SOME ASPECTS REGARDING THE FORECASTING INFORMATION SYSTEM ACTIVITY

Prof. Alexandru MANOLE PhD (alexandru.manole@gmail.com)

"Artifex,, University of Bucharest Lecturer Ana CARP PhD (karp_ana@yahoo.com) "Artifex,, University of Bucharest Doina AVRAM Ph.D Student (doina.avram@gmail.com) Bucharest University of Economic Studies Doina BUREA PhD Student (doina.burea@yahoo.com) Bucharest University of Economic Studies

Abstract

Activity prediction (forecasting) of the national economy plays an important role in future projects. Although the conditions of free market activity macroeoconomică it must be projected to be expected to know the perspective that this economy will grow. The authors consider that the main aspects of implementing the theoretical prediction activity is beneficial. From this point of view, an important role for macroeconomic forecasting plays indicator system use. Thus, taking into account the classification of the main macroeconomic indicators authors do an inventory on accestora revealing that the main categories (groups of indicators) are those of the general business of the warning system, coincidence or delays in implementing the plan forecast. Of course, every subgroup of indicators plays an important role in macroeconomic. But, essentially, it is that this activity forecasting must consider this as a single complex system. Based on their view of the main elements of trends in individual and concerted then these indicators gives a realistic trend on macroeconomic growth. Against this background it stresses the role that has the system of national accounts and macroeconomic analysis filing system that can be used in business forecasting. Based on national accounts, to give some ideas on macroeconomic indicators of results that can be calculated, the structural elements thereof to facilitate an opportunity for comprehensive analysis, structural and on which can lead to the identification, forecasting the trend of evolution. Well formalized system of national accounts is that by taking into account the elements contained in it, make building a macroeconomic model, on which to make a realistic forecast. It is in this sense, the authors established several mathematical relationships from which it can calculate quantitative analysis with qualitative perspective, the main macroeconomic developments.

Keywords: *forecast, account national, macroeconomic model, mathematical function, variable structure*

Revista Română de Statistică - Supliment nr. 4 / 2017

Introduction

The problem of information system activity forecast is particularly critical in the sense that only based on thorough knowledge of the realities downstream of the national economy based on concrete models can achieve a realistic forecast of the evolution of the national economy. In this article were revealed: the system of indicators used in the business of forecasting, inventory itself and making the details of each individual groups of indicators or indicator that has essentially the elements of the System of National Accounts as a method of recording and highlight the results of macroeconomic analyzes needed in this area and then content and calculation of the main indices of the national economic accounts system. These are discussed in this article the correlation that exists between macroeconomic variables that can be quantified and used in economic models that can give a probabilistic evolution at least the national economy. This article presents details on each aspect, finally materializing some mathematical models that are used for this purpose.

Literature review

Anghelache, Panait, Marinescu și Niță (2017) describe models and forecasts macroeconomic indicators dedicated, Anghelache și Anghelache (2010) focuses on equilibrium models, Anghelache și Capanu (2003) presents in detail the calculation and analysis of macroeconomic indicators. Anghelache (2008), Anghelache, Isaic-Maniu, Mitrut și Voineagu (2007) are concerned with macroeconomic statistics. Klenow si Willis (2007) studied the correlation between information and prices. Weizsacker (2010) develops on rational expectations. Philippon si Schnabl (2011) deals with the types of rents generated by state intervention in the banking sector. Manole (2008) considers use of information systems in financial decision-making. Anghelache (2015) is a reference paper in macroeconomic forecast. Caplin și Dean (2015) are concerned with the acquisition of information. Carroll (2003) considers the correlation between household and macroeconomic expectations. Colla si Mele (2010) discusses the theme of informational connections. Golosov, Lorenzoni și Tsyvinski (2014) examines the role of private information in transactions. Mankiw, Gregory si Reis (2007) concerned the role of certain information in the context of general equilibrium. Ostrovsky (2012) assess the aggregation of information in the context of dynamic markets. Pasquariello (2007) takes into account the heterogeneity of information. Kiley (2007) analyzes a set of models dedicated pricing information based on certain characteristics.

Research methodology and data The indicators used in forecasting activity

Indicators are absolute or relative numerical expressions which are quantified objectives economic and social activity in each period shall be fixed means of making them and ensure control over resource efficiency. Indicators used in forecasting economic and social phenomena and processes are classified according to various criteria, as follows:

• After fulfilling role in the activities scheduled are: plan and forecast indicators, calculation and substantiation indicators and indicators of statistical tracking and control. Indicators can be indicative plan, indicative of recommendation or binding. Calculation substantiation indicators or indicators serve sizing and forecasting plan and usually are not included in the forecasting tools. This role can be fulfilled by some indicators plan and forecast. Tracking statistical indicators and controls are used to verify the achievement of the objectives and recommendations for plans, programs and forecasts;

• After breeding processes or sides that they reflect. are indicators of primary resources of socio-economic development indicators of production, distribution indicators, indicators of exchange or circulation indicators of final demand and indicators of consumption and final results of reproduction;

• After the unit of measure are indicators expressed in natural or naturalconventional monetary indicators in terms of value and labor indicators;

• By nature or content they express objectives are: quantitative and qualitative indicators. The qualitative indicators characterizing the volume of activities and their results, the amount of resources available or used capacity increases deproducție and qualitative indicators reflect the quality of economic and social activities, the structural characteristics of the economy; aspects of economic efficiency.

The most important indicators are indicators characterizing the activity of forecasting cyclical fluctuations. The analysis of cyclical fluctuations of national economies of particular interest for economic and social forecasting. To this end, they use a series of indicators to measure cyclical oscillations, to highlight the key changes forecast in the economy and, ultimately, to inform strategy to mitigate large variations and integration into development programs. These indicators are divided into three groups, namely: representative indicators, indicators and general indicators of business compounds.

Representative indicators reflecting the dynamics of particular phase of economic activity, but from correlations that exist between fluctuations in a sector and the national economy as a whole, it is estimated that they indirectly characterizes the state of the national economy. This group includes: the production of iron and steel, which can be characterized by short-term trends that are manifested in the national economy; the volume of railway transport; bank payments or bank loans, which are related to the economic activities; power generation etc.

Indicators characterizing compounds several phases of economic activity and include: number of employees in factories, calculated based on a sample of units which comprise 50% of the staff busy; price index for the workforce and changes in the number of hours worked per week; Industrial Production Index, calculated based on a sample of companies covering 25% of the employees in manufacturing and mining; GNP in constant prices (comparable).

Common indicators reflecting business growth and cyclical changes their business. It's business volume index and statistical indicators for cyclical changes thereof. Index business volume reflects the dynamics combined 10 individual variables such as: production of ingot steel production of ingots, zinc construction volume we use cotton, oil production, electricity generation, employment in non-agricultural activities, transport volume, bank rates, sales volume in stores.

The group statistical indicators of business is cyclical changes include 26 indicators, each reflecting a different aspect of economic activity, divided into three parts namely: warning indicators, indicators and indicators delay coincidence.

Category contains 12 indicators warning indicators that signal changes essential moments preceding cyclical fluctuations especially extreme points of the phases of prosperity and depression. These indicators are: average number of hours worked weekly new records of cases of unemployment, training net new businesses, orders of consumer durables, contracts and orders for plant and equipment, buildings and housing, changes in inventory prices of industrial materials storage prices, profits, the ratio of price and labor costs and changes in consumer debt.

Category indicators coincidence comprises of eight indicators, which significantly changes its direction of movement, especially in the peak, prosperity and the trough of the depression. These are: employment in nonagricultural sectors, unemployment rate, gross national product at current prices, the gross national product at constant prices, the industrial products, personal income, sales by the manufactured goods trade, sales in retail trade. It should be noted that some statistics using national product expressed only in current or constant prices and retail sales are dropped, which have a similar dynamic commerce sales of manufactured goods.

Category indicators delay consists of 6 indicators that point change

occurs at the time of maximum or minimum fluctuation. They are long-term unemployment, investment in factories and equipment, inventory and business trade plants, the unit cost of labor, industrial and commercial loans, interest rates and loans for business. As indicators of delay is also sometimes use nonfarm productivity change and loss of business.

Conclusion

This article is about some theoretical and practical conclusions as follows. Primarily on the basis of theoretical setting items that may underlie a macroeconomic model to achieve the development of the national economy. Another conclusion is that without an adequate information system that provides the necessary data can not provide a realistic forecast of the evolution of the national economy. In any country, even if the laws of the free market works for necessary macroeconomic forecasting is absolutely necessary. The article points out that without an adequate information system without reliable data, macroeconomic forecasting process can not be achieved. The study highlights all theoretical aspects to be considered in achieving macroeconomic forecasts content. Article not proposed to make a specific study on the set because it would mean a huge volume of data that does not reveal anything further than that imposed these ideas can base a model of the evolution of economic activity. Outlook is actually determining future development prospects based on reliable data consumed but must be founded on the basis of reliable information. In this context we consider that the information system needed for the prediction (forecasting) is particularly important. Those who wish may extend this study taking minimum data required system of statistics or statistical information system.

References

- Anghelache, C., Panait, M., Marinescu, I.A., Niță, G. (2017). Modele și indicatori utilizați în prognoza macroeconomică / Models and indicators used in macroeconomic forecast, Romanian Statistical Review, Supplement, no. 3, pp. 29-39 / 40-48
- 2. Anghelache, C., Anghel, M.G., Manole, A., Lilea, F.P.C.(2016). *Modelare* economică, financiar-monetar-bancară și informatică, Editura Artifex, București
- 3. Anghelache, C. (2015). Previziune economică. Note de curs, Editura Artifex, București
- 4. Anghelache, C., Anghelache, G.V. (2010). *Modele de echilibru pentru prognozarea economică*, Romanian Statistical Review, Supplement, no. 9
- 5. Anghelache, C. (2008). *Tratat de statistică teoretică și economică*, Editura Economică, București
- 6. Anghelache, C., Isaic-Maniu, A., Mitruţ, C., Voineagu, V. (2007). Sistemul Conturilor Naționale Ediția a II-a, Editura Economică, București
- 7. Anghelache, C., Capanu, I. (2003). *Indicatori macroeconomici calcul și analiză economică*, Editura Economică, București

- Caplin, A., Dean, M. (2015). Revealed Preference, Rational Inattention, and Costly Information Acquisition, American Economic Review, July 2015, 105 (7), 2183–2203
- 9. Carroll, Ch. (2003). *Macroeconomic Expectations of Households and Professional Forecasters*, Quarterly Journal of Economics 118(1), 269-298
- Colla, P., Mele, A. (2010). *Information linkages and correlated trading*, Review of Financial Studies 23 (1), 203–246
- Coibion, O., Gorodnichenko, Y. (2012). What Can Survey Forecasts Tell Us about Information Rigidities?, Journal of Political Economy, University of Chicago Press, vol. 120(1), pages 116 – 159
- 12. Golosov, M., Lorenzoni, G., Tsyvinski, A. (2014). *Decentralized trading with private information*. Econometrica, 82 (3), 1055–1091
- Klenow, P.J., Willis, J.L. (2007). Sticky Information and Sticky Prices, Journal of Monetary Economics, 54, 79-99
- Kiley, M.T. (2007). A Quantitative Comparison of Sticky Price and Sticky Information Models of Price Setting, Journal of Money, Credit, and Banking 39(1), 101-125
- 15. Mankiw, N. Gregory and Ricardo Reis. 2007. *Sticky Information in General Equilibrium*, Journal of the European Economic Association, 5 (2-3)
- 16. Manole, A. (2008). Sistemul informatic pentru modelarea deciziei financiarcontabile, Editura Artifex, București
- Ostrovsky, M. (2012). Information aggregation in dynamic markets with strategic traders. Econometrica, 80 (6), 2595–2647
- Pasquariello, P. (2007). Imperfect competition, information heterogeneity, and financial contagion. Review of Financial Studies, 20 (2), 391–426
- 19. Philippon, T., Schnabl, T. (2011). Informational Rents, Macroeconomic Rents, and Efficient Bailouts, NBER Working Paper No. 16727
- Weizsacker, G. 2010, "Do We Follow Others when We Should? A Simple Test of Rational Expectations", American Economic Review 100: 2340-2360