
摘要

近几年我国资本市场日益蓬勃，监管层和监管机构的监管举措也在不断加强，财务舞弊情况有所减少，显性的、易被发现的“人为操纵”会计信息现象减少了，但隐性的、不易察觉的“人为操纵”会计信息现象却增加了，因此有必要重新审视上市公司财务数据，通过评估财务数据质量，判断出财务是否存在舞弊情况。

本文首先在辽宁证监会网站、RESSET 数据库和同花顺股票软件上得到辽宁省上市公司的基本信息与财务数据，其中在辽宁省的 76 家上市公司中选取了 17 个财务指标，抓取到了 2014 年到 2019 年这 6 年共计 28492 个数据，之后对上市公司的基本情况进行了描述。

其次运用 SPSS 对财务数据进行了描述性分析，运用 R 语言画出直方图，SPSS 画出盒形图并把数据进行了标准化，以对财务数据进行探索性分析，分析出数据存在异常值与缺失值。接下来运用 R 软件对财务数据进行处理，剔除掉错误数据与缺失数据。

再其次针对 Benford 分布适用于无界数据集这一缺点提出修正的 Benford 分布，利用数据集最值将数据集划分为两个集合，与最值数据位数相同的划为一个集合，剩下的为另一集合，分别计算出两个集合首位数字的分布频率及其权重，通过加权求和得到修正后的 Benford 分布。

最后应用修正前后的分布，评估辽宁省上市公司财务数据质量。验证该修正方法的优良性：分别计算出样本数据集、Benford 分布、修正后这三者首位数字的分布频率，将计算结果进行对比，得出样本数据集首位数字的分布频率更符合修正后的 Benford 分布，由此表明修正后的评估方法更好。通过卡方拟合优度检验与皮尔逊相关系数检验最终找出三大财务报表里的利润表与资产负债表存在问题，随后运用修正的 Benford 分布分析这两个财务报表得出财务费用、利润总额、净利润、应收账款、未分配利润这 5 个财务指标存在数据造假问题。

关键词：修正 Benford 分布；上市公司；财务数据；数据质量

Abstract

In recent years, China's capital market has become more and more prosperous, and the regulatory actions of regulators and regulators have also been strengthened. The proportion of financial frauds has declined, and the obvious and easily discovered "man-made" accounting information phenomenon has decreased, but the hidden Sexual and unnoticeable "man-made" accounting information has increased, so it is necessary to reexamine the financial data of listed companies and identify financial fraud by evaluating the accuracy of financial data.

This article first obtained the basic information and financial data of Liaoning listed companies on the website of the Liaoning Securities Regulatory Commission, RESSET database and Flushing stock software. Among them, 17 financial indicators were selected from 76 listed companies in Liaoning Province. In the six years of 2019, a total of 28,492 data were collected, and then the basic situation of listed companies was described.

Secondly, SPSS was used to conduct a descriptive analysis of financial data, R language was used to draw a histogram, SPSS drew a box chart and the data was standardized, in order to conduct an exploratory analysis of financial data, and the data were analyzed for outliers and Missing value. Then use R software to process the financial data, remove erroneous data and missing data.

Secondly, a modified Benford distribution is proposed for the disadvantage that the Benford distribution is suitable for unbounded data sets. The data set is divided into two sets by using the maximum value of the data set, and the same number of digits as the maximum value is divided into a set. The remaining is In the other set, the distribution frequency and weight of the first digits of the two sets are calculated respectively, and the modified Benford distribution is obtained by weighted summation.

Finally, the distribution before and after the correction is applied to evaluate the financial data quality of listed companies in Liaoning Province. Verify the superiority of the correction method: calculate the distribution frequency of the first digits of the sample data set, Benford distribution, and the revised three respectively, and compare the calculation results to find that the distribution frequency of the first digits of the sample data set is more in line with the revised Benford distribution, which shows that the revised evaluation method is better. The

chi-square goodness-of-fit test and the Pearson correlation coefficient test finally found out that there were problems in the profit statement and balance sheet in the three major financial statements, and then used the modified Benford distribution to analyze the two financial statements to obtain financial expenses and profits. The five financial indicators of total amount, net profit, accounts receivable ,and undistributed profit have data fraud.

Key words: Modified Benford distribution; listed companies; financial data; data quality

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