系统科学与数学 2008 28 (11): 1383-1390 ISSN: 1000-0577 CN: 11-2019/O1

基于时间序列法的国税月度收入预测模型研究

张梦瑶 崔晋川

中国科学院数学与系统科学研究院应用数学研究所, 北京 100190

收稿日期 2008-4-17 修回日期 2008-9-29 网络版发布日期 2008-12-24 接受日期

摘要 研究了基于时间序列方法的国税月度收入预测. 通过采用Box-Jenkins的ARIMA模型,
结合国税月度收入数据,
分析并提出了一套针对月度税收收入的预测研究框架, 包括对税收预测模型的拟合、检验、预测、评价、
动态修正等主要环节的处理方法.
在该研究框架的指导下, 以增值税、海关代征税和营业税为例, 对2006年各月的税收收入进行了模拟预测,
月度税收收入预测的平均相对误差分别控制在5.47\%, 8.63\%和2.37\%.
最后给出了在实际应用中动态修正税收预测模型的建议,
并简要讨论了时间序列方法在税收预测中面临的问题.

关键词 统计预测, 时间序列方法, ARIMA模型, 税收预测, 月度预测.

分类号 91B84

Study on Monthly Central Tax Revenues Forecasting Models Based on Time Series Method

ZHANG Mengyao CUI Jinchuan

Institute of Applied Mathematics, Academy of Mathematics and System Sciences, Chinese Academy of Sciences, Beijing 100190

Abstract The monthly central tax revenues forecasting is considered based on time series method.
A monthly tax revenues forecasting method, including how to fit, test, forecast, evaluate and dynamically revise the model,
is proposed through the combination of ARIMA model proposed by Box-Jenkins and central tax data.
According to this method, monthly tax revenues of value-added tax, customs duty and business tax from January to December in 2006 are predicted.
Comparing with actual monthly revenues of these three taxes during 2006, the average relative errors are no more than 5.47\%, 8.63\% and 2.37\%, respectively.
Finally, suggestions of dynamically revising the forecasting model in practical application are presented.
Problems that occur during the use of time series method in tax revenues forecasting are also simply discussed.

Key words Statistical forecasting time series method ARIMA model tax revenues forecasting monthly forecasting.

DOI:

通讯作者