

THEORETICAL FUNDAMENTALS CONCERNING THE TRANSMISSION CHANNELS FROM THE PERSPECTIVE OF THE EXTERNAL EQUILIBRIUM

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Abstract:

The external equilibrium plays an important part in the foundation of the economic position of a country or a region on the world map. Generally speaking, the world economy is based on a comprehensive system of economic, social, political, etc. interdependences at the national, regional and international level, which can influence or even dramatically change the functioning of the national economy so that the problem of external competitiveness becomes extremely sensitive. The situation turns even more delicate when analyzing the impact of macroeconomic shocks on the external equilibrium. In these circumstances, the article² aims to look at the transmission mechanisms of macroeconomic shocks on the external equilibrium by analyzing the main features of the transmission channels.

Keywords: *transmission channels, balance of payments, macroeconomic shocks*

JEL: *F15, F36, F42, F62*

INTRODUCTION

In the economy, the transmission channel is that tool capable of transferring the action and effects of a factor or a series of factors over another or others within a country, and from one country to another. In general, the transmission channels are traffic routes, “pipes” connecting elements of the same type or containing the same “substance”. The transmission channels have necessarily two endings, one way in and one way out and may have "bends", "bifurcations" and "taps" or "outlets".

The balance of payments is the tool that shows, at macroeconomic level, if an economy is in external equilibrium or if the external sector puts expansionary or contraction pressures on the internal economy (in the case of external imbalance). In this sense, the concept of external equilibrium can be defined as the equality between the credit autonomous external transactions and the debit autonomous external transactions of the current account and of the capital and financial account of the balance of payments. The balance of payments' equilibrium can be understood also as a sustainable disequilibrium, which allows a positive development of the economy (Milea et al, 2012).

When referring to external equilibrium, the analysis of the operation of transmission channels can provide insights on the transmission of macroeconomic shocks from one economy to another.

In a broader view, the shock is an impulse or an event propagated at a certain moment, in a given environment, through the transmission channels, whose trajectory

² The paper represents a partial capitalization of the research project “*Echilibrul extern și șocurile asimetrice*”, conducted in 2012 at “Victor Slăvescu” Centre for Financial and Monetary Research, Romanian Academy, and coordinated by Milea Camelia, Ph. D.

determines, after a certain period of time, disturbances manifested in the form of effects (imbalances) that "alter" the operation of that environment. Thus, the shock has three main components: the generating source, the channel of transmission through the environment and the final effect (determined according to the depth of the analyzed phenomenon). The macroeconomic shock is a particular case in which the impulse is generated by a decision, an event or a "conflict" of political, economic, social, ecological, etc. nature, the environment is the economy, the disturbances concern the economic activity and they can be assessed based on macroeconomic variables. The environment in which the shock propagates can be a segment of the national economy, a country or a region. Not every event is a macroeconomic shock, but only the one that has a major impact on the economic system. (Criste A., 2012)

Understanding the behavior of the transmission channels and also of the "substance" (in this case: macroeconomic shocks) through the transmission channels can sustain several national or regional public policies to limiting the undesirable effects on the external equilibrium, at first, then on the economy as a whole.

Note that in many cases, in the literature, the transmission channel is synonymous with the transmission mechanism. However, the channel is that "material" form, the instrument of transmission and not the way how a "substance", a phenomenon acts and is conveyed. Therefore, the transmission mechanism is a more complex concept than the transmission channel, the latter being only a part of the mechanism³. Moreover, the existence of similar elements and properties of the transmission channels does not mean that the transmitted phenomena have identical manifestation; thus the transmission mechanisms can vary substantially depending on the nature of the conveyed substance and also on the entry and the exit environment. An example might be that a property of the channel, e.g. its narrowness, can in some circumstances obstruct the transmission of the substance, and in another situation may have no influence or may have an insignificant influence. If the transmission channel concept is clarified and understood, it may help to understand the way of channel transmission of a phenomenon, in our case, an economic phenomenon, such as the macroeconomic shock. With these clarifications, in order to facilitate the theoretical understanding, we can consider the two concepts (the channel and the mechanism) as synonyms.

IDENTIFYING THE STRUCTURAL ELEMENTS AND SOME PROPERTIES OF THE TRANSMISSION CHANNELS OF MACROECONOMIC SHOCKS ON THE EXTERNAL EQUILIBRIUM

The external equilibrium of a country is influenced both by the internal and external economic phenomena. Currently, in a highly globalized world, there is a wide system of economic, social, political, cultural interdependences between countries. Under these conditions, the outburst of a macroeconomic shock in an economy or a region is conveyed through the transmission channels from one country to another, influencing the balances of payments of the countries affected. The way in which the transmission channels affect the transported substances (they can amplify, distort, diminish due to the channel's properties) determine the extent and the characteristics of the effects of the initial shocks on the balance of payments of each country.

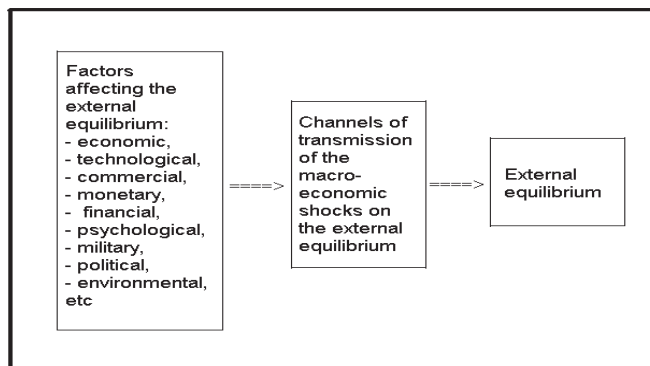
In order to identify the transmission channels of macroeconomic shocks on the external equilibrium, we intend first to identify a number of structural elements,

³ According to the National Bank of Romania, the transmission mechanism of the monetary policy consists of all the channels through which the central bank can influence the dynamics of aggregate demand and of prices in the economy, using a set of various tools.

properties, dysfunctions, but also, factors favoring the conveyance through the transmission channels.

Note that the problems that arise should be identified correctly, meaning that both problems at source and problems at destination should be separated from the problems arisen in the transmission channels. In this article, we shall address only the problems that may arise in the transmission channels, not the dysfunctions that occur either at source or at destination, for reasons independent of the channel. Thus, the figure below presents the authors' view of the transmission mechanism of macroeconomic shocks on the external equilibrium, based on the possible influence factors (see chart no. 1).

Chart no. 1 The transmission mechanism of macroeconomic shocks on the external equilibrium



Source: authors' conception

Depending on where a macroeconomic shock occurs, with a punctual manifestation in that place, we can say that there are strong disturbances that represent shocks either:

- at the source, in a branch of the economy and it affects other branches. The emergence of this internal shock affects mainly that country's balance of payments and it will be reflected little or not at all on other economies, implicitly in their balances of payments;
- at destination, the shock from an economy is felt alleviated in that economy, but in the channel it can undergo amplification and strong manifestation of the shock will be felt especially at destination;
- in the channel. In this situation, the shock is very little visible both at source (the country of origin of the shock) and at destination, the shock expanding and then decreasing throughout the channel.

But in most cases, the macroeconomic shocks are transmitted from the "source" country to the "destination" country and their effects produce changes in the balances of payments of the two countries. The negative macroeconomic phenomena may suffer increases in any of the points of the transmission route.

In analyzing the transmission channels, the aspects concerning the 'physical' properties of the channels should be separated from the aspects concerning the "substance" transported through the channel.

Thus, in this analysis, in order to simplify the understanding of the transmission mechanism of a macroeconomic shock, we refer only to the developments that may occur in the transmission channel, taking into account the changes of the properties of the transmission channel, and disregarding the changes of the "substance" conveyed in this process. Otherwise, if both the properties of the transmission channel and the substance suffer changes simultaneously, it can be hard to analyze and distinguish the

exact cause of a certain (unfavorable) development on the external equilibrium. However, the change of some of the properties of the transmission channels during the substance transmission can be considered a natural adjustment to the substance conveyed and it can be clearly attached to this phenomenon.

In the economy, we can say that the "substance" is a shock, a strong and sudden change of the economic, political, social, cultural and environmental etc. factors with impact on the economy. In the case of our study, the "substance" analyzed is the one that produces effects on the external equilibrium of an economy. The conducted phenomenon may have a positive or a negative impact on the external equilibrium.

In general, "liquid" substances are transported or are circulating through the channels, but these substances may have different degrees of consistency. By consistency we refer to how easy or not the substances and the effects of the shocks are identified, to how easy or not the connection between the cause and the effect is determined and also to the visibility of this connection. Hence, we can identify three types of substances, depending on the "concentration" of the substance diffused: "thick" or "dense" substances (e.g. a macroeconomic shock related to the structure of supply and demand modifying suddenly the price of a commodity or service. It may be caused by a sudden increase or decrease in the supply or demand of a particular good, affecting the equilibrium price. For example a negative supply shock can cause an increase of prices and a fall in output conducting to stagflation. This type of shock can be considered "dense" because it refers to visible or "tangible" changes of the supply of goods and services, observing price adjustments due to this phenomenon); substances with an average density; liquid substances (e.g. macroeconomic shock related to interest rate developments. We consider this type of shock as one with an average density because it can be related to the effects, but not in such clear manner or with a lag. For example, according to some authors (Cocriş and Nucu, 2013), an increase in the interest rates causes a contraction of industrial production index, a peak being reached after about six months and being statistically significant) and substances very little "dense" or even "gaseous" (e.g. information asymmetries, rational expectations and so on because they travel fast and easy. This type of substance can be considered "gaseous" because one party of a transaction or a part of an economic decision making has more or better information than the other party, but it is very hard to identify to which extent the misinforming or lack of information affects the other party.). Also, for a good channel conveyance, the transmission channel must be adequate to the "substance" that it carries. For example, it is not recommended to carry a "thick" substance through an elastic channel, but only through a rigid channel, without many branches, wide enough to avoid blockings on the route. If the "substance" is very little thick, almost "gaseous", it can be transmitted smoothly if the channel has many bends and bifurcations and is extremely narrow and elastic. When conveying "substances" with positive effects on the channel (e.g. macroeconomic policies designed to address problems arising in the transmission channel), the less consistent is the "substance" (e.g. lax measures of public policies or insufficiently correlated among them), the longer the channel needs to be in order to produce their beneficial effects.

The transmission channels can have a variety of disorders: blockages or gluts and cracks or breaches. All channels suffer in time of "corrosion", recording losses on the way. Therefore, in order to convey the positive effects, it should be considered constant revisions and examinations of the transmission channels in order to identify and fix these losses. If, some negative shocks occur through the transmission channel (e.g. the unfavorable exchange rate trend on the trade balance structure), the corrosion of the channel is actually a relatively good thing, the shock being dissipated. However,

there is a risk also in this situation, that of not being able to control the dissipation of the shock in the environment.

However, in the analysis of the transmission channels it must be taken into account some essential qualities that they must meet for a good transmission of the effects through the channel. Thus, they must show good flexibility, resistance to pressure, offer control on the substance conveyed, allow a good channel maintenance and repairs or adjustments, prevent the risk of contagion, be stable, have "memory "(namely, the channel to behave similarly in time to the same stress factors of the substance transported).

In the table (see Table no. 1), we present some properties related to the physical aspects of any transmission channel.

Table no. 1 Advantages and disadvantages of the properties of the transmission channels

Properties of the transmission channels		Advantages	Disadvantages
The narrowness of the channel	narrow	It makes more difficult or blocks the transmission of elements with negative impact	It blocks the transmission of "substances" with positive effects (policies, measures or other elements)
	wide	It facilitates the movement of "substances" with positive effects (policies, measures or other elements)	It allows to convey faster, more "substances" with negative effects
The density of the channel's material	thin	It allows better permeability and contact with the environment	It may allow or encourage a contagion effect or breaches or cracks of the channel.
	thick	It blocks the negative effects from the environment, while making more difficult the cracks and breaches in the channel	It does not create a good permeability and a good adaptation to the environment.
The length of the channel	short	The "substance" from the channel that can generate positive effects is conveyed with maximum efficiency to destination.	The "substance" from the channel that can generate negative effects is conveyed quicker to destination, not offering the time necessary to take steps to limit the unwanted effects.
	long	The "substance" from the channel that can generate negative effects is conveyed in a longer period of time over the balance of payments, providing the necessary time for adjustments (e.g. through public policy measures).	The "substance" from the channel that can generate positive effects can be dissipated in the channel. There will be a loss of its effectiveness (e.g. labor migration that could produce beneficial effects in the host country could "dissipate " on the geographical path between the source country and the destination country, reducing the beneficial effect on the balance of payments).

The channel's flexibility	flexible	The "substance" from the channel can integrate better into the environment and it can be conveyed more efficiently (e.g. the funds provided through the financial channel can be allocated more easily to destinations in the economy and shifts / redistribution between different subaccounts of the balance payments of a country may even take place).	If the "substance" from the channel is inadequate to the channel, delays or bottlenecks in the transmission will take place (e.g. the European funds provided through an inappropriate financial channel to the economy).
	rigid	If the "substance" from the channel has "roughness" and "viscosities", but not more rigid than the channel, it will not cause damage to the channel (e.g. the confidence channel can be considered rigid to the extent that there is a long-term and stable policy between two countries so that a temporary shock, regardless of its nature, can not damage significantly this channel).	The "substance" from the channel can cause breaches or lesions to the transmission channels if it has "viscosities". External pressure can also lead to breakages of the channel if the substance is harder than the rigidity of the channel.
The quality of the channel's "material"	low quality	It may involve lower costs due to lack of material reliability.	It implies additional costs for maintenance, repairs and supervision of the channel (e.g. a weak trade policy exposes the trade channel to permanent shocks so that the resumption of exports or imports with third countries will be extremely difficult with economic, political and social costs; but also with negative effects on the balance of payments' equilibrium).
	good quality	It allows efficient transmission of the "substance" through the channel, while ensuring a good flexibility, resistance to pressure, control of the substance transported, good maintenance of the channel, reduction of the risk of contagion, stability and shock adapted behavior.	It assumes higher costs due to increased reliability of the material. If the "substance" generates negative effects, the high quality of the channel's "material" makes the shock to be felt strongly and clearly, undamped or undissipated in the channel, but it allows better control at destination.

Source: authors' conception

In a transmission channel one or more "substances" may meet (in this case, macroeconomic shocks, most of them with asymmetric effects). The "quantity" of macroeconomic shocks influencing the external equilibrium is determined by the interlinks of the effects of various influence factors. The economic, technological and commercial factors are materialized through material goods, measures of economic policy, economic policy tools, technologies and services at a certain price and of a certain quality. The financial-monetary factors regard broad money, credit, interest rate, financial flows (including speculative flows), while the psychological factors refers to conceptions, behavior, mood of people.

For a fair appraisal of what is conveyed through the transmission channels of macroeconomic shocks, it is necessary to determine scientifically the dimensions, the weights, the trends of all of these factors.

Note that, whatever the classification⁴, sooner or later, all the factors affecting the balance of payments have an economic and financial, pecuniary correspondent, in the form of price, i.e. the way the shock develops is reflected as strong and / or sudden variations of the price of these factors. We consider that the basic elements of the production process: labor, land and capital, in their elementary or derived form, are the cause of macroeconomic shocks. The changes, inconsistency or unsustainability of the price of these factors represent the trigger of a shock or even of a crisis. For example, the cause of the current international financial crisis has been the inconsistency of the housing prices (derived from the factor land) with the variation of revenues, including the price of factor labor, in the context in which the factor capital, by financial "wrapping" in increasingly sophisticated products, has lost the value contact with the underlying/basic asset. Therefore, we can say that at the onset of any shock or crisis is the inconsistency in relative prices between two or more factors. Therefore, the transmission channel should match and be appropriate to the "substance" or the phenomenon that is conveyed, representing an environment that allows the transfer of the interaction between other substances or phenomena or their prices.

Table no. 2 The properties of the transmission channels and the coordinates of macroeconomic shocks

Properties of the transmission channels		Coordinates of the macroeconomic shock							
		The amplitude		The intensity		The duration		The speed	
		low	high	low	high	short	long	slow	fast
The narrowness of the channel	narrow	√		√			√	√	
	wide		√		√	√			√
The density of the channel's material	thin		√		√	√			√
	thick	√		√			√	√	
The length of the channel	short	√			√	√			√
	long		√	√			√	√	
The channel's flexibility	elastic		√		√	√			√
	rigid	√		√			√	√	
The quality of the channel's "material"	low quality	√		√			√	√	
	good quality		√		√	√			√

Source: authors' conception

In general, the control of the transmission mechanism can be exerted especially when there is only one "substance" that is conveyed. This is almost impossible in the economy, where the change of an economic factor or phenomenon is accompanied by the variation of others. These phenomena can meet in the channel and they can double, potentiate, mitigate or counterbalance reciprocally their effects. Also, there are economic phenomena that occur not within a country, but between countries, such as labor force migration, relocation of companies, implementation of international or regional policies (e.g. the common policies of the European Union, of the international organizations and of regional or global groups of power), etc. that can not be analyzed

⁴ The factors affecting the balance of payments can be divided into: - real or nominal; - economic and monetary or nonmonetary and noneconomic (e.g. psychological factors etc.); - material, tangible or abstract, hardly identifiable; - domestic (national) or external (regional or international); - demand or supply, etc.

separately because of their complex implications, the transmission channels having features adequate to such regional or international phenomena.

However, taking into account the possible behavior or coordinates of the "substance" (the macroeconomic shock) through a transmission channel, we can correlate them with the properties of the transmission channels (see table no. 2) in order to highlight the influence of the transmission channel on the coordinates of shocks.

Also, if we make the correlation between the beneficial properties or qualities of the transmission channels (flexibility, strength, controllability, maintenance, stability, "memory", etc.) and the coordinates of the macroeconomic shocks we notice that all of these can concur to the reduction of the amplitude, intensity, duration and speed of the shocks. Therefore, it is desirable that any transmission channel should fulfill to a greater extent all these qualities, or at least a part of them for a reduction or dissipation of the negative macroeconomic shock.

CONCLUSIONS

The external equilibrium plays an extremely important part in highlighting the economic position (the economic situation resulted from the relationships with other countries), and the competitiveness of a country or a region in the world. For this reason, the identification of the influence factors and of the possible macroeconomic shocks that affect the operation of the balance of payments becomes extremely important. At least as important is the understanding of the way macroeconomic shocks are passed over the external equilibrium, which is why we first analyzed the properties, the specific features of the transmission channels.

Thus, the authors have explained that the specific characteristics of the transmission channels influence significantly their operation under the action of macroeconomic shocks, at the same time identifying the manner in which these properties affect the features (coordinates) of the "substance" carried through the channels, in our case, the macroeconomic shocks.

There are properties of the transmission channels that reduce the amplitude, the intensity, the duration and the speed of a negative macroeconomic shock on the external equilibrium. Based on this, the authorities can select from the macroeconomic policies, those public policies that contribute to the achievement of good "technical" performance of the transmission channels.

This is the reason why public policies should ensure a good flexibility, strength, controllability, maintenance, "memory" and stability of the transmission channels concerning the conveyance of positive or negative phenomena (e.g., macroeconomic shocks) on the external equilibrium.

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