

Hybrid Financial Instruments: An International Examination from the IFRS 17 and Solvency II Perspective

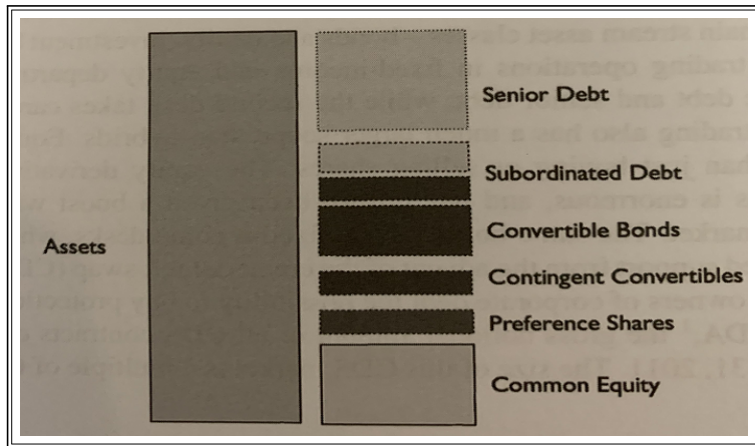
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What are HFI?

Figure: Hypothetical BS financial institution (Spiegeleer et al, 2014).



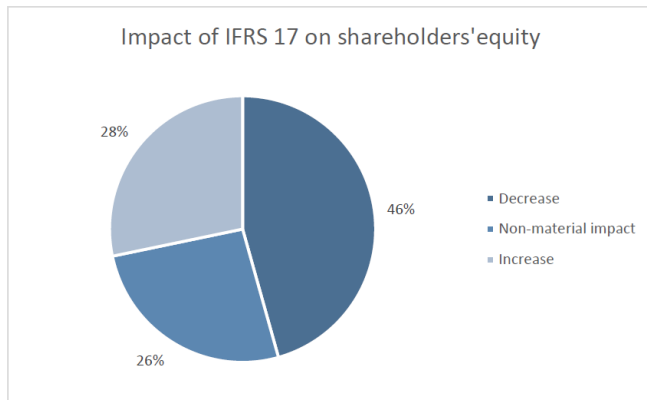
Source: The Handbook of Hybrid Securities

Why/When companies issue HFI?

- Restrictions, serve as substitute for equity [SS06], avoid capital markets discipline [MM84].
- Firms near capital limits favor hybrid instruments over equity [LM17].
- Connection btw insurers and HFI already established: strengthen capital ratios [JLL17; De 07], enhance returns at lower costs [RY20].
- Debt financing → regulatory/covenant ratios.
- Strategic alternative facing capital challenges under new accounting standards [RY20], optimize capital structure.
- Large European insurers have issued hybrid bonds since the early 2000s (13% on average) [DW15], component of regulatory capital [JLL17].

The research problem





Figure: Impact of IFRS 17 implementation (EIOPA, 2024)



EIOPA: European Insurance and Occupational Pensions Authority





The research problem

Figure: IFRS 17 effect analysis (IASB, 2017)

Discount rate currently used	Expected effects of IFRS 17	
	Insurance contract liabilities	Equity
Historical rate lower than current rate		
Historical rate higher than current rate		

The research problem

Figure: IFRS 17 effect analysis (IASB, 2017)

Risk margin currently used	Expected effects of IFRS 17	
	Insurance contract liabilities	Equity
Risk margin higher than risk adjustment in IFRS 17		
Risk margin lower than risk adjustment in IFRS 17		

The research problem

- IASB's central goal, conjecture and literature: IFRS 17 enhances transparency regarding performance.
- IFRS 17 → new measurement approach → economic essence of insurance contracts: how generate/make use of cash flows.
- "Channel" to enhance financial statement transparency → **current value (value in use/fair value/market consistent) measurement**: timely information about changes in the value of assets and liabilities [BBD21].
- **However**, its adoption is likely to have considerable impacts on the insurance sector [BG22]...

The research question

- IFRS 17 reforms introduced: reassessment of technical provisions.
- Affect insurer's regulatory capital.
- Increase volatility in regulatory capital [LKL23].
- Need for additional capital → alternative financing mechanisms → hybrid financial instruments (HFI) [RY20].

The research question

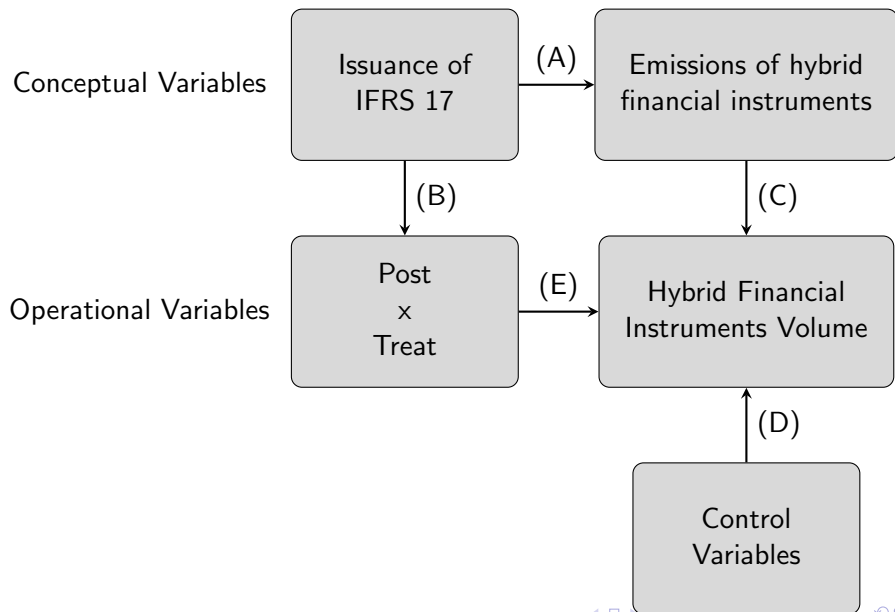
- IFRS 17 reforms introduced: reassessment of technical provisions.
- Affect insurer's regulatory capital.
- Increase volatility in regulatory capital [LKL23].
- Need for additional capital → alternative financing mechanisms → hybrid financial instruments (HFI) [RY20].

RQ: Has the issuance volume of HFI increased in response to the anticipated impacts of IFRS 17 on insurance companies' regulatory capital?

Why is the topic important?

- **Accounting standard setters** value input from academic research [Koo+23].
- IASB and **market expectations** (in fact impossible to predict net benefits [BG22]).
- Empirical studies often overlook financial firms [DSZ14] → **literature gap**.
- Impact on the insurance industry remains **under explored** [SCN22].
- Major shift from IFRS 4: national/historically cost-based → current value [AGT23].

Libby-Box design



Data and sample selection

- Hybrid bonds issuance: Bloomberg platform (2005 to 2019).
- 593 distinct issuance, 147 distinct issuers based in 28 different countries.
- Cross-referenced issuers with S&P capital IQ database.
- Insurance brokers, fiscal paradises, listed subsidiaries, average total assets less than USD 100 MM.
- Research group of interest: 25 different countries, 207 publicly traded insurance companies (issuers or not), USD 373 billion of HFI issued between 2005 and 2019.

■ Equation 1 (OLS):

$$HFIV_{i,t} = \beta_0 + \beta_1 Post_t + \beta_2 Treat_i + \beta_3 Post_t Treat_i + \beta_k X_{k_i,t} + u_{i,t}.$$

■ Equation 2 (FE):

$$HFIV_{i,t} = \beta_0 + \beta_1 Post_t + \beta_2 Treat_i + \beta_3 Post_t Treat_i + \beta_k X_{k_i,t} + c_i + \lambda_t + u_{i,t}.$$

■ Equation 3 (RE):

$$HFIV_{i,t} = \beta_0 + \beta_1 Post_t + \beta_2 Treat_i + \beta_3 Post_t Treat_i + \beta_k X_{k_i,t} + c_i + u_{i,t}.$$

Empirical findings

HFIV sharply decreased...

Table: Diff-in-Diff regression results.

Variables	OLS (1)	Fixed Effects (2)	Random Effects (3)
Post	0.327 (0.344)	-0.397 (0.278)	-0.260 (0.234)
Treat	1.094*** (0.306)	0.480 (0.317)	0.820* (0.488)
Post*Treat	-1.102** (0.508)	-0.625** (0.277)	-0.586** (0.263)
N (Obs.)	297	809	809
N (id)		178	178
Constant	Yes	Yes	Yes
Controls	Yes	Yes	Yes
Country Fixed Effects			Yes
Period Fixed Effects			Yes
Industry Fixed Effects			Yes

HFIV sharply decreased...

Table: Diff-in-Diff regression results (differences in time trends).

Variables	OLS (1)	Fixed Effects (2)	Random Effects (3)
Post*Treat	-1.069** (0.503)	-0.558* (0.293)	-0.577** (0.262)
Time*Treat	0.111 (0.137)	0.117 (0.0755)	0.106 (0.0873)
N (Obs.)	297	809	809
N (id)		178	178
Constant	Yes	Yes	Yes
Controls	Yes	Yes	Yes
Country Fixed Effects			Yes
Period Fixed Effects			Yes
Industry Fixed Effects			Yes

HFIV sharply decreased...

Table: Diff-in-Diff regression results (CH and JP excluded).

Variables	OLS (1)	Fixed Effects (2)	Random Effects (3)
Post	-0.151 (0.332)	-0.705*** (0.245)	-0.500*** (0.192)
Treat	1.372*** (0.370)	0.345 (0.336)	0.593 (0.422)
Post*Treat	-1.053** (0.509)	-0.601** (0.278)	-0.521** (0.261)
N (Obs.)	245	731	731
N (id)		164	164
Constant	Yes	Yes	Yes
Controls	Yes	Yes	Yes
Country Fixed Effects			Yes
Period Fixed Effects			Yes
Industry Fixed Effects			Yes

- Earlier results, implementation of the Solvency II framework (January 2016) → additional robustness test.
- Core guidelines: designation of tiers for the formation of regulatory capital.
- Transitional measure under Solvency II particularly relevant to our study.
- *Grandfathering*: strengthened Tier 1 solvency capital, issuing subordinated debt instruments (including HFI).
- Timing closely coincides with the 2017 announcement of IFRS 17.

HFIV even larger average decrease...

Table: Diff-in-Diff regression results (Solvency II effect).

Variables	OLS (1)
Post*TreatEur	-1.553* (0.800)
Time*TreatNonEur	-0.720 (0.534)
N (Obs.)	297
Constant	Yes
Controls	Yes

Final remarks

IFRS 17 & Solvency II share significant similarities...

- Adoption of IFRS 17 → reduction in the issuance of HFIs.
- Earlier implementation of the Solvency II framework.
- Convergence of IFRS 17 and Solvency II is not only temporal [SCN22; BG22; PLL21].
- Significance of considering other regulatory developments.
- Role of HFI as a capital management tool.
- Relevant for regulators and standard setters → need to account for firms' strategic responses.

THANK YOU!!



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