An Asian Monetary Unit?

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1. Introduction and Summary

Formally, the proposed Asian Monetary Unit (AMU) is a basket composed of the currencies of the 13 countries that form the ASEAN+3 grouping. Its usefulness has been examined by various study groups set up by Finance Ministers, with no formal conclusion so far. A basket of currencies is of no particular interest unless it is being used for particular purposes.[1]

Proposals for the AMU follow the example of the European ECU. ECU served as a unit of account, as a basis for computing exchange rate divergence indicators and was briefly used by private markets to issue debt instruments. Obviously, the proponents of the AMU aim as using it to foster exchange cooperation and possibly to create a regional bond market.

In Europe, the ECU never played any role but could an AMU meet a more brilliant fate? The ECU was superseded by the elaborate Exchange Rate Mechanism, which imposed many obligations on member countries. The East Asian countries have shown that they are not ready to accept the same restrictions on their monetary policies, but at the same time they are concerned that exchange rate movements affect their external competitiveness. In addition, they are open to currency mismatches, mostly in US dollars, which were at the root of the 1997-8 crisis.

The AMU proposal represents one more attempt at squaring the circle of greater exchange rate cohesion without giving up total control of monetary policies. The Chiang Mai Initiative has evolved towards an ERPD (Economic Review and Policy Dialogue) which covers exchange rate arrangement. It also dovetails with the Asian Bond Market Initiative. Yet, exchange rate policy coordination has remained elusive and progress on bond market integration at the regional level remains modest. Adopting the AMU is unlikely to change the situation.

A key reason is that, in and by itself, the AMU – with its associated divergence indicator – is not conducive to exchange rate arrangements because it requires choosing one regional currency (or a sub-regional basket) to act as anchor. The two regional giants, the People's Republic of China (PRC) and Japan, are the only ones whose could see their currencies play that role, but the floating yen and the tightly controlled RMB are not well suited for the task.

This is why basket peg proposals for the area are typically defined in terms of external currencies, in some cases including the yen as Japan is unlikely to join an exchange rate policy cooperation arrangement. Basket pegs directly address the intention of limiting intra-regional exchange rate fluctuations. In contrast, the AMU only suggests such an objective, the implicit idea being that interested countries could tie – to various degrees – their currencies to the Unit. This would require agreeing on the list of currencies to be included in the basket and on their corresponding weights. An alternative is to bypass these discussions altogether and let each country choose its own basket. If the weights are based on trade volumes, the difference between common and own-baskets is trivial.

2. Rationale and Origins

The idea of establishing an Asian Monetary Unit (AMU) is intimately linked to the view that exchange rate fluctuations within (East) Asia are more troublesome than exchange rate fluctuations relative to the rest of the world. This can be the case if

[1] The Tokyo-based Research Institute of Economy, Trade and Industry provides and prices daily an example of the AMU, see http://www.rieti.go.jp/users/amu/en/.

trade is intense within the region or if the countries of the region compete for the same world markets and if wages and prices are inflexible enough to make up for exchange rate movements. Financial integration offers an additional argument, even an added urgency if cross-border asset holdings in regional currencies are larger than cross-border holdings in international currencies.

The general view (see, e.g. Kim and Lee, 2008) is that trade integration within East Asia is deep, not quite as deep as in Europe now but comparable to what it was when the EMS was launched. Financially, individual East Asian countries are better integrated with global markets than among themselves. All in all, therefore, there is a decent case for aiming at limiting intra-regional exchange rate fluctuations.

The proposal for an AMU originated as Japan became the leading economy in East Asian, both as a trade partner and as a model to emulate and therefore compete with. Kwan (1994) initially proposed a yen bloc, which attracted predictably few takers. Following the idea by Williamson (1994) that East Asian countries would be well advised to adopt a common basket peg, the idea of an AMU was formalized by Mori, Kinukawa, Nukaya and Hashimoto (2002), Kuroda and Kawai (2003) and by Kawai and Takagi (2005). Ogawa (2006) then refined the idea and proposed to complete the arrangement with a divergence indicator, clearly influenced by the European precedent.[2] The AMU proposal has subsequently attracted interest from the ADB and its Regional Integration Center. The ASEAN+3 countries agreed in 2006 to explore steps to create a regional currency unit, see Ogawa (2006), and Ogawa and Shimizu (2006). Recently, however, facing objections from some members, the official study of the feasibility of introducing an AMU has been discontinued.

The Chiang Mai and Asian Bond Market initiatives were both designed first and foremost to foster currency stability in the sense of avoiding exchange rate crises. The CMI is meant to provide a collective line of defense against currency turbulence; the ABMI aims at reducing currency mismatches and at building deep and resilient markets, which should reduce both the frequency and impact of financial disturbances. Yet, neither initiative directly promotes exchange rate stability in the more mundane sense of limiting volatility. Although the evidence that real exchange rate stability encourages trade remains inconclusive, policymakers tend to accept that it is a desirable objective among trading partners. In both Europe and East Asian, they have long accepted the view that exchange rate stability provides a level-playing field, which encourages regional integration policies.

3. Possible usages

3.1. A Step toward Monetary Policy Coordination

The AMU was initially presented as a unit of account, much as the European ECU. But in Europe, the ECU was effectively used by the European Commission for its book-keeping, with no equivalent institution in the region. It was then suggested that the AMU could assist ASEAN+3 policy authorities in the conduct of their exchange rate policies by serving as a surveillance indicator for regional exchange rate policy coordination in East Asia. Ogawa and Shimizu (2006) go further as they argue that the AMU could serve as a common currency basket to which the ASEAN + 3 members, except Japan, could link their currencies.

The mechanism for coordination is the divergence indicator, which signals any currency's departure from the weighted average. This could be seen as a presumption that the monetary authorities of the diverging country should take action

[2] The European Monetary System included the ECU and divergence indicators.

to limit the gap. This was indeed the stated aim within the EMS. But the European experience does not provide much comfort that it will work. In Europe, policy coordination was achieved but through a very different mechanism. It was based on the Exchange Rate Mechanism (ERM) of the EMS, in which the ECU played no role. The divergence indicator turned out to be largely ignored. Policy coordination in Europe was based on explicit commitments (bilateral parity pegs, automatic and theoretically unlimited mutual support, consensus on realignments) that significantly reduced the margin for maneuver of national central banks. The question, then, is whether the Asian countries are willing to move to a tighter form of policy coordination. Even ignoring the deep issue of national sovereignty, the case must be made that it is desirable and possible.

The counter-factual evolution of the synthetic AMU, displayed in the leftmost graph in Figure 1, well illustrates the issue. The figure uses the formal definitions provided in Appendix 1. Since early 2003 and until the financial crisis in late 2008, the AMU has appreciated against the dollar while losing in value vis-à-vis the euro. Overall, on average using the 65-35 dollar-euro basket, the AMU has slightly appreciated. The depreciation *vis-à-vis* the euro is largely explained by a weakening of the yen and by the inflexibility of the dollar-renminbi exchange rate at a time when the dollar depreciated. The other countries, the ASEAN countries and the Republic of Korea (Korea), which have mostly exhibited sizeable current account surpluses during that period, had no reason to let their currencies follow the depreciating dollar. To that effect, they should have let their exchange rates diverge from the AMU, which is what they mostly did, but it runs counter to the aim of the divergence indicator.

An alternative interpretation is that the AMU could serve as a tool for *policy dialogue* in the sensitive area of exchange rates. As trade partners and competitors, the East Asian countries care about each other's exchange rate but are cautious not to meddle in each other's policy. Policy coordination is desirable, they reckon, but can only come about as the result of gradual confidence-building steps. The AMU could be seen as just one such step.

To consider this possibility, look again at Figure 1. The rightmost chart shows the diverging trends over 2003-8 of the Japanese yen and of the Korean won. As previously noted, with sizeable external surpluses, Korea could expect to see its exchange rate appreciate (before a major depreciation related to the global financial crisis). During that time, the yen has strongly depreciated *vis-à-vis* the AMU while the renminbi has returned to its earlier parity after a period of depreciation. What could have the discussions been on the basis of the divergence indicator, which simply documents these diverging paths?

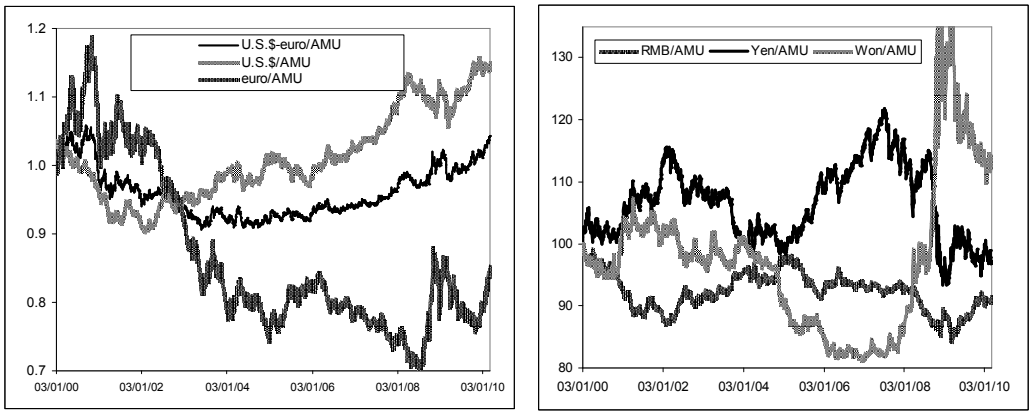
Diverging Korea and Japan would have had to explain their policies. Korea would note that, given its weight in the AMU, the yen depreciation causes other currencies to appreciate *vis-à-vis* the average. Would the Koreans also claim that the link between the RMB and the dollar is also part the problem and that the PRC's weight in the monetary unit implies that its exchange rate policy is an externality for the other countries? If the PRC and Korea were to stabilize their AMU exchange rates for the sake of coordinating their exchange rate polices, they would have to appreciate their currencies against the dollar. If the PRC does not let its dollar-renminbi exchange rate appreciate, Korea will have to assume an even greater burden of adjustment. More generally, countries like Korea and the ASEAN members face an impossible challenge.

This example illustrates that the AMU is not automatically conducive to regional policy coordination as long as the yen remains a free-floating currency and the PRC is reluctant to revalue its currency. Nor can AMU provide any useful guidelines to individual countries in formulating their exchange rate policies. Simply focusing on

divergences provides no clue of any use to policymakers. Worse, divergence indicators inevitably attract attention to conflicting situations.

Figure 1 AMU Exchange Rates

Jan.3, 2000 – August 20, 2009 - Index January 2000 = 1



Source: RIETI (http://www.rieti.go.jp)

3.2. An Asian Bond Market

Kuroda (2006) envisaged the creation of a regional market for basket bonds denominated in the AMU. It has also been suggested that the AMU could be the first step to making the yen as the anchor currency for the member states of ASEAN + 3.[3] This view challenges the lessons drawn from the European experience. An important difference, though, is that the advocates of Asian basket bonds, including AMU bonds, envision an active role of the public sector. Indeed, governments could issue AMU-denominated debt as could the ABF. The question is whether there exists sufficient demand for such a product. *A priori*, we would expect that if such a demand existed, private institutions would have exploited the market opportunity. Indeed, it is not difficult for investment banks or other securities firms to create and market AMU-denominated bonds, as happened briefly with the ECU. The fact it has not happened so far casts doubt on the viability of this proposal.

It may seem strange that investors do not seem to demand such instruments, which provide some desirable stability properties. In fact, they do, but they do not need synthetic currencies. They can easily hold a portfolio consisting of bonds in different currencies. Self-made diversified portfolios allow each investor greater flexibility than a basket-denominated bond. For the AMU to capture a significant market share, it should provide some advantages. The most obvious one is transaction cost saving. The weakness of basket-denominated bonds, which affected ECU bonds, is that it requires numerous currency conversion costs. To overcome this disadvantage, the AMU should become a quasi-currency, which would require a commitment by the monetary authorities. This would come close to the adoption of a common currency

[3] These various ambitions are remindful of the many views expressed in Europe when the European Currency Unit (ECU) was established. Formally, the ECU was used as an internal accounting unit for all official transactions and accounts of the EU. The central banks did not use it in their transactions. For some advocates, the ECU was a political gesture towards monetary union. In that sense, the ECU was symbolic, just as the SDR is a symbol for a future world currency. In practice, however, there was no such official commitment.

in Asia.

4. Weights: Who cares?

Since the yen is freely floating, there is little chance that the Japanese authorities will agree to cooperate on regional exchange rate policies. The renminbi it closely linked to the dollar and the PRC has not shown any willingness to discuss its policy. As it turns out, the weights of these two currencies represent nearly two thirds of the AMU's total, see the table below. Pegging to the AMU, therefore, essentially means pegging to these two currencies.

Are weights the problem? In fact, the AMU is NOT a fully worked-out arrangement. This is the old N-1 result: when N currencies are linked to each other, there are N-1 exchange rate restrictions and exactly one rate must be determined outside the arrangement. This is how the EMS evolved to become a DM-led arrangement. In East Asia, the center currency could be could be the yen, or the RMB, or any other currency, but there must be explicit or implicit agreement on which one fulfils that role. Obviously, size matters and the two regional giants are natural leaders.

Table 2. AMU Shares and Weights of East Asian Currencies

(revised in 9/2008****, benchmark year=2000/2001)

	Trade Volume* %	GDP measured at PPP**,%	Arithmetic average shares % (a)	Benchmark exchange rate*** (b)	AMU weights (a)/(b)
Brunei Darussalam	0.33	0.14	0.24	0.589114	0.0041
Cambodia	0.1	0.16	0.13	0.000270	4.8148
China, People's Rep. of	25.32	43.18	34.25	0.125109	2.7376
Indonesia	5.1	5.7	5.4	0.000113	477.8761
Japan	24.21	31.19	27.7	0.009065	30.5571
Korea, Rep. of	12.9	8.3	10.6	0.000859	123.3993
Lao PDR	0.09	0.08	0.09	0.000136	6.2500
Malaysia	7.63	2.42	5.03	0.272534	0.1844
Myanmar	0.32	0.31	0.32	0.159215	0.0198
Philippines	2.53	2.02	2.28	0.021903	1.0387
Singapore	12.79	1.46	7.13	0.589160	0.1209
Thailand	6.54	3.59	5.07	0.024543	2.0637
Viet Nam	2.14	1.44	1.79	0.000072	248.6111

*: The trade volume is calculated as the average of total export and import volumes in 2004, 2005, and 2006 taken from DOTS (IMF)

**: GDP measured at PPP is the average of GDP measured at PPP in 2004, 2005, and 2006 taken from the *World Development Report*, World Bank.

***: The Benchmark exchange rate ($-euro/Currency) is the average of the daily exchange rate in terms of US$-euro in 2000 and 2001.

****: AMU shares and weights were revised in Sept. 2008. This is the fourth version.

The rightmost chart in Figure 1 shows that the value of the Korean won – and this applies to the other currencies except the PRC – relative to the AMU is strongly negatively correlated with the yen. The leftmost chart shows that the RMB link to the US dollar implies that the AMU depreciates when the US dollar does. The smaller countries may well ask why the yen, whose fluctuations create much variability of the AMU against the dollar and euro, should be the leading currency or even why it should be included in a common basket. If Japan cannot or does not want to give up its free floating status, the AMU would be massively dominated by the RMB. Given the PRC's relatively restricted financial markets and heavy currency management, a RMB bloc is unlikely to meet the economic needs of most member countries.

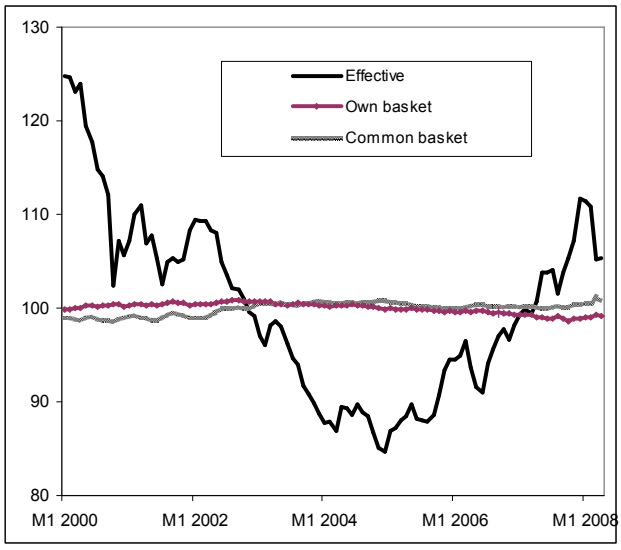
On the other hand, the PRC and Malaysia have adopted a basket arrangement in 2005 and, as noted by Kawai (2002), Korea and Thailand have shifted to a de facto currency basket arrangement similar to Singapore's managed floating since the

1997-98 crisis.[4] The movements of both the nominal and real effective exchange rates of Indonesia and the Philippines also indicate that their currencies are linked to a basket of the currencies of their major trading partners. Practically all seven emerging market economies in East Asia – the original ASEAN 5, the PRC, and Korea – are explicitly or implicitly tying their currencies to own-made baskets, each one with its own weights and choice of anchor currencies. With similar currency management arrangements and aims, it becomes easy to monitor the evolution of exchange rates. If any one lets is currency weaken, competitive devaluations throughout the region could follow. Undoubtedly, own-basket pegging provides as much incentives to cooperate as the AMU basket, without having to face the sensitive N-1 problem.

Thus, if exchange rate cooperation and limited intra-regional fluctuations are deemed desirable, pegging to external currencies is not just a more coherent arrangement than limiting deviation from the AMU, it provides cooperation without the need to formally agree to it. In a way, this is already the case.

A seemingly more cohesive possibility would be to adopt the same basket of external currencies. This would require negotiations to agree on the currencies to be included and the weights to attach to each of them. In fact, Park and Wyplosz (2004) have shown that, for all practical matters, the difference between a common basket and own-basket pegs is very limited if one looks at the effective exchange rate. This is shown for one example in Figure 2. Appendix 2 shows that what matters is the average difference between individual weights and the common weights – the weighted average of individual weights – on anchor currencies. It is not surprising that these differences of averages of averages are small.

Figure 2 Effective exchange rates: actual and counterfactuals



Source Park and Wyplosz (2009)

[4] It remains to be seen what Korea will do with the won after the financial crisis.

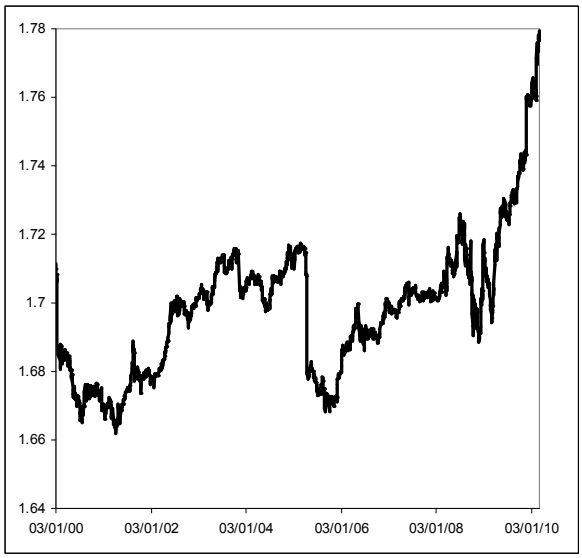
5. Conclusions

Cooperation in matters of exchange rate cannot be completely 'soft'. Limiting exchange rate flexibility requires that monetary policies be sufficiently aligned to keep expectations anchored. This means that central banks follow closely one of them, as was the case during the stable period of the European Monetary System, or that all central banks follow a joint target. There should be no illusion that exchange rate stability can be achieved without some loss of national monetary independence. East Asian countries have been looking at other ways, including reserve pooling and joint development of financial markets, but there has been no indication that deeper cooperation, including some loss of monetary independence, is actively under consideration.

The creation of an AMU *per se* would not make any contribution to exchange rate stability. It would provide a direct way of observing how stable mutual exchange rates are and a divergence indicator would show which currency(ies) is less in line with others. Correcting such divergences and, more generally, stabilizing the exchange rate would require continuous monetary policy action, i.e. some loss of independence.

This skeptical conclusion is illustrated in Figure 3, which displays the variability across ASEA+2 currencies evaluated *vis-à-vis* the AMU. The interesting observation is how volatile these exchange rates have become when a financial crisis erupted in the US and moved on to Europe. Of course, the East Asian countries were eventually affected by the crisis because of trade links. This did not necessarily imply that exchange rates would be pulled apart within the region, and yes they did. The mere existence of AMU would unlikely have made a difference.

Figure 3 Coefficient of variation of ASEAN+2 exchange rates vis-à-vis AMU



Source: RIETI (http://www.rieti.go.jp)

Appendix 1: AMU Arithmetic

Both the ADB and Ogawa (2006) define the AMU as a basket of the thirteen currencies of the ASEAN+3 member countries weighted by their relative importance in terms of GDP, trade volume, population, and the degree of capital account liberalization. These definitions are directly borrowed from the European Currency Unit (ECU).

In Ogawa (2006), the 13 ASEAN+3 currencies are weighted by their relative GDPs valued at purchasing power parity (PPP) and by total trade volumes (the sum of exports and imports). The value of the AMU is then quoted in terms of a weighted average of the two major international currencies – the US dollar and the euro. The weights are the shares of the US and the Euro area in total trade of the ASEAN+3 countries, 65% and 35%, respectively. Formally, the "euro and dollar value" of AMU is:

$$E^{(\$,€)/AMU} = a\ E^{\$/AMU} + b\ E^{\$/AMU},$$

where *a* = 0.65 and *b* = 0.35, and the dollar and euro exchange rates are:

$$E_t^{\$/AMU} = \sum_{i=1}^{n} w_i E_t^{\$/i} \text{ and } E_t^{€/AMU} = \sum_{i=1}^{n} w_i E_t^{€/i},$$

where w_i is the weight of Asian currency *i* and $E_t^{\$/i}$ and $E_t^{€/i}$ are the dollar and euro exchange rates of currency *i* at time *t*, respectively. This, in turn, defines the dollar-euro exchange rate or currency *i* as $E_t^{(\$,€)/i} = a\ E_t^{\$/i} + b\ E_t^{€/i}$. The ACU exchange rate of the currency *i* is then:

$$E_t^{i/AMU} = \frac{E_t^{(\$,€)/AMU}}{E_t^{(\$,€)/i}} = \sum_{j=1}^{n} w_i \frac{E_t^{(\$,€)/j}}{E_t^{(\$,€)/i}}.$$

Still following the EMS divergence indicator, Ogawa defines the AMU Nominal Deviation Indicator (NDI) for currency *i* at time *t* as:

$$NDI = \frac{E_t^{(\$,€)/i} - E_0^{(\$,€)/i}}{E_0^{(\$,€)/i}} \times 100,$$

which measures the percent discrepancy from the benchmark rate $E_o^{(\$,€)/i}$ observed in a base year.

Appendix 2: Own vs. common basket pegs

Consider *N* countries, each of which is pegging to its own basket. The (log of the) effective nominal exchange rate of currency *i* is:

$$e_i^{eff} = \sum_{j \neq i} w_{i,j} e_i^j$$

where e_i^j is the (log of) nominal exchange rate of currency *i* vis a vis currency *j* (units for currency *j* for one unit of currency *i*) and $w_{i,j}$ is the weight of country *j* in country *i*'s trade ($\sum_{j \neq i} w_{i,j} = 1$). The list of countries and the weights are unrestricted.

Note that $e_i^j = e_i^{\$} - e_j^{\$}$ where $e_j^{\$}$ is the (log of) dollar exchange rate of currency *j* (dollars per unit of currency *j*). Therefore:

$$e_i^{eff} = \sum_{j \neq i} w_{i,j} (e_i^{\$} - e_j^{\$}) = e_i^{\$} - \sum_{j \neq i} w_{i,j} e_j^{\$} .$$

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Then we compute $E_i^{eff} = \exp e_i^{eff}$ and $\overline{E}_i^{eff} = \frac{E_i^{eff}}{E_{i,0}^{eff}}$, where the denominator corresponds to a base period.

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The own baskets for the set *I* of ASEAN+2 countries are, expressed in dollars (the choice of numeraire does not affect the results):

$$h_i^{\$} = \sum_{z \in Z} h_{i,z} e_z^{\$}$$

for $i \in I$ and where *Z* is the set of non-regional currencies that make up the basket. The terms $h_{i,z}$ are the own weights. Note that *Z* may include all the other countries with some weights set to zero.

A common basket is defined as:

$$c^{\$} = \sum_{z \in Z} c_z e_z^{\$}$$

where c_z are the common weights.

Using the same weights as for the own basket, the (log of the) effective own basket for any *i* is:

$$h_i^{eff} = \sum_{j \in I, j \neq i} w_{i,j} h_i^j + \sum_{k \in K} w_{i,k} h_i^k$$

where *K* is the set of non-regional trading partners, which may include some or all of the countries in *Z*. The bilateral exchange rate between countries *i* and *j* is $h_i^j = h_i^\$ - h_j^\$$ and $h_i^k = h_i^\$ - e_k^\$$.

It follows that:

$$h_i^{eff} = h_i^\$ - \sum_{j \in I, j \neq i} w_{i,j} h_j^\$ - \sum_{k \in K} w_{i,k} e_k^\$$$

Note that we have $\sum_{j \in I, j \neq i} w_{i,j} + \sum_k w_{i,k} = 1$.

Similarly assuming that all countries of the region to adopt the common basket, country *i*'s effective exchange rate is:

$$c_i^{eff} = \sum_{j \in I, j \neq i} w_{i,j} c_i^j + \sum_{k \in K} w_{i,k} c_i^k = c_i^\$ - \sum_{j \in I, j \neq i} w_{i,j} c_j^\$ - \sum_{k \in K} w_{i,k} e_k^\$$$

where $c_i^j = c_i^\$ - c_j^\$$

The difference between the two basket arrangements is:

$$h_i^{eff} - c_i^{eff} = (h_i^\$ - c_i^\$) - \sum_{j \in I, j \neq i} w_{i,j} (h_i^\$ - c_i^\$)$$

or:

$$h_i^{eff} - c_i^{eff} = \left(\sum_{z \in Z} (h_{i,z} - c_z) e_z^\$ \right) - \sum_{j \in I, j \neq i} \left(w_{i,j} \sum_z (h_{j,z} - c_z) e_z^\$ \right)$$

The first term correspond to the different weights relative to the anchor currencies. The second term is the weighted average of the same term as it applies to the other countries in the region.

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