

"The impact of global financial crisis on business cycles
in Asian emerging economies" by Jarko Fidrmuc and
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- To examine the degree of business cycle synchronization of developed countries with those in emerging economies of China and India.
- To analyse the role of trade intensity as a determinant of business cycle synchronization of emerging Asian economies with the industrial countries.
- Whether the current global financial crisis has led to the coupling of business cycles in industrial and emerging economies.

Techniques for describing business cycle correlation

- Moving correlation of quarter on quarter GDP growth rates for a four-year moving window.
- Dynamic correlation: to study co movements at business cycle frequencies.

Key findings

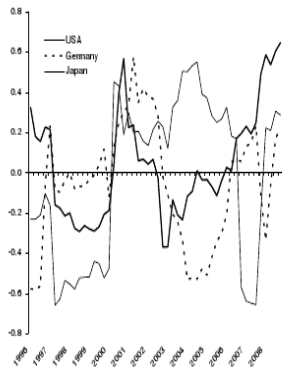
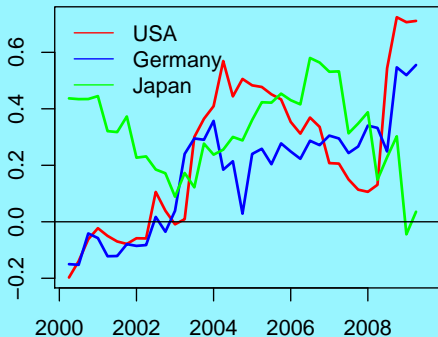
- Business cycles in China and India have been very different from those of OECD countries.
- Trade is an important determinant of business cycle correlation between industrial economies and emerging Asian economies.
- Current global financial crisis has had similar effects on industrial economies and on emerging Asian economies.

Key findings

- Non-European OECD countries (USA, Korea, Israel and Japan) trading more intensively with China show higher short run correlations.
- Finland, Norway and Switzerland show higher short run correlation with Indian business cycle, even though their trade with India is quite modest.

- For all countries except India: 1992-2008.
- For India: 1993-2008
- For India, the quarterly GDP is available from 1996 Q2 onwards.

Moving correlations of selected countries with India



Cross correlation with industrial countries GDP: Period I (1996-2003)

	Variables	t-4	t-3	t-2	t-1	t	t+1	t+2	t+3
1	Austria	0.13	0.29	0.23	0.42	0.16	-0.17	0.14	-0.02
2	Belgium	0.12	0.29	0.25	0.43	0.18	-0.17	0.13	0.01
3	Denmark	0.11	0.26	0.26	0.45	0.11	-0.10	0.11	-0.01
4	Germany	0.14	0.25	0.22	0.44	0.16	-0.15	0.12	-0.00
5	Finland	0.12	0.28	0.21	0.42	0.16	-0.20	0.13	0.00
6	France	0.13	0.28	0.25	0.43	0.17	-0.18	0.14	-0.01
7	UK	-0.19	0.28	0.03	0.29	0.05	-0.12	0.18	0.03
8	Italy	0.12	0.28	0.25	0.42	0.17	-0.17	0.14	0.01
9	Netherland	0.11	0.27	0.23	0.43	0.16	-0.19	0.11	-0.02
10	Portugal	0.08	0.27	0.23	0.40	0.13	-0.20	0.11	-0.02
11	Sweden	0.21	0.32	0.19	0.25	0.36	0.01	0.30	0.06

Cross correlation with industrial countries GDP: Period I (1996-2003)

	Variables	t-4	t-3	t-2	t-1	t	t+1	t+2	t+
12	Switzerland	0.20	0.20	0.14	0.35	0.10	-0.20	0.20	-0.0
13	Norway	0.20	0.23	0.45	0.09	0.21	-0.12	0.19	-0.0
14	USA	-0.20	-0.33	-0.17	0.11	0.01	0.04	0.09	-0.0
15	Canada	-0.03	-0.04	0.07	0.25	0.49	0.36	0.23	0.0
16	Australia	0.14	0.12	0.33	0.27	0.51	0.24	0.23	0.0
17	New.Zealand	0.18	0.23	0.33	0.51	0.51	0.18	0.03	-0.0
18	Israel	0.01	-0.03	0.06	-0.11	0.20	0.36	0.25	0.0
19	Japan	-0.03	0.08	-0.03	0.37	0.33	0.07	0.06	0.1
21	China	0.14	-0.17	0.25	-0.21	0.15	-0.11	0.36	-0.1
22	Spain	0.13	0.31	0.32	0.38	0.21	-0.23	0.16	-0.0

Cross correlation with industrial countries GDP: Period II (2003-2009 Q1)

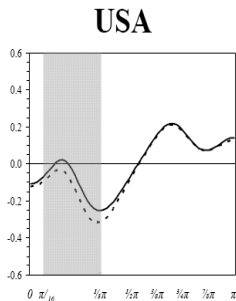
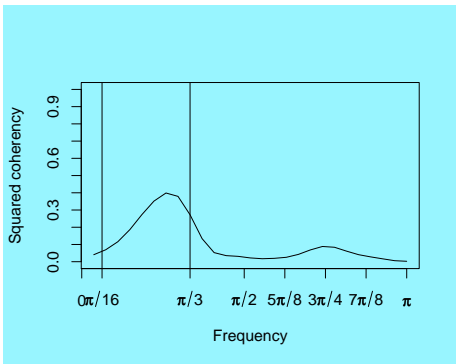
	Variables	t-4	t-3	t-2	t-1	t	t+1	t+2	t+3
1	Austria	0.01	-0.10	-0.08	0.27	0.49*	0.41	0.08	0.22
2	Belgium	0.01	-0.09	-0.09	0.28	0.48*	0.40	0.07	0.20
3	Denmark	-0.00	-0.09	-0.03	0.28	0.51*	0.39	0.04	0.14
4	Germany	-0.00	-0.10	-0.10	0.28	0.52*	0.43	0.11	0.19
5	Finland	0.01	-0.08	-0.07	0.34	0.53*	0.42	0.11	0.19
6	France	-0.01	-0.08	-0.07	0.29	0.50*	0.37	0.06	0.19
7	UK	0.05	0.15	0.08	0.25	0.58*	0.58	0.30	0.16
8	Italy	0.02	-0.07	-0.07	0.29	0.50*	0.41	0.08	0.19
9	Netherland	-0.02	-0.11	-0.09	0.29	0.51*	0.43	0.09	0.20
10	Portugal	0.02	-0.09	-0.09	0.28	0.48*	0.39	0.04	0.19
11	Sweden	0.02	-0.07	0.04	0.25	0.53*	0.49	0.17	0.25

* indicates significant correlation

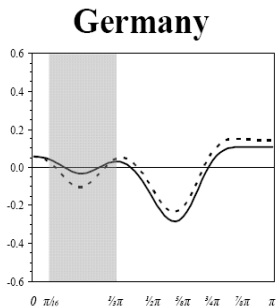
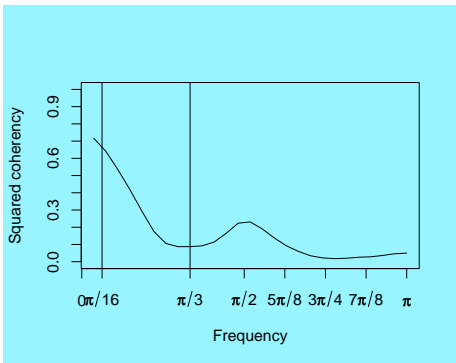
Cross correlation with industrial countries GDP: Period II (2003-2009 Q1)

	Variables	t-4	t-3	t-2	t-1	t	t+1	t+2	t+
12	Switzerland	0.06	-0.25	-0.15	0.11	0.28	0.27	-0.09	0.
13	Norway	-0.16	-0.16	-0.04	0.21	0.56*	0.55	0.29	0.
14	USA	-0.08	0.14	0.15	0.47	0.67*	0.57	0.33	0.
15	Canada	-0.17	-0.08	0.06	0.37	0.50*	0.47	0.37	0.
16	Australia	-0.07	0.02	-0.05	0.32	0.64*	0.49	0.30	0.
17	New.Zealand	-0.00	0.12	0.10	0.50	0.64*	0.39	0.34	0.
18	Israel	-0.12	-0.11	-0.27	-0.02	0.17	0.50	0.24	0.
19	Japan	-0.03	-0.33	-0.15	-0.05	0.17	0.02	-0.23	0.
21	China	-0.16	-0.03	0.09	-0.09	-0.05	0.12	0.24	0.
22	Spain	0.03	-0.07	-0.03	0.32	0.51*	0.42	0.06	0.

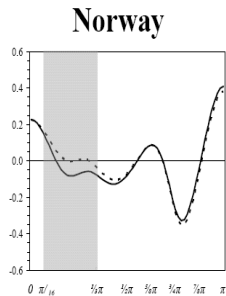
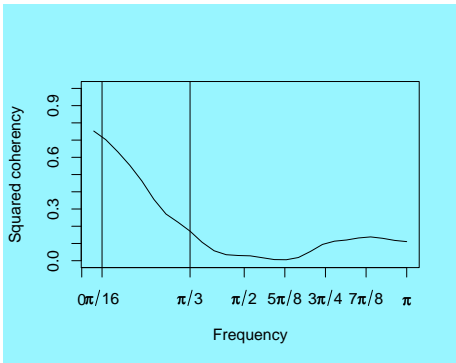
Spectral coherence of India with USA



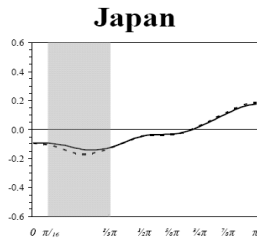
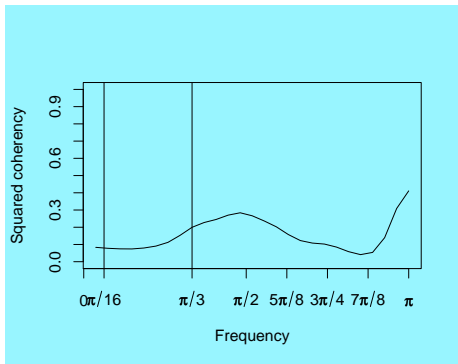
Spectral coherence of India with Germany



Spectral coherence of India with Norway



Low coherence with Japan



- Different detrending methods extract different types of business cycle information from the original series (Canova 1998).
- Uncritical use of mechanical detrending can induce spurious cycles (Harvey and Jaeger, 1993), (Harding and Pagan, 1999).
- For emerging market economies shocks to both trend and cycle are relevant for business cycle analysis. In emerging economies **trend is the cycle** (Aguilar and Gopinath 2004).

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Summary conclusions

- Indian GDP data is available from 1996.
- Significant synchronization of Indian business cycle with those of industrial economies irrespective of trade ties.
- Detrending of output may not be desirable for emerging economy like India.

Thank you