BANK FOR INTERNATIONAL SETTLEMENTS

Discussion
Accouting for Low Long-Term Interest Rates: Evidence from Canada

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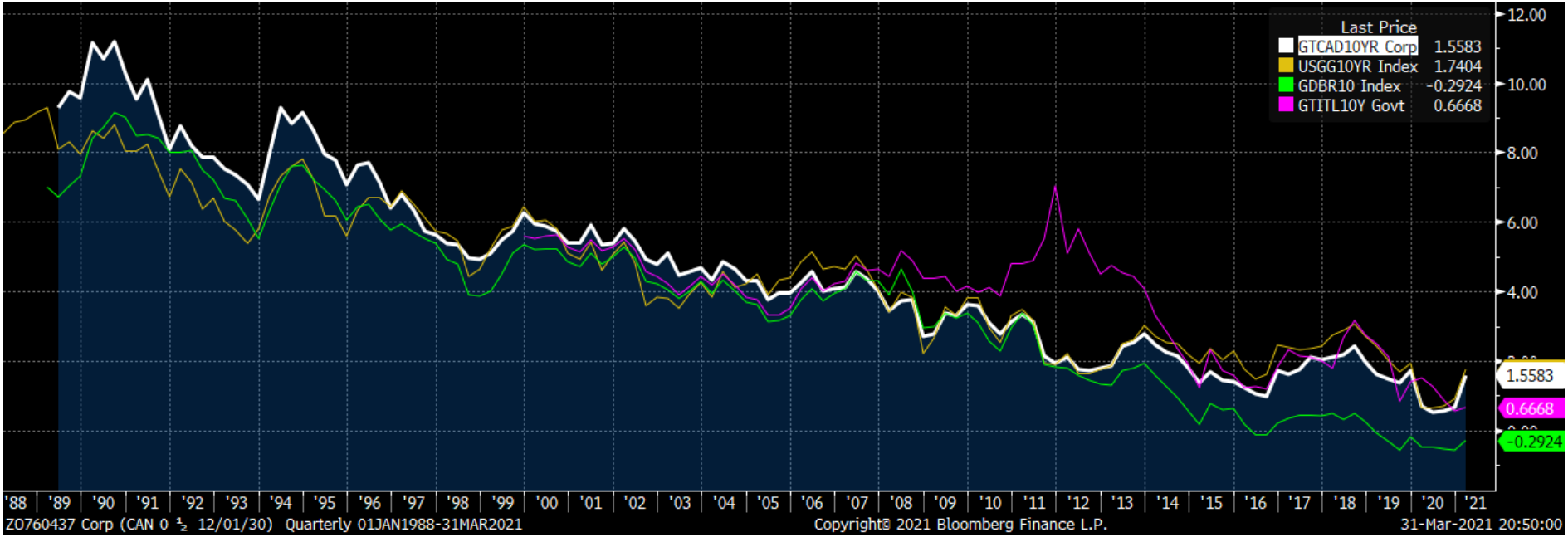
The views expressed in this presentation are my own and do not necessarily reflect those of the BIS.

The paper in a nutshell

Focus: drivers underlying the decline in long-term nominal interest rates in Canada

- Background: falling long-term nominal interest rates across AEs
- Importance: monetary policy vs structural change, assumption regarding discount rate for pension funds, etc
- Why Canada: no ZLB, no QE and minimal sovereign credit risk



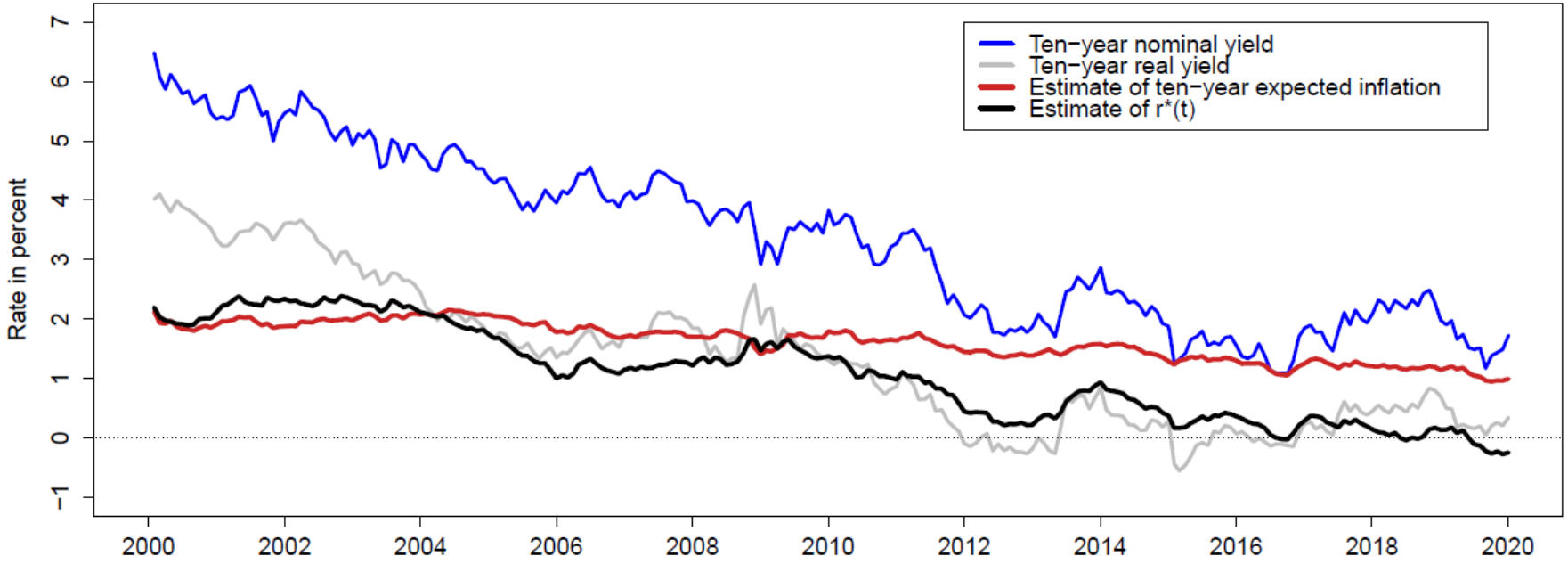
Approach:DTSM of nominal and real yields

$$
\begin{aligned}
y_t^n &= \mathbb{E}_t \sum_{\tau=0}^{n-1} r_{t+\tau} + \text{term premium}_t^n \\
&= \underbrace{\mathbb{E}_t \sum_{\tau=0}^{n-1} r_{t+\tau}^R + \text{real term premium}_t^n}_{y_t^{R,n}} + \mathbb{E}_t \sum_{\tau=0}^{n-1} \pi_{t+\tau} + \text{inflation premium}_t^n,
\end{aligned}
$$

where $y_t^{R,n}$ can be obtained from Canadian government real return bond price after adjustment of liquidity premium.

Conclusion: the drop in r^* largely account for the lower nominal interest rate since 2000

- $\Delta y_t^{10\text{yr}} \sim 450\text{bps}$
- $\Delta r^* \equiv \frac{1}{5}\mathbb{E}_t \sum_{\tau=5\text{yr}}^{10\text{yr}} r_{t+\tau}^R \sim 200\text{bps}$



Comment: A very nice paper with a few details to nuance

- The role of policy expectation after the GFC may not be negligible.
- Canada may not be that different.
- What are economic implications of $\mathbb{P}$ dynamics restriction.

The role of monetary policy expectation after the GFC may not be negligible.

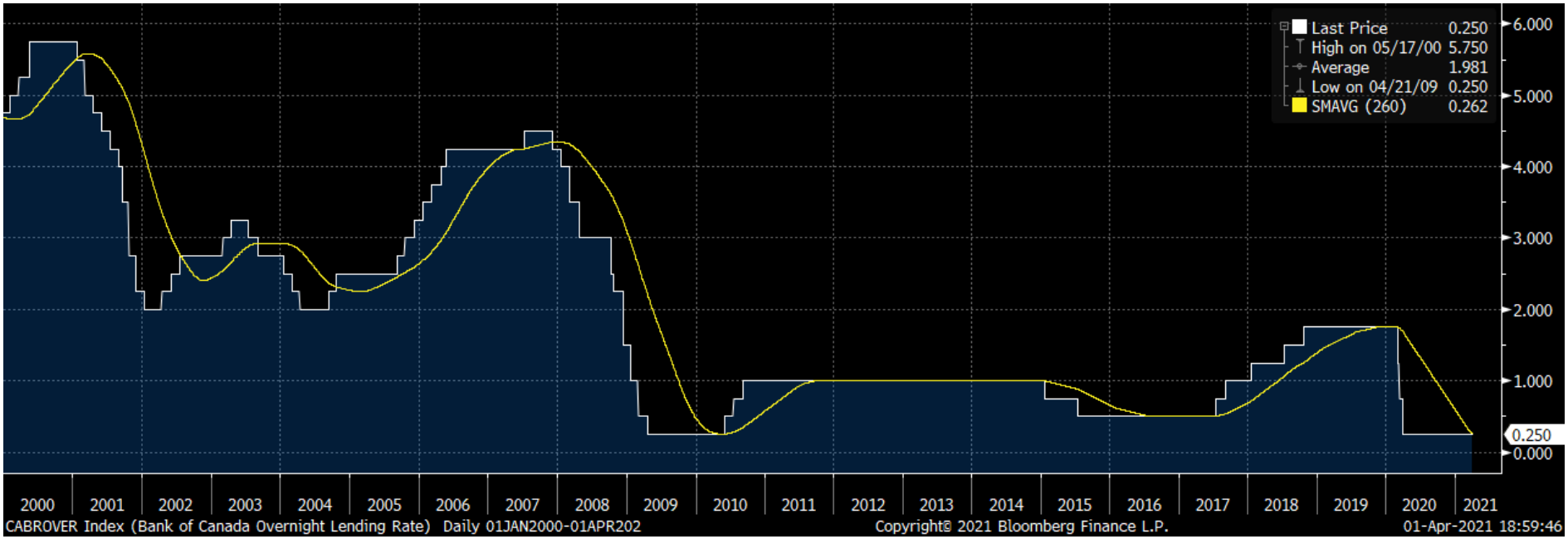
- Decomposing the 10-year nominal yield

$$\underbrace{\Delta y_t^{10\text{yr}}}_{450bps} = \underbrace{\Delta y_t^{R,10\text{yr}}}_{400bps} + \underbrace{\Delta\text{expected inflation}_t}_{50bps} + \underbrace{\Delta\text{inflation premium}_t}_{0bps}$$

$$\underbrace{\Delta y_t^{R,10\text{yr}}}_{400bps} = (\underbrace{\Delta y_t^{R,5\text{yr}}}_{450bps} + \underbrace{\Delta y_t^{R,5\text{yr}5\text{yr}}}_{350bps}) \times 0.5$$

$$\underbrace{\Delta y_t^{R,5\text{yr}5\text{yr}}}_{350bps} = \underbrace{\Delta r^*}_{200bps} + \underbrace{5\text{yr}5\text{yr real term premium}}_{150bps}$$

- Policy rate has been at persistently low levels post GFC in both nominal and real terms.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Low on 04/21/09 0.250
SMAVG (260) 0.262
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2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021
CABROVER Index (Bank of Canada Overnight Lending Rate) Daily 01JAN2000-01APR202
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01-Apr-2021 18:59:46


Last Price 1.1
High on 02/28/03 4.7
Average 1.9
Low on 07/31/09 -0.9
SMAVG (60) 1.6
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CACPIYOY Index (STCA Canada CPI YoY NSA 2002=100) Monthly 01JAN2000-28FEB2021
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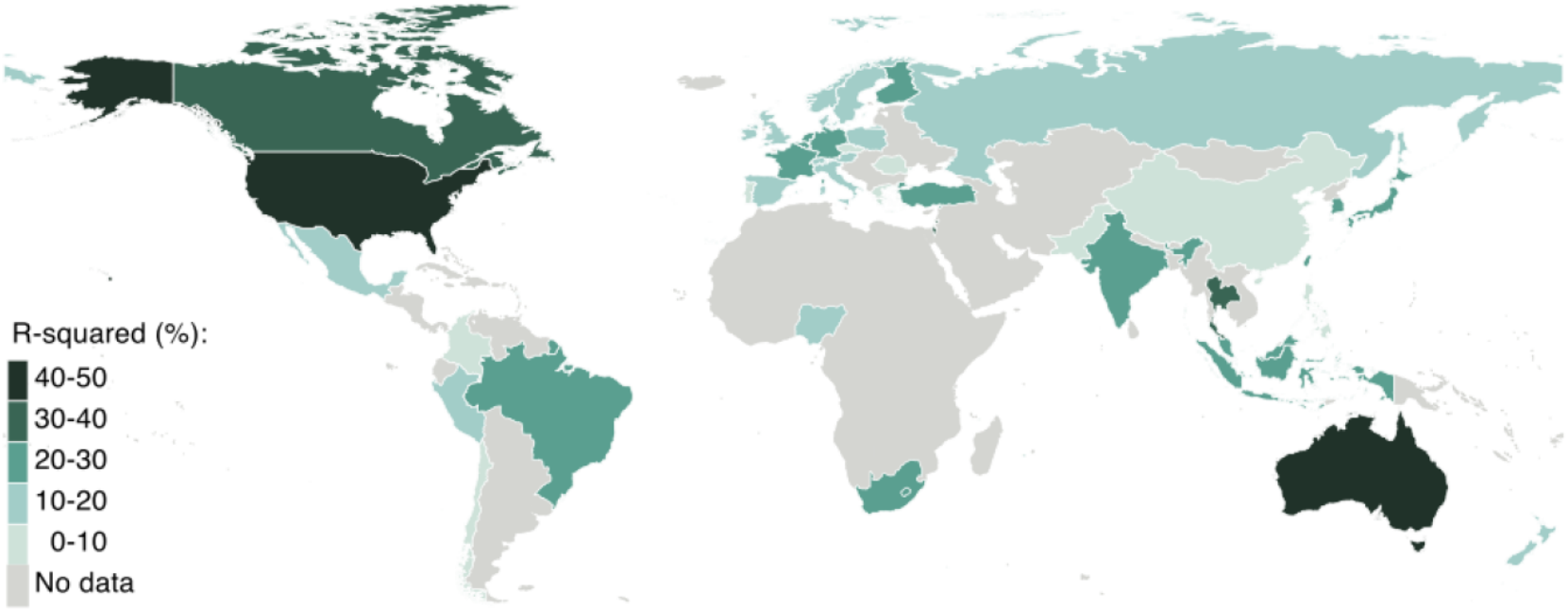
Canada may not be that different.

- QE: spillover from other AEs.
- ZLB: flatness instead of zeros matters.

- Significant spillover from the Fed to Canadian government bond yields, likely through term premium channel.

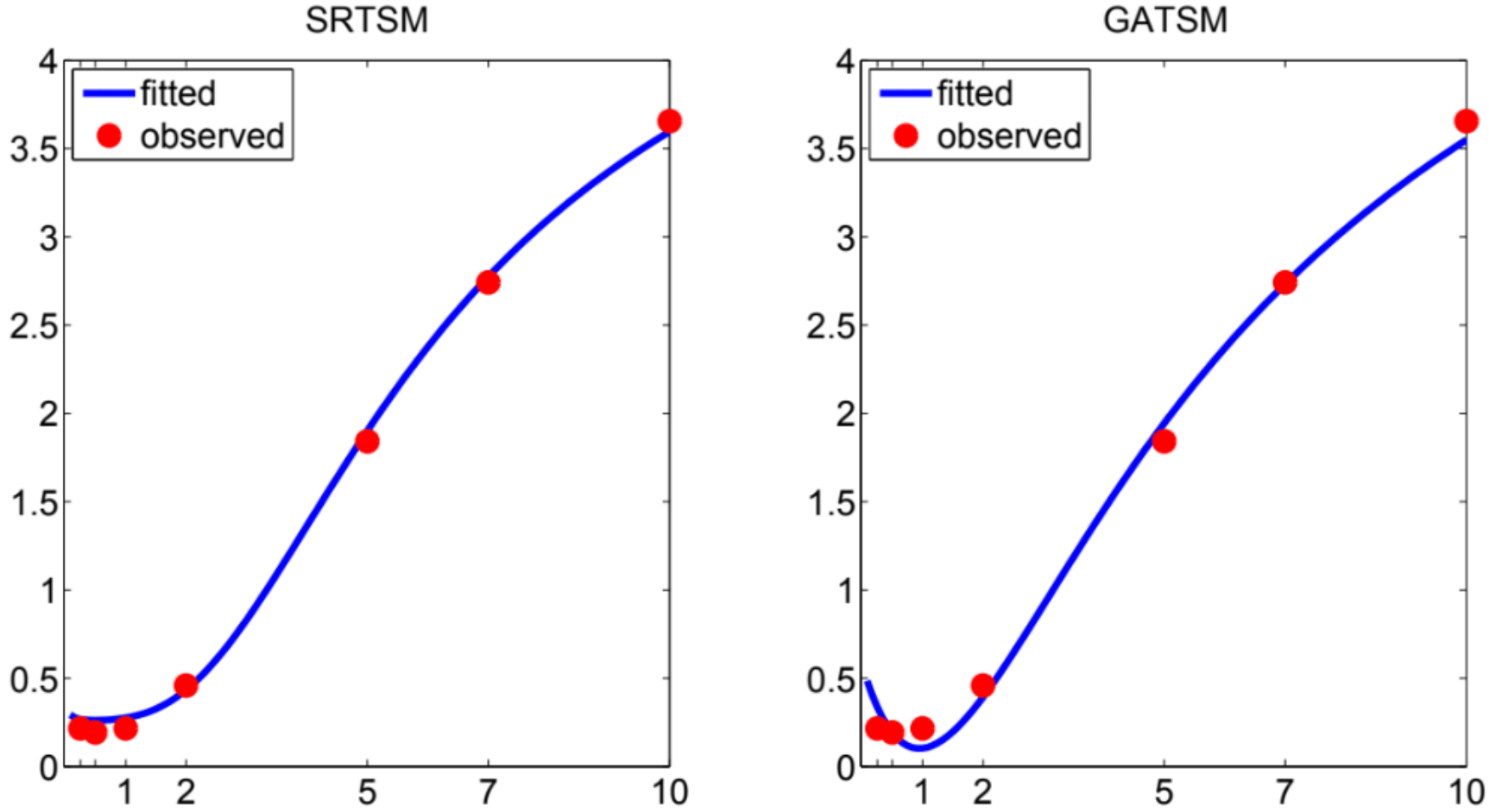
Figure 3: Global Map of Fed Spillovers



Source: Kearns et al (CEPR DP, 2020)

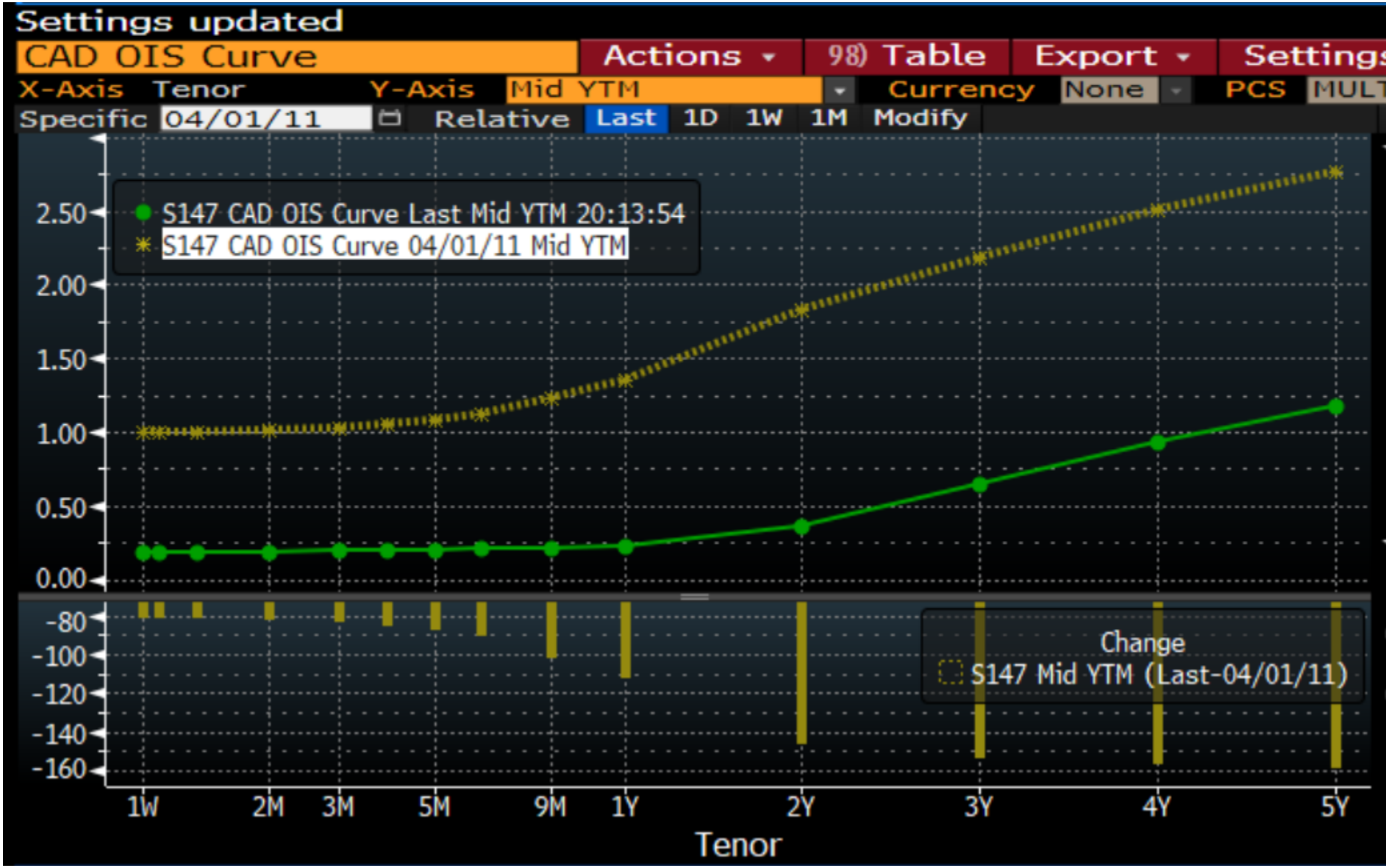
- GATSM cannot capture the flat short-end, which is a feature for the yield curve at the ZLB...

Figure: Average forward curve in 2012



Source: Wu and Xia (JMCB, 2016)

- ...and ELB.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S147 CAD OIS Curve 04/01/11 Mid YTM
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S147 Mid YTM (Last-04/01/11)
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3Y
4Y
5Y
Tenor

What are economic implications of $\mathbb{P}$ dynamics restriction

- $\mathbb{P}$ is key for expectation and risk premium decomposition.
- Statistical approach: BIC
- Economic implication regarding price of risk? What are the factors explaining time-variation in price of risk (columns)? Which co-variances commanding risk compensation (rows)?

$$\Gamma_t = \gamma_0 + \gamma_1 X_t$$
$$\gamma_1 = \Sigma(\kappa^{\mathbb{P}} - \kappa^{\mathbb{Q}})$$