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An Institutional Approach to Balancing International Monetary Relations

The Case for a US-China Settlement Facility

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Abstract

Management of international monetary relations between China and the United States will be one of the crucial parameters for the stability or instability of the global financial system in the next decade. Although most of the literature suggests rebalancing through either adjustment of relative prices or adjustment of behavior in both countries, this paper explores an institutional approach to rebalancing. Applying the lessons from Keynes' 1944 plan for a United States-United Kingdom international clearing union, the paper explores the creation of a bilateral United States-China settlement facility as an institutional contribution to the structural rebalancing of global imbalances.

This paper—a product of the Development Economics Vice Presidency—is part of a larger effort in the department to better understand the global economic crisis and its implications for development policies. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at npiffaretti@worldbank.org.

An Institutional Approach to Balancing International Monetary Relations:

The Case for a US–China Settlement Facility

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Introduction

The aftermath of the 2007–2009 global financial crisis is fostering intense debate on the international monetary and financial architecture, from which two main points seem to emerge:

- The long domination of the US dollar as the major international currency, started after WWII, is coming to an end, and the global economy has entered an uncharted and possibly long period of transition to a fragmented multi-polar system, which is likely to elicit international monetary instability.[1]

- Coordinated external and internal rebalancing of the US and Chinese economies will be key for future stability of the global economy.[2]

Accordingly, management of international monetary relations between China and the United States will be a crucial parameter for the stability or instability of the global financial system in the next decade.

This paper departs from existing analyses on rebalancing the global economy in two ways. Current literature on addressing global imbalances advocates rebalancing either through *relative prices* (that is, exchange rates) or through change in *behavior*

[1] The fall of the pound sterling occurred during the 1920–1940 interwar period. New estimates put forward by Eichengreen and Flandreau (2008) show that contrary to most accounts, the US dollar and the pound sterling alternated themselves as main reserve currency. The interwar period was indeed characterized by great international monetary instability (Eichengreen 1991), owing to lack of international cooperation, unwillingness by the raising power (the United States) to assume full international monetary leadership, and structural shortcomings of the reserve currency system.

[2] See Blanchard and Milesi-Ferretti (2009) on the dangers of "remaining in midstream".

(notably, consumption and saving patterns).[3] This paper explores a third, *institutional approach*, through the design of the international monetary architecture. Further, while the current literature focuses on (coordinated) *asymmetrical* rebalancing by the countries involved, this paper points out the interest in adopting schemes of *symmetrical* rebalancing. Indeed, adjustments at only one side of global imbalances are bound to have destabilizing effects: on one hand, a unilateral substantial decrease of spending in deficit countries (namely, in the United States) could potentially move debtor countries towards a depression (Wolf 2009); on the other hand, failure to address fiscal sustainability in deficit countries might set the stage for the next financial crisis.

The internal and external rebalancing of the US and Chinese economies needs to be framed beyond the narrow view of an adjustment of relative prices through modification of the relevant exchange rates. In light of the magnitude of the existing imbalances, even a gradual re-alignment of the relevant exchange rates would amount to an overall adjustment of great magnitude carried out in a relatively short period of time. A substantial depreciation of the US dollar against a number of currencies, accompanied by a substantial appreciation of the yuan against the US dollar, would set in motion strong dynamics that might act negatively on the pace of current economic recovery, and may generate further imbalances within the global economy. A too dramatic rebalancing of the relations between the US economy and the rest of the world, and an appreciation of the yuan with respect to the US dollar, could precipitate the exchange rate of the latter, leaving the global economy *de facto* without a risk-free liquid asset.

[3] See Blanchard and Milesi-Ferretti (2009) for discussion of scenarios leading to behavioural-driven adjustment of global imbalances.

In this respect, Lin (2009) points out the structural nature of the US–China imbalances, stressing the simplistic nature of solutions mainly driven by a change in relative prices, and argues for a resolution through progressive deep structural reforms on all sides of the global imbalances. Lin's (2009) proposal, however, also amounts to an overall economic adjustment of great magnitude to be carried out in a relatively short period of time. This paper argues that a reform of the international monetary and financial architecture to introduce a symmetric rebalancing mechanism would support such a coordinated structural adjustment. The first section considers current imbalances between China and the United States in the international framework of global trade. The second section brings forward the importance of a sound international monetary architecture for avoiding substantial external imbalances, and the third section briefly reviews recent proposals to give a prominent role to Special Drawing Rights. The fourth section proposes a settlement facility between China and the United States as a first step to improve the structure of international payments. The last section concludes, summarizing the requirements for such a facility to operate in order to rebalance foreign trade bilaterally as well as multilaterally.

1. The US–China Imbalances in the Context of Changing Patterns of Global Trade

Global imbalances have been rising substantially in the last decade, from less than 1% of world total output in 1998 to 3% in 2008, with the recent slowdown in accumulation linked to the consequences of the global financial crisis on both trade flows and world output. Surprisingly, there is no consensus view on the origins and nature of current global imbalances. The origins of imbalances have been attributed to manipulation of yuan exchange rates (Geithner 2009), the existence of a global

savings glut (Bernanke 2005), and the exchange-rate policy response of Asian countries after the 1997–1998 Asian crisis (Aizenman and Lee 2007, Lane and Milesi-Ferretti 2007, Obstfeld et al. 2008, Park and Shin 2009). Dooley et al. (2003) point to the export-oriented strategy of many Asian economies, accompanied by the underdevelopment of financial markets in emerging countries, which fuelled a surplus of savings directed to more mature financial markets. A number of authors[4] identified the origins of these imbalances in excessive consumption expenditures in the United States mirrored by very high saving rates in China.

Global imbalances have originated within a rapidly changing context of international relations and a shifting distribution in global economic activity (Quah 2009). China's current account balance between 1982 and 2002 has constantly been barely positive, never reaching beyond 1.5% of its GDP. From 2003, China's current account surplus raised every year to 2.8%, 3.6%, 7.2%, to peak at 11% of its GDP in 2007. The economic raise of China goes well beyond its relation with the United States. Within Asia itself, one notices important shifts: while China has grown to become the main trading partner of both Japan and Korea, the part of Japan and Korea in the overall volume of Chinese trade has been decreasing. As every major country intensifies its trade relations with China, the latter country is differentiating its own trade relations. This also holds for the trade relation between China and the United States, as China's share of US imports has steadily increased (to 13% in 2008), while China's overall exports to the United States have declined from 22% (in 2003) to 18% (in 2007).

[4] See Rajan (2006) and Roach (2006) for the origins of this argument.

On the other side of the Pacific, US trade relations have grown increasingly unbalanced: in 2008, the US trade deficit reached the level of the GDP of India. It is within this context that trade relations between China and the United States have substantially grown, since 2005, into the current strongly enduring imbalanced pattern. The US imbalance, however, is a phenomenon going beyond the US–China trade relation: the US trade imbalance has increased not only towards China – starting from 2003 – but towards the European Union and oil-exporting countries as well. The imbalance against the latter two trade partners mirrors the amount of the US trade deficit against China.

However, the astounding pace at which the trade imbalance between China and the United States has been evolving since 2003 has raised concerns, and fuelled calls for significant adjustments of the exchange rate between the US dollar and the yuan, despite the latter has been appreciating 21% from 2005 to 2008 with respect to the former.

In the United States, saving has been sharply declining since 2000, owing to an increase in both private and public spending. On the other hand, the low pre-crisis level of the US dollar exchange rate, and the sharp rise of oil prices have exacerbated the US current account deficit. China's 2003 sharp rise of the overall saving rate (from 40% to around 52% of its GDP) is in stark contrast with overconsumption in the United States. The well-known parsimonious attitude of Chinese households, supported by a high level of precautionary saving owing to an insufficient level of social protection, cannot alone explain the high saving rate, as Chinese households saving rate (around 18%) is not uncharacteristically high, and household saving as a proportion to total income has not risen at all in the past two decades. The main driver

of excess saving in China, in fact, has been the local corporate sector, in particular large corporations. Gross corporate savings in China have increased to more than 26% of GDP in 2007 from 15% a decade earlier. Lin (2009) suggests that such a high saving rate of local large corporations is due to inefficiencies in the Chinese financial sector, mostly formed by large banks. This sector is not tailored to finance investment by small or medium-sized enterprises, and ought therefore to be reformed before long.

High gross corporate savings are however seldom originated by inefficiencies in the financial sector. As corporate savings are formed out of non-invested profits, a key issue is to identify the drivers of the accumulation of profits. As Anderson (2009) points out, gross corporate savings are formed by profits earned on markets abroad, hence part of Chinese saving is not originating in the domestic economy but in foreign trade. While gross profits as a share of total revenues have been stable in China, their ratio as a share of GDP has increased very sharply since 2002, against the backdrop of doubling industrial sales revenues with respect to GDP over the 2002–2009 period, driven by steel, basic materials, and machineries. Industrial-sector data indicates that corporate profits have boomed, rising steadily from 2% of GDP to above 10% in 2007, driven by expanding market shares. This is a pattern similar to increased saving observed in oil-exporting countries over the same period of time.

As a result, China's internal imbalance is directly caused by the external flow of trade on product markets. An adjustment of the yuan exchange rate would reduce gross profit earnings and, indeed, saving in China. However, the magnitude of the adjustment required in that respect would amount to an important decrease in the volume of foreign trade, at a time when the global economy is already suffering from excess capacity.

While reduction of the amount of gross corporate savings would reduce China's current account surplus, so would an increase in spending of corporate profits on investment goods, with the difference that the latter would adjust the volume of foreign trade upwards rather than reducing it.

Adoption of policies to increase investment of Chinese corporate profits earned in foreign trade would be a most effective tool, under present circumstances, to reduce domestic imbalances in China. Yet, these profits being earned in US dollars, the current international monetary architecture does not encourage spending them in imports through foreign investment.

2. Monetary Architecture Matters

Despite the centrality of the US–China financial relationship, the US trade imbalance against the European Union and oil-exporting countries is at least as high as the US trade deficit against China, pointing to the United States as the main origin of the overall imbalance in foreign trade. Running large trade deficits has become a structural feature of the US economy in the last decade, reflecting the financial excesses that led to the 2007–2009 financial crisis. While the origin of this trend is linked to the systematic US overconsumption pattern stimulated by very low domestic interest rates and excessive expectations on higher assets prices, it cannot explain alone the reasons that have led this pattern to evolve to such impressive proportions without generating a counterbalancing adjustment.[5] The US dollar status as the world's foremost reserve currency has played a significant role in enabling the financing of the US external deficit beyond what would be sustainable levels for other

[5] As current imbalances do not reflect difference in productivity levels, market exchange should tend to adjust, limiting the scope of imbalances.

advanced countries, and allowed the United States to be able to finance during the last decade its mounting current account deficits by borrowing abroad almost limitless and at very low interest rates.

As a result, while the US and Chinese economies remain largely not strongly interdependent commercially (their bilateral trade accounts indeed for only 3% of world trade), the global role of the deficit country's currency has provided a major financial interconnection between China and the United States, with China's external imbalance financing part of the US internal imbalance.

The current design of the international monetary architecture structured around a core (the United States) and a periphery (namely, Asia and the European Union) allows for international imbalances to build up so long as the periphery supports accumulation of US dollar-denominated debt. The use of national currencies in international transactions allows for foreign trade imbalances to develop unchecked. While within any countries the existence of central bank clearing and interbank settlement procedures strongly limits monetary imbalances between banks, at international level national central banks can accumulate very substantial amounts of foreign-exchange reserves, if creditor countries are willing to continue accumulate debt claims. The global role of the US dollar has granted the United States a limitless borrowing privilege from the rest of the world, which finances the relevant flows with profits earned in foreign trade by oil exporters, Chinese corporations, and other countries' businesses. Denominated in US dollars, these profits have given rise to external saving, thereby maintaining total saving in China at a very high level, and financing excess consumption in the United States.

While the US dollar still retains its global role, the above pattern is likely to continue unless the structural issues of overconsumption in the United States and the excessive external saving of Chinese corporations are addressed altogether in a process of coordinated adjustment. Policies of rebalancing would imply, however, a reduction of trade flows between China and the United States, and would have therefore a negative effect on the global economy, at a time when economic growth is still lagging in a world economy that presents substantial excess capacity.

On the other hand, shifting away from the global role of the US dollar would cause a large capital loss on China's accumulated stock of holdings in the United States. For these reasons, as pointed out by Dooley et al. (2003), Asian countries still very much have the interest to support "Bretton Woods 2", which amounts to betting on the likelihood that the US dollar will continue playing its global role, despite the evident imbalances that this generates in the global economy. Nonetheless, as noted by Prasad and Gu (2009), this regime remains highly unstable, and its equilibrium is more similar to the "balance of financial terror" described by Summers (2006) than to an equilibrium generated by (foreign-exchange) market forces.

There is now a widespread consensus about the need to reverse the process of accumulation of global imbalances, and worry that the post-crisis desire of self-insurance may be permanently increased, potentially leading to further accumulation of foreign-exchange reserves, setting thus the stage for a continuation of the current disequilibria.

While the US–China imbalance needs to be framed into the broader context of geo-economical shifts of power across the globe, and cannot be separated from the pattern of overconsumption in the US economy, any major adjustment of global

imbalances cannot avoid addressing the US–China imbalance itself. Hence, any global solution would depend on coordinated reforms between China and the United States on what Prasad and Gu (2009) suggestively describe as "the tightening embrace between the two countries".

A major obstacle in the process of adjustment resides, however, in the very same feature of the current international monetary architecture that has allowed imbalances to grow unchecked – namely, the asymmetrical nature of international payments in a key-currency regime – which is also the institutional feature that makes rebalancing particularly difficult, as the issuing country runs external deficits to meet growing demand for reserve assets from the rest of the world. The key drawback of the current international monetary architecture is the lack of an institutional setting that can allow for smooth symmetric rebalancing of both debtor and creditor countries alike. As the Governor of People's Bank of China pointed out recently, this would not be the case if back in 1944 countries had adopted Keynes' bancor (Zhou 2009).

Keynes' 1941 Plan for an International Currency Union stemmed from the idea that monetary architecture matters, and that the post-WWII growing flows of foreign trade would have been best supported by an international monetary and payment facility. Setting up an international clearing union, with binding rules and proper incentives to contain the level of imbalances in both debtor and creditor countries, was meant to avoid both the difficulty and the recessionary effects of rebalancing through the traditional adjustment on the debtor country side only, which had plagued the international monetary system in the interwar period. The key feature of Keynes' plan was a mechanism of quotas and incentives to encourage surplus countries to spend their net earnings from foreign trade on imports from any deficit

countries, instead of allowing these earnings to accumulate as external saving financing internal imbalances in deficit countries. The operational goal of the proposed international facility was "the clearing and settlement of the ultimate outstanding balances between central banks" (Keynes 1980: 125), each of them acting on behalf of its own country for the settlement of foreign trade transactions. Within the framework of the current modern payment systems' mechanisms that operate domestically on a real-time gross-settlement basis, this amounts to setting up an international settlement institution issuing the means of final payment used by central banks for foreign transactions of participating countries. The use of this means of final payment would be reserved to settlement between participating central banks of any international transactions. Any amounts of bancor being issued for and circulating between central banks only – within the international settlement facility through which participating central banks would be connected – the bancor would not circulate for payments between private parties, remaining thereby out of reach for foreign-exchange market transactions involving "private individuals, businesses and banks other than central banks" (Keynes 1980: 168). Transactions among individual agents would continue to be carried out in any national currencies of choice, with the official exchange rates established between the national central banks participating to the international settlement facility providing a benchmark towards which exchange rates established on foreign-exchange markets will tend as a result of the incentives within the international settlement facility. The arbitrage process will notably make sure that a growing share of foreign trade is paid through the international settlement facility – granting exchange-rates stability (see Rossi 2009) – thereby reducing the influence on exchange rates from foreign-exchange markets as time goes by.

It is the legacy of Keynes' idea of asking an international monetary institution to issue supranational bank money for the settlement of foreign trade transactions between national central banks that inspired in 1967 delegates at the annual meeting of the IMF to set up the Special Drawing Right (SDR) facility. Yet, SDRs were not conceived as new supranational means of payment, but as a conduit to a number of national currencies within a basket named after the SDR. Most importantly, the introduction of the SDR has not been associated with the symmetrical set of incentives for rebalancing which constitutes a central feature of Keynes' plan.

A reform of the international monetary architecture through SDRs would in fact require a change in their nature and issuance mechanism. Currently issued by *ad hoc* one-off allocations to supplement the needs for foreign-exchange reserves of IMF member countries, to date SDRs do not represent liabilities of the IMF: they are simply a right for any deficit countries to borrow multilaterally a number of deposits denominated in national (key) currencies, which therefore continue to be used as international reserve assets as pointed out above.

3. An SDR's Renewal?

Recently, SDRs have received much renewed attention, in particular after authoritative PBoC's Governor Zhou (2009) called for a supranational reserve currency, and prospected a new role for SDRs in the post-crisis international monetary architecture. The resurgence of interest in SDRs has given rise to markedly diverse proposals for SDRs reforms, each aimed at addressing different shortcomings of the current system, namely (i) action on the demand side, (ii) insurance against exchange-rates risk, and (iii) creation of a global derivative to substitute demand of US dollar-denominated assets.

Extending the SDR allocation to a pre-determined pace of issuance would have some effects to reduce official precautionary holdings of reserves currencies, by increasing access to unconditional resources, and acting more on the demand side of currencies than on the supply side (IMF 2009). Some suggestions are aimed at developing the SDR into an instrument that could support crisis management, building on the 1970s and 1980s discussion around the possible role of the IMF as international lender of last resort. In that respect, Cooper (2009) puts forward the idea of the institution of IMF credit lines, with strict rules for their allocation and repayments. Others[6] view the SDR progressively supplementing national key currencies, provided that its liquidity increases massively, possibly through the development of private SDR-denominated assets and prominent institutions issuing SDR-denominated debt. Such an SDR would essentially be a global derivative instrument (IMF 2009). Less far-reaching proposals (Bergsten 2009) put the SDR at the center of a substitution account that would allow countries to manage exchange-rates risk better, while leaving the rest of the features of the current international monetary architecture unchanged.

None of the most prominent recent suggestions for a reformed SDR addresses the core issue of global imbalances, which would indeed require issuing SDRs as part of an institutional scheme of symmetric rebalancing based on international settlements for participating central banks. This is surprising in view of the current prominence of the issue of imbalances, in particular considering that current account disequilibria were one of the issues at the heart of preparatory works for the 1944 Bretton Woods conference, notably the UK proposal (Keynes' plan).

[6] See United Nations (2009).

Even if denominated in SDRs, creation of an international clearing system would directly mirror the function that national central banks play within their own domestic payment and settlement systems, extending to international payments the following fundamental features of two-tier banking (see CPSS 2008):

- provision of a stable and reliable unit of account and means of payment;
- daily settlement procedures that aim at constantly limiting the amount of net imbalances between participating banks;
- potential function of lender of last resort in case of threatening imbalances between participating banks.

Accordingly, an international settlement system would not aim at enlarging the provision of reserve currencies, but would instead aim at providing a system of symmetric rebalancing. In that framework, the international monetary facility would function as the settlement institution for participating central banks, a function which is merely technical and not political (see Rossi 2007).

While at this stage an SDR-based international settlement facility might still lack political realism and support, if the international community were to agree to far-reaching reforms of the current international monetary architecture, an international settlement facility would be both intellectually and practically preferable to reforms aimed at making the SDR the dominant reserve asset. Such settlement system would rest on a long-established and tested tradition of theory and practice of independent and efficient central banking around the world.

The remainder of this paper focuses on addressing the current impasse on global imbalances by exploring the creation of a supranational settlement facility between China and the United States.

4. An International Settlement Facility between China and the United States

The path of future reforms might be influenced by the degree of urgency to address the rebalancing of the global economy after the 2007–2009 financial crisis, characterized by slower economic growth, lower trade flows, high fiscal deficits, and ongoing financial fragility. In the absence of a broad international reform, a bilateral monetary agreement between China and the United States could represent a stabilizing step, and would lie down the foundations of a future broader multilateral monetary agreement (Rossi 2009).

As Mark Twain put it, "history does not repeat itself, but it does rhyme." It is interesting to observe the parallel between the current economic setting and the 1929–1944 period, which led to the Bretton Woods agreements eventually. At that time, the need to rebalance relations between the United Kingdom and the United States, in the context of lagging global economic growth, and the loss of influence of the pound sterling in the world economy, led Keynes to suggest a monetary clearing agreement between the United States and the United Kingdom, based on a supranational monetary unit (the grammor), to set the basis for allowing a smoother rebalancing of the US–UK current account imbalance.

In the spirit of that blueprint, the basis of an agreement between China and the United States would consist in setting up a bilateral settlement facility for these two countries. In view of the imbalances accumulated thus far, such an agreement would

need to include converting a part of current official holdings of foreign-exchange reserves into a new supranational monetary unit. While the unit could be linked to the SDR, it does not have necessarily to be so (see Alessandrini and Fratianni 2009). Provisions in the agreement would set limits, penalties, and incentives both on debtor and creditor countries, thereby introducing a symmetric rebalancing mechanism between China and the United States. On the debtor's side, US trade deficits against China would no longer be freely financed by issuing US domestic-debt instruments, while, on the creditor's side, China would have incentives to spend in trade with the United States a relevant part of its external earnings, limiting accumulation of reserves to credits on the US–China settlement facility. This would support avoiding payment deficits in the United States (Machlup 1963: 256), by increasing commercial exports from that country. This would provide a strong incentive for productive investment in the US economy, and contribute bridging the gap formed over the last two decades owing to delocalization. Indeed another advantage of rebalancing through a bilateral settlement facility would be for the United States to increase local production in the manufacturing and services sectors where it presents a comparative advantage with respect to China,[7] spurring thereby R&D activities, multifactor productivity increases, value added creation, and thus real economic growth in the United States. Moreover, the bilateral monetary agreement would provide an incentive for reducing US fiscal deficits, as the US Treasury would have a very much stronger pressure to find on

[7] Elaborated in the aftermath of the Great Depression, Keynes' plan was meant to be expansionary. In the suggested process of rebalancing, China would not need to reduce exports to the United States (unlike in the current international setting): it will in fact have an incentive to increase imports from the United States. This will not induce closing factories in China, to re-open them in the United States (as the current international monetary system would require achieving re-balancing). On the contrary, the bilateral settlement facility will provide an incentive to increase production in the (highly capital intensive) sectors where the United States has a comparative advantage with respect to China.

international financial markets the necessary amount of funds than this is the case to date, owing to the international reserve role of the US dollar and forced acceptance by China of US Treasury bills, notes, and bonds as a way of increasing returns with respect to official foreign-exchange reserves – especially when US policy rates of interest are very low.

Positive balances with the international settlement institution – which will correspond to external surpluses of the creditor country – would thereby no longer provide any finance to internal imbalances in the debtor country: reserved for foreign trade only, these balances would finance commercial and financial purchases in the deficit country, as the latter would have the incentives to seek for rebalancing its foreign trade beyond reasonable threshold levels for its current account imbalance and stock of accumulated external debt (Rossi 2009).

In such a bilateral settlement system, balances earned in foreign trade will not be available on the domestic financial market of the deficit country, but would remain available for financing trade with the latter country (notably, imports from it). In that framework, China's trade surplus would no longer correspond to an accumulation of US-issued debts, but would give rise to positive balances at the international settlement institution. In a nutshell, a settlement facility between China and the United States will be mechanically restricted to their central banks, which will thereby use the corresponding deposits for settlement of their bilateral foreign trade. Any persistent trade deficit will imply for the relevant country a net sale of financial assets to the trade surplus country – provided that the latter is willing to buy these assets from the former. Analogously to the international scheme suggested by Keynes, no interest would be paid on creditor country's balances at the international settlement institution,

whilst an appropriate rate of interest would be charged on positive balances in excess of a bilaterally agreed level,[8] as well as on any negative balances with this institution. This would provide an incentive for both creditor and debtor countries to reduce the amount of imbalances while also stimulating trade between them as a rebalancing and an exchange-rate stabilizing mechanism.

The relevant bilateral settlement facility would imply a supranational currency unit, which will account for US–China settlement credits (USCSCs). USCSCs would be supported by the credibility of the Fed and PBoC, and would be initially limited to US–China trade relations. The mechanics of international settlements will work for any foreign transactions carried out once the relevant monetary agreement enters into force. In view of the current huge amount of foreign-exchange reserves, accumulated in particular over the 2003–2008 period, the institution of a bilateral clearing facility will need to provide a transition mechanism to reduce these reserves. In that respect, two solutions may be put into practice, depending on the political agreement and the time horizon that both countries involved are indeed willing to adopt: either a fraction of official foreign-exchange reserves accumulated by the creditor country (China) is converted into positive balances at the international settlement institution – adopting the official exchange rate between the US dollar and the supranational money unit that will have to be decided bilaterally between the two countries involved – or the debtor country (the United States) is willing as well as able to export an equivalent amount of domestic output to the creditor country, which pays the former country in disposing of US dollar-denominated bank deposits (that are in its official reserves or in its own

[8] Keynes' plan included a number of provisions for discussing measures to restore equilibrium when disequilibria surpass the allowed quota. These measures are notably appreciation, expansion of domestic demand, reduction of barriers to imports, loans to developing countries, and payment of liquid reserves into a Reserve Fund that might finance loans to developing countries.

sovereign wealth funds when the monetary agreement is signed by representatives of both countries involved). The latter solution depending on the US capacity to export competitive products in both manufacturing and high-tech sectors, its actual implementation is likely to require much more time than the former solution, which would be preferable for adoption as soon as the settlement facility begins operations between China and the United States.

Setting up of this facility would require negotiation of some current thorny issues: China and the United States will indeed have to agree on the exchange rate that applies initially between the US dollar and the supranational currency unit into which the relevant foreign-exchange reserves are converted, once the US–China monetary agreement enters into force. The latter would thus need to include an agreement on the level of exchange rate between the yuan and the US dollar, setting also the exchange rate between each of these national currencies and supranational money. As current misalignment between the US dollar and the yuan acts both as an obstacle and an incentive to enter such an agreement, exchange-rate negotiations are certainly bound to be difficult. However, a process of formal negotiation might allow engaging in a broader monetary and economic agreement between the two countries, encompassing broader aspects of US–China relations so as to be balanced in a way as to be agreeable to both countries, allowing thereby orderly handling of the current deep divergence on currency management that is generating strong political tensions between Washington and Beijing, and may destabilize markets.

Internal and external rebalancing mechanisms would work for both countries, as the requirement for the US economy to finance all its imports through the export of either commercial or financial items will strongly reduce domestic overconsumption,

which becomes impossible if the necessary (external) finance is lacking. Analogously, the Chinese trade surplus towards the United States will have to be limited to more manageable sizes, both because the United States will have to contain its trade deficit within affordable and tolerable limits, and also because of the incentives for Chinese corporate foreign earnings to be spent on international trade, instead of remaining available for external financing of the trade deficit country. This saving will thus be available within the domestic economy, making it really possible to increase Chinese consumption expenditures and investment on both domestic and foreign products, thereby limiting the country's current account surplus within unproblematic limits on a permanent basis. As the level of consumption expenditures in China increases, both local consumers and US exporters will have an incentive to get in touch each other, in order to have a much wider choice of consumption goods in China and to increase US commercial exports towards the latter country. This could lay the proper ground for the bilateral monetary agreement between China and the United States to be enlarged to other countries shortly, representing *de facto* the institutional core of a structurally-reformed international monetary system. The benefits of multilateral trade will indeed elicit strong positive incentives for several countries around the world to enter into a multilateral monetary agreement shortly after the US–China settlement facility has been set up as indicated above.

Multilateralization of the supranational settlement facility between China and the United States would not require institutionalizing formally a joint US–China monetary body to operationalize their bilateral monetary agreement. A US–China settlement facility could be hosted within the Bretton Woods institutions, in so far as the latter will just be keeping the books into which they enter the debits and credits resulting from settlement of bilateral trade between these two countries. In that case,

the Fed and PBoC would record any incoming or outgoing payments from and to their correspondent central bank in the bilateral monetary agreement. In their internal department, central banks would record the result of payments for foreign trade in their local currency and whose counterparties are local depository institutions, whilst the same result would be recorded in USCSCs in their external department, which is connected to the settlement facility through a real-time gross-settlement protocol similar to those existing in any advanced countries for the settlement of (mostly large-value) domestic transactions. In recording payments for foreign trade in USCSCs, the facility would debit the account of the paying central bank and simultaneously credit the account of the receiving central bank, both central bank accounts being kept within the facility and whose balances are available for central bank payments only.

All entries at the settlement facility would be denominated in USCSCs, the facility acting as monetary catalyst and keeping the record for all those payments that China and the United States carry out for the settlement of their bilateral trade on both products and financial markets. While trade deficits will still be possible – but limited in their level – they will no longer correspond to payment deficits (by selling of internal denominated-debt instrument).

Supranational central bank money issued by an international settlement institution for any two member countries will increase stability in the foreign-exchange market, and align changes around productivity changes. The clearing of any settlement balances being the result of an electronic algorithm running on the settlement facility computer, the agreement between the Fed and the PBoC can carry it out bilaterally, implementing it via the so-called Payment-versus-Payment (PvP) protocol: every time the Fed credits the PBoC for any imported items from China, it

debits the PBoC for the simultaneous payment of private or sovereign bonds bought by China. Each central bank will be debited as well as credited with the same amount of the relevant national currency, which will leave their exchange rates unaffected by the operation. This will be enough to avoid the current situation in which a national (key) currency, like the US dollar, assumes the role of an object of trade, eliciting payment deficits for the net importing country, and contributing thereby to generating persistent global imbalances across the world economy.

5. Conclusion

A coordinated external and internal rebalancing of the US and Chinese economies will be key for future stability of the global economy. Setting up a bilateral settlement facility between China and the United States could constitute a bilateral way to avoid further increases in global imbalances and to absorb the huge stock of official foreign-exchange reserves accumulated so far by Chinese monetary authorities (amounting to 2,399billion US dollars as of end of December 2009).

The initiative of creating such a settlement facility can be taken by the central banks of the countries involved, which are in a technical position to enter into their own books the relevant international payments, as far as they agree to adopt the Payment-versus-Payment protocol that exists, among others, in the privately-run Continuous Linked Settlement (CLS) system managed by CLS Bank (based in New York) for foreign-exchange market transactions. The minimum technical requirements for such a protocol to work properly are as follows:

- distinguishing between domestic and international payments carried out through the two central banks, entering all corresponding transactions in two functionally-separated accounts in the central banks;

- applying the real-time gross-settlement protocol for processing payment orders across the borders through the Fed and the PBoC, analogously to national central bank's settlement on domestic interbank markets.

Setting up a settlement facility for major trading countries would constitute an orderly way to rebalancing economic systems in order to avoid further excessive global imbalances, which threaten economic and financial stability across the globe. Designed to reproduce in the international monetary space the workings of payment and settlement systems that exist within national economies, the facility would reproduce internationally the following features: (a) double-entry bookkeeping will make sure that any country's purchase is financed through sales on any products or financial markets, but not through the issuance of its own currency; (b) the issuance of supranational money as an instantaneous circular flow from and to the institution carrying the relevant payment out will make sure that no national currency becomes an object of trade; and (c) the explicit distinction between the payments function and the financial intermediation activities carried out by settlement institutions will make sure that any country pays all its imports finally, so that no payment deficits will occur any more in foreign trade.

It is in the mutual interest of both China and the United States to rebalance the bilateral trade flows in order for both of them to make sure that economic growth is as robust and sustainable as this is required to avoid another global crisis, and to improve the standard of living of their populations. While most analyses recently put forward

advocate coordinated rebalancing either through adjustment of relative prices (that is, exchange rates) or through adjustments in behavior (reducing US consumption and expanding China's), the current international monetary architecture lacks the means to implement such coordinated adjustment. On the other hand, the global excess capacity generated in the aftermath of the 2007–2009 global financial crisis is a backdrop against which both changes in exchange rates and reduction of US overconsumption are bound to generate further destabilizing effects in the global economy.

This paper has explored the advantages of achieving coordinated adjustment through an institutional way. A bilateral settlement facility is a technical construct, which could help these countries reaching a long-standing goal, while addressing the current political and economic challenges. This might then raise other countries' self-interest, and provide the right incentives to some of them to join in what could further evolve into a multilateral payment agreement, representing the key stepping stone for a structural reform of the international monetary and financial architecture in a not too distant future, to the benefit of both global trade (which would thereby increase) and a more stable world economy.

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