Analysing the terms of trade effect on GDP and employment in the presence of low real unit labour costs

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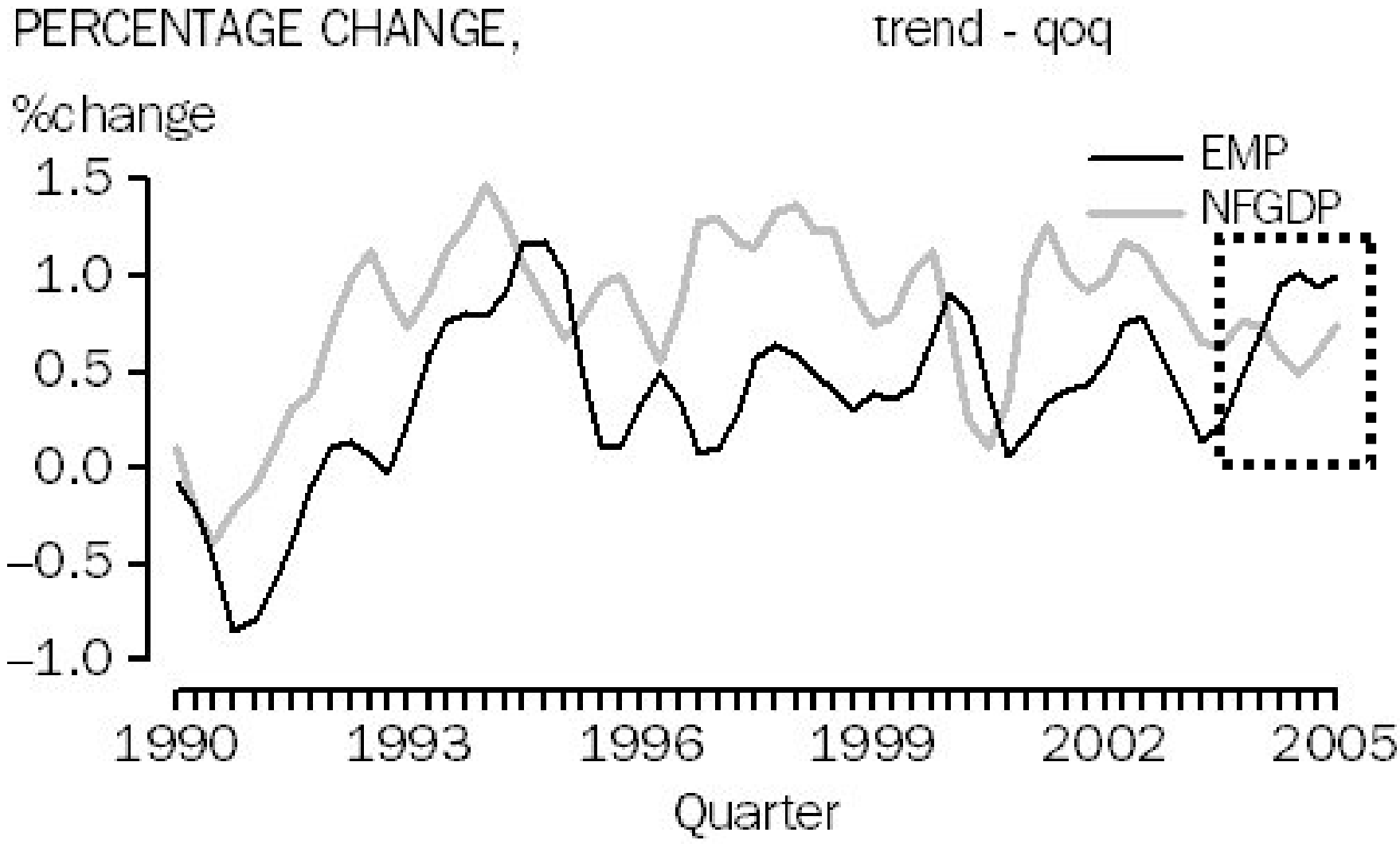
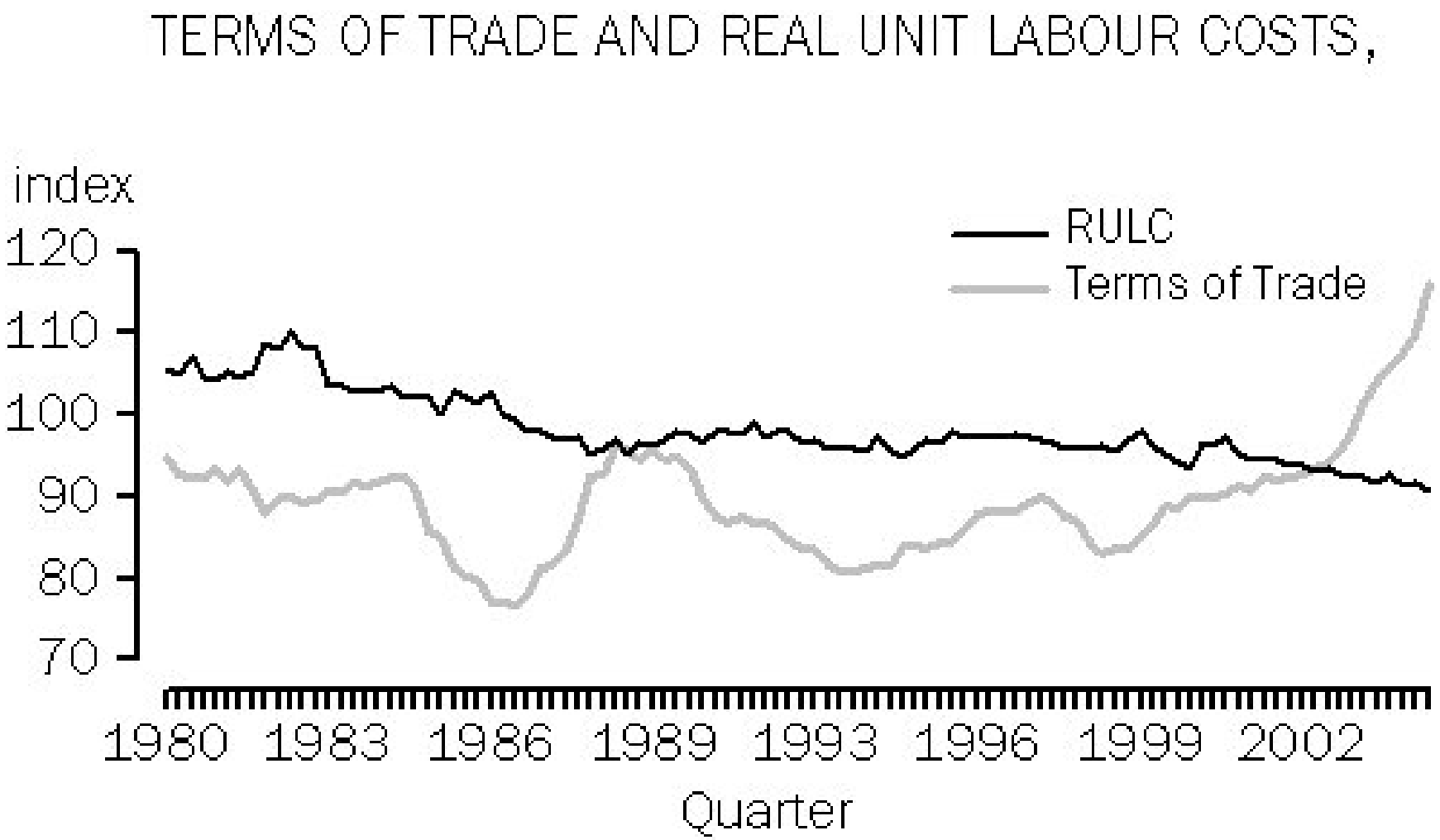
Outline

- Background and motivation
- Descriptive and business cycle analysis
- VECM exploratory analysis
- Remarks

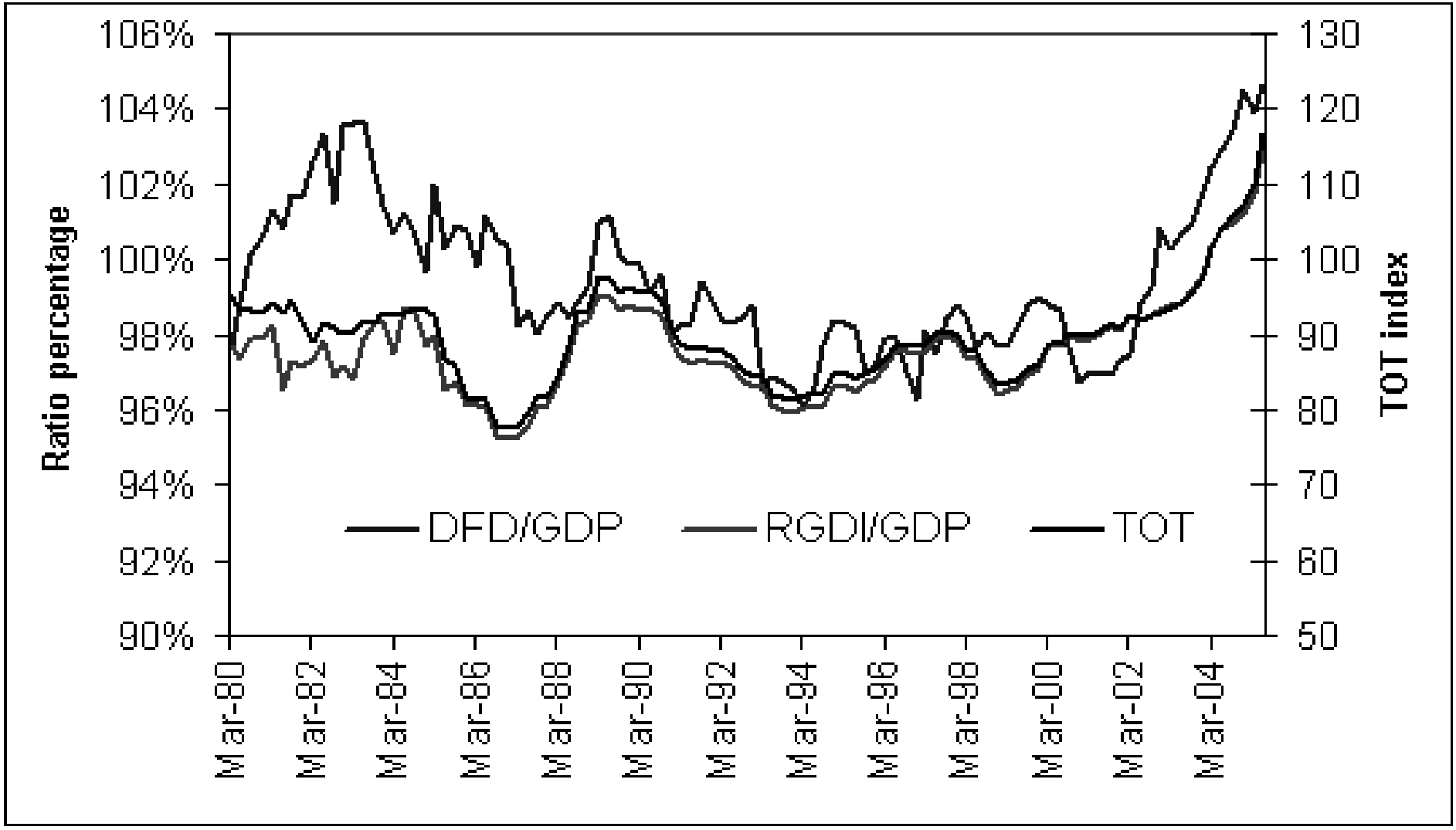
Background & motivation



Background & motivation



Descriptive analysis



Descriptive analysis

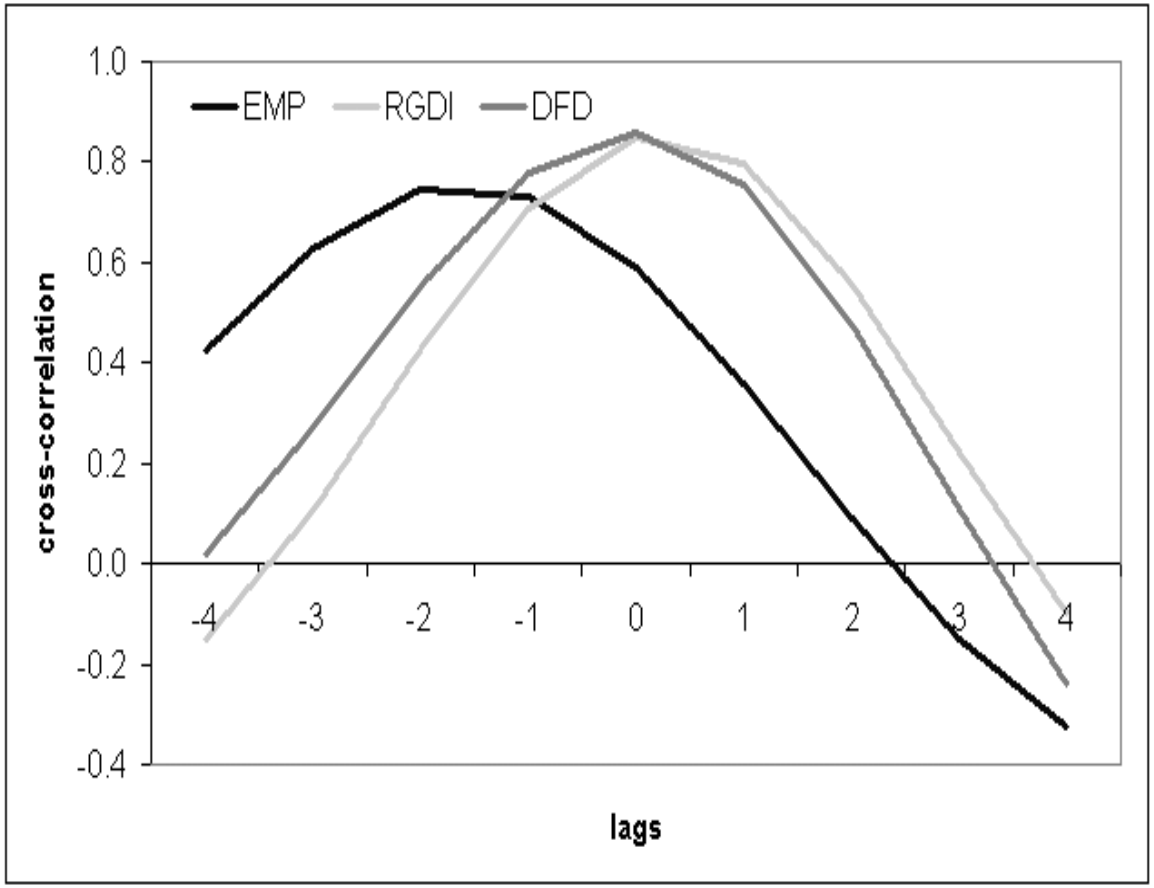
- The terms of trade effect, real gross domestic income (RDGI) and domestic final demand (DFD)

  - Relative price change not directly reflected in volume measure of GDP
  - Increased real purchasing power of the Australian economy
  - Boost to real incomes
  - Flow on to domestic demand

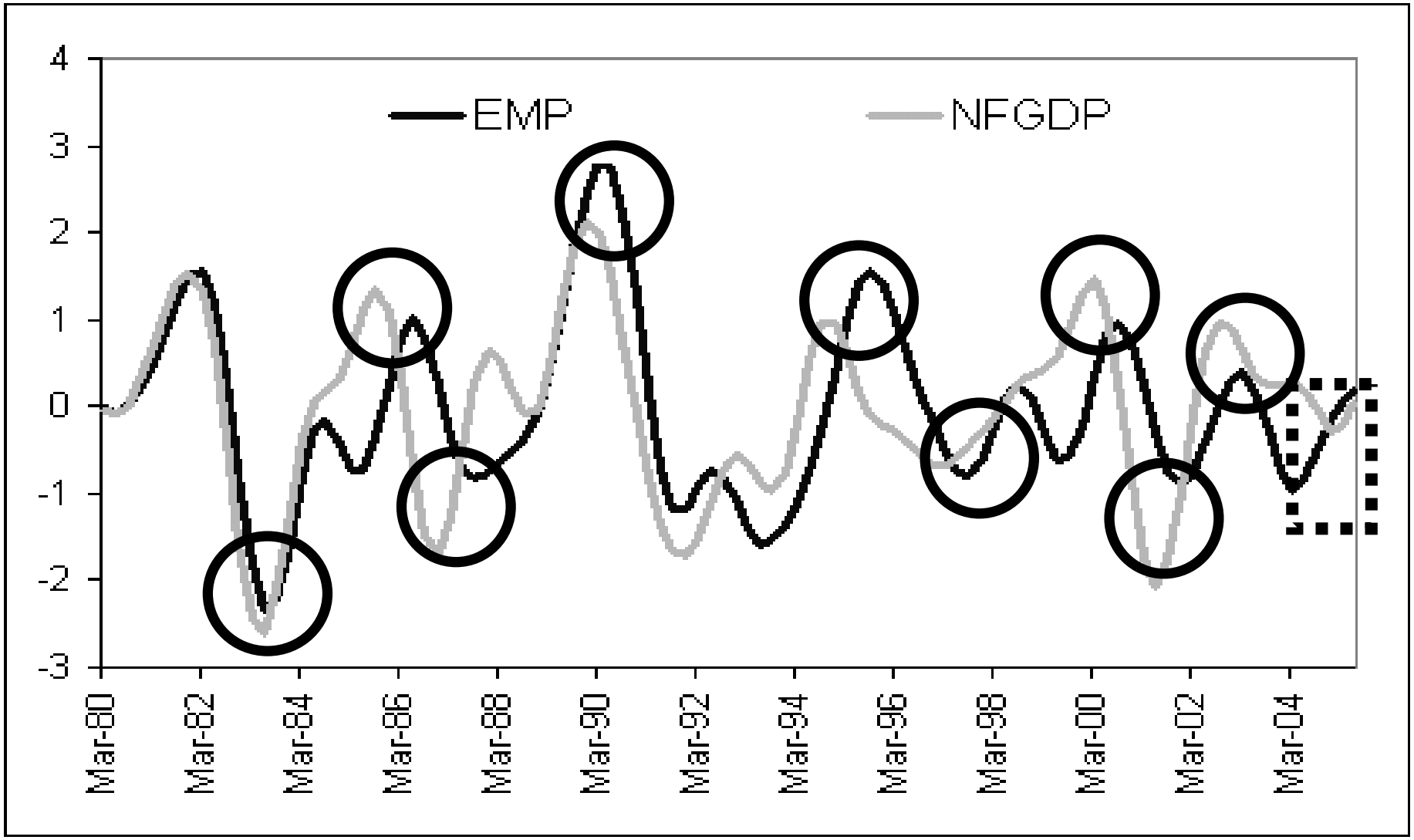
Business cycle analysis

- Employment is usually a lagging indicator of GDP.
- RGDI and DFD are usually coincident indicator of GDP
- These usual patterns seem distorted since 2004.

Cross correlation with NFGDP



Business cycle analysis



Aims and VECM approach

- Better understand the relationship between GDP, employment, the terms of trade and labour costs
  - effect of terms of trade shocks?
  - role played by historically low but stable real unit labour costs?

- Can the recent relationship between GDP and employment be explained by these factors?

- Analysis is data driven. No a priori economic structure imposed.

Aims and VECM approach

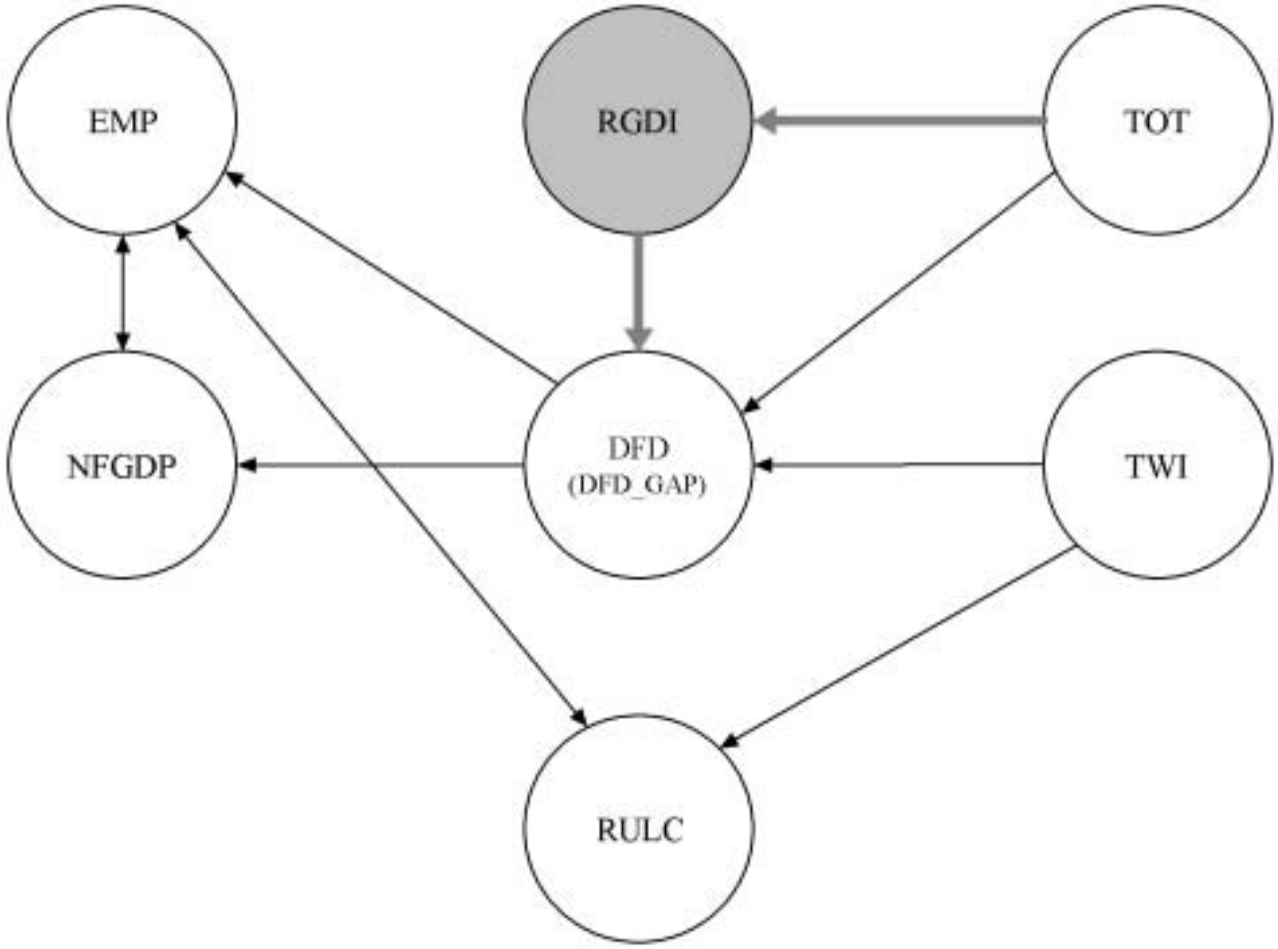
- Multivariate time series model - vector error correction model (VECM).

- Variables chosen:
  - non-farm real GDP (NFGDP)
  - total employed persons (EMP)
  - the terms of trade (TOT)
  - real unit labour costs (RULC)
  - the gap between DFD and GDP (DFD Gap)
  - the trade weighted index (TWI)

- RGDI is directly derived from TOT and GDP and excluded due to collinearity with TOT

Direct and indirect relationships between the variables

- Identified model dynamics - Granger causality tests



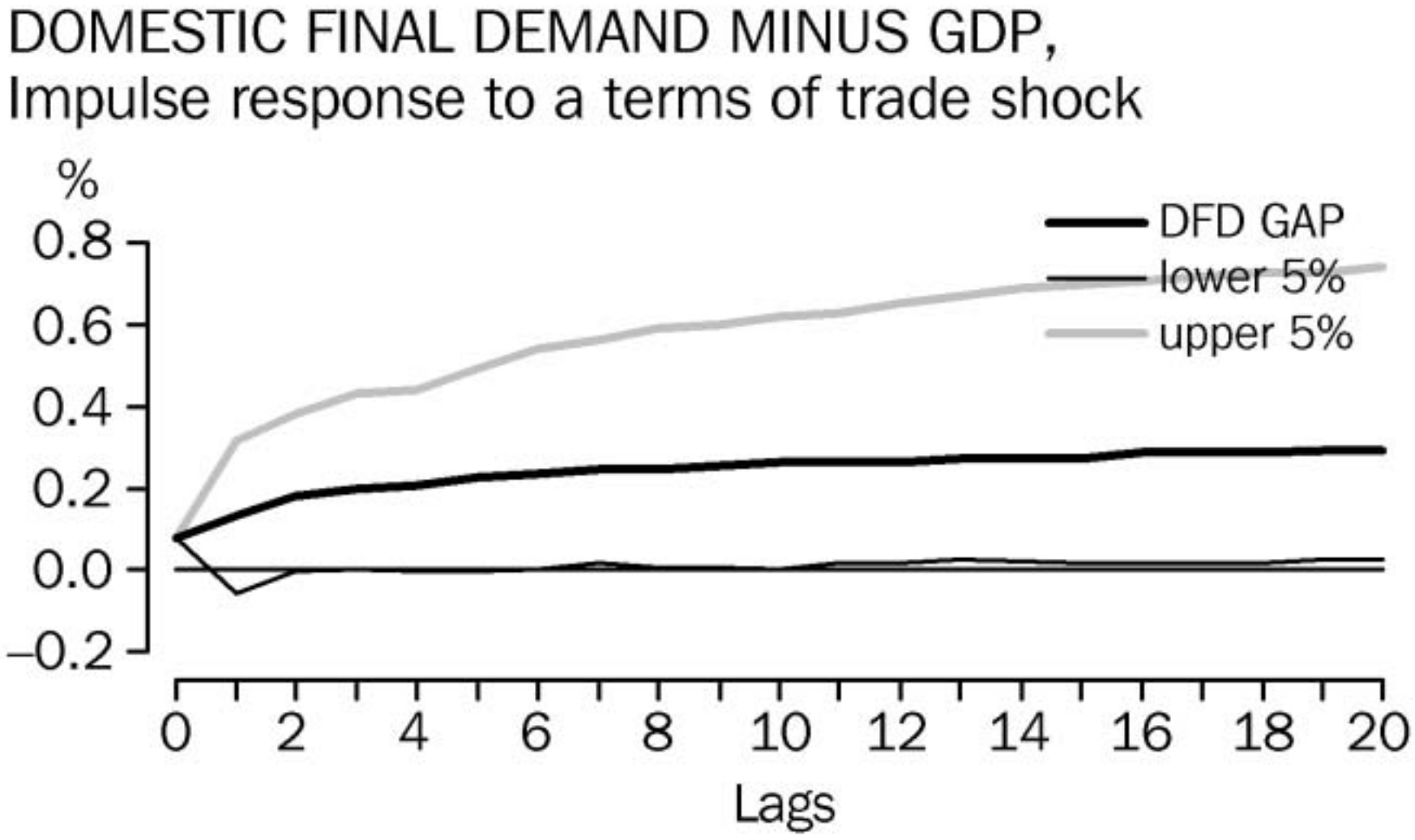
Long run relationships

- Cointegration between GDP, employment and real unit labour costs

$\log(EMP_{t-1})$ =	(t-stats)
0.436 $\log(NFGDP_{t-1})$	(24.383)
-0.649 $\log(RULC_{t-1})$	(-4.526)

  - Low real unit labour costs support the long run level of employment

Effects of a terms of trade shock



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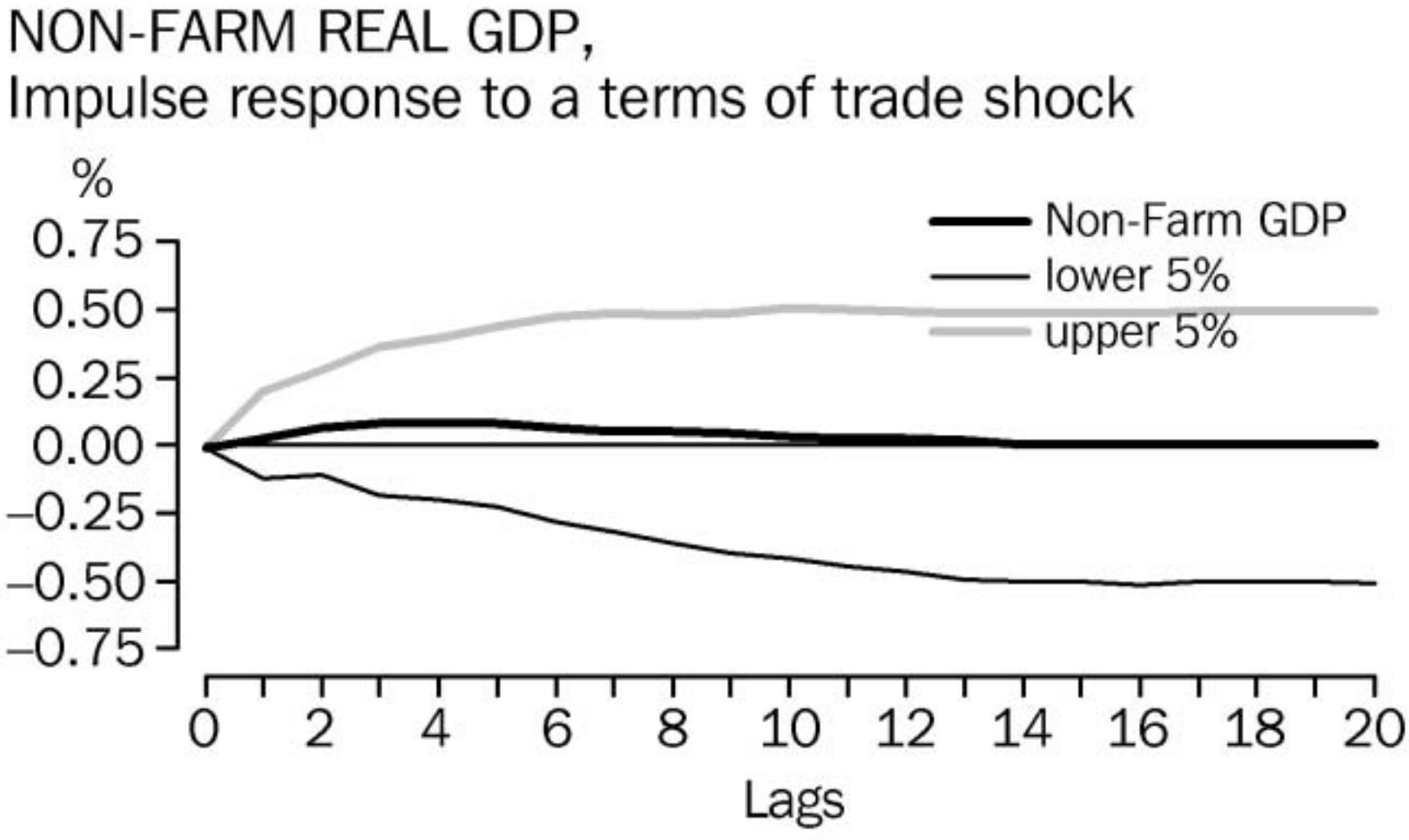

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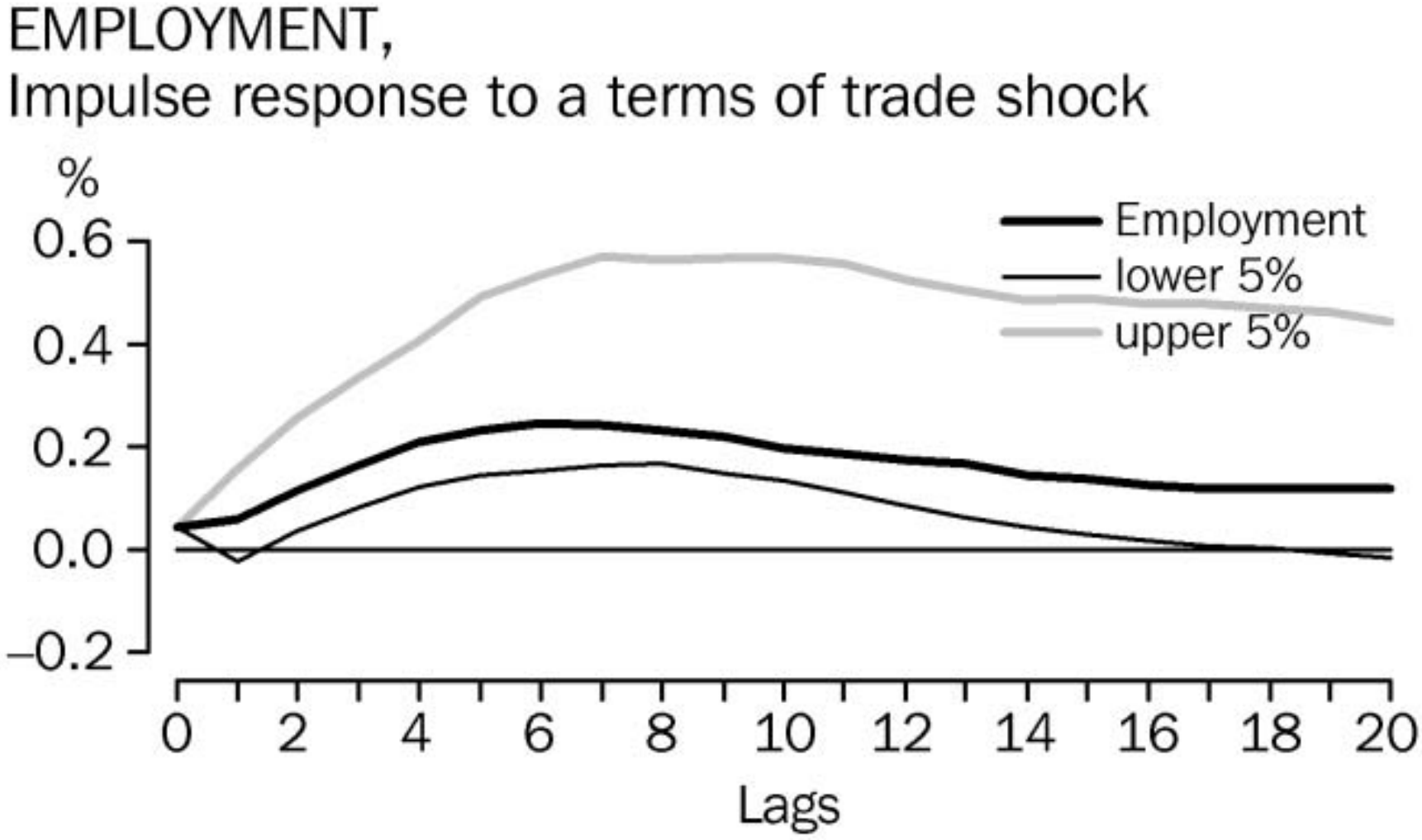
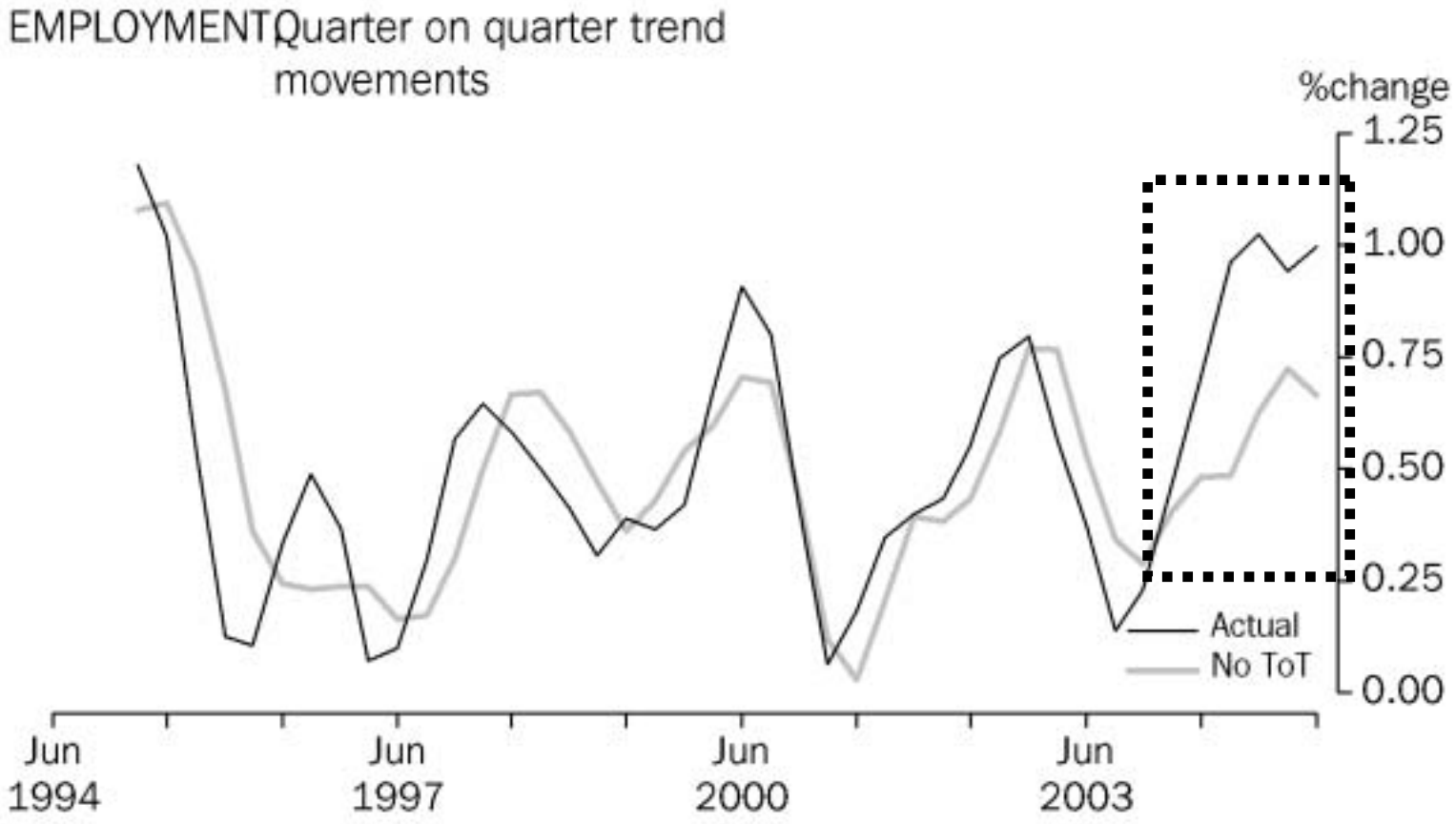


Impact of terms of trade shocks

- Historical Decomposition 1995 - 2005:



Employment growth in 2004-05 is stronger than what it would have been in the absence of terms of trade shocks.

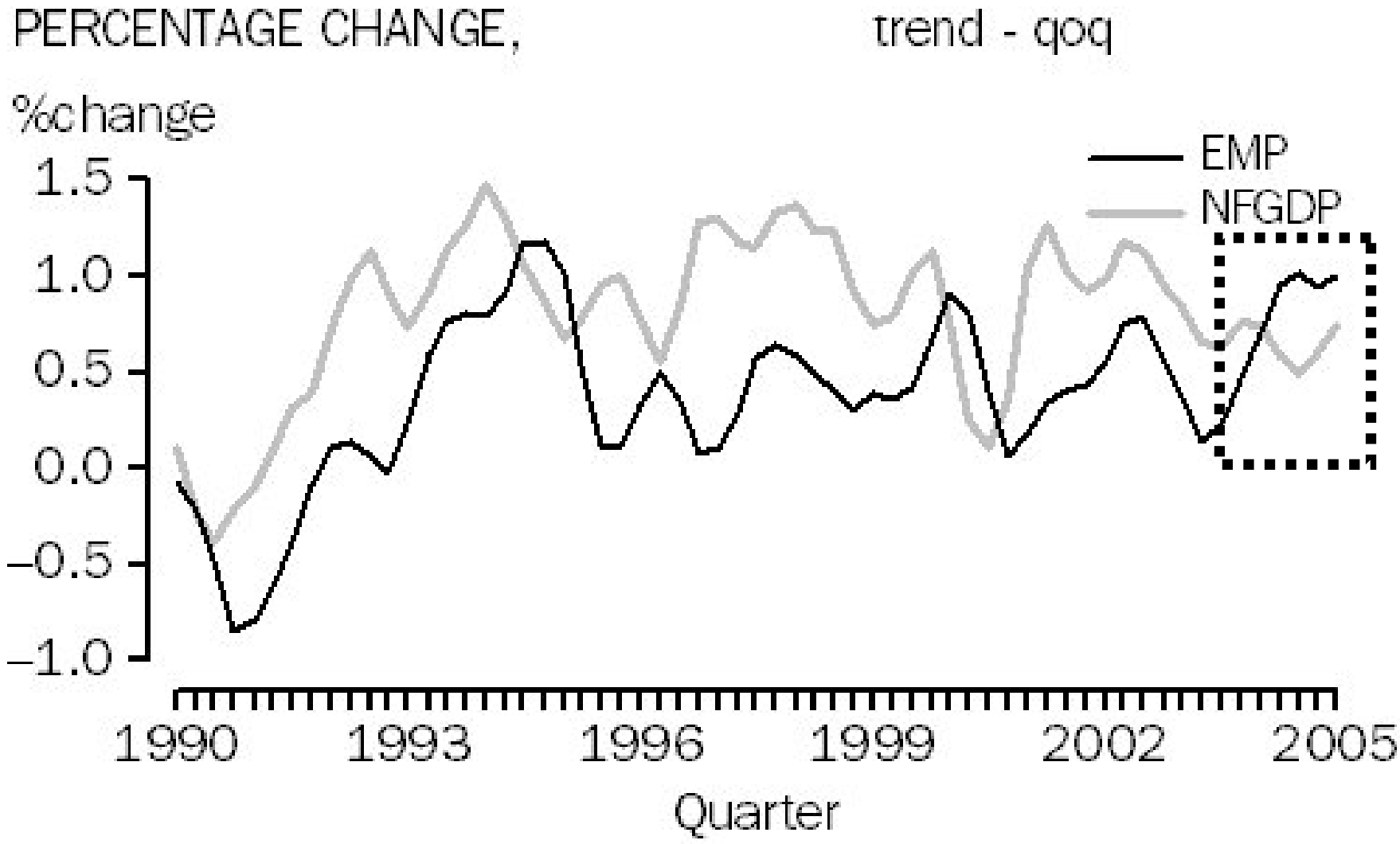
Remarks

- Usual lagging relationship between GDP and employment can be disrupted by various shocks to the economy.

- The VECM suggests that
  - the usual relationship can be altered temporarily by real gross domestic income and domestic final demand induced by a rapid increasing in terms of trade;
  - the macro economic variables under this study still provide a coherent picture of the economy.

- This VECM exercise also paved a methodological way for the ABS to make better data assessment in future.

Questions ?


PERCENTAGE CHANGE,
trend - qoq
%change
EMP
NFGDP
1.5
1.0
0.5
0.0
−0.5
−1.0
1990
1993
1996
1999
2002
2005
Quarter