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The bank-sovereign nexus across borders

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The views presented here are those of the authors and do not necessarily reflect those of the Bank of Canada.

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Summary

- **Objective:**
  - Quantify the risk of contagion from the banking to the sovereign sector within and across borders in the euro area.

- **Method:**
  - Event study (using difference and difference-in-differences specifications) around ECB's release of the outcome of its Comprehensive Assessment (CA) on October 26, 2014.

- **Data:**
  - Equity returns and CDS spreads on 130 banks and 26 different euro-area countries.

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Main results

- **Headline Result:**
  - **Bank risk in stressed countries appears to be shared within the euro area.**
  - The bank risk from stressed countries spills over onto sovereigns that are unlikely to face sovereign distress.

- **Evidence:**
  - Bank-sovereign nexus in “stressed” countries not affected.
  - Bank-sovereign nexus in “non stressed” becomes significant.
  - Changes in CDS spreads in “non stressed” countries become more sensitive to equity values of banks located in “stressed” countries.

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Contribution: New channel of interconnectedness

- **Links between bank risks and sovereign risk within a given country**
  - "Deadly embrace" / "Doom loop".
  - Acharya et al. (2014), Cooper and Nikolov (2014), Farhi and Tirole (2014), and Acharya and Steffen (2015).

- **Links between bank risks across different countries**
  - Counterparty credit risk and information contagion.
  - Lang and Stulz (1992), Jorion and Zhang (2007, 2009), and Helwege and Zhang (2012).

- **Links between sovereign risks across different countries**
  - Information contagion and explicit/implicit fiscal guarantees.
  - Augustin et al. (2015), Kallestrup et al. (2013), Lucas et al. (2014), and Benzoni et al. (2015)

- **Links between bank risks in one country and sovereign risks in other countries**
  - Explicit and implicit guarantees to preserve monetary union.

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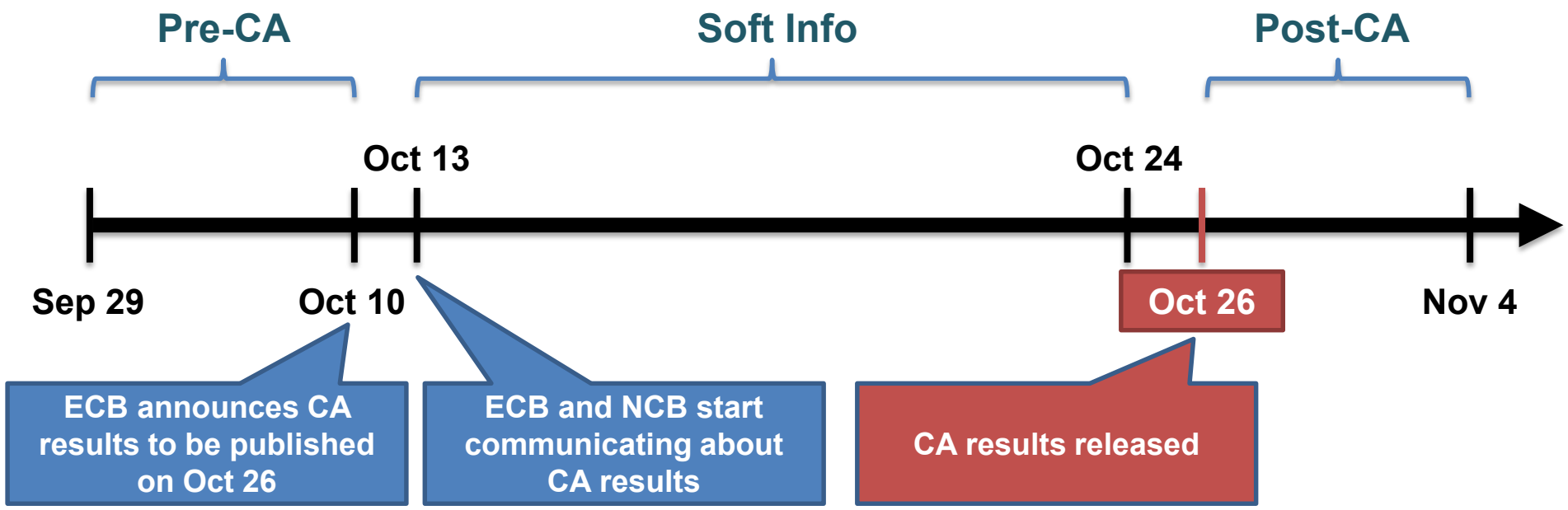
Timeline



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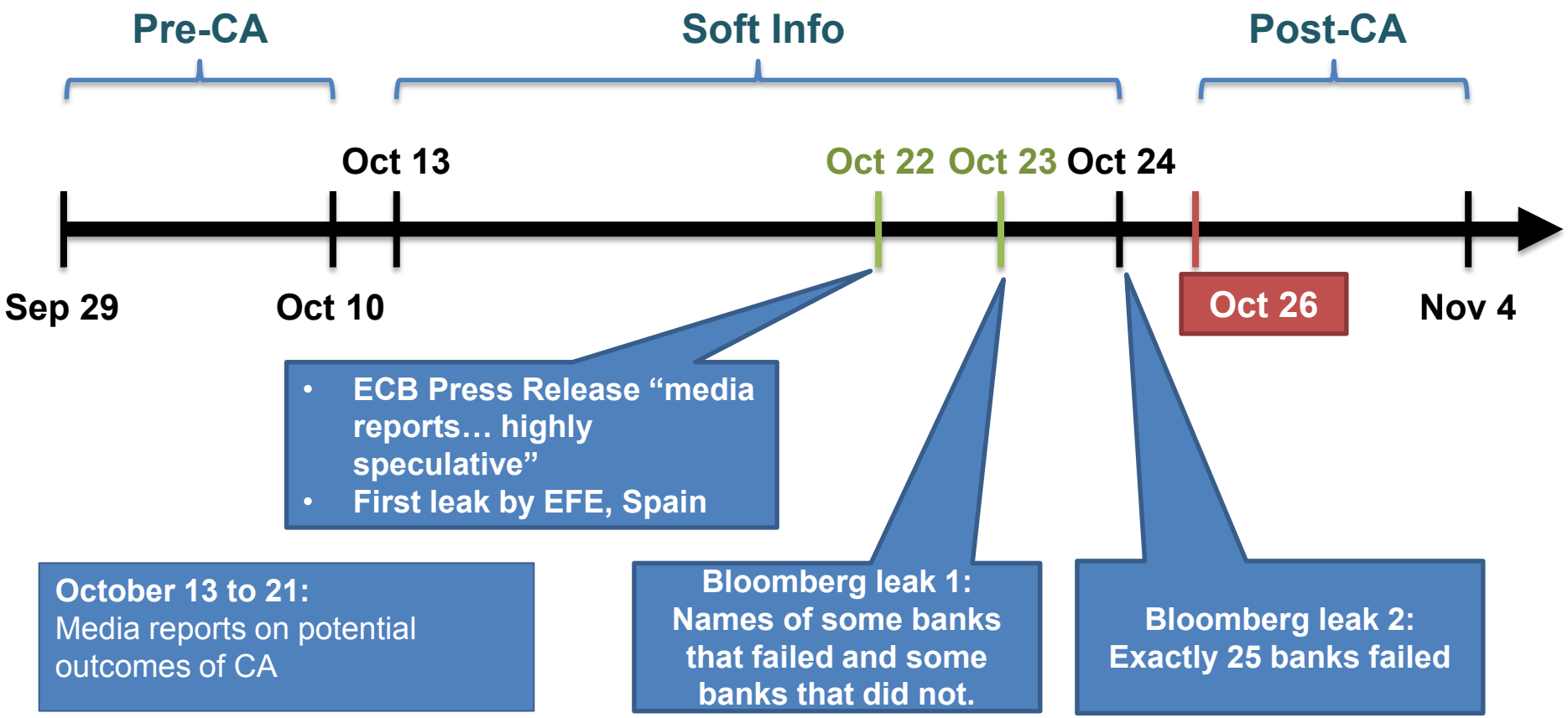
Timeline



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Comments: Methodology

1. Information contained in the CA:

- The CA announcement revealed significant new information beyond what was anticipated by market participants. Aggregate results might not had contained new information, but country and bank level results were "true news".
- **Comment:** Is there a more precise way to separate the effect of aggregate vs. entity level information? Why don't you compare the log returns of the Post-CA and Soft Info periods? – This comment also applies to the CDS spreads in the next step.

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Comments: Methodology

2. Response of sovereign and bank CDS spreads:

- CDS spreads increased in “non-stressed” countries, despite bank equity values in these jurisdictions remaining flat.
- Violation of sovereign risk ceiling: Average CDS spreads in some “stressed” countries fell below their corresponding sovereign CDS spread.
- **Comment:** Can you say something about the strength of the implicit and explicit guarantees in different countries? Is there more of a guarantee for Italy vs. Greece?
- Which country is leading the charge as “guarantor of last resort”? Run the same exercise but disaggregate the “non-stressed” countries., then aggregate from “safest” to “least safe”.

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Comments: Methodology

Figure 2: Cumulative bank equity returns in the euro area

Equity prices are from 29 September 2014 to 7 November 2014. In each panel, the dashed vertical line marks the beginning of the Soft Info period, while the solid vertical line marks the release of the CA results. The top panel plots the cumulative log changes in equity closing prices for non-stressed countries' bank equities (solid line), the bank equities of stressed countries excluding Italy (dashed line), and Italian bank equities (dotted line). The bottom panel plots the cumulative log changes in the equity of banks located in stressed countries, relative to the cumulative log changes in the equity of banks located in non-stressed countries.

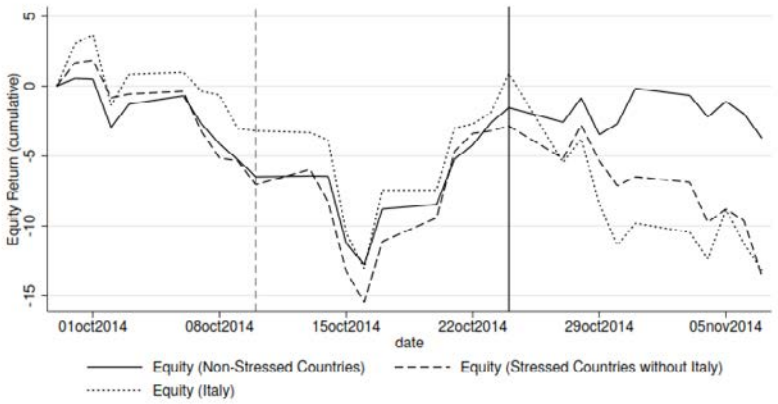
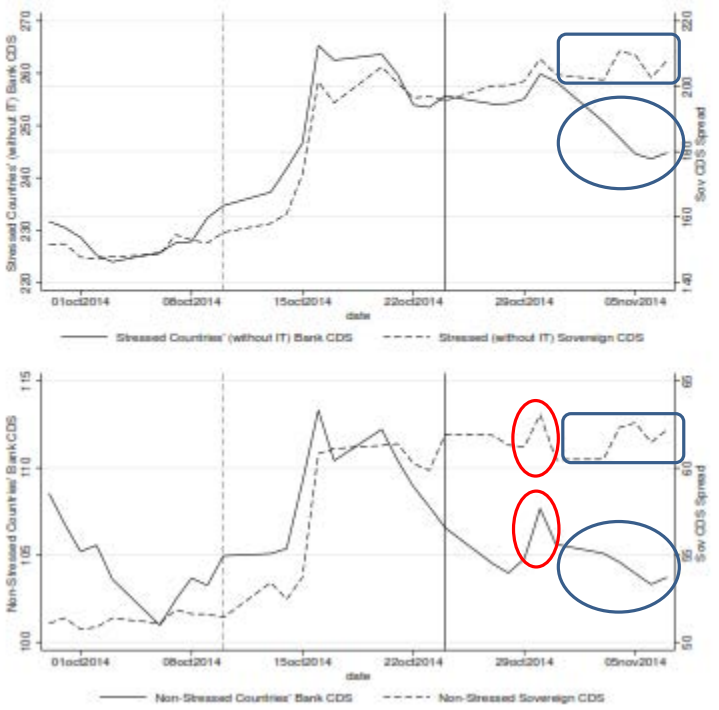


Figure 3: Bank CDS and sovereign CDS in the euro area

CDS levels for both banks and sovereigns within the euro area (except Italy) from 29 September 2014 to November 2014. In each panel the dashed vertical line marks the start of the Soft Info period, while the solid vertical line marks the announcement of the CA results on 26 October 2014. The top panel plots average CDS levels for stressed countries' banks' CDS (solid line), and stressed countries' sovereign CDS (dashed line), excluding Italy. The middle panel plots average CDS levels for non-stressed countries' banks' CDS (solid line) and non-stressed countries' sovereign CDS (dashed line). The bottom panel refers to Italy.



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Comments: Methodology

3. Structural change of the *domestic* bank-sovereign nexus:

- The domestic bank-sovereign nexus was not affected in "stressed" countries. The authors interpret this as evidence of stressed sovereigns being unable to provide a backstop to their own banking sectors.
- The domestic bank-sovereign nexus becomes significant for "non-stressed" countries. The authors interpret this as evidence of risk sharing across euro area countries, as the CA kick-started single banking supervision.
- **Comment:** Is the increased significance of the nexus in "non-stressed" countries due to the fact that some of their banks issue CDS, or hold distressed debt?
- Controlling for liquidity in CDS (e.g., volume): Another view could be that CDSs in "stressed" countries trade less. Therefore, investors use a "second best" alternative to acquire protection for the most correlated, but "non stressed" entities.
- In addition, it is difficult to separate the portion of the CDS that can be attributed to the issuer and to the notional entity. Additional distress for issuers could lower CDS spreads and inhibit the domestic bank-sovereign nexus for "stressed" countries.

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Comments: Methodology

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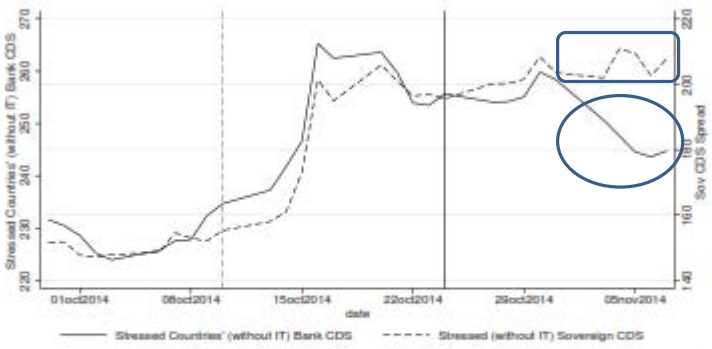

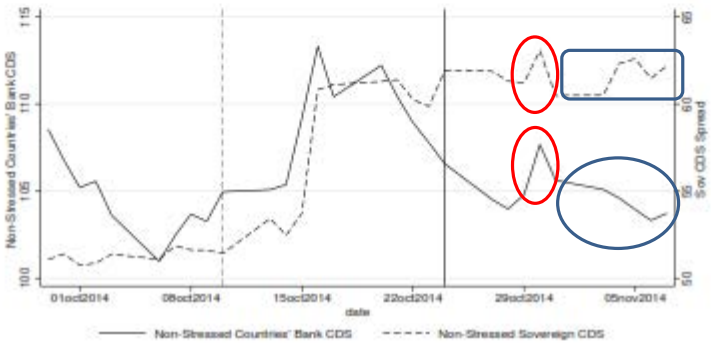

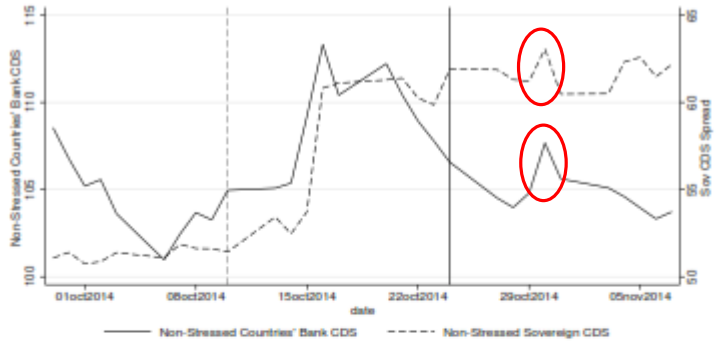

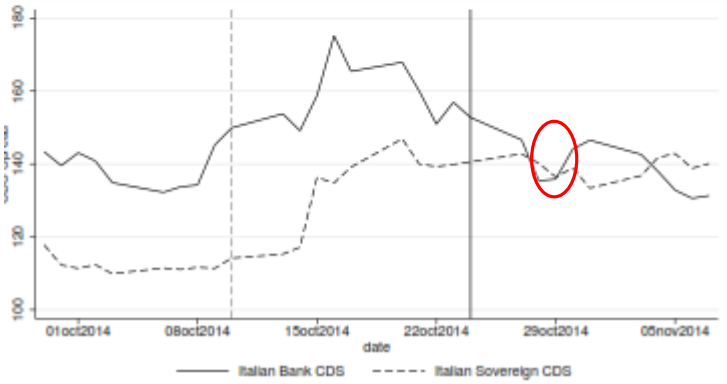

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Comments: Methodology

4. The *cross border* bank-sovereign nexus:

- A decline in the equity market value of banks located in stressed countries is associated with an increase in perceived sovereign risk of non-stressed countries in the euro area. This is the case after the completion of the CA, and not before.
- **Comment:** Why are average equity prices of banks in "stressed" counties in the RHS of the specification? Do the results hold if you run it on CDS spreads?
- Could the exercise be repeated for previous stress test results, such as those undertaken by the European Banking Authority between 2010 – 2013?

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Comments: Transmission channels

- **What happened to banks and sovereigns in jurisdictions not in the euro area (e.g., US, UK, etc.)? Is there a *cross border* bank-sovereign nexus with these countries?**
  - The difference between the effect on euro area entities and non-euro area entities is more likely to be due to the proposed transmission channels.

- **Can we disentangle between implicit and explicit guarantees?**
  - Market-based expectation of the commitment of non stressed (i.e. core) countries to preserving the euro area.

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Comments: Bank-sovereign causal link

"Changes in sovereign CDS premia after the announcement of the CA results are plausibly due to the arrival of adverse news about the health of the banking sector, and not due to new information about sovereign risk."

- However, future sovereign tax revenues depend on domestic economic growth.
- Domestic economic growth itself depends on the economic growth of other euro-area countries, particularly for exporting nations.
- The growth of these other euro-area counties itself depends on their banks' lending behavior.

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Other comments

- Present disaggregated data for each one of the countries in the "stressed" and "non-stressed" groups.
  - It would be good to see that the relationships are not being driven by one or two countries (e.g., France for CDS spread staying high after CA).
  - This would also help to see who is leading the chare in absorbing "stressed" countries' banking risk.

- I am still not 100% clear on how single banking supervision increases risk sharing at a sovereign level.

- It is not clear what section 4.2 contributes to the paper. Maybe provide a better explanation of why the CDS-equity sensitivities should be different for "stressed" and "non-stressed" countries.

- Table 2 should be presented as a panel of charts

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Overall impression

- Very nice paper
- Interesting and policy relevant contribution
- Nicely executed
- Must read on the flight back home!

Thank you!