THE CURRENT ACCOUNT DEFICIT AND THE FIXED EXCHANGE RATE. ADJUSTING MECHANISMS AND MODELS.

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The main purpose of the paper is to explain what measures can be taken in order to fix the trade deficit, and the pressure that is upon a country by imposing such measures. The international and the national supply and demand conditions change rapidly, and if a country doesn't succeed in keeping a tight control over its deficit, a lot of factors will affect its wellbeing. In order to reduce the external trade deficit, the government needs to resort to several techniques. The desired result is to have a balanced current account, and therefore, the government is free to use measures such as fixing its exchange rate, reducing government spending etc. We have shown that all these measures will have a certain impact upon an economy, by allowing its exports to thrive and eliminate the danger from excessive imports, or vice-versa. The main conclusion of our paper is that government intervention is allowed in order to maintain the balance of the current account.

Keywords: current account, trade deficit, trade surplus, absorption, elasticity, the Keynesian multiplier model of national income, fixed and floating exchange rate.

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1. Adjusting mechanisms of the current account deficit, if the exchange rate is fixed.

Both in practice and theory, the accent is set on the deficit of the external trade balance (and not on its surplus), because the adjusting process determines the reduction of the international reserves, and forces the country to impose corrective measures.
If the exchange rate is fixed, the corrective process involves the transfer of national resources abroad. These transfers can be measured by the following methods, which limit at studying the behavior of the current account and the adjusting process of its deficit: elasticity approach; income approach; absorption approach.

1.1. Elasticity approach

The elasticity approach is based on the variations of the nominal exchange rate (devaluation, appreciation) for the necessary adjustments in reestablishing the external balance. By devaluation or appreciation of the currency, there will be an inflationary or deflationary regime that counts for the growth or decrease of the internal prices.
In the case of a regime of fixed exchange rates, currency appreciation or devaluation are used to optimize the external trade balance. This affirmation is based on some key premises that some economists consider that are arguable in some poor developed countries. These premises refer to the extent that the change in import prices affects the quantity asked by imports and exports, measured by the elasticity of demand by price.
In the case of devaluating the national currency, the relative prices of imports and exports suffer changes. So, the export prices in foreign currency decrease compare with other countries prices, and the internal import prices rise compared with the national products that substitute imports, provoking the decrease of the imports volume, and the growth of the export volume of goods, thus improving the situation of the current account. So, the devaluation concentrates on the

reduction of excess spending on imports, and the appreciation process focuses on the reduction of excess revenues from exports.
The elasticity of imports (exports) by price, is an instrument which shows the measure that physical volume of imports (exports) suffers modifications, when the price fluctuates. This is reported like this: $\boldsymbol{E_{M(X)}}$ = percentage modification of imports (exports) quantities / percentage modification of imports (exports) prices.
If the price modification reflects in the modification of imports, than the demand is elastic to the price. If the demanded quantity suffers less modifications, than the demand is inelastic to the price.
If the elasticity of demand for imports based on prices is nil, than the demand for imports is perfectly inelastic, and the same amount of goods will be imported no matter what the price is in the national currency.

1.2. The absorption approach

The absorption approach is the name of a set of ideas about the external trade balance, associated with the work of Meade, Alexander and Mundell, expressed in a paper by Johnson (1958).
In a closed economy, the national income can be separated into sectors where the production is being sold: consumption, investments, public spending; and also in those sectors where it is won: consumption, saving and taxes: C+S+T = Y = C+I+G, (1) were: Y is the national income, C is the consumption, S is the national private savings, T is the taxes, I is the national investments, and G are the governmental spending.
Because C +I +G = A, were A is the internal absorption, it results that Y=A(2).
From equation (2) we conclude that in a closed economy, the national spending has to be equal to the national income. And, if we assume that there is a budget equilibrium (G=T), it results that the national investments has to be equal to the national private savings (S = I).
When we pass to an open economy, we add the income earned through exports (X) minus the national spending on imports (M). The equation becomes (1) C+ S+T = Y= C+I +G +X-M(3)
By reorganizing the equation number (3), we obtain: X-M = (C+ S+T) – (C+I +G) = Y-(4)
The national income can be larger or smaller than the internal absorption, meaning that the current account output can be a deficit or a surplus.
Starting from equation number (3) and by rearranging the terms we have: S +(T-G) –I = (S–I) +(T-G) = X-M(5). The equation number (5) signifies that the net financing capacity of an economy = net financing capacity of the private sector from which we lower the need of financing of the public sector = the account of the current operations.
If we consider the budget surplus (T-G) as governmental savings, or the budget deficit as spending, we can define the national savings as EN = S+(T-G). Than the equation cand be written EN - I = BC (6). This equation has the following meanings: the total national savings out pass investments with a sum equal to the external trade balance account.

1.3. The income approach (the Keynesian model of the national income)

1.3.1. The Keynesian model of a small country

The income approach refers to the effects of the national income modifications over the adjusting process of the current account. The modifications of the national income can contribute positive or negative to the correction of the external imbalance, but in both cases, the effects can be incomplete, having to be accompanied by alternative correction measures, like the change of the nominal exchange rate.*This analysis derives from the model of the Keynesian simple multiplier, in the case of a small but open economy.*
The national income in an open economy is determined by the sum of consumption, investments, governmental spending and the net external spending on goods and services. So, by resuming the equation number (3): Y = C + I + G + (X - M)(3)

$C = C^* + cY$ (7)

In the simple Keynesian model, both governmental investments and spending are considerate exogenous (fact showed by the asterisk in the right of the letter) $I = I^*$ şi $G = G^*$

The demand for exports (imports for foreigners) is a function of relative prices and national income from abroad (Y^*): $X = X_d (E,Y^*)$

So the simplified formula for the demand of exports, regarding the fact that the exchange rate is fixed, and the foreign income is exogenous, we have: $X = X^*$(8)

The demand for imports depends on the relative prices and the national income: $M = M_d (E,Y) = M^* + mY$, (9) were: Y is the national income; C is the aggregated consumption; C^* is the autonomous consumption; c the marginal inclination to consumption; I^* are the autonomous investments; G^* is the governmental autonomous spending; X is the exports determined by external factors (like the external income); M is the aggregated imports; M^* is the autonomous imports; „m" is the marginal inclination to imports affected by the national income, and assures the connection between the national income and those of the imports. We consider "m" as positive and subunit, following the fact that imports are an increasing function of national income. So the imports go the same way with the national income, but in a smaller proportion.

Replacing the equations (7), (8) and (9) in the equation number (3), we obtain: $Y = C^* + cY + I^* + G^* + X^* - (M^* + mY)$

$$\Delta Y = \frac{\Delta C^* + \Delta I^* + \Delta G^* + \Delta X^* - \Delta M^*}{1 - c + m} \quad (10)$$

The multiplier of an open economy, like in the equation number (10) is $\frac{1}{1-c+m}$. This is smaller than in a closed economy, ($\frac{1}{1-c}$) because of adding the marginal inclination to imports (m), which represents a leakage of incomes abroad care.

$$\frac{1}{1-c+m} < \frac{1}{1-c}$$

$1 - c = s$, were „s" is the marginal inclination to savings.

The equation number (10) can be expressed:

$$\Delta Y = \frac{\Delta C^* + \Delta I^* + \Delta G^* + \Delta X^* - \Delta M^*}{s + m} \quad (11) \text{ or } \Delta Y = \frac{\Delta A^* + \Delta X^* - \Delta M^*}{s + m} \quad (12)$$ were

$A^* = C^* + I^* + G^*$ represents the exogenous component of the aggregated demand.

The multiplier for any autonomous component of the spending is: $\frac{\Delta Y}{\Delta A} = \frac{1}{s+m}$ (13)

In practice, the sum between „s" and „m" is less than 1, and by this ht multiplier is supraunit. That means that an autonomous increase of spending can provoke the increase of the national income in a greater measure.

The equation number (11) can be used for determining the impact of the modification of the components of the national income over the external equilibrium. The current account can be expressed like this (if we consider that as majority the commercial flows, and the other components – the income and transfers – unimportant): $CC = X - M$ resulting $\Delta CC = \Delta X - \Delta M$ (14)

By replacing the equation number (9) în the equation number (14) we obtain $\Delta CC = \Delta X^* - \Delta M^* - m\Delta Y$ (15)

With the help of the equation number (15) we can determine the direct impact of the modification of autonomous imports and exports, and the indirect impact of the modification of any component of the national income, over the external equilibrium. So, the changes of the national income (in any direction) will affect the external equilibrium.

By introducing in the equation number (15) the ΔY from the equation number (11), and by rearranging the terms, we obtain:

$$\Delta CC = \frac{s}{s+m}\left(\Delta X^* - \Delta M^*\right) - \frac{m}{s+m}\left(\Delta C^* + \Delta I^* + \Delta G^*\right) \quad (16)$$

If we suppose that ΔM^* is very small, almost equal to zero, than: ΔCC = ΔX* - m ΔY = ΔX* - m $\frac{1}{s+m}$ ΔX* = $\frac{s}{s+m}$ ΔX*(17)

The expression $\frac{s}{s+m}$ is smaller than 1, which means that external trade balance is improving less than the exogenous growth of exports, because of the increase of imports based on the increase of the national income.. Per total the effect is positive, because imports don't increase as much as exports.

1.3.2. The Keynesian model with two big countries

In this model we consider two countries large enough to affect each other's national income, because the development of the rest of the world depends on the evolution that country, and the exports evolution of the host country depends on the abroad evolution. By this, the rest of the world (in order to ease the analysis we consider the rest of the world as one country) and the host country are interdependent.

Because the abroad national income is endogenous, the foreign country shapes itself analog to the host country, admitting that its exports are the imports of the host country. This depends on the national income of the host country: M = M*+mY(18)

The imports of the foreign country are the exports of the host country. These depend on the national income of he foreign country: $X = X^* + m_s Y_s$ (19) were m_s is the marginal inclination to imports of the foreign country, s_s is the marginal inclination to savings of the foreign country, and Y_s is the national income of the foreign country.

So, from the equation number (19) results that when the national income increases abroad, the foreigners import more from the analyzed country.

In the equation number (12) X* is replaced by the new expression of exports, resulting a new formula of the *equilibrium national income*: $Y = \frac{A^* + X^* - M^* + m_s Y_s}{s+m}$ (20)

From the above equation we assume that the internal national income depends positively from the foreign national income. When a big country registers an expansion, it imports more from its trading partners.

In these conditions, the solution for the foreign equilibrium income is: $Y_s = \frac{A_s^* + M^* + mY - X^*}{s_s + m_s}$ (21), were A^*_s represents the autonomous component of foreign spending.

The equation number (21) is the version for the foreign country of the equation number (20). The equilibrium national income for any of the two countries is obtained by resolving simultaneous of the two equations. The multiplier of an expansion of the host economy is:

$$\frac{\Delta Y}{\Delta A} = \frac{1}{s + m - \frac{m_s m}{s_s + m_s}} < \frac{1}{s} \quad (22)$$

This is larger than the multiplier of a small country 1/(s + m), because a part of the spending that gets out of the country as imports they comeback as exports. Also, the multiplier from the

equation number (22) is smaller than that of a closed economy (1/s), as long as ”m” and ”s” are higher than zero.
In the case of the model with two countries: $\Delta BC = m_s\Delta Y_s - m\Delta Y$(23). From the equation number (23) we find that if the host country registers an expansion larger than the foreign country, than the host country will suffers a deterioration of the external trade balance, assuming that two countries have the same marginal inclination to imports.

1.3.3. Transmitting the economic shocks in the Keynesian model

Next, we will analyze the way of transmitting, over the borders of one country, the economic shocks, in the conditions of a fixed exchange rate in comparison the floating one, starting from the Keynesian model. This comparison is one of the criteria that a country uses in order to chose its exchange rate.

1.3.3.1. Transmitting the economic shocks in the case of a fixed exchange rate

For simplicity we start from the premise of a small country. Another premise is to ignore the repercussion effects due to the modifications of the foreign national income.
According to the equation number (13),an internal imbalance, like a reduction of the demand of investments, can provoke the decrease of the internal national income with $\frac{\Delta Y}{\Delta I^*} = \frac{1}{s+m}$ in the mode with a small country. An external imbalance, like the reduction of the export demand, can provoke the modification of the national income wit the same amount: $\frac{\Delta Y}{\Delta X^*} = \frac{1}{s+m}$. In this case, a part of the foreign modification is transmitted, through the external trade balance, in the host country.
In the model with two big countries, the export multiplier is higher (as we can observe from the equation number (22)), because a part of the national income leakages return as imports, return back as exports

1.3.3.2. Transmitting the economic shocks in the case of a floating exchange rate

In the case of the floating exchange rate, the Central Bank doesn't intervene. We assume that there are no capital, financial or transfer flows, so the external trade balance is nil. In the condition of a floating exchange rate, you cannot realize a surplus of the external trade balance, because the excess of the foreign currency, obtained by reducing imports, provokes the appreciation of the national currency, which in return supports imports and discourages exports.
The zero sum of the external trade balance means $\Delta BC = \Delta X^* - m\Delta Y = 0$, from which results $\Delta X^* = m\Delta Y$.
The reduction of net exports determinate by the appreciation of the national currency has to be suffice to counteract the downfall of imports provoked by the diminish of the national income. To calculate the variation of the national income we start with the equation number (11): $\Delta Y = \frac{\Delta I^* + \Delta X^*}{s+m} = \frac{\Delta I^* + m\Delta Y}{s+m}$

$$\Delta Y = \frac{\Delta I^*}{s} \quad (24)$$

1.4. Conclusions of the mechanisms that adjusts the current account when the exchange rate is fixed.

The adjusting problems do not appear in the case of flouting exchange rates, because in this regime the adjustment is automatic and its determined by the market conditions. The nominal

exchange rate reacts in the changes of the supply and demand of imports and exports, and thus, the adjustment of the external balance is done automatically.
The analysis stated above has only one major flood, and that is the minimization of the external balance to a null entry in the current account (the difference between imported and exported goods and service registered in the current account), the capital and financial accounts not being analyzed This characteristic imposes serious limits regarding the conclusion of this paper.
In practice, the external balance is equal to the zero sum of the aggregate current account and the capital and financial accounts. By introducing the capital and financial accounts, changes the shape of the analysis in a radical way.
Although the model of the national income multiplier is restrictive, with its help some interesting information can be obtained.
The most important conclusions are evident in the simpler form of the Keynesian model, when the foreign national income is considered constant. This premise is realistic if we assume that the host country is to small to influence the foreign national income. The first conclusion refers to the variation of government spending. Such changes have a multiplying effect upon the national income, because at every round of spending, a part of the obtained income is transforming in more spending, but the effect upon the national income is lower than in a closed economy, because a part of the income is spent outside the country for new imports, which can increase the deficit of the trade balance. Feedback effects through the foreign national income can be obtained only in the case of big countries, and amplifies the effects upon the internal national income.
The next conclusion refers to devaluation. If the Marshall-Lerner condition is obtained, the devaluation of the national currency will determine the improvement of the trade balance, and of the national income, because of the multiplier, but because the growth of the national income amplifies imports, the improvement of the trade balance will be smaller than in the case of omitting the effectsof the income.

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