

# **The Evolution of World Business Cycles**

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# Perspective

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- Global linkages:
  - The world has become more integrated internationally: goods, services, assets, information, and more.
- Question:
  - Do we see tighter international connections (correlations?) in national economic activity as a result?

# Executive summary

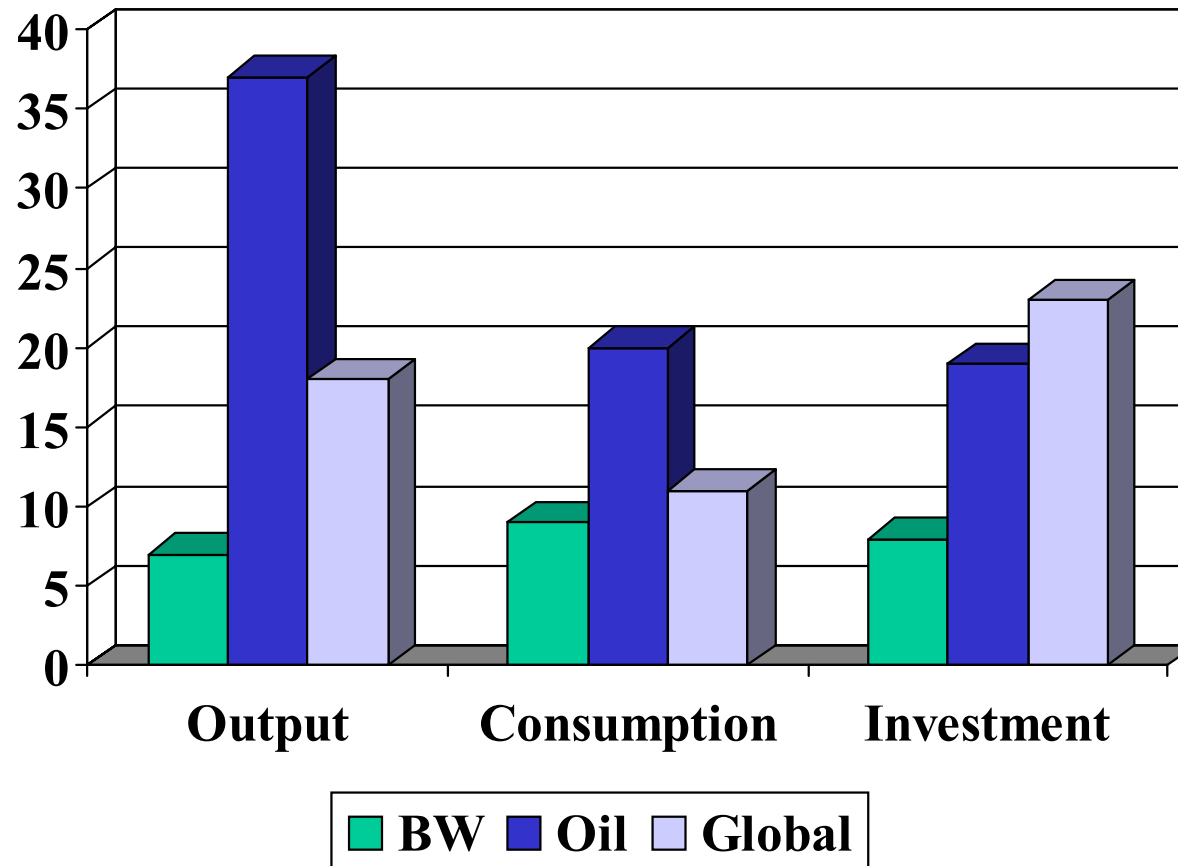
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- Methodology:
  - Estimate factor model for G7 (y, c, i) (world, country, and idiosyncratic factors)
  - Divide sample into 1960-72 (BW), 1972-86 (Oil), 1986-2001 (Global)
- Results:
  - Overall: world factor more important in output than cons or investment
  - Subsamples: world factor most important in oil period (common shock?), second in global period (unexpected?)
  - “Source” variables (oil, terms of trade, interest rates, and govt spending): typically not very important

# Role of “world factor”

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Percent of variance due to world factor



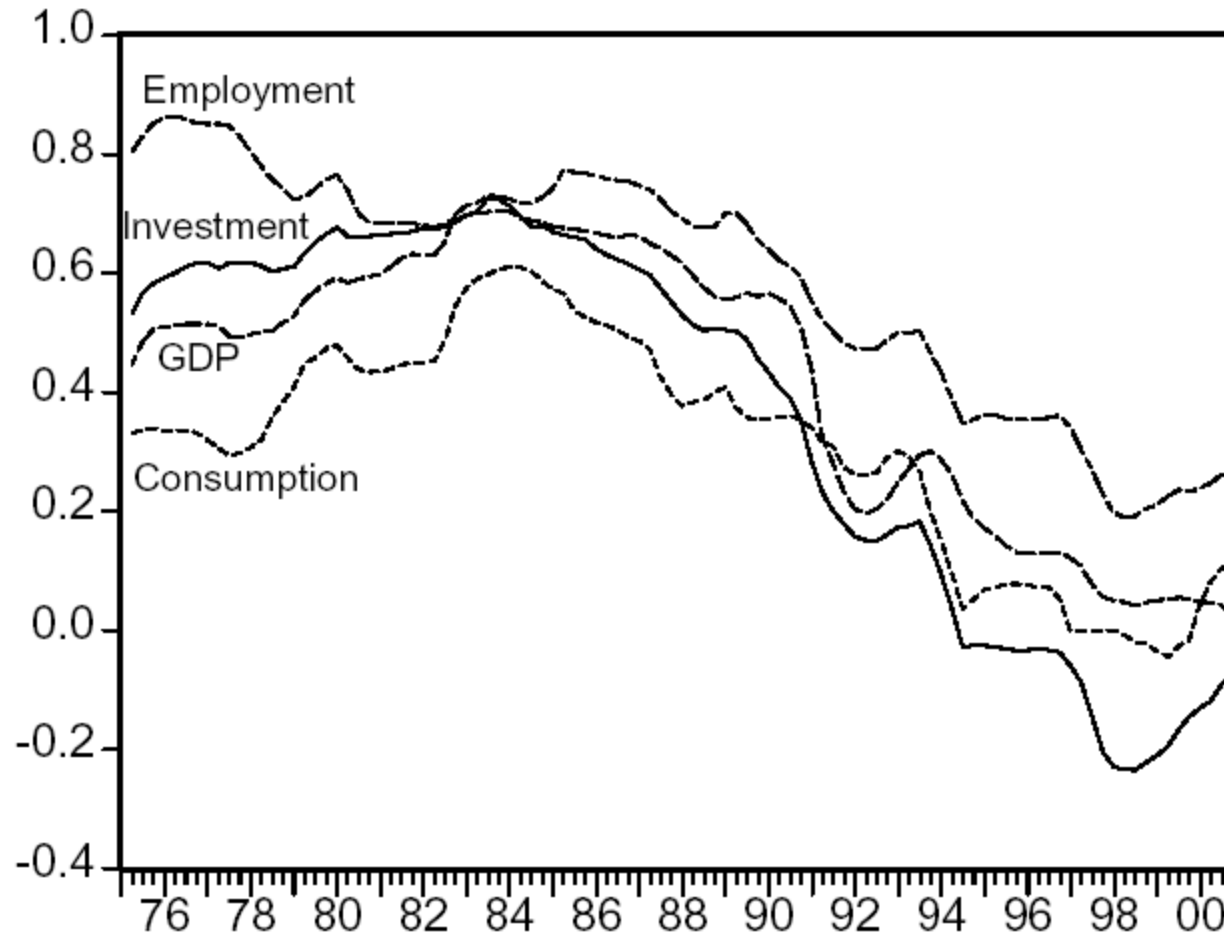
# Relation to theory

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- Correlation of consumption likely to be more than correlations of output and investment
  - Neither this paper nor earlier evidence supports this
- Increased correlation in shocks should increase correlations of output, consumption, and investment
  - World factor important in oil period (but is oil a common shock?)
- Increased economic integration MAY decrease correlations of output and investment, increase correlation of consumption,
  - Results puzzling, possibly different from other studies

# Heathcote & Perri

Correlation between US and “G6”



Heathcote and Perri, “Financial globalization,” Figure 1

# Related results

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- Frankel and Rose:
  - Tighter trade and monetary links increase business cycle synchronization (ditto Artis and Zhang)
- Kalemli-Ozcan, Sorensen, and Yosha:
  - Capital market integration associated with greater specialization (hence lower correlation?)
- Imbs:
  - Financial openness associated with greater business cycle synchronization
- Coming: has consumption smoothing increased?

# Why the differences?

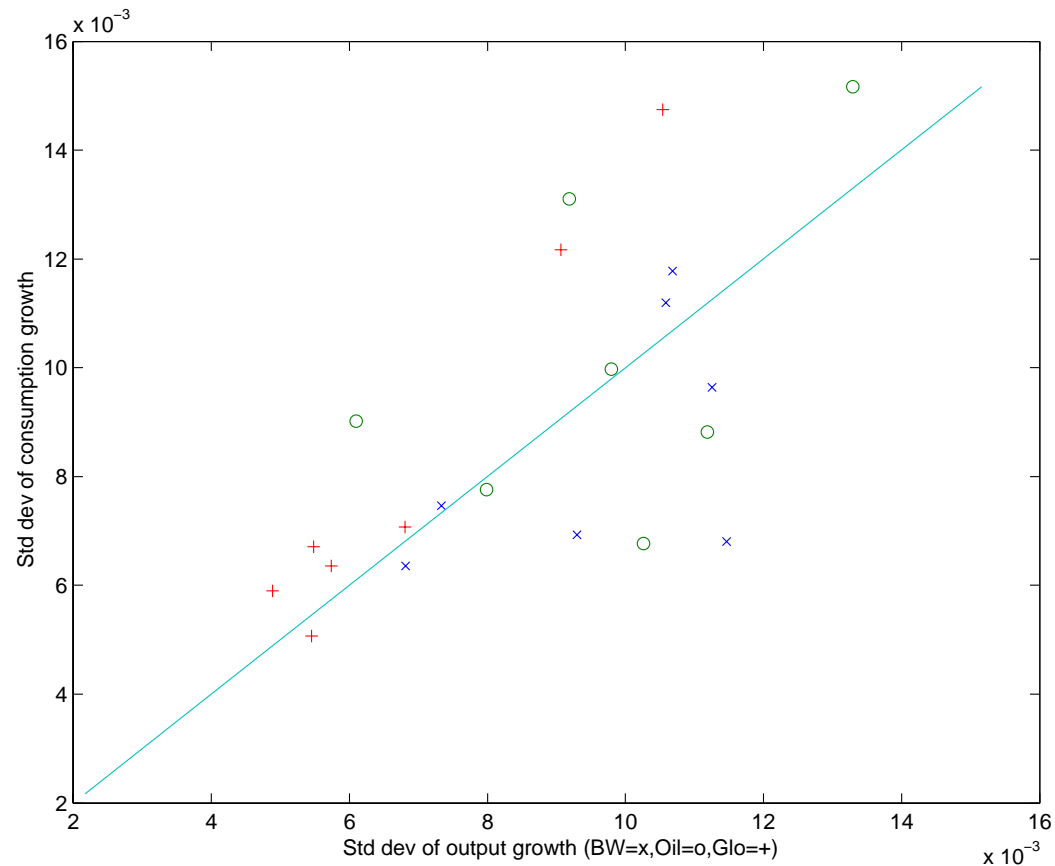
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- Different countries (G7 v Europe)
  - Is there an EU factor?
- Frequency:
  - KOW study quarterly growth rates, Heathcote-Perri study HP filtered data (“business cycle frequencies”)
- Phase shift?
  - Are US/Europe correlated at lag of 1-2 years?
- Multiple variables
  - Is common factor doing too much (y, c, and i)?

# Consumption smoothing in G7?

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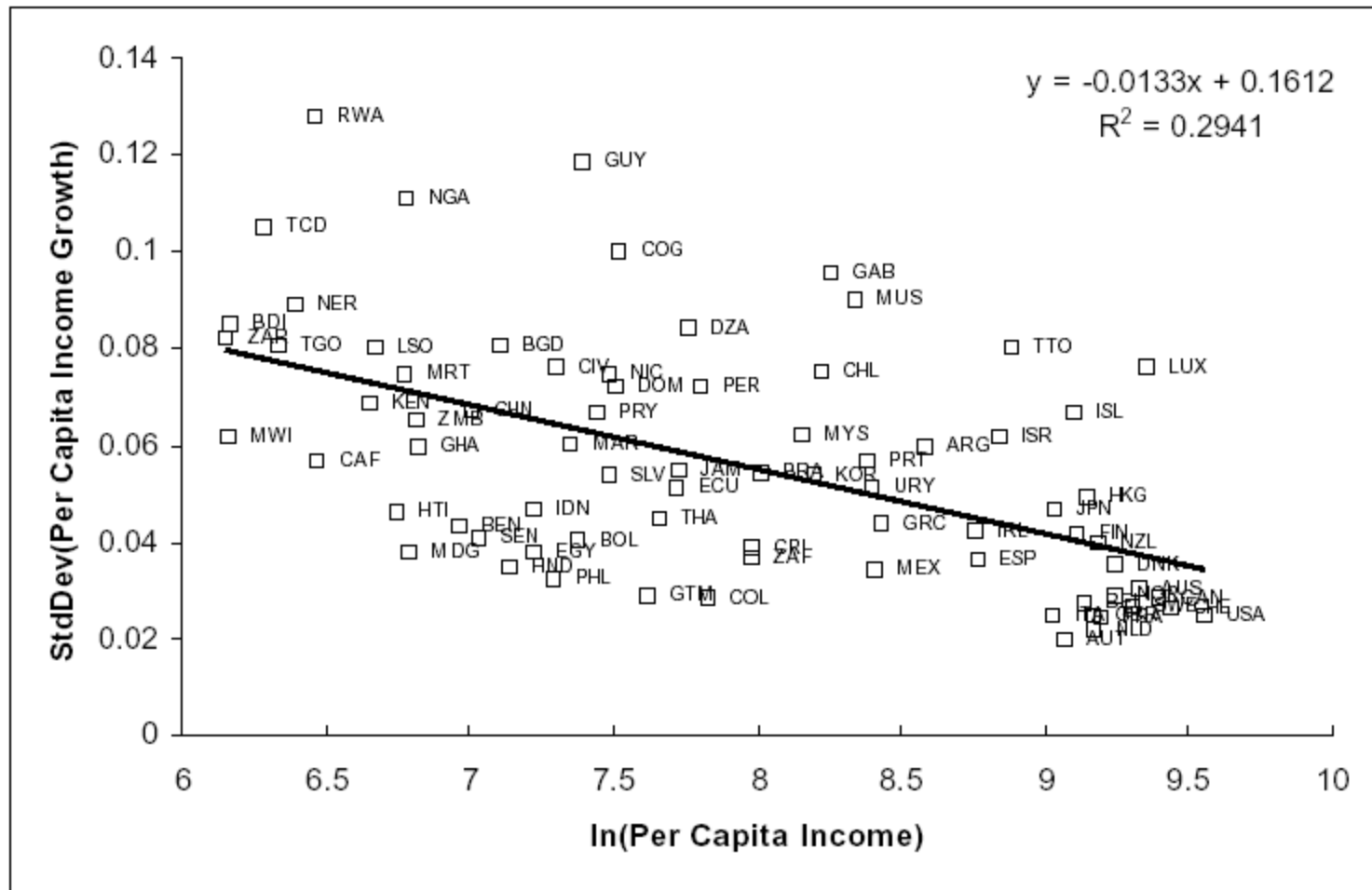
## Volatility of consumption and output growth



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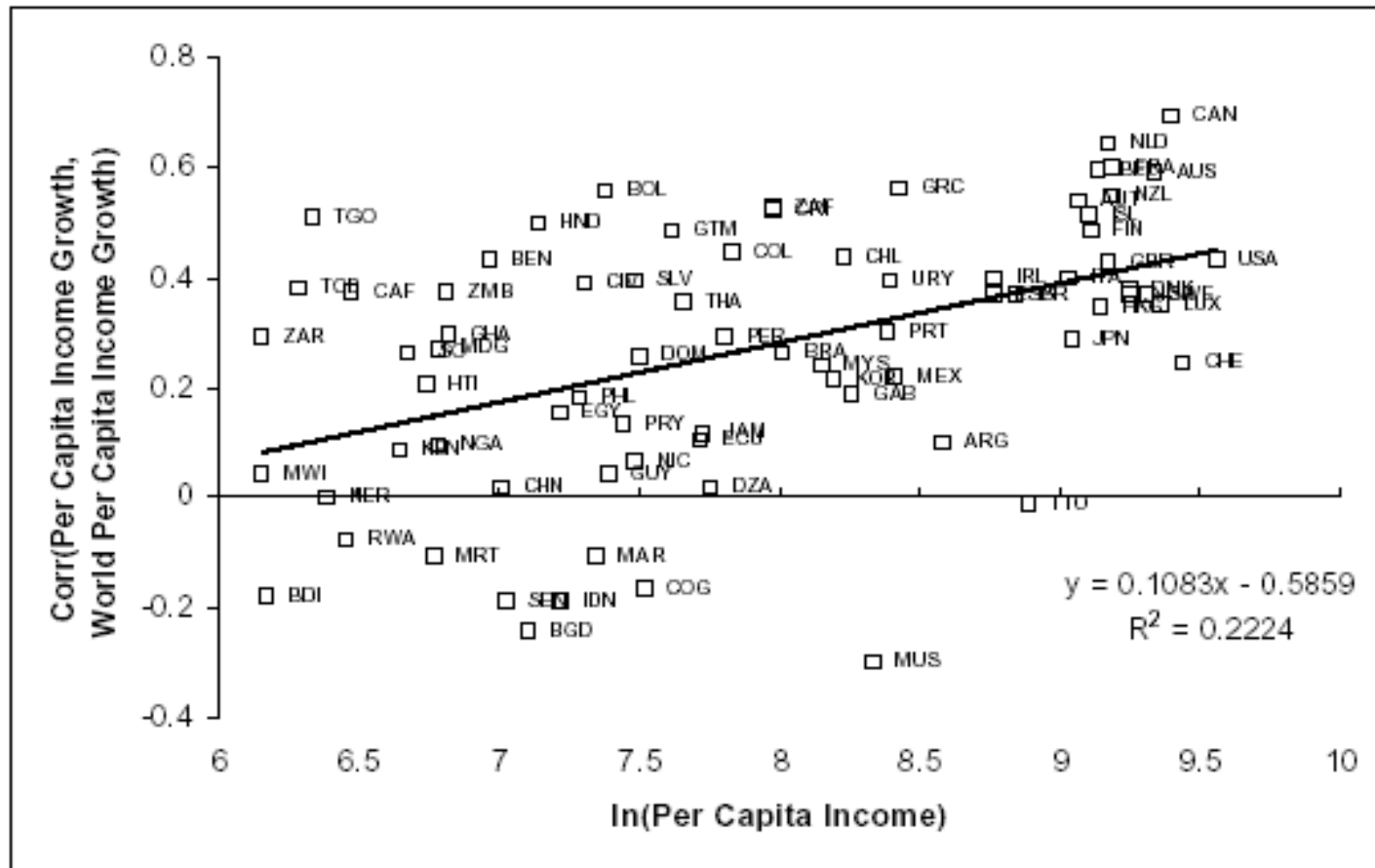
Quarterly data for G7 courtesy of KOW.

# Emerging markets more volatile



Kraay and Ventura, "Comparative advantage," Figure 1

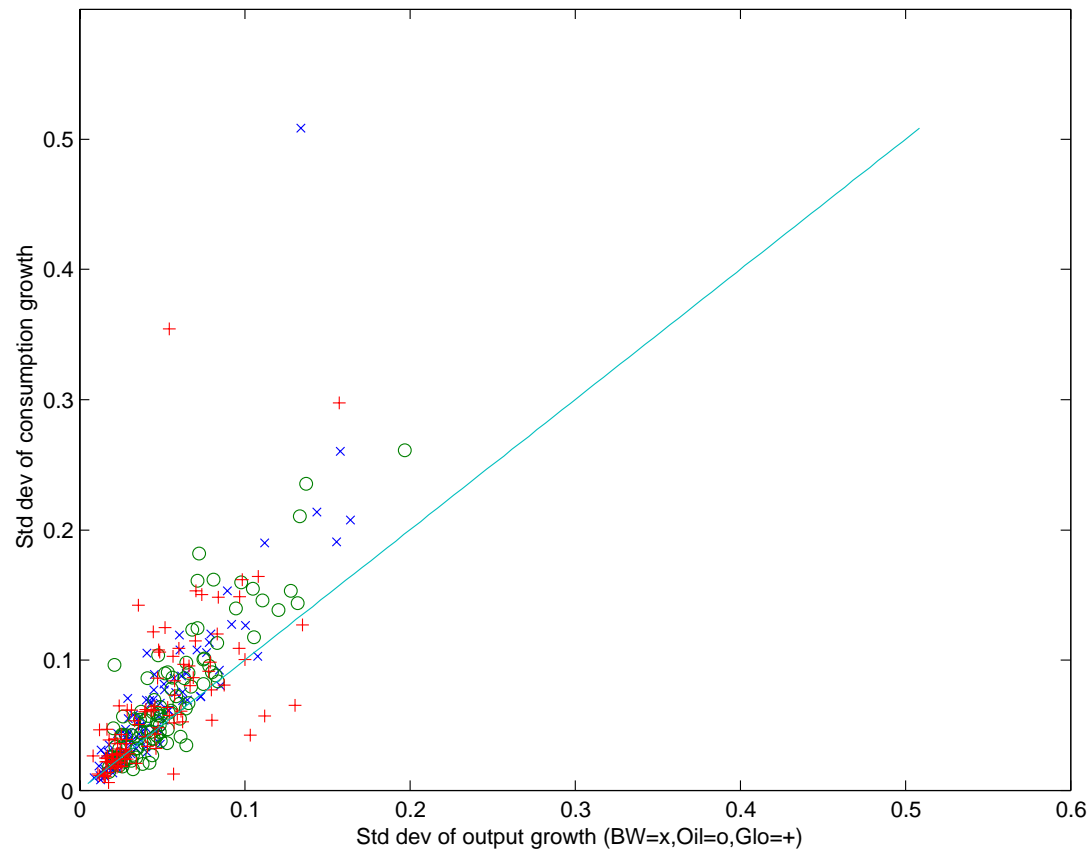
# Emerging markets less correlated



# Consumption smoothing everywhere?

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## Volatility of consumption and output growth



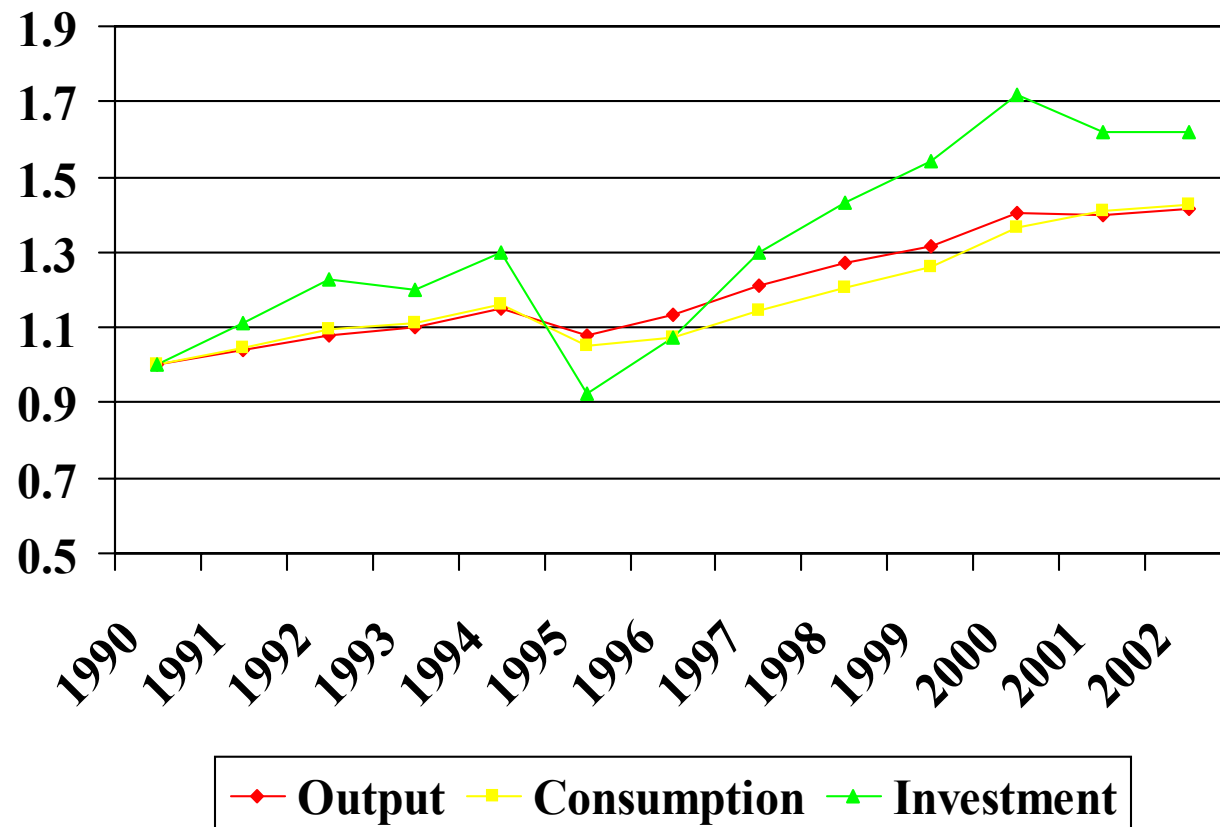
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Annual data from Penn World Tables, courtesy of KOW.

# Mexico

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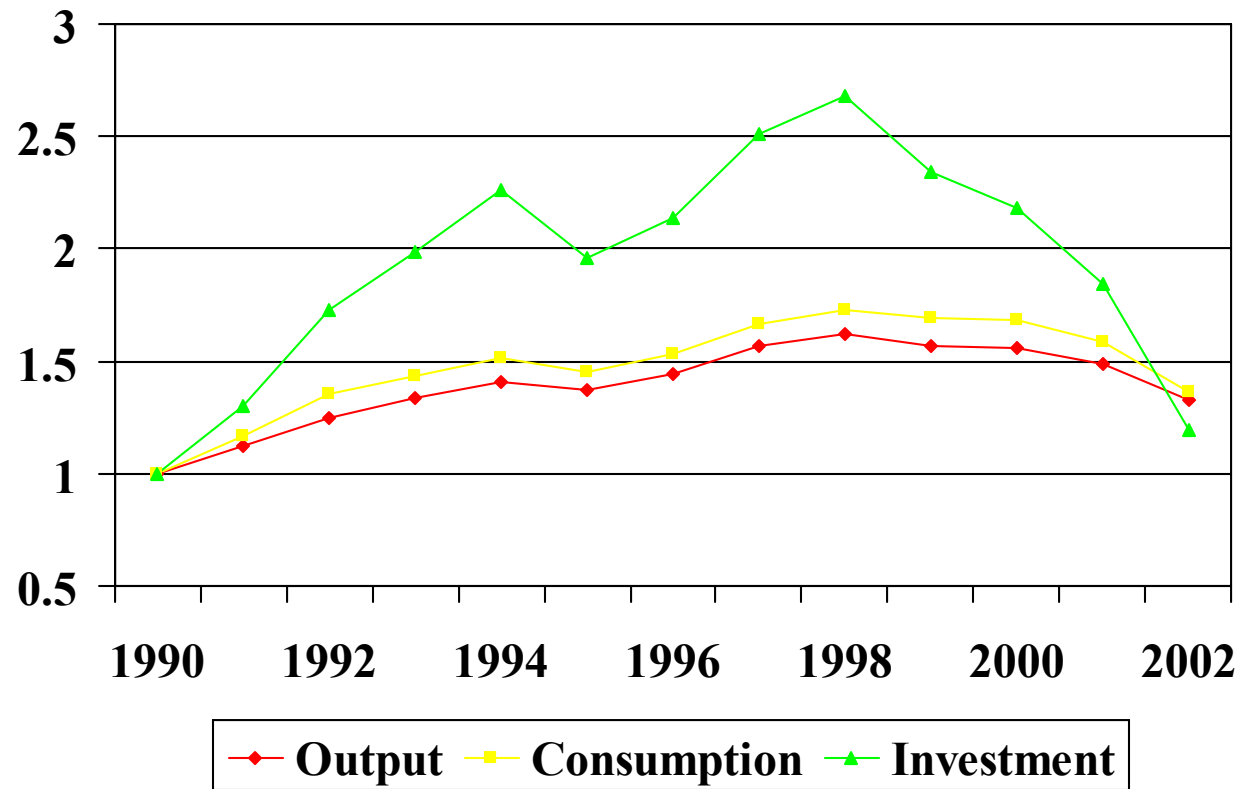
In the crisis, c fell as much as y



# Argentina

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In the crisis, c fell as much as y



# Asset returns

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- Financial integration:
  - Substantial increase in international asset holdings
- In G7, returns more highly correlated than outputs
  - Integration? Different frequencies? Other?
- In emerging markets, correlations smaller, but:
  - Greater than output correlations
  - Increasing over time
- Correlations of returns and outputs move together

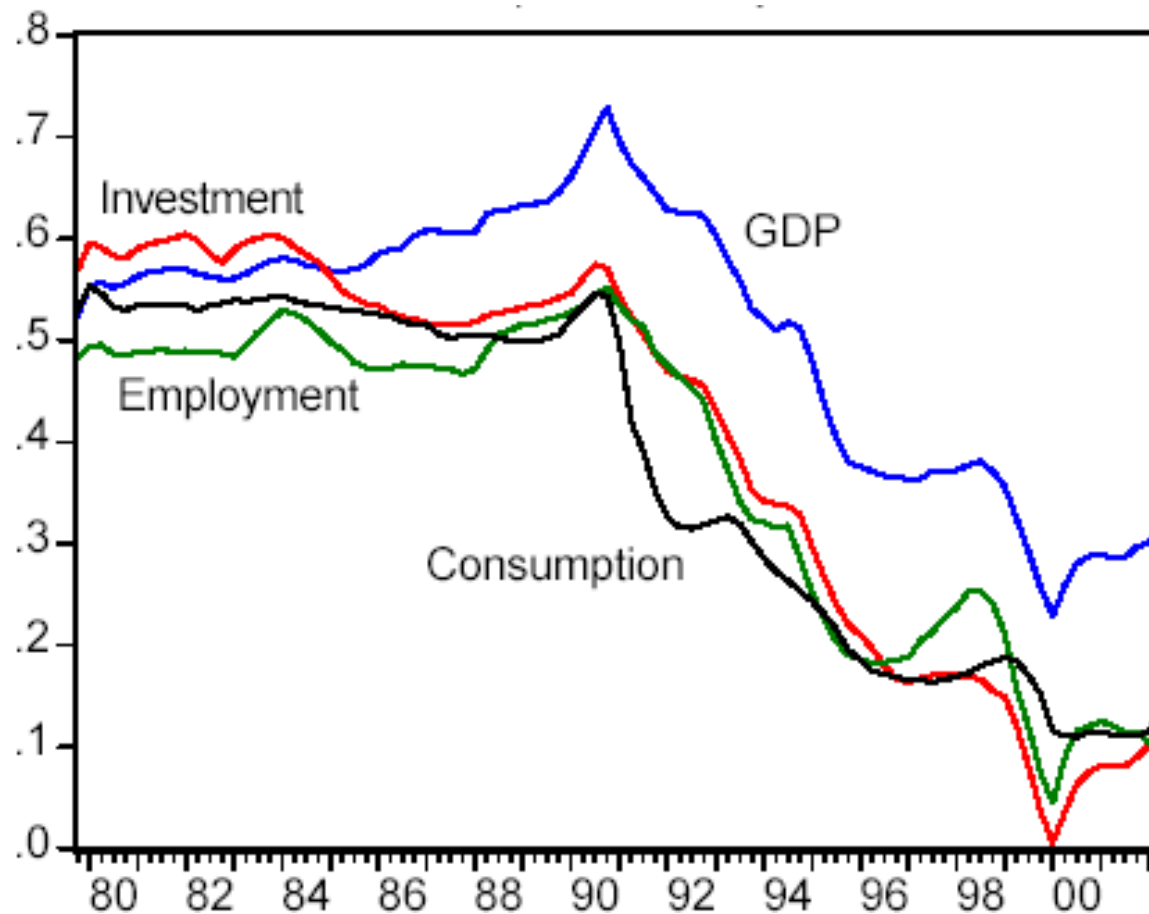
# Questions

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- In what respects has the world become more global?
  - International trade, international financial markets, local property rights, local goods markets, labor markets
- Can we quantify these changes?
  - Is Argentina more integrated? Mexico? Germany?
- Is there an impact on aggregate performance?
  - Has output volatility increased? No! Shocks seem to have changed, too, so role of integration unclear.
  - Has consumption correlation increased? No!
  - Bottom line: jury's still out about which aspects of globalization matter, and what their impact has been.

# Heathcote & Perri (update)

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Heathcote and Perri, "Why has US...", Figure 1