supplier of safe debt
- Public safe assets crowd out private safe assets (?) Krishnamurthy & Vissing-Jorgensen

6. Demand/Supply (Imbalances) of Safe Assets

Source: Krishnamurthy & Vissing-Jorgensen, JPE 2012
6.1. Supply
- Public Section
- Private Sector

Source: Brunnermeier & Sannikov, “Redistributive Monetary Policy” 2012

6.2. Demand
- Banks – manage solvency and liquidity risk + produce own safe asset
- Official Reserve Managers
- Sovereign wealth funds
  - Heterogeneous – stabilization funds have demand
- Insurance companies and pension funds
- Different investors put different emphasis on different characteristics
  - Spanish bank and Spanish sovereign

6.3. Shortage Debate
- Private safe asset supply (loss of “moneyness”): Equity cushion shrinks
- Micro versus macro debate (store of value – precautionary motive in OLG, Bewley, …)
- QE measures: Remove safe asset – replace it with excess reserves (doesn’t change overall)
7. Safety and Maturity

- Safe assets are useful for liquidity management
- Liquidity mismatch matters
  - Long duration is fine – as long as market liquidity is high (sell off with little price impact)
  - 30 year US Treasury provides safety even if it is funding with overnight debt
  - Consistent with empirical data. (see K&VJ)
- Moneyness at the short-end of the yield curve