



PROSPECTS FOR THE EVOLUTION OF THE ECONOMIC SECTORS' BEHAVIOR

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Abstract

This paper is a synthesis of the research results obtained over the interval 2008-2009⁴. The problem we addressed was the following: how the evolution of an economic sector's output was influenced when an exogenous shock occurred within its basic factors, namely the received intermediate consumptions, wage remuneration, taxes on products, gross fixed capital formation, foreign trade (expressed through the ratio of the sector's imports to exports). The most significant distortions that may determine in circumstances of crisis severe disturbances in the functioning of the economic system were signaled.

Introduction

In order to assess the economic sectors' prospects for evolution, we analyzed the responses to shocks. For such a purpose, we built VAR models for each sector, considering the dependence of a sector's output on certain determining variables and analyzing the impulse-response functions. Methodologically, we went through all the phases necessary to build such models and retained only those models that satisfied the validation tests. We used the real time indices of variables and tested the stationarity of data. Because the data series were short, we could not consider more than two lags. The shocks had a size of one standard deviation (SD) and were positive, in the sense that one shock signified one SD increase in the base variable; the interpretation of the effect depending on the significance of the respective variable and on the analyzed correlation. Even if an asymmetry of the econometric dependences exists, it shows itself in the coefficients, but preserves the sign, so that a negative shock of the same variable may induce effects that are contrary to those obtained as a reaction to a positive shock. The differences among the sectors reveal themselves in the type and magnitude of response, as well as in the duration of shock dampening. Due to the large data amount, we do not insist here upon the models and

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their validation tests, and present only the results obtained for the ten groups of sectors that we aggregated from the 105 industries in the Input-Output table (see the Appendix).

We mention that such a type of analysis uses the previous statistical evolutions and assesses the response to shocks in accordance with what has happened insofar during the statistical period; so that a rigorous interpretation should emphasize for each kind of such a discussion: **“assuming that the future evolutions follow the trend of the transition period, one should expect that the output’s reaction to a certain type of shock is the following...”**. For simplification, we shall not make such appreciation every time, the more so as in most of the cases the assumption that the trend of transition is maintained is not one to be neglected, even under circumstances of economic crisis.

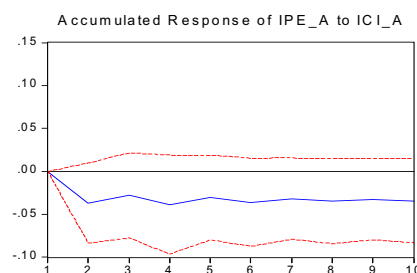
1. Prospects for the evolution of the agricultural sector’s behavior

The **agriculture** includes six primary industries (see the Appendix). In order to assess the evolution prospects we built VAR models for the entire sector, taking into account the dependences between the sector’s output and its inputs and analyzing the impulse-response functions.

The dependence between output and intermediate consumptions in agriculture

The impulse-response function shows first that the shocks dampen over time, after 6-7 years from the occurrence of the first shock (Figure 1). The response is oscillatory: for a positive shock to the intermediate consumption index (that may be determined by an increase in activity, as well as by an increase in prices) the output index decreases in the second year, then has an oscillatory evolution, but never significantly exceeding the zero level. Under circumstances of economic crisis, one may expect an increase in the prices of material and energy inputs, which signifies a negative shock to the output. If the crisis halts, the prices stabilize, and the shock is dampened in maximum 5-6 years. In conclusion, the agricultural sector has quite a significant stability to the negative shocks to input prices.

Figure 1



Data source: Authors' computations on the basis of the Input-Output tables with 105 industries. Under such circumstances, it is obvious that a **price stabilization policy** for the material and energy inputs to agriculture, even if subvention-based, would allow for

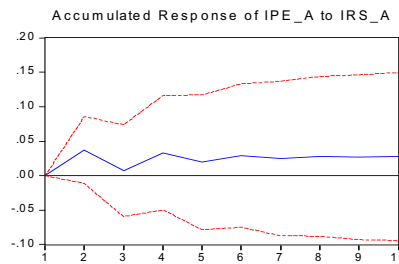
diminishing the impacts of shocks and for shortening the dampening period. The subventions for the agricultural producers must be directed in such a way to solve the main price shocks.

The dependence between output and wage remuneration in agriculture

We mention from the beginning that the number of paid workers in agriculture is small as compared to other sectors; such paid workers are mostly specialists employed by the producers' associations or by larger companies. A positive shock to the wage index (Figure 2) leads to an increase in the output index; however, the evolution is oscillatory and dampens in about 5-6 years. A negative shock, expressed by a wage diminution or a drop in the number of specialists working in agriculture, may determine a decline in the agricultural output.

In conclusion, a **wage policy** that encourages the increase in the number of specialists that work in agriculture may have positive impacts on the output growth, while neglecting such an aspect may have a negative impact.

Figure 2

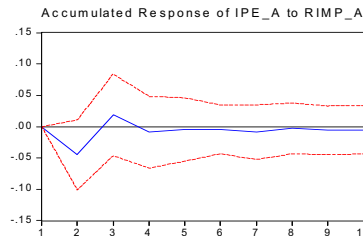


Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

The dependence between output and taxes in agriculture

A shock to the tax rate in agriculture is translated into a negative oscillatory response, which dampens in about four years since its occurrence (Figure 3). A **coherent taxation policy** for the agricultural industries must take into account the oscillations induced by a sharp increase in the tax rate.

Figure 3

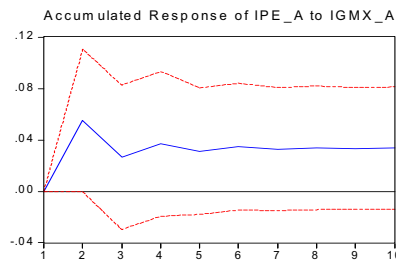


Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

The dependence between output and import coverage by export in agriculture

We considered that not exactly the increase in the sector's imports or exports (measured by the real time index of the respective indicator) may express adequately the influence of foreign trade upon the agricultural output, because both the exports and the imports have destinations that are not always correlated with the output level (certain imports are not destined either to output or to consumption, but to re-export; and as regards the exports, they may have as source the above-mentioned imports and not the domestic output). For such reasons, we considered that the import to export ratio, called henceforth the import coverage by export, reflects more adequately the phenomenon's dynamics. As one may see in Figure 4, a positive shock to the import coverage by export has as effect an increase in output, and the shock dampens in around 4-5 years. For such a purpose, **foreign trade policies** that encourage the agricultural products export and deter import of such products (of course, within the limits of the existing trade agreements) are necessary. An efficient leverage is the exchange rate policy, a moderate devaluation of the RON encouraging the exports and deterring the imports.

Figure 4

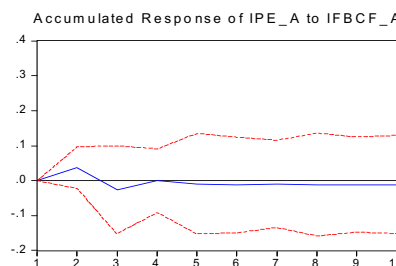


Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

The dependence between output and gross fixed capital formation in agriculture

The gross fixed capital formation in agriculture is not directly impacting upon the current year's output; a shock to gross capital formation leads to an increase in output and it dampens in around four years. The variations of the output are oscillatory (Figure 5) and of low amplitude.

Figure 5



Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

However, such a kind of analysis uses the previous statistical evolutions and assesses the response to shocks in accordance with what has happened insofar during the statistical period, so that a more rigorous interpretation should point out that since we assume that the future evolutions follow the trend of the transition period one should not expect significant increases in the agricultural output, not even in the case of massive investments in agriculture.

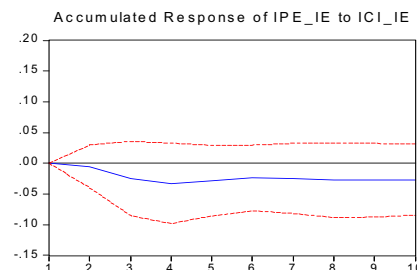
2. Prospects for the evolution of the mining and quarrying industry's behavior

The **mining and quarrying industry** includes ten primary industries (Appendix).

The dependence between output and intermediate consumptions in the mining and quarrying industry

As one may see in Figure 6, a shock to the intermediate consumptions of the mining and quarrying industry leads to a decrease in output that does not dampen even after ten years (in fact not even after twenty years). Such a thing means great problems for the governmental administration, because **policies for supporting expenditures on inputs** in the mining and quarrying industry are needed in order to prevent such shocks. The decline in the mining and quarrying output may influence all the economic sectors that depend on the domestic output of raw materials and energy, which may find themselves forced to increase the imports for production, with all the adjoining consequences. This is an area where the administrated prices play a significant part.

Figure 6

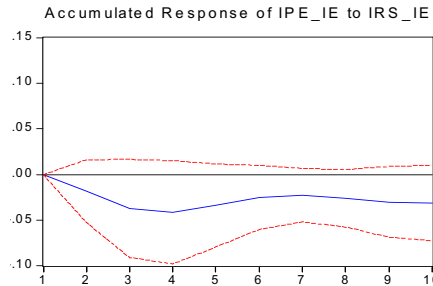


Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

The dependence between output and wage remuneration in the mining and quarrying industry

The mining and quarrying industry is similarly sensitive to a shock to wage remuneration, which leads to a decrease in output and does not dampen over the next ten years. Consequently, a **prudent wage policy** is required, with gradual wage increases, and not as sharp shocks. The wage level diminution determined by activity shrinking has negative effects that dampen over a long time interval.

Figure 7

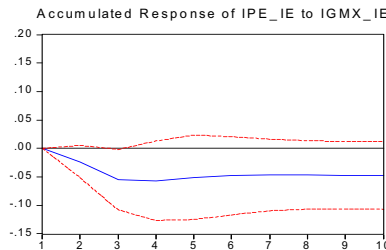


Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

The dependence between output and import coverage by export in the mining and quarrying industry

In the mining and quarrying industry, a positive shock to the import coverage by export has negative, long-term and quite strong effects upon the output (Figure 8). In order to avoid such a shock, **foreign trade policies** able to maintain stable the ratio of import to export are needed, so if an increase in imports is necessary, new export markets are identified in order to compensate for such a development. If such a thing is not possible, domestic resources should be found in order to avoid the imports that might break the above-mentioned balance.

Figure 8



Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

In conclusion, the mining and quarrying industry is very sensitive to shocks, which generally have long-term impacts. This requires prudent and coherent sectoral policies in all the areas, especially because the propagated effects of distortions in the mining and quarrying industries are transmitted within the entire economy.

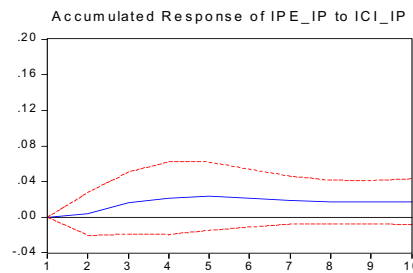
3. Prospects for the evolution of the manufacturing industry's behavior

The **manufacturing industry** includes ten groups of industries, each comprising a certain number of primary industries (Appendix).

The dependence between output and intermediate consumptions in the manufacturing industry

A shock to the intermediate consumptions is perceived as delayed by the manufacturing industry output; the maximum is reached in the fifth year since the occurrence of the shock and the effect lasts for many years (Figure 9). The behavior revealed by the statistical data is an output increase for an increase in intermediate consumptions, which may induce a perverse effect during periods of crisis, when the rises in prices of energy and raw materials inputs lead to a decrease (saving of) in intermediate consumptions. As mentioned before, such a kind of analysis uses the previous statistical evolutions and assesses the response to shocks on the basis of what has happened during the statistical period; so that a more thorough interpretation should stress that one might expect decreases in the manufacturing industry output if rises in inputs prices have occurred, obviously assuming that the future evolutions follow the trend of the transition period.

Figure 9

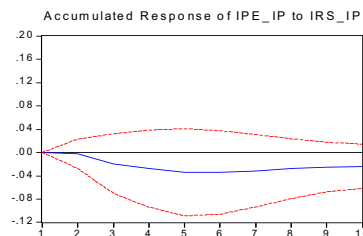


Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

The dependence between output and wage remuneration in the manufacturing industry

As one may see in Figure 10, a positive shock to wage remuneration in the manufacturing industry leads to a decline in output, which reaches minimum values in around 5-6 years, and which dampens very slowly. One may expect, especially under circumstances of economic crisis, a stagnation of wage rises (even decreases in certain industries), with positive impacts upon output. Under such circumstances, a prudent wage policy is needed in the manufacturing industry, since the wage fluctuations generate output perturbations, especially in times of economic crisis.

Figure 10

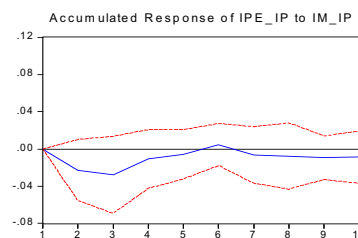


Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

The dependence between output and tax rate in the manufacturing industry

A sharp rise (a shock) in the tax rate in the manufacturing industry leads to a significant output decline in the first three years, followed by a weak recovery in the sixth year, then by a decline with a long dampening period (Figure 11). This is an attention signal regarding the **taxation policies** concerning the sector, which should take into account the following reaction of the manufacturing industry: the rise in the tax on product leads to diminution of the tax base, which may trigger a boomerang effect even upon the forecasted tax incomes.

Figure 11



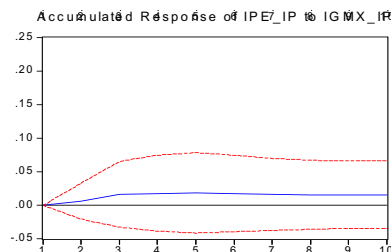
Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

The dependence between output and import coverage by export in the manufacturing industry

A positive shock in the import coverage by export has no significant impact upon the manufacturing industry output. The response is weak; it increases gradually and reaches a maximum value over the next 4-6 years since the occurrence of the shock (Figure 12). Consequently, even if a trade imbalance in the manufacturing industry occurs, in the sense of faster growth in import than in export, such a thing does not influence the domestic output, because the imports preponderantly have final consumption as main destination.

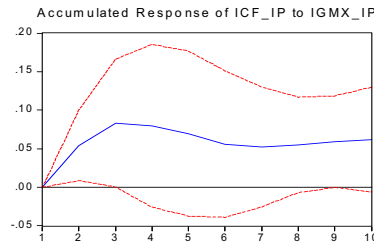
In order to analyze such a situation, we built a VAR model that takes into account the dependence between the final consumption provided by the manufacturing industry and the import coverage by export of this sector. As Figure 13 shows, a shock to the import coverage by export, which translates into a foreign trade imbalance in favor of imports, is strongly perceived by the final consumption, which responds through a fast increase; the shock is dampened over the next ten years.

Figure 12



Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

Figure 13

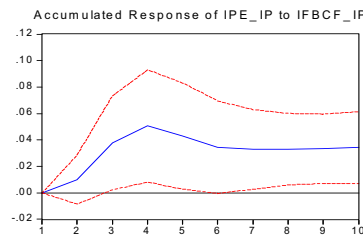


Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

The dependence between output and gross fixed capital formation in the manufacturing industry

The role of gross fixed capital formation is significant in the manufacturing industry: a positive shock to investments leads to a significant increase in output, whose maximum is reached after around four years and whose influence is perceived over the next ten years without too much dampening (Figure 14). In conclusion, **policies to encourage investments in the manufacturing industry are necessary, employing all the possible tools, of which one of the most used is non-taxation of the reinvested profit.**

Figure 14



Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

4. Prospects for the evolution of the energy industries' behavior

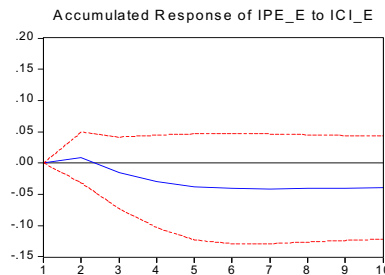
The group of **energy industries** includes four primary industries (Appendix).

The dependence between output and intermediate consumptions in the energy industries

As one may see in Figure 15, a shock to the intermediate consumptions of the energy industries leads to a decline in output that is not dampened even after ten years (in fact, not even after twenty years). Such a thing must be taken into account by the governmental policies, because **policies for supporting expenditures on inputs** in the energy industries are necessary in order to deter the occurrence of such shocks. The output decline in the energy industries may influence all the sectors of the

economy that depend upon the domestic energy output, which may be forced to resort to imports for production, facing all the consequences. This is an area where the administrated prices play a significant part.

Figure 15

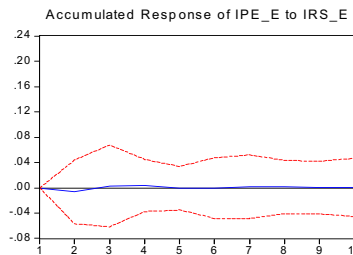


Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

The dependence between output and wage remuneration in the energy industries

The group of energy industries is not similarly sensitive to a shock to wage remuneration; on the contrary, a positive shock to the wage level passes with almost no effects, both in the short and in the long run (Figure 16).

Figure 16

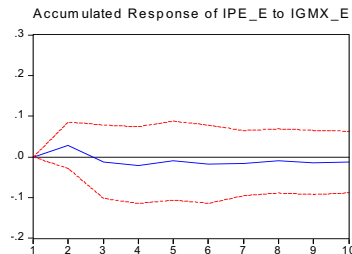


Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

The dependence between output and import coverage by export in the energy industries

In the energy industries, a positive shock to the import coverage by export has negative effects upon output beginning with the third year, long lasting but oscillatory, and relatively weak (Figure 17). A cause of such a response may be the impossibility to put in stock certain kinds of energy (electric power, for instance). In order to avoid a shock of such kind, **foreign trade policies** that aim to maintain the balance between the two components (import and export) are necessary, so when an increase in imports is required, there may be identified export markets able to compensate for such a rise.

Figure 17



Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

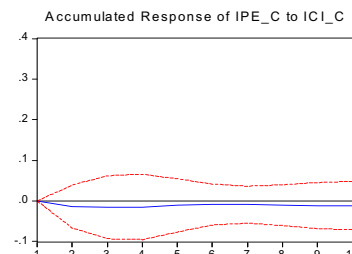
5. Prospects for the evolution of the constructions sector's behavior

The Input-Output tables include a single primary industry with **constructions** activities (Appendix).

The dependence between output and intermediate consumptions in constructions

As Figure 18 shows, a shock to the intermediate consumptions in constructions leads to a small decline in output, which, however, does not dampen over the next ten years. Such a situation may be dealt with the help of **policies supporting the expenditures on inputs** in constructions.

Figure 18

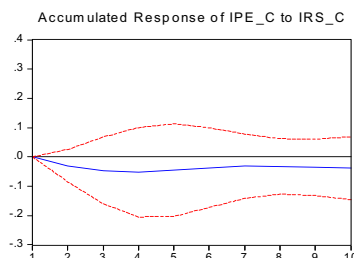


Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

The dependence between output and wage remuneration in constructions

As one may see in Figure 19, a positive shock to the wage remuneration in constructions leads to a decline in output, whose maximum value is reached in about 4-5 years, and which dampens very slowly. One may expect, especially under circumstances of economic crisis, a stagnation of the wage level, with positive impacts upon output. In such a context, a prudent wage policy in the sector is required, since the wage increases may induce output disturbances, especially in times of economic crisis.

Figure 19

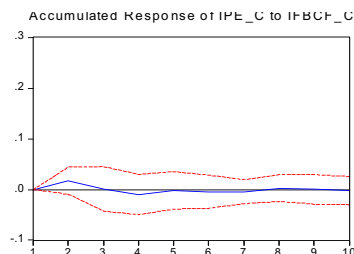


Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

The dependence between output and gross fixed capital formation in constructions

The gross fixed capital formation in constructions has a direct impact upon the current year's output; a shock to it leads, however, to an oscillatory output variation, which dampens in around 5-6 years (Figure 20). Because such a kind of analysis uses the previous statistical evolutions and assesses the response to shocks on the basis of what has happened during the statistical period, a more thorough interpretation should stress that one might not expect significant increases in the constructions output if massive investments have been made, obviously assuming that the future evolutions follow the trend of the transition period.

Figure 20



Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

6. Prospects for the evolution of the domestic trade sector's behavior

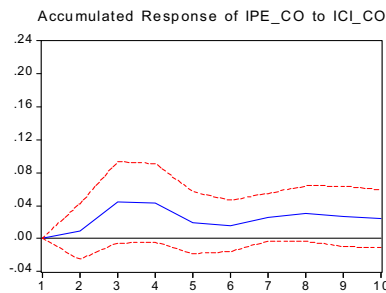
The **domestic trade** includes three primary industries (Appendix).

The dependence between output and received intermediate consumptions in the domestic trade sector

The dependence between output and the level of intermediate consumptions received by the domestic trade sector is of such a kind that the output's response to a shock to the consumption of energy and raw materials used by the sector is perceived beginning with the second year and is transmitted in an oscillatory manner over the

next years (Figure 20). The impact of the initial shock is not dampened over the analyzed ten years. In this sector, the increase in the material inputs leads to an increase in activity. If one may speak about an increase in volume in the received material consumptions, then the increase in output is a healthy one; but if the shock is given by price increase in circumstances of economic crisis such kind of correlation shows possible price increases of the domestic trade sector's output, which may involve decreases in the output's volume.

Figure 21



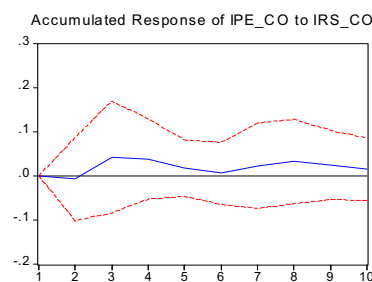
Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

As a conclusion, the **price policies** regarding energy and tradable products that are not produced within the sector, but in other sectors, have direct impacts upon the consumers.

The dependence between output and wage remuneration in the domestic trade sector

The response to a sharp increase in remuneration in the domestic trade sector leads to a slight decline in the output volume in the next two years, then the output recovers and its evolution is oscillatory. Such a response may be induced by an increase in the total number of employees, or in the gross wages (however, difficult to achieve in times of crisis). The wage increases will be reflected either in the output volume, or in the price of trade services. The economic crisis may determine many traders to fire employees or to cut wages; in such a case one may witness an inverse phenomenon, namely that of output decline.

Figure 22



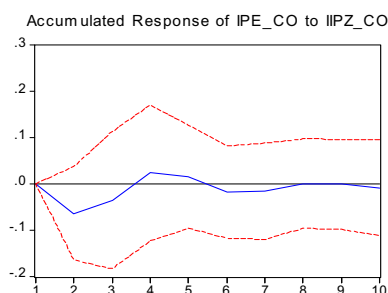
Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

In conclusion, a **wage policy** that encourages employment in the domestic trade sector might have positive impacts upon the output growth. Nevertheless, the output increase may be also determined by the increase in the trade services selling prices, with negative impacts upon the economic development.

The dependence between output and taxes on product in the domestic trade sector

In the Input-Output tables, the taxes on product include the VAT, custom duties, import taxes and other taxes. A sharp rise (a shock) in the taxes on product given by a VAT or custom duties increase leads to a decline in output in the first three years, followed by a slight recovery due to the adaptation of the trade services prices. The initial shock dampens very slowly over time, in about eight years.

Figure 23



Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

As a conclusion, a sharp rise in the VAT, for instance, leads to a shrinking of trade activity due to consumption decline, and adaptation is quite difficult. One may also draw the inverse conclusion, namely that **a decrease in taxes might lead to an increase in activity in the domestic trade sector.**

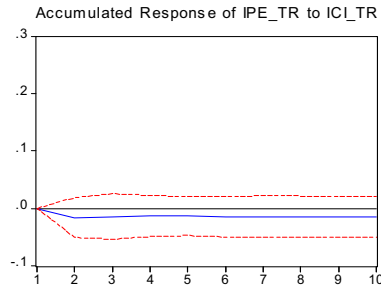
7. Prospects for the evolution of the transports sector's behavior

The **transports sector** includes eight primary industries (Appendix).

The dependence between output and intermediate consumptions in the transports sector

To a shock to the received intermediate consumptions, the transport sector has a negative, but very weak response, without oscillations over time, which, however, do not dampen over the entire analyzed interval (ten years). Thus, to a sharp rise in energy prices, for instance, the sector responds by shrinking activity, which lasts over time. Such inertia is explainable through the peculiarity of the transport activity, whose decline may paralyze the entire economic activity.

Figure 24

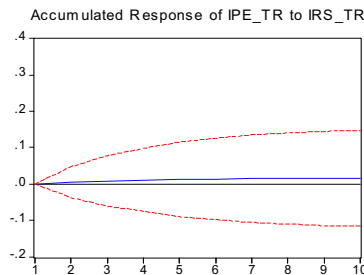


Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

The dependence between output and wage remuneration in the transports sector

The transports sector proves the same weak sensitivity to a shock in wage remuneration, which leads to a very small output increase and does not dampen over the next ten years.

Figure 25



Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

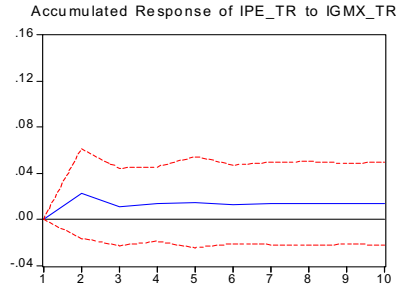
The dependence between output and import coverage by export in the transports sector

In the transports sector, a positive shock to the import coverage by export has positive, long-lasting and quite strong impacts upon the output (Figure 26).

The dependence between output and taxes on product in the transports sector

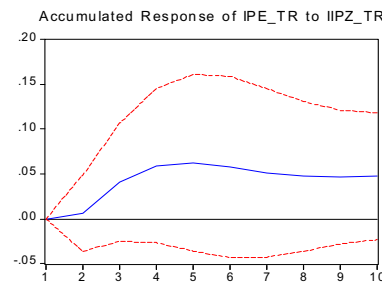
If the response of the transports sector output to some of the previously analyzed shocks (material inputs and gross wages) was insignificant, a rise in the taxes on products (VAT, custom duties, other taxes) leads to a significant increase in the activity of the sector. The initial shock is transmitted over time for a long duration. The rise in the total tax volume might be given by an increase in the transported commodities volume, which is reflected in the transport sector's output growth.

Figure 26



Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

Figure 27



Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

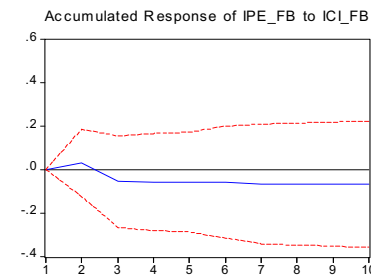
8. Prospects for the evolution of the finance and banking sector's behavior

The finance and banking sector includes two primary industries (Appendix).

The dependence between output and received intermediate consumptions in the finance and banking sector

The response of the finance and banking sector to a sharp increase in the received intermediate consumptions shows beginning with the second year through a decline in output. The initial shock does not dampen for a long time over the following period.

Figure 28

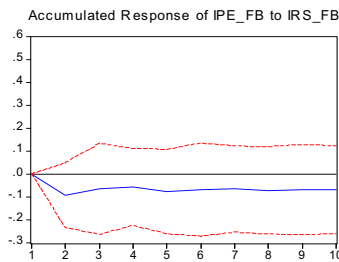


Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

The dependence between output and wage remuneration in the finance and banking sector

Contrary, a shock to the gross wage remuneration is perceived through a decline in output that maintains over the entire analyzed period. Such a shock may come from massive hiring within the sector, or from wage increases. None of such hypotheses is plausible in circumstances of economic crisis. However, it is possible that a rise in taxes leading to a net wage decrease determines some employees to leave the system.

Figure 29



Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

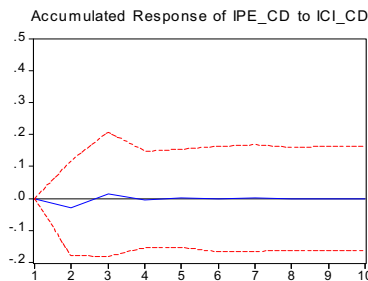
9. Prospects for the evolution of the research-development sector's behavior

The **research-development** sector (R-D) includes four primary industries (Appendix).

The dependence between output and received intermediate consumptions in the research-development sector

There is a weak dependence between the output and the intermediate consumptions received by the research-development sector. A shock to the level of received intermediate consumptions has oscillatory, but weak impact upon the output, which dampens fast over time. Such industries do not require large amounts of intermediate consumptions provided by the other sectors (they are based more on human intelligence than on a material support), so that the price variations of the materials used do not have significant influences.

Figure 30

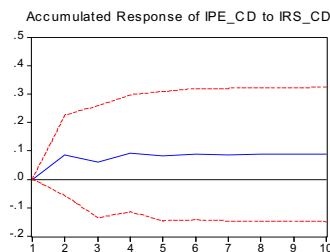


Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

The dependence between output and wage remuneration in the research-development sector

A sharp rise in the wage remuneration of the research-development sector leads to an increase in output. Such a shock may be given by a sharp increase in the number of employees (highly unlikely, due to the high level of professional qualification required for hiring, which limits the number of candidates), or by an increase in the gross wages on payroll. It is advisable that the wage policies for the sector take into account such correlations, since a decrease in wage remuneration may lead to a decline in the sector's output. The rise in taxation rate leading to a diminution of the net wage may induce a decline in the number of employees, which also involves a decline in the sector's output.

Figure 31



Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

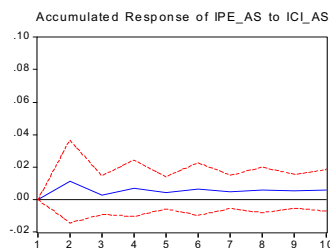
10. Prospects for the evolution of the social welfare sector's behavior

The Input-Output tables include four primary industries in the **social welfare** sector (Appendix).

The dependence between output and received intermediate consumptions in the social welfare sector

The response to a shock to the received intermediate consumptions is positive, oscillatory, with a long dampening period. A decrease in the received intermediate consumptions due to prices or expenditure cuts correlates with a decline in the sector's activity.

Figure 32

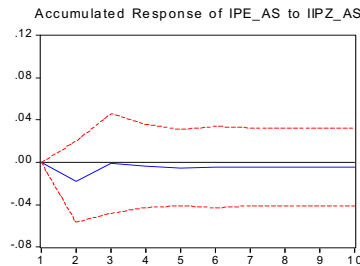


Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

The dependence between output and taxes in the social welfare sector

The sharp increase in taxes (VAT, custom duties, other taxes) is transmitted to the sector's output through a small amplitude decline, which dampens after the third year since the initial shock.

Figure 33



Data source: Authors' computations on the basis of the Input-Output tables with 105 industries.

Conclusions

The economic crisis triggered some specific phenomena, of a temporary nature, but with significant impacts to the economy: real output decline, price rises leading to inflation surge, wage cuts, increasing unemployment and tax rises (VAT). The economic decisions of the central authorities (the government and the Central Bank) envisage measures aiming at decreasing the budget deficit (expenditure cuts through wage cuts, staff restructuring, budget expenditure limitation and budget incomes rises) and at supporting the national currency exchange rate (the NBR's currency reserves being able to support the exchange rate). The domestic and foreign loans that allowed for supporting the budgetary expenditures and for increasing the currency reserves will, nevertheless, impinge further upon the economic evolutions, the debt payment becoming a new burden difficult to support by an economy that emerges slowly from crisis.

From the previous analysis, certain conclusions may be drawn:

1. the **price rises for material and energy inputs** may lead to a deepening economic crisis through output decline in most of the sectors;
2. the **measures aiming at stopping the wage increases** are necessary, such rises having long-term negative impacts upon the output indices;
3. the **measures aiming at rising the taxes on products** trigger immediate and significant negative impacts upon output; however, they do not have long-term impacts. Certain measures aiming at diminishing the production taxes may have positive impacts upon the alleviation of economic crisis effects;
4. the **increase in export** is not a solution for the mining and quarrying and energy sectors, due to their low competitiveness, but it has positive and long-term impacts in agriculture and the manufacturing industry;
5. the **measures aiming at increasing investments** are very important in the manufacturing industry, which responds positively and with significant impact upon

output growth during a long interval. The other sectors do not show significant responses to an increase in investments;

6. the research-development and social welfare sectors exhibit an atypical behavior as compared to the rest of the sectors.

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Appendix

Grouping industries by sector

No.	Sector	Industries
1.	Agriculture	01. Vegetal production 02. Animal breeding 03. Auxiliary services 04. Forest-farming and hunting 05. Forestry 06. Fish-farming and fishing
2.	Mining and quarrying	07. Coal extraction and processing (including bituminous sands) 08. Crude oil extraction (including auxiliary services) 09. Natural gas extraction (including auxiliary services) 10. Radioactive ores extraction and processing 11. Ferrous ores extraction and processing 12. Non-ferrous ores extraction and processing - aluminum, copper, lead, chrome, precious metals, rare metals 13. Ore extraction for building materials industry 14. Sand and clay extraction 15. Ore extraction and processing for the chemical industry 16. Salt extraction and processing 17. Other non-metallic mineral ores extraction and processing
3.	Manufacturing industry	ia. Food processing (10 primary industries); iu. Light industry (9 primary industries); ic. Chemical industry (12 primary industries); imc. Building materials industry (8 primary industry); ig. Heavy industry (5 primary industries); im. Machinery industry (12 primary industries); it. Transport means industry (5 primary industries).
4.	Energy sector	79. Electric power production and distribution; 80. Natural gas production and distribution (excluding methane extraction); 81. Thermal power and hot water production and distribution; 82. Water capturing, filtering and distribution.
5.	Constructions	83. Constructions
6.	Domestic trade	84. Wholesale and retail trade 85. Hotels 85. Restaurants.
7.	Transports	87. Railway transport 88. Other transport 89. Pipe transport 90. Water transport (sea, coastal, inland rivers) 91. Air transport

No.	Sector	Industries
		92. Annex and auxiliary transport activities, travel offices activities 93. Travel agencies and tourist assistance activities 94. Post and courier activities 95. Telecommunications
8.	Finance-Banking	96. Finance, banking and insurance activities 97. Real estate transactions
9.	Research-Development	98. Computer science and connected activities 99. Research-development 100. Architecture, engineering and other technical services 101. Other service activities for companies
10.	Social welfare	102. Public administration and defense, compulsory social welfare 103. Education 104. Health and social welfare 105. Other collective, social and personal services activities