

**Figure 3. Influence of tx changing on dynamics of the countries.**

Now consider changing tx in both countries. Increase tx to 0,15 in country A and decrease tx to 0.25 in B. The level of GDP in country A will be increasing to 2.81 thousands euros per year, and in B will be decreasing to 2.56 thousand euros per year (Figure 3, left). In graph 3, on the right shows the GDP dynamics, with a decrease tx in both countries to 0.15. As we can see, the dynamics are identical in both countries, and increasing to 2.95 thousands euros per year.

Comparing similar model for one country and the model discussed above, if we change the same parameters, then we can observe that the GDP will be lower in a model with two countries than in a model with one.

### ***References***

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## **SYSTEM DYNAMIC APPROACH FOR SOVEREIGN DEBT REGULATION**

The debt issue and repayment problem are strongly correlated with appropriate national macroeconomic policy and strategy instruments. Macroeconomic incrementalism tools in evaluating informative signals to determine the optimal level of sovereign debt helps to understand the nature and possible outcomes of national debt policy. The very basic simplified structure of sovereign debt issue is presented on Figure 1.

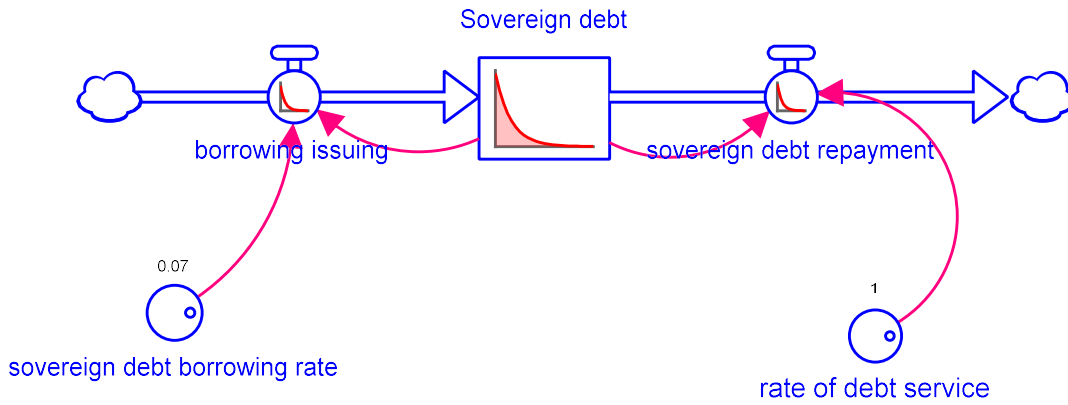


Figure 1. **Sovereign debt simplified model**

The sensitivity analysis for this process is presented on Fig.2. The most probable scenarios are 1,2 and 3 with gradual debt repayment

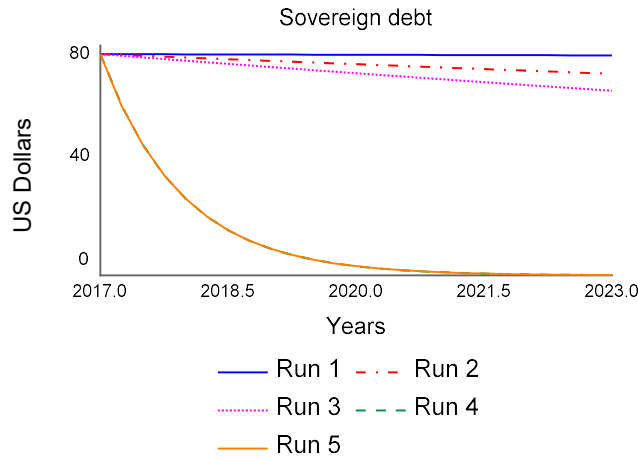


Figure 2. **Sensitivity analysis for sovereign debt issuing and repayment**

Some theoretical aspects of the influence of the policy of incrementalism on the dynamics of sovereign default are aimed at studying the practical and theoretical aspects of the assessment of the sovereign debt problem. The basic source on which this study is based is [5], in particular, the analysis of macroeconomic incrementalism tools in evaluating informative signals to determine the optimal level of sovereign debt. The difference in the position of the author from previous studies, including [6], is in finding ways to achieve a dynamic equilibrium with changing the country's sovereign debt, as opposed to research which asserts that the economy is always in a state of static equilibrium. The distinction of author point of view from previous research papers, including [5], is to find ways to achieve a dynamic equilibrium when changing sovereign debt of the country, in contrast to scientific research, which believe that the economy is always in a state of static equilibrium.

In accordance with [4], incrementalism is a model of the decision-making process by the government, according to which decisions are usually taken with relatively small, gradual adaptations to existing situations.

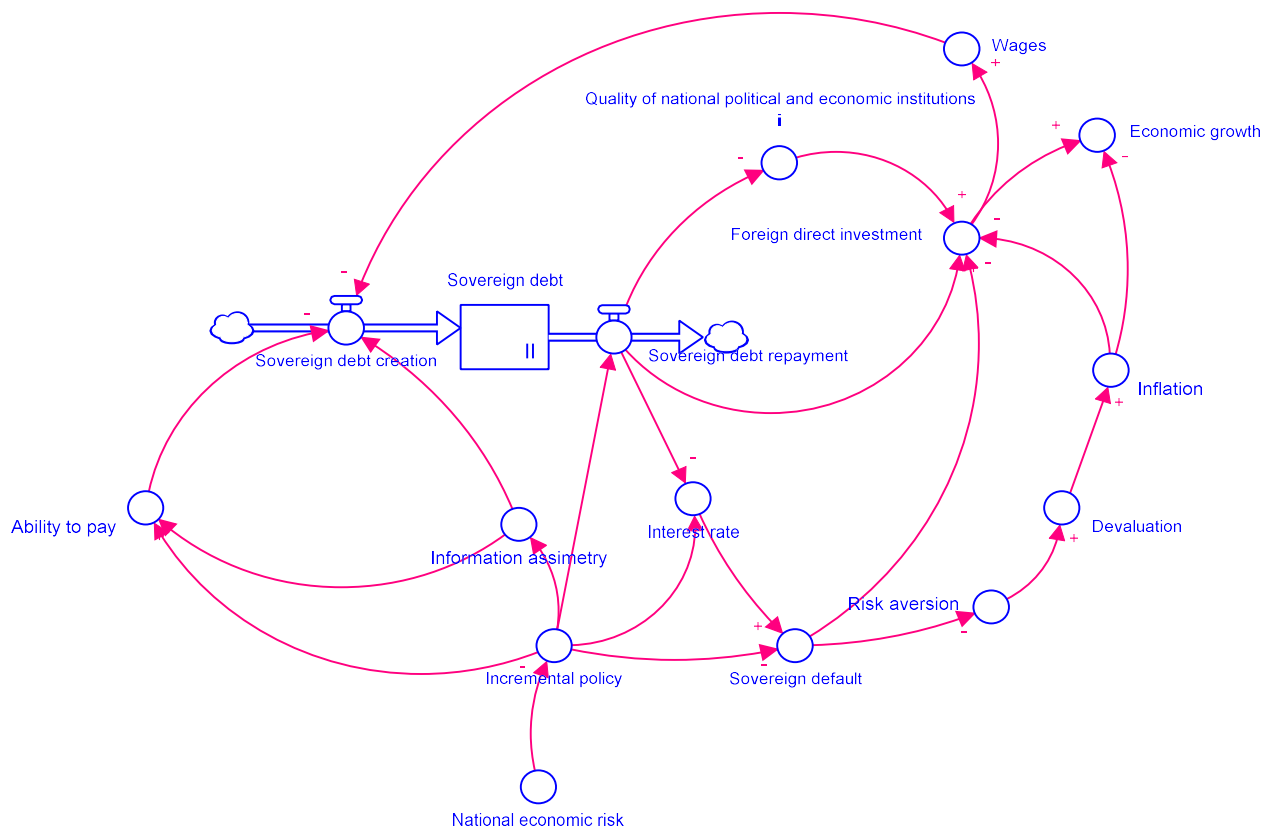
The entrepreneurial behavior is characterized by the desire for strategic internal and external changes, caused by the corresponding reaction of the macroeconomic environment adaptation to changing events, to prediction of future dangers or priority opportunities of the national economy respective segments. Entrepreneurial behavior involves a diverse search for alternative managerial decisions in order to identify the best macroeconomic environment for the country.

An increase in sovereign debt leads to an increase in domestic consumption. In turn, an increase in sovereign debt leads to an increase in the interest rate, which in turn can lead to a reduction in consumption and costs. Thus, this model indicates to us the presence of a balancing feedback loop. There is a policy oppose ("policy resistance") to existing economic policies. For example, the growth of a sovereign debt can positively affect the rate of economic growth, since debt is a positive indicator for foreign investors about the credibility of the country's economic policy. At the same time, unjustified rational expectations of foreign investors may increase the depth of the economic downturn in the future. Thus, the positive feedback loop is balanced by a negative, as shown in Fig. 2.

Incrementalism in its applied application can be applied to macroeconomic policies for regulating the level of sovereign debt by the government with the provision of relevant informative signals to international investors. The level of sovereign debt can gradually decrease under the preservation, or even the growth of current consumption. This thesis modifies the statement of the famous scientist Y. Dror, which asserts, that incrementalism can only be used under stable socioeconomic systems and the absence of radical differences in the strategies of political elites [2]. Incremental dynamics can overcome the inertia of the economic system by creating additional macroeconomic regulation tools that can overcome the time lags of decision-making. As an argument, an expanded base model of the sovereign debt impact on macroeconomic indicators of the national development can be presented. The model indicates that the introduction of additional reinforcing and balancing feedback loops (changing the structure of the system) can lead to a change in the behavior of the system. In particular, even if the economic decline takes place, ownership and the skillful use of information by the state as a macroeconomic agent can affect the positive decision of foreign investors on this country.

At the same time, a simultaneous positive impact on economic growth (including wages) and the quality of national political and economic institutions, which in the future may minimize the new level of accumulation of sovereign debt can take place.

The macroeconomic policy of incrementalism presented in Figure 3 is aimed at overcoming the gap between information asymmetry and the ability to debt repayment, that is, it minimizes the country risks. At the same time, information asymmetry can lead to increased political fragmentation, which is associated with an increase in the dynamics of sovereign debt, especially in the presence of high level of corruption. The impact of political fragmentation on the dynamics of debt, as a rule, is also asymmetric, especially under debt growth [1].



**Figure 3. Extended basic model of the sovereign debt influence on the national macroeconomic development indicators**

In an idealized form, the relationship between incremental analysis and political fragmentation is the method of mutual adjustment of policy elements in the absence of sufficient quality of human capital for computation and control. Both phenomena neutralize the negative effects of their appearance and application and lead to the emergence of coordinated macroeconomic policy. Coordination, or integration of policies can only be achieved through endless minor adjustments of macroeconomic policies to the current situation in the country [3].

### ***References***

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