

BUSINESS STATISTICS
IMPROVING COMPETITIVE PERFORMANCE OF THE UK

Stephen Penneck & Lesley Petrie

Department of Trade & Industry, UK

Introduction

The purpose of this note is to outline how statisticians in the United Kingdom Department of Trade and Industry (DTI) use statistics to measure and assess the competitiveness of British industry. In particular, the note looks at statistics used for the White Papers on Competitiveness.

The DTI is no longer a major collector of economic statistics, as most collection of industrial statistics (apart from energy statistics) is now undertaken by the Office for National Statistics (ONS). DTI continues to employ a small group of statisticians who provide statistical analyses and briefing to ministers and officials, as well as pressing the ONS to ensure that the economic, trade and industrial statistics they produce meet DTI needs. Most DTI statisticians are 'outbedded'; that is, they are organised in small groups as part of policy divisions, working alongside policy colleagues. This ensures that they are closely in touch with policy requirements, and can advise on a range of statistical issues, such as non-official and international data sources, requirements for ad hoc studies and surveys, as well as on ONS data.

The competitiveness agenda

DTI's aim is to help UK business compete successfully at home, in the rest of Europe, and throughout the world.

Competitiveness matters because the UK market and our overseas markets are becoming increasingly open and competitive. For DTI to help British business to win in such markets, we must understand the main issues businesses face and the UK's relative strengths and weaknesses compared with our major trading rivals. The Government has published three White Papers on competitiveness¹, which cover all aspects of the Government's work to help British business become more competitive and set out the part played by the private sector itself. The purpose of the third White Paper, published in June this year, is to focus attention on the UK's performance and how businesses can improve on this to make the UK the enterprise centre of Europe. The pressure is for continuous improvement. Many other countries have also produced analyses of their performance and set out strategies for improvement.

¹ (I) Competitiveness: Helping Business to Win, Cm 2563, May 1994, HMSO £15.40
 (ii) Competitiveness: Forging Ahead, Cm 2867, May 1995, HMSO £19.50
 (iii) Competitiveness: Creating the Enterprise Centre of Europe, Cm 3300, June 1996, HMSO £20.00

How competitiveness is measured

What is competitiveness? For a firm, competitiveness is the ability to produce the right goods and services of the right quality, at the right price, at the right time. It means meeting customers' needs more efficiently and more effectively than other firms. But what does it mean for a nation to be competitive? For a nation, the Organisation for Economic Co-operation and Development (OECD) has defined competitiveness as: "... the degree to which it can, under free and fair market conditions, produce goods and services which meet the test of international markets, while simultaneously maintaining and expanding the real incomes of its people over the long term".

A sustained improvement in our competitiveness requires further underlying improvement in long term productivity, control of costs, and a performance in many aspects of national life that compares favourably with others. Specific areas which affect our competitiveness include education and training, research and development and performance in high tech industries.

For the UK, DTI statisticians use three key measures of competitiveness: growth in output, growth in productivity and overseas earnings from trade. Other factors, such as profitability, investment, etc. are also important, but it is essentially the growth in the nation's output, the efficiency with which it uses its resources and its ability to attract income from overseas which determine its competitiveness.

Assessing competitiveness requires measures of comparative performance. We are not setting specific targets for productivity or GDP growth, but rather comparing such measures with our overseas competitors. In the case of overseas earnings we are looking at how our share of overseas markets compares with our main competitors.

Three key measures of Competitiveness

The three key measures of competitiveness:- growth in output, productivity growth, and overseas earnings from trade, are described in more detail below.

Growth in Output

The Gross Domestic Product is a measure of domestic activity. It is a value added measure, which is measured at market prices or factor cost. Statisticians in DTI use the factor cost measure when looking at the UK as this excludes the effects of taxes and subsidies. Constant price measures of GDP also exclude the effects of inflation from any comparisons made. For international comparisons market prices are used.

Chart 1 shows UK GDP at both current and constant 1990 prices. Allowing for inflation, GDP has risen by 61% from 1970 to 1994. Comparisons are often made between countries based on GDP per head. In 1995 the UK was ranked 16th in the world based on OECD estimates.

For International comparisons of output we use GDP per head to account for the differences in the size of countries. This then leaves us with the problem of converting to a standard currency. This would normally be done using Purchasing Power Parities (PPP's), however there are conceptual difficulties with these e.g. should the figures reflect the cost of the same basket of goods in each country or should they reflect the cost of a standard (in each country) basket of goods?

Using growth rates rather than actual levels minimises this potential lack of comparability. By looking at growth rates, and the changes in these over time, we can get a fuller picture of the potential for future performance, rather than a retrospective one. Charts 2 and 3 above taken from the third Competitiveness White Paper make this type of comparison. The growth rates here have been calculated between similar points in the economic cycle (as defined by the OECD business cycle). This helps to ensure that as fair a comparison is carried out as possible.

To compare output in one industry with another industry we often look at the contribution

that a particular industry makes to GDP. Detailed estimates of the contribution of industries to GDP are calculated every five years by ONS. Breakdowns of GDP by broad industry group are produced every year and published in the Blue Book². Chart 4 shows the change in contribution to GDP at current factor cost.

The contribution to GDP at current factor cost by manufacturing industry fell from 34% in 1970 to 21% in 1994. During this period the contribution made by financial and business services rose from 12% to 22%. The relative contributions of these two sectors changed little over this period when measured in constant prices.

The change in value added is made up of two main components: output volume and prices. Data are collected on both these components and published at detailed industry level. The index of output measures the change in the volume of net output. For some industries this is an easy concept to grasp, and a simple indicator can be readily defined: e.g. for gas supply it is the number of therms, for rail transport it is passenger kilometres travelled, for car manufacturers it is the number of cars produced. For other industries it is less well defined and is a combination of volume measures and turnover deflated by a price index, and additionally, in the case of services, input measures used as a proxy for output.

For the UK two measures of price changes are available: producer prices and retail prices. These measure the change in the cost of production and the cost to the consumer respectively. Producer prices are published monthly at detailed product level:- BM MM22³. Price indices can be used to look at the relative prices of, eg, manufactures and services. Since 1980 the retail price index for a new car has increased by 70 per cent, whereas the retail price index for car maintenance has increased by 175 per cent.

Productivity Growth

The structure of UK employment has been changing. Traditional manufacturing businesses

² The ONS Blue Book: United Kingdom National Accounts

³ ONS Business Monitor MM22: Producer Prices

such as vehicle and textile production have seen the number of employees decrease substantially over the last 25 years. This has been largely offset by the increase in employment in the service sector. Some of the decline in manufacturing employment is due to contracting out of services such as catering and cleaning and some due to technological advances.

There has also been a change in employment patterns with more self employment, part-time working and flexible contracts. Labour productivity is usually measured as output per head or output per hour worked. We must be sure to include all members of the workforce when compiling productivity comparisons.

Chart 5 shows labour productivity growth since 1985 for broad industry sectors. Productivity comparisons are also made between countries. Output per hour worked is a reliable measure as it takes account of different work practices in the various countries.

Labour productivity is an important measure of competitiveness but it should not be the only measure. A business may decide to replace labour with machinery. Comparisons of labour productivity would then be misleading as the business with fewer employees will appear more productive. It is also important to measure how productively industry uses new capital investment. For this reason we need to look at total factor productivity, a combination of labour productivity and capital productivity.

Chart 6 from the Third Competitiveness White paper illustrates information from OECD on the growth of joint factor productivity. These data cover the business sector, which excludes government and housing, and is a weighted average of labour and capital productivity. Although these data take account of the effects of the capital employed they

are based on the number of employees, rather than hours worked. As the working patterns in different countries can vary substantially with

some employees working part time this measure of productivity is not the best for international comparisons. The data are not available for manufacturing and services separately. The data are also only published as a rate of change over selected periods - internationally comparable levels of productivity are not readily available. Some research work has been carried out in an effort to produce internationally comparable productivity level data, as illustrated for labour productivity in Chart 7 from the

Third Competitiveness White Paper. Work has been carried out in the UK by the National Institute of Economic and Social Research (NIESR) to provide estimates of productivity levels in market services sectors for the UK, USA, West Germany and France. The DTI welcomes both this and the work being carried out under the auspices of Working Party 9 of the OECD such as the recent expert workshop on international comparison and measurement issues for productivity and would like to see such initiatives continue.

Overseas earnings from Trade

Britain is one of the world's greatest trading nations. Trade is equivalent to 25% of our GDP - compared with 10% in the US and 9% in Japan. This comparison, in part, reflects the size of the home market. UK exports to EU countries have grown from 40% of exports of goods before membership to 60% now. Statistics help us monitor export performance and can help identify new market opportunities. Recent work carried out by statisticians at DTI has calculated the shares of exports to the UK's top 80 markets for exports of goods held by each of the G7 countries.

Germany is the leading destination for UK exports by value but as shown in Chart 8, France and Italy export more. Further analysis would identify which products lead export sales in each

country.

Detailed data on the value and volume of UK trade in goods are collected

monthly in BM MM20⁴ and quarterly in BM MQ20⁵.

The third Competitiveness White Paper looked at shares of exports of goods to East Asia and Eastern Europe. Charts 9 and 10 illustrate this.

Unfortunately similar information is not yet available for services. The DTI has commissioned the ONS to produce information on trade in services for many of these countries as part of the work of the President's Task Force on Services Statistics. This information is currently available for 1994 and will be available for future years. Similar information is also available for Germany, France and Japan. It is hoped that in time we will have a fuller picture of trade in services.

UK data on volumes of exports are also collected enabling comparisons to be made which

⁴ ONS Business Monitor MM20: Overseas Trade Statistics of the UK with countries outside the European Community

⁵ ONS Business Monitor MQ20: Overseas Trade Statistics with countries within the European Community

are not affected by price movements and devaluation. Production statistics collected by the new PRODCOM⁶ inquiry enable us to calculate export/sales and import penetration ratios at a detailed product level. As these new series build up over time they will become an important future indicator of export performance.

The increasing importance of service industries has been accompanied by an economy - wide shift towards smaller businesses. The Competitiveness White Papers highlighted the increasing share of output and employment accounted for by small firms and focused on the need to help such firms improve their performance.

Implications for statistics

The Government's competitiveness agenda has a number of implications for economic statistics. DTI recognises that the measurement of performance is heavily dependent on the availability of good quality economic statistics. DTI Statisticians have defined a number of particular requirements:

1. The emphasis on international comparisons requires us to look at international compendia of statistics such as those produced by OECD and Eurostat. These international statistics are compiled from questionnaires filled in by Member States or are derived from national sources, and are often **out of date** and based on **inconsistent definitions**. Publication of data electronically as it becomes available, rather than waiting for the slowest, would be helpful in improving timeliness of data and OECD have already begun looking at this. DTI is keen to improve the quality of international statistics to enable more meaningful comparisons with our competitors to be made.
2. Many of the statistics of interest are derived statistics. Productivity is usually expressed as output per head or output per hour worked. These statistics are not directly collected from industry, but are derived from output and employment statistics, collected by the ONS for the UK. There are **inconsistencies** to be considered and **definitional questions** to be addressed. Similarly, overseas earnings, especially for trade in services, are derived from a variety of **different sources** and adjustments are made to convert them to a balance of payments basis. The emphasis on derived statistics requires the primary statistics on which they are based to be of a **high quality** and **mutually consistent**.
3. The need to compare and contrast the competitiveness of different industries **requires detailed statistics** at industry level. Data also need to be available in a **consistent**

⁶ Taylor Nelson AGB Publications UK Markets

format over a **number of years**. There are problems where **classification systems are revised** as well as between the **correspondence from national classification** systems to international ones. There are also problems with the national classifications, e.g. in the UK SIC92 does not provide the level of disaggregation required by DTI statisticians particularly for industries where rapid changes are taking place such as electronic publishing. There are also inconsistencies in the industry level at which data are published for different countries.

4. Comparisons must be **as up to date as possible**. Annual statistics, which usually afford the detail needed for competitiveness analyses, are often insufficiently up to date, while short term statistics (monthly and quarterly), while more up to date, do not give the detail required.

Production/services balance

UK production statistics are much better developed than statistics of the service industries, particularly for some of the newer service industries. The UK is not alone in this and there are several reasons for it: the measurement of economic activity and trade for some service industries poses particular conceptual and measurement problems; service industries are dominated by small firms posing additional costs for the collector and sensitivity to the costs of the provider; and the growth of interest in the service industries in the 1980s coincided with severe cut backs in government surveys. Consequently, although progress has been made over the last ten years in extending the availability of service statistics, much remains to be done. In 1994 the President of the Board of Trade asked for improvements to be made to service sector statistics. Following this support the “President’s Task Force on Services Statistics” was set up. A separate paper by Bill Cave of the DTI gives details of the progress made so far by this task force.

Conclusion

This note shows how economic, industrial and trade statistics remain central to the DTI’s agenda. DTI work on competitiveness, particularly for service industries, and small firms, has given our needs for both domestic and international statistics a new emphasis in the mid 1990s. DTI welcomes the work of international agencies and national statistical institutes on improving the information available on services. More needs to be done whilst bearing in mind the costs to business of providing statistics. The Voorburg Group has a leading position influencing the future development of services statistics which is much valued by DTI.