CLASSIFIED FORECASTING EXCHANGE RATE

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Forecasting exchange rate is one of the main factors of strategy and tactics of financial institutions, especially under current economic and political globalization of the economy of different countries, which are closely related. There are numerous methods of forecasting exchange rates, which are built on the ideas of statistical extrapolation. But their main disadvantage is a sufficiently large predictive error, since these methods are not adaptive. Consider the problem of classification prediction of changes of exchange rate under progressive information and extreme intellectual technology (IEI-technology) base on the ideas and methods of machine learning and pattern recognition.

The formation of decision rules within the IEI-technology is made at the stage of learning decision support system (DSS). Formalized problem DSS study is to construct a faultless study matrix for decision rules by iterative optimization of structural parameters of the $< g_1,...,g_\xi,...,g_\Xi >$ information on the criteria of functional efficiency (CFE). The optimal value of the parameter function is defined as

$$g_\xi^* = \arg\max_{G_e} E_m,$$

where E_m - value CFE learning DSS recognition of class X_m^o; G_e - area criterion value E_m.

As input data exchange rates of some countries against the U.S. dollar are considered: a stable condition, depreciation and appreciation. The structure vector implementation of each class consisted of 47 recognition features which characterized the exchange rates of national banks in the U.S., Europe, Japan and Ukraine and the leading American, European and Ukrainian commercial bank rates against the dollar.

During training DSS restore optimal container in a radial basis feature space recognition was carried out through its serial purposeful transformation in hyper spherical dimensions, the radius d_m increased at every step training on recurrence procedure:

$d_m(k) = [d_m(k-1) + h \mid d_m(k) \in G_m^d]$, where $k -$ variable number of range increments container class X_m^o; $h -$ step increase in radius; G_m^d – region of admissible values of the radius.

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