



Department of Statistics

**Labour Productivity in Bermuda
Executive Brief**

Abstract

Bermuda experienced two years of slow growth in labour or worker productivity during 2005 and 2006. Labour productivity is the amount of output an employee generates for every hour he or she is on the job. Labour productivity is a key measure of both economy and workplace efficiency. In 2005, labour productivity in Bermuda grew by 1.7%, but this slipped considerably to 0.6% in 2006, the slowest rate of growth since 2001.

As productivity growth contracted, labour costs went up. Employers' unit labour costs, that is, how much employers pay workers for every unit of output they produce, rose at 7.0% and 5.3% in 2005 and 2006, respectively. These rates marked the largest increase in labour costs since 2001.

Background

In 2007, the Department of Statistics conducted a comprehensive study on labour productivity for the Bermuda labour market. An eleven-year time series of labour productivity indicators were produced for the Bermuda economy and its goods and services industries. This Executive Brief highlights the findings of the detailed report titled "**Labour Productivity Indicators: 1996-2006**". It is the first official publication which endeavours to thoroughly monitor productivity developments in Bermuda at the industry level.

The methodology for producing the labour productivity indicators aligns with the methodology provided by the Organisation for Economic Cooperation and Development (OECD), which outlines a standardised international methodology allowing for cross-country comparisons. To develop the Bermuda productivity indicators, employment and income data were used from the annual Employment and Economic Activity Surveys. Both are business surveys targeting the Bermuda job market of over 6,000 employers.

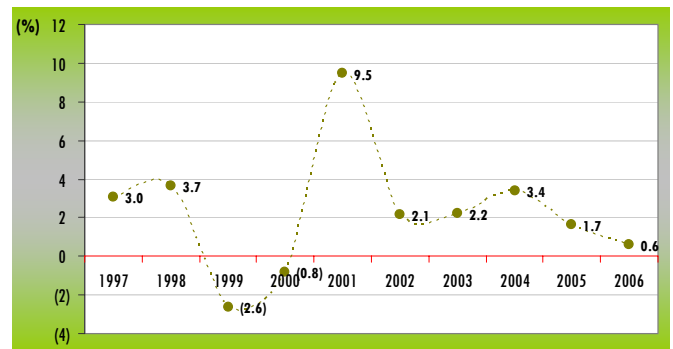
National Economy-Level

Bermuda's labour productivity level, in terms of output per hour worked, was \$56 in 2006 compared to \$45 in 1996. This means that, in 2006, the Bermuda workforce produced an average of \$56 worth of output in goods and services per hour worked. Overall, this reflected an increase of \$11 or 25% over the 11-year period.

Labour productivity grew the fastest in 2001 at a rate of 9.5% when output per hour worked shifted from \$47 to \$51 (See Chart 1 and Table 1). This pace of growth resulted from a 7% drop in actual hours worked during 2001 combined with growth in real output of close to 2%.

The fall in hours worked was attributed mainly to the conclusion of the 2000 Census field operations, which ended in March 2001. During the Census over 300 temporary workers were employed to enumerate Bermuda's population.

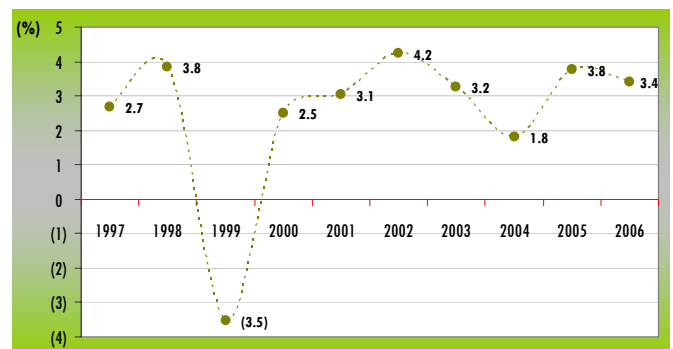
Chart 1
GROWTH IN OUTPUT PER HOUR WORKED
Total Economy, Percentage Change at Annual Rate, 1997-2006



In terms of the annual value of output produced for each job filled in the workforce, the labour productivity level increased from \$78,369 in 1996 to \$83,553 in 1998. This resulted mainly from large increases in output produced than in the number of jobs. Subsequently, as the number of filled jobs in the workforce increased faster than the increase in output, labour productivity declined to \$80,614 in 1999. (See Chart 2 and Table 1)

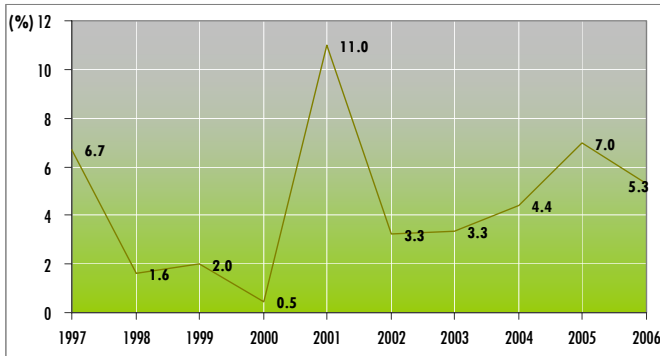
However, in 2005 and 2006, real output increased at annual rates of 5%; outpacing growth in jobs at 2%. As a result, a high productivity level was sustained in 2006 where it peaked at \$100,060. (See Table 1)

Chart 2
GROWTH IN OUTPUT PER FILLED JOB
Total Economy, Percentage Change at Annual Rate, 1997-2006



There was increased compensation for labour's contribution to output as indicated by the rising unit labour costs. The average cost of labour in 2006 was \$0.88 for \$1 of output. This means that, on average, each employer paid \$0.88 in exchange for a dollar's worth of output. The year 2001, which recorded the highest annualized efficiency gain, also registered the largest increase in labour costs (11% increase, or \$0.07, in the compensation per dollar of real output) (See Chart 3 and Table 1).

Chart 3
GROWTH IN COMPENSATION PER UNIT OF OUTPUT
 Total Economy, Percentage Change at Annual Rate, 1997-2006



In 2005, Bermuda's labour productivity of \$56 was one of the highest relative to a few selected countries (USA \$48, UK \$40, Canada \$39). It was also one of the highest when compared to the G7¹ countries (\$43), the North American countries (\$40), and the OECD countries (\$36).

Further, the data show that the standard of living for Bermuda's residents is more a result of how productive its workers are rather than how many hours they work.

Industry-Level

Real estate and renting services, international business activity, and financial intermediation services were the top three industry groups that contributed the bulk of growth in labour productivity.

Wholesale and retail trade services, transport and communication, and business services activities continued to remain important.

Hotels and restaurants recorded one of the lowest levels of output per hour worked. In 2006, labour productivity was only \$23.94. However, this industry is typically labour intensive, hence its relatively low labour productivity level. In contrast, labour productivity, in 2006, for real estate and renting services was \$545.46. The higher productivity level for this sector is a direct result of the high output produced.

¹Group of 7 industrialized nations: Canada, France, Germany, Italy, Japan, United Kingdom and United States.

NOTE TO READER

What is Productivity?

Productivity is a measure of the efficiency with which the output of a plant, industry, sector, or economy is produced. In other words, it answers the question as to how efficiently production inputs are being used to generate outputs. Simply put, productivity gains occur when the production of goods and services grows faster than the volume of work dedicated to their production.

This report focuses on labour productivity, which is the simplest, most common single-factor productivity measure.

Gross Domestic Product (GDP) and **Gross Value Added (GVA)** reflect the output measures for the economy and industry, respectively. The labour input measures used were actual hours worked and number of jobs filled.

Unit labour cost is as a measure of competitiveness and a key gauge of inflationary pressures from wages. This concept measures how much businesses pay workers for every unit (dollar) of output they produce.

Growth in **labour utilization** (hours worked per person) and the growth in labour productivity (output obtained for each hour worked) is equivalent to the growth in the standard of living (GDP per capita). The more hours people work and the higher the level of productivity, the higher is per capita income for a country.

Usefulness

At a macro level, productivity is the most important determinant of economic growth, competitiveness and living standards. Labour productivity indicators may be an official yardstick of economic performance vis-à-vis explicit policy targets. Further, these indicators provide an instrument to improve or monitor the performance of a country or its industries. Labour productivity specifically allows for the analysis of the labour market through the evaluation of the relation between wage increases and productivity. It may also facilitate effective labour, employment and labour market reform and policy development. In addition, a series such as this reports on the productivity of the sectors and industries of a country and allows for comparison, over time, of industries, or branches of industries.

At a user level, more information is available to government, trade unions, businesses and job seekers, employment-sourcing centres and training agencies. Government may use labour productivity indicators for labour-related planning; trade unions may use them as an informational resource for planning and negotiations; while businesses may use these indicators to compare their operation to the industry. These indicators provide a source of awareness of labour market trends to job seekers and others.

Productivity gains are therefore the driver of higher living standards, higher wages, increased profits and low inflation.

Findings

Labour productivity indicators were estimated at three levels: aggregate level, industry level for all 15 industries as classified by the Bermuda Classification of All Economic Activity (BCEA), and sub-industry level for two selected economic activities (hotels and restaurants, and international business activities).

Limitations

No survey data is complete and is subject to adjustments when projected for the entire period, or part thereof, whether it is for the economy or industry. Likewise, output derived from the financial intermediation services sub-industry indirectly posed some computational adjustments at the industry level. In addition, there is a time lag between the employment survey and the economic activity survey that delays the estimation of annual labour productivity by more than a year.

Hours worked in the real estate and renting services industry are generally lower than in other industries resulting in high productivity.

Industries such as financial intermediation and international businesses, with relatively high productivity levels and corresponding rapid output growth rates, were more likely to contribute strongly to the aggregate labour productivity growth for the economy. (See Tables 2 and 3)

In 2006, unit labour costs (i.e. how much workers are paid for every \$1 of output they produce) were highest for public administration (\$1.39); international business activity (\$1.26); and education, health, and social work (\$1.19); and lowest for real estate and renting services (\$0.35) and electricity, gas, and water supply (\$0.54).

Labour Productivity for Selected Industries

The hotel and restaurant industry and international business activities were selected for a more in-depth analysis of its labour productivity. These industries were analyzed for changes over time in labour productivity and labour costs, as well as in contribution to each industry's labour productivity growth. The following are highlights of the analyses.

Hotels and Restaurants

- Hotels and members clubs, and restaurants, cafés, canteens, and catering activities were typically the highest contributing sub-sectors; accounting for 80% of the industry's overall labour productivity growth.
- In most years, hotels and members clubs contributed more than 50% of the industry's labour productivity growth.
- In 2006, 52% of the growth in this industry's labour productivity was attributed to hotels and members clubs.
- In hotels and members clubs, it cost \$0.74 to produce each dollar of output.
- In 2006, a total of \$33.19 worth of output was produced per hour worked in hotels and members clubs.
- The highest unit labour cost of \$0.78 was paid by employers of bars and nightclubs.

International Business Activities

- Insurance risk-taking activities was the main driver of labour productivity; contributing 64% of growth in 2006.
- In 2006, the value of output per hour worked in the Insurance risk-taking activities was \$233.52.
- Unit labour costs, or how much businesses paid workers for every unit dollar of output they produced, remained relatively static during 1996 to 2006 for this industry.
- In 2006, the value of output per hour worked amongst the financial and related activities was \$132.71.

Conclusion

At the economy level, in 2006:

- The cost to produce \$1 of output was \$0.88.
- Labour productivity grew at a 0.6% annual rate representing a 5% increase each in output and hours worked.
- International business activities, real estate and renting services, and financial intermediation were the major industries contributing to productivity growth.
- The hotel and restaurant industry contributed the least to productivity growth.
- The standard of living for Bermuda residents is more a result of how productive its workers are rather than how many hours they work.

At the industry level, in 2006:

- Real estate and renting services, electricity, gas and water supply, and international business activity, were the most productive.
- The cost to produce \$1 of output in public administration was \$1.39.
- Unit labour cost was \$1.26 for international business activities.
- Compensation for \$1 of output was \$0.35 in real estate and renting services.
- The average cost of labour for \$1 of output in the electricity, gas and water supply industry was \$0.54.

Table I
LABOUR PRODUCTIVITY AND LABOUR COST
Total Economy, 1996-2006

Years	Output per Hour Worked		Output Per Filled Job		Unit Labour Cost	
	Level (B\$)	Growth (%)	Level (B\$)	Growth (%)	Level (B\$)	Growth (%)
1996	45	-	78,369	-	.57	-
1997	47	3.0	80,463	2.7	.60	6.7
1998	48	3.7	83,555	3.8	.61	1.6
1999	47	(2.6)	80,614	(3.5)	.63	2.0
2000	47	(0.8)	82,617	2.5	.63	0.5
2001	51	9.5	85,143	3.1	.70	11.0
2002	52	2.1	88,749	4.2	.72	3.3
2003	53	2.2	91,631	3.2	.74	3.3
2004	55	3.4	93,276	1.8	.78	4.4
2005	56	1.7	96,779	3.8	.83	7.0
2006	56	0.6	100,060	3.4	.88	5.3

Table 2
PERCENTAGE CONTRIBUTION TO
GROWTH OF OUTPUT PER HOUR WORKED
BY INDUSTRIAL CLASSIFICATION OF ECONOMIC ACTIVITY
 1997, 2001 & 2006

Industrial Classification of Economic Activity	1997	2001	2006
Agriculture, Forestry & Fishing	0.7	1.4	(4.6)
Manufacturing	2.2	3.1	(3.7)
Electricity, Gas & Water Supply	2.8	1.6	6.7
Construction & Quarrying	5.2	8.2	(20.4)
Wholesale & Retail Trade & Retail Services	7.9	12.9	(7.9)
Hotels & Restaurants	2.1	12.9	(37.6)
Transportation & Communication	7.3	8.4	(0.6)
Financial Intermediation	12.5	8.6	40.8
Real Estate & Renting Services	24.4	4.4	72.0
Business Activities	9.3	9.5	(2.6)
Public Administration	1.5	7.6	(12.5)
Education, Health & Social Work	7.0	6.2	(0.2)
Other Community, Social & Personal Services	0.3	5.0	(13.3)
International Business Activity	16.9	10.4	83.7

Chart 4
LABOUR PRODUCTIVITY, OUTPUT & HOURS WORKED
 Total Economy, 1996-2006

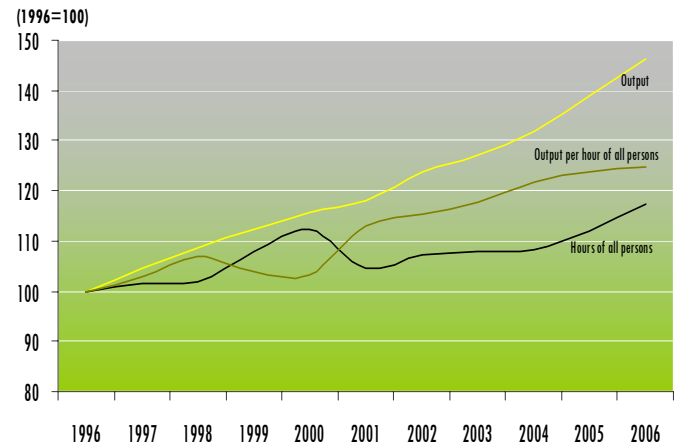
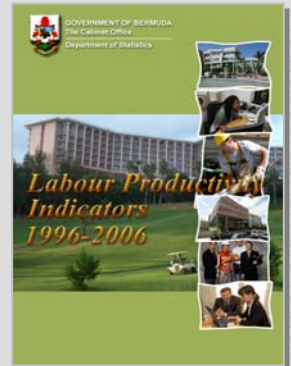


Table 3
LABOUR PRODUCTIVITY AND LABOUR COST
BY INDUSTRIAL CLASSIFICATION OF ECONOMIC ACTIVITY
 Percentage Change at Annual Rate, 1997, 2001 & 2006

Industrial Classification of Economic Activity	1997	2001	2006
<u>Growth in Output per Hour Worked</u>			
Agriculture, Forestry & Fishing	7.9	(5.6)	(5.3)
Manufacturing	3.0	(3.1)	10.6
Electricity, Gas & Water Supply	2.9	14.3	3.8
Construction & Quarrying	(4.7)	(10.2)	(12.4)
Wholesale & Retail Trade & Retail Services	3.7	25.3	(0.7)
Hotels & Restaurants	(0.1)	15.3	6.0
Transportation & Communication	7.2	(0.2)	0.5
Financial Intermediation	12.6	24.9	(9.7)
Real Estate & Renting Services	(3.1)	5.4	(3.6)
Business Activities	9.9	3.5	(5.0)
Public Administration	(9.1)	14.4	23.7
Education, Health & Social Work	(1.7)	7.0	0.6
Other Community, Social & Personal Services	2.9	(0.6)	1.7
International Business Activity	4.9	17.3	10.6
<u>Growth in Unit Labour Cost</u>			
Agriculture, Forestry & Fishing	3.9	29.2	10.1
Manufacturing	3.5	6.6	4.5
Electricity, Gas & Water Supply	2.5	0.6	3.1
Construction & Quarrying	(3.3)	69.4	10.3
Wholesale & Retail Trade & Retail Services	1.2	(4.2)	9.0
Hotels & Restaurants	3.8	(0.8)	(6.7)
Transportation & Communication	(0.5)	6.4	1.5
Financial Intermediation	(4.5)	2.0	(7.1)
Real Estate & Renting Services	7.3	179.4	2.2
Business Activities	3.0	10.3	(19.2)
Public Administration	10.7	(17.6)	4.0
Education, Health & Social Work	26.6	3.4	4.4
Other Community, Social & Personal Services	27.9	(11.1)	11.8
International Business Activity	3.9	14.8	6.4

A more in-depth analyses and interpretation of the labour productivity indicators at the level of the economy, industry and sub-industries (of the two selected industries) can be found in the detailed report: "Labour Productivity Indicators 1996-2006". This report can be downloaded from the Department's website at www.statistics.gov.bm.



This report also contains more complete methodological and conceptual guidelines which directed its preparation.

This is the first official publication which endeavours to thoroughly monitor labour productivity developments in Bermuda. This series adds to the body of statistics currently disseminated by the Department of Statistics.

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August 2008

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