

Data art design in finance

Introduction

Representative pictures are very important for analyses and reports. How to invent the most impressive graphs? There are many ways to achieve it. A lot of graphic forms are being used in the practice. Nevertheless some pictures could be sufficiently improved using "Data art design technology". What is the art design in finance?

Idea

Preparing diagram we must eliminate insufficient details and concentrate attention on the main idea. In what way it should be done? Let's imagine graph resembling well known shapes - so called nature forms. In this case it is possible to concentrate information, sufficiently decrease report volume and make analyses more obvious.

The essence of art technology is:

- *accenting the diagram on the nature forms;*
- *creating associations leading to emotional and psychological "shocking" situation;*
- *compressing and concentrating information;*
- *combining details and main tendencies;*
- *explication of hidden critical points of the finance processes;*
- *transparency as the mean of criteria evolution of finance data.*

Examples

Let's consider the stock market. The wave surface is a good image for stock market analyses. It is possible to squeeze information and get projecting price-series into 2D. In the pic.1 (see appendix) we can see stripes of the stock market and correlation between different stocks. The temperature scale has been chosen for the colour. The red colour is for growth of the stock's price and the blue one is for the lowering stock's price. This shape demonstrates compression of information. I'm sorry for titles. This picture was taken from my article published in Russian journal. Along X-axis names of stocks – Lukoil, Gasprom, etc. Along Y-axis – data from July till December during last year. Figures in the field are average changes in closing price during the week.

The second example (pic. 2) was taken from sensitivity analysis of the State Pension Fund (PAYG). The field of constant level lines allows to put results of many calculations into one chart. It will make analyses easier. Fixing contribution rate we'll get decreasing replacement ratio during the

years of forecast. On the other hand “freezing” replacement ratio leads to sufficient growth of contribution. The level of replacement ratio is inscribed on the lines.

In the pic. 3 we can see the tariff net for single contribution providing unit monthly pension for different periods of accumulation and payments. The square shows deviation from average parameters of accumulation and payment.

Pic. 4-5 – art pictures. There are demographic structures. The demographic forecast of Russia has been used for building these pictures.

Appendix

Еженедельное процентное изменение цены закрытия

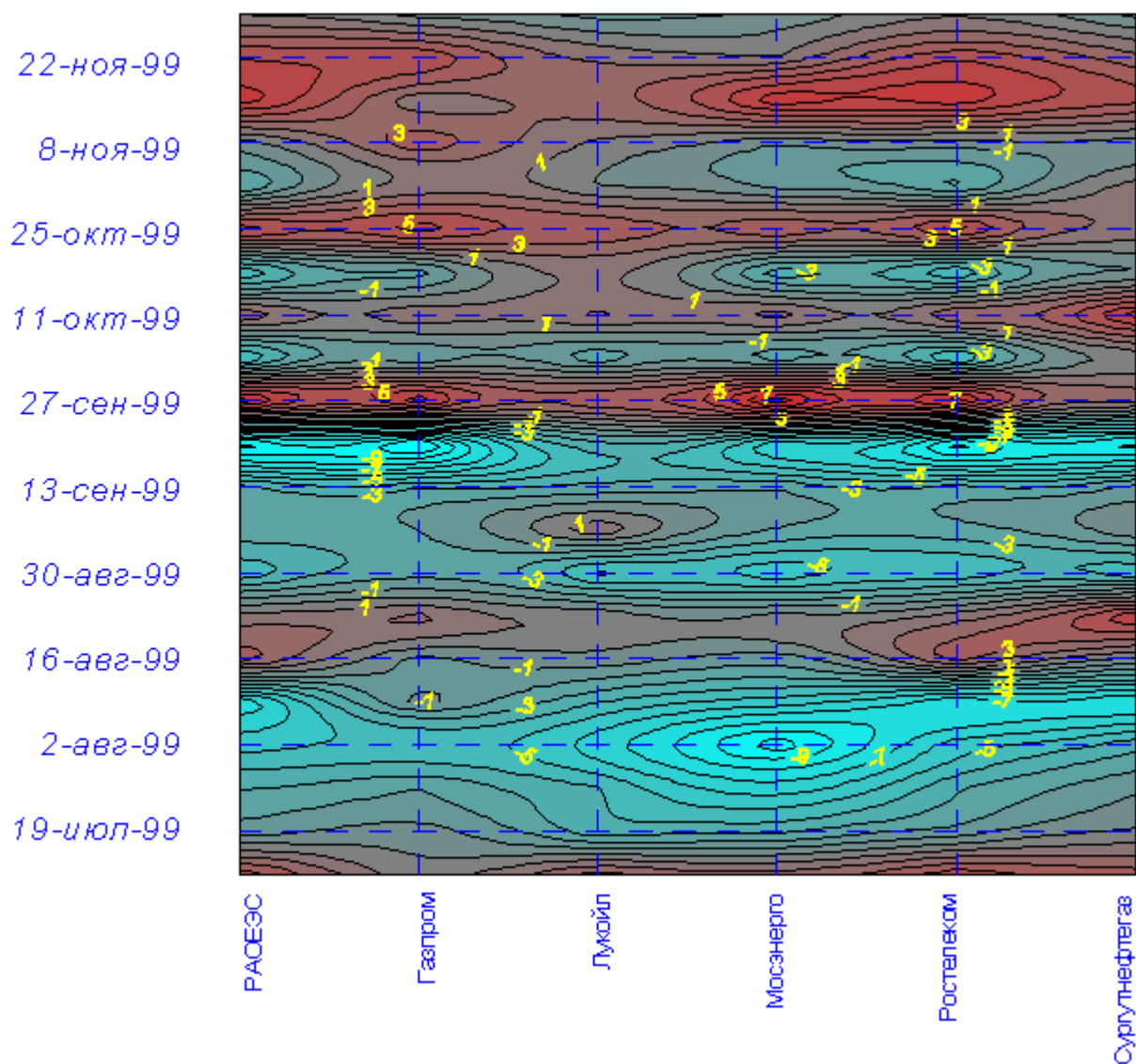
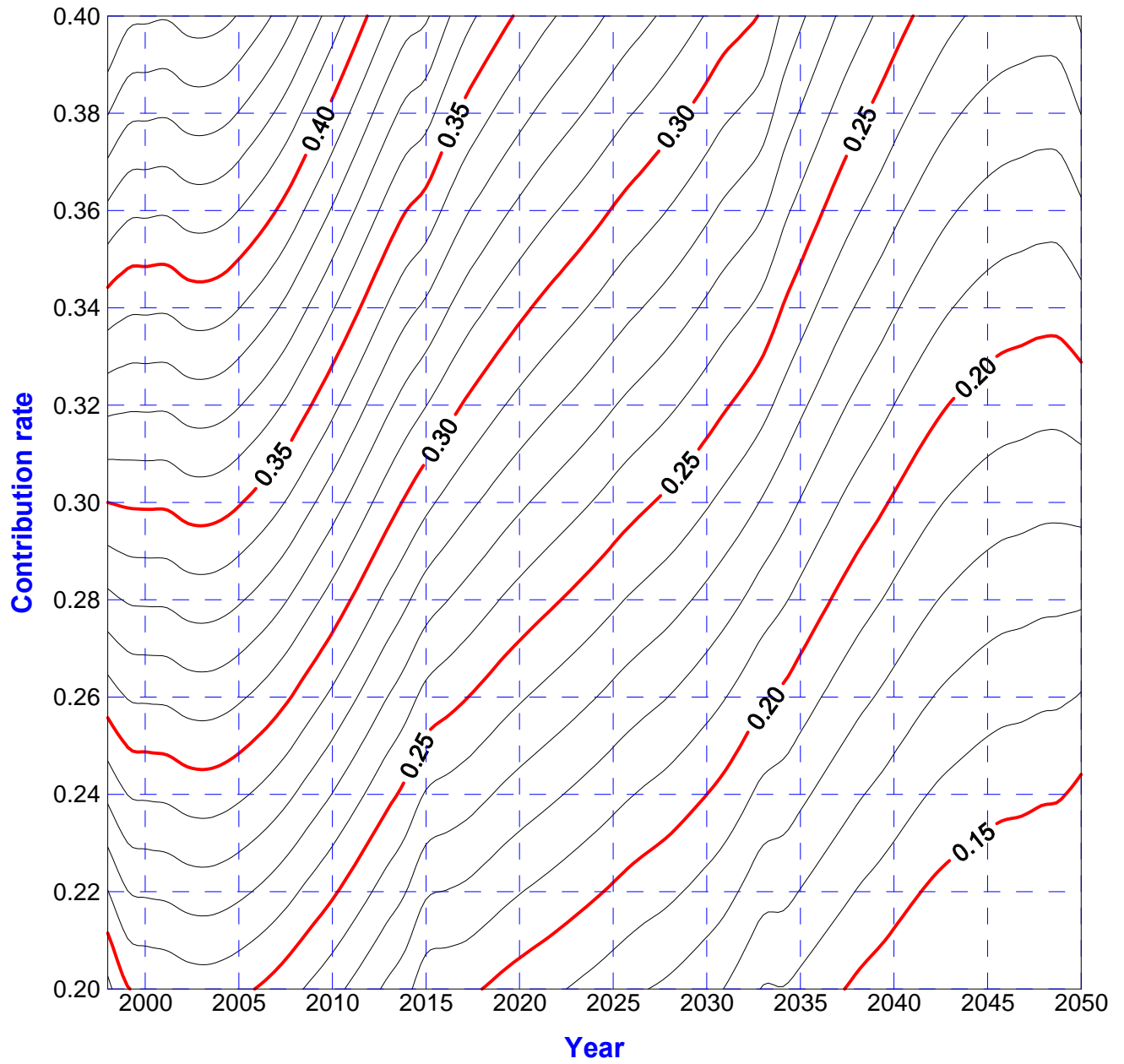


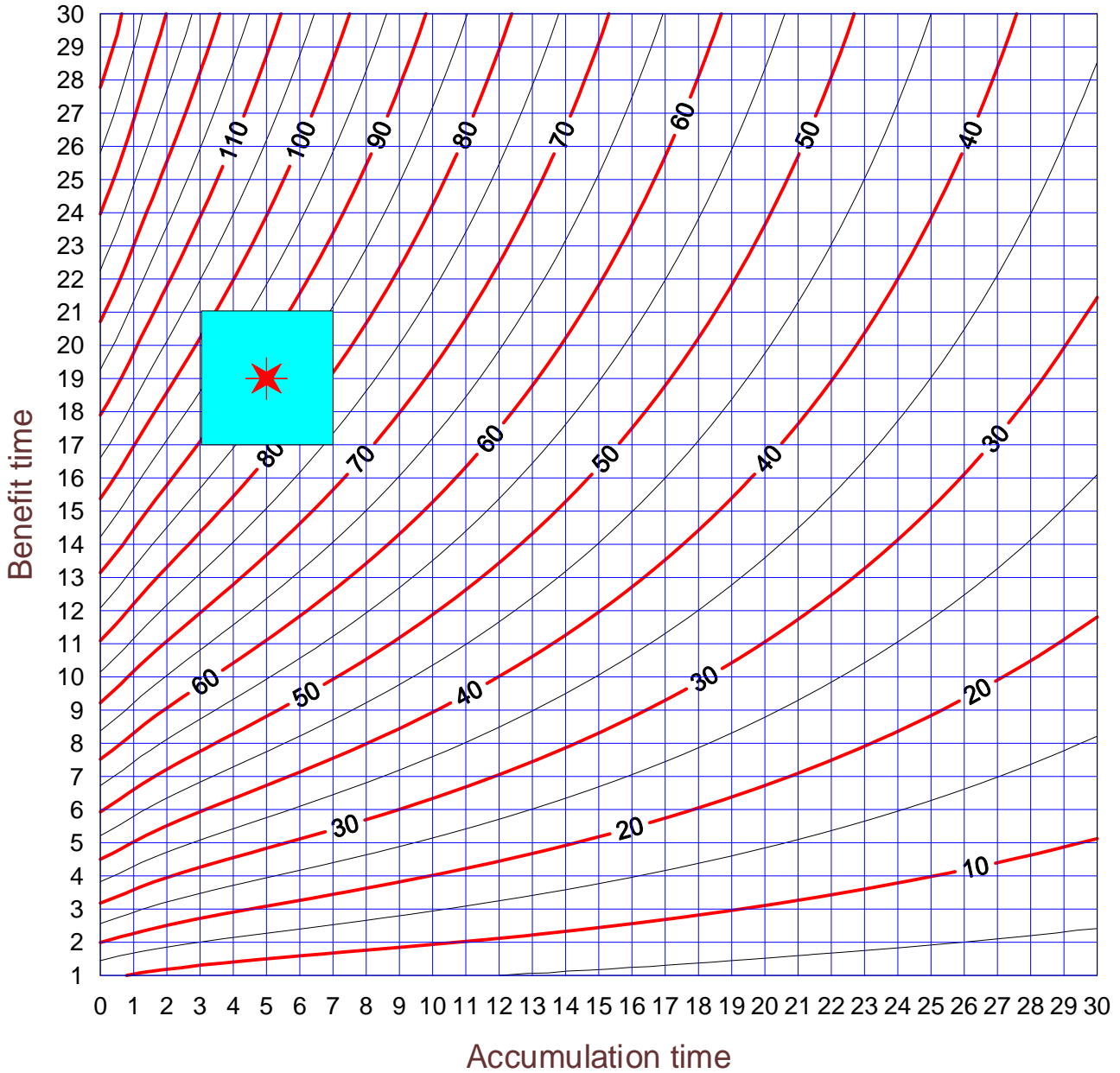
Рис.1

Sensitivity analysis
(Constant value lines for replacement ratio)



Pic.2

**Single contribution for unit pension
for different contribution and benefit time
(interest rate is decreased with time)**



Pic. 3

Прогноз численности мужского населения России (тыс. чел.)

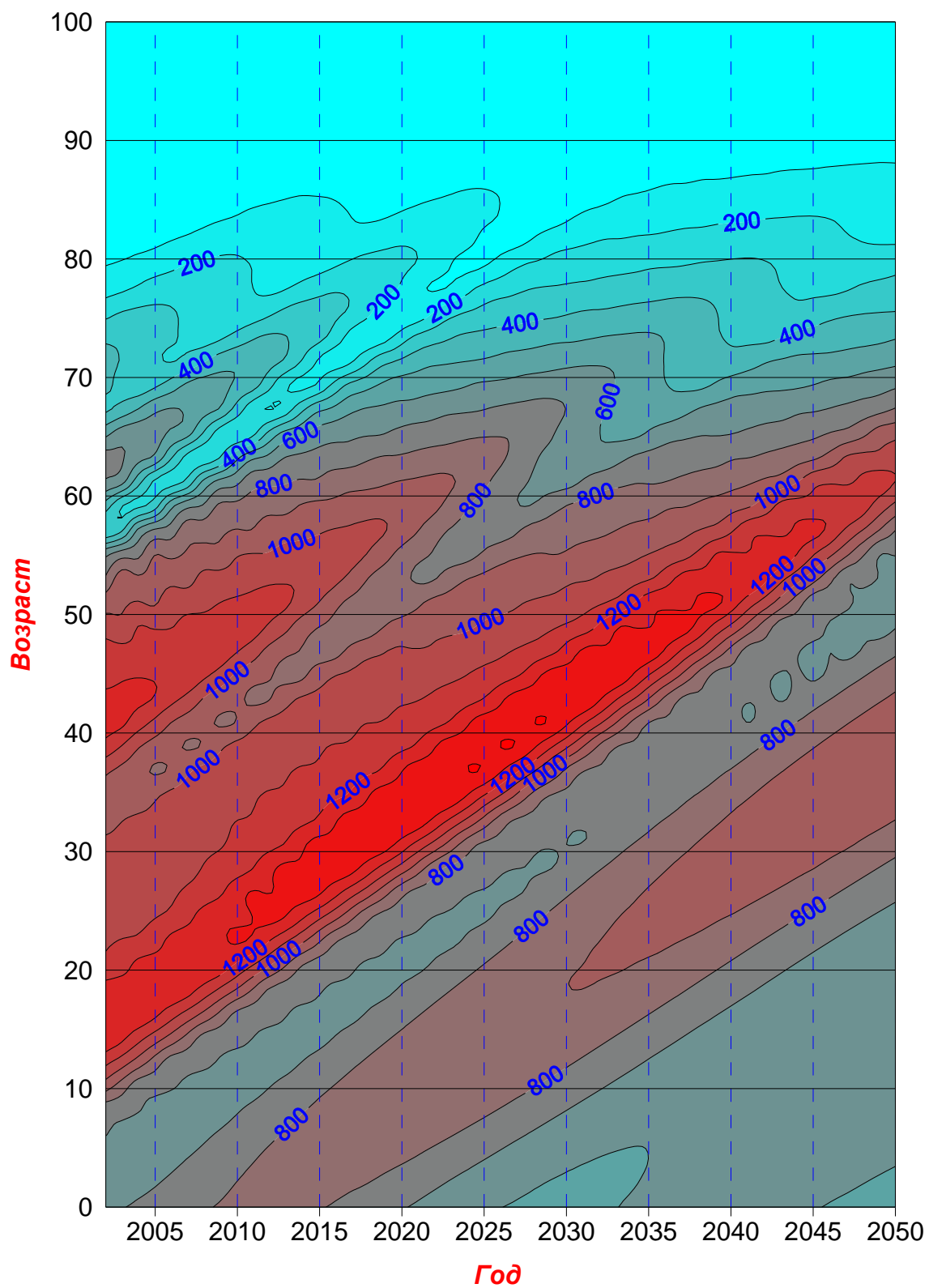


Рис. 4

Прогноз численности населения России в 2050 году (млн. чел.)

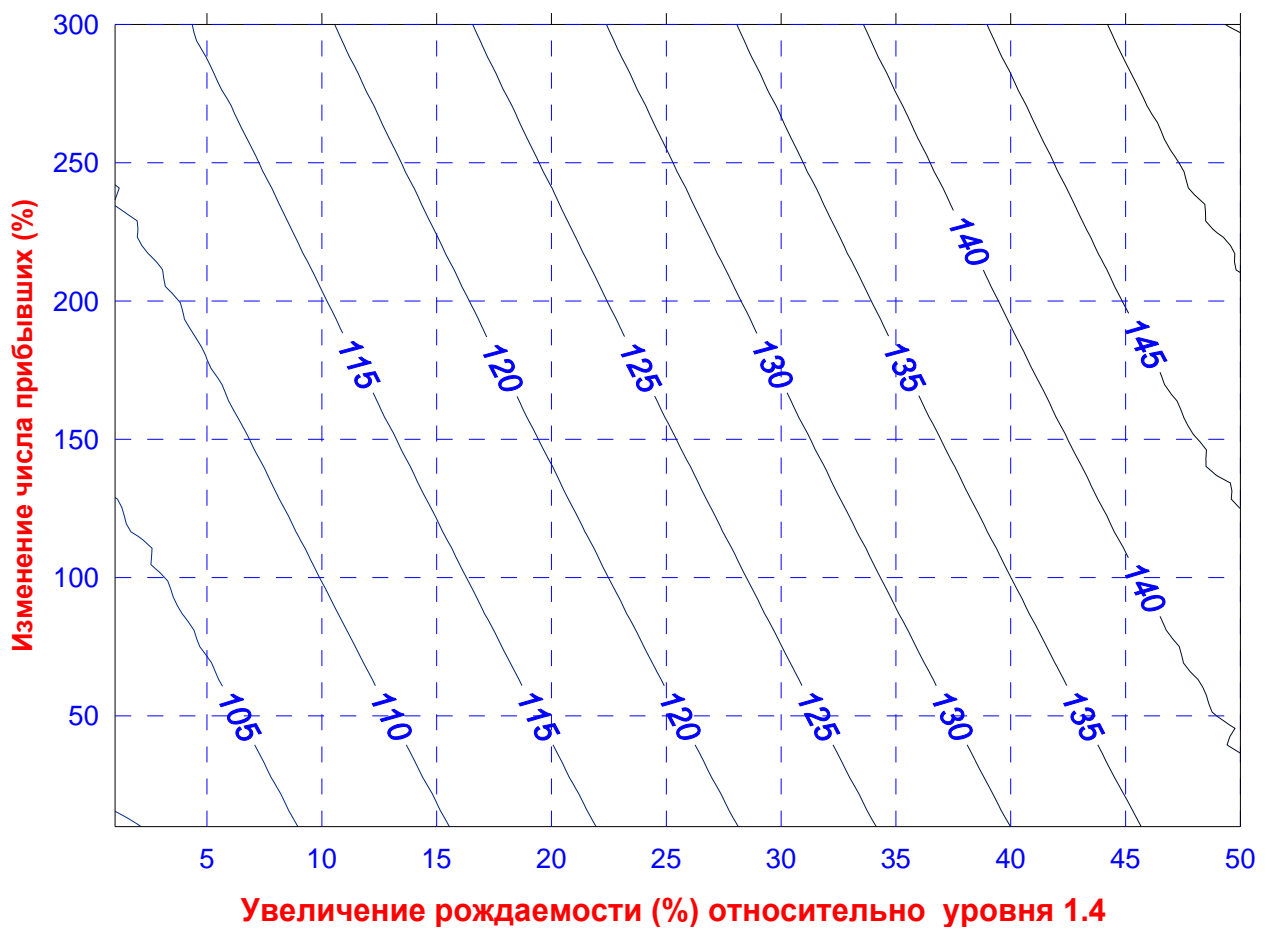


Рис. 5