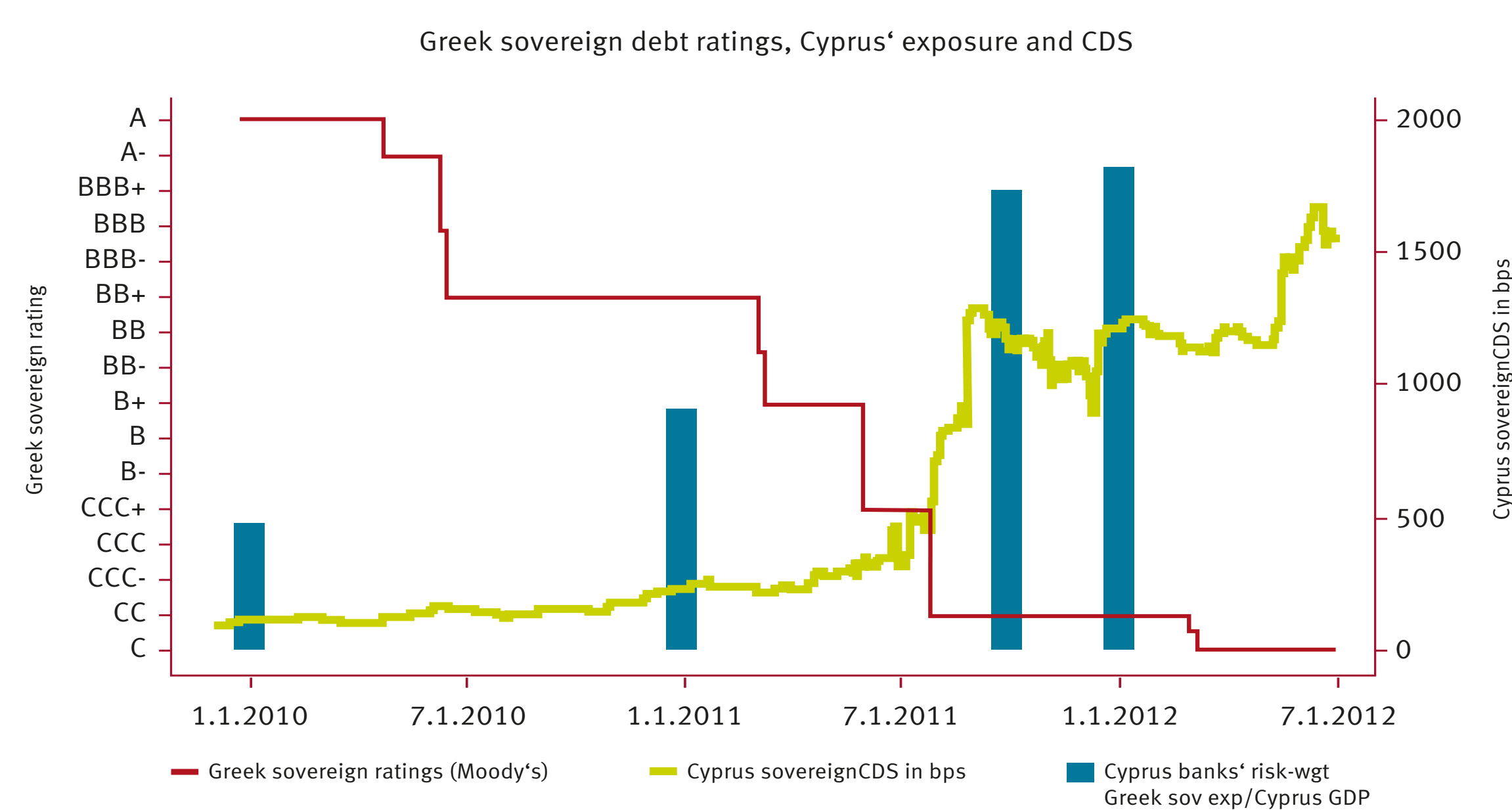


# Zero Risk Contagion – Banks’ Sovereign Exposure and Sovereign Risk Spillovers

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## 1 Cyprus’ sovereign credit risk and bank exposure to sovereign risk

### ZERO RISK CONTAGION

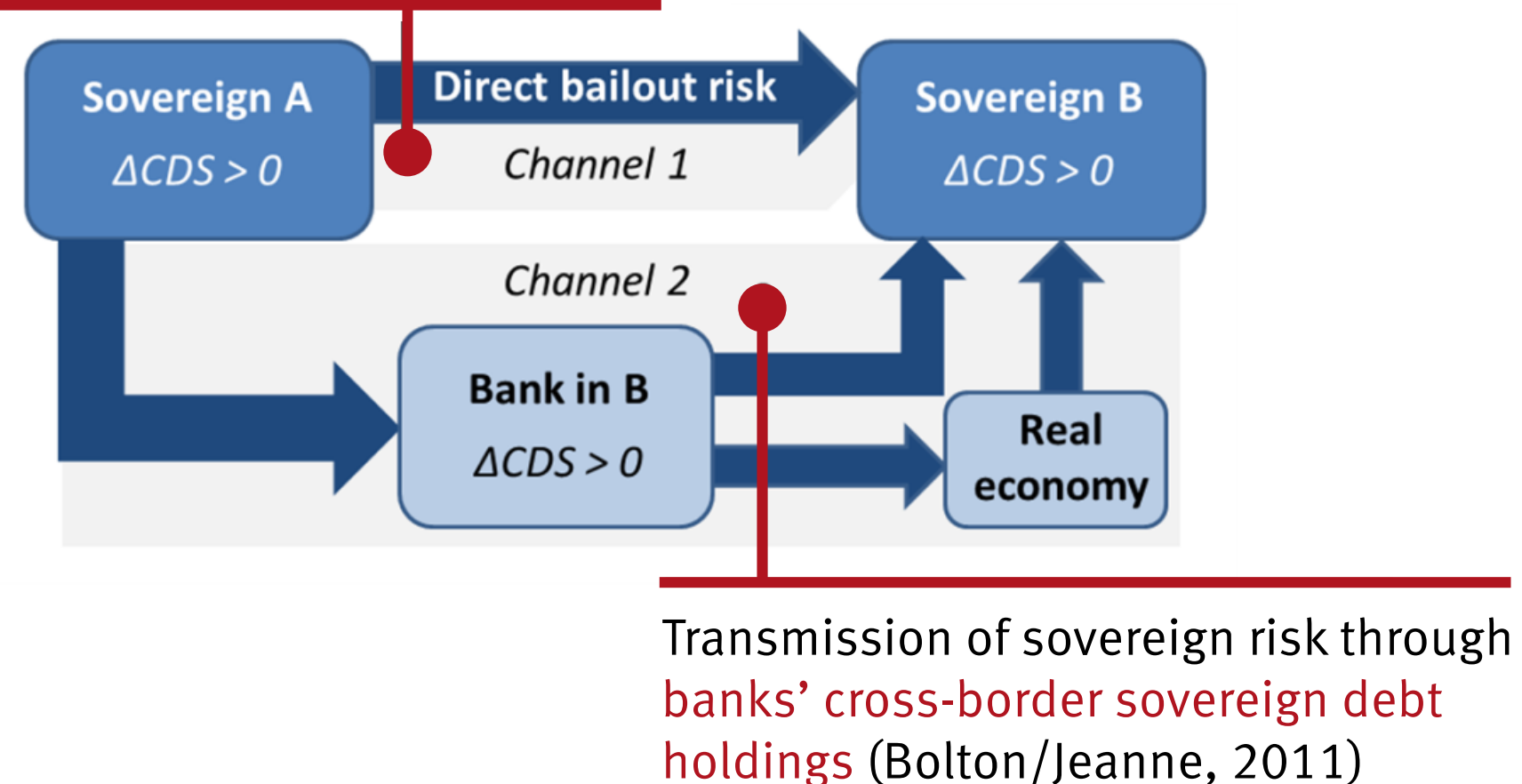


## 2 Why banks accrue too much leverage

- The principle (Basel II/III)
  - Capital buffer against risk-weighted assets
- The European exemption (CRD III/IV)
- Standard approach: favorable treatment of EU sovereign debt (“zero risk weight” for sovereign debt in domestic currency of that sovereign)
- IRB approach: IRB can be substituted by standardized approach for sovereign portfolio (IRB permanent partial use)
- Banks accrue too much leverage investing in risky sovereign debt

## 3 Theoretical framework

Common bailout responsibility in a monetary union (Buitier/Kletzer, 1990)



## 4 Contribution to the debate

- We show that sovereign spreads exhibit a larger co-movement with other European CDS spreads if banks have large exposures for which they do not hold capital.
- We emphasize the transmission of sovereign risk from weak to strong sovereign governments through the holdings of banks (and the implicit expectation that governments bail out their domestic banks).

### What we do not show:

- We do not document that zero risk weights for EU sovereign debt caused European banks to hold too much risky sovereign debt;
- We do not show that because of these low risk weights banks tended to invest in nondomestic sovereign debt.

## 5 Data

- Market data (Bloomberg, Datastream)
  - Sovereign CDS spreads (5yr) and sovereign bond yields (10yr)
  - Sovereign ratings (3 rating agencies)
  - Financial market indicators (iTraxx, equity index, VSTOXX, EONIA, Euribor)
- Bank / banking sector non-domestic sovereign exposures (BIS, EBA)
  - BIS consolidated banking statistics on country level (comprehensive, quarterly since 2010-Q4, few countries)
  - EBA stress test exposure data on bank level (non-comprehensive, 5 cross-sections between 2010 and 2012, more countries)
- Other data sources: SNL Financial, OECD, ECB

## 6 Modeling sovereign risk spillovers – Our baseline regression model

$$\Delta \ln CDS_{i,t} = \alpha + \beta_1 * \Delta \ln CDS index_t + \beta_2 * \text{sovereign subsidy}_{i,p} / GDP_{i,p} + \beta_3 * [\Delta \ln CDS index_t * \text{sovereign subsidy}_{i,p} / GDP_{i,p}] + \delta_t + \gamma_{i,p} + \varepsilon_{i,t}$$

Change in the CDS spread of sovereign i (“home sovereign”)

Change in a sovereign CDS index weighted by the importance of sovereign j in the sample’s full sovereign exposure in period p (quarterly)

Time fixed effects and country-quarter fixed effects or control variables

Main variable of interest: Effect of sovereign subsidy beyond simple sovereign risk correlation

## 7 Key results

- Sovereign CDS spreads co-move more strongly the larger the risk-adjusted sovereign subsidy
- Zero risk weights do not apply to non-EU government debt
- Countries with higher ECB share have higher CDS spread changes if sovereign risk increases
- Countries with better capitalized banks show lower spillovers

## 8 Implications

- Application of risk-weights impairs financial stability.
  - Zero-risk weights associated with EU sovereign debt exposures creates a huge subsidy for the banking sector.
  - Effect of this subsidy is smaller if banks are less aggressive in terms of their leverage or, more generally, have higher capital ratios.
- Favorable treatment of banks (i.e. subsidy) comes from regulators not modeling economic losses.
  - Inconsistent even if e.g. banks build provisions for expected losses
  - Not fully accounted for in stress tests (Acharya and Steffen, 2014)
  - Problems extend far beyond sovereign but all assets that have too low risk weights
  - “Complexity of regulation” (Behn, Haselmann and Vig, 2015)
- Stress tests in Europe still rely on risk-weights (Acharya and Steffen, 2014).
- Implications for current debate to introduce risk-weights in SSM supervision.