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How Distinct are Financial Cycles from Business Cycles in Asia?

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Motivation 1

- The literature has established some stylised facts about the financial and the business cycle
- A prominent one is that the '…medium-term financial cycle is a different phenomenon from the business cycle that is generally discussed in the macroeconomic literature (Drehmann *et al.* (2012, p. 18))'
- This has policy implications for both monetary and financial (macroprudential) stability

Motivation 2

- “An effective “lean-against-the-wind” approach requires policy to take financial developments into account systematically. In effect, it may be represented by a policy rule that takes the form of an augmented version of the standard Taylor rule … and incorporates financial cycle indicators.” (Juselius et. al. 2016, p.3)
- “..with macroprudential policies perfectly targeting the sources of threats to financial stability, monetary policy should remain primarily focused on price and output stability.“ (IMF, 2013, p.1)
- “A concern sometimes raised is that macroprudential frameworks could lead to conflicts between monetary and macroprudential actions. My sense is that such concerns are overdone. … macroprudential policy and monetary policy will be complementary, [for]… two reasons …: First, the financial cycles that matter for prudential policy have a much lower frequency than business cycles.” (Caruana, 2011)

Stylised business-cycle fact…

- Following Burns and Mitchell (1946), the standard **business cycle** frequencies are set equal to six and 32 quarters (eight years)
- For example, the taxonomy employed by the NBER to officially date business cycles in the US describes fluctuations with periodicity between two and six years as the business cycle
- In addition, conventional wisdom has it that no complete cycle (in the US) has exceeded eight years in length

…and reality

- But Rand and Tarp (2002), *inter alia*, illustrate that the average duration of business cycles in 15 developing countries is shorter than the stylised 1.5 to eight years calibrated to the US
- They find that developing-country business cycles range in length between about two and five years
- Pedersen (1998) suggests that while the upper choice of eight years may be appropriate in the case of the US, studies concerning eleven OECD countries indicate that a period shorter than six years is likely to be a more appropriate duration of the business cycle

Stylised financial-cycle fact…

- When we consider the **financial cycle**, the popular and widely-used definition due to Drehmann *et al.* (2012) considers periodicities in the band from 32 quarters (eight years) to 120 quarters (30 years)
- This assumption is increasingly put into question

…and reality

- Using a variety of techniques, evidence is mounting that there is considerable cross-country heterogeneity in the duration of the financial cycle:
  - Schüler *et al.* (2015) find an average financial cycle length of 7.2 years in a sample of 13 EU member states (with a minimum of 2.6 and a maximum of 128 years)
  - Galati *et al.* (2016) find financial cycle lengths ranging between 7.8 and 17.5 years for the US and the five largest euro-area countries
  - Rünstler and Vlekke (2016) find financial cycle lengths ranging between 8.2 and 18.7 years for the US and the five largest EU member states

What about developed and developing countries?

- This heterogeneity notwithstanding, all cycles lengths for developed countries more or less conform with the stylised cycle length of eight to 30 years..
- …although some countries' estimates approach the lower bound of eight years
- But is there a difference between the stylised fact and the duration of the financial cycle across (and between) developed and developing economies…just as there is for the business cycle?

Challenges to the stylised fact

- Pontines (2016) and Rummel (2017) find credit cycles for Asian economies close to – or below – the minimum stylised duration of eight years for developed countries using both direct and indirect spectrum estimation (for robustness)

The empirical analysis (Rummel, 2017)

- Uses spectral analysis to derive the dominant cycle frequency in the growth rate of total credit to the private, non-financial sector for eight SEACEN member economies
- All quarterly series are deflated by CPI, in logs and converted into annual growth rates (i.e., four-quarter differences in log-levels)
- Data are sourced to the BIS database on credit to the non-financial sector

Data and estimation methodology

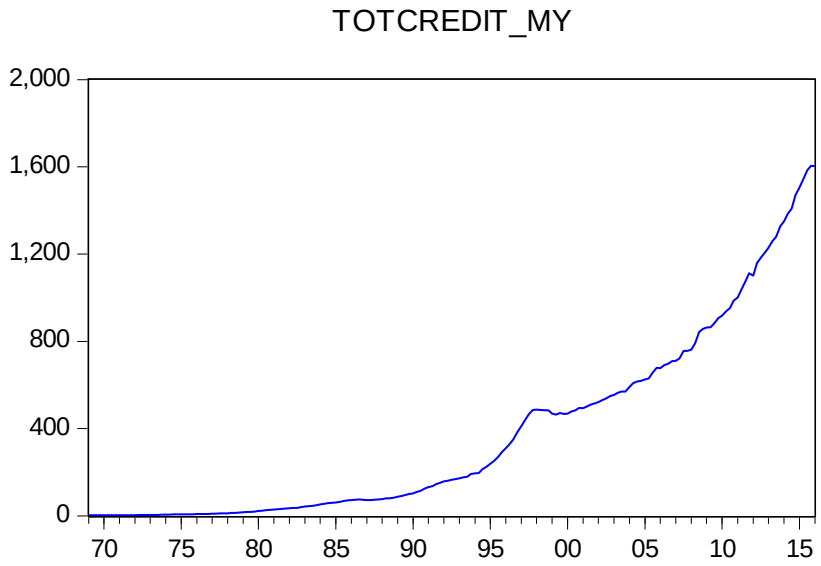
- Heterogeneous sample of (small) open economies at different stages of economic and financial development:
  - China (1995 Q1), Hong Kong (1978 Q4), Indonesia (1979 Q1), India (1953 Q2), Korea (1965 Q1), Malaysia (1968 Q1), Singapore (1963 Q4), Thailand (1976 Q1)
- Similar to A'Hearn and Woitek (2001), who identified peaks of single spectra in the contact of business cycles, Rummel identifies the peak to locate the cycle length of the total credit (growth) series

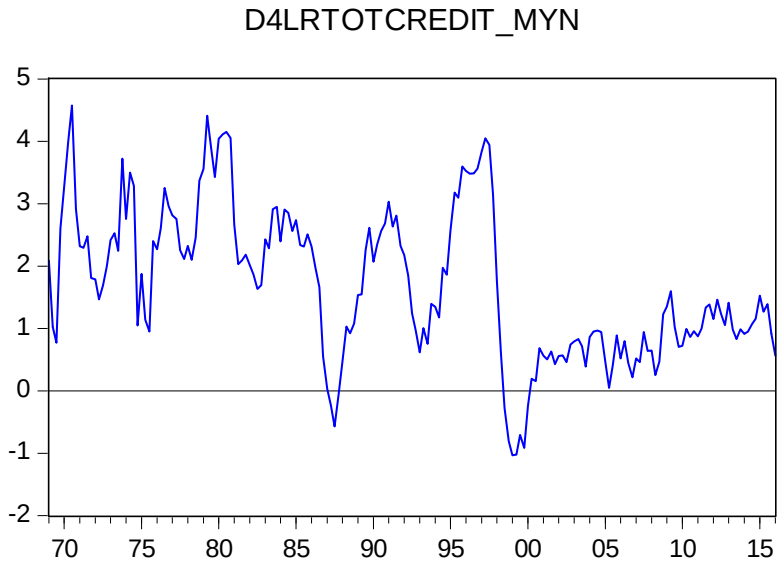
Empirical results: cycle lengths

Country	Estimated cycle length (quarters)
China (1996 Q1 – 2016 Q1)	27.00
Hong Kong (1979 Q4 – 2016 Q1)	29.20
Indonesia (1980 Q1 – 2016 Q1)	20.71
India (1954 Q2 – 2016 Q1)	27.56
Korea (1966 Q1 – 2016 Q1)	50.25
Malaysia (1969 Q1 – 2016 Q1)	23.63
Singapore (1964 Q4 – 2016 Q1)	51.50
Thailand (1977 Q1 – 2016 Q1)	26.17
Japan (1965 Q4 – 2016 Q1)	67.33
USA (1953 Q1 – 2016 Q1)	63.25

- Largest peak of the estimated periodogram

The example of Malaysia (1)

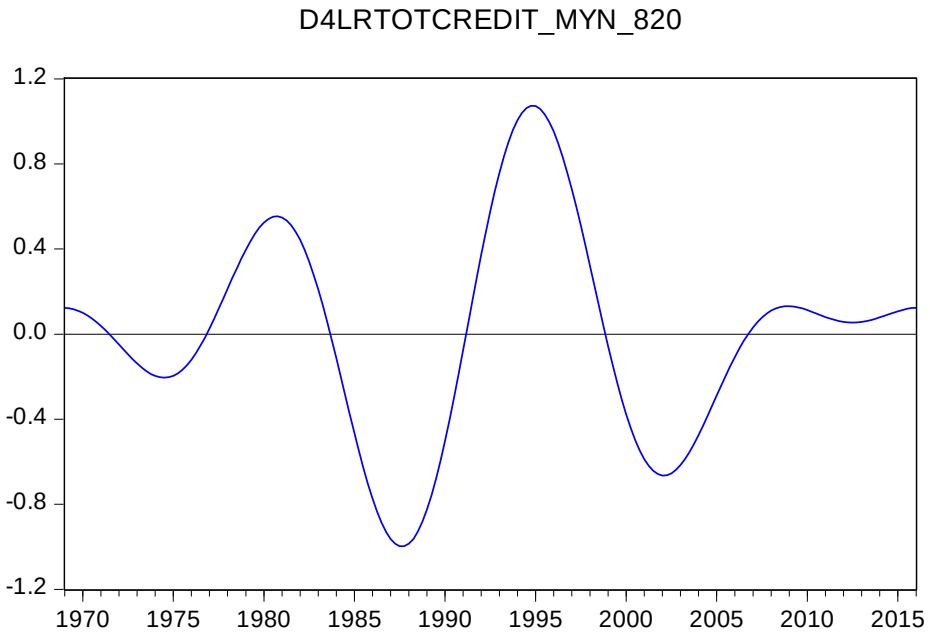




Source: BIS.

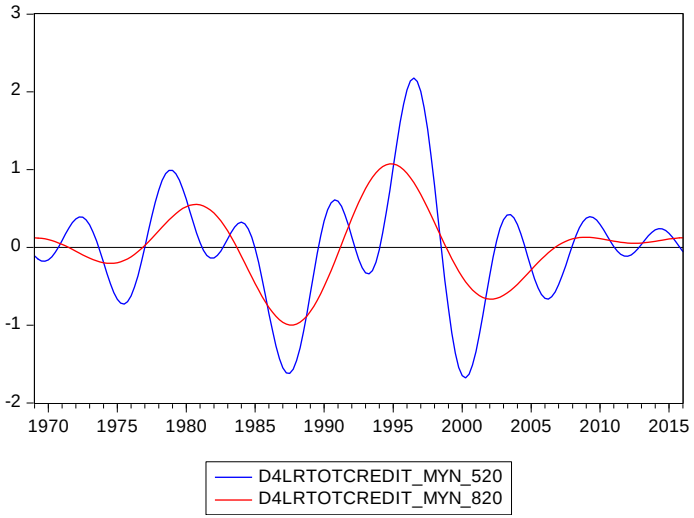
- Total credit to the private, non-financial sector for Malaysia in levels and annual growth rates

The example of Malaysia (2)



- The ‘classical’ credit cycle in Malaysia, frequency-domain band pass filter from eight to 20 years.

The example of Malaysia (3)



- The ‘classical’ credit cycle in Malaysia (red line) and the ‘proper’ credit cycle (blue line; band-pass filter from six to 20 years)

The empirical analysis (Pontines, 2016)

- Victor Pontines also employed a version of spectral analysis to characterize financial cycles in Hong Kong, Malaysia, Philippines and Thailand and compare it to the US, UK and Germany

- The study confirms the financial cycle (measured as housing and credit cycles) of these three advanced economies operate at a low frequency with a cycle period of between 10 and 20 years.

- More interestingly, the study finds that financial cycles the Asian economies appear to be substantially shorter than what has been found for developed economics

Business Cycles and Financial Cycles

	GDP	Equity	Credit	Housing
US	8.8	7.5	15.6	12.8
UK	9.1	5.8	18.5	10.6
Germany	4.1	4.9	*	19.9
Hong Kong	4.7	4.5		8.1
Malaysia	3.5	4.9	7.8	
Philippines	4.4	6.5		
Thailand	5.9	6.4		

Reasons for the disparity

- Potential reasons for the disparity:
  - different stages of financial development and depth of financial markets;
  - alternative sources of finance for households;
  - skewed population income distributions;
  - different policy regimes
  - Importance of international factors for credit growth

Summary

- Spectral density estimates do not justify setting a medium-term frequency range for extracting the credit cycle in SEACEN member economies
- This argues against the uncritical application of stylised financial cycle facts such as a frequency range from eight to 30 years

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THANK YOU