

## 27 Up: The Implications for China of Abandoning its Dollar Peg<sup>1</sup>

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China's announcement on Saturday, June 19<sup>th</sup> that it will abandon its currency peg to the dollar and henceforth manage the renminbi more flexibly against a basket of currencies will have implications for the world economy, but most of all it will have implications for China. Assume for sake of argument that Beijing now allows the renminbi to appreciate.<sup>2</sup> What impact should we expect this to have on the Chinese economy?

Some warn that there could be a sharp slowdown in Chinese growth, with adverse effects on the export sector and financial markets. They point to the appreciation of the yen in the 1970s and again in the 1980s, followed first by a sharp slowdown in Japanese growth and then a lost decade.<sup>3</sup> Others say that these fears are overblown. They note that the renminbi's appreciation in 2005-8 had little visible impact on Chinese exports and growth. The rebuttal here is that the currency's appreciation was so limited in duration and magnitude – it rose against the dollar by only 7 per cent a year and even that was halted after 12 quarters – that it is not possible to draw general conclusions from this experience. Moreover, the backdrop to the 2005 episode was special: the world economy was booming, and the Chinese economy itself was in an exceptionally strong position. This episode, it is objected, was *sui generis*.

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<sup>1</sup> First draft (June 21<sup>st</sup>): comments welcome.

<sup>2</sup> Whether and to what extent this occurs, time will tell. The government followed up on June 20<sup>th</sup> with another statement, for local consumption, reassuring its domestic audience that any change in currency values would be gradual. There is also the possibility that even if the renminbi is allowed to strengthen against its (undisclosed) reference basket, it could fall against the dollar, depending on whether or not other currencies in the basket fall against the greenback, and depending on the composition of the basket. A further sharp fall in the euro could have this effect, for example.

<sup>3</sup> See for example McKinnon (2006, 2007).

It would be nice if we had a larger sample of analogous episodes from which to draw inference. In this paper we therefore ask what can be learned from other times and places about the likely effects of China now exiting its de facto pegged exchange rate regime in favor of renewed currency appreciation. It turns out that there is a sample of other exits up in the post-World War II period, although it is relatively small.<sup>4</sup> Our core sample is composed of 27 episodes. Because of the small sample size, we eschew sophisticated econometrics. But with the help of some simple statistical comparisons, we can use these episodes as a set of structured case studies.

We find little evidence of serious economic and financial damage as a result of exits up. There is no increase in the incidence of banking and financial crises. There is no evidence of significant stock market declines. There is no evidence of a significant deterioration in the current account. There is no evidence of a significant fall in the investment rate. A variety of other economic and financial variables are similarly unaffected.

There is, however, weak evidence a deceleration in economic growth from relatively high levels. The average annual growth rate falls by roughly a percentage point between the five years before and after the policy event. This suggests that the preference of Chinese officials for moving gradually is well founded. But, if they do, they need not worry about a crash.

## **1. Episodes**

We are aware of no previous empirical work to have systematically addressed these questions. While there is an empirical literature on exits from pegged exchange rates (Eichengreen and Masson et al. 1998; Eichengreen, Masson, Savastano and Sharma 1999), this focuses entirely on cases where exit from a peg is followed by currency *depreciation*. And while

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<sup>4</sup> And few if any we can think of before that.

there is a literature on buying as well as selling attacks on pegged exchange rates (Grilli 1986), that literature is entirely theoretical.

So here we go. We are interested in using prior experience to understand how China's economy could be affected by the decision to stop shadowing the dollar and allow its currency to appreciate. This requires identifying previous cases where countries abandoned exchange rate pegs and allowed their currencies to appreciate. Doing so is not straightforward. Exchange rate regimes come in many flavors, not just pegs and floats. Many countries, while not attempting to maintain a peg, manage their rates heavily; these are intermediate regimes of one type or another. Others have an official or stated (*de jure*) exchange rate regime that differs from actual (*de facto*) practice. Some countries have multiple exchange rates; they may regulate one according to official policy but have a different exchange rate (often on the black market) that moves differently.

In what follows we utilize the Reinhart-Rogoff (RR) classification of exchange rate regimes.<sup>5</sup> This distinguishes 15 exchange rate regimes by degree of flexibility and is available monthly from 1946 through 2007 for 218 countries. RR make use of information on both official and black market exchange rates. The first four of their categories – no separate legal tender; pre-announced peg or currency board arrangement; pre-announced horizontal band that is narrower than or equal to +/-2%; and *de facto* peg – can be considered as capturing pegged rate regimes.

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<sup>5</sup> There are a number of alternative classifications of exchange rate regimes. The most prominent, published by the IMF, has been based on government's stated *de jure* exchange rate policy for most of its history. But it is historical data on what the officials in charge of exchange rate policy actually *do*, rather than *say*, that is of interest here. Similarly, we choose not to use Shambaugh's (200\*) system, since this relies exclusively on *de jure* exchange rate data and provides only a coarse classification (peg/no-peg) at an annual frequency. Levy-Yeyati and Sturzenegger's (200\*) categorization incorporates information movements in both exchange rates and international reserves, but their data set is annual, and only begins in 1974, both of which are disadvantages for our purposes.

We look for cases where countries moved away from these regimes and then experienced exchange rate appreciation over the subsequent period. Implementing this criterion requires answers to two further questions: how long a subsequent period, and appreciation against what? Somewhat arbitrarily, we require currency appreciation over the subsequent year. We consider both appreciation against the U.S. dollar, that being the single most important reference currency to which countries peg and the reference currency relevant to China, and appreciation against the SDR, that being a reasonably representative basket of major currencies (including the dollar).

Merging the 107,612 RR observations with IMF data on the official prices of both the American dollar and the Special Drawing Right (SDR) gives a total of 119 cases where a country exited a peg for a more flexible regime but only 20 cases where a country exited a peg and appreciated against both the dollar and the SDR over the subsequent year and another 10 (7) observations where there was only a dollar (SDR) appreciation.<sup>6</sup> Some of these observations are irrelevant since countries re-pegged subsequently, albeit not always to the same reference currency (e.g., Lithuania in 2003 or Ireland in 1979) or, despite appreciating over the first year, succumbed to rapid inflation soon thereafter (e.g., Liberia in 1998). We are left with 27 episodes of interest.

Austria, 1971	Germany, 1971	Mauritania, 1974	South Africa, 1972
Canada, 1970	Germany, 1973	Mozambique, 2004	Spain, 1974
Denmark, 1971	Hong Kong, 1972	Netherlands, 1971	Sweden, 1973
Equatorial Guinea, 1979	Japan, 1973	New Zealand, 1973	Switzerland, 1973
Finland, 1973	Libya, 1971	Nigeria, 1971	Tunisia, 1974
France, 1971	Malaysia, 2005	Portugal, 1973	UK, 1972
Germany, 1969	Malta, 1972	Singapore, 1973	

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<sup>6</sup> In what follows we consider both appreciation against the dollar and appreciation against the SDR basket, since in China's case it is not clear whether what is relevant is appreciation against the dollar or appreciation against the reference basket (which, while undisclosed, presumably attaches heavy weights to the same major currencies that constitute the SDR).

Several of these episodes are widely familiar, others less so. We see clusters of exits up around the time of the collapse of the Bretton Woods System in 1971 and then of the Smithsonian Agreement in 1973, although differences in timing suggest that individual episodes also depended on specific national circumstances. Equatorial Guinea's exit up in 1979 was a response to high oil prices that led to a windfall for the government.<sup>7</sup> Mozambique's in 2004 took place against a backdrop of strong growth (8 per cent) and the authorities' efforts to use appreciation to bring down inflation that had run at an uncomfortably high 14 per cent in 2003. Malaysia's in 2005 followed closely on China's decision to relax its dollar peg; this led Bank Negara, Malaysia to shift to a managed float against a basket of major currencies. The rate of appreciation in the first year ranges from 1 to 13 per cent. The median is not far from the 2005-8 Chinese average of 7 per cent.

Three of the countries in our sample, Japan, Hong Kong, Singapore and Mozambique, averaged double-digit growth for the five years before their exits up, comparable to China's growth rate now. In this sense their growth experiences are especially relevant to China's current situation. China's growth rate vastly exceeds that of most other countries in our sample, and its economy also differs in other respects. Most obviously, China has a much larger population. It is also poorer than most; average income in our comparison group is higher by a factor of around two. But along a variety of other economic and financial dimensions, it turns out that China is not all that different.

## **2. Analysis**

We start by examining how macroeconomic performance in the periods prior to exits up compares with that of other countries. Not surprisingly, countries choosing to exit up are

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<sup>7</sup> See McSherry (2006).

growing somewhat faster: 5.6 per cent per annum in the five years preceding the event versus 4.1 per cent for other countries; the difference is significant at the 95 per cent confidence level.<sup>8</sup> Countries opting to exit up have stronger current accounts, although the difference from the control group is not significant at conventional levels. Their imports and exports are both growing significantly faster. They have significantly higher savings and investment rates. It is often observed that how China is likely to perform economically and financially following the exit from its dollar peg will be unusual – that this will differ from the economic performance of a randomly-selected country – because China’s performance prior to the exit was unusual. If so, the 27 countries in our sample of exits up are unusual in many of the same respects.<sup>9</sup>

One difference of interest is that inflation is about twice as high around the time of exits up as in the control-group countries. The difference (10 versus 5 per cent per annum) is too large to be dismissed on Balassa-Samuelson grounds. This is also reminiscent of current Chinese experience.

What happens to growth during the periods around our 27 events? Figure 1 plots the individual experiences centered on the year of the exit (denoted year zero). Evidently growth experience around these events varied tremendously. There is some sign of growth trending lower after the exit. The average GDP growth rate is 5.6 per cent annually in the five years before the exits up, and 4.4 per cent afterwards. This difference is not statistically significant at the ten per cent confidence level, however.<sup>10</sup> In any case, whether this is a healthy correction of

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<sup>8</sup> Here we use data from the Penn World Tables. When we use World Bank data instead (WDI mnemonic NY.GDP.MKTP.KD.ZG) we lose a couple of observations (Equatorial Guinea and Libya), but the difference in growth rates is very similar, 5.9 versus 3.9 per cent.

<sup>9</sup> If not necessarily to the same extent.

<sup>10</sup> If one uses World Bank data on real GDP instead, the decline is from 5.9 per cent in the 5 years before an event to 4.3 per cent in the five years after, and in this case the change is significant at the one per cent level. Recall however that the World Bank does not provide data for several of our countries.

potential overheating or an undesirable slowdown is impossible to say. That inflation is running significantly higher in the exiting countries is at least not incompatible with the first view.

We widen the set of variables we examine in Figure 2, which looks at nine economic and financial characteristics before, during, and after the 27 exits up. The top leftmost panel focuses again on real GDP growth. We show the sample average of the 27 cases, along with a +/- two standard deviation confidence interval. The vertical line in the middle of the graph again shows the year when the countries appreciated away from their fixed exchange rate. To facilitate comparison with contemporary China, we also show the Chinese average growth rate for the post-1999 period, with a wide tick mark indicating when it unpegged the renminbi in 2005. Although Chinese growth is high, it does not lie outside the confidence interval marked; this again reassures us that the data from our 27 cases may have some capacity to shed light on Chinese experience.

The remaining panels of Figure 2 do the same for other economic and financial variables. Directly to the right of GDP growth is investment as a percentage of GDP. At the top right is inflation (as measured using the percentage change in the GDP deflator). The middle row shows three trade-related variables: trade as a percentage of GDP; export growth; and the current account as a percentage of GDP. In the bottom row, we present three monetary variables: the growth rates of domestic credit and M2, and the ratio of international reserves to M2. China is unusual compared to our 27 cases in its high export growth rate but similar in other respects, which again is somewhat reassuring.

The most striking feature about the event studies in the periods after exits up is that ... nothing much happens. We have already noticed that growth slows on average, by approximately 1 percentage point, though there is a considerable variation across national

experiences. But relatively little seems to happen to investment, inflation, or the external side of the economy. The same is true of the three monetary variables we consider. Exits up do not have a visible impact on macroeconomic and financial performance.

One much commented upon aspect of the Chinese situation is the country's vast holdings of international reserves. The bottom right-most panel of Figure 2 shows that these are not, in fact, especially large by the standards of other countries that have exited up. Note that reserves are normalized here by M2, following inter alia Obstfeld, Shambaugh and Taylor (2009). The use of M2 to is sometimes justified as a measure of depth and extent of the credit markets that the authorities could conceivably have to backstop using their international reserves. But how we normalize reserves in fact makes remarkably little difference for this conclusion. Figure 3 normalizes reserves by GDP, months of imports, and short-term external debt. (We also reproduce the data on reserves measured compared to M2.) In no case do Chinese reserves look much out of the ordinary, compared to our 27 comparison cases. It is also striking that reserves, like most other variables, do not change very dramatically on average after exits up.

We have also examined the incidence of four types of crises: a) banking crises (using four different measures taken from the literature); b) foreign exchange/balance of payments crises (using seven different measures); c) equity market crises; and d) sudden stops of capital inflows. In no case is the period of five years after exits up associated with statistically significant changes in crisis incidence. The probability of a banking crisis is lower in the period after an exit-up than in our control group of countries, though not by a statistically significant margin. There are no sudden stops of capital inflows or security market crises in the five years before or after our events. Thus we find no evidence of increased vulnerability to banking, currency, security market, capital inflow crises following an exit up.



### 3. What Causes Growth to Slow?

So we have something of a paradox. Growth slows by a percentage point around the time of exits up but there is no other visible change to the economy. Should the decline in the growth rate, which misses statistical significance (just marginally) at the 90 per cent confidence level be dismissed as a statistical anomaly? To get a better handle on this question, we look next at the rates of growth of the components of GDP. Export growth slows significantly, from 9.7 per cent per annum in the five years preceding the exit to 6.4 per cent in the five years following (the difference is significant at the 95 per cent confidence level); this is an expected effect of currency appreciation. But import growth slows by almost the same amount. And as we saw above there is no visible change in the current account.

The rates of growth of both investment and government spending fall slightly following exits up, but neither change remotely approaches statistical significance at any reasonable confidence level. The component of GDP that lies behind the slowdown in growth turns out to be household consumption. The rate of growth of household consumption falls from 6.0 to 4.3 per cent per annum between the five years prior to and following exits up. With the country exporting less, households consume fewer imports and domestically-produced goods alike.<sup>11</sup> One interpretation, again, is that this is a healthy adjustment that avoids overheating. Another interpretation is that, had the authorities been prepared to support spending by increasing government consumption and by adopting measures, such as financial liberalization and the development of a social safety net, to promote the growth of private consumption, any slowdown could have been avoided.

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<sup>11</sup> More precisely, the rate of growth of their spending on these items slows.

#### **4. Conclusion**

What are the implications for Chinese economic policy and performance? The experience of other countries gives little reason to think that an exit up will have seriously adverse consequences for the economy. But it points to the possibility of economic growth slowing at least marginally. If the authorities wish to limit the risk of an excessive slowdown, they can maintain the level of public spending and redouble their efforts to foster the growth of private consumption. If more domestic spending means more spending on, among other things, imported goods, this will represent a Chinese contribution to global rebalancing.

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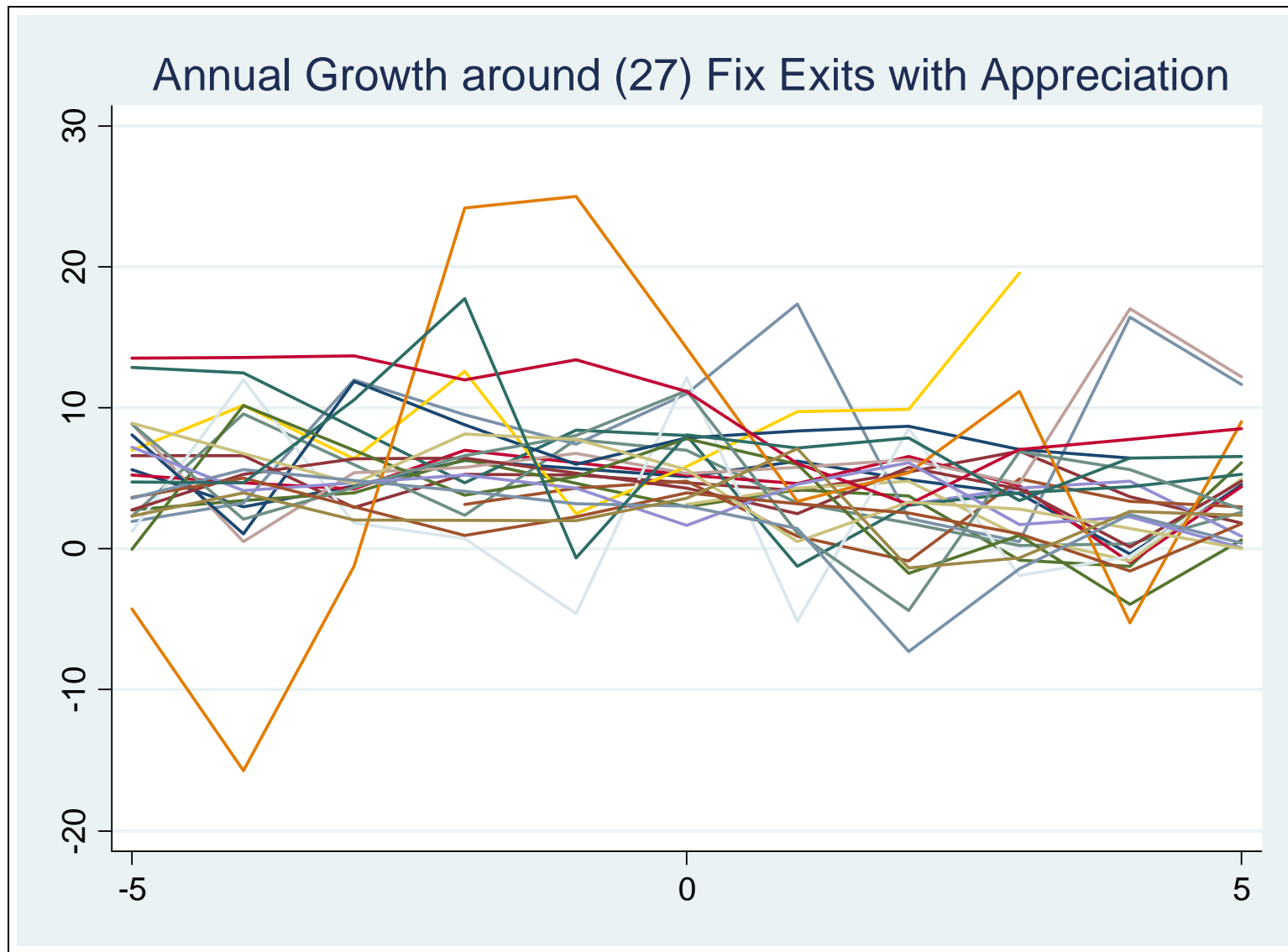
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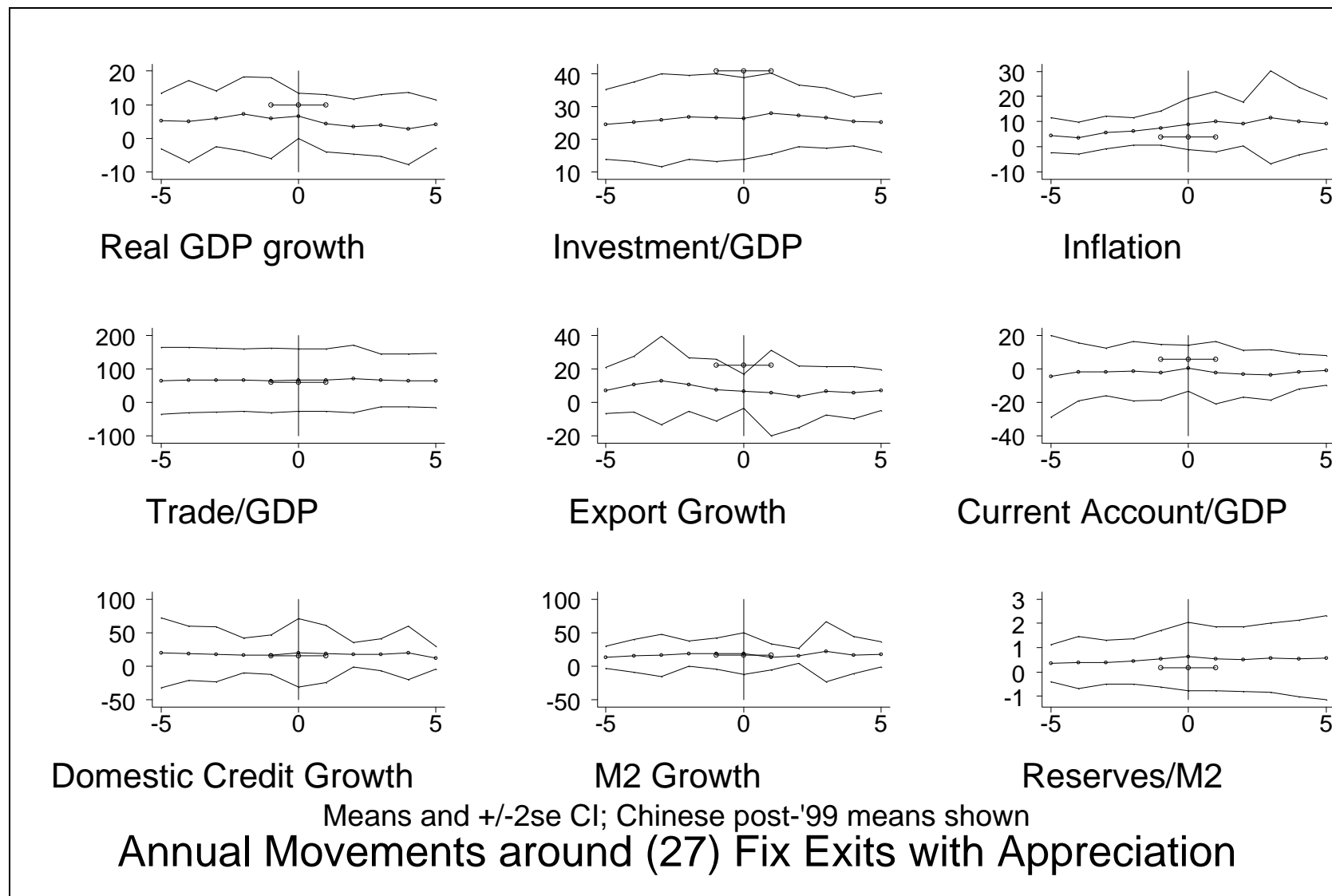
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Figure 1: Growth around Times of Appreciating Exits



**Figure 2: Macroeconomy around Times of Appreciating Exits**



**Figure 3: International Reserves around Times of Appreciating Exits**

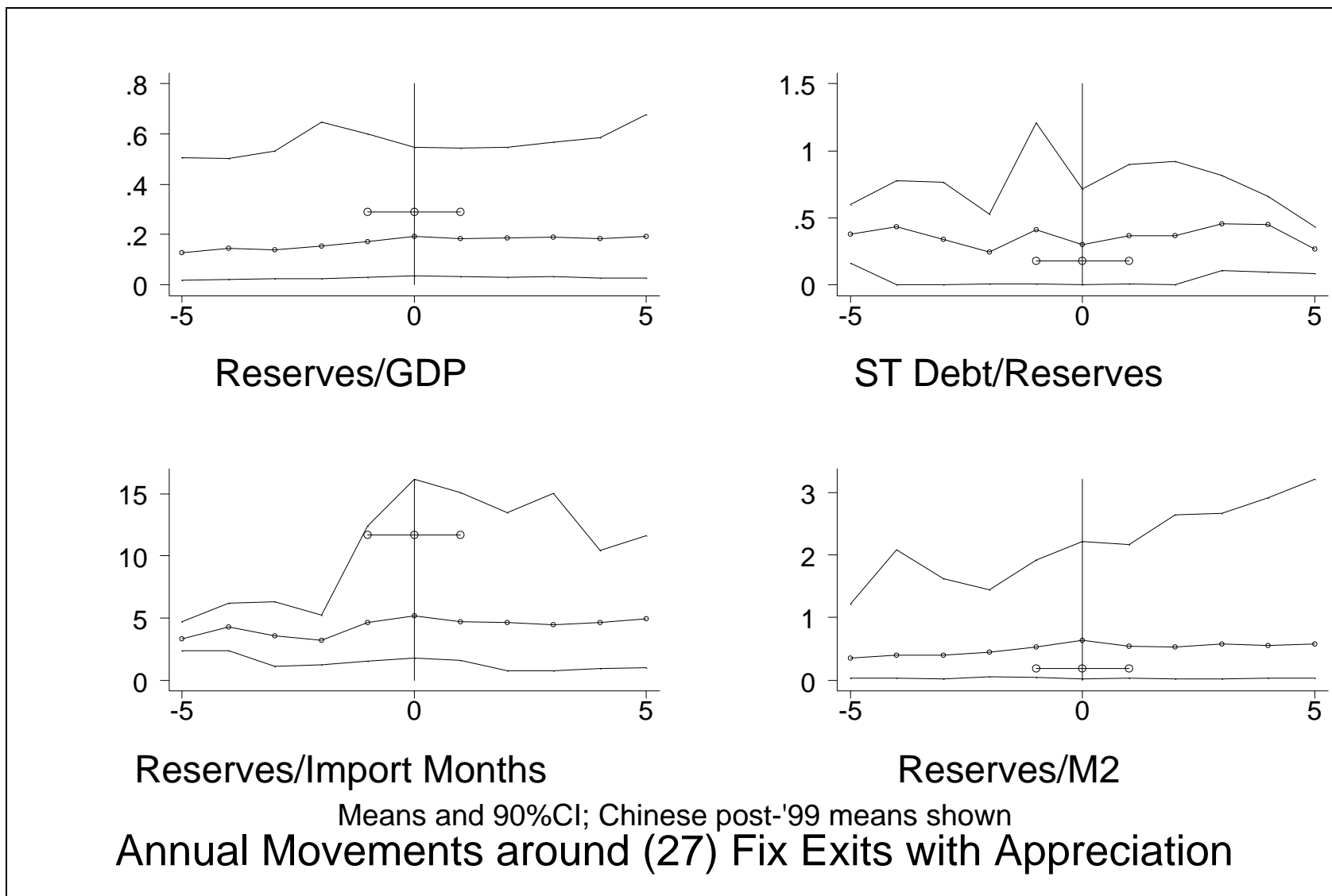


Figure 4: Rates of Growth of GDP Components

