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MECHANISMS**

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Abstract

We discuss the theoretical aspects of global imbalances (defined as an excess of global savings over global investment) within the context of the classical theory and the Keynesian theory. We are mainly interested on the effects of global imbalances on output and employment. These effects cannot be discussed within the context of the classical model, because its assumptions do not allow for a lack of effective demand. They are better analyzed within the context of the Keynesian model. In the Keynesian model, the imbalances between saving and investment are liquidated by a decline in output that leads to an increase in unemployment. These effects are more acute in a currency area. Since there are no automatic mechanisms able to remove global imbalances, an international agreement on this issue is required. This agreement has to be based on an updated version of the Keynes plan. The advantage of this plan is that it mitigates global imbalances and thus stimulates effective demand within the currency area.

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1. Introduction

Global imbalances, i.e., the excess of global savings over global investment, is at the heart of the economic problems of the world economy today. Bernanke (2005) argued that the major cause of the US current account deficit was not due to the US domestic policy, but rather to the excess of savings in East Asia and Middle East economies (savings glut hypothesis); and that this was consistent with the relatively low levels of the world interest rates. Keynesian economists consider global imbalances as the main cause of the current meltdown and the increase in unemployment (Skidelsky, 2009). Global imbalances are not a new phenomenon. Keynes attributed the great depression of 1928-32, to a global savings glut, whose main source was the economy of the United States; the tendency of this country to accumulate gold reserves, blocked *the balance of payments adjustment* and imposed deflation on the rest of the world.

The situation in the euro-area is not very different. The current account surpluses of Germany and of some other countries, and the corresponding increase of their domestic savings, are defended by their corresponding fiscal and incomes policies. They are acting as if they had devalued their real exchange rate against their trading partners in the euro-area (European Commission, 2010, p.7). Thus, their economic growth is based not on the increase of their domestic aggregate demand, but on the demand (and by implication on the trade deficits) of their trading partners. More important, by insisting on keeping their trade surpluses intact, they are blocking *the balance of payments adjustment* within the eurozone, imposing thus deflation and unemployment on the rest of their partners.

Starting from Bernanke's statement, the *source* of *global imbalances* has become the principal object of theoretical and empirical research in recent years. Gourinchas and Rey (2013) state, that the starting point of research is the neoclassical model of economic growth, the standard prediction of which, regarding capital flows, is that capital will tend to flow from countries with low autarky returns (interest rates) to those with high autarky ones. This model identifies two key determinants of autarky returns: capital scarcity and long term prospects of growth. Since, according to this theory, advanced countries have low, and emerging economies high autarky interest rates, capital flies from the first to the second. This prediction is not in accordance

with the observed facts. Various models put forward in the literature, attempted to explain why advanced economies can exhibit higher autarky real returns than the rest of the world. Caballero et al. (2008) assume that the emerging economies have a shortage of stores of value, and this shortage depresses autarky interest rates. Mendoza et al. (2009) and Angeletos and Panoussi (2011) stress the differences in the ability of the countries to insure away idiosyncratic risks. In a Bewley (1987) type model, these differences translate into different strength of the precautionary saving motive. Less financially developed countries with higher degree of idiosyncratic risks tend to save more. This depresses autarky rates of returns and, by implication, offers an explanation to the observed facts (Gourinchas and Rey, 2013)

Global imbalances are conceived as a problem. The flowing of capital from the emerging economies to the more advanced ones contributed to the reduction of the interest rates (and to a decline in risk aversion) and the US ability to borrow cheaply abroad, thereby financing the 2008 housing bubble (Dorucci and McKay, 2011, and references therein). Others (Corden, 2011; Deardorf, 2010) hold a more skeptical view. They consider global imbalances as representing a phase in inter-temporal international trade, and normally one may expect this trade to yield gains for all countries. Thus, the view that imbalances are undesirable hardly makes sense. However, Corden (2011) argued that the equilibrium implied by the inter-temporal trade did not occur, because the borrowing countries have failed to build up resources out of which interest and the necessary repayments could be made. Savings coming out from the “saving glut” countries have financed consumption and “unfruitful” investment, like housing. Corden blames the financial sector for the failure to turn increased savings into investments, capable of producing a flow of income from which to service the debt. The result was a debt crisis.

These models, however, are of limited validity for several reasons: (i) They restrict the source of global imbalances to the emerging economies They ignore, therefore, the case in which the source of global imbalances are the advanced economies, as is the case of the Eurozone. (ii) Their main issue of research is the explanation of capital flows from the emerging economies to the advanced ones. Therefore, they ignore as such the most important effect of global imbalances, namely, the blocking of the mechanism of the balance of payments adjustment. (iii) They also ignore the

effects of global imbalances on output and employment, an issue studied in the context of the Keynesian tradition.

The intention of this paper is to discuss the theoretical aspects of global imbalances and their effects on the international economic system. We emphasize two points: The *first* is that global imbalances are due (in part) to deliberate economic policies (mercantilist practices). The resulting situation is a disequilibrium system, in which the fundamental proposition of classical international trade theory, that there is an automatic mechanism ensuring balance of payments equilibrium, does not hold. The *second* point is that the consequences of global imbalances lead to a decline in aggregate demand, with negative effects on output and employment. These negative effects are more acute within a *currency area*, especially in the absence of an automatic transmission mechanism capable in removing global imbalances, and by implication their negative effects on output and employment. In these instances, an international agreement on the issue is required.

The paper is organized as follows: In section 2 we present the classical theoretical aspects of global imbalances and their corresponding effects. Section 3 presents the Keynesian aspects on global imbalances and their effects. Section 4 suggests possible ways in removing global imbalances, and in section 5 we conclude.

2. Global macroeconomic imbalances: The classical view

We consider an economy, consisting of two countries, the home country and the rest of the world, the national currencies of which are imperfect substitutes. It is assumed, as in Dornbusch (1980, pp. 120-125), that this economy operates at a full employment level, the quantity theory of money holds, and relative prices are constant. The last assumption (constant relative prices) implies a one good world. In a one good world, spatial arbitrage assures that prices will be the same in all countries, provided that they are measured on the same currency:

$$p = ep^* \quad (1)$$

where p and p^* are domestic and foreign prices respectively, and e is the domestic currency price of foreign exchange.

It is assumed that global nominal income equals global nominal spending:

$$p(y+y^*) = v_m + v^*e_m^* \quad (2)$$

where p_y and p_{y^*} are the domestic and foreign nominal income respectively, and v_m and $v^*e_m^*$ the domestic and foreign spending. In these expressions, v is a constant that is interpreted as the domestic expenditure velocity and m is the domestic currency. The asterisk (*) denotes foreign variables. Obviously $m+m^*=M$, where M is the world money supply.

Condition (2) can be written as:

$$(p_y - v_m) = (v^*e_m^* - p_{y^*}) \quad (3)$$

The expression in the first parenthesis defines hoarding, i.e., the excess of nominal income over nominal spending, while the expression in the second defines dishoarding, i.e., the excess of spending over nominal income. Condition (3) says that the rate of *hoarding* in the home country must be equal to the rate of *dishoarding* of the rest of the world. Given the definition of hoarding, we can look at the equilibrium rate of hoarding as equal to the *trade surplus* of the home country or the rate at which the home country accumulates assets. And vice versa for dishoarding. And because trade surplus is associated (by definition) with an excess of savings over investment, we may interpret condition (3) as a condition for *global macroeconomic imbalances*, in the sense that the excess of savings over investment (the “savings glut”) in the home country is exactly matched by an excess of planned investment over savings in the rest of the world. Note that, in the context of this model, a global “savings glut” does not make sense. We can only speak about a “savings glut” in a country or a group of countries, which is exactly matched by a dishoarding in the rest of the world.

Classical economists have argued that global macroeconomic imbalances could not persist. In a floating exchange rate regime, disequilibria could be removed through changes in the exchange rates. In a fixed exchange rate regime, the adjustment process is induced via monetary flows from the surplus country to the deficit country. Therefore, cash balances and nominal spending will rise in the surplus country. In the deficit country, cash balances decline and so does nominal spending. Thus, hoarding and dishoarding gradually disappear. Money stocks are redistributed until:

$$(py - vm) = (v^*em^* - py^*) = 0 \quad (4)$$

The redistribution of money thus acts like a transfer, i.e., it restores trade and monetary equilibrium.

It is possible, however, and this reflects the *current situation* of the international economy, that the home monetary authorities (for example) fix the exchange rate at a “competitive” level and then *sterilize* in whole (or in part) the monetary effects of the payments imbalances. Thus, the home country blocks the mechanism of balance of payments adjustment. In this case, the movement to equilibrium will be slowed down or even stopped, with a magnification of the payments imbalances and changes in central bank reserves. In terms of the model, the world economy remains at the situation described by (3), i.e., in a situation of global disequilibrium, and never reaches the equilibrium situation (4). As a result, a part of the world develops trade surpluses and accumulates international reserves (“savings glut” countries) while the rest of the world develops trade deficits and loses reserves. The ability of the hoarder (the “savings glut” country) to drain assets from the rest of the world is fortified by the lack of a mechanism of adjustment.

The effects of blocking the balance of payments adjustment by a country (or group of countries) on output and employment cannot be analyzed within the context of the classical model. The model assumes full employment and, by (2), there cannot be lack of global demand. However, the facts of experience are not consistent with these assumptions. Hence, in order to analyze the effects of global imbalances on output and employment, an alternative model is needed. This alternative model is provided by Keynes’ view on global imbalances.

3. Global macroeconomic imbalances: The Keynesian view

According to the Keynesian tradition, saving and investment determine the level of income (and not the interest rate). Therefore, global macroeconomic imbalances, *considered from the Keynesian perspective*, may be defined as an excess of global savings over investment at a given level of income y^* (savings glut) or, equivalently, as the inefficiency of investment to absorb savings at the same level of income y^* (investment dearth (Wolf, 1968)). And since the motives behind the decision to save

are not the same as the motives behind the decision to invest (in the classical theory, investment and savings are determined by the interest rate), there is no guarantee that the savings, realized at the income level y^* , will be absorbed by current investment.

The motives behind the decision to run a positive trade balance and by implication accumulate reserves (to hoard or to save) may be defined as depending on: (i) a *precautionary* motive, (ii) a *policy* motive and (iii) on *income inequality*. The *precautionary* motive refers to the need for meeting unforeseen emergencies, such as capital flights during economic crises. The *policy motive* (mercantilist motive) refers to the desire to boost exports and increase domestic employment. Finally, an *increase in income inequality*, may contribute to an increase in the global propensity to save by redistributing income from lower income classes with lower propensity to save, to higher income classes with a higher propensity to save.

These savings have to be absorbed by increased investment. Investment depends on a number of dynamic factors like technological innovations, the expectations of entrepreneurs, and the rate of interest. But there is no guarantee that investment will increase at the same rate as saving, so as to keep the world income (which is determined by the intersection of saving and investment schedules) at the level of full employment. Investment may be insufficient for a number of reasons, as for example, lack of investment opportunities (Schumpeter, 1939), or the decline of marginal efficiency of capital (that depends on the uncertain expectations of the entrepreneurs) below the long run interest rate. The lack of investment opportunities may explain why, even with very low interest rates, the only investment that could be generated was in housing. The imbalance between saving and investment is liquidated by a fall in output.

More formally, we may postulate, in accordance with the Keynesian tradition (Keynes, 1936), that investment and savings functions are linear. Investment is taken to be independent of income and therefore $dI/dy = 0$. The saving function has the form $S = S(y)$, with $dS/dy > 0$. The behaviour of the system is described by the condition:

$$dy/dt = \beta [I(y) - S(y)], \beta > 0 \quad (5)$$

The system is locally asymptotically stable since:

$$dI/dy < ds/dy \quad (6)$$

and globally stable since $S(y) > I(y)$ for all $y > y^{**}$ and $S(y) < I(y)$ for all $y < y^{**}$.

The equilibrium occurs when $dy/dt = 0$, i.e., when investment and savings are equal. If $dy/dt < 0$, and by implication $S - I > 0$, we have the case of global imbalances. Since global imbalances correspond to a disequilibrium position, then by condition (6) the system will tend to its equilibrium position via a reduction in income and employment. Thus, global imbalances lead to a *decline in global demand*, and generate *unemployment* of the Keynesian type. There are no automatic mechanisms able to restore equilibrium at the level of full employment. Since the system is globally asymptotically stable, it will tend away from the higher level of income (and employment) associated with $S - I$, towards the lower level of income (and employment) associated with $S = I$ (Figure 1).

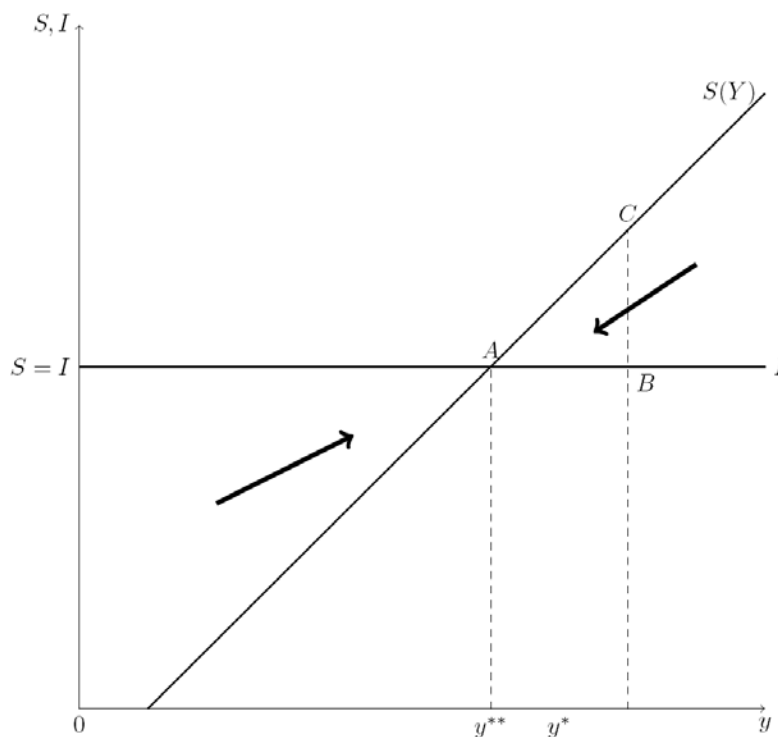


Figure 1

The consequences of global imbalances are more acute in a *currency area*, defined as a group of countries (without fiscal integration) that share a common currency. According to the classical view, as we have already seen, global imbalances cannot last for a long time because there are automatic mechanisms inherent in the system that are able to restore equilibrium. Therefore, any attempt to accumulate reserves (and to run trade balance surpluses) is self-defeating. However, as Keynes (1980, p. 28) has remarked, the process of adjustment is compulsory only for the deficit country but not for the surplus country. In fact, if we start from a state of disequilibrium, as described by (3), we may observe that the surplus country (the creditor) has three options at its disposal: (i) the option of investing its surplus abroad, (ii) the option of using its surpluses to expand its own economy, and (iii) the option of hoarding (sterilizing) its surpluses.

Thus, the *preferences* of the surplus country on the outcomes of its options (policies) are *crucial*. If the surplus country believes that the gains associated with an international equilibrium, as described by the condition (4), are higher than those associated with mercantilist practices, then it will refrain from hoarding its surpluses, and the equilibrium in the *currency area* will be restored via the mechanism already described (see section 2 above). But if the surplus country believes that condition (3) improves its economic position relative to that of its partners (growing, exports boost, domestic employment and growth), then it will sterilize its surpluses (i.e., it will prefer option (iii) to options (i) and (ii)), thus eliminating any chance of narrowing its surplus with the rest of the currency area. Option (iii) expresses an increased desire to save over investment, and it will have the following effects on the economic system:

(1) It may lead to a *deficiency in the effective demand* of the *currency area* as a whole. In fact, as we have already seen, by opting (iii), the surplus country triggers an imbalance between savings and investment, which is liquidated by a fall in output and employment (condition (5)). Thus, the currency area is trapped in an equilibrium with unemployment. Equilibrium with unemployment tends to persist because the economic system is not self-adjusting.

(2) It *throws the burden of adjustment to the deficit countries* of the currency area. A country running a balance of payments deficit cannot devalue its currency: it has to deflate its domestic prices. Domestic deflation may stimulate exports, by reducing domestic prices relative to foreign prices, and thus restore external equilibrium.

However, *domestic deflation* may have two undesirable effects:

(i) It may *deteriorate the terms of trade*. As Keynes (1980, p. 29) has remarked, the amount of price reduction which will prove necessary to stimulate a sufficient expansion of the quantity of exports relative to imports, depends on the elasticity of demand in the world as a whole for the product in question. If a large reduction in prices is required to stimulate a sufficient increase in exports, the country may suffer a severe loss in the proceeds obtained from its previous volume of trade. And in the limiting case of a unit elasticity of exports demand, “the debtor country is involved in a Sisyphus task and gets no nearer a position of equilibrium however great its efforts” (Keynes, 1980, p.29).

(ii) Deflation leads to an increase in the real interest rates, and thus to a decline in investment and employment. Domestic deflation may also lead to a *liquidity crisis* (De Grauwe, 2011; De Grauwe and Yuemei, 2013). Internal devaluation is achieved by deflationary macroeconomic policies. Inevitably, this will lead to a recession and thus (through the operation of automatic stabilizers) to an increase in budget deficits. Increased budget deficits increase the *distrust* of the markets as to the ability of the country to service its debt. This is because the members of the currency area borrow in a currency, the supply of which do not control, and therefore, they cannot guarantee bondholders that cash will always be there at maturity. This distrust leads to bond sales. Liquidity is withdrawn from national markets, domestic interest rates increase drastically, forcing authorities to apply even more budgetary austerity, which in turn leads to an even more intense recession. Thus, the country finds itself in a situation, characterized by *austerity programs* that fail to reduce budget deficits, because they lead to a downward economic spiral and punishing interest rates.

We thus conclude: If some countries (in a currency area) insist on keeping their trade surpluses (better, they adopt mercantilist practices), then *they block* the balance of payments adjustment mechanism in the currency area, and throw the burden of

adjustment on the deficit countries, namely, "...on the countries least able to support it, making the poor poorer" (Keynes, 1980, p. 29). And if domestic deflation fails to restore external equilibrium, then the deficits in the current account will accumulate, and this may lead to a massive outflow of capital and bank runs. Eventually, some members of the currency area may be forced to leave it, if they believe that the cost of leaving is lower than the cost of remaining in the currency area.

4. Curing global imbalances within a currency area

We have argued in the previous section, that global imbalances (especially in the context of a fixed exchange rate regime or of a currency area) *block* the balance of payments adjustment mechanism by the tendency of the "savings glut" country (or countries) to accumulate assets, imposing deflation and unemployment on the rest of the world. In order to avoid these catastrophic effects, global imbalances have to be removed, which implies a decline in both the trade surplus of the creditors and the trade deficits of the debtors. And since this cannot be expected to happen automatically in a world, the history of which is characterized by a persistent tendency towards balance of payments disequilibria, an international agreement on this issue becomes necessary.

This agreement should be based on an updated version of the plan for an *International Clearing Union* proposed by Keynes (Skidelsky, 2009; Davidson, 2007) for two reasons: The first, is that the Keynes plan attempts to mitigate global imbalances and thus to stimulate effective demand. The second, is that it allows more flexibility in the system by allowing a fixed but adjustable relation of the national currencies to the common currency. In accordance with the Keynes plan (for details see Keynes, 1980; Skidelsky, 2001; Skidelsky, 2009), the member countries retain their national currencies. All international transactions of the member countries, giving rise to a surplus or deficits in the balance of payments, should be settled through "clearing accounts" held by the central banks of the member countries in an International Clearing Bank (ICB). Central banks of the member countries would buy and sell their national currencies against credits and debits with the ICB. These balances would be held in an international form of bank money, the "bancor". National currencies have a fixed but adjustable value relative to "bancor". Deficit counties are allowed to

depreciate their national currency relative to “bancor”; they would be charged interest on excessive deficits. Surplus countries may revalue their national currencies in terms of the “bancor”; they will be charged rising rates of interest on surpluses above a certain limit. Thus, the adjustment of the balance of payments may take the form of capital movements, since the only way for the surplus country to avoid paying high interest rates to the union is to lend its surpluses to the deficit countries. Thus, an agreement, along the lines of the Keynes plan, will lead to an international equilibrium with no global imbalances.

One has to observe, however, that an international agreement, that leads to an outcome consistent with that of international equilibrium, will be acceptable by all if the following two conditions are satisfied: (i) it had to be efficient in the sense that no alternative outcome exists that yields higher benefits *simultaneously* to all countries (group rationality), and (ii) no country could be expected to agree on a joint outcome, that would leave it with a lower benefit than it would assure itself by its own individual efforts (individual rationality). While an agreement, along the lines of the Keynes plan, seems to satisfy condition (i), it does not, necessarily, satisfy condition (ii). In the present context, condition (ii) means that a surplus country may not agree to allow its surpluses to be “automatically” placed at the disposal of the deficit countries, because the subjective utility derived by accepting this agreement, is lower than the subjective utility derived from a stand-alone policy. But one has to accept, that an agreement along the lines of the Keynes plan, is the only way to avoid the creation of global imbalances in a currency area (Demopoulos and Yannacopoulos, 1999).

5. Concluding remarks

The following conclusions may be drawn from our analysis:

(1) Global imbalances, i.e., the excess of global savings over global investment, are due to mercantilist policies. Some countries follow policies that lead to an increased hoarding and therefore to an increased accumulation of assets and balance of payments surpluses, thus blocking the mechanism to equilibrium of the international payments system.

(2) In the context of the classical model, a *global* “savings glut” does not make sense. We can only speak about a “savings glut” in one country or a group of countries, which is exactly matched by a dishoarding in the rest of the world. And since full employment is assumed in the model, we cannot investigate the effects of global imbalances on output and employment.

(3) The effects of global imbalances on output and employment can be studied within the context of the Keynesian tradition. An imbalance between saving and investment is liquidated by a fall in output that triggers an increase in unemployment. Thus, global imbalances reduce aggregate demand, and the economic system tends to an equilibrium with unemployment.

(4) There is no “automatic” mechanism able to remove global imbalances, the negative effects of which are more acute in a currency area. We may need therefore a system, that makes the adjustment process compulsory for both the debtors and the creditors so to ensure that surpluses and deficits even out in the long run. An updated version of the Keynes plan may be appropriate for this purpose. The advantage of this plan is that it mitigates global imbalances and thus stimulates effective demand within the currency area. At the same time, it allows more flexibility in the system since it requires a fixed but adjustable relation of the national currencies relative to common currency.

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