RELATIONSHIP BETWEEN CURRENCY OFFER AND THE LOCAL ECONOMIC GROWTH

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ABSTRACT

This work consists of the verification of the influence of currency, more specifically of the money offered in the economic growth of a small open and federated economy as it is the case in Brazils small and middle towns. Therefore, two basic hypotheses were emphasized: endogeny of currency in local economy in interaction with the income stream from and to abroad; and the domestic circulation unsteadiness rate of the currency. Trying to test these hypotheses, real events in a local model of the balance of payments were simulated, trying to verify the impact of the external relations on the internal monetary basis under laboratory conditions. The simulations

corroborated a Keynesian hypothesis that currency affects the real part of economy, they confirmed also the endogeny of currency offer in the local economy in this specific case, and pointed to unsteadiness in the domestic circulation rate of the currency. In this regard, it can be defended that economic growth in a small open and federated economy depends of its domestic monetary liquidity. This liquidity depends basically on the economic performance of the basic sector, especially on export as currency source for its foreign relations and, secondly, on the development of the non-basic sector as one of the determinats of the circulation rate of currency.

WORDS CLEF: Money offer,   Economic Growth, Brazilian Municipality

INTRODUCTION

Still an economy is facing with theoretical divergences in every fields. Especially in currency matters, the controvercies turn around the endogeny or exogeny of the currency offer, the reasons of the currency demand, the constancy of the money circulation velocity, the neutrality or non – neutrality of currency, the relationship between currency offer and the general prices level. Agreeing that, without the participation of the currency, would be impossible the progress of technology and dealings. However, the study focus about the currency always turned to national economies. May be a few studies about this matter had been done in the local field, especially in federated economies, as the case of the Brazilian towns.

Under the summit of this inspiration, our central objective includes a discusion about the determinants of the currency offer on the local economy fields and its relationship with the internal economic growth. More specifically, we try to verify how behaves the external relations in the determination of the money base. In economical terms, the peculiarity in the spacial level cannot turn into an obstacle to the measure of

the exchange relations. In the Brazilian case, with the political structure of a big Federation, inexorably covers multiple territorial and economical parcels.

In this dimension, we only found more depurated official accountancy records of an economy in national terms. In a state field, with some availability, they are quite precarious yet. When we reported aurselves to the towns, or to the regions, the scene became descouraging. People who govern the local state just manage the public accounts. Unluckly, the public municipal sector has the technical installed capacity to run a local economy.

Since in a capitalist productive system when someone win, another loose, it becomes feasible to affirm that the national macroeconomic policies do not have the same echo in every federated town. In this dimension, the thermometer of the local economy cannot be turned to the national economy thermometer.

For these reasons, we are going to recover from the national accountancy the local specificity, since the economical space can be delimited in accordance with prompt interests, without great perjuices. Certainly, an unavailable information becomes a limit to the practical verification; still, the establishment of an own accountant structure will present parameters to the local economy behaviour analysis. The scrutiny of the structural elements of an economy is indispensable for its understanding.

BASIC CONCEPTS OF THE SOCIAL ACCOUNTANCY

Following the social accountancy [1] concepts, we verify that, in the capitalist system which main characteristic is the private property of the production factors, in a

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[1] The Social Accountancy starts from a given wealth (inmobilizations, stocks and saving), to measure the economic production in a determined period.

closed economy and without government, involving two sectors – family units and productive sector – the product (Y) is equal to paid yields to the production factors, which are Salaries (W), Renting (R), Interests (J) and Profits (P):

$$Y = W + R + J + P \qquad (1)$$

This equality suggests that the product is equal to the paid yields from the productive sector to the family units because the acquisition of the production factors. So, the perceived incomes by the families are spent in the purchase of produced goods and services, forming a real stream that necessarily is equal to the currency stream, that produces the equality between product, income and expenses.

On the real stream, part of the production is assigned to the family units ´consumption and part is assigned to the purchase of capital goods, that expands the productive capacity of an economy, representing the Investment (I) that let the construction of a new relationship:

$$Y = C + I \qquad (2)$$

To mantain the consistency of the equality between product and income, in the currency stream, a portion of the income that is not assigned to expenses, with a consumption which assumes the way of saving (S), demonstrated by the following equation:

$$Y = C + S \qquad (3)$$

The exclusion of the consumption in two previous equations proves the equality between investment and saving, indicating that the non – consumed income is destined to the investment:

$$C + S = C + I => S = I \qquad (4)$$

With the exclusion of the government, that enter to the real stream to carry out its leessee, distributive and stabilized functions, we have the participation, in the currency and real streams, of the fiscal policy, represented by the taxable collection and by the public expenses. From the product point of view, the goods and services pass to join monetarily the taxes (T), as soon as from the expenses point of view, the government expenditures (G) represent a part of the consumption:

$$Y = C + I + G \quad \text{(Production)} \quad (5)$$

$$Y = C + S + T \quad \text{(Income)} \quad (6)$$

Opening the economy for the relationahips with the rest of the world, we have the emphasized role of the liquid exportations, represented by the product and the income streams with abroad. In an opened economy, the product has to incorporate the goods and services for abroad, as soon as the internal expenses have to incorporate the goods and services received from overseas.

In this way, from the point of view of the product, in the real market of goods and services, the total consumption (C) is represented by domestic consumption (Cd) of goods and services internally produced, plus the consumption of foreign goods and services (Cf), as soon as the investment break itself down between domestic (Id) and foreign (If) one and the Government expenses break down into domestic (Gd) and foreign (Gf) expenditures:

$$C = Cd + Cf \quad (7)$$

$$I = Id + If \quad (8)$$

$$G = Gd + Gf \quad (9)$$

As the internal product has to incorporate the exportations (X), as it is about internal production and if we take away and increase Cf, If and Gf, that does not change the equality, we can recognize the closed economy´s general formula for an opened economy:

$$Y = (C_d + C_f) + (I_d + I_f) + (G_d + G_f) + X - (C_f + I_f + G_f) \qquad (10)$$

The summary of goods and services bought abroad $(C_f + I_f + G_f)$ has necessarily to correspond to the total imported goods and services (M), the equality could be rewrite such as:

$$Y = C + I + G + (X - M) \qquad (11)$$

The exportations less the importations are defined as liquid exportations (N), we have the accountable equelity of the product as:

$$Y = C + I + G + NX \qquad (12)$$

We have to emphasize that the liquid exportations assume an entering and departuring income connotation and not simply tangible goods, as it is represented in the commercial balancce of a determinated country or region. As soon as, the liquid exportations is equivalent to the product less the internal expenses, expressed by the summary of the consumption, investment and govenment expenditures, that is to say:

$$NX = Y - (C + I + G) \qquad (13)$$

In this way, if the product exceed the internal expenses, we will be exporting a difference. In this case, the liquid exportations will be positive. When the internal expenses surpass the product we will be importing the difference, so the exportations will be negative. In other words, when the liquid exportations were positives, we have a difference of incomes to abroad; the oppossite way is when they are negative, we receive incomes from abroad.

From the point of view of the income, we have follow in the same direction the income destinated to expenses with consumption, has to reflect the expenditures with the purchase of domestic goods and services (Cd) and from abroad (Cf), as soon as, respectively, the domestic saing (Sd) is increased from the foreign saving (Sf) and the taxes which influence the domestic income (Td) are increased from the taxes over the imported income (Tf).to not perturb the equality, as the income destinated to the payments of the goods and services internally producced (Cf,Sf and Tf) will be destinated to abroad, we have to take it away from the equality, since it represents an exported icome (RX).

In the same way, the income received from abroad correspond to an imported income (RM), nevertheless, simply we add a total income, since it represents an absolute interest from the income. So, as the total income in an opened economy has to incorporate an imported income (RM), and if we add Cf+Sf+Tf and we take RX off, that does not change the equality, we can rewrite the equation of the expense, like this:

$$Y = (Cd + Cf) + (Sd + Sf) + (Td + TF) + RM - RX \qquad (14)$$

In the same condition of the product, the imported income (RM) less the exported income (RX) has to represent the liquid exportation (NX); in the same way: the total consumption expresses the domestic and foreign consumption, the total saving embraces the internal and foreign saving and the total taxes are compound by the influencing taxes over the internal and foreign income. The contable equality of the income can be expressed like that:

$$Y = C + S + T + NX \qquad (15)$$

The liquid exportations from the point of view of the product, represent the exportation of goods and services less the importation of goods and services (X – M); from the point of view of the incomes, they are compound by the imported income less the exported income (RM – RX). In this way, it lets to corroborate that the exportations

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of goods and services could be equal to the imported income (X = RM) and the exported income (M = RX). The bigger the goods and services volume, or least the goods and services dimension, the bigger the income.

The bigger the internal expense the bigger the income. The consumption, the investment and the public expenditures are relatively proportional; this implies that, for a constant internal expense, the relative increase of one, necessarily diminishes the participation of the other, or the other two, as soon as, an increasing or diminishing of one, mantaining the same proportions, increases or diminishes teh internal expense, reflecting directly over the income.

From the point of view of the economic growth, the investment is going to produce a new wealth, since the consumption is destruction, while the investment increases the productive capacity of the economy. So, even though the consumption and the investment in a short term, increase the effective demand and, consequently, the income in an opened economy the incomes transferred from abroad are used in the consumption, they does not produce a new wealth in a long term. In this way, only a part destined to the investment could add to the literal purpose of saving.

In this conception, every income received from abroad is paid with a reduction of saving or it may be paid with the production factors in the future. Used as consumption, it will be destroyed in the present, without producing a new wealth and contracting the internal saving or leaving debts to pay with future production factors. Used in the investment, getting a comparative advantage, it has to give sufficient wealth that make possible earnings to pay the future debts, or, in other words, to guarantee the investment return. This observation is inserted in the microeconomic logic of the capitalist investment, being possible to applied it in a macroeconomic logic as well.

All this previous explanation, corroborates the symbiosis between the real part and a monetary part of an economy, under the light of economical precepts visualized by Keynes and used by the contemporary social accountancy.

So, we have to underline that, in a first aproximation, we glimpse that the relationship with abroad is determining of the local economical basis in a small opened and federated economy. As the economical relationship with abroad are attracted in the traditional macroeconomy by the Payment Balance, we have to follow in this direction as well.

THE MEASUREMENT OF THE PAYMENT BALANCE

The Payment Balance is a contable tool of measurement of the relationships with abroad, in an opened economy. In Brazil, only in a federal boundary, these measurement techniques are used. The Federated States, that could have a more effective control of the streams in their frontiers, the do not use this instrument, leaving aside a very importante appraisal over the behaviour of the state economies.

In relation with the municipal or regional economies, the difficulties of this kind of recording increase, in position with a bigger opening with abroad. Specificaly in relation to the towns, the "habitat" of the family units, we find a model of an opened economy, since the production factors and goods and services streams is totally free, without custom obstacles, distinguished taxes or another conditioner. In front of the difficulties obtaining the necessary information for the Payment Balance Assembly and analysis, it has been done a little in Brazil in this sense.

From this focus, to alleviate and measure the effects of a Payment Balance abstract in a local / regional performance, taking into account the existence of frontiers

and controls over the income streams, we have chosen to develop an experimental model, creating an empirical, particular, and limited territory.

So, in a first moment, we could emulate a small economy that internally reproduces itself, starting in a local economic production that satisfies its own vital and cultural needs, without communications with abroad. In this situation, its economic growth depends on, exclusivelly, an internal enunciation, the non-basic sector, being its development level subjugated to the availability and to the utilization of its own production factors, the distribution of the income, and other elements.

In another dimension, opening the economy, there are economic insertions that identify their income streams to be recorded on the Payment Balance. The model of a National State´s Payment Balance can, naturally, goes through a local or regional afjustment, in accordance with the technical-experimental escheme showed in picture 1.

PICTURE 1 – STRUCTURE OF THE LOCAL PAYMENT BALANCE

PAYMENT BALANCE

CURRENT TRANSACTIONS ACCOUNT (NX)	CAPITAL ACCOUNT
1. Comercial Balance	4. Autonomous Capital Balance
1.1 Goods Importation	4.1 Direct Liquid Investments
1.2 Goods Exportation	4.2 Loans, Financing, Applications
	4.3 Amortizations
2. Services Balance	
2.1 Capital incomes (interests,liquid incomes)	5. Financing of Result (Compensation)
2.2 Various services (royalties, technical assistence,etc)	5.1 Money reserve
2.3 Tourism	
	Initial Wealth Stocks (real and monetary)
3. Unilateral Transferences	Movement
3.1 Federative Capital Transferences (incomes, taxes)	Final Wealth Stocks (real and monetary)
3.2 Private Capital Transferences	
Initial Currency Stocks	

Movements
Final Currency Stocks

As soon as in the national macroeconomic measurement, the structure of the throwing follows the General Accounting rules, using the double entry method which means that each credit corresponds to a debit, or better, each economic fact has its particular behaviour, without throwing off balance where it always be zero, letting prompt apprises of scientific validity.

This laboratory balance is placed in sub-accounts, in function of its own peculiarities:

ü   Commercial Balance: Indicates the transactions of tangible goods with abroad, being the importations the real entries and the exportations the real exits, and where each real movement means an inverse monetary movement.

ü   Services Balance: Records the transactions of intangible goods, or better, the payment and/or reception of resources for the utilization of the production factors (interests, incomes, royalties) and non-factors (tourism, etc).

ü   Unilateral Transferences: Represent the entry and exit of incomes without a cross entry, it does not indicate a future indemnifying.

ü   Autonomous Capital Balance: Points at the transactions which produce variations on the assets and passives with abroad, being by a cross entry of Commercial Balance and by the Services Balance, or being by pure finantial movement.

ü	Outcome Financing: Represents the "cash[2] or the tributary, finantial, and commercial insolvence.

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This model allows empirically measurable essays, offering indications as for possible movements of real and monetary streams with abroad and its impplications on the local economy, specially, in the determination of the currency offer.

Starting from the convergence or divergence of the resources, we can forsee the alteration of the monetary base and, consequently, their reflexes on the internal economy. In this direction, we will develop empirical essays anchored in previous refections. We propose to test as the real stream of the goods and services, expressed by the income cross entry, can dimention the local currency offer. The verification of this stream with abroad determines the monetary base, will corroborate the hypothesis of the endogeny of currency in a small, opened economy.

SIMULATIONS OF THE PROPOSED MODEL FOR   SMALL LOCAL OPENED ECONOMIES

With the proposed structure, we can procede to more varied insertions in an empirical Payment Balance. In this dimension, we are going to procede to essays which intend measure the impact on the internal economy, in terms of the currency offer, with possible transactions with abroad. We use the double entry method, where

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[2] The Payment Balance, boeing the General Accountancy rules, has its "cash" that is represented by a Credit and Obligations account When there are resources entrances, being by the goods exportations, being by reception of services, appear a debit in the Credit and Obligations account and a credit in a respective account, that represents, effectively, an increase in the asset with abroad (adjoining availability or saving). When there are exits of resources, logically, accurs the opposite thing.

a positive throwing receives a negative cross entry and vice versa, in order to mantain stable the Payment Balance.

We will accomplish six tests to try to express the varied forms of real movements that happen in a small opened federated economy. Each test is particular, independent, and pressuposes that the other non-related variables are constant, or that obey to the condition "Ceteris Paribus", which is widely used in economics. This dimension refers us to a delimitation of a temporal space, where we try to measure the interactions between specific variables, in a more literal cartesian way, that naturally is not absolut; yet, by now, we believe that we can contribute to the attempt of our prompt purposes.

In this way, we are going to considerate additional, particular, and short term insertions, considering an initial wealth stock (real and monetary assets) with the amount of 100.000 currency units and an initial currency stock of 10.000 currency units.

The objective of these insertions is restricted to measure the impact of the operations with abroad on these accounts, that represent, respectively, attainable wealth stock and the currency stock.

Essay 1 – An additional exportation of 2.000 currency units with a receiving in cash, in a short term, that represents the following movements in the Payment Balance:

PAYMENT BALANCE

CURRENT TRANSACTIONS ACCOUNT (NX)	2000	CAPITAL ACCOUNT	0
1. Comercial Balance	2000	4. Autonomous Capital Balance	0
1.1 Goods Importation		4.1 Direct Liquid Investments	0
1.2 Goods Exportation	2000	4.2 Loans, Financing, Applications	
		4.3 Amortizations	
2. Services Balance	0		
2.1 Capital incomes (interests,liquid incomes)		5. Financing of Result (Compensation)	-2000
2.2 Various services (royalties,		5.1 Money reserve	-2000

technical assistence,etc)
2.3 Tourism

		Initial Wealth Stocks (real and monetary)	100000
3. Unilateral Transferences	0	Movement	2000
3.1 Federative Capital Transferences (incomes, taxes)		Final Wealth Stocks (real and monetary)	102000
3.2 Private Capital Transferences			

Initial Currency Stocks	10000
Movements	2000
Final Currency Stocks	12000

Picture 2 – Essay 1: Positive throwing in NX and negative one in R.

Result 1:

o Current Account (NX): + 2.000; Capital Balance (BK): 0;

o Money Reserve (R): (-2.000)[3]; Wealth Stock (SW): 100.000 + 2.000 = 102.000

Conclusion 1 – Any positive insertion in NX, without movements in BK, represents a positive result with an equal amount in SW and SM, or better, when the stream with abroad represents an interest on the Current Transactions Balance, being for positive movements of the Commercial, Services Balance or Unilateral Transactions Balance without cross entry on the Capital Balance, that is to say, no income is transferred to abroad (saving), it will increase the money base stock[4] in a same proportion, as soon as, therefore, the local wealth stock.

Essay 2 – En additional exportation of 2.000 currency units without receiving in cash (financing the purchaser), in a short term, represents the following movements on the Payment Balance:

Picture 3 – Essay 1: Positive throwing in NX and negative one in BK

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[3] A negative sign in the reserve account, in practice, means an increase in the money reserves represented by the increase of the Money stock, as soon as, the throwings of cash in the General Accountancy.

[4] We are not going to considerate in this moment that the interest of the income is canalized by the foreing commercial banks, neutralizing the effect by saving transference.

PAYMENT BALANCE

CURRENT TRANSACTIONS ACCOUNT (NX)	2000	CAPITAL ACCOUNT	-2000
1. Comercial Balance	2000	4. Autonomous Capital Balance	-2000
1.1 Goods Importation		4.1 Direct Liquid Investments	
1.2 Goods Exportation	2000	4.2 Loans, Financing, Applications	-2000
		4.3 Amortizations	
2. Services Balance	0		
2.1 Capital incomes (interests,liquid incomes)		5. Financing of Result (Compensation)	0
2.2 Various services (royalties, technical assistence,etc)		5.1 Money reserve	
2.3 Tourism			
		Initial Wealth Stocks (real and monetary)	100000
3. Unilateral Transferences	0	Movement	2000
3.1 Federative Capital Transferences (incomes, taxes)		Final Wealth Stocks (real and monetary)	102000
3.2 Private Capital Transferences			
Initial Currency Stocks	10000		
Movements	0		
Final Currency Stocks	10000		

Result 2:

- · Current Account (NX): +2.000; Capital Balance (BK): (-2.000)

- · Money Reserve (R): 0; Wealth Stock (SW):   100.000 + 2.000 = 102.000

- · Money Stock (SM): 10.000 + 0 = 10.000

Conclusion 2 – Any positive insertion in NX, with movement corresponding to BK, represents a positive result with an equal amount in SW, although without alteration in SM. In other way, we can conclude that when we have a positive movement in the Current Transactions Balance, with a cross entry in the Capital Balance by loans, financing or any other finantial investment, or by direct investments or amortization, we are transferring saving to abroad, therefore, with a positive reflex on the total wealth, although without increasing the money stock or money base. In this dimension, this indicates that the multiplier effect of the currency in a local economy, in a short term, will be discouraged; although, it could exceed its effects in a long term by the increase of the total wealth.

Essay 3 – An additional importation of 2.000 currency units with payment in cash, in a short term, represents the following movements on the Payment Balance:

Picture 4 – Essay 3: negative throwing in NX and positive one in R

PAYMENT BALANCE

CURRENT TRANSACTIONS ACCOUNT (NX)	-2000	CAPITAL ACCOUNT	0
1. Comercial Balance	-2000	4. Autonomous Capital Balance	0
1.1 Goods Importation	-2000	4.1 Direct Liquid Investments	0
1.2 Goods Exportation		4.2 Loans, Financing, Applications	
		4.3 Amortizations	
2. Services Balance	0		
2.1 Capital incomes (interests,liquid incomes)		5. Financing of Result (Compensation)	2000
2.2 Various services (royalties, technical assistence,etc)		5.1 Money reserve	2000
2.3 Tourism			
		Initial Wealth Stocks (real and monetary)	100000
3. Unilateral Transferences	0	Movement	-2000
3.1 Federative Capital Transferences (incomes, taxes)		Final Wealth Stocks (real and monetary)	98000
3.2 Private Capital Transferences			
Initial Currency Stocks	10000		
Movements	-2000		
Final Currency Stocks	8000		

Result 3:

ü   Current Account (NX): (-2.000); Capital Balance (BK): 0

ü   Money Reserve (R): +2.000; Wealth Stock (SW): 100.000 – 2.000 = 98.000

ü   Money Stock (SM): 10.000 – 2.000 = 8.000

Conclusion 3: Any negative insertion in NX, without movement in BK, represents a negative result with an equal amount in SW and SM. In other words, any negative movement in a short term of the Current Transaction Balance by the Commercial Balance, Services Balance, or Unilateral Transferences Balance without a cross entry in the Capital Balance, represents an absolute diminution in the monetary base and,

consequently, in a direct or expanded way, if we consider the currency multiplier, in the total wealth. This test sign on the effect of the substitution of the importation, or in a more specific way, a distinction in the developing level of the non-basic sector. It deserves a record in this moment, the promptness in the local state and federal tax collection, since, in the model, we are relating with the unilateral transactions.

Essay 4 – An additional importation of 2.000 currency units without payment in cash (credit prurchase, financed) in a short term, represents the following movements in the Payment Balance:

Picture 5 – Essay 4: Negative throwing in NX and a positive one in BK.

PAYMENT BALANCE

CURRENT TRANSACTIONS ACCOUNT (NX)	-2000	CAPITAL ACCOUNT	2000
1. Comercial Balance	-2000	4. Autonomous Capital Balance	2000
1.1 Goods Importation	-2000	4.1 Direct Liquid Investments	
1.2 Goods Exportation		4.2 Loans, Financing, Applications	2000
		4.3 Amortizations	
2. Services Balance	0		
2.1 Capital incomes (interests,liquid incomes)		5. Financing of Result(Compensation)	0
2.2 Various services (royalties, technical assistence,etc)		5.1 Money reserve	
2.3 Tourism			
		Initial Wealth Stocks (real and monetary)	100000
3. Unilateral Transferences	0	Movement	-2000
3.1 Federative Capital Transferences (incomes, taxes)		Final Wealth Stocks (real and monetary)	98000
3.2 Private Capital Transferences			
Initial Currency Stocks	10000		
Movements			
Final Currency Stocks	10000		

Result 4:

   ü   Current Account (NX): -2.000; Capital Balance (BK): 2.000; Money Reserve (R): 0

   ü   Wealth Stock (SW): 100.000 – 2.000 = 98.000

   ü   Money Stock (SM): 10.000 + 0 = 10.000

Conclusion 4 – Any negative insertion in NX with a corresponding movement in Bk, represents a negative result with an wqual amount in SW, but without alterations in SM. When from a negative movement in the Current Transaction Balance, in any of its subaccounts, with a cross entry of the Capital Balance, we have a convergent transference of savings from abroad, which points a mainteinance of the monetary base, but with a reduction in the total wealth, since it should be make up in a long term. We have to underline that, if the negative movement were canalized to the consumption, it will have a more sharped effect than if it were canalized to the investment, since in the last case we will be increasing the productive capacity of a local economy with positive reflexes in a long term, which via basic sector, increases the exportations and via non-basic sector, substitutes the importations.

Essay 5 – Receiving in cash 2.000 currency units by amortizations for credits granted abroad, in a short term, it represents the following movements in the Payment Balance:

Picture 6 – Essay 5: Positive throwing in BK and negative one in R.
PAYMENT BALANCE

CURRENT TRANSACTIONS ACCOUNT (NX)	0	CAPITAL ACCOUNT	2000
1. Comercial Balance	0	4. Autonomous Capital Balance	2000
1.1 Goods Importation		4.1 Direct Liquid Investments	
1.2 Goods Exportation		4.2 Loans, Financing, Applications	
		4.3 Amortizations	2000
2. Services Balance	0		
2.1 Capital incomes (interests,liquid incomes)		5. Financing of Result (Compensation)	-2000
2.2 Various services (royalties, technical assistence,etc)		5.1 Money reserve	-2000
2.3 Tourism			
		Initial Wealth Stocks (real and monetary)	100000
3. Unilateral Transferences	0	Movement	0

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3.1 Federative Capital Transferences (incomes, taxes)		Final Wealth Stocks (real and monetary)	100000
3.2 Private Capital Transferences			

Initial Currency Stocks	10000
Movements	2000
Final Currency Stocks	12000

Result 5:

ü Current Account (NX): 0; Capital Balance (BK): +2.000

ü Money Reserve (R): -2.000; Wealth Stock (SW): 100.000 + 0 = 100.000

ü Money Stock (SM): 10.000 + 2.000 = 12.000

Conclusion 5: Any positive insertion in BK without movement in NX, it does not change SW [5], but represents a positive result with an equal amount in SM. The receiving of resources via Capital Balance, by Direct Investment, loans, financing or amortizations, has between its effects on which increase the local monetary base, in spite of not change the total wealth in a short term. The destination of the resources a the local economy will define the long term effects. We have to underline the importance of the financial sector that has a national structure; therefore, it is outer to the local economy, has a singular role in the definition of the monetary base.

Essay 6 – Payment in cash of 2.000 currency units by amortizations for debits abroad, in a short term, it represents the following movements in the Payment Balance:

Picture 7 – Essay 6: Negative throwing in BK and a positive one in R.

PAYMENT BALANCE

CURRENT TRANSACTIONS ACCOUNT (NX)	0	CAPITAL ACCOUNT	0
1. Comercial Balance	0	4. Autonomous Capital Balance	-2000
1.1 Goods Importation		4.1 Direct Liquid Investments	-2000
1.2 Goods Exportation		4.2 Loans, Financing,	

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[5]The contraction of loans and financing or the receiving of direct investments do not change in a short term SW, Coeteris Paribus, by a cross entry in SM, but represent in the future an exit of additional income via interests and yields, respectively, in the Service Balance.

		Applications	
		4.3 Amortizations	-2000
2. Services Balance	0		
2.1 Capital incomes (interests,liquid incomes)		5. Financing of Result (Compensation)	2000
2.2 Various services (royalties, technical assistence,etc)		5.1 Money reserve	2000
2.3 Tourism			
		Initial Wealth Stocks (real and monetary)	100000
3. Unilateral Transferences	0	Movement	0
3.1 Federative Capital Transferences (incomes, taxes)		Final Wealth Stocks (real and monetary)	100000
3.2 Private Capital Transferences			
Initial Currency Stocks	10000		
Movements	-2000		
Final Currency Stocks	8000		

Result 6:

    ü   Current Account (NX): 0; Capital Balance (BK): (-2.000)

    ü   Money Reserve (R): +2.000; Wealth Stock (SW): 100.000 + 0 = 100.000

    ü   Money Stock (SM): 10.000 – 2.000 = 8.000

Conclusion 6: Any negative insertion in BK, without movements in NX, does not change SW, but it represents a negative result with an equal amount in SM. A negative movement in the Capital Balance, produced by Direct Investments abroad, or produced by loans, financing, amortizations or any other financial investment, reduces directly, in a short term, the local monetary base, although it does not reduce the total wealth that could be realized respectively in a long term. In the same way that the test 5, we underline the role of the commercial banks, since every bank movement, in this model, can be considered as an external transaction. So, for example, a cash or long term deposit in a commercial bank from "abroad" reduces locally the monetary base if the resources were not internally applied.

From both purposed essays, we can synthesize their results in order to the following picture:

Picture 8 – Synthesis of Essays

DESCRIPCIÓN / ENSAYOS	1	2	3	4	5	6
Initial Wealth Stock (S_{Wi})	100.000	100.000	100.000	100.000	100.000	100.000
Initial Money Stock (S_{Mi})	10.000	10.000	10.000	10.000	10.000	10.000
Current Account (NX)	+2.000	+2.000	(-2.000)	(-2.000)	0	0
Capital Balance (BK)	0	(-2.000)	0	2.000	+2.000	(-2.000)
Money Reserve (R)	(-2.000)	0	+2.000	0	(-2.000)	+2.000
Wealth Stocks (S_W)	102.000	102.000	98.000	98.000	100.000	100.000
Money Stock (S_M)	12.000	10.000	8.000	10.000	12.000	8.000

Font: Own Structure

In this context, we can mathematically deduce that:

$$SW = SWi - (BK + R) \qquad (16)$$

Being SWi the initial wealth stock, we know that the wealth stock (SW) is in function of the movements of the autonomous capitals (BK) and of the movements in the money reserves (R). So, the bigger the saving transferences to overseas and/or the monetary base increasing, the bigger the increasing in the wealth stock and viceversa [6]. Logically, when BK and R compensate themselves integrally to the total wealth, they will not change.

In the same way, we can conclude that, given that an initial money stock (SMi), the money stock (SM) is in function of the liquid exportations (NX) movements and of the autonomous capitals (BK), expressed in the equation:

$$SM = SMi + NX + BK \qquad (17)$$

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[6] We have to underline that the negative sign in the equation 16 represents an inverse relationship for NX and R, since we are using resources of the accountancy writing, where an increase represents a debit and a reduction a credit.

So, the bigger the liquid exportations and/or the reception of saving from abroad[7], the bigger the monetary base and vice versa. One more time, when NX and BK compensate themselves integrally in the monetary base they will not change.

By this equation, we can corroborate the hypothesis about the money endogeny in a small, opened, and federated economy, since our empiric payment balance

attracts the movements of the local monetary base. Certainly, the decision of exogen actors influence the income stream; still, it is undeniable that the dynamic of the movements determination is given by the internal economy development. For example, the exported goods and services demand is exogen, as soon as the decision of apply internally the resources by the commercial banks. Still, the competitivity and the attraction of foreign capitals are dependent upon the local economy dynamism.

Starting from these precepts, now we go beyond to reflex about how the monetary base can influence on the economical growth of a small, opened, and federated economy.

THE RELATIONSHIP BETWEEN THE CURRENCY OFFER AND THE INCOME

Accepting that a small, opened, and federated economy does not determine the federation´s prices level, because of its relative smallness, this becomes in an exogen factor for the internal economy, in function that the goods and services federated offer does not represent restrictions to an increase in the internal aggregate demand[8]. With view in our prompt purposes, we consider a constant prices level, or better, we deny

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[7]Idem previous note.

[8]In the big cities in Brazil, as for example Sao Paulo, the liquidity excess, reflecting itself in the demand without a cross entry of the offer, could affect the prices.

that an increase in the currency offer has direct reflexes on the general prices level, following to the Keynesian thoughts[9].

So, if we recover the Money Quantitative Theory, where MVV = PT, being M: the currency offer; V: currency circulation velocity;   P: general prices rate and T: transactions physical volume.

PT = Y, where Y is the real income and if we admitt that the prices rate were constant, we could be rewritten the quantitative equation such as:

MV = Y   (18)

In this way, we have that the currency offer multiplied by its circulation velocity is equal to the income. In the same way, the Cambridge Equation can be rewritten such as:

M = Y / V   (19)

Rewriting the equation (17), we have that:

NX = SM – SMi – BK   (20)

Knowing from the equation (13) that the liquid exportations NX = Y – (C + I + G), being the internal expenses DI = C + I + G, we conclude that:

Y – DI = SM – SMi – BK (21)   or

Y = DI + SM – SMi – BK   (22)

We can rewrite the equation (19) MV = Y, as

Y = SM * Vi   (23)

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[9] The Hicks-Hansen Model that tries to synthesize the keynesian thought, considers, in a national economy, the constant prices in a short term.

We can see that the internal income (Y) is equal to the product from the internal money stock (SM) with the internal rent circulation velocity (VI). Transporting the equation (23) to the equation (22) we have that:

$$SM * Vi = DI + SM - SMi - BK \qquad (24)$$

Isolating di in the equation (24) we conclude that:

$$DI = SM (Vi - 1) + SMi + BK \qquad (25)$$

Starting from the classic inspiration, where Vi is constant in a short term, so any increase on the currency offer has a positive answer on the income and vice versa. So, we corroborate the Keynesian hypothesis which says that the currency offer affects the real side of the economy, that denies the hypothesis of the Money Quantitative Theory and the Dealing Equation, in which the increasing of the currency offer has reflexes exclusively on the prices.

This affirmation can be proved in the six essays previously presented. Starting from the result of the essays and the hypothesis about Vi is equal to 10, we have the quantification of NX, DI and Y, as follows:

Descripción Ensayos	1	2	3	4	5	6
Current Account (NX)	2.000	2.000	-2.000	-2.000	-	-
Capital Balance (BK)	-	-2.000	-	2.000	2.000	-2.000
Money Reserves (R)	-2.000	-	2.000	-	-2.000	2.000
Initial Wealth Stock (SWi)	100.000	100.000	100.000	100.000	100.000	100.000
Wealth Stock (SW)	102.000	102.000	98.000	98.000	100.000	100.000
Initial Money Stock (SMi)	10.000	10.000	10.000	10.000	10.000	10.000
Money Stock (SM)	12.000	10.000	8.000	10.000	12.000	8.000
Currency Velocity (Vi)	10	10	10	10	10	10
Initial Income ($Yi=SM*Vi$)	100.000	100.000	100.000	100.000	100.000	100.000
Liquid Exportations ($NX=SM-SMi-BK$)	2.000	2.000	-2.000	-2.000	-	-
Internal Expenses ($DI=S_M(Vi-1)+S_{Mi}+BK$)	118.000	98.000	82.000	102.000	120.000	80.000
Income $Y= DI + NX$	120.000	100.000	80.000	100.000	120.000	80.000

Picture 9 – Test of both essays with Vi constant. Font: Own structure

So, by the presented tests and by previous reflections, we can deduce that:

o   The currency offer is endogen in a small opened economy; this can be attracted by our empiric Payment Balance, being determind by NX and Bk.

o   The income/product is a direct function of the money stock, or better, the money is a determining of the economic growth of these economies: in the essays 1 and 5, it increases the money stocks, as soon as the income; in the essays 2 and 4, when the money stocks do not change themselves, and the income does not change as well; in the essays 3 and 6 where the money stocks contract themselves, the income diminishes.

o   The internal expenses are function of NX, that is to say, the current transactions determine the consumption, the investment and the public expenditures; in the essays 1 and 2, the internal expense is contracted by the production for

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exportation; in the essays 3 and 4 the internal expense surpasses the income by the supremacy of the importation; in the essays 5 and 6 the income equalize the internal expenses, since NX is zero.

o   The income is a direct function of the amount of money and its circulation velocity, as soon as the income multiplier (m) is equal to the currency circulation velocity. With a constant velocity, a variation in the amount of money, both positive and negative, multiplied by the velocity, reflexes on the income.

In this way, we can identify the main exogen and endogen factors that determine the local monetary base:

Main exogen factors that actuate in the determination of the monetary base:

o   Federal and State Government (Tax collection and transferences)

o   Financial System (attracting and applying resources)

o   Exported product demand
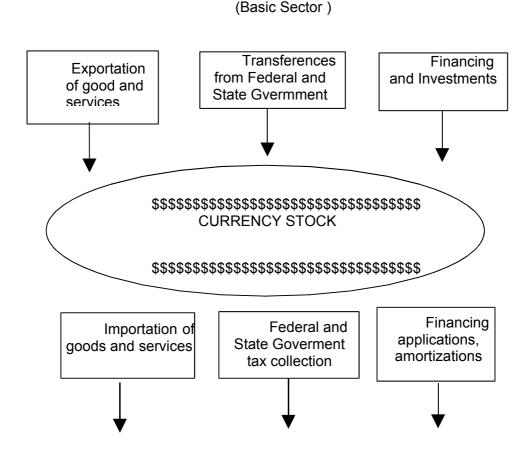
o   Foreign direct investments

Main endogen factors that actuate on the monetary base:

o   Basic sector dynamic (competitivity/exportation diversity)

o   Non-Basic sector development (importation substitution)

o   Internal propensity to consume (local and imported goods and services)

o   Internal propensity to save (internal and externally)

o   Internal propensity to invest (internal and externally)

o   Local Government expenses (local and imported goods and services)

o   Attraction of the local economy by foreign capitals

To sybthesize, we can make a symbolic representation, as soon as we express next to present the monetary base behaviour. If we consider a local economy as a money reserve, that interacts with centripetal and centrifugal forces of the currency, the dynamic of these forces will be determining of the money stock.

Picture 10 – Income stream with abroad in a local opened economy.

CENTRIPETAL FORCES OF INCOME

(Basic Sector)

Exportation of good and services	Transferences from Federal and State Gvermment	Financing and Investments

$$\$$$
CURRENCY STOCK

$$\$$$

Importation of goods and services	Federal and State Goverment tax collection	Financing applications, amortizations

CENTRÍPETAL FORCES OF INCOME

Certainly the reserve is not going to be used up, since the centrifugal forces supremacy will have a limit in the economic contraction with an equilibrium under the full occupation of the production factors in the logic of Keynes´teaching.

CURRENCY CIRCULATION VELOCITY

Following the classic precepts, we admitt in the previous section that the currency circulation velocity were constant. Identifying the speculative money demand, Keynes rebuted this assumption. Still, only the demand could influence on the currency circulation velocity in a small federated economy?

To answer this question, we are going to take back the equation (10). Considering that (Cf + If + Gf) = M, we can rewrite it in the following way:

$$Y = (Cd + Id + Gd) + (Cf + If + Gf) + X - M \qquad (26)$$

Where Y: income; Cd: consumption of internally produced goods and services; Cf: consumption of imported goods and services; Id: Investment in internally produced capital goods; Gd: government expenses in internally produced goods and services; Gf: government expenses in imported goods and services; X: exportation of goods and services and M: importation of goods and services.

The equation (26) shows that, the greater the internal availability of goods, the greater the income. As we can see, if the economy close itself to abroad, the income will reduce itself, staying equal to the sum of domestic produced goods destinated to consumption, to the investment and to the government expenses, that is to say, Y = Cd +Id +Gd.

Substituing Y by SM * Vi from the equation (23), to a closed economy, we have:

$$SM * Vi = Cd + Id + Gd \qquad (27)$$

The equation (27) shows that the money stock is a limiting factor of the expenses growth (Cd + Id + Gd) and of the income, by equivalence. So, to get a bigger economic growth is necessary to increase the currency circulation velocity, being by alteration on the currency demand, or by dinamization and / or diversification of the internal productioon. Mantaining constant the money sotck, which is a limit to the

expansion of dealings, it takes away the acceleration of the currency circulation velocity in order to expand the income, or, in a specific case, the internal consumption. Stressing that we are starting from the premise about prices were constant in a short term. This explains that the small regions are opened economies and their smallness in the total demand composition, do not succeed in influence on the prices general level from the economy as a whole.

The effect of the money creating by the commercial banks (multiplier of the monetary base) corroborates that premise. There is a consensus in the monetary theory about payment instruments, that express the economy liquidity, beyond the money-paper in the public hands, involve the deposits in the commercial banks. As a quantum of deposits in the commercial banks undergoes from effects of the bank multiplier, any variation on the multiplier causes aan alteration in the economy liquidity, modifying in this way the currency circulation velocity for a same monetary base.

If this hypothesis about variation of currency velocity is valid for a closed economy, it will be validated for an opened economy as well, although it becomes more complex the analysis because of the involved variables as a whole. In this direction, Fischer indicated that the currency circulation velocity suffered the influence of the bank system, although he did not contemplate in his analysis the behaviour alterations in the loan chain.

At present, and more specifically in Brazil, the compulsing deposit rate fixation has been an important instrument of the monetary policy, since the "Plan Real" in 1994. this instrument actuates exactly in the determination of the available amount for loans by the commercial banks. In other words, an increasing in the compulsing deposit rate povokes reduction in the multiplier of the bank money contracting the economy liquidity and vice versa.

Keynes, identifying the preference by the liquidity, demonstrated that the interest rate in a short term influences the currency circulation velocity. The least the economy liquidity, the bigger the interest rate in a short term and the biggeer the marginal propensity to apply money instead of mantaining it as a reserve, as soon as, the marginal propensity to invest will be less.

Now, a contraction in the national macroeconomic liquidity, that rises the interest rate, will induce the local agents to apply their available resources; in the same way, it will get the postponement of the internal investments, that could be explained by the contraction of the loans availability. Any of this actions rebounds negatively on the local Payment Balance, because of the financial structure of the Federation. On the contrary, an increase in the national macroeconomi liquidity will reduce the interest rate, it will discourage the applications of resources with a tendency to increase the loans availability [10] and the marginal propensity to invest.

As the bank system is nationally integrated, the locally leasing of deposits could not produce effects from the multiplier on the bank system, by chance to increase its internal liquidity. This can be one of the main points of strangulating in the local economies. In the way as the national bank structure is constitued, the resources can be locally attracted and be applied in another district. In this aspect, it is laudable the creation of credits cooperatives that actuate especifically in the local economies.

We verify, therefore, that the currency circulation velocity could not be constant in a short term; certainly, it varies from a district to another, in function to the functional dynamic from each economy and from the behaviour of the attracting and investing of the commercial banks in each geopolitical space.

Synthesizing, the internal velocity of the currency circulation in a small, opened and federated economy is dependent upon the dynamic of the acting of the financial

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[10]   It doesn´t mean, necessarily, that the resources will be available in a same way in differents points of the national

system that interacts in a local economy and upon the development of the non-basic sector, as an income adding, via productive enchainment.

FINAL CONSIDERATIONS

We believe that we have explained very well in this work that the currency affects the real stream of the economy, mainly in a small local economy. If this interaction between the real and monetary streams happen at a national level as well, starting from the hypothesis about the prices stay constant in a short term, with all the more reasons the local economic growth must be estimulated by the expansion of the monetary liquidity. The simulation carried out demonstrated that relationship.

In this way, the simulations carried put corroborate the central hypothesis of this research, as soon as they achieved to appoint to the endogeny of the currency offer in a small, local, opened economy. The secondary hypothesis relative to the inconsistence of the currency circulation velocity was confirmed by the argument of the step of development of the non-basic sector as well, by the influence of the interest rate from the Keynesian view and, specially, by the performance of the commercial banks.

By these considerations, we can argue that the economic growth of a small opened economy, as the case of the small and medium Brazilian towns, is dependent of the internal monetary liquidity that is determined, in a first level, by its basic sector, being income attracting because of its communications with abroad and, secondly, by the developing of its non-basic sector, as one of the conditioning of the currency circulation velocity.

However not have received a greater emphasis in this research, in a long term, the investment is decisive in the determination of the local growth, because it expands the installed productive capacity, as soon as the destination of income to the consumption, receives an economical connotation of pure and simple destruction,

although being an expresion of a greater quality of life. So, the relationship between the marginal propensity to invest and the marginal propensity to consume deserve as well an epigraph in the determination of the economic growth.

Still, how do dimensionthe economic growth? How much have to increase a small opened economy? Having in view the non-full accupation of the production factors, as much the region increases, as better. We admitt that the currency offer affects the real stream, that it is endogen and that its circulation velocity could be changed, so good action strategies to accelerate the economic growth have to pass to the monetary side of an economy.

Logically, it has not disdane that the distribution of the internal income is a decisive factor in this definition.

BIBLIOGRAPHICAL

BEDIN, Gilmar Antônio (Org.). Reestruturação Produtiva, Desemprego no Brasil e Ética nas Relações Econômicas. Ijuí, UNIJUÍ, 2000.

BERCHUELLI, Francisco O. Economia Monetária. São Paulo, Saraiva, 2000.

CARVALHO, F. C., et. al. Economia Monetária e Financeira: Teoria e Prática. Rio de Janeiro, Campus, 2000.

FEIJÓ, C. A., et. al. Contabilidade Social: O Novo Sistema de Contas Nacionais do Brasil. Rio de Janeiro, Campus, 2001.

GORDON, R. J.. Macroeconomia. Porto Alegre, Boochman, 2000.

HOWELLS, P., BAIN, K. Economia Monetária: Moedas e Bancos. Rio de Janeiro, LTC, 2001.

MISHKIN, F. S. Moedas, Bancos e Mercados Financeiros. 5ª ed., Rio de Janeiro, LTC, 2000.

PAULANI, L. M., BRAGA, M. B. A Nova Contabilidade Social. São Paulo, Saraiva, 2000.