

**INPUT-OUTPUT STUDY  
OF  
GIBRALTAR**

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## **1. 0 Introduction**

The Government of Gibraltar invited Professor Fletcher to undertake a series of studies based on an input-output analysis of the Gibraltar economy. Following a preliminary visit by Professor Fletcher and his colleague Professor Wanhill it was agreed with the government that, initially, an input-output model was to be constructed and that subsequent studies would be determined following the completion of that exercise. This report sets out the findings of the input-output model and presents some figures relating to the structure and size of the national economy.

The progress of the study was hindered by a number of unforeseen and exceptional circumstances. Initially, it was identified that there was an accuracy problem with the data relating to the imports of goods into Gibraltar. The recording of goods was found to be inconsistent and, in some instances, wildly inaccurate. In order to overcome this problem it was agreed that two years of the forms used by importers to request imports and those completed by customs officials should be re-entered into a computer programme to verify their accuracy. The most efficient method of undertaking such a colossal exercise was to send copies of the forms to a professional data inputting company in India. This is a practice used by many multi-national companies and large corporations such as airlines. An initial shortlist of six companies was identified by reference to their client base. This was subsequently reduced to a shortlist of three companies based upon the verification process used by the companies (double key entry being the preferred accuracy check). These three companies were then invited to submit estimates for undertaking this work and the most cost-effective company was selected.

The data then had to be photocopied (a major undertaking that took several months) and the photocopied forms were transported to the UK for subsequent transfer to the company in India. The data entry was being undertaken rapidly and good progress was being made (with interim data sets being sent to the researchers at weekly intervals) when India suffered a severe earthquake (measuring 7.9 on the Richter scale) on January 26<sup>th</sup> 2001, killing more than 20,000 people and devastating the region. All contact with the data inputting company (located close to the epicentre) was lost for several months and it was feared that contact would not be regained. However, in spite of severe infrastructural disruptions contact was re-established and the remaining work was completed albeit at a much slower pace.

The study was severely disrupted by this delay and this was further compounded by the fact that the tourist expenditure data being collected and input by the Government Statistics Office was not complete and did not include the additional data that were required for the purposes of the study (the tourist expenditure data). The omission of the tourist expenditure data was because the software in the Government Statistics Office was not sufficiently flexible to allow such an expansion of data variables. This meant that the tourist survey data had to be completely re-entered by the researchers in the UK. This added yet further delay to the study.

Finally, the lead researcher Professor Fletcher was involved in an accident in late May 2001 that resulted in him being out of commission and unable to carry out aspects of the research for the following six months whilst he was hospitalised and under medical/surgical treatment.

The delays have, therefore, been quite exceptional. However, the delays have allowed the researchers to spend far more time than would normally be available checking and re-checking data to ensure the integrity of the model. Given the lack of control data this was an unexpected bonus that was put to good use. The result of this study is a model that the researchers believe is a stable and robust planning and policy tool for the Government and should make an invaluable contribution for many years to come. In spite of the delays referred to above, the total time taken from commencement to completion of the model is not significantly longer than many input-output exercises, which traditionally take from 18 to 36 months to complete.

### **1.1 Data**

Input-output analyses require significant amounts of good quality data in order to construct the transactions table. These data are generally collected via both secondary and primary sources. The researchers inspected the secondary data that were available from the Government's Statistics Office and identified those areas where the study would be adequately supported and those areas where the data were found to be deficient. In the latter's case, where possible steps were taken to rectify matters.

#### *Secondary Data*

The normal secondary data required for input-output analysis include:

- Output by industrial sector
- Wages and salaries by sector \*
- Employment by sector \*
- Imports by type of product
- Exports by type of product \*
- Gross Domestic Fixed Capital Formation
- Government Revenue by source \*
- Government expenditure by category
- Tourist arrivals \*
- Tourist expenditure by category of expenditure

These data were not all available to the researchers and only those with an \* were available in a useable form. The remaining data had to be collected through either primary data means or through inputting collected data again.

#### *Primary Data*

The normal primary data collected to undertake an input out analysis are those data from a Business expenditure Survey. The researchers implemented such a survey with the collaboration of experienced input-output data collectors from the University of Cardiff. In addition to the Business Expenditure Survey the researchers requested the addition of expenditure

data to the tourist survey undertaken by the Government Statistics Office. They also requested and arranged for two years of import data forms from the Customs Department to be re-entered in an electronic format in order to clarify many of the issues relating to Gibraltar's imports. This exercise was only partially successful in that it was evident that there was still misinformation being recorded in the import figures. The researchers derived best estimate import figures by using a combination of the estimates produced by the statistics office combined with double checking the newly inputted data. The Business Expenditure Survey covered all sectors of the Gibraltar economy and was aggregated using the following industrial sectors:

1. Manufacturing
2. Electricity & Water
3. Construction
4. Wholesale
5. Retail
6. Hotels
7. Restaurants
8. Transport
9. Communications
10. Financial Services
11. Real Estate & Business Services
12. Government & Welfare Services
13. Other Services

Furthermore, the following primary input categories were aggregated to provide an analyses platform:

14. Wages, Salaries & Distributed Profits
15. Repatriated Income
16. Imports
17. Depreciation & Savings
18. Stock Changes

Such an aggregation allows the researchers to use secondary sources, such as the employment statistics, to gross up from the survey to arrive at the national economy figures. The use of employment figures for this grossing up exercise is common practice in that the employment data are generally the most reliable data available to an economy. This is particularly true when the economy is based on a direct taxation system.

In general the data availability was a significant problem for the study in the sense that there was a lack of "control totals" for the researchers to cross check the grossed up data from the sample survey. The model had to be constructed as a coefficient model based on the Business Expenditure Survey and this was then grossed up using employment data as the key control total. The resulting set of accounts was then cross checked using the partial import data that had been received from the data inputting agency together with other values that the researchers had acquired during the study.

It is normal practice to use additional control totals to produce independent grossed up totals but this was not possible in Gibraltar's case because of the lack of reliable data. Therefore, the input-output coefficients were used as the cross checking indicators whereby the variation in coefficients found within sectors were compared with production functions from other studies that have been conducted by the researchers and they were found to be acceptable. This is an approach that was used by the researchers to great effect when conducting a study for the UK government.

Fortunately, some of the sectors, most notably the financial intermediary, the business services and the manufacturing sectors, were extremely co-operative and provided the researchers with a great deal of accurate data. This allowed the researchers to complete the construction of the input-output model with a high degree of confidence in the resulting model's coefficients.

## **2.0 The National Economy of Gibraltar**

Economies are dynamic structures that change over time as a result of both internal and external factors. This researcher has been constructing economic models of the Gibraltar economy for successive governments since 1978. The national economy of Gibraltar has changed significantly since the previous two input-output models were completed. The changes have been far more dramatic than one would normally associate with the dynamics of economic systems. This is because the economy in 1978, when the first input-output model was constructed, was largely dependent upon UK MOD expenditure. Now, in 2002, it is a thriving and energetic economy based upon its financial services, shipping and tourism industries.

The researchers have constructed 3 models for the Government of Gibraltar since 1978 and each time the structure of the economy had been subjected to major changes. First there was the closure of the Royal Naval Dockyard and reduction in MOD activities, this was then followed by the re-opening of the frontier with Spain and more recently, the impressive growth of the financial sector have all had major impacts on the economy. Even large economies would feel the strain of changes of such magnitude and would suffer as a result. However, because of the size of the economy, every sector of the economy, and every income earner within the economy has been affected. The changes have been major in every sense of the word and it is a credit to the Government and people of Gibraltar that they have been able to adapt to such changes so quickly. Indeed the economy of Gibraltar has a resilience that is hard to parallel anywhere else in the world.

The models that have been constructed over the past 25 years have all been based on a method of analysis known as Input-Output Analysis. This methodology is widely accepted as an excellent means to studying the structure and impacts of any given economy. Indeed, most OECD countries have been using input-output analyses for the past 30 years and there are clear United Nations guidelines relating to the structure of such models. The researchers are acknowledged specialists in this field and have built input-output models for governments in the Caribbean, the South Pacific, the Indian Ocean, The Mediterranean and elsewhere in Europe.

## **2.1 Understanding the Model**

Input-Output Models start their life as a system of accounts that show the purchases and sales of each sector of the economy in question. Unlike sets of National Accounts that focus upon the demand of the economy, Input-Output Tables focus upon the supply-side by drawing up tables that show how each sector buys goods and services in order to produce its output. For instance, a shop in Main Street has its output defined as the provision of retail services to final demand consumers. The Input-Output Table looks at what inputs were required in order for the retailer to provide its services. For instance, there may be wages and salaries paid to employees or profits drawn down by the owner, there will be rent on the property, there will be the purchase of goods for resale, payments for electricity and water, payments to construction companies for the maintenance of the property, payments to the government in the form of taxes, accountants and lawyers for services etc.

As can be seen from the above example, each £ of sales from the retail shop can be broken down into its corresponding input until every penny of output is included. This gives the inputs and outputs for the sector – where the model derives its name.

The inputs of each sector are tabulated in this manner until the whole economy of Gibraltar is broken down into 13 sectors and the table shows how each of these sectors buys its inputs from each of the other sectors. If a sector's purchases are made directly from outside the economy then this sum is shown as an import. Once every sector is included, the final sales of all sectors are also added so that the table shows total inputs by summing each of the columns of the table and total outputs by summing the rows of each sector to show the total sales. Total sales must equal total inputs because the system is like a set of double entry accounts.

This table, which is known as a Transactions Table, is manipulated mathematically so that the repercussions of an increase in sales of one sector can be examined in terms of its effects on other sectors. For instance, if retail sales increase in Gibraltar, then the purchases that retailers make from wholesalers, importers, transport services, accountants, wages etc are also likely to increase. These increases are taken into the calculation. However, the wholesalers, importers and transport service sectors will find that their sales have also increased because of the increased demand for retail sales. The model goes on to include the effects of increased demand on all sectors of the economy that are affected directly or indirectly by changes in final demand.

By exploring the impact of changes in final demand on the income, employment and output of each of the sectors, a series of ratios can be calculated that show the relationship between the total effect and the initial change in demand that brought it about. These ratios are known as "multipliers" and have been a part of economic analysis since Keynes formulated the theory in the 1930s.

### **2.1.1 The 1978 Model**

The 1978 model was built around an economy that was largely driven by M.O.D. activity where there was a significant presence of M.O.D. Households spending money within the economy and a large proportion of the Gibraltar work force found employment as a result of the activities of HM Dockyard or other M.O.D. presence, such as the housing and building maintenance organisation (PSA) or the hospital. The economy was also operating under siege conditions with the frontier between Gibraltar and the neighbouring country of Spain being closed for the passage of either trade or people.

The model demonstrated the impacts of tourism, the dependence upon MOD and the effects of shipping on the well-being of the economy. At that time tourism, even though accounting for a much smaller proportion of the economy than it does now, was considered to be a major driver of the economy.

### **2.1.2 The 1988 Model**

The 1988 model was built for a quite different economy to that of 1978, in that the M.O.D had curtailed the majority of their activities, the Dockyard had been transformed to Gibraltar Ship Repair Yard and the M.O.D. Hospital had ceased to operate. The reduction of M.O.D. personnel also had a significant effect on the total demand levels within Gibraltar. The frontier between Gibraltar and Spain had been opened and this resulted in a dramatic shift in the volume and pattern of tourist/visitor expenditure. However, the economy had not fully adjusted to the open frontier economy and many of the businesses in Gibraltar were trading as they had done when the frontier was closed.

### **2.1.3 The 2000 Model**

In 2000 the Gibraltar economy has again seen significant structural change. The M.O.D. continued to reduce its presence but then had stabilised its presence by 2000. The Gibraltar Ship Repair Yard had transmogrified into a leaner venture and the development of the off-shore financial intermediation centre has drastically altered the import/export of services to the economy. This latter development has also had a significant impact in enhancing the business skill sets of the Gibraltar work force.

The changes that have taken place in the Gibraltar economy make it difficult, and to some extent, meaningless to try and draw comparisons between the 1978, 1988 and 2000 models. The interdependencies between sectors have changed in many ways over the 24 year period spanned by the models, furthermore, some sectors have diminished or disappeared from the economy whilst new ones have taken their place. The changes in these inter-sectoral linkages means that the multiplier values will also have changed. This means that the values are no longer strictly comparable. The removal or addition of sectors within an economy requires new model construction because of the changes that it brings to each sector's activities.

The economy of Gibraltar in 2002 is currently driven by 3 major but distinct activities:



1. Financial Services
2. Tourism (including cross-border day visits)
3. Shipping/manufacturing

Today, the offshore finance centre in Gibraltar is a major activity and a vital segment of the national economy. The off-shore financial activities including exempt companies (9,000) and qualifying companies (147) play a fundamental role in generating income and employment opportunities within the national economy. The former group of companies manifest their impact indirectly through the linkages with the communications sector and business services (for instance there are 84 licensed trust and company managers) but the latter have a physical presence in Gibraltar with just one of the 147 being responsible for more than 200 full-time-equivalent jobs (FTEs) and a further 49 of these companies are also major employers. The exempt and qualifying companies provide a catalyst for development by attracting highly skilled members of the workforce (professionals) that would not be present in the absence of such activities.

Therefore the presence of the offshore finance centre is felt much more widely than through its income generating activities alone. It enhances the skill sets and entrepreneurial expertise of the labour force and diversifies an economy that is forced to be narrow in scope as a result of its small size.

The tourism industry has changed beyond measure since the first of the 3 models were constructed in 1978. The cross-border visitors have displaced the traditional stay visitor in both volume and value. The former group come to Gibraltar for a wide variety of purposes but essentially the majority come to shop. This has made the economy far more robust and the tourist pound penetrates a wider range of recipients than in the period when it was dependent upon the stay visitor.

## **2.2 The Gibraltar Economy Today**

The latest estimate, produced by the Statistics Office, of Gibraltar's Gross Domestic Product in 1996/7 is £352 million. The major changes that had taken place throughout the 1990s caused the balance to shift in favour of a private sector dominated economy. This made the estimation of GDP etc increasingly more complex. This made it difficult, if not impossible, to measure economic activity with any reasonable degree of confidence and reliability. In the knowledge that a study such as this was necessary, the contribution of the rapidly expanding private sector economy was not estimated and thus GDP figures from 1997 onwards were not derived pending the undertaking of this major study. The GDP figures for the economy are now available with some degree of confidence and reliability.

The Gross Domestic Product for Gibraltar in 1999/2000, estimated from the input-output study, is £411 million, which includes the GDP attributable to the MOD. This level of GDP works out at around £33,796 per full time equivalent worker and £15,120 per capita. This latter figure compares favourably with

the corresponding figure for the UK of £14,962 per capita. The method of calculation for GDP is shown in Table 2.1

**Table 2.1 GDP in Gibraltar (£'s)**

	<b>£,s</b>
<b>Wages, Salaries &amp; Distributed Profits</b>	217,776,176
<b>Stock Changes</b>	3,453,599
<b>Depreciation &amp; Business Savings</b>	190,107,908
	411,337,683
<b>GDP/FTE</b>	33,796
<b>GDP per Capita</b>	15,120
<b>UK figure</b>	14,962

This GDP is made up from the income generated from each of the productive sectors. The GDP by sector shows the significance of each sector to the economy as a whole; however, this does not imply the importance of a sector to the economy because every sector fulfils a vital role in making the economy function.

GDP by sector is shown in table 2.2. It can be seen that financial intermediation plays a significant part in generating gross domestic product, followed by the distributive trades (wholesale and retail) and then by the Government.

**Table 2.2 GDP by Sector and as Percentage of Total**

<b>Sector</b>	<b>GDP as % With MOD</b>
<b>Manufacturing</b>	1.87
<b>Electricity &amp; Water</b>	1.86
<b>Construction</b>	8.81
<b>Wholesale</b>	10.11
<b>Retail</b>	10.15
<b>Hotels</b>	0.99
<b>Restaurants</b>	1.22
<b>Transport</b>	5.74
<b>Communications</b>	3.11
<b>Financial Intermediation</b>	21.02
<b>Real Estate &amp; Business Activities</b>	10.67
<b>Govt &amp; Welfare Services</b>	18.74
<b>Other services</b>	1.94
<b>Ministry of Defence</b>	3.77
<b>Total.</b>	<b>100.00</b>

Table 2.2 shows the distribution of activities within the Gibraltar economy. The sectors that seem, at first glance, to account for the largest proportion of GDP are the financial intermediation sector (21.02%) and the Government (18.74%). However, some activities, such as tourism, draw upon a wide

range of sectors (hotels, restaurants, retail, wholesale, transport & communication, as well as financial services).

The activities of the economy can be examined by the relative significance of each sector by the activities included in the model. The following series of tables show the top 6 sectors in terms of the “direct” output, income, employment, government revenue, GDP and imports attributable to them. These tables need a word of caution before they are read. First, the fact that a sector has more output associated with it than another sector in no way implies that the sector is more important to the Gibraltar economy. Indeed if any of the sectors of the Gibraltar economy were removed it would damage the inter-sectoral linkages and these relationships would all need to be recalculated. Also, and of equal importance, is the fact that the disaggregation of the model is a critical factor in determining the size of any sector. Perhaps the best example of this is the Financial Intermediation Sector. It can be seen from table 2.3 that Finance Intermediation is the one with the largest output associated with it. The true picture is even stronger than this because much of the output of the Real Estate and Business Services Sector is associated with the activities of the Financial Intermediation Sector. Similarly, there will be elements of the Communication Sector that are related to the off-shore financial services activities.

A similar problem can be identified in terms of the distribution sector. The distinction between wholesale and retail in an economy such as Gibraltar is to some extent arbitrary and if the two sectors are combined they represent a formidable component of the economy.

Table 2.3 lists the top 6 sectors according to the value of output attributed to them. The financial services sector is typified by high volume low profit activities and thus it is not surprising to find this sector at the top of the table. This table and the ones to follow only refer to the direct output, income etc of each sector and not the generated (direct plus indirect plus induced) effects.

**Table 2.3 The Top 6 Sectors: Direct Output**

<b>Sector</b>	<b>% of Total Direct Output</b>
<b>Financial Intermediation</b>	16.67
<b>Construction</b>	14.36
<b>Retail</b>	12.87
<b>Wholesale</b>	12.29
<b>Government</b>	9.59
<b>M.O.D.</b>	2.68

The construction industry is also a large component of the Gibraltar economy and is second in the table followed closely by the two tiers of the distributive trade industry. The Government and M.O.D. occupy 5<sup>th</sup> and 6<sup>th</sup> ranking respectively.

The Government is the top contributor to direct wages, salaries and profits in the economy, this is because of the high labour content associated with government services. Table 2.4 shows the ranking of sectors by the direct level of income associated with each sector (including income paid to those that may repatriate it outside Gibraltar). However, this ranking would not remain if business savings were included where financial services, retail, wholesale and transport all have significant elements.

**Table 2.4 The Top 6 Sectors: Direct Income**

<b>Sector</b>	<b>% of Total Direct Income</b>
<b>Government</b>	25.69
<b>Construction</b>	15.85
<b>Real Estate &amp; Business Services</b>	9.87
<b>Financial Intermediation</b>	9.69
<b>Retail</b>	8.72
<b>M.O.D.</b>	7.12

Table 2.5 shows that the Government is again top of the table when it comes to supporting employment opportunities in the economy being responsible for almost twice as many full-time-equivalent employees than its closest rival, the retail sector. If the wholesale sector was included as an aggregated distributive trade sector then this would account for 2,239 jobs. The spread of employment sectors between the other sectors is fairly even.

**Table 2.5 The Top 6 Sectors: Direct Employment**

<b>Sector</b>	<b>% of Total Employment</b>
<b>Government</b>	28.81
<b>Retail</b>	12.50
<b>Construction</b>	10.92
<b>Real Estate &amp; Business Services</b>	8.70
<b>M.O.D</b>	8.48
<b>Financial Intermediation</b>	7.68

Table 2.6 shows the ranking by the sector's contribution to government revenue. Again there are words of caution here because the ultimate burden of taxes will fall on the final user and not the sectors. However, the figures shown in table 2.6 represent the payment of taxes, licences, fees and other monies to the government by sectors. The fact that the two distributive trade sectors are holding the first and second ranking in the table is no surprise as they represent the focal point for items such as import duty etc. In fact these two sectors combined account for nearly a quarter of all government revenue.

**Table 2.6 The Top 6 Sectors: Direct Government Revenue**

<b>Sector</b>	<b>% of Government Revenue</b>
<b>Wholesale</b>	15.34
<b>Retail</b>	8.03
<b>Construction</b>	7.52
<b>Communication</b>	2.64
<b>Financial Intermediation</b>	2.40
<b>Transport</b>	1.95

There are two ways of calculating Gross Domestic Product, the expenditure method and the income method. Both approaches, if conducted properly, will yield the same results. This report has used the income method. That is, it is the sum of wages, salaries and profits, together with depreciation and business savings and then the end result is adjusted for any stock changes.

The financial intermediation sector is clearly a dominant sector in terms of GDP in spite of the fact that it ranked only 5<sup>th</sup> and 6<sup>th</sup> in the income and employment tables respectively. The government is carried into 2<sup>nd</sup> ranking because of its high wages and salaries components and the remaining top 6 sectors are all very similar in terms of their contribution to GDP.

The results of the 1987 input-output study produced a GDP figure that was within £2 million of that figure calculated by the Statistics Office using the income method of estimation. Again, in the 1999/2000 model the figures for GDP from these two sources are within £2 million of each other. Given the fact that these calculations are derived from different samples of the economy and calculated using different methodologies a high degree of confidence can be achieved from the level of commonality found.

**Table 2.7 The Top 6 Sectors: Gross Domestic Product**

<b>Sector</b>	<b>% of Total GDP</b>
<b>Financial Intermediation</b>	21.02
<b>Government</b>	18.74
<b>Real Estate &amp; Business Services</b>	10.67
<b>Retail</b>	10.15
<b>Wholesale</b>	10.11
<b>Construction</b>	8.81

Finally, table 2.8 shows the ranking of sectors according to their propensity to import. Further words of caution are necessary here because these imports are aggregated according to the sector that directly imported them and not by the sector that used them. Also, it should be noted, that repatriated profits and income are also recognised as imports and will influence the values recorded. Thus, the wholesale sector is ranked 2<sup>nd</sup> because it is the main portal for imports for the economy. The integration of the international

financial world explains why the finance sector is in the top 3 of this table and the highest propensity to import falls on the construction industry because of its need to import all of its materials.

**Table 2.8 The Top 6 Sectors: Direct Imports**

<b>Sector</b>	<b>% of Total Imports</b>
<b>Construction</b>	23.31
<b>Wholesale</b>	18.84
<b>Financial Intermediation</b>	16.46
<b>Retail</b>	14.34
<b>Transport</b>	7.94
<b>M.O.D.</b>	1.91

### **2.2.1 Gibraltar M.O.D.**

The Ministry of Defence have played a diminishing role within the economy since the days when HM Dockyard was operating at full capacity and there was a significant presence of Army and RAF personnel, supported by the PSA and Hospital services. The contribution of the M.O.D. to the economy of Gibraltar is determined by the expenditure that takes place within this economy. The model does not include expenditure that forms part of the M.O.D. budget for Gibraltar but does not enter the economy. When a single productive sector is dominated by a single entity it is subject to year on year fluctuations that can, on occasions, be quite significant. The value recorded during the survey was lower than anticipated but there are indications that this has since increased and the M.O.D's contribution is probably back to between 6.5 - 9.0%.

The M.O.D. is a sector that is exogenous to the economy of Gibraltar in the sense that Gibraltar has no influence over the volume of spending, cannot make itself more attractive to generate increased activity and is merely the recipient of the expenditure decisions made outside the economy. Therefore its activities are recorded in the same way as, say, repatriated income from abroad or subsidies.

### **2.2.2 Financial Services**

The financial services sector of the Gibraltar economy includes both off shore and on shore. Clearly, the off shore activities have blossomed over time and now represent a significant element of the economy. To add to this, there is a wide range of business and professional service activities that have grown up in support of the financial services sector. These latter businesses are to be found in the Real Estate and Business Services sector of the input-output model. Taken together, these activities have added significantly to the robustness of the Gibraltar economy, providing not only a degree of diversity but also enhancing the skill sets of its work force.

Taking the total output of the Financial Services Sector (£222 million) and deducting from that output the intermediate and final demand from within the Gibraltar (on shore), provides an export value for this sector of the economy

of just over £193 million. This figure is used in the following analysis to determine the impact that this sector has on the national economy (see section 3.1).

It should be noted that the entries for financial services in input-output tables are very different to those used in the income measure of GDP. Therefore, to reconcile the input-output table with the income measures of GDP adjustments have to be made. These relate to the treatment of interest received and interest paid out (net receipts of interest by financial institutions). The result of this is that the GDP contribution of the financial services sector is lower than the sum of its input-output income and undistributed profit values. This is standard practice and is used in the UK.

### **2.2.3 Tourism**

Tourism in Gibraltar occurs whenever visitors (persons not normally resident within Gibraltar) arrive by sea, by air or across the land frontier. It is normal for such visitors to purchase hotel accommodation, restaurant services, local transport services, shopping and entertainment. Gibraltar has become something of shopping destination because it appears that the vast majority of visitors (arriving at the land frontier) do so to make purchases from the retail outlets (including petrol stations). In the year 2001 the total tourist expenditure was £145 million of which more than £85 million was on various forms of shopping.

The average party size of people visiting Gibraltar is just over 1.2 and they tend to stay, on average, for 1.3 days. This latter figure shows the dominance of day visitors to the country overall. The day visitor content is also reflected in the fact that the two largest spending categories are shopping and duty free.

Staying visitors (the more traditional form of tourist activity) were responsible for just over £19 million expenditure. Day visitors from across the land frontier were responsible for more than £120 million and the remaining expenditure was split between cruise ship visitors (£4.219 million), Yacht visitors (£353,000) and other visitors (£1.564 million). Other visitors were those that were entered as not known on the questionnaires.

Tourist expenditure by port of entry provides a similar picture with the tourist expenditure by each entry point being:

Air	£10.582	million
Sea	£ 7.113	million
Land	£127.616	million

The total tourist expenditure of £145 million creates a direct income effect of £41.6 million and this increases to approximately £68.5 million when the indirect effects are taken into account and £91.5 million when the induced effects are included. In terms of employment, the direct effect is 1,853 FTEs and the direct plus indirect level is 2,760. When the induced economic activity is also brought into the calculation the total employment opportunities

supported by tourist spending is 3,498. These jobs are distributed across all of the sectors of the Gibraltar economy as the effects of tourist expenditure impact on virtually every area of productivity (directly and indirectly).

The 92,553 visitors to Gibraltar, arriving by air, spent almost £10.6 million. Almost half of this was spent on Hotel Services and the Restaurants & Bars of Gibraltar with a further third being spent on shopping. The direct income effect of this spending was £4.5 million, rising to £6.8 million when the indirect effects are included and then onto £9.2 million when the induced effects are included. The direct employment effect associated with this spending was just 268 FTEs. At the direct plus indirect level of impact this figure rises to 349 and then to 425 FTEs when the induced effects are also included.

Government revenue derived from this tourist spending was £0.539 million at the direct level, £1.120 million at the direct plus indirect level and £3.088 million at the induced level. The large increase in Government revenue experienced at the induced effect reflects the way in which tax revenue was entered into the input-output transactions table and Gibraltar's dependency upon direct taxation. The direct level of imports required to meet the tourists' expenditure demands was £1.884 million, at the direct plus indirect level this was £3.744 million and at the induced level the figure was £5.892 million.

Those visitors arriving in Gibraltar by Sea totalled 145,987 and they were responsible for spending just over £7 million and 83% of this was on retail shopping. The direct level of income generated from this tourist spending amounted to £1.831 million, at the direct plus indirect level this increased to £3.082 million and then to £4.108 million when the induced effects are included. Visitors arriving by Sea directly support 70 FTEs job opportunities and this resulted in a direct plus indirect employment effect of 112 FTEs and 145 FTEs when the induced effect was included.

Government revenue derived from visitors arriving by sea was £0.471 million at the direct level and this increased to £0.845 million when the indirect effect was taken into account. The induced effect brought the total Government revenue derived from tourist spending by visitors arriving by sea to £1.702 million.

The largest single component of tourist expenditure was attributable to those visitors arriving by land, where 7.1 million visitors spent £127.6 million. A major proportion of their total expenditure was on retail shopping. This is clearly a major export for Gibraltar and the direct level of income generated by day visitor spending amounts to £35.338 million, which increases to £58.587 million when the indirect effect is taken into consideration. The induced effect takes the total impact on income levels up to £78.178 million. This level of economic activity directly supports 1,515 FTE job opportunities and the economic activity stimulated by it supports a further 2,299 FTE job opportunities making 2,928 FTEs in total.

The Government revenue derived from day visitor spending amounted to £8.239 million at the direct level, £15.035 million at the direct plus indirect



level, and £31.417 million at the direct plus indirect plus induced level. The amount of imports required to meet the demands of this activity are £49.486 million directly, this goes up to £68.342 million when the indirect effect is included and up to £86.227 million when the induced effect is included.

#### **2.2.4 Other Exports**

Other exports in 1999 from Gibraltar were valued at £248.5 million with £74.3 million of this total being non-petroleum goods. The non-petroleum level of exports has changed little over those recorded in 1998 when the figures were total exports £184.4 million of which £75 million were non-petroleum.

The £74.3 million non-petroleum exports had a direct income effect within the economy of £17.282 million and this rises to £27.770 million with the indirect effect included and £36.974 million with the induced effects. Employment supported from this activity was 325 at the direct level, increasing to 762 with the indirect and to 1,057 including the induced effect. Government revenue at the direct level amounted to £10.273 million, this figure increases to £12.661 million when the indirect effect is added and up to £20.358 million when the induced effect is included. The import content is naturally quite high and the direct import requirements were £43.293 million (almost 60% of the total output) and this import requirement rises further when the indirect requirements are included £44.991 million and on to £53.394 million when the induced effects are included.

### **3.0 The Model's Results**

The results of the 2000 input-output model show how much income and employment are generated by any given change in the level of final demand for the economy's output. They not only show the direct effect of each sector, but also the value of changes brought about through the interaction between the various sectors. To refer back to the earlier example, the direct effect on total output of a change in the sales of retail shops in Main Street will be equivalent to the value of those sales. However, as demonstrated earlier, the indirect effect will also include the increase in output of the suppliers to the retail shops and to their suppliers and so on. In other words, it will include the direct effect plus all of the secondary effects created by that initial change in demand. Finally, as the economic activity of each sector is increased to meet the change in demand, so too will the income generated by each business in each sector. When this generated income is re-spent within the Gibraltar economy, it sets into motion a further round of spending and this has a series of secondary effects associated with it. This latter effect is known as the induced effect.

#### **3.1 The Value of the Financial Services Sector to the Economy**

The financial services sector is a significant component of the Gibraltar economy. It has grown steadily over recent years and in 1998 had a total offshore output (sales) of £193 million. This level of sales generated direct income (in the form of wages, salaries, profits, rent and interest) of £94,104,232; the direct employment was 813 full-time equivalent job opportunities (FTEs) and the Government received direct revenue of £3,082,301 in licenses and fees, and the level of imports required to support

this level of activity was £72,647,218. This is clearly a significant industry for the economy. When the “knock-on” effects (indirect effects) are taken into consideration these figures increase to a direct plus indirect income effect of £112,398,466, employment generation results in a total of 1,295 FTEs; Government Revenue rises to £5,002,243 and the import content rises to £81,081,602.

Furthermore, when the income that has been accrued at the direct and indirect level (induced effect) is taken into account the total effects (direct plus indirect plus induced) is an income level of £129,568,812; employment supported by this level of activity is 1,847 FTEs; Government Revenue increases to £19,359,962 and; the import content rises to £96,756,533.

Therefore, the number of jobs supported by the financial services offshore activities is more than twice as many as those directly employed by this sector.

### **3.2 The Value of Tourism to the Economy**

Tourism has always been an important source of exports for Gibraltar but, since the land frontier with Spain has been opened the economy's tourism industry has flourished. Visitors not only come to stay in Gibraltar but they also come as excursionists to explore the sights and heritage and also to shop. Every time a visitor spends money in the shops, garages, cafes and bars this is recorded as an export.

Tourism in Gibraltar has changed beyond recognition compared with its magnitude and pattern examined in the previous studies. The opening of the frontier with Spain has considerably altered both the volume and pattern of tourist spending.

The number of visitors to Gibraltar, arriving by air, in 1970 was 47,726 (21% of total arrivals). This figure was relatively stable through to the mid-1980s where after it grew rapidly to a peak of 162,438 in 1989 and then fell, just as rapidly down to a low of 66,219 in 1996 after which it has been growing steadily to the current level of visitors (92,535) in 2001 (just 1.27 % of total arrivals). In contrast, the number of visitors arriving by sea was relatively stable through the period 1970 (92,943 – 78.7% of total arrivals) to the mid 1990s, but has shown a relatively steady increase from 1997 to the 2001 figure of 145,987 (2.0% of total arrivals). The major impact has been the change in the volume of visitors arriving by land. In 1970 this was, of course, zero as the frontier was closed between Gibraltar and Spain. In 1982 with limited access across the border the figure was 46,595 and this figure grew rapidly with the relaxation of border restrictions, to a stable base of 2,260,039 in 1985. Cross-frontier traffic has grown steadily since that time and the 2001 figure was 7,286,648 or 96.7% of total arrivals.

Clearly such a major change in shift away from the proportion of staying visitors arriving by air and sea in favour of day visitors crossing the frontier has changed the pattern of spend associated with visitors to Gibraltar. The volume and value of day visitors across the land frontier dominates the

tourism statistics. This can be seen from the various tables shown below where items such as purchases of food and beverage, petrol, other shopping and duty free are significant elements of total expenditure. On the other hand, accommodation costs have become a minor part of the total tourist expenditure pattern.

The breakdown of tourist expenditure by type is shown below: It can be seen that shopping in total accounts for more than 79% of the total expenditure if the duty free and fuel sales are included under this heading and this further increases to more than 80.0% if the food and beverages bought in shops is included.

**Table 3.1 Total Tourist Expenditure by Category of Spend, 2001**

	<b>% of Total</b>
Accommodation, Food & Beverage	10.7
Shopping	79
Transport etc	4.8
Other	5.5
<b>TOTAL</b>	<b>100.0</b>

Table 3.1 shows how the £145 million total tourist expenditure in 2001 was distributed across the various categories. The importance of shopping and shopping-related activities is clear from this breakdown and once the different types of tourists are examined it can be seen that this influence is from the large number of land based day visitors.

#### *Staying Visitors*

Staying visitors in general spend around half of their total expenditure on accommodation and meals. Gibraltar is not an exception to this rule and some 50.8% of total spending was attributable to these two categories.

**Table 3.2 Staying Visitors, 2001**

	<b>% of Total</b>
Accommodation, Food & Beverage	50.8
Shopping	26.0
Transport etc	5.6
Other	17.6
<b>TOTAL</b>	<b>100.0</b>

#### *Day Visitors*

The dominance of the day visitor to Gibraltar means that the total expenditure pattern of all tourists to Gibraltar reflects the day visitor pattern. It is a quite distinct pattern with shopping accounting for more than 87% of total spend. Given the volume of day trip visitors to Gibraltar this represents a significant amount of trade.

**Table 3.3 Tourist Expenditure, Day Visitors to Gibraltar, 2001**

	<b>% of Total</b>
Accommodation, Food & Beverage	4.5
Shopping	87.5
Transport etc	4.4
Other	3.6
<b>TOTAL</b>	<b>100.0</b>

*Visitors Arriving by Air*

Table 3.4 shows the tourist expenditure patterns for trips to Gibraltar by those people arriving by air transport. Visitors arriving by air exhibit a traditional expenditure pattern with accommodation, food & beverage accounting for a significant proportion of total spend (49.7%). Expenditure on shopping accounts for just over 23% of the total spend. The category defined as "other" represents a major element of the total spend (23.9%) and this should be explored to determine whether other categories should be included in the breakdown.

**Table 3.4 Tourist Expenditure, Air Arrivals to Gibraltar, 2001**

	<b>% of Total</b>
Accommodation, Food & Beverage	49.7
Shopping	23.1
Transport, etc	3.3
Other	23.9
<b>TOTAL</b>	<b>100.0</b>

*Visitors Arriving by Sea*

Visitors arriving by Sea again show a traditional cruise ship pattern of expenditure with little being spent on accommodation whereas shopping and transport are the main purchases.

**Table 3.5 Tourist Expenditure, Sea Arrivals to Gibraltar, 2001**

	<b>Per Person % of Total</b>
Accommodation, Food & Beverage	2.0
Shopping	89.6
Transport, etc	6.3
Other	2.1
<b>TOTAL</b>	<b>100.0</b>

*Visitors Arriving by Land*

Table 3.6 shows the expenditure pattern of those arriving in Gibraltar by crossing the land frontier. Comparison of this table with Table 3.3 for day visitors shows the influence of this latter category of visitors to Gibraltar. The two are not identical because some staying visitors and some transit visitors come into Gibraltar via the land frontier. The shopping component of this expenditure pattern is very large standing at more than 83% of the total spend per person. Fuel expenditure is just under 25% of the total spend and other

shopping accounts for an even greater proportion of the total (29.2%). The expenditure on tours and trips was an expected 3.9% of the total and reflects the spending opportunities in this category.

**Table 3.6 Tourist Expenditure, Land Arrivals to Gibraltar, 2001**

	<b>% of Total</b>
Accommodation, Food & Beverage	8.0
Shopping	83.2
Transport, etc	4.7
Other	4.1
<b>TOTAL</b>	<b>100.0</b>

*Visitors by Yachts*

Visitors by yachts to Gibraltar do not spend on accommodation and it is the shopping category which dominates. This and the food and beverage category reflect the self-catering nature of these visitors. The 35% of total spend on "other" items requires further examination but presumably reflects chandlery expenditures and other yachting related spend.

**Table 3.7 Visitors by Yacht, Gibraltar 2001**

	<b>% of Total</b>
Accommodation, Food & Beverage	8.1
Shopping	50.9
Transport, etc	6.0
Other	35.0
<b>TOTAL</b>	<b>100.0</b>

*Cruise Ship Visitors*

The cruise ship visitors spend the majority of their money on shopping with transport representing the only remaining significant category.

**Table 3.8 Cruise Ship Visitors , Gibraltar 2001**

	<b>% of Total</b>
Accommodation, Food & Beverage	1.9
Shopping	84.3
Transport, etc	12.7
Other	1.1
<b>TOTAL</b>	<b>100.0</b>

*Visitors in Transit*

Those visitors who arrive in Gibraltar deemed to be in transit (purpose of visit is passing through Gibraltar) spend most of their money on shopping and food and beverage. This is a typical pattern for transit visitors many of whom may stay only a matter of hours and may not even leave the airport terminal. Some may also arrive across the frontier or through the port, and may need to stay overnight.

**Table 3.9 Visitors in Transit, Gibraltar 2001**

	<b>% of Total</b>
Accommodation, Food & Beverage	20.1
Shopping	66.2
Transport, etc	3.3
Other	10.4
<b>TOTAL</b>	<b>100.0</b>

#### **4.0 Gibraltar Business Expenditure Survey**

The Business expenditure Survey provides the hub of any input-output model and it is imperative that a significant number of businesses co-operate with the survey by providing the necessary responses. The response rate for Gibraltar was sufficient to complete the study and is comparable with the response levels achieved during previous studies.

##### **4.1.1 Response Rates by Sector**

In general the survey was greeted with a co-operative stance by most businesses. The data are collected under strict confidentiality rules that prevent the survey collectors from revealing any of the data to other parties (including the government). Similarly, these confidentiality rules preclude the researchers from producing tables whereby the activities of any individual company can be identified. This means that some sectors are aggregated in such a way that they prevent the identification of companies included in them.

Some of the business services allowed their accountants to complete a questionnaire on their behalf. Similarly, one of the associations completed a composite questionnaire for all of its members. In one instance a single composite set of data was provided that included the activities of more than 100 individual businesses. The remaining questionnaires reflect individual company responses. Some sectors have been combined to protect the anonymity (required by the code of confidentiality) of specific businesses.

Of the 280 sample companies targeted, responses were achieved from 141 (not counting multiple company responses within a single questionnaire) which yields a response rate of just over 50%. Table 4.1 shows the breakdown of completed questionnaires by sector.

**Table 4.1 Business Expenditure Survey Questionnaires by Sector**

<b>Sector</b>	<b>Questionnaires</b>
<b>Manufacturing</b>	7
<b>Electricity &amp; Water</b>	3
<b>Construction</b>	5
<b>Wholesale</b>	7
<b>Retail</b>	35
<b>Hotels</b>	3
<b>Restaurants</b>	13
<b>Transport</b>	132
<b>Communications</b>	3
<b>Financial Intermediation</b>	21
<b>Real Estate &amp; Business Activities</b>	24
<b>Govt &amp; Welfare Services</b>	1
<b>Other services</b>	7
<b>Total</b>	<b>261</b>

The Government is shown as a single questionnaire whereas, in reality each department head submitted a completed questionnaire.

## APPENDIX A

### **The Multiplier Analysis**

The input-output model allows the researchers to derive multiplier coefficients for each of Gibraltar's productive sectors. These multiplier coefficients demonstrate the ability of any given sector to generate income, employment, output and government revenue from any given change in the demand for its output. The multipliers also show how dependent each sector is upon imported inputs in order to produce any given level of output.

The multiplier values can be used to show the impact on the national economy as a result of a given change in any of its final demands. These impacts can be sub-divided into three categories:

#### **A. 1 Direct Effects**

The direct effects are those effects brought about directly in those sectors that are subject to the change in final demand. Therefore, a change in the level of activity of the off-shore financial services will be directly felt by those companies that are involved directly in the production of those services i.e. the off-shore financial companies. Similarly, a change in the level of staying visitors to Gibraltar will have a direct effect upon the hotel sector, the restaurants, taxis and shops that directly receive the tourist's money. Finally, a change in the level of demand for ship repairs will have a direct effect upon the ship repair companies that carry out those services.

#### **A.2 Indirect Effects**

When there is a change in final demand for a sector's output the sector's that produce that output will have input demands of their own. For instance, the off-shore companies may need to purchase additional communication services, other financial services from companies within their sector and supporting services related to, say computing legal and accounting services. The hotel that was subject to an increase in demand may need to increase its purchases of food & beverages, laundry services, cleaning services etc. The ship repair companies may need to acquire additional spares, purchase engineering services, transport services and other, related costs. These effects that occur as a result of the direct effect changes are known as indirect effects. They continue to occur as the suppliers to each of the companies that have increased demand, are subject to increased demands themselves as a consequence.

#### **A.3 Induced Effects**

Whenever a good or service is produced some income is accrued as either wages, salaries, profit, rent or interest (or some combination of these). Therefore, during the direct and indirect effects income is accrued as a result of the initial change in final demand. When that income is re-spent it triggers of another round of economic activity. This additional round of economic activity generates income, employment, output and government revenue. The economic effects that are the result of the re-spending of accrued income are known as the induced effects.



The multiplier ratios allow the determination of the full effects resulting from any change in final demand. Depending upon the multiplier these full effects may be the direct plus indirect effects, or the direct plus indirect plus induced effects. The different multipliers are shown below:

#### A.4 Direct Multiplier Values

The direct multiplier values associated with each form of economic activity within the Gibraltar economy are set out below. These are partial multiplier values in that they reflect the ability of each sector to generate output, income, and government revenue. These values should not be viewed judgementally. Variations between the direct income, government revenue or import impacts associated with one unit of output can be a result of many factors including the nature of the production function. For instance, the construction industry has a relatively high propensity to import because it imports the majority of its material inputs and these account for a large proportion of its total inputs. However, other sectors may import through wholesalers and this is reflected in the high import value of the wholesale sector. Labour intensive sectors are likely to have higher than average income effects and those sectors that attract particular taxes and excise duties may be associated with high government revenue multipliers.

**Table A.1: Direct Multiplier Values by Sector, Gibraltar 2000**

Sector	Output	Income	Gov. Rev.	Imports
Manufacturing	1.0	0.4943	0.0301	0.4707
Electricity & Water	1.0	0.3854	0.0245	0.2078
Construction	1.0	0.1890	0.0581	0.6194
Wholesale	1.0	0.2326	0.1383	0.5827
Retail	1.0	0.2415	0.0691	0.4281
Hotels	1.0	0.4471	0.0411	0.1000
Restaurants	1.0	0.5105	0.0337	0.0708
Transport	1.0	0.3150	0.0383	0.5359
Communications	1.0	0.4324	0.1321	0.3104
Financial Services	1.0	0.4864	0.0159	0.3804
R. Est. & Business Services	1.0	0.6986	0.0492	0.1022
Govt. & Welfare Services	1.0	0.6019	0.1684	0.0347
Other Services	1.0	0.5336	0.0581	0.2748

Table A.1 can be interpreted as follows; any change in the demand for a good or service will have direct output effect equivalent to the value of that change. Hence the output multiplier will always be equivalent to unity (1.0). However, only a part of that output value will accrue as income and so, at the direct level, when the demand for a sector's output is changed it will have a direct effect on income levels in Gibraltar that is less than the value of the output that has caused it i.e. less than 1.0. Thus, an increase in the demand for manufacturing services will increase income levels by 49p for every £1 increase; an increase in demand for the output of hotels will bring about a direct increase in income levels of 45p for every £1 spent, and so on. The

table shows income in its broadest sense and includes wages and salaries, income paid to non-Gibraltarians and business savings.

It can be seen from the table that Real Estate and Business Services generate the greatest direct levels of income showing the high personnel inputs required in these services, followed by the government and then the financial service sector.

Similar logic is applied to the government revenue multipliers, which show that for every additional £1 of output produced by the construction industry the government will receive almost 6p as a direct result of that increase. The government itself is a major source of generating revenue from any given change in final demand (17p per £1 of output), followed by the wholesale (14p per £1) and communications (13p per £1) industries.

In order to meet the additional demand each sector must increase its purchase of goods and services and some of these are likely to be imported. Therefore, it is possible to determine the likely increase in imports as a result of any given change in final demand. Manufacturing requires 47p of imports in order to produce £1 worth of output, financial services requires to import 38p worth of services in order to produce one £1 of output and so on. The table shows that the construction industry, wholesale sector, transport and manufacturing all require significant levels of imports in order to produce their output. The money that goes out of the Gibraltar economy and therefore plays no further part in generating income and employment is known as leakage. The higher the leakage the lower will be the multiplier value. It should be noted that sectors shown in these tables as importing sectors are not necessarily importing for their own use, this is particularly true for the wholesale sector that imports goods for most of the other sectors of the national economy.

#### **A. 5 DIRECT PLUS INDIRECT EFFECTS**

The direct plus indirect effects depend not only upon the propensities of each sector to employ labour or import materials and services from outside Gibraltar, but also upon their economic linkages with other sectors that have relatively high propensities. Comparison between the direct and indirect values show that those sectors that have relatively strong economic linkages with other sectors subject to high propensities to employ human resources will find that their income multipliers increase by a larger margin than those that do not. Similar results can be identified where the value of the government revenue multiplier or the import requirements have increased significantly.

**Table A.2: Direct plus Indirect Multiplier Values by Sector, Gibraltar 2000**

<b>Sector</b>	<b>Output</b>	<b>Income</b>	<b>Gov. Rev.</b>	<b>Imports</b>
Manufacturing	1.1626	0.5769	0.0437	0.5054
Electricity & Water	1.6062	0.6368	0.0642	0.3798
Construction	1.2643	0.3193	0.0869	0.6869
Wholesale	1.2455	0.3738	0.1704	0.6099
Retail	1.4419	0.4219	0.1242	0.5818
Hotels	1.7320	0.7312	0.1119	0.3559
Restaurants	1.6335	0.7698	0.1000	0.3024
Transport	1.2048	0.4090	0.0591	0.5969
Communications	1.3722	0.6382	0.1780	0.3688
Financial Services	1.1764	0.5810	0.0259	0.4275
R. Est. & Business Services	1.3423	0.8944	0.0779	0.1676
Govt. & Welfare Services	1.5311	0.8881	1.2200	0.1365
Other Services	1.3157	0.6911	0.0852	0.3576

### **A.6 DIRECT PLUS INDIRECT PLUS INDUCED EFFECTS**

During the direct and indirect rounds of expenditure referred to above, income will accrue to the people of Gibraltar, in the form of wages, salaries, rent, profit, interest and dividends. This income will, in part, be re-spent within the Gibraltar economy and cause another round of economic activity. The effects of this are known as the induced effect.

Table A.3 Direct plus Indirect plus Induced Multiplier Values, by Sector, Gibraltar 2000

### **Table A.3: DIRECT PLUS INDIRECT PLUS INDUCED EFFECTS**

<b>Sector</b>	<b>Output</b>	<b>Income</b>	<b>Gov. Rev.</b>	<b>Imports</b>
Manufacturing	1.5259	0.8048	0.2343	0.6328
Electricity & Water	2.1047	0.9495	0.3257	0.6478
Construction	1.5403	0.4925	0.2317	0.8375
Wholesale	1.4430	0.4976	0.2740	0.7186
Retail	1.6683	0.5639	0.2429	0.7019
Hotels	2.1224	0.9761	0.3167	0.4873
Restaurants	2.0259	1.0158	0.3057	0.4491
Transport	1.3677	0.5113	0.1446	0.6854
Communications	1.7403	0.8690	0.3711	0.5726
Financial Services	1.3179	0.6697	0.1001	0.5001
R. Est. & Business Services	1.7782	1.1678	0.3065	0.3551
Govt. & Welfare Services	2.1806	1.2953	0.5606	0.4835
Other Services	1.7425	0.9588	0.3090	0.5532