Banking on Sustainability: Strategic Incentives Behind Sustainability-Linked Loans

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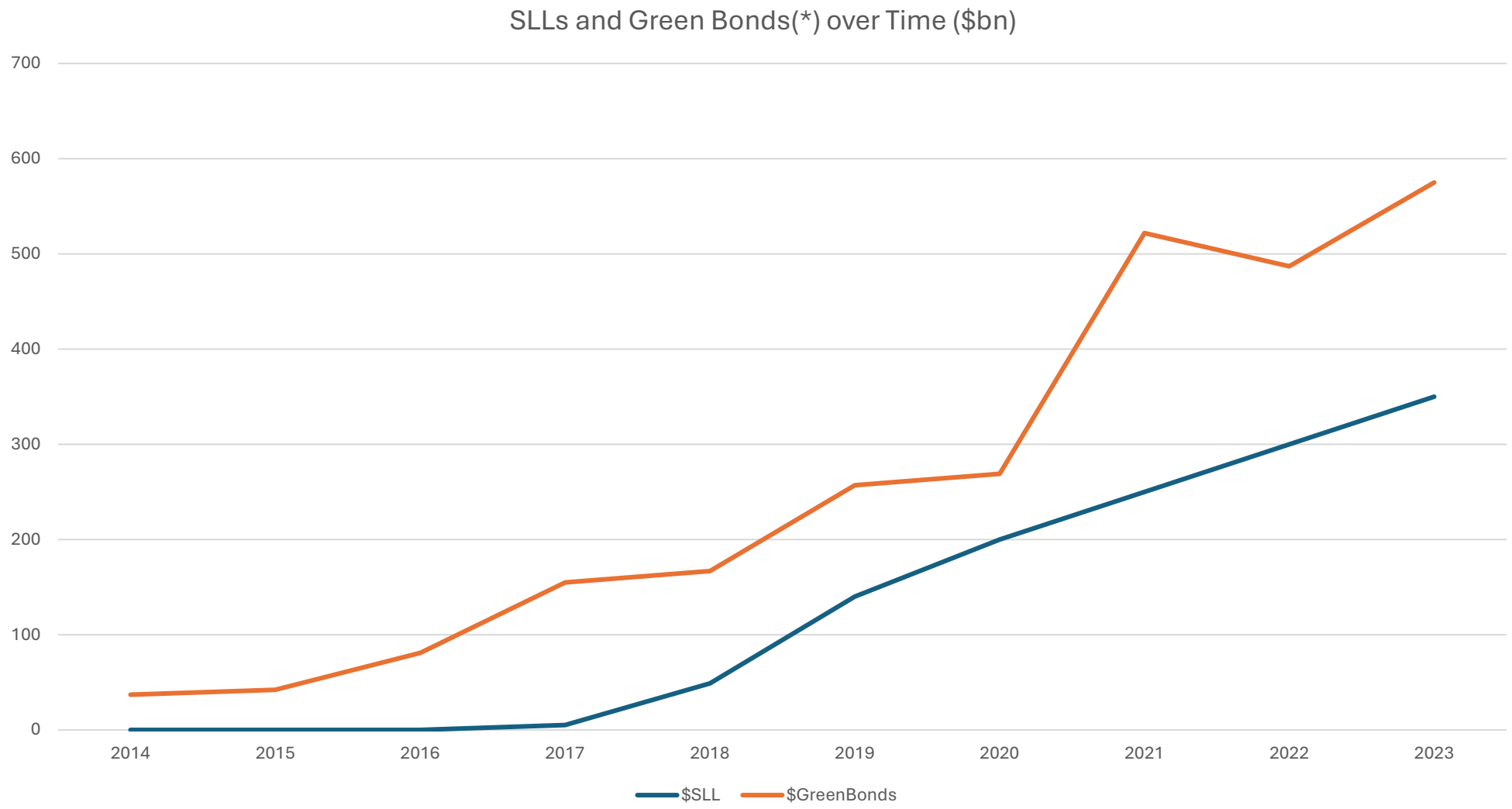
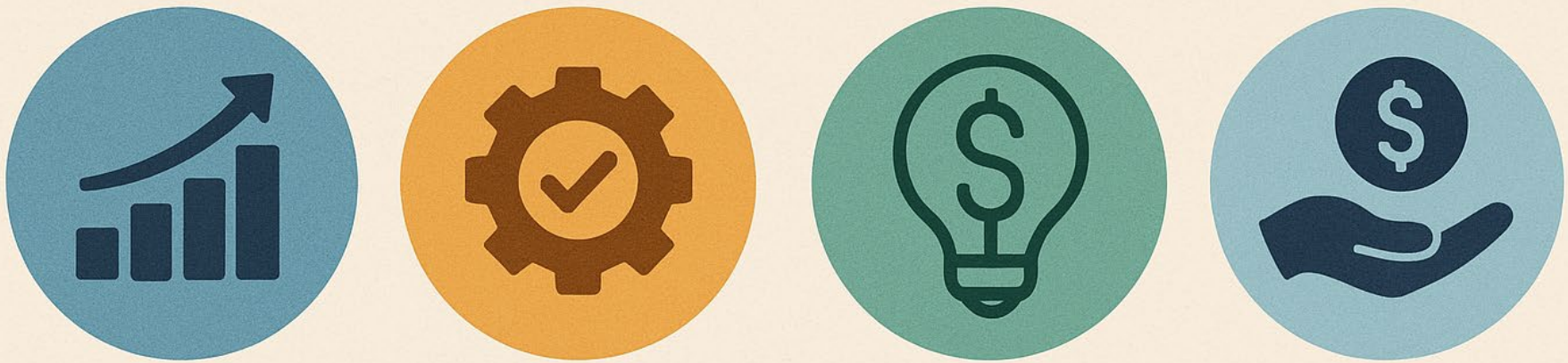


Constant growth in aggregate SLL issuance, mirroring, at times outpacing growth in Green Bond issuances

WHY FINANCIAL INNOVATION MATTERS



ECONOMIC GROWTH

EFFICIENCY

ACCESS TO CAPITAL

FINANCIAL INCLUSION

“Everybody talks about the weather, but nobody does anything about it.”

Mark Twain (attributed)

“Everybody talks about financial innovation, but (almost) nobody empirically tests hypotheses about it.”

Frame and White (2004)

“We talk about Sustainability-Linked Loans, and empirically test hypotheses about the motives of issuing banks.”

Kleymenova, Li and Li (attributed)

Context

- Frame & White (2004, JEconLit): **Financial innovation**

Types	**Rationale**
Product innovation	**Competitive considerations**
Process innovation	*Demand-side pressures*
Institutional innovation	*Regulatory avoidance*
	Cost reduction
	Risk reduction
	(Taxes, …)

- Tufano (1989): 58 financial product innovations (1974-1986), *market share*
- Flammer (2021): green bonds, benefits>costs, *signal of commitment to E*
- Cocco et al. (yesterday): green mortgages, *customer acquisition*
- Today's paper: SLLs, *strategic considerations,* ***geographic dimension***

Summary of the paper

- Test for strategic incentives behind SLL issuances
  - 3,400 SLLs issued by 200+ banks globally over 2017-2022
- Large multinational banks issue SLLs
  - More so **at home**; **abroad** where they have high market share but slow growth
- Issuance results in higher market share, interest income and lending fees – seen as consistent with new client acquisition, spillovers to other business
- One of a growing number of papers on drivers of green financial innovation, focus on strategic tradeoffs that vary by **geography**

SLLs vs Green Loans

- Sustainability-linked loan (SLL):
  - **Pricing tied to** borrower's performance on predefined **ESG criteria**/KPIs
  - **Proceeds** can be used for **any purpose** (including non-ESG)
  - E.g., interest rate reduced by 0.1%pt if 20% reduction in emissions

- Difference to green loans:
  - **Proceeds tied** to eligible green projects
  - **Pricing fixed**, ESG performance 'irrelevant'
  - E.g., a loan to reduce emissions of some type (by 20%)

Example: ING/Royal Philips, April 19, 2017

ING announced its first sustainability-linked loan (SLL) issuance on April 19, 2017, in collaboration with Royal Philips. This €1 billion revolving credit facility was pioneering in that its **interest rate was directly tied to Philips' sustainability performance**, as assessed by the ESG rating agency Sustainalytics. As Philips improved its sustainability rating, the **interest rate on the loan would decrease**, and vice versa. This structure provided Philips with an incentive to enhance its environmental, social, and governance (ESG) practices.

This transaction is widely recognized as the world's first syndicated sustainability linked loan, marking a significant milestone in sustainable finance. Unlike traditional green loans, which require proceeds to be used for specific environmental projects, this SLL **allowed Philips to use the funds for general corporate purposes** while still promoting sustainability through performance-based financial incentives.

Source: Wikipedia?

Example: Lloyds/Unibail-Rodamco April 6, 2017

On April 6, 2017, Lloyds Banking Group arranged a €600 million syndicated revolving credit facility (RCF) for Unibail-Rodamco, marking one of the earliest examples of a loan incorporating **sustainability-linked features**. This facility was structured under Lloyds' Green Lending Initiative, which provided **margin discounts** for borrowers committing to energy efficiency targets on the commercial properties underlying the loans.

The loan's **interest margin** was **tied to** Unibail-Rodamco's performance against specific **environmental Key Performance Indicators (KPIs)**, aligning with the company's broader corporate social responsibility commitments. If the company met these predefined sustainability targets, it benefited from **reduced borrowing costs**; failure to meet the targets could result in **higher interest rates**. This structure aimed to incentivize continuous improvement in the company's environmental performance.

Source: Property Week

Difference to green loans: EIB/Ørsted

In 2021, Ørsted, a Danish renewable energy company, secured a **€500 million green loan** from the European Investment Bank (EIB) to support the **construction of a large-scale offshore wind farm** in the North Sea—Borssele 1 & 2. This project, located off the coast of the Netherlands, aimed to **provide sustainable energy** to over one million households.

The loan was structured under the Green Loan Principles, ensuring that the **proceeds were exclusively used for environmentally beneficial purposes**. The project focused on **reducing greenhouse gas emissions** and supporting the EU's climate and energy targets.

This financing enabled Ørsted to expand its clean energy portfolio while maintaining financial flexibility. The wind farm became operational in 2020, significantly contributing to the Netherlands' transition away from fossil fuels. This green loan demonstrated how targeted financial instruments can drive meaningful progress toward global sustainability goals by aligning investor capital with environmentally responsible projects.

Sources: Nordic Investment Bank, orsted.com

Earlier examples?

- Other lending practices with environmental criteria in mind?
  - Banks/associations created under the **Federal Farm Loan Act (1916)**
  - Idea: Offer **extended repayment periods** on loans to farmers so they invest in **land improvements and conservation** ~ promotes sustainability
- Unlike SLLs, environmental KPIs not formalized and pricing not a loan-specific function of achieving certain KPIs

Outline of discussion

- First paper to provide insights into the strategic drivers of SLL issuances and their consequences for issuing banks
- Very detailed, carefully collected data: >3,000 SLLs by 200+ banks, 2017-2022 -> outcomes at bank-**host country**-year level
- Appears to be relatively early second draft. Will encourage authors to
  - be more specific (and ambitious) about contribution
  - go further wrt implementation: determinants, outcomes
- Some of my comments arise from limitations/challenges arising from how recent SLLs are

Comments

1. Contribution

2. Determinants of SLL issuance

3. Consequences of SLL issuance

Contribution

- SLLs are a very recent form of financial product innovation
- All financial product innovation characterized by
  - cost-benefit tradeoffs
  - strategic considerations (new clients, spillovers to deposits, …)
- What's new here? Strategic considerations may differ by geography!
  - home vs. foreign, differences by host country
- => Suggest highlighting that results may speak to the possibility of a geographic dimension in financial innovation decisions

Comments

1. Generalizability

2. Determinants of SLL issuance

3. Consequences of SLL issuance

Determinants

- Aim: explain why bank issues SLL vs non-SLL in a country-year
- LHS (*t+1*): SLL indicator at bank-host country-year level, 1 if ≥1 SLL
- Controls (*t*): bank-host country-time, bank-time, country-time
- Sample: **banks that lead at least one syndicated loan** (SLL or non-SLL) in *t+1*

=> Allows to test **what drives banks' decision to issue ≥1 SLL vs. non-SLL**

	VARIABLES	Full *sll_lead_t1* (1)	(2)	(3)
Market	*total_hhi*	0.392***		
		(0.136)		
	country_year_sll_indicator	0.050**		
		(0.024)		
Bank	*loan_leader*	0.205***	0.218***	0.226***
		(0.023)	(0.024)	(0.024)
	loan_leader×hhi	-0.722***	-0.877***	-0.941***
		(0.132)	(0.172)	(0.154)
	rel_perc	0.006	0.023*	0.032**
		(0.012)	(0.012)	(0.013)
	has_refinitiv	0.098**	0.159***	
		(0.046)	(0.048)	
	loan_growth	-0.024***	-0.026***	-0.035***
		(0.004)	(0.004)	(0.004)
Initiatives/ Regulation	*pri_sig*	0.009	-0.009	
		(0.032)	(0.033)	
	bank_home_regulation	0.007	-0.018	
		(0.045)	(0.048)	
	sfdr	0.015	0.075*	
		(0.042)	(0.041)	
Experience	*prior_sll_par_exp*	0.139***	0.129***	
		(0.022)	(0.024)	
	prior_green_loan_exp	-0.012	-0.029	
		(0.018)	(0.018)	
Bank type	*top_20_foreign*	-0.015	0.003	-0.117**
		(0.038)	(0.040)	(0.050)
	top_20_home	0.095	0.117**	
		(0.059)	(0.058)	
	multinational_foreign	-0.105***	-0.108***	-0.163***
		(0.021)	(0.020)	(0.029)
	multinational_home	0.068***	0.061**	
		(0.026)	(0.024)	
	Observations	13,078	13,022	11,420
	Adjusted R-squared	0.373	0.447	0.469
	Country FE	YES	NO	NO
	Bank FE	YES	YES	NO
	Year FE	YES	NO	NO
	Country x Year	NO	YES	YES
	Bank x Year	NO	NO	YES
	Cluster	Country Bank	Country Bank	Country Bank
	Mean dependent variable	0.214	0.214	0.214

Determinants

Paper: Decision to issue **at least one SLL vs. no SLL** in a country **conditional on** involvement in **issuing syndicated loan** in that country.

Many equally interesting and important decisions to be studied

- 1. Differences between product differentiation, product mix, entry
- 2. SLLs vs. other ESG lending, esp. Green Loans
- 3. Bank-host country characteristics vs. home country-host country characteristics (this is also an *omitted variables* comment)

Determinants

1. Product differentiation vs. shift in product mix?

	2017	2018	2019	2020	2021
Bank A:					
D_{SLL}	0	0	1	1	1
$\%_{SLL}$	0%	0%	10%	10%	10%
Bank B:					
D_{SLL}	0	0	1	1	1
$\%_{SLL}$	0%	0%	10%	25%	50%

- In the paper, Bank A and Bank B are the same: they differentiate in 2019
- Their strategic considerations after 2019 may be different: Bank B expands into SLLs

Suggestions: Enrich analysis by relative (%) (and absolute ($)) SLL measures

[E.g., #SLLs/#All Syndicated Loans, Logged $ SLL issuance, $SLL/$all syndicated issuances]

Determinants

1. Product differentiation vs. entry

	2017	2018	2019	2020	2021
Bank A: D_{SLL}	0	0	1	1	1
Bank C: D_{SLL}	-	-	1	1	1

- Analysis combines factors driving Bank A's shift to SLLs & Bank C's entry into SLLs in 2019
- But the strategic incentives to differentiate vs enter may be very different

Suggestions:

- Provide summary stats on differentiation vs entry (maybe entry straight into SLL rare)
- [Study differentiation using bank-home country fixed effects]

Determinants

2. Are drivers of SLL issuance different from those of Green Loan issuance?

- Point of the paper: Strategic incentives drive SLL issuance, geography matters
- SLLs and Green Loans differ only in use of proceeds/pricing
- **Are drivers of SLLs issuance different from those of green loan issuance?**
- **Suggest expanding tests:** replace key outcome (SLL indicator) by Green Loan indicator, combination of Green Loan/SLL indicator (alt: more complicated choice models)
    - Authors seem uniquely positioned to study determinants of SLL and green loan issuance: Table 1 lists conventional syndicated loans excluding green bonds. So they have green bonds
- -> can speak to generalizability wrt other green financial product innovation

Determinants

3. Are results about bank-host country characteristics or about home country-host country characteristics?

- Right now, results could be about
  - Banks and their strategic incentives to issue SLLs in a country (what authors want)
  - Home country-host country characteristics that encourage SLL issuance but are correlated with foreign branch operations (large but slow-growing branches)
- **Suggestion**: Include home country-host country(-time) controls
  - (Country-pair fixed effects)
  - Gravity model-type controls (FDI, *bilateral ESG agreements*)

Comments

1. Generalizability

2. Determinants of SLL issuance

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Consequences of SLL issuance

- Aim: Study whether SLL issuance affects outcomes
- E.g., ESG scores, market share, interest income
- Background: benefit-cost analysis by issuing bank
- Right now, early draft

	Full Sample		
VARIABLES	*market_share_t1* (1)	*first_time_market_share_t1* (2)	*rel_market_share_t1* (3)
sll_lead	0.554***	0.393	0.366***
	(0.162)	(0.278)	(0.108)
sll_foreign_lead	1.255***	1.289**	0.660***
	(0.313)	(0.531)	(0.179)
sustainability_agent	1.515***	2.284**	1.054***
	(0.373)	(0.875)	(0.219)
sustainability_agent_foreign			
Controls	YES	YES	YES
Observations	11,420	11,420	11,420
Adjusted R-squared	0.329	0.168	0.327
Country FE	NO	NO	NO
Bank FE	NO	NO	NO
Year FE	NO	NO	NO
Bank x Year	YES	YES	YES
Country x Year	YES	YES	YES
Cluster	Country Bank	Country Bank	Country Bank

Consequences of SLL issuance

- Could implement stacked staggered difference-in-difference approach
  - Cohorts: Banks that issue first SLL in a country in 2017, 2018, …
  - Sample period: 2014-???? (first SLL 2017 but outcomes available earlier)
  - Fixed effects: Bank-host country-cohort, (Home country-)Host country-cohort-time, (more?)
  - Never treated: Banks that issue syndicated loan but not SLL over sample period
  - Outcomes: Anything that is measurable at bank-host country-year level
  - **Opportunity**: also do this for green loans vs. SLLs ~ effects the same?

Consequences of SLL issuance

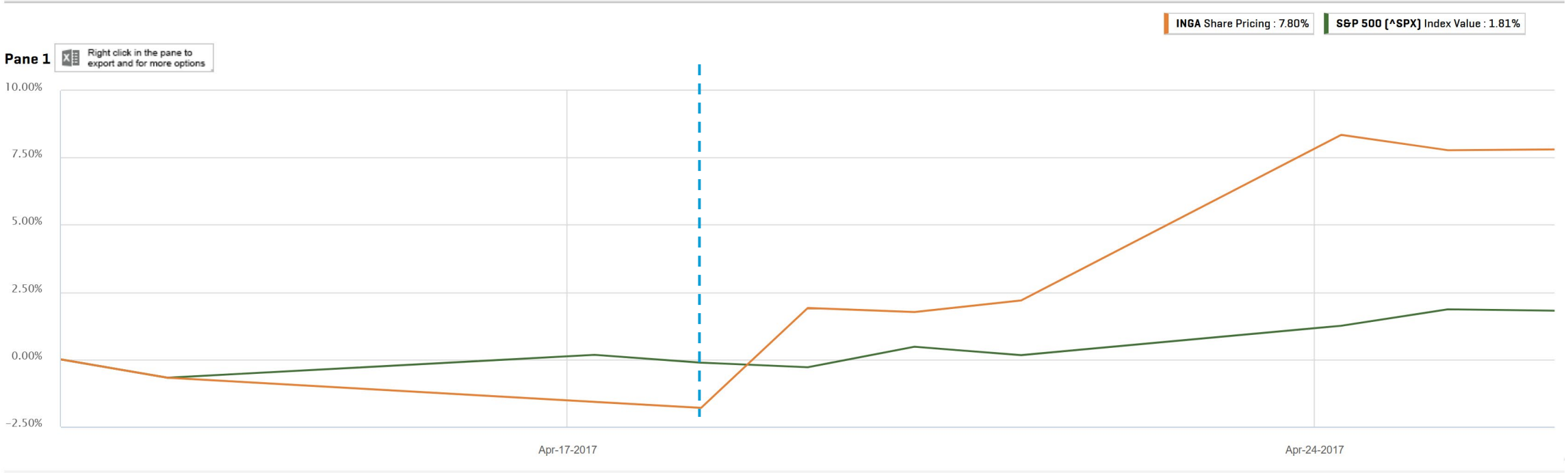
- Some challenges:
  - Parallel trends, endogeneity (banks choose SLL issuance), (short post period)
  - List of outcomes “unlimited” **-> scope for event study using issuance returns?**

Scope for event study?

- Can present value of discounted future cash flows arising from SLL issuance be captured using **event study**?

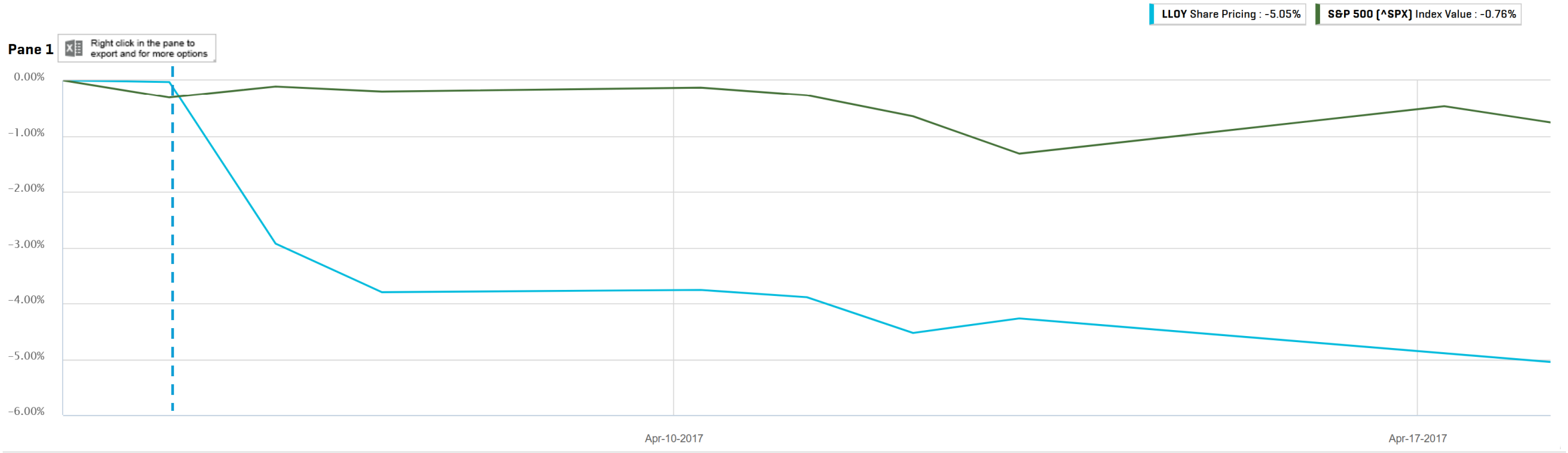
- Let me provide some examples, point to benefits and caveats

ING/Royal Philips, April 19, 2017



ING stock price up 3.5% (vs. S&P), reflecting $2bn market cap gain on $1bn facility

Lloyds/Unibail-Rodamco April 6, 2017



Lloyds stock price down 4% (vs. S&P), reflecting $2.4b market cap loss on $600m loan

Event study

- Can PV(FCF) arising from SLL issue be captured using **event study**?

- Tempting: Event returns reflect all discounted future cash flows
  - those arising directly from issuance,
  - those arising indirectly through future (new) business, spillovers, …, and
  - those linked to costs of offering SLLs

- But: Some caveats/challenges
  - Determining the announcement date (could be ≠ issuance date)
  - Comingled other news
  - Treatment of first vs. later SLLs
  - Price effects when direct competitors announce SLLs

Summary

- Test for strategic incentives behind SLL issuances
- Large multinational banks issue SLLs—mostly at home, abroad where they have high market share and slow growth
- Issuance results in higher market share, interest income and lending fees –new client acquisition, spillovers to other business
- Paper is about SLLs as a new green financial product innovation
- => Could consider highlighting that strategic incentives to issue SLLs differ by **geography**