Paweł Fiedor and Neill Killeen

Securitisation special purpose entities, bank sponsors and derivatives
2019 RiskLab/BoF/ESRB Conference on Systemic Risk Analytics (Helsinki)

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Disclaimer

The views expressed in this presentation are those of the authors and do not necessarily reflect the views of the Central Bank of Ireland or the Eurosystem.

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Preview of findings

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Preview of findings

1. Securitisation SPEs have significant exposures in interest rate derivatives, but are also active in credit, equity, and currency derivatives;

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1. Securitisation SPEs have significant exposures in interest rate derivatives, but are also active in credit, equity, and currency derivatives;

2. SPE characteristics are the most important determinants of their use of derivatives: size and engagement in capital markets in particular;

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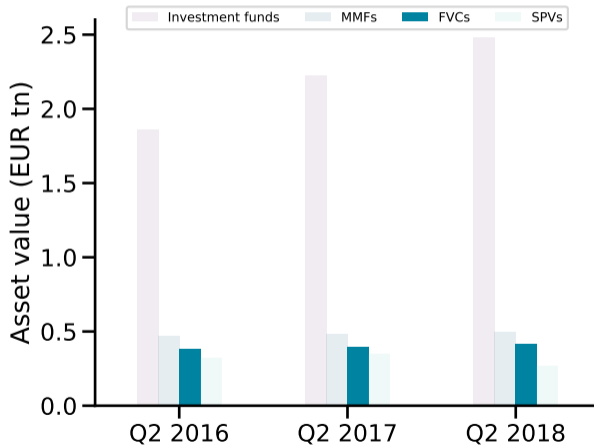○○○○

Preview of findings

1. Securitisation SPEs have significant exposures in interest rate derivatives, but are also active in credit, equity, and currency derivatives;

2. SPE characteristics are the most important determinants of their use of derivatives: size and engagement in capital markets in particular;

3. Bank-sponsor results are somewhat weaker, but size, capitalisation, and profitability of the bank sponsor seem to matter.

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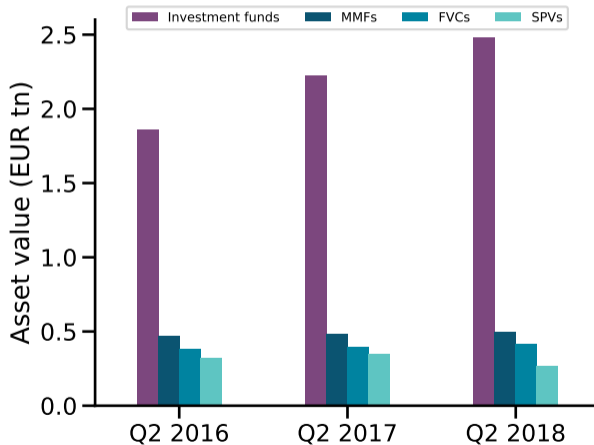
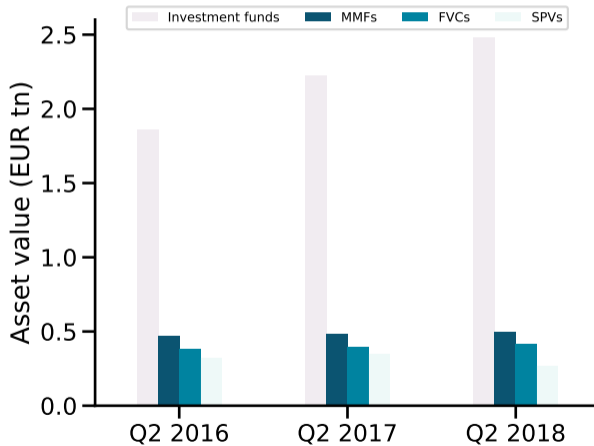# A Sizable Part of the Market Based Finance Sector in Ireland

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A Sizable Part of the Market Based Finance Sector in Ireland

Why do we look at securitisation special purpose entities?

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- We focus specifically on securitisation special purpose entities: financial vehicle corporations (FVCs);

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- Strongly interconnected with the banking system through their sponsor linkages;
- We focus specifically on securitisation special purpose entities: financial vehicle corporations (FVCs);
- Previous research identified that SPEs are active players in CDS markets (Kenny, Killeen and Moloney, 2016).

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- Sheer size of the derivatives market warrants attention;
- The crisis has shown that their complexity can create systemic risk;
- Increasing transparency of OTC derivative markets (e.g. EMIR reporting) and central clearing key elements of policy response to the crisis;
- Understanding the activities and linkages of non-bank financial institutions in derivative markets forms an important component of risk monitoring exercises (e.g. FSB and ESRB).

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An FVC has a choice between:

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1. keeping the underlying risk (interest rate risk);
2. getting a hedge (swapping interest rate risk for credit risk and fees);

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We test two broad hypotheses:

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   ▸ Larger, more complex and internationally active FVCs are more likely to use derivatives.

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1. FVC characteristics:
   ▶ Larger, more complex and internationally active FVCs are more likely to use derivatives.

2. Bank-sponsor characteristics:
   ▶ Larger bank-sponsors and those vulnerable to financial distress are more likely to engage in derivative transactions through FVCs.

European Market Infrastructure Regulation (EMIR)

- EMIR requires all EU counterparties entering into a derivative contract (OTC and ETD) to report details of the transaction to a trade repository. EU wide data are available to ESMA and ESRB, trades involving IE counterparties available to Central Bank of Ireland.

- Dual reporting requirements for counterparties which provides a detailed transaction level dataset for analysis and research

- EMIR captures transactions on different types of asset classes - commodity, credit, equity, interest rate and FX

- Also includes additional information on other counterparty, clearing status of trade, CCP used etc

- Initial research based on EU data (Abad et al, 2016) shows that non-bank financial institutions are active players in derivative markets.

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Data

- Apply a data cleaning procedure to raw EMIR data before merging with SPE data based on legal entity identifiers (LEIs)
  - Remove trades where notional and currency are reported incorrectly (remove gross notional greater than EUR10 billion)
  - Remove trades where where termination or maturity date before the reporting date
  - As EMIR imposes double reporting requirements we remove duplicate trades based on the trade ID
  - We use EMIR trade state reports for the period Q3 2015 to Q3 2017
- Collect balance sheet data and firm characteristics information on securitisation SPEs from Central Bank of Ireland SPE data
- Gather balance sheet data on banks sponsors from SNL Financial and Bloomberg

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Empirical methodology

$$Pr(FVC derivative use = 1)_{i,j,t} = \Phi(\alpha + W_{i,t}\beta_1 + X_{j,t}\beta_2 + \gamma_t + \alpha_j) + \varepsilon_{ijt} \qquad (1)$$

- Our dependent variable (FVC derivative use) is a binary variable equal to one if the FVC i with a bank-sponsor j uses derivatives in time t and zero otherwise
- $W_{i,t}$ is a vector of firm-level controls capturing characteristics of the FVC such as size, listed on an exchange, part of a wider multi-vehicle structure and orphan entity
- $X_{j,t}$ are bank-sponsor explanatory variables such as size, equity capitalisation and NIM which are likely to affect the financial position of the bank-sponsor

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OTC derivative exposures of Irish domiciled FVCs

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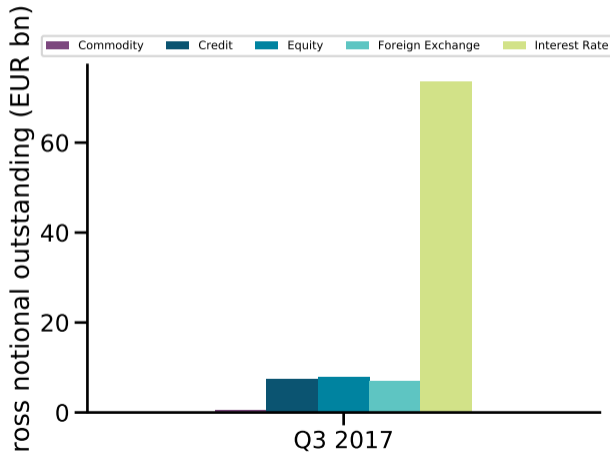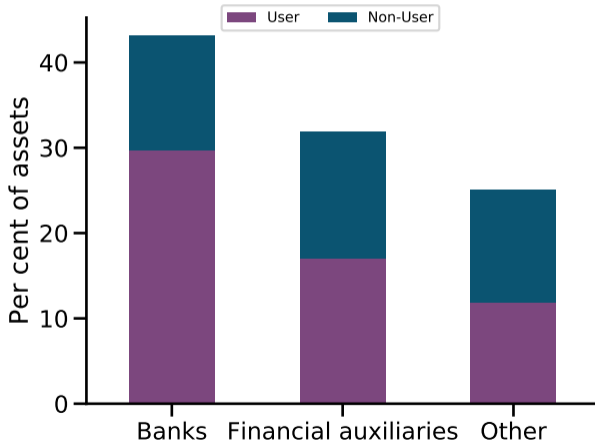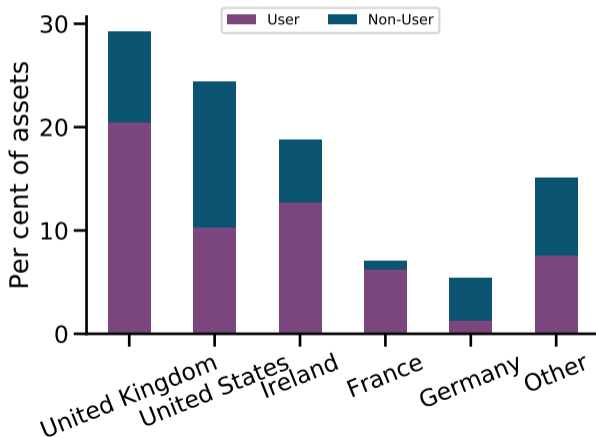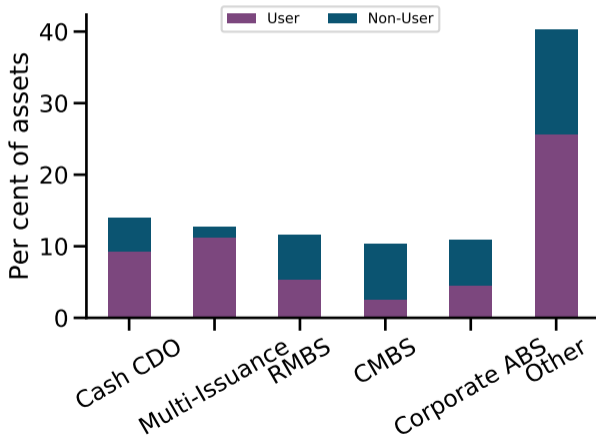
Derivative users vs non-users

Variable	Mean	
	Users	Non-Users
Total assets (EUR mn)	917.75	407.17
Listed	0.85	0.52
Orphan	0.95	0.88
Multi-vehicle	0.29	0.27
Bank sponsor assets (EUR mn)	1,105.48	1,112.74
Bank sponsor CET1 ratio	14.45	14.58
Bank sponsor NIM	1.50	1.60

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Per cent of derivative user observations by group

	User	Non-User	% users
Listed	1,477	1,438	50.67
Non-listed	259	1,323	16.37
Orphan	1,666	2,483	40.15
Non-orphan	87	340	20.37
Multi-Vehicle	453	717	38.72
Single-Vehicle	1,126	1,894	37.28
DTC sponsor	992	1,260	44.05
FIN sponsor	944	1,644	36.48
NFIN sponsor	16	251	5.99
EU sponsor	1,504	1,843	44.94
Non-EU sponsor	448	1,312	25.45

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H1: FVC characteristics

	Use of derivatives				
	(1)	(2)	(3)	(4)	(5)
log assets	0.038***	0.033***	0.066***	0.063***	0.063***
listed	0.284***	0.223***	0.301***	0.247***	0.241***
orphan	0.054	0.026	0.076***	0.041	0.041
multi-vehicle	0.019	−0.041	0.049***	−0.017	−0.020
DTC sponsor	0.319***	0.265***	0.335***	0.302***	0.299***
FIN sponsor	0.241***	0.208**	0.372***	0.354***	0.352***
Time FE	No	No	Yes	Yes	Yes
Sponsor country FE	No	Yes	No	Yes	Yes
Time-country FE	No	No	No	No	Yes
Period	2017Q3	2017Q3	All	All	All
Observations	684	684	4,071	4,071	4,071
McFadden's R^2	0.146	0.214	0.177	0.227	0.243

Notes: ***Significant at the 1 per cent level.
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Sponsor country FE	No	Yes	No	Yes	Yes
Time-country FE	No	No	No	No	Yes
Period	2017Q3	2017Q3	All	All	All
Observations	684	684	4,071	4,071	4,071
McFadden's R^2	0.146	0.214	0.177	0.227	0.243

Notes: ***Significant at the 1 per cent level.
**Significant at the 5 per cent level.
*Significant at the 10 per cent level.

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H1: FVC characteristics

	Use of derivatives				
	(1)	(2)	(3)	(4)	(5)
log assets	0.038***	0.033***	0.066***	0.063***	0.063***
listed	0.284***	0.223***	0.301***	0.247***	0.241***
orphan	0.054	0.026	0.076***	0.041	0.041
multi-vehicle	0.019	−0.041	0.049***	−0.017	−0.020
DTC sponsor	0.319***	0.265***	0.335***	0.302***	0.299***
FIN sponsor	0.241***	0.208**	0.372***	0.354***	0.352***
Time FE	No	No	Yes	Yes	Yes
Sponsor country FE	No	Yes	No	Yes	Yes
Time-country FE	No	No	No	No	Yes
Period	2017Q3	2017Q3	All	All	All
Observations	684	684	4,071	4,071	4,071
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H2: Bank-sponsor characteristics

	Use of derivatives				
	(1)	(2)	(3)	(4)	(5)
log assets	0.031**	0.034***	0.048***	0.061***	0.062***
listed	0.440***	0.396***	0.376***	0.306***	0.304***
orphan	−0.171	−0.048	−0.058	0.041	0.044
multi-vehicle	−0.049	−0.029	−0.054	−0.103***	−0.104***
sponsor assets	0.038*	0.069*	0.014*	0.012	0.017
sponsor CET1 ratio	−0.046***	−0.048**	−0.022***	−0.006	−0.008
sponsor NIM	−0.111***	−0.128**	−0.069***	−0.073***	−0.083***
Time FE	No	No	Yes	Yes	Yes
Sponsor country FE	No	Yes	No	Yes	Yes
Time-country FE	No	No	No	No	Yes
Period	2017Q3	2017Q3	All	All	All
Observations	220	220	1,494	1,494	1,494
McFadden's R^2	0.199	0.265	0.140	0.228	0.254

Notes:　***Significant at the 1 per cent level.
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H2: Bank-sponsor characteristics

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	(1)	(2)	(3)	(4)	(5)
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H2: Bank-sponsor characteristics

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	(1)	(2)	(3)	(4)	(5)
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Sponsor country FE	No	Yes	No	Yes	Yes
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H2: Bank-sponsor characteristics

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Period	2017Q3	2017Q3	All	All	All
Observations	220	220	1,494	1,494	1,494
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H2: Bank-sponsor characteristics

	Use of derivatives				
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Time FE	No	No	Yes	Yes	Yes
Sponsor country FE	No	Yes	No	Yes	Yes
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Sponsor country FE	No	Yes	No	Yes	Yes
Time-country FE	No	No	No	No	Yes
Period	2017Q3	2017Q3	All	All	All
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Time FE	No	No	Yes	Yes	Yes
Sponsor country FE	No	Yes	No	Yes	Yes
Time-country FE	No	No	No	No	Yes
Period	2017Q3	2017Q3	All	All	All
Observations	220	220	1,494	1,494	1,494
McFadden's R^2	0.199	0.265	0.140	0.228	0.254

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Main findings

1. FVC use of derivatives:
   ▸ Substantial exposures towards interest rate derivatives;
   ▸ Also active in credit, equity, and foreign exchange, but to a lesser degree.

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Main findings

1. FVC use of derivatives:
   - ▶ Substantial exposures towards interest rate derivatives;
   - ▶ Also active in credit, equity, and foreign exchange, but to a lesser degree.

2. FVC-level characteristics strongly affect derivative use:
   - ▶ economies of scale;
   - ▶ previous engagement in capital markets.

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Main findings

1. FVC use of derivatives:
   - ▶ Substantial exposures towards interest rate derivatives;
   - ▶ Also active in credit, equity, and foreign exchange, but to a lesser degree.

2. FVC-level characteristics strongly affect derivative use:
   - ▶ economies of scale;
   - ▶ previous engagement in capital markets.

3. Weaker effects of bank sponsor characteristics:
   - ▶ economies of scale;
   - ▶ financial situation.

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Policy implications

1. Interconnectedness:
   - ▶ The nexus of high debt liabilities, interconnectedness with the banking system, and derivatives reinforces the importance of close monitoring and macroprudential surveillance of SPEs.

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Policy implications

1. Interconnectedness:
   ▶ The nexus of high debt liabilities, interconnectedness with the banking system, and derivatives reinforces the importance of close monitoring and macroprudential surveillance of SPEs.

2. Reporting standards:
   ▶ The study highlights the importance of LEI reporting - used for matching various supervisory and statistical datasets created in recent years.

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Thank you!

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H1: FVC characteristics

	log(1 + OTC Interest Rate notional)				
	(1)	(2)	(3)	(4)	(5)
log assets	0.291***	0.241**	0.501***	0.459***	0.456***
listed	1.447**	0.987	1.151***	0.545**	0.466*
orphan	−0.540	−0.549	−0.149	−0.001	−0.005
multi-vehicle	−0.098	−0.696	0.573**	−0.265	−0.325
DTC sponsor	5.698***	5.246***	5.014***	4.726***	4.819***
FIN sponsor	2.053	1.542	2.422***	2.028***	2.167***
Time FE	No	No	Yes	Yes	Yes
Sponsor country FE	No	Yes	No	Yes	Yes
Time-country FE	No	No	No	No	Yes
Period	2017Q3	2017Q3	All	All	All
Observations	684	684	4,071	4,071	4,071
Adjusted R^2	0.086	0.101	0.084	0.128	0.096

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H2: Bank sponsor characteristics

	log(1 + OTC Interest Rate notional)				
	(1)	(2)	(3)	(4)	(5)
log assets	0.336	0.336	0.703***	0.632***	0.653***
listed	3.977**	3.689**	3.111***	2.844***	2.794***
orphan	−1.778	0.990	−0.311	1.993	1.821
multi-vehicle	−2.489	−1.162	−1.616***	−0.966	−1.176*
sponsor assets	0.447	0.400	0.093	0.110	0.052
sponsor CET1 ratio	−0.590**	−0.144	−0.245***	0.317***	0.389***
sponsor NIM	−0.836	−1.175	−0.161	−0.685*	−0.576
Time FE	No	No	Yes	Yes	Yes
Sponsor country FE	No	Yes	No	Yes	Yes
Time-country FE	No	No	No	No	Yes
Period	2017Q3	2017Q3	All	All	All
Observations	220	220	1,494	1,494	1,494
Adjusted R^2	0.064	0.140	0.074	0.207	0.168

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