

# A Discussion on Macau Monetary Reform from a Broad Perspective

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## 1. Introduction

There appear to be many reasons for celebrating Macau's economic success since it became the world's top-one casino resort in 2007, with its gaming revenue surpassing Las Vegas' and its GDP per capita outstripping Hong Kong's. Macau's real growth, reaching 10.1%, 14.2%, 28.4%, 6.9%, 17.0%, and 27.3% consecutively in the six years up to 2007 (CSM 2007), is also viewed as sustainable due to the continuation of the "Free Travel Scheme" (FTS) permitted by the central government.

Fast growth has enabled Macau to accumulate enormous forex reserves (RSD 2007), which should have greatly pushed up the exchange rate of its domestic currency (the *pataca* measured in MOP). Unfortunately, the *pataca* has been depreciating rapidly vis-à-vis the currency (the RMB in units of *yuan*) of its largest trading partner (the Mainland). Macau money fell from 1.03 *yuan* / MOP in July 2005 to 0.85 in April 2009, and this fall is by no means over. The past three and half years saw a big anomaly in this small booming town – a skyrocketing economy with a freefalling currency.

Monetary instability starting to arise in 2005 has become increasingly serious ever since because the *pataca* has been losing its value very fast not only externally but also internally, with inflation exhibiting a worrying tendency: 1.7%, 4.8%, 6.0%, 6.4% for 2004-2007(Q3), and 10.0% in February 2008 (AMCM, 2007). Inflation is now lying low due to the global financial crisis, but will surely stage a comeback once the crisis fades out. Soaring inflation before and high price levels now are hurting the working-class public, asset bubbles aggravating income inequality, and large *pataca* depreciations (vs. the *yuan*) eroding the saved Macau wealth. All these phenomena witnessed a major problem of currency misalignment facing the territory.

The problem's root is a currency board arrangement (CBA) adopted by the Monetary Authority of Macau (AMCM) and anchored by Hong Kong's currency (the HKD), which in turn links to the U.S. currency (the USD)

(Chan, 2004). The U.S. has long favored a weak dollar policy to revive its troubled economy and nibble away at its rising foreign debt, while the RMB is being forced to appreciate continually. As such, the *pataca* will be depreciating effectively against the *yuan* via its link directly to the HKD and indirectly to the USD. Macau's CBA is supposed to deliver low and stable inflation under a healthy anchor, yet its ultimate anchor (the USD via the HKD) is now very sick with no hope to recover any time soon, so that Macau money is riding a roller-coaster since it sticks to its U.S. dollar-related CBA.

Such a monetary system makes Macau easily exposed to external shocks. This vulnerability was bitterly experienced by Macau via contagion effects in the 1997-1998 Asian crisis when the HKD was attacked (mainly by U.S. speculators). The attack was finally defeated, but Hong Kong and Macau then suffered high interest rates and a long deflationary depression from the financial crisis of external origin, among other things (e.g., SARS). This time, once again, Hong Kong is being hit much harder than other comparable economies by the global crisis, with its GDP growth turning negative to -7.8% in the 1<sup>st</sup> quarter 2009 on a year-on-year basis. The growth of Macau is also being tied down with the worst situation since 2005 even under the FTS support.

There have been some researches on Macau reform for avoiding adverse external influences and correcting monetary instability and currency misalignment (Xu, 2006 and Gu & Sheng, 2008). It is proposed that the *pataca* should use the RMB rather than the HKD as its anchor to get away from wealth depreciation, real loss, financial deficiency, and monetary instability. It is urged that the original exchange rate of 100 MOP = 103 *yuan* should be restored to give the *pataca* a deserved status as a more attractive currency than the HKD for the first time in history as Macau has been economically stronger than Hong Kong for eight years. It is recommended that a sovereign wealth fund (SWF) should be established to pursue autonomous growth and real development (Chan, 2007). Yet academic and financial circles in the territory, simply indulged in all the excitement of foreign

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dominated bubble growth, attach no great importance to these serious proposals for an urgently needed monetary reform.<sup>1</sup>

In April 2009, the State Council of China aiming to promote the RMB's offshore use in external trade declared Shanghai and four Guangdong cities as the experimental units for this new reform. These units are expected to function well in pushing for internationalization of the RMB if there is an offshore RMB settlement / trading center in Hong Kong and/or Macau. This would provide the two SARs with a favorable opportunity for financial development and economic growth. One barrier to fully utilizing this opportunity, however, is that both SARs still link monetarily with the USD to a more or less extent. The Chief Executive of the Hong Kong SAR has recently talked about the possibility of shifting the HKD's anchor from the USD to the RMB. So, Macau should think seriously about its monetary reform before it is too late.

Even though it is evident that there exist necessary and sufficient conditions for the monetary reform, one can expect there to be some difficulties in carrying it out since some Macau elites are hesitant to do so under certain worries involving currency convertibility, policy confidence, political autonomy, speculative attacks etc. There do have been discussions on the reform, yet it is observed that two parties in debate have different views about major world currencies' (such as the *yuan*, *dollar*, *euro*) changes, different understandings of the existing monetary regimes, and different interpretations of some given facts and data.<sup>2</sup> Some seem to underestimate the length and magnitude of future RMB appreciation while others may even need conceptual clarifications (Ho, 2003). That is the very reason that this paper provides a detailed explanation of major monetary regimes adopted by various economies, presents a clear statement of RMB appreciation prospects under persistent and consistent (though largely incorrect and unfair) foreign pressures, and addresses the opposite party's concerns about potential problems that may arise from the monetary reform.

The rest of the paper is structured as follows. Sections 2 and 3 describe four different monetary regimes adopted by various economies. Section 4 reveals the likely prospects of RMB appreciation under international economic imbalances. Section 5 mentions the indispensability of the Macau monetary reform, discusses possible reform conundrum, and clarifies certain controversies related to the reform. Section 6 concludes the paper.

## 2. Central Banking and Currency Boards

Before discussing justifications for currency-peg shifting by Macau, it is necessary to clarify several monetary concepts due to the operational complexity of the AMCM, which is neither a pure CBA nor

complete dollarization but a mixture of the two even with certain ingredients of central banking. We look first at these concepts separately to avoid confusion, and then put them together in the context of Macau. The concept of monetary union to be used later must also be distinguished from dollarization for now. This section focuses only on central banking and currency boards.

As the government authorities of sovereign states, central banks are policing financial markets and in charge of monetary policy. Central banks may affect interest rates, domestic credit, and the money supply, all of which have direct impacts on aggregate output, inflation, and hence everyone's well-being. Equipped with policy tools such as open market operations, discount lending, and reserve requirements, a central bank intends to achieve such policy goals as output growth and economic stability. Its monetary policy is conducted by pursuing certain monetary strategies in the form of operating instruments and intermediate targets. The goal of economic stability can be further classified into macro-oriented monetary stability (of prices and exchange rates) and micro-focused financial stability (for interest rates and capital markets). Indeed, a central bank plays a central role in adjusting financial markets and the overall economy. Especially, in the case of crisis, a central bank serving as a lender of last resort (LOLR) can channel reserves to banks needing them most via the discount tool by printing money. This is the most effective way to prevent financial panics, bank failures, and economic recessions.

The AMCM actually has acted as a LOLR by means of monetary bills (M-bills) together with a *repo*-style discount window backed by the SAR Reserve Fund and forex reserves (Chan, 2004). A typical central bank makes money from discount lending, whereas the AMCM incurs a cost of working with M-bills.

Central banks always struggle for a difficult tradeoff between two conflicting goals of growth and stability. In the process, a notion about central bank independence (of domestic governments) is becoming increasingly fashionable, while this fashion also encounters its critics with a different view on bureaucratic behavior that independence may facilitate bankers' motivation for power and prestige. Many fear that those unelected elites responsible to no one might act for their personal welfare at the cost of the public. Under the impossibility trinity, central banks can be very powerful (e.g., the U.S. Fed) if having an independent (of foreign influences) monetary policy when international capital moves freely and exchange rates are floating. But the policy trilemma also asserts that a central bank, if fixing its exchange rate under perfect capital mobility, may become powerless to manipulate interest rates for affecting real economic activity and will be exposed openly to various external shocks.<sup>3</sup>

As a monetary authority, a currency board commits to holding enough foreign currency assets to back

domestic currency liabilities at a fixed rate. In other words, it pegs its national currency to another nation's currency by selling or buying forex reserves as appropriate to maintain a parity value. When doing so, it passively changes the stock of domestic money and its conduct of monetary policy is therefore put on autopilot. Since its only job is to fix the exchange rate through foreign reserve trading, the currency board is regarded as a monetary institution for the management of the fixed exchange rate. Thus the currency board has very limited responsibilities, and also is less powerful than a typical central bank. A currency board is prohibited by law from acquiring any domestic assets such that all currency it issues or its authorized issuance is fully backed by forex reserves.

CBA's clearly have some advantages. a) With monetary policy taken completely out of the hands of politicians who might abuse it, a currency board is shielded from political influence. Thus many economists see CBA's as a useful constraint on profligate fiscal policy and as the best means to establish credibility for price stability. b) A currency board itself cannot engage in discretionary monetary policy, either, so that its commitment to the exchange-rate target makes its operation simple and transparent. That is, increased domestic money is exactly matched by an equal rise in foreign reserves, such that no inflation is caused by printing money. Inflation and interest rates must move in line with those of the anchor economy. c) With its strong commitment to exchange stability, a CBA is deemed to be effective in bringing down inflation quickly (yet that was not the case with Macau prior to the current global crisis) and in lowering the chance of a successful speculative attack since it can never run out of foreign reserves under the full backing.

The drawbacks of CBA's are also obvious. a) There is the loss of an independent monetary policy, and an economy that adopts a CBA gets the anchor economy's monetary policy, like it or not. b) The currency board that cannot create money or hold domestic assets will be unable to act as the LOLR in times of banking crises. c) A currency board, with the increased exposure of the economy to shocks from the anchor country, has no ability to employ stabilization policies such as reserve requirements set on domestic banks or surprising devaluations for smoothing or fine-tuning the economy. d) If there is a speculative attack on the CBA, the resulting currency substitution can be highly damaging to the economy with consequences of sharp economic slump, drastic price deflation, and a subsequent long-lasting recession.

Currency boards originally arose in the colonial territories of the British Empire. By CBA's, the colony effectively let its imperial ruler run its monetary policy while handing its ruler all seignorage coming from its demand for money. Critics of CBA's point to the requirement of foreign reserve holdings as a cost of operating a currency board. However, since these

holdings by modern currency boards are largely interest-bearing, highly-liquid, low-risk securities (secondary reserves – SR) denominated in foreign currencies rather than non-interest-bearing actual currency (primary reserves - PR), the interest earnings on SR that outweigh seignorage losses on PR tend to make currency boards profitable. The currency-board system peaked in the 1940s, and virtually disappeared during the 1960s. But it came back in the 1990s as a way to reduce incentives for devaluation and to import anti-inflation credibility from the anchor country with a well-established, low-inflation reputation; examples include Argentina, Bosnia, Bulgaria, Estonia, Latvia, and Lithuania.

Normally, CBA's are adopted by colonized regions (Hong Kong and Macau are among them), by financially weak, economically poor, developing, or small countries, by newly independent nations with no track record of monetary policy, or by mismanaged economies with a history of high inflation and big (budget or/and current-account) deficits. So there is nothing of which you should be proud from adopting a CBA even if it is run successfully. Compared with a central banking system, a CBA is not an independent monetary authority but accepts foreign influences. As a less advanced institution, a CBA is to achieve more narrow policy goals [only exchange (and jointly price) stability], use fewer policy tools (just foreign reserves) and simpler monetary strategies (just forex trading), and interact with the domestic financial system under no financial deepening or sophistication. So it is inconceivable that as a well-developed, financially-strong, large economy, Hong Kong has still maintained a backward CBA regime without changing to a more advanced, independent system of central banking.

### 3. Dollarization and Monetary Unions

This section is devoted to the description of dollarization and monetary unions. Dollarization refers to a situation where a country abandons its own currency altogether and adopts a sound currency of another country, like the USD, for all its domestic transactions. What this term actually means is the use of any other nation's currency, not just the USD, as legal tender. This arrangement is considered as an even stronger commitment than CBA's to exchange-rate management simply because no exchange rate, no exchange crisis. Even a currency board can be mismanaged and given up, forcing a devaluation, just as Argentina did in 2001-2002 (irresponsible politician can undermine any monetary policy regime, and U.S. speculators are powerful enough to attack any economy by causing exchange problems); yet a domestic change in the value of your used currency is impossible with dollarization since that currency is foreign money.

This monetary practice is usually chosen by financial-crisis-ridden, currency- mismanaging, less

developed, emerging-market, or small countries; the most cited examples include Ecuador, El Salvador, and Panama. 21.5% of the member states of the IMF have been dollarized, and more nations are contemplating partial or complete dollarization. In the wake of global financial crises around the late 1990s up to 2002, radical economists, mostly, of American origin argued that all developing countries should dollarize (Daniels and VanHoose, 2005: 74). All these economies, whether big or small, if having rigid labor markets, fragile banking sectors, and shaky public finances, must do so in order to be immune from foreign speculative attacks. Even Russia should adopt at least a CBA if unwilling to be dollarized (Krugman and Obstfeld, 2004: 696). (Remember, currency speculators making trouble are mostly the American, too; this point is again proven by the current global financial crisis).

Macau is largely dollarized, but not many people in the territory have admitted this long-existing fact; still, until now is the AMCM widely perceived as a CBA only. Some insist on the widespread use of the HKD in Macau as currency substitution without harmful effect (Ho, 2003). We do not share the same view as theirs since this monetary phenomenon usually occurs at a time of high inflation and/or under an imminent devaluation. In most years, however, Macau's inflation was not high, with the *pataca*-HKD convertibility 100% guaranteed, there was no need for the public to seek refuge in the HKD as a store of value. Indeed, there is some currency substitution now going on in town, which is not of the HKD for the *pataca* but of the *yuan* for the *pataca* (called *yuanization*). Local people run to banks on paydays to exchange their idle *pataca* for the *yuan* since the former is depreciating fast relative to the latter.

The proponents of dollarization advocate it as a last-resort monetary policy option for poorly-managed economies with weak currencies. Its merits are in the following. a) Small countries bordering a large one with a strong currency, by giving up their problem currencies for dollarization, will no longer mismanage them and can therefore achieve fiscal prudence and economic stability. In turn, inflation and interest rates should simply mirror those of that large country. b) Dollarization (by the USD) completely avoids the possibility of a (U.S.) speculative attack on the domestic currency (that does not exist).<sup>4</sup> In other words, there is no risk of big devaluations or sudden capital outflows. c) Using a strong foreign currency as domestic money can help a small nation to integrate easily into world markets by raising trade and investment. Also, d) low foreign inflation transmitted to the small nation can reduce inflationary expectations and hence the risk premium on domestic loan rates which will then be kept at low levels, thereby strengthening financial institutions and promoting output and employment.

The opponents to dollarization counter that its benefits do not exceed its costs. As a matter of fact, dollarization suffers from some of the same

shortcomings as CBAs and incurs higher costs than the latter. a) There is the complete loss of autonomous monetary and exchange-rate policy, and the destiny of a dollarized economy is directly affected by its dollarizing counterpart which, usually much bigger, is ignorant and does not care about the little guy's well-being. b) The monetary authority is eliminated as a LOLR in averting a financial panic or a bank run due to its inability to create money. c) It may be a hard job to get the sufficient amount of a sound foreign currency to dollarize and then to keep the monetary base rising with the growing economy as required. Furthermore, once this process is started, there is no reverse course. d) Dollarization has an additional disadvantage vis-à-vis CBAs, that is, the greater loss of seignorage, the revenue transferred to the foreign anchor country by not printing domestic money. (The U.S. profit from seignorage was more than USD 20 billion in 2003, 2.6 times as much as Macau GDP) (Mishkin, 2003: 515). e) Wide exposure of the dollarized economy to policy shocks from the dollarizing economy is the least worrisome to the former if closely tied to the latter, but dollarization will make little sense if both economies are not strongly linked. Small economies, facing volatile terms of trade and not deeply integrated with a big one as the anchor, are likely to incur net costs under dollarization because of their inability to absorb external shocks while the alleged benefits of low interest rates, fiscal discipline, and macroeconomic stability may be elusive (Cecchetti, 2006: 513).

As a regional form of shared monetary governance under bi- or multi-lateral policy cooperation, a monetary union, like the *euro*, differs greatly from dollarization. As mentioned above, when the anchor country makes its decision, the dollarized economies carry no weight so that they will have to forgo seignorage revenues and cut their public spending, or to find some way of getting money to provide the needed liquidity for their troubled banks. Under the *euro* union, however, all member countries make joint decisions, share all seignorage, and have a united ECB which, along with its national counterparts, serves as a LOLR to make *euro* discount loans.

Obviously, there are many justifications for Hong Kong to adopt a central banking regime while there is no reason for it to stick with the primitive CBA. Macau is not in any monetary union with Hong Kong even though the HKD has long prevailed in the territory, meaning that the monetary relationship is unequal between the two cities. Macau can only be thought of as having a (1/2) HK-dollarized currency board given the currently extensive presence of the HKD in its monetary system, with the HKD's share in Macau's *M2* reaching 53.9% in 2006 while other foreign currencies took a share of about 20%. This type of currency structure renders domestic monetary stability particularly vulnerable to external shocks arising from anchoring or dollarizing currency.

#### 4. International Imbalances and RMB Appreciations

Since Macau's monetary instability has much to do with the RMB's substantial appreciation vis-à-vis the USD via the HKD link, it is important to figure out whether this international economic imbalance is temporary or will be persistent. If the imbalance is not transitory, Macau will have to make necessary monetary changes to avoid the deterioration of current instability and the situation of real loss. This section provides six arguments for our prediction of the prolonged large RMB appreciation.

1) On the U.S. side, the stubborn twin-deficit problem has transformed it from the world's largest creditor into its largest debtor almost forever. The profligate American spending habit, evidenced by the widespread debt financing of private consumption and public spending, causes the extremely low U.S. saving rate (<1%). The savings deficiency relative to investment inevitably gives rise to trade deficits which then have to be financed by foreign debts. Furthermore, the U.S. has been trapped in its ineffective war against global terrorism for too long and is being hit by a deepening subprime mortgage loan crisis; as a result, the U.S. now faces an impending recession. These old weaknesses and new problems are driving America to persistently pressure China for substantial RMB revaluations. China gave in by abandoning its long-held RMB's hard peg to the USD in July 2005 and allowing for small and gradual revaluations ever since. Unfortunately, Uncle Sam now becomes addictive to China's concessions, more of which arouse his demand for even more of them.

2) As known by the U.S. itself, the RMB's appreciation, no matter how large it is, can solve neither Sino-U.S. trade imbalances nor American economic problems due not only to the U.S.'s low savings but also to its declining competitiveness. The opposite of this situation is true for China. Its high productivity of labor force together with its low cost of wages, made possible by its huge, well-educated surplus labor, has kept China's exports almost unbeatable on the world market, with its competitiveness able to be maintained almost forever, regardless of the RMB's value relative to the USD's. China will then, as always, be taken as a scapegoat by the American politicians for their own economic problems, and the U.S.-Sino Senior Forum, starting in 2006 and held twice a year, now becomes a U.S. dominated platform to force a new round of RMB appreciation, one after another.

3) The RMB's value is not only a bilateral Sino-U.S. dispute, but has also become a more international issue. This problem was initially triggered by Japan, has been later dominated by the U.S., and is now being heated by the EU. The USD has depreciated 40% against the *euro* since 2002 (up to December 2007) but the RMB has so far appreciated more than 20% against the USD, so that the *euro* has actually appreciated a lot relative to the

RMB. Consequently, China has received a huge and rising trade surplus with *euro* countries side by side that with America. Since there is nothing that can be done about the U.S. policy of dollar depreciation, the European now turn to join the American to fiercely push the Chinese for more, quicker, and greater RMB appreciations. The extended battle between these trade giants (China, America, and Europe) will lie ahead for many years to come. The 2009 economics Nobel Laureate Krugman also made such a prediction when invited to visit Beijing, Shanghai, and Guangzhou recently (May 11-15, 2009).

4) There appear to be certain serious factors that will be exacerbating international imbalances. To prevent its economy from sliding into a severe recession, the U.S. Fed has kept on lowering the interest rate, and this will accelerate the USD's fall in the long run (even if not in the short run, such as now in the midst of a chaotic crisis). To curb escalating inflation caused by foreign hot money inflows prior to the crisis, China had frequently raised its interest rate, increasing the Sino-U.S. interest rate differential and hence greatly aggravating capital inflows. FDI continues to enter even after the crisis, and China is now trapped in rampant liquidity flooding due to the huge expansionary credit stimulus to prevent the crisis-induced growth slowdown. The expected irresponsible fall in the dollar will make the  *yuan*  effectively depreciating vs. the *euro* and the Japanese  *yen* , causing China's trade surplus with Japan and Europe to swell even further. All this burdens China with even greater pressure for RMB appreciations, and China may have to do so in order to avoid losses from rising import prices and mitigate domestic inflation as the crisis fades out in the near future.

5) China is now forced into getting on the same track as was Japan in 1971-1991 under over-powerful foreign pressures. Faced with problems of the Vietnam War, chronically high inflation, and rising twin deficits, America pressured Japan to dismantle its fixed exchange rate in 1971 in an attempt to reduce its large trade surplus with the U.S., and forced the  *yen*  to appreciate further by removing its exchange controls around 1980. The  *yen*  had risen 64% from 360 yen/USD in 1971 to 130 in 1989, but ironically the U.S. trade deficits with Japan were still in there and remained very large. The  *yen* 's value against the USD has since been kept at high levels (below 100), but solved none of the U.S. economic problems. This process is referred to by U.S. economists as America's "Japan Bashing," and "China Bashing" has only just begun (MacKinnon, 2004). With its fixed exchange rate crippled in July 2005 and its capital controls to be disarmed soon, China's  *yuan*  appreciation has only reached the early stage of a 20-year process (according to the Japanese experience).

6) China, like other oriental nations, traditionally has a high rate of savings (> 45%), even higher than its already high rate of investment. Thus its growth rests heavily on exports along with investment, and its trade

balance must be positive all along. However, its “crazy” trade growth seems to have stayed too strong for too long (at an average yearly rate of 17.4% for exports in 1978-2007). Huge trade surpluses have led to huge forex reserves, thereby making people believe that the RMB has been undervalued to a huge extent. Higher market expectations of RMB revaluation attract more capital flows into China and create greater forex reserves, thus inviting stronger international pressure for larger revaluations. This process, having become a self-strengthened vicious circle since China was forced to allow for a limited floating of the RMB in 2005, can hardly be reversed any time soon.

The synchronic growth in both China’s forex reserves and accumulative RMB appreciations is observed to be very significant. The U.S. has been the world’s largest debtor for more than 20 years, and China has now become its largest holder of forex reserves (amounting to USD 1.95 trillion at the end of 2008) with a legacy of strong trade growth for 30 years (now still growing but at a slower pace). This big international economic imbalance that, though lessened somewhat by the current global crisis, will remain for many more decades is a fundamental force to drive a long-term, quite large RMB appreciation. If sticking to the original HKD-linked CBA, the *pataca* will continue to suffer a bigger depreciation relatively to the *yuan*.

## 5. Obstructing Controversies and Reform Conundrum

Given the long-lasting prospect of large RMB appreciations as stated above, there are six fundamental justifications, as listed below, for Macau’s monetary reform (Gu & Sheng, 2008).

(1) The Mainland is now the most important factor for Macau’s growth, and there is no reason to keep Macau’s CBA still anchored by the HKD. Sustainable receipts in the RMB also provide a sufficient condition to take it as Macau’s monetary anchor which will be very strong for many years to come. (2) Possible gains from increased competitiveness that promotes net trade under the *pataca*’s effective depreciation fall well below the large loss of real income caused by the worsening terms of trade. It does not pay to stick with the HKD linked CBA. (3) Since much of Macau savings must be later used to finance imports from the Mainland, the long-lived RMB appreciation will cause an unbearable loss from wealth depreciation under the HKD-anchored CBA. (4) The *pataca* has experienced value losses for too long with high or unstable inflation. And monetary reform must be carried out to prevent instability problems from deteriorating fast. (5) A dollarized Macau CBA has long brought about non-curable financial deficiencies in the form of weak *pataca* credit. The reform may revive the sickly *pataca* by preventing yuanization, removing HK dollarization, and raising the

efficiency of Macau’s banking sector. (6) Macau’s management of forex reserves is inefficient in terms of safety and returns with too much liquidity for convertibility. Macau may need to establish a SWF as an innovative reform to avoid financial losses and seek autonomous growth.

Even with the above necessary and sufficient conditions for the monetary reform, one cannot expect it to be carried out any time soon since some of Macau elites are reluctant to do so under certain worries about (a) currency convertibility, (b) policy confidence, (c) political autonomy, and (d) speculative attacks. We need to clarify these controversial issues and provide some countermeasures for tackling new problems that may arise from the reform.

First, one may think of linking the convertible *pataca* to the inconvertible *yuan* as unnatural. But Given that the *pataca* used to link to the inconvertible Portuguese *escudo* for many years up to 1977, why will there be a problem with the *pataca*’s *yuan* link? Note that the *escudo* was too weak to be convertible at that time, whereas the *yuan* is strong enough to be convertible but not allowed to be so by Beijing. Now China is the world’s largest holder of forex reserves, and the Bank of China specializing in forex transactions is the note-issuing bank for both the HKD and the *pataca*; why worry about the RMB’s inconvertibility? In fact, acceptability is more important than convertibility for paper currency (fiat money). The HKD, though convertible, is now rejected by Mainlanders, whereas the *yuan*, though inconvertible, is accepted by every Chinese. What then are the uses of the *pataca*’s convertibility given that Macau’s main trade partner is the Mainland? Actually, the *yuan* is becoming more and more convertible while, as shown shortly, some inconvertibility of the *pataca* will be needed to curb speculative attacks on the reformed Macau CBA.

Second, some worry that monetary changes may shake up policy confidence which, however, has already been lost due to the weakening HKD. Recall that the *pataca*’s anchor was shifted from the *escudo* to the HKD in 1977 due to sharp *escudo* devaluations under a Portuguese revolution. Why can the *pataca* not change its anchor again from the freefalling HKD to the *yuan*? Although there is no problem with the *pataca*’s full convertibility into the HKD under enormous forex reserves, this policy credibility becomes meaningless because the *pataca* is sinking with the HKD in which people have no confidence. There is now a payday run on the *pataca* for the *yuan* by wealthy local citizens, and this is probably a better verdict on the existing Macau CBA. Under no reform, one can expect to see a continuous, destabilizing flow out of the *pataca* and a further shrinking use of it.

Third, the local elites fret that political autonomy may get lost after the monetary reform. Those obsessed with independence have forgotten the fact that a CBA was initially designed by colonial rulers to control a

colony's monetary policy and seize its seignorage and that modern CBAs invite foreign influences for low inflation.<sup>5</sup> Why does Macau's CBA have to stay independent of its own (prudent) government by linking to an external currency while unable to overcome high or unstable inflation? It is inconceivable that the *pataca* could/can link to the *escudo* previously and the HKD now but cannot to the *yuan* even if the Portugal was an insignificant economy in West Europe and Hong Kong growth has relied heavily on the Mainland which is also dependable for Macau prosperity. The weird mentality regarding independence has become the biggest obstacle to the urgently needed reform for Macau. It is unwise, in fact, to mix economic affairs with political autonomy since there should be no political right required to be sacrificed for economic gains from the monetary reform.

Fourth, those skeptical about the reform are afraid that the reform-driven *pataca*'s appreciation against the HKD would invite currency speculation and give rise to monetary instability. These worriers fail to see that Macau has already been suffering severe instability in terms of high or unstable inflation, asset bubbles, and (effective) currency depreciations under the current CBA. Also, they fail to notice the benefits from the reform that could make the HK dollarization disappear from Macau's monetary system while effectively keeping out emerging *yuanization* since the *pataca*, at a fixed rate slightly above the *yuan*, will be appreciating equally with the latter vis-à-vis the HKD and the USD. The only point they have got right is that there will be speculative attacks on the *pataca*, a conundrum of the reform. We conjecture, however, that this currency speculation will not cause big trouble to Macau's monetary stability if it adopts some *managed* form of a currency board.

Speculative attacks on Macau currency can be launched under free capital mobility by the Hongkonger and other holders of depreciating currencies such as the USD. It pays them to invest as much money, the HKD or the USD, as possible in *pataca* assets, such as bank deposits, or preferably, housing units. In the case of deposits, they can enjoy higher interest rates (say, Macau's rate is 6% similar to the Mainland's while Hong Kong's 1% as in 2007 before the current global crisis) and also reap a capital gain as they exchange proceeds from their investment back to the HKD a year later (note that the *pataca* following the *yuan* would appreciate 8% a year relative to the HKD). In total, they can capture a nominal return at 14%, much higher than 1%, an alternative return on HKD deposits; the net profit from speculation in Macau will be 13%. If invested in Macau's real property which rises, say, 10% a year higher than in Hong Kong, speculative profits will reach a rate as high as 23%. Given this high profitability and under free capital mobility, one can expect a massive influx of hot money into the Macau financial system as soon as its monetary reform is carried out. The consequences must be an expanded balance sheet of banks, a further swelling of forex reserves, a quicker

ballooning of asset bubbles, and a higher rate of inflation. Fortunately, these consequences, we believe, can be suppressed or confined in one way or another to a reasonable range of tolerance.

One reason for this belief is that Macau's post-reform interest rates must, in theory, move away from those of Hong Kong which are low (associated with the low U.S. rates) but in line with those of the Mainland which are high if returning, as is likely later, to the pre-crisis situation. This is good for Macau in the midst of overheated growth since high rates of interest help reduce monetary instability. The city now really needs an economic damper, and high rates could crush property bubbles and hence slowdown high inflation. Another reason is related to changes in the balance sheet of banks caused by hot money flooding after the monetary reform. As rational profit maximizers, Macau banks will have strong incentives not to provide financial services for speculation, and the consequences from hot money invasion can thus be contained somewhat. This can be seen from an artificial example that illustrates rational bank behavior.<sup>6</sup>

Yet another reason for not worrying about the destabilizing effect of speculative threat is that the problem can be overcome by adopting a managed CBA. Under this regime, only a limited degree of capital mobility (or a partial sort of *pataca* convertibility) is allowed<sup>7</sup> in order to curb speculation. In other words, the government should have some capital controls, which are being held by other emerging economies with appreciating currencies. Capital controls still remain a serious policy option and were actually used by developed nations for a long period in recent history (in 1930-1973 by North America and in 1930-1992 by much of Europe). Since then, however, this option has been made a dirty word and a taboo policy on the basis of flawed theories with no hard evidence by the orthodoxy. Mainstream economics just serves the interests of the global financial market but at the cost of developing economies (Stiglitz 2004). The Western propaganda has long promoted capital freedom for their speculators to seek super profits around the world, resulting in one financial crisis after another. For Macau as a gaming center and a tourist resort in Asia, visitor freedom such as the FTS is crucial for output growth and economic welfare, but capital freedom is not since Macau is not a financial center. Given the speculative threat after the monetary reform and the too-much accumulation of savings and forex reserves, Macau should tighten capital inflows while relaxing capital outflows. Capital controls, if carried on effectively, can hopefully play an important role to subdue currency speculation, asset bubbles, and accelerating inflation.

## 6. Conclusion

This paper has described the differences among

various existing monetary systems, and identified the AMCM as a partially dollarized CBA with a few central-banking features. We have also examined the likely prospect of a persistent, substantial RMB appreciation, in an attempt to reveal the seriousness of this prolonged, big international imbalance's impact on Macau's economic welfare and prosperity. In related researches, we have advocated a monetary reform package for Macau, including: a) a change in its monetary anchor from the HKD to the RMB to strengthen its currency board regime; b) a revaluation in the *pataca* slightly above the *yuan* to have an attractive domestic currency; c) the establishment of a SWF for economic diversity and autonomous growth. To implement this reform proposal, certain worries and concerns about reform impacts should be addressed and clarified first.

There are some people in the territory who are still skeptical about the reform, and hence certain controversies have to be debated before taking any reform action. The reform-related issues include currency convertibility, policy confidence, political autonomy, and speculative attacks. We have argued that convertibility is not a problem since the RMB has now embarked on its journey for internationalization, that confidence can only be restored by the RMB as a stronger anchor than the HKD, that autonomy is surely unaffected since economics need not mix with politics, and that speculation can be preventable if staying away from regulatory forbearance. These controversies must soon be resolved in order to launch the urgently needed reform. Some countermeasures such as a managed CBA via limited capital controls should be taken to protect the post-reform monetary system.

## Notes:

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- <sup>1</sup> There seems no disagreement about the economic fundamentals that warrant our proposed monetary reform. Strangely the opposite party in debate instead pays too much attention to non-fundamental aspects of the reform. This shows that the issue may be a matter of less economics than of something else (such as ideology) in their minds beyond our comprehension (Pao, 2003).
- <sup>2</sup> Obviously, the academics are informationally disadvantaged than the government staff in terms of facts and data. It is the latter's responsibility to supply the required but missing statistical reports of good quality.
- <sup>3</sup> No one knows exactly whether China's exchange rate policy is a managed floating or an adjustable fixed rate after its long-held, hard pegging to the USD was abandoned in July 2007. Even so, the Mainland central bank since then has still held on to some power in affecting interest rates and real economic activity since capital controls, though very leaky, remain in place and partially effective.
- <sup>4</sup> Such an attack is still a danger even under CBAs; e.g., the HKD was attacked in 1997-1998.
- <sup>5</sup> Relatively speaking, fiscal policy can be made independent but monetary policy cannot. Actually, the monetary policy of weak or small countries is susceptible to foreign influences or pressures whatever monetary regime is adopted. The financially undemocratic IMF, serving as the central bank of central banks but controlled by the U.S., is aimed at interference with the monetary policy of member states (mostly, in the interests of the West but at the cost of other nations). So it is naïve to seek full monetary independence if having adopted a CBA.
- <sup>6</sup> Suppose a Macau bank accommodates a Hong Kong speculator's request for exchanging the HKD for the *pataca* and then depositing the money. This will trigger a series of changes in Macau's monetary and financial systems. There should be an equal rise both in *yuan* reserves as an asset and in Certificates of Indebtedness (CIs) as a liability on the AMCM's part. The resulting changes in the bank's balance sheet include those on the asset side (such as a drop in *yuan* reserves, and a rise in CIs, in *pataca* vault cash, and in HKD reserves), and those on the liability side (such as a rise in banknote issuing and in saving deposits both in terms of the *pataca*). Also, there will be a multiple expansion of deposits after the bank loans out the deposited *pataca* money. However, how to profitably invest those HKD reserves will become a difficult decision for the bank in face of HKD assets' depreciating relative to the *yuan*, as difficult as under the current CBA. Probably, the bank will rationally choose to avoid this unfavorable decision by turning down that Hongkonger's request for HKD-*pataca* exchanging and depositing.
- <sup>7</sup> Macau, like the Mainland, can maintain full currency convertibility on current account for promoting output and trade but permit only partial convertibility on capital account for battering speculation and money laundering. Additionally, Macau will have to impose certain restrictions on capital flows in order to prevent itself from becoming a financial base for various speculators to make attacks on the RMB.

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