

GROWTH ECONOMIC MODELS AND THEIR IMPLICATIONS TO FINANCIAL POLICY DURING TRANSITION. ATHEORETICAL APPROACH.

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Abstract:

During 1989, the moment of changes in Eastern Europe, in socialist countries political system were transformed, by renouncing communism, and adopting market based economy. The process had major implications on economic systems in countries such Romania, Bulgaria, Hungary, Poland, Czechoslovakia, that from that moment engaged in wide-ranging political, social, economic and institutional reforms. The year 1989 also marked the beginning of the transition from socialist economy to a market economy to centralized countries mentioned, a process with profound implications on the economic system and financial default. This important structural reforms necessary functioning new economic framework and assumed behavior modification specific old economy, focused on socialist property, presumably achieve in conditions of relative stability allowing rapidly and sustainable growth. This paper takes into discussion some models used by FMI and World Bank (WB) that had implications on financial policy applied in transition country, referring to absorption theory, monetary approach to balance of payment and stabilization programs, as short terms models, respectively.

Key words: *Transition, economic growth models, financial policy, financial system structure, innovation.*

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1. The end of central-planned economies, the start of transition and implications to financial policy

During 1989, the moment of changes in Eastern Europe, in socialist countries political system were transformed, by renouncing communism, and adopting market based economy. The process had major implications on economic systems in countries such Romania, Bulgaria, Hungary, Poland, Czechoslovakia, that from that moment engaged in wide-ranging political, social, economic and institutional reforms. The year 1989 also marked the beginning of the transition from socialist economy to a market economy to centralized countries mentioned, a process with profound implications on the economic system and financial default. This important structural reforms necessary functioning new economic framework and assumed behavior modification specific old economy, focused on socialist property, presumably achieve in conditions of relative stability allowing rapidly and sustainable growth. Found that, although relevant to the period of transition, stabilization policy and growth has not been treated in works of literature, sometimes financial reforms being neglected [Brana, 2001, p. 15], at the expense of reforms aimed especially, the social side.

Importance of an approach to restructuring the financial system in post-communist period is taken into discussion, especially because the financial system and its structure was a factor most often disruptive in terms of ensuring stability and economic growth. A partially reformed banking system and underdeveloped capital markets, the impossibility of appropriate institutional restructuring, that become

obstacles in ensuring monetary control by the central bank [Lacoue-Labarthe, 1993, p. 12], attracting necessary financial resources to increase economic, enterprise restructuring, privatization and banking reform became fundamental conditions during the transition [Brainard, 1991, p. 17].

Related to financial policy implications, the Washington Consensus proposed some objectives that should be reached in transition economies: fiscal discipline, a redirection of public expenditure priorities toward fields offering both high economic returns and the potential to improve income distribution, such as primary health care, primary education, and infrastructure; tax reform (to lower marginal rates and broaden the tax base); interest rate liberalization, a competitive exchange rate; trade liberalization, liberalization of inflows of foreign direct investment, privatization; deregulation (to abolish barriers to entry and exit); secure property rights.

Some of today's policy discussion, however, might still be understood by using the term as a reference point. For instance, some authors argue that there now exists an "Augmented" Washington Consensus, which in addition to the items listed above, adds: corporate governance; anti-corruption; flexible labor markets; WTO agreements; financial codes and standards; "Prudent" capital-account opening; non-intermediate exchange rate regimes; independent central banks/inflation targeting; Social safety nets; targeted poverty reduction [Roderick, D. 2001].

2. Short term macroeconomic stabilization models

2.1 The theory of absorption

Initial analysis of the IMF stabilization kept focused on the *theory of absorption*, which emphasizes trade balance surplus. Thus, in the context of an indebted economy, which successfully accumulate trade deficit ($B < 0$) related to the balance of payments, the absorption rate must reduce imports by generating a net surplus of exports. The objective of balancing the trade balance becomes stabilization ($B = 0$), or a current balance surplus ($B > 0$). Assuming dB variation trade balance, which must be positive ($dB > 0$), it can be expressed, starting from global macroeconomic interdependencies between variables (1), in relation to the resources in domestic absorption (2).

Methods according to the global economic balance relationship are expressed below:

$$Y = C + G + I + (X - M) \quad (1),$$

where:

Y – GDP,

C – Consumption

G – Government expenditure

I – Investments

X – Exports

I – Imports.

Starting from the equation expressing the total income, the assumption of a positive level of trade balance variation ($dB > 0$) is expressed as the relationship:

$$dB = dy - (dC + dG + di) = dy - dA > 0 \quad (2) \text{ where: } A - \text{the internal absorption.}$$

Consider the following notation: X - exports; m - volume of imports, r - rate, p - the price of exported goods in the country, p* - the world price.

In relation to the above, the trade balance surplus can be written:

$$dB = p \cdot dx + x \cdot dp - (p^* \cdot r \cdot dm + * + p^* \cdot r \cdot mdp \cdot m \cdot dr) > 0 \quad (3).$$

Analyzing the relationship (3) that varying trade balance is positively influenced by the following variables: growth in exports (+ dx) and decrease imports (-dm) currency devaluation (-dR), increased export prices (dp) and lower world price (-dp *) on imports.

Considering the specific case of a weak economy competitive in transition countries, the price of exports, imports that can not be influenced (so called price situation Taken), a policy of stabilization can be achieved by acting on the variables that influence internal absorption. In this context, stabilization policy aimed at reduction of internal variables (-dG, -dC, -dI), with the focus on reducing public spending budget (-dG), the suppression of subsidies and reducing the budget deficit, especially when funding to be done by monetary means to generate inflation. Reduction of consumption (-AD) becomes possible by braking salary increases. Reducing investments, although disputed, is taken in order to reduce domestic absorption factor. Analyzing the above measures, we find that absorption theory proposed in a policy of austerity during transition, being necessary to reduce the level of external dependence and enhance national product. At monetary level, a measure of devaluation of national currency, the onset of stabilization policy can become a key export driven.

In the model, the IMF imposed in transition countries a series of measures aimed at drastically reducing public spending (the elimination of subsidies, privatization of economic agents bankrupt) reducing consumption (by freezing or reducing public sector wages) and reducing investment (increasing taxes and interest rates), currency devaluation, the effect on imports and stimulate exports contraction.

2.2 The theory of monetary approach to balance of payments

The theory of monetary approach to balance of payments has been integrated in the IMF stabilization programs, being based on a model developed by J. Polak. This model assumes that a fixed exchange rate regime in the context of short-term balance of payments deficit express an imbalance between supply and demand for currency in the domestic market. The deficit is interpreted as a result of looser policy of monetary authorities, leading to an excess supply of credit.

The model is designed to study the effects on balance of payments due importante two exogenous variables: 1. exports and 2. credit (through money creation). The following approach is derived from Polak and Argy authors (1977) and contains two behavioral equations and two equations of definition:

$$dMO = kdY \quad (1)$$

$$M = mY \quad (2)$$

$$dMO = dR + dD \quad (3)$$

$$dR = X - M + K, \quad (4)$$

where:

MO - money supply;

Y - GDP;

M - Imports;

R - Monetary reserves;

D - Domestic credit

X - Exports;

K - Net contribution (capital flows) of non-banking sector;

k - Reverse circulation speed of money, $k = 1 / v$ (a.n.)

m - Marginal propensity to import.

In order to sustain economic policy decisions, it is considered necessary to focus on Central Bank balance and credit situation, which requires the introduction of a new relationship definition (Pollak, 1998):

$$dH = dr + d DCB \quad (5)$$

and a comoprtement equations:

$$dMO = q dH \quad (6)$$

where:

H - monetary reserves;

DCB - Domestic credit provided by the Central Bank;

q - monetary multiplier.

A recent approach to model [Andreff, 2007] is focusing on the currency supply and demand equations - equations (1) and (2) - and the exchange rate calculated according to relationship (3)

$$dM^o = dH + dR \quad (1)$$

$$dM^d = 1/v. p. dY \quad (2)$$

$$Z = p/p^* \quad (3).$$

where:

dM^o - money supply;

dH - change of domestic credit;

DR - changes in foreign exchange reserves;

dM^d - demand for currency;

v - velocity of money (considered constant);

Z - the exchange rate;

P - domestic price level;

p^* - foreign general price level;

dY - real GDP national income variation.

In this context, money market equilibrium

$$dM^o = dM^d \quad (4)$$

relationship can be expressed as equivalent

$$dR = dM^d - dH = 1/v. Z.p^*.dY - dH. \quad (5)$$

Equation expresses the fact that currency reserves (in the context of balance of payments) depend on the size of monetary reserves and the spread between supply and demand of currency, in direct correlation with national income GDP and domestic credit variations.

The model leads to the conclusion that achieving price stability and rebalance the balance of payments are possible by calling a restrictive credit policy (-AD), in the context of supply and GDP growth (+ dy) and the exchange rate devaluation (-Z).

2.3 The Stabilization Programs

This approach considered medium-term macroeconomic equilibrium is influenced by exchange rate variations [Andreff, 2007, p. 31]. In this framework, we find that medium-term IMF model assumes a flexible exchange rate impact on exports and imports demand with automatic rebalancing effect the balance of payments. Though, assuming Mundell's triangle incompatibilities, which states that it must give up one of three goals - a fixed rate regime, an autonomous monetary policy, free capital flows - in order to achieve stability and growth [Mendell, 1960]. Specialized economic

literature suggests either version called *orthodox stabilization policy* (adoption of a floating exchange rate regime in the context of an autonomous monetary policy) or *heterodox stabilization policy* (adoption of fixed exchange rates in the context of monetary policy constraints of the event).

Although the results of applying the stabilization programs for countries in developing and transition economies have been modest [Blanchard et al., 1991]. Economic literature, however, recognizes the beneficial effects on balance of payments and the reduction of inflation [Dembinski, Morisset, 1990]. Balance of the implementation of these programs shows poor results, because after application of 39 programs, 28 have failed [Andreff, 2007].

3. Long term macroeconomic stabilization models – the return to growth and sustainable development

Models aimed to increasing long-term balanced growth path, are focused most often on: the sources of growth, savings and investment justification in the economy; the stability of balanced growth path, starting at a time when the economy is initially not on a balance growth path.

The foundation of most current models is the model of Solow (1956), which starts from two fundamental assumptions: stable growth rate is independent of savings (saving rate s is exogenous); the growth is based mainly on technological progress in second place being located the capital accumulation. Subsequently, authors such as Romer (1986, 1987, 1990), Lucas (1988), Grossman and Helpman (1991), Aghion and Howitt (1992) developed the current growth patterns.

Present economic growth theory it is considered that was based in 1986 by Romer model, which explains economic development with reference to the role of externalities. The idea was, however, previously treated by Arrow (1962) who argued that externalities – mainly knowledge and technological innovation – are factors of labor productivity propellants, with direct impact on sustainable growth. Lucas (1988) which continued fundamental premise by Uzawa (1965) explains the fundamental role of human capital development, and Grossman and Helpman (1991) focused on knowledge as a source of sustainable growth. Subsequently, other authors took into account technological innovation (R & D) as the basis for economic growth.

3.1 The Solow Model – base for further approaches

Considering a simple intertemporal growth model for a closed economy, the relationship between consumption, investment and GDP (income) is given by the equation below:

$$C_t + S_t = Y_t \quad (1)$$

where:

C - consumption;

Y – output

S – savings, defined by:

$S_t = sY_t$, with s - marginal propensity to consume considered exogenous.

The development of capital stock K_{t+1} depends on the level of investment I, being expressed as:

$$K_{t+1} = K_t (1 - \delta) + I_t \quad (2)$$

The expansion of workforce - L to a growth rate n , can be quantified by the equation:

$$L_t = L_0 (1+n)^t \quad (3)$$

Output growth (economic growth) is expressed by the relation:

$$Y_t = a (1+\gamma)^t K_t^\alpha L_t^{1-\alpha}, \text{ cu } 0 < \alpha < 1 \quad (4)$$

with γ - the rate of total factor productivity growth of production.

Starting from the condition of equilibrium (balanced growth)

$$I_t = S_t \quad (5)$$

capital gain can be expressed by a K_t

$$K_{t+1} = (1-\delta) K_t + S K_t^\alpha L_t^{1-\alpha} (1 + \gamma)^t \quad (6)$$

The model can calculate a balanced growth rate g that verifies the relationship:

$$(1 + g) = (1 + n) (1 + \gamma)^{1/\alpha} \quad (7)$$

Optimal level of capital K_t^* can be written like this:

$$K_t K_s^* = (1 + g)^t \quad (8)$$

$$K_s = (s / (g + \delta))^{1/\alpha} \quad (9)$$

considered an equilibrium level of capital.

As the result of capital K_t model converges to a steady state K_s , and the growth rate g is directly influenced by the growth rate of productivity factors γ production.

3.2 The first model used by World Bank

The first model used by World Bank for transition economies consider the stability of ICOR (incremental capital output ratio) [Andreff, 2007], return to long-term economic stabilization being approached in the context of structural adjustment involving the main sustainable economic growth objectives. The rate stability is considered ICOR rate (Incremental Capital Output Ratio) or marginal capital coefficient, defined by:

$$dy = r dk \quad (1)$$

Where:

r - ICOR,

Y - GDP

dK - net investments.

In the model, exports are considered exogenous, there is also a relationship between imports and GDP:

$$M = m.Y \quad (2)$$

m - Marginal rate of imports.

Private consumption function is defined by:

$$C = (1-s) (y - T) \quad (3)$$

where:

C - consumption function;

S - susceptibility to save;

y - real GDP;

T - taxes.

The objective is to obtain real GDP surplus $dy > 0$, with the variables T and G , in terms of net investment balance and increasing investments in capital dK .

Starting from these premises, the balance equation becomes:

$$dk = (y - T - C) + (T - G) + (M - X) \quad (4)$$

G - government public spending.

Equation (4) is equivalent to:

$$dk = (s + m) y + (1 - s) T - G - X \quad (5)$$

The equation express the relationship between net investment and direct conditioning level income, in the context of price level interpreted as exogenous variables. In this approach, a restrictive budgetary policy, often recommended by the IMF in transition countries is considered initially expansionary in the model of WB

[Andreff, 2007, p. 34]. Conversely, an expansionist budgetary policy of Keynesian origin, is considered nefarious by creating deficit and braking economic growth. The WB models taken into discussion are also aimed to an analysis of global productivity of production factors (as in the case of Solow model). This fundamental premise of economic growth can be summarized in an equation of the form:

$$dy = (1-\alpha) dk + \alpha + dQ dL \quad (6)$$

where K - capital stock, L - labor force, α - part of the workforce in revenue Q - global productivity of production factors.

Taking into consideration the effectiveness of resource allocation E ($0 < E < 1$) and U inputs availability, equation 6 becomes:

$$dy = (1-\alpha) dk + \alpha dL + dU + dE. \quad (7)$$

Assuming that capital formation depends on the savings - S and slodului trade balance - B, equation (7) can be rewritten as:

$$dy = (1-\alpha) (ds + dB) + \alpha dL + dU + dE \quad (8)$$

Return to sustainable growth (+ dy) is possible by increasing savings (+ S), balance of payments surplus (+ dB) - cncordanta situation with models proposed by the IMF, that increase resource utilization efficiency (+ dU, + dE). In this context, price liberalization and privatization to ensure full use of production factors, the fundamental premise of developing countries in transition.

An integrated approach that takes into account the impact of credit on economic growth is achieved in *Khan-Montiel model*. The model is constructed for a productive sector, the relation through variables being

$$dy = f(s, t, P, Z, R, D), \quad (1)$$

where

s - Marginal propensity to savings;

t - Taxes in real terms;

P - Price index;

Z - The exchange rate;

R - Reserves

D - External credits

This approach and empirical results from these model application on transition countries are goals to future papers.

4. Conclusions

Applying the results of the programs based on models taken into discussion for transition countries for Economies have been modest, but economic literature, however, recognizes the beneficial effects on balance of payments and the reduction of inflation. Balance of the implementation of these programs shows poor results - after application of 39 programs, 28 have failed. Some of the recommendations were applied in Romania during transition, but the results were also poor, because of the Romanian transition specific factors (slow privatization, late creation of capital market, high inflation rates etc.).

In conclusion, analysis finds that (money) in the short term is not fully integrated with long-term analysis, there are contradictions between the objectives of financial policy by the models proposed by the IMF, WB, respectively.

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