

# Structure and Co-Fluctuations

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# Determinants of Business Cycles Correlation

- Openness to Trade in Goods and Services (Frankel-Rose)
- Openness to Capital Flows (Forbes)
- Disaggregated Structure (not necessarily sectoral shocks, e.g. Kraay-Ventura)

# Approach

- Cross-section of (bilateral BP filtered) GDP correlations  
(PWT Version 6.0 – 49 countries, 1950-1998)
- Cross-section of (bilateral) trade intensities  
(IMF Direction of Trade)
- Cross-section of capital account changes  
(Lane-Milesi-Ferreti)
- Cross-section of similarity in sectoral shares  
(UN Statistical YearBook – 1-digit Value Added, covering whole economy)

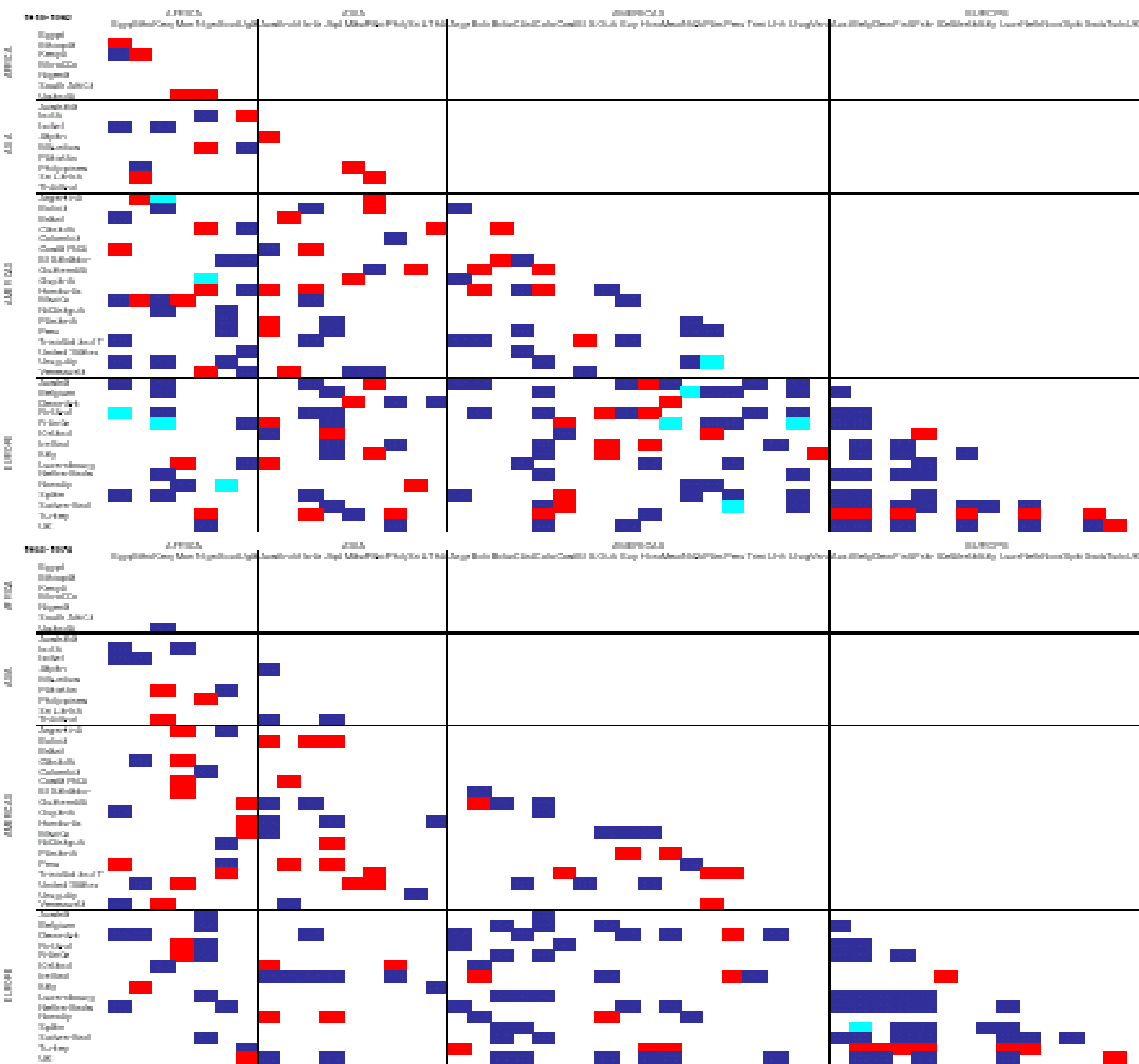
## Approach (cont.)

- Similarity index in sectoral shares:

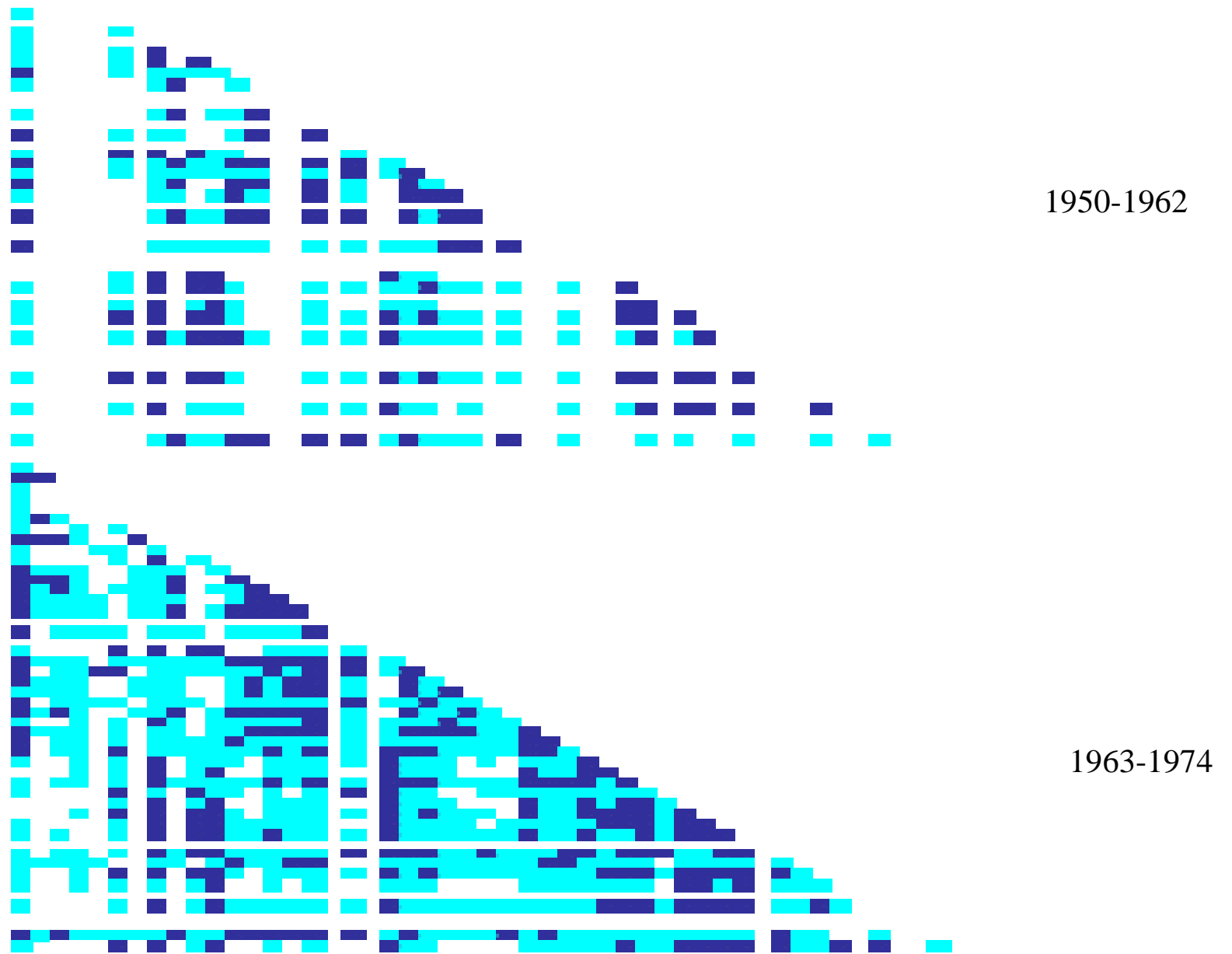
$$\sum_i |s_{ij} - s_{ik}| \text{ with } s_{ij} = y_{ij} / \sum_i y_{ij}$$

- Panel – causes of increased synchronization, as well as their change over time.

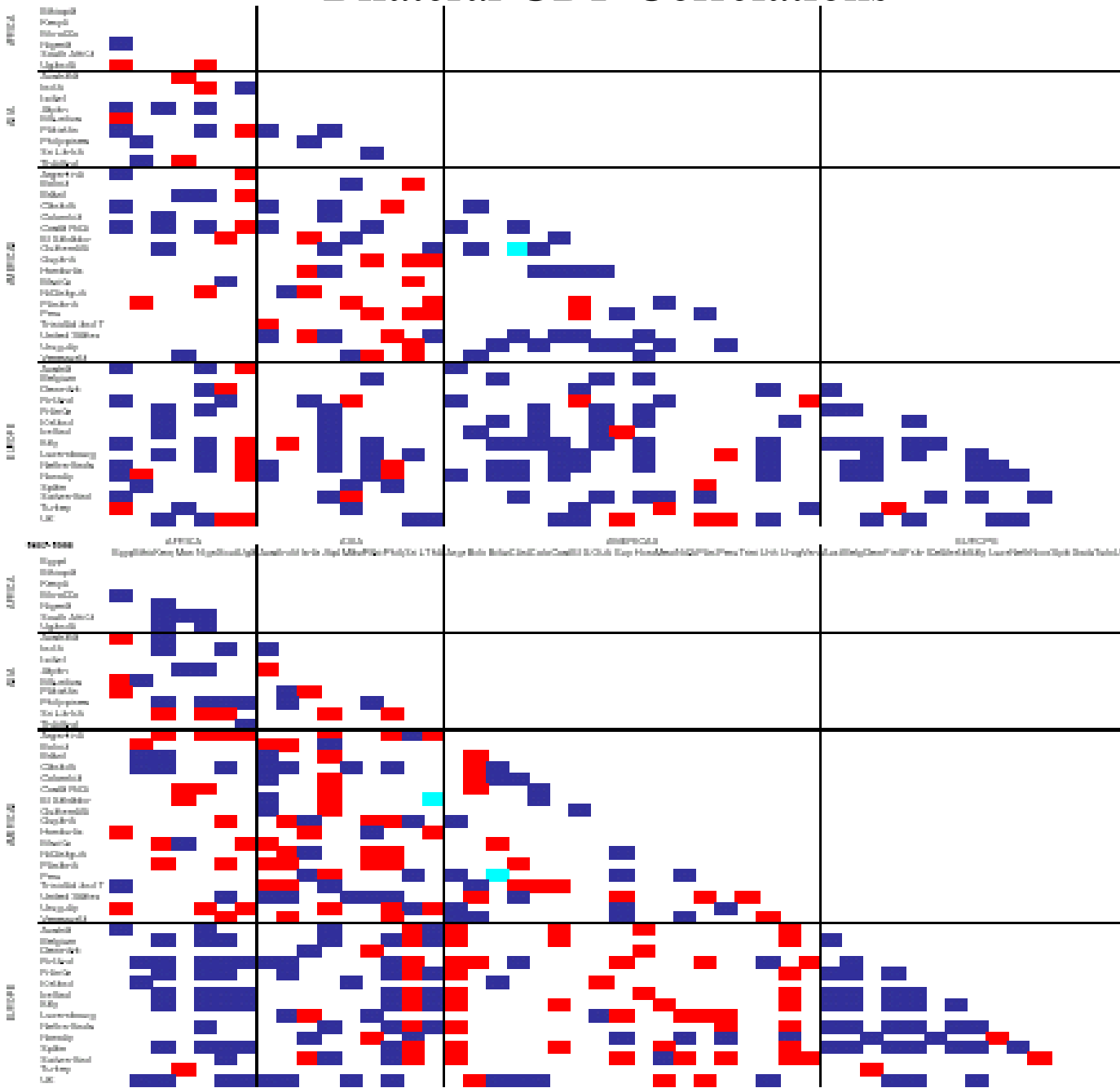
# Illustration: Bilateral GDP Correlations



# Bilateral Similarity Indices



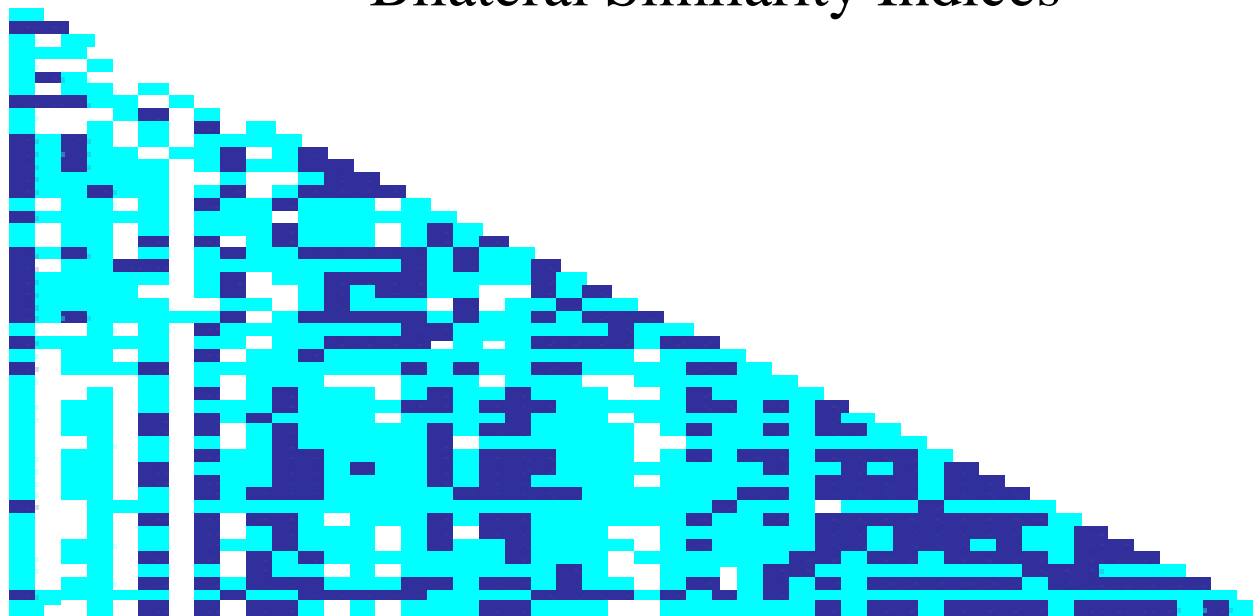
# Bilateral GDP Correlations



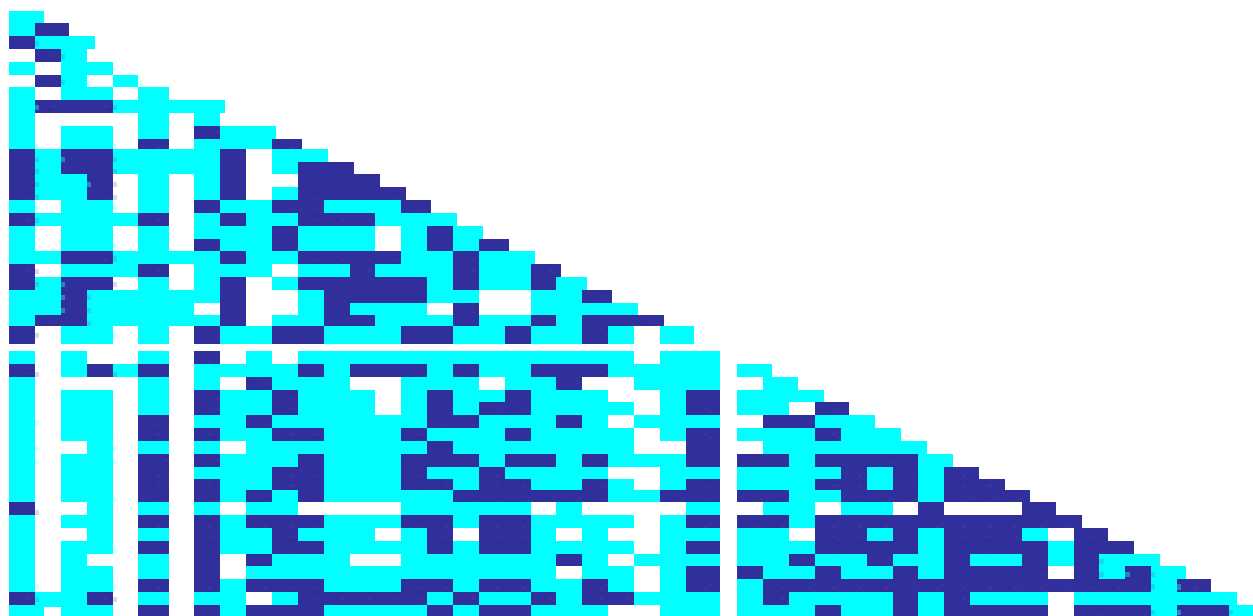
1975-1986

1987-1998

# Bilateral Similarity Indices



1975-1986



1987-1998



# Issues

- Endogeneity of Trade Intensity?

Trade cycles with GDP, so synchronized economies trade in booms and don't in recessions. No implication on average intensity. In doubt: IV with Gravity variables, Sachs-Warner dates

- Endogeneity of Capital Account Co-Movements?

Possibly simultaneous. IV with lagged values, or instrument with IMF indices of capital controls.

- Endogeneity of Sectoral Similarity?

Possibly – specialization responds to business cycles (long-run?) characteristics. Instrument with initial values.

## Issues (cont.)

- Are Bilateral Correlations significantly different from each other? (they are significantly different from 0).

i.e. variance-covariance structure of the cross-section of bilateral correlations

- Accounting for relative size? (e.g. in capital inflows or trade as % of receiving GDP)

Control for relative size?

Use  $(X_{ij}/Y_i + X_{ji}/Y_j)$  ?