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Some reflections on predicting socio-economic future

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Abstract

The reflections included in this paper show the imperfections of human knowledge when it comes to predicting the socio-economic situation of a modern democratic state, and their consequences resulting in that those who develop the forecast have to direct their attention to the following issues in their exploration:
- list of important features characterizing well-being of the state and its citizens' condition;
- credibility of the information on the value of the selected characteristics (data);
- adequate methods outlining the history of how those characteristics were shaped in the past (trends);
- methods of shaping causal relationships between these characteristics;
- effective methods of forecasting socio-economic situation in future.

Introduction

Although there is a complete consensus that we do not know the future, we are still supposed to be able to make short or long-term predictions and, on top of that, to make them relatively accurate, according to our dreams of having our well-being improved or at least maintained. Making predictions, called by scholars a forecast, pertains to everyone, as an individual or as a member of a herd (of a family, inhabitants of a town or village, municipality, county, voivodship, country, associations of states and the whole community on our planet).

Every forecaster, as an individual or leader of a herd of individuals, needs supporting tools. Firstly – to identify their current well-being – secondly – to look into the history of how the level of well-being has been evolving,

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and thirdly – to have an idea of how to use thus acquired knowledge in order to make the dreams about the future come true. Moreover, this person should be aware of the fact that any tools he/she is about to use for this purpose are marked by imperfection, that actions based on knowledge do not have the property of the holy truth, that they are subject to risks. The risk results from the fact that our insight into the current well-being and the history of its development is also flawed. We will elaborate on why it is so further on in the paper.

At this point we should provide our readers with the following information: our attention will be focused on forecasting future in a modern democratic state.

Description of the modern democratic state

In the countries indicated in the very title of this section, what we encounter is a civil society, which means that its vast majority understand that electoral slogans are in general utopian, so therefore one should vote for electoral bodies which are guided by realism, that is, by taking into account economic capacities. This majority also understands that unjustified demands can be harmful for the herd for in order to give something, you need to have it first. This kind of society consists, in large part, of people who are aware that it is necessary to give up on some of one's inherent egoism for the benefit of the herd, that is, for all citizens of the state. Hence, in such countries, there usually are two strong and to reckon with political parties: the rational left and rational right which tend to take power alternately (provided that the unrest occurring in their surroundings has hardly any impact on their work). Their rationalism brings their

actions closer to each other, to the centre. The minor differences between them are the result of the existence of the two categories of citizens, or actually of those citizens' income distribution. Those two societal strata include:

a) emplovyed workers, who for the most part do not possess any significant property, and

b) entrepreneurs (some of them are employers) along with the self-employed.

The shape of the income distribution of those groups, which has been assumed hypothetically by intuition, is demonstrated in Fig. 1

Both distributions are skewed to the right, whereby the income distribution of the stratum b), owing to a large number of the self-employed with low earnings, shifts the mode of distribution to its left edge. Assuming that the society made a good ideological choice when voting for a ruling party, the rational left will devote somewhat more attention to the poorer citizens coming from both of the societal strata, while the rational right will concentrate primarily on entrepreneurs from the middle class, without vexing too much the citizens located at the long tails of the income distributions. And we should remember that such governments ensure social peace and do not embark on revolutionary actions for we know particularly well that revolutions mainly destroy merely to either rebuild the new afterwards, with much hardship and for a long time, or to do it fast, but irresponsibly, which on the whole does not advance the society's well-being, at least not at the beginning.

Even when the state exists in the aforementioned conditions, albeit exceedingly optimistic from the point of view of the practice, forecasting socio-economic future is still at the risk of being flawed.
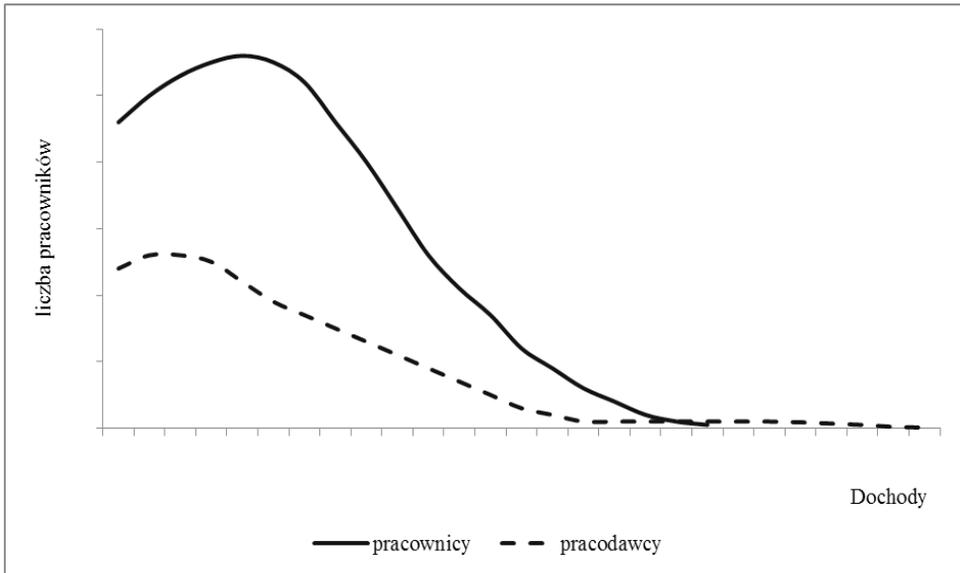
Liczba pracowników – number of employees
Pracownicy - employees
Pracodawcy – employers
Dochody - income

Fig 1. The author's hypothetical drawing of the income distribution of entrepreneurs and employed workers in the state.

Source: Author's own study

Main reasons for the risk involved in forecasting

The primary reason behind the in-accuracy of predictions is the imper-fection of our human knowledge with respect to the laws ruling our earthly realm, which determine our current existence, and of the laws shaping its behavior over time. Inadequate know-ledge of these laws is clearly demon-strated by the impact of natural disas-ters: earthquakes, volcanic eruptions, tsunamis, cyclones and other similar disasters impossible to foresee, al-though they hinder precise forecasts which are necessary for running a country.

Another important reason causing the imperfection of the socio-econom-ic forecasts for a given country is the globalization of international social and economic relationships. The im-pact of globalization, which is hard to predict, brings the risk of errors for the country's forecasts.

Even setting aside the unpredictable natural disasters and the globalization impact, we are still lacking a thorough knowledge of the laws ruling the econ-omy and social situation of the coun-try considered to be a separate unit.

We need to accept this for despite our evolving knowledge we will never be able to enjoy the "holy truth", not even until the end of the world, as the highlander theory of cognition developed by Father Tischner[1] asserts. However, we – the people - should not therefore be shrouded in pessimism.

Let us imagine that we knew everything. We would then create a world full of robots which would take all the useful work we would perform of arranging our well-being, thus turning homo sapiens into homo ludens, and depriving the human mind of its need of creating, along with the need of constantly seeking the truth. That would indeed be dreadful.

With imprecise knowledge – mainly with respect to the list of characteristics of the country's socio-economic situation– the door opens to subjective ideas of how to improve the forecast accuracy (Bartosiewicz 2011a, 2011b, 2012a). Those ideas stem from the world of scholars who, drawing on the knowledge already gained, are striving to make their knowledge more complete by discovering new and, in their view, important features (characteristics or, in other words, indicators or variables) measuring the state and history of the socio-economic well-being of the country's citizens, as well as the causal links occurring between the selected characteristics. At the same time, while entering new features into the list with the already applied characteristics (possibly removing, from time to time, some deemed no longer of key value), they create networks of causal links of those characteristics, building the so called macro models of the country's economy. A well-known designer of such macro models is the late professor Władsław Welfe, who perfected this idea together with his team several times (Welfe 1992, Welfe, ed. 2001, 2005, 2009; Welfe

2010 et al., 1996; Welfe, Świerczewska, ed., 2013). The University of Łódź has been continuing his work.

Of course, in order to build networks of causal links, it is necessary to know the history (of trends) of particular characteristics and their causal relationships. Again, we face the problem of how far to look into the past. It is likely to depend on the time frame of our forecast. The longer the time frame, the further back in time we need to go to capture the nature of the historic process of a particular characteristic. What lies before us now is to search for historical information on the value of the characteristic and, if it is measured in numbers[2] in the form of time series, we need to look for an appropriate function of the trend, the application of a certain method of estimating trend parameters and the way of formulating forecasts, for example, through a point-based or interval-based extrapolation. Other proposals also include forecasting through the construction of scenarios based on estimating the value of risk to be expected during the period we make forecast for[3]. Every step in the forecast formulation procedure is subject to some errors. The reasons for that are as follows:

- we do not know the credibility of the values we found for the characteristics[4],

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[1] Józef Tischner - an eminent Polish priest and philosopher.

[2] Some characteristics can be measured using ordinal or nominal scales, which causes additional problems referring to having to convert them into time series which tend to be of little credibility.

[3] Constructing scenarios requires from the person making the forecast to use special methods of estimating risk value.

[4] One should be aware of the fact that all figures are estimated in partial studies and if they are not conducted according to the principles of the representative method, they may be affected by systematic errors (see here – my paper, "Dane – dylemat ilościowców" (Bartosiewicz S. 2012b))
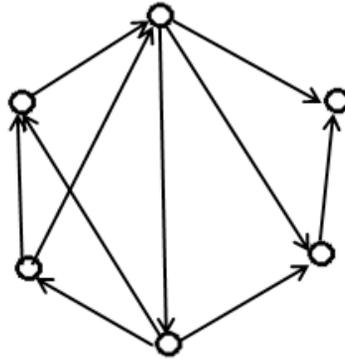
Fig.2 Example of macro-economic model graph

Source: Author's own study

- even if the adjustment of the function of the trend is of a good quality, we do not know whether the method of estimating the trend parameters is adequate,
- and finally, whether we have chosen an adequate forecast method.

The difficulties of the a), b) and c) types also occur in determining the causal links in macro models. A static (taking no account of the passage of time) diagram of the macro model is displayed in fig. 2 in the form of a graph in which the knots represent the selected characteristics, and directed edges – causal relationships. If the graph construction does not undergo changes over time, the evolution of the state's well-being can be depicted graphically in that the size of the knots in the graph which emerged on the basis of historical data is being increased proportionally to the increase of the values of the characteristics. In fig. 3, it was assumed that the "historical" graph stems from fig. 2, and the second graph is the forecast of well being in the next period.
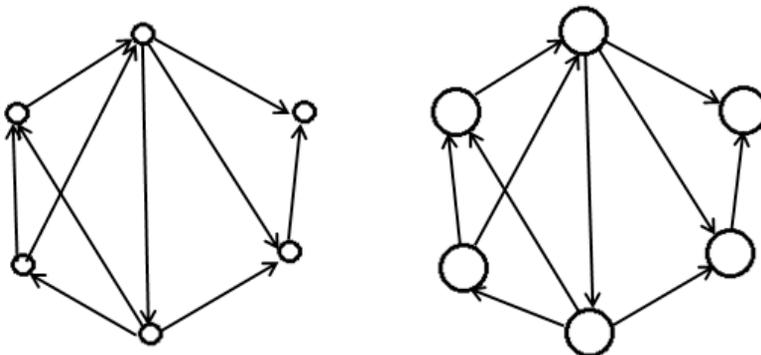

Fig 3. Example of a graph of the macro-economic model along with the well being forecast

Source: Author's own study

Every change in a), b) and c) points of the procedure results in starting the procedure all over again. A new "historical" graph must emerge providing a new basis for the forecast.

As the state government is divided into departments, with each department being an agenda for a specific fragment of the macro model, the departments, with the view to formulate the development forecast for the fragment they are responsible for, create or deploy scientifically devised procedures concerned with the method which will allow them to perform the task. However, they will, while going through the available research, come across numerous subjective ideas within this scope (see for example, Cieślak 2004, 2006; Pawełek ed. 2012 and Pociecha ed. 2014). Then, even if the procedure has been chosen with the support of an expert team, they will have no guarantee that the risk of forecast errors will be avoided. Also, one needs to bear in mind that, apart from the government's agendas, very diverse scientific, education, cultural associations deal with the fragments of macro models, including, in particular, scholars who create and publish their subjective ideas. Thus, a huge collection of methods emerges through which just to navigate is difficult enough. Moreover, a substantially correct choice which minimizes forecast errors tends to be extremely troublesome.

Summary

Predicting the unknown socio-economic future of a state along and of its citizens compels us to forgive those who run the country their subjective forecast errors, provided that one minimizes errors in the implementation of the following issues:

• searching for the list of important characteristics of the socio-economic well being of the state and its citizens;
• credible information on the values of the selected characteristics (data);
• adequate adequate methods outlining the history of how those characteristics were shaped in the past (trends);
• methods of shaping causal relationships between characteristics;
• effective methods of forecasting the socio-economic situation in the future.

In order for the tasks listed above to be completed, those who perform them must also use their ingenuity and – most likely – intuition, beside the knowledge they possess.

The entire message conveyed in the paper is an optimistic fairy tale that people so much need at the time of "the third world war in fragments"[5] which began immediately after the second one ended (Korea, Vietnam, wars in Africa during the decolonization process, continuous armed conflict between Israeli and Palestine, bloody disintegration of Yugoslavia, two Iraqi wars, Afghanistan, Arab Spring in North Africa and its tragic outcome and finally Syria and the so called Islamic State, as well as the terrorism oppressing humanity).

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[5] The author heard the quoted excerpt on the Tok fm radio, yet, unfortunately, she does not know who said it.

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Garść refleksji na temat przewidywania społeczno-gospodarczej przyszłości

Abstrakt

Refleksje w artykule wskazują niedoskonałości wiedzy ludzkiej w prognozowaniu sytuacji społeczno-gospodarczej nowoczesnego, demokratycznego państwa oraz ich skutki, powodujące, że opracowujący prognozę muszą kierować swoją uwagę na następujące problemy w poszukiwaniach:

a) spisu ważnych cech charakteryzujących stan dobrostanu państwa i jego obywateli;

b) wiarygodności informacji o wartościach wybranych cech (danych);

c) właściwych metod dla opisu historii kształtowania się cech w przeszłości (trendów);

d) metod kształtowania relacji przyczynowo-skutkowych między cechami;

e) skutecznych metod prognozowania sytuacji społeczno-gospodarczej w przyszłości.

Słowa kluczowe: społeczno-gospodarcza sytuacja państwa, stan wiedzy, ryzyko błędów, rola subiektywizmu, modelowanie, prognozowanie