Discussion of

"Can Oil Prices Forecast Exchange Rates?"

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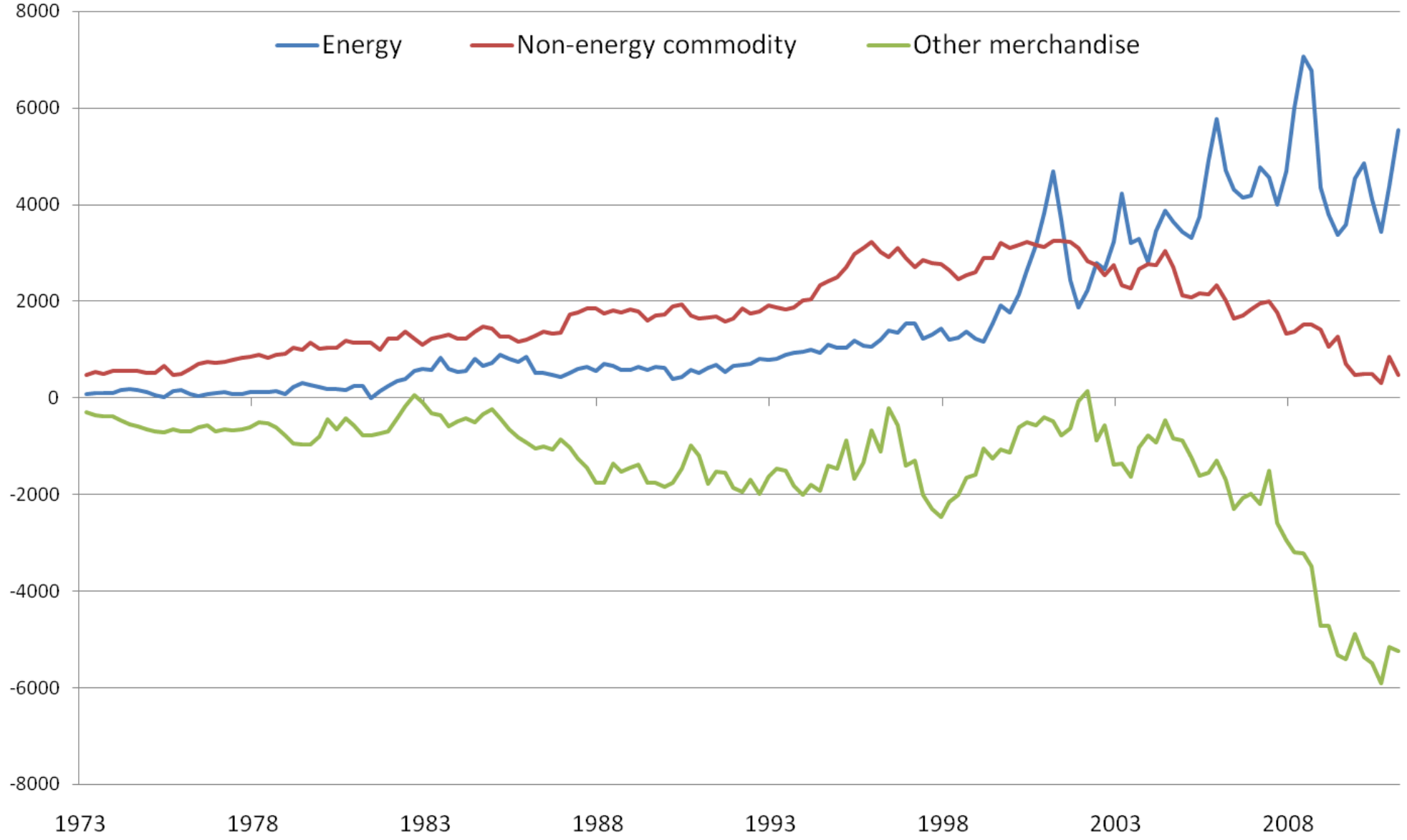
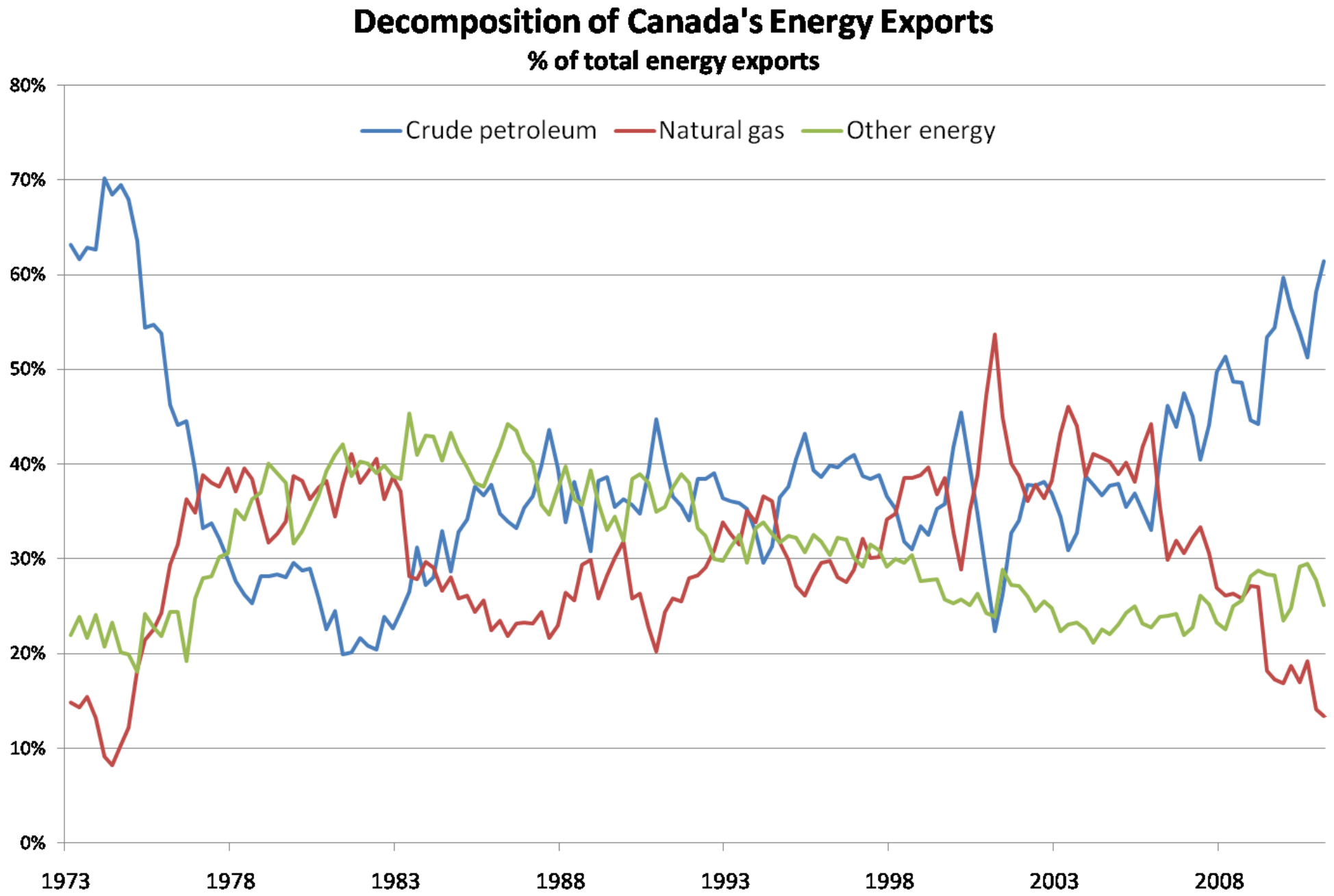
The views expressed in this presentation represent the author's own and should not be attributed to the Bank of Canada.

Canada's net exports

millions of $current, SA



Source: Statistics Canada.



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Note: The figure updates Figure 3 in Issa, Lafrance and Murray (2008)

Oil Prices and the Canadian Dollar

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- Structural break in empirical relationship between energy prices and CAD in early 1990s (Issa, Lafrance, and Murray 2008).

- Change in energy policies at national and provincial level in 1992/93 led to large net direct investment flows.

Outline

1. Reconciling high- and low-frequency results
2. Economic significance of forecast-accuracy improvements
3. Nonlinear models
4. Other comments

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Oil price increases → USD revenue increases (inelastic oil demand)
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- Is a model based on *macroeconomic* fundamentals the right way to think about the response of the CAD to oil price shocks at high frequency?

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- **Portfolio channel**: Returns on Canadian assets adjust to reflect shifts in expectations about developments in global commodity markets, causing a capital inflow and CAD appreciation.

- But this suggests using CAD to forecast oil prices at daily frequency.
  — Evidence of ex ante forecastability from CAD to oil prices at monthly (Alquist, Kilian, and Vigfusson 2011).

Economic Significance of Forecast-Accuracy Improvements

- Oil-price model statistically outperforms interest-rate model relative to a random walk.

Figure 1(a). Oil Price Model. Forecasting Ability in Daily Data

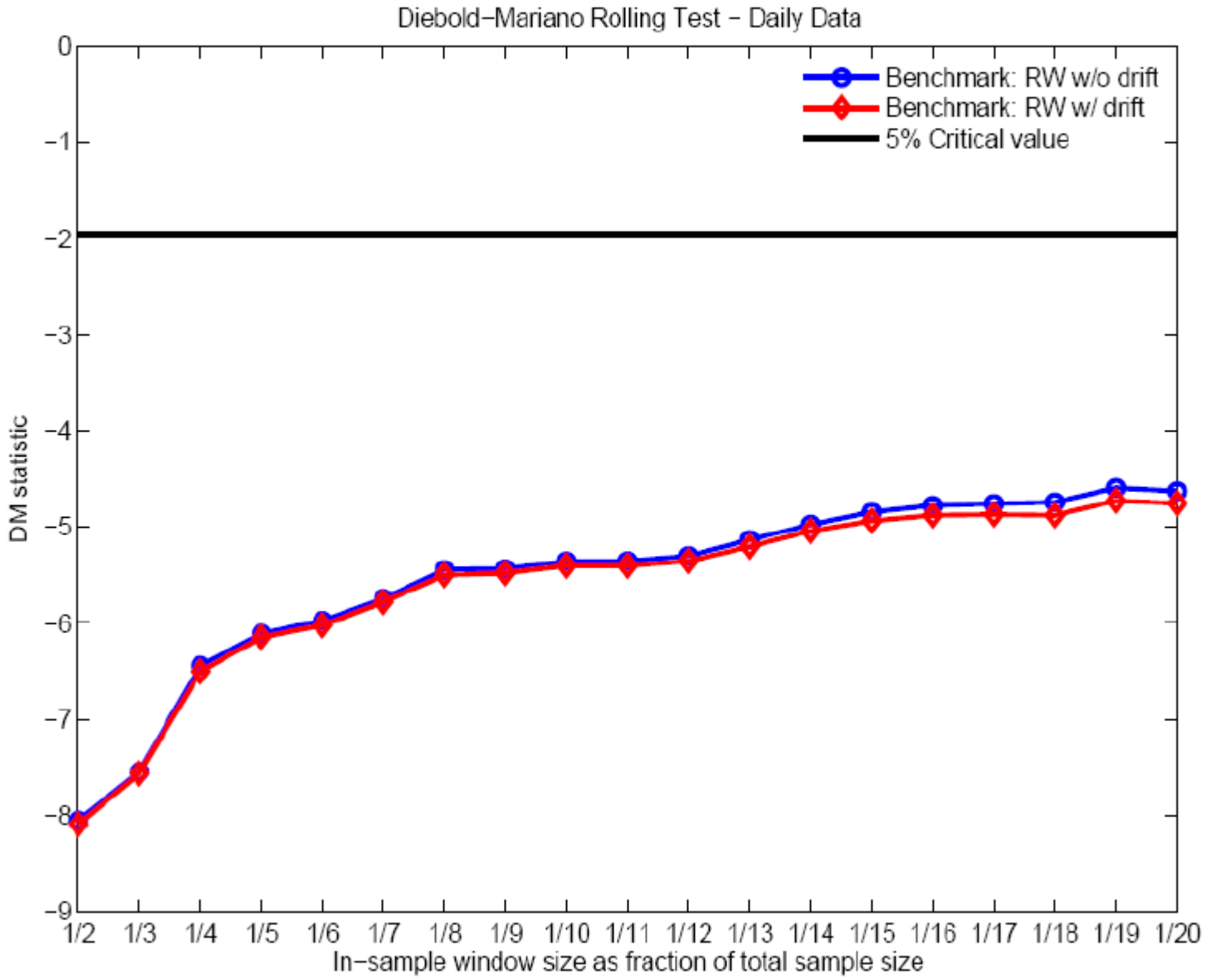
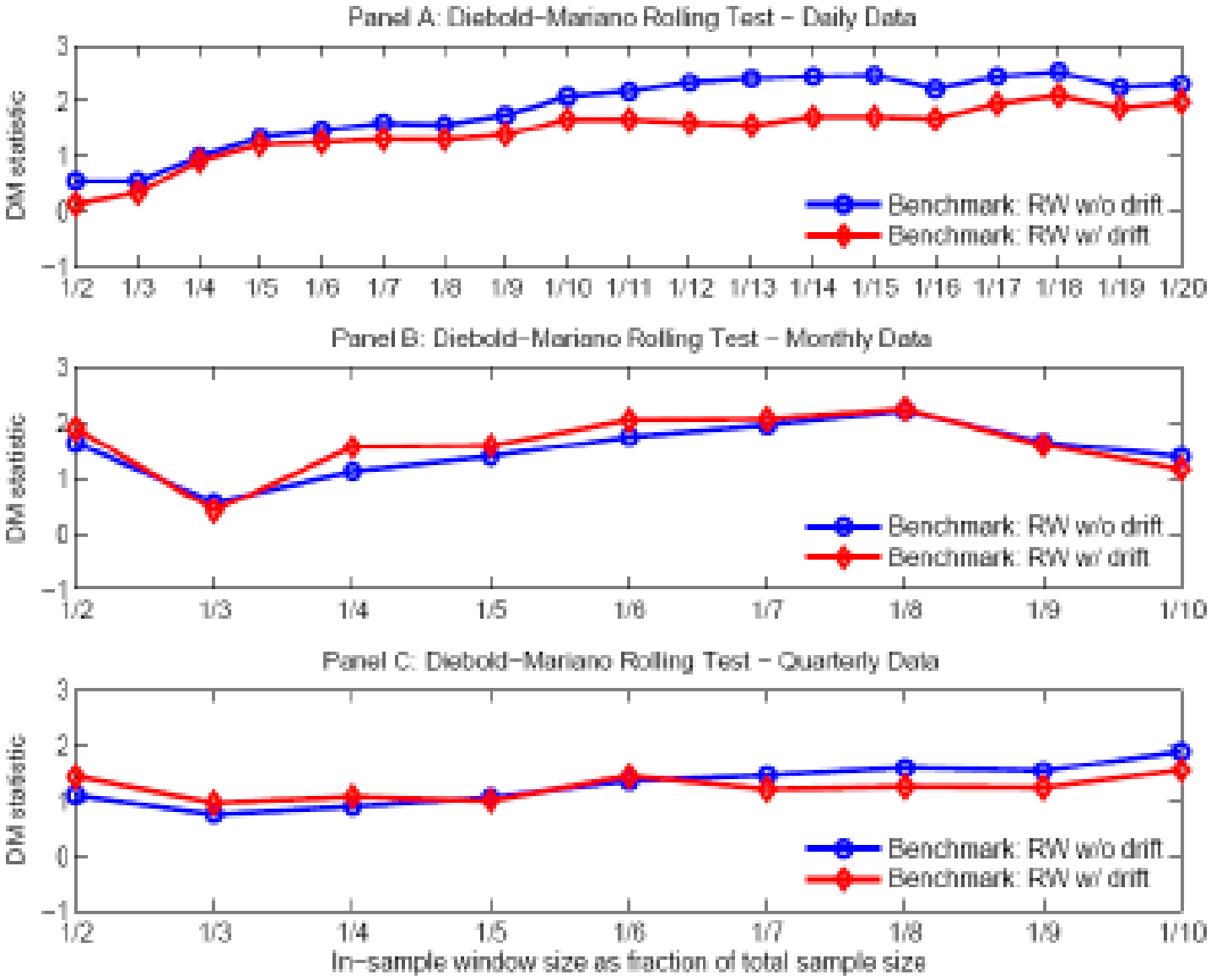


Figure 2. The Interest Rate Model.



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- MSPE ratios range between 0.91-0.94.
- Larger than improvements for a set of fundamentals-based models at *quarterly* frequency (Cheung, Chinn, and Garcia Pascual 2005).
- Smaller than improvements for USD/EUR rate (0.81-0.96) using *ex-ante* order flow at 1- to 20-day horizon for 3-year sample period (Evans and Lyons 2005).

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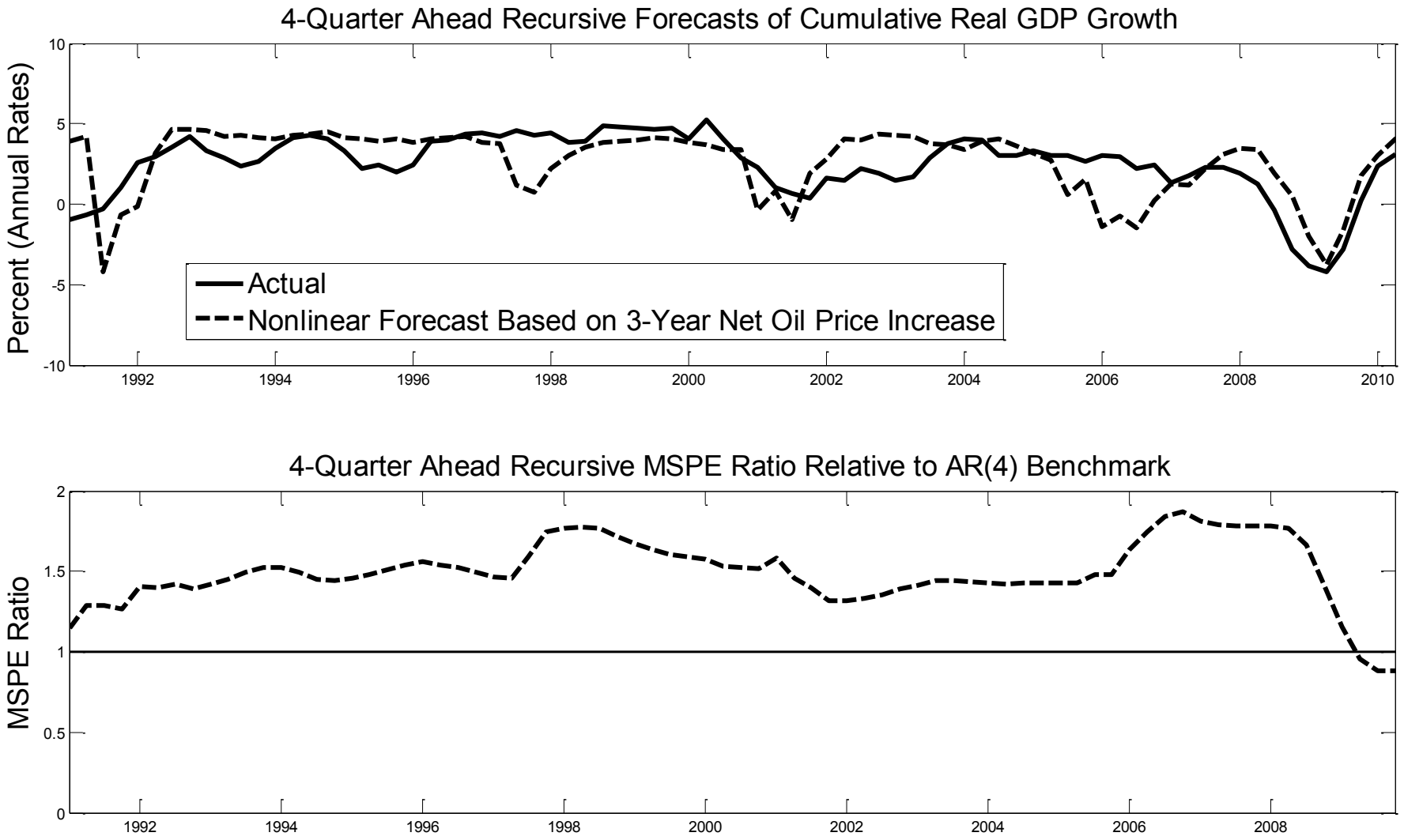
- Alquist, Kilian, and Vigfusson (2011): Improvements in forecast accuracy driven exclusively by simultaneous collapse of US GDP growth and oil prices in 2008.


4-Quarter Ahead Recursive Forecasts of Cumulative Real GDP Growth
Percent (Annual Rates)
10
5
0
-5
-10
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
Actual
Nonlinear Forecast Based on 3-Year Net Oil Price Increase
4-Quarter Ahead Recursive MSPE Ratio Relative to AR(4) Benchmark
MSPE Ratio
2
1.5
1
0.5
0
1992
1994
1996
1998
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Other Comments

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  — Intuition: Forecaster's loss function differs from loss functions implicit in model selection criteria.

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- Given the sensitivity of nonlinear model's forecast accuracy improvements to sample period, unsurprising that it does not work well for the CAD.