

Comments on “Monetary policy regimes and macroeconomic outcomes: Hong Kong and Singapore” by Stefan Gerlach and Petra Gerlach-Kristen

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Stefan and Petra’s comparative study of the performance of Singapore and Hong Kong has improved our understanding of the likely response of a small open economy to shocks under different exchange rate regimes. However, it has also raised a number of interesting analytical questions with regard to the similarities and differences in the response of the two economies to various shocks.

In my view, the findings in the study on the startling similarity in the response of the two economies to various shocks reflect, to a large extent, the methodology used, that is, the use of a Hodrick-Prescott filter to extract the behavioral response of the economies to shocks. I have therefore found it useful to study not only the filtered data but also the underlying raw data for both Singapore (SG) and Hong Kong (HK), in order to better understand the results of the study.

First, a summary of some of the key macroeconomic indicators of the two economies is shown in Table 1, followed by a description of the authors’ main findings. In the next section, I will seek to provide some insights on some of the issues raised in the paper.

Table 1
Comparison of key macroeconomic indicators of Singapore and Hong Kong

	Singapore	Hong Kong
Exchange rate regime	Managed float	Currency board
Inflation outcome	Low and stable	Higher and more variable
GDP	Higher average growth	Lower average growth
Output gap	Slower adjustment to mean; Std deviation 0.015	Faster adjustment to mean; Std deviation of 0.015
Interest rate	Lower than US rate	Close to US rate
Unemployment	Lower in 1998-2004	Higher in 1998-2005

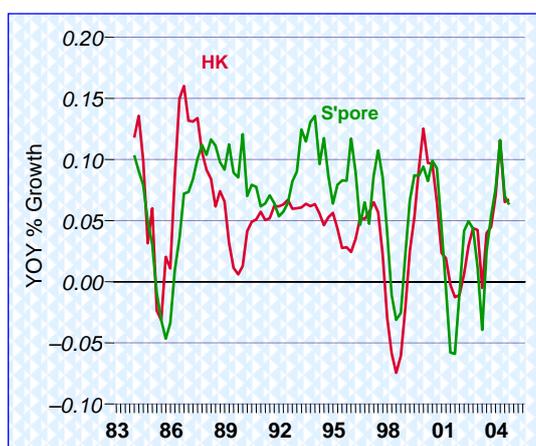
Main findings of the paper

- Inflation was lower and more stable in Singapore than in Hong Kong.

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- Singapore's inflation averaged 1.7% from 1981-2004, compared with 5.2% in HK over the same period.
- Interest rates were generally lower in Singapore than Hong Kong but the series are strongly correlated.
- Average growth of GDP in Singapore was higher than in Hong Kong (see Chart 1).
- The unemployment rate was lower in Singapore than in Hong Kong in the post-1997 period.
- Volatilities of output gaps were very similar in Singapore and Hong Kong.
- The output gap adjusts more slowly in Singapore than in Hong Kong.
- The nominal effective exchange rate (NEER) responds to inflation in Singapore but not in Hong Kong.

Chart 1
Output growth (YOY)



Comments on the paper

Before I proceed to comment on the issues raised in the paper, it is useful to note that studies have shown that in Singapore's case, the S\$NEER responds to both inflation and the output gap - a form of Taylor rule. The policy response to the output gap is a derived one; in other words, it depends on the relationship between inflation and the output gap. For example, if an increase in the output gap can cause a rise in inflation, then policy will respond to a rise in the output gap in order to dampen inflation (see Chart 2).

Chart 2A

HK output gap vs HK\$NEER (YOY)

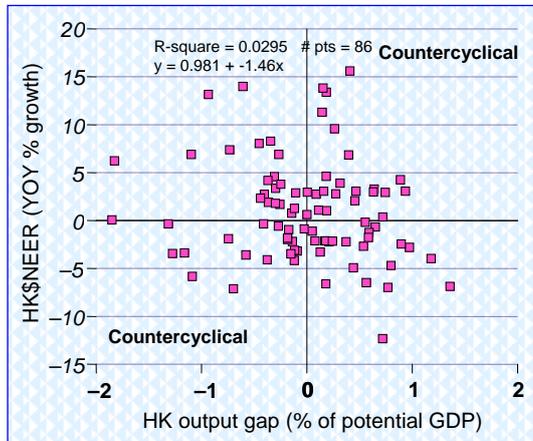
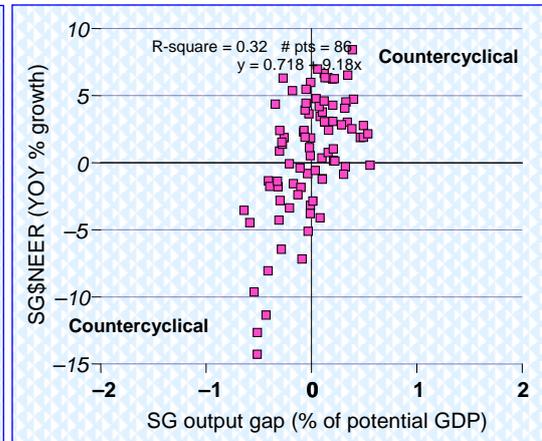


Chart 2B

SG output gap vs S\$NEER (YOY)



In general, policy must take into account the leads and lags of macroeconomic responses to changes in policy. At the Monetary Authority of Singapore (MAS), the leads and lags are captured in its Monetary Model of Singapore (MMS) model, which is used to help formulate the optimal path of S\$NEER in our policy review.

Next, it is also useful to highlight that the findings reflect the method of analysis that was used. In particular, the use of the Hodrick-Prescott (HP) filter to create the output gap series brings with it certain implicit assumptions, in particular that potential output adjusts relatively quickly to shocks. The HP filter is basically a statistical technique which assumes that the potential output is equal to the trend line.

I now provide brief comments on some of the findings or issues raised in the paper.

1. The average inflation rate in Singapore was lower than in Hong Kong.
 - This finding is not unexpected as Singapore was able to effectively use the exchange rate as a nominal anchor to counter inflationary pressures and thereby achieve a lower and more stable rate of inflation. Indeed, the monetary policy objective in Singapore is to attain low inflation in order to promote sustained non-inflationary economic growth.
2. Why was the average growth rate during 1983-97 higher in Singapore?
 - During that period, the external environment for Singapore was conducive to rapid economic growth. In particular, Singapore was able to ride on the boom in the global electronics industry, whereas Hong Kong shifted most of its manufacturing industries to Shenzhen.
3. Why was the unemployment rate higher in Hong Kong during 1997-2005?
 - As mentioned in the paper, Hong Kong faced sharper adjustment in real output and employment because the exchange rate was fixed against the US dollar. In Singapore, the depreciation of the exchange rate and decline in wages helped to cushion the impact of the shock on the real sector.
4. Why is the volatility of the output gap so similar between Singapore and Hong Kong?
 - It is hard to reconcile this finding that volatility of the output gap is similar between the two countries when the unemployment rates in the two

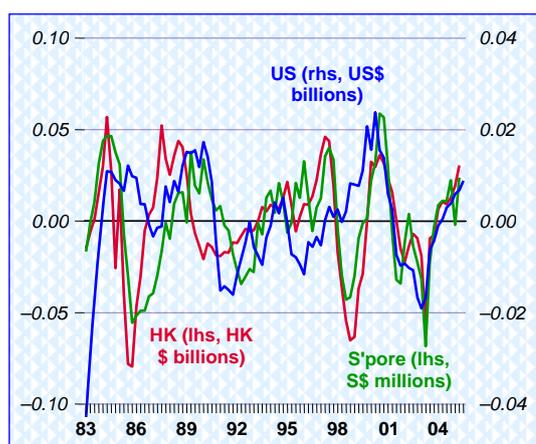
economies are so different. In particular, the unemployment rate in Hong Kong was much higher than in Singapore over the period 1997-2005.

- As the authors suggested, for this finding to make sense, one must assume that potential outputs and natural rates of unemployment adjust rapidly to their new equilibrium levels. As noted above, this reflects the use of HP filters to derive the output gaps. Otherwise, it is difficult to explain how output gaps can be positive when unemployment rates were so high.
- Nevertheless, despite the inherent bias, HP filter results still provide useful insights into the dynamics of the two economies.

5. Why are the output gaps of Hong Kong and Singapore so highly correlated?

- As shown in the paper, other key macroeconomic variables of the two economies, such as interest rates and unemployment rates, are also highly correlated.
- A possible reason for these observations is that both countries face similar global shocks and capital flows. Interestingly, the output gaps of both Hong Kong and Singapore are highly correlated with that of the United States (see Chart 3).

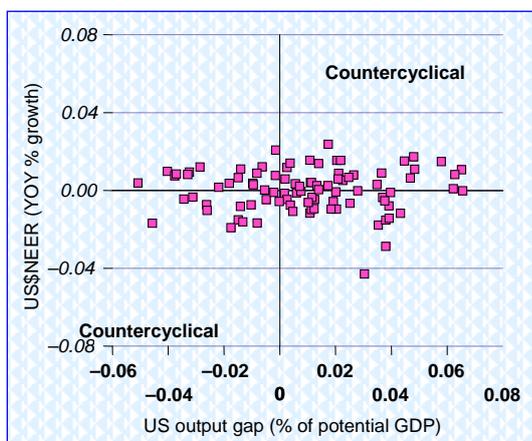
Chart 3
Comparisons of output gap (HP filtered)



6. Another interesting finding is that the HK\$NEER reacts to the output gap in a countercyclical fashion (Table 3 in the paper).

- This finding raises the question as to whether HK\$NEER reaction to changes in output gap was due to policy.
- As Hong Kong's exchange rate regime is a currency board, it is puzzling that the HK\$NEER can respond in a systematic way to changes in its domestic output gap.
- HK\$NEER can react to the output gap in a countercyclical fashion only if the US\$NEER moves countercyclically to the US output gap. However, this is not evident, as shown in Chart 4. In fact, US\$NEER movements in recent periods (2002-05) have been procyclical and led to some inflationary effects in Hong Kong after a relatively deflationary period (2000-04).

Chart 4
Comparisons of output gap (HP filtered)



Why is the impact of the output gap shock on inflation smaller in Singapore than in Hong Kong? (Refer to Figure 7 in the paper)

- This finding is not surprising since the MAS is likely to tighten its policy stance in response to an increase in the output gap, as indicated by its policy reaction function.
- Furthermore, the MAS's credibility in policymaking enables inflation expectation to be firmly anchored.
- In contrast, changes in the output gap in Hong Kong do not trigger any countervailing policy reaction and hence are likely to lead to stronger response in the inflation rate.

Why is the adjustment in the output gap slower in Singapore than in Hong Kong? (Refer to Figure 7 in the paper.)

- In the case of Singapore, the MAS's policy reaction function puts greater emphasis on price stability than on changes in the output gap.
- In addition, the slower adjustment can be attributed to the countercyclical behaviour of S\$REER to the output gap.
 - When the output gap increases, the MAS would appreciate S\$NEER to dampen any rise in inflationary pressures, unlike in Hong Kong, where prices are allowed to adjust freely to changes in the output gap without any policy reaction. As a result, the increase in Singapore's inflation is likely to be more muted in Singapore than in Hong Kong.
 - Reflecting this, the increase in S\$REER is likely to be smaller in Singapore compared to Hong Kong. The smaller increase in S\$REER implies that the output gap would take longer to revert to mean (see Chart 5).

Chart 5A

**HK output gap vs
HK\$REER (YOY)**

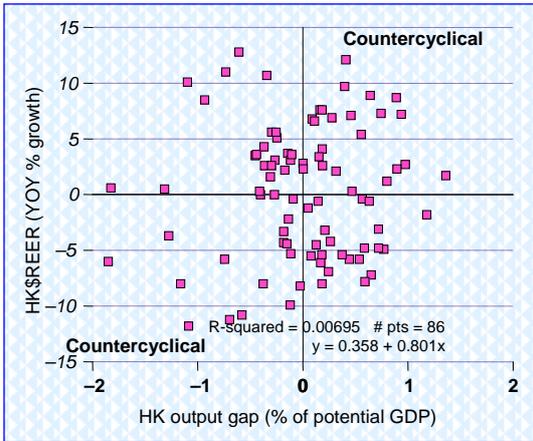


Chart 5B

**SG output gap vs
SG\$REER (YOY)**

