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Forecasting on telecommunication revenue based on service tax
using the arima model / Therina Olivia Rajaturai.

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PERPUSTAKAAN SULTANAH NUR ZAHIRAH UMT

FORECASTING ON TELECOMMUNICATION
REVENUE BASED ON SERVICE TAX
USING THE ARIMA MODEL

By
THERINA OLIVIA RAJATURAI

A Final Year Project submitted in partial fulfillment of
the requirements for the award of the degree of
Bachelor of Science (Financial Mathematics)

DEPARTMENT OF MATHEMATICS
FACULTY OF SCIENCE AND TECHNOLOGY
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**JABATAN MATEMATIK
FAKULTI SAINS DAN TEKNOLOGI
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PENGAKUAN DAN PENGESAHAN LAPORAN MAT 4499B

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk **FORECASTING ON TELECOMMUNICATION REVENUE BASED ON SERVICE TAX USING THE ARIMA MODEL**. No. Matriks: **UK 13107** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Matematik sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda Sains Matematik Kewangan, Fakulti Sains dan Teknologi, UMT.

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DECLARATION

I hereby declare that this final year project entitled Forecasting on Telecommunication Revenue based on Service Tax Using ARIMA model is the result of my own research except cited in the reference.

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FORECASTING ON TELECOMMUNICATION REVENUE BASED ON SERVICE TAX USING THE ARIMA MODEL

ABSTRACT

The service tax used in Custom is to generate the future income for the country. This research is regarding the revenue telecommunication industry in the governments and the development sector. The paper practically focuses in two characteristics which are the fixed lines and the cellular phones revenue that are generated in the custom in order to get the future income based on the service tax. Basically, Custom generated the tax whereby the paper deals with service tax. The model ARIMA in Box Jenkins is used to forecast the value for the year 2009 by using the software provided in Custom. This model basically is used in checking data, estimated parameters and checking diagnostic made to obtain which model is suitable to be used in the prediction. From the analysis the suitable model for ARIMA model used is ARIMA (0,1,3). Therefore, the results obtain shows that the forecasted results had a slight increase in Custom in generating the service tax based on the telecommunication.

PERAMALAN HASIL TELEKOMUNIKASI BERDASARKAN CUKAI PERKHIDMATAN DENGAN MENGGUNAKAN MODEL ARIMA

ABSTRAK

Hasil cukai yang digunakan di Kastam adalah untuk menjana hasil pendapatan Negara. Kajian ini dilakukan terhadap hasil industri telekomunikasi di sektor awam dan juga kawasan pembangunan. Kertas kerja ini juga difokuskan kepada dua ciri iaitu talian tetap dan penggunaan telefon bimbit yang digunakan untuk menjana telekomunikasi di Kastam dimana untuk mendapatkan hasil pendapatan pada masa hadapan berdasarkan hasil cukai. Di kastam, pihak kerajaan selalu menggunakan cukai perkhidmatan untuk menjana hasil pendapatan negara. Model ARIMA di Box Jenkins telah digunakan untuk menjana hasil bagi tahun 2009 dengan menggunakan perisian yang digunakan di Kastam. Model ini digunakan untuk pengecaman data, pemeriksaan data dan pemeriksaan diagnostic digunakan untuk mendapatkan hasil yang sewajarnya. Selain itu, daripada analisis yang dilakukan model yang sesuai digunakan adalah ARIMA (0,1,3). Dengan itu, keputusan didapati bahawa terdapat peningkatan dalam hasil peramalan di Kastam dalam menjana cukai perkhidmatan berdasarkan kepada telekomunikasi.