



LABOUR PRODUCTIVITY INDICATORS

JULY 2009

For The Year 2007

Introduction

This report is the second statistical brief produced on labour productivity in Bermuda. It highlights productivity changes between the years 2006 and 2007. The 2002 and 1997 data are presented to show five-year and ten-year changes. The main data sources used to derive the productivity indicators were the annual reports of Employment and Gross Domestic Product (GDP).

National Economy

Bermuda's real GDP or the total output of goods and services produced, was valued at \$4.16 billion in 2007 compared to \$3.98 billion in 2006. This reflected a 4.6% increase in total output.

Although the total value of output was higher, fewer hours were used to produce this level of output. The total number of hours worked in 2007 was estimated at roughly 68 million compared to 71 million hours in 2006; a drop of 3% year-over-year. This translated to an average of 32.9 hours worked per week in 2007 compared to 34.1 hours in 2006.

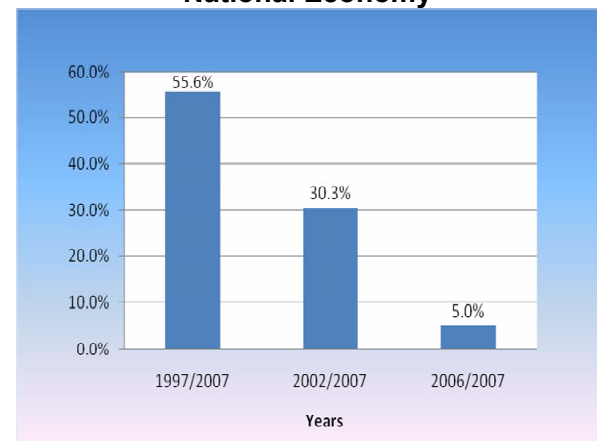
The reduction in average hours worked per week was a direct reflection of the steep decline in annual hours worked in the financial intermediation sector of 1.4 hours. During this period, there was an identical contraction in the number of hours worked in the commercial banking sub-sector.

Productivity Level

Labour productivity in terms of output per hour worked, was \$58 in 2007 compared to \$54 in 2006. On average, the Bermuda workforce produced \$58 in goods and services per hour worked. The \$4 increase in output per hour worked reflected an annual increase of 8% in this measure of

labour productivity. The increase in output per hour resulted from higher output levels and a reduction in work hours.

Chart 1
Growth in Unit Labour Cost (ULC)
National Economy



Output Level

In 2007, the value of output per filled job was \$99,475. This level of output represented a 4% increase over 2006 when output per filled job stood at \$95,355. During the same period, the number of jobs rose at a slower pace (0.4%) than the increase in output; from 39,686 to 39,851. Gross output climbed 5.2% from \$4.1 billion in 2006 to \$4.4 billion in 2007.

Unit Labour Cost

Unit labour cost (ULC) is a measure of how much workers are paid for every \$1 of output they produce. In 2007, employee compensation rose in proportion to gross output. Unit labour cost advanced from 89¢ in 2006 to 94¢ in 2007. This means that employee compensation accounted for 94¢ of every \$1 of output. ULC was highest for public administration (\$1.46); international business (\$1.32); and education, health, and social work (\$1.28). In contrast, real estate and renting activities and financial intermediation reported the lowest unit labour cost for the year at 19¢ and 59¢, respectively.

Industry Level

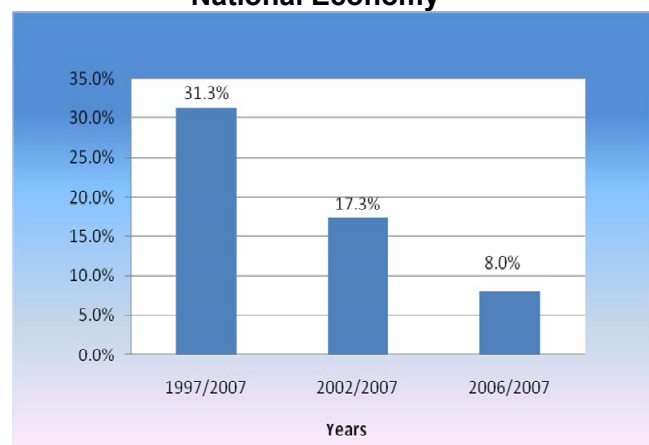
Labour Productivity

In 2007, real estate and renting services, international business, and financial intermediation services continued to be the leading industry groups with high labour productivity levels in Bermuda.

Despite the decline in output between 2007 and 2006, real estate and renting services surpassed all other industries in the total level of output produced per hour worked, at \$500.39.

In contrast, community, social and personal services such as membership organizations, sporting and recreational activities posted the lowest level of output per hour worked at \$22.74. Such industry groups generally have lower employment levels and fewer hours worked.

Chart 2
Growth in Output Per Hour Worked
National Economy



The Bermuda workforce worked fewer hours than in 2006. The total number of hours worked in 2007 dropped by 3.0% indicating efficiency in the production of goods and services. In the financial intermediation sector total hours worked during the year dipped sharply (-21%) from 6.4 million hours in 2006 to 5 million hours in 2007.

Other 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 highlights the findings.

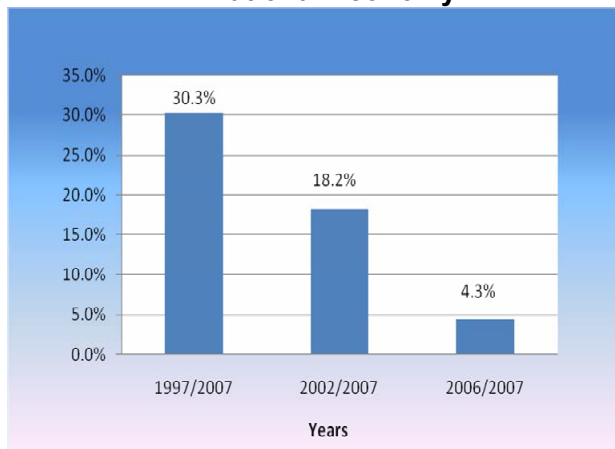
Hotels and Restaurants

- In 2007, 64% of labour productivity growth was attributed to hotels and members clubs.
- It cost hotels and members clubs, .66¢ to produce one dollar of output.
- A total of \$103.23 worth of output was produced per hour worked by employees in apartment hotels.
- The highest unit labour cost of \$1.15 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 2007.
- The value of output per hour worked in the Insurance risk-taking activities was \$268.22.
- The value of output per hour worked amongst the insurance brokerage activities was \$162.15 in 2007.

Chart 3
Growth in Output Per Job Filled
National Economy



Conclusion

At the economy level, in 2007:

- The cost to produce \$1 of output was 94¢.
- Output per hour worked grew by 8%. The output per filled job and ULC grew by 4% and 5%, respectively.
- International business activities, real estate and renting services, and financial intermediation were the major industries contributing to productivity growth.

At the industry level, in 2007:

- The cost to produce \$1 of output in public administration was \$1.46.
- Unit labour cost was \$1.32 for international business activities.
- Compensation for \$1 of output was 59¢ in financial intermediation.
- The average cost of labour for \$1 of output in the construction & quarrying industry was 90¢.

Concepts and Definitions

The official measure of productivity for an economy is determined by the amount of output generated based on inputs used such as labour (skill), materials, technology and capital. **Multifactor productivity** is the

term that applies when two or more inputs are used to estimate productivity for an economy. **Outputs** are the goods and services produced in an economy for own consumption and or the consumption of others. The total value of output produced in an economy is termed **Gross Domestic Product (GDP)**.

Labour Productivity

Labour productivity is derived by using the number of jobs in the economy or the hours that job holders work as the sole input. Using hours worked, labour productivity is the amount of output an employee generates for every hour that he or she is engaged in work activity. When the number of jobs is used as the divisor, labour productivity is the value of output per job.

Labour productivity therefore is a key measure of efficiency in the economy and in the workplace. Long-term improvements in labour productivity growth lead to economic growth. Labour productivity growth occurs as the labour input, be it technological skill, work experience and “know-how” is used more efficiently, i.e. less time is required, in the production of outputs.

Unit Labour Cost

Another important measure of productivity is unit labour cost (ULC). ULC measures the cost of producing \$1 of output. ULC can also be thought of as employee compensation in proportion to gross value added.

A decline in ULC from one year to the next would result if there was an increase in employee compensation combined with a higher increase in output. This scenario would represent an improvement in workplace efficiency.

Gross value added is the total value of output of goods and services (GDP) produced in Bermuda, before adjusting for bank charges, import taxes and duties.

LABOUR PRODUCTIVITY INDICATORS

Table I: GDP AT CONSTANT MARKET PRICES, 1996 = 100 ('000)

INDUSTRIAL SECTIONS	1997	2002	2006	2007
01 Agriculture, forestry and fishing	22,831	28,169	34,845	36,160
03 Manufacturing	66,707	70,223	63,523	57,146
04 Electricity, gas and water supply	66,536	82,488	74,225	72,660
05/02 Construction & Quarrying	163,538	177,330	234,621	233,960
06 Wholesale and retail trade and repair services	281,771	324,996	362,034	370,276
07 Hotels and restaurants	212,083	205,742	229,544	230,295
08 Transport and communications	204,901	229,353	252,578	269,796
09 Financial intermediation	314,915	383,571	557,291	595,490
10 Real estate and renting activities	461,931	471,575	564,922	543,483
11 Business activities	231,028	293,089	327,034	341,460
12 Public Administration	134,195	155,219	183,137	195,653
13 Education, health and social work	195,428	236,403	241,617	246,673
14 Other community, social and personal services	81,193	77,513	82,867	75,162
15 International business activity	389,715	642,683	935,740	1,090,854
Total	2,826,772	3,378,354	4,143,976	4,359,069
Less : Imputed bank service charge	132,779	195,501	359,723	394,906
Gross Value Added (GVA) in Basic Prices	2,693,993	3,182,853	3,784,255	3,964,162
Add : Taxes and duties on imports	146,042	173,203	193,687	198,232
GDP at constant market prices	2,840,036	3,356,055	3,977,940	4,162,394

LABOUR PRODUCTIVITY INDICATORS

Table 2: PERCENTAGE CHANGE OF GDP AT CONSTANT MARKET PRICES, 1996=100

INDUSTRIAL SECTIONS	1997/2007 ¹	2002/2007 ²	2006/2007 ³
01 Agriculture, forestry and fishing	58.4	28.4	3.8
03 Manufacturing	-14.3	-18.6	-10.0
04 Electricity, gas and water supply	9.2	-11.9	-2.1
05/02 Construction & Quarrying	43.1	31.9	-0.3
06 Wholesale and retail trade and repair services	31.4	13.9	2.3
07 Hotels and restaurants	8.6	11.9	0.3
08 Transport and communications	31.7	17.6	6.8
09 Financial intermediation	89.1	55.2	6.9
10 Real estate and renting activities	17.7	15.2	-3.8
11 Business activities	47.8	16.5	4.4
12 Public Administration	45.8	26.0	6.8
13 Education, health and social work	26.2	4.3	2.1
14 Other community, social and personal services	-7.4	-3.0	-9.3
15 International business activity	179.9	69.7	16.6
Total	54.2	29.0	5.2
Gross Value Added (GVA) in Basic Prices	18.1	18.9	4.8
Less : Imputed bank service charge	197.4	102.0	9.8
Add : Taxes and duties on imports	35.7	14.5	2.3
GDP at constant market prices	46.6	24.0	4.6

¹ Change at ten years

² Change at five years

³ Year to year change

LABOUR PRODUCTIVITY INDICATORS

Table 3: Total Jobs Filled by Major Industry Group

INDUSTRIAL SECTIONS	1997	2002	2006	2007
Total	35,296	37,815	39,686	39,851
01 Agriculture, forestry and fishing	400	644	687	692
03 Manufacturing	889	1,107	965	935
04 Electricity, gas and water supply	522	412	372	394
05/02 Construction & Quarrying	2,149	2,921	3,658	3,549
06 Wholesale and retail trade and repair services	4,916	5,056	4,775	4,754
07 Hotels and restaurants	5,998	4,913	4,901	4,810
08 Transport and communications	2,220	2,859	2,829	2,756
09 Financial intermediation	2,857	2,882	2,902	2,952
10 Real estate and renting activities	241	491	518	614
11 Business activities	2,142	3,872	4,091	4,187
12 Public Administration	4,608	3,896	4,069	4,113
13 Education, health and social work	2,605	2,973	3,221	3,251
14 Other community, social and personal services	3,082	2,202	2,209	2,155
15 International business activity	2,667	3,587	4,489	4,689

LABOUR PRODUCTIVITY INDICATORS

Table 4: Growth in Total Filled Jobs %

INDUSTRIAL SECTIONS	1997/2007 ⁴	2002/2007 ⁵	2006/2007 ⁶
Total	12.9	5.4	0.4
01 Agriculture, forestry and fishing	73.0	7.5	0.7
03 Manufacturing	5.2	-15.5	-3.1
04 Electricity, gas and water supply	-24.5	-4.4	5.9
05/02 Construction & Quarrying	65.1	21.5	-3.0
06 Wholesale and retail trade and repair services	-3.3	-6.0	-0.4
07 Hotels and restaurants	-19.8	-2.1	-1.9
08 Transport and communications	24.1	-3.6	-2.6
09 Financial intermediation	3.3	2.4	1.7
10 Real estate and renting activities	154.8	25.1	18.5
11 Business activities	95.5	8.1	2.3
12 Public Administration	-10.7	5.6	1.1
13 Education, health and social work	24.8	9.4	0.9
14 Other community, social and personal services	-30.1	-2.1	-2.4
15 International business activity	75.8	30.7	4.5

⁴ Change in ten years

⁵ Change in five years

⁶ Year to Year change

LABOUR PRODUCTIVITY INDICATORS

Table 5: Total Hours Worked⁽¹⁾

('000)

INDUSTRIAL SECTIONS	1997	2002	2006	2007
Total	60,947	64,360	70,465	68,325
01 Agriculture, forestry and fishing	632	1,091	1,307	1,265
03 Manufacturing	1,631	1,978	1,785	1,712
04 Electricity, gas and water supply	950	888	615	810
05/02 Construction & Quarrying	4,217	5,749	7,495	7,103
06 Wholesale and retail trade and repair services	8,588	8,923	8,427	8,453
07 Hotels and restaurants	11,041	9,175	9,590	9,080
08 Transport and communications	4,318	5,207	5,289	5,013
09 Financial intermediation	5,147	4,875	6,380	5,016
10 Real estate and renting activities	344	858	944	1,086
11 Business activities	3,655	6,218	6,991	7,086
12 Public Administration	6,764	5,568	5,441	5,493
13 Education, health and social work	4,164	4,182	4,933	4,606
14 Other community, social and personal services	4,779	3,379	3,357	3,305
15 International business activity	4,717	6,269	7,911	8,297

1. Actual hours worked per week during the reference week

LABOUR PRODUCTIVITY INDICATORS

Table 6: Growth of Total Hours Worked %

INDUSTRIAL SECTIONS	1997/2007 ⁷	2002/2007 ⁸	2006/2007 ⁹
Total	12.1	6.2	-3.0
01 Agriculture, forestry and fishing	100.2	15.9	-3.2
03 Manufacturing	4.9	-13.4	-4.1
04 Electricity, gas and water supply	-14.7	-8.8	31.6
05/02 Construction & Quarrying	68.4	23.6	-5.2
06 Wholesale and retail trade and repair services	-1.6	-5.3	0.3
07 Hotels and restaurants	-17.8	-1.0	-5.3
08 Transport and communications	16.1	-3.7	-5.2
09 Financial intermediation	-2.5	2.9	-21.4
10 Real estate and renting activities	215.5	26.6	15.1
11 Business activities	93.9	14.0	1.4
12 Public Administration	-18.8	-1.3	0.9
13 Education, health and social work	10.6	10.1	-6.6
14 Other community, social and personal services	-30.8	-2.2	-1.6
15 International business activity	75.9	32.3	4.9

⁷ Percentage change in ten years

⁸ Percentage change in five years

⁹ Year to Year percent change

LABOUR PRODUCTIVITY INDICATORS

Table 7: Output per hour worked

INDUSTRIAL SECTIONS	1997	2002	2006	2007
Total	44.20	49.45	53.70	58.02
01 Agriculture, forestry and fishing	36.13	25.83	26.67	28.58
03 Manufacturing	40.89	35.50	35.58	33.37
04 Electricity, gas and water supply	70.07	92.89	120.63	89.61
05/02 Construction & Quarrying	38.78	30.84	31.30	32.94
06 Wholesale and retail trade and repair services	32.81	36.42	42.96	43.81
07 Hotels and restaurants	19.21	22.42	23.94	25.36
08 Transport and communications	47.45	44.04	47.76	53.82
09 Financial intermediation	61.19	78.68	87.34	118.72
10 Real estate and renting activities	1,342.09	549.45	598.66	500.39
11 Business activities	63.21	47.14	46.78	48.19
12 Public Administration	19.84	27.88	33.66	35.62
13 Education, health and social work	46.93	56.52	48.98	53.56
14 Other community, social and personal services	16.99	22.94	24.68	22.74
15 International business activity	82.62	102.51	118.29	131.47

LABOUR PRODUCTIVITY INDICATORS

Table 8 Growth in Output per hour Worked %

INDUSTRIAL SECTIONS	1997/2007 ¹⁰	2002/2007 ¹¹	2006/2007 ¹²
Total	31.3	17.3	8.0
01 Agriculture, forestry and fishing	-20.9	10.7	7.2
03 Manufacturing	-18.4	-6.0	-6.2
04 Electricity, gas and water supply	27.9	-3.5	-25.7
05/02 Construction & Quarrying	-15.1	6.8	5.2
06 Wholesale and retail trade and repair services	33.5	20.3	2.0
07 Hotels and restaurants	32.0	13.1	5.9
08 Transport and communications	13.4	22.2	12.7
09 Financial intermediation	94.0	50.9	35.9
10 Real estate and renting activities	-62.7	-8.9	-16.4
11 Business activities	-23.8	2.2	3.0
12 Public Administration	79.5	27.8	5.8
13 Education, health and social work	14.1	-5.2	9.4
14 Other community, social and personal services	33.8	-0.9	-7.9
15 International business activity	59.1	28.2	11.1

¹⁰ Percentage change in ten years

¹¹ Percentage change in five years

¹² Year to year change

LABOUR PRODUCTIVITY INDICATORS

Table 9 Output per Filled Job

INDUSTRIAL SECTIONS	1997	2002	2006	2007
Total	76,326	84,169	95,355	99,475
01 Agriculture, forestry and fishing	57,077	43,740	50,721	52,254
03 Manufacturing	75,036	63,435	65,827	61,119
04 Electricity, gas and water supply	127,464	200,212	199,529	184,416
05/02 Construction & Quarrying	76,100	60,709	64,139	65,923
06 Wholesale and retail trade and repair services	57,317	64,279	75,819	77,887
07 Hotels and restaurants	35,359	41,877	46,836	47,878
08 Transport and communications	92,298	80,221	89,282	97,894
09 Financial intermediation	110,226	133,092	192,037	201,724
10 Real estate and renting activities	1,916,728	960,438	1,090,583	885,151
11 Business activities	107,856	75,695	79,940	81,552
12 Public Administration	29,122	39,841	45,008	47,569
13 Education, health and social work	75,020	79,517	75,013	75,876
14 Other community, social and personal services	26,344	35,201	37,513	34,878
15 International business activity	146,125	179,170	208,452	232,641

LABOUR PRODUCTIVITY INDICATORS

Table 10 Growth in output per filled job %

INDUSTRIAL SECTIONS	1997/2007 ¹³	2002/2007 ¹⁴	2006/2007 ¹⁵
Total	30.3	18.2	4.3
01 Agriculture, forestry and fishing	-8.4	19.5	3.0
03 Manufacturing	-18.5	-3.7	-7.2
04 Electricity, gas and water supply	44.7	-7.9	-7.6
05/02 Construction & Quarrying	-13.4	8.6	2.8
06 Wholesale and retail trade and repair services	35.9	21.2	2.7
07 Hotels and restaurants	35.4	14.3	2.2
08 Transport and communications	6.1	22.0	9.6
09 Financial intermediation	83.0	51.6	5.0
10 Real estate and renting activities	-53.8	-7.8	-18.8
11 Business activities	-24.4	7.7	10.3
12 Public Administration	63.3	19.4	5.7
13 Education, health and social work	1.1	-4.6	1.2
14 Other community, social and personal services	32.4	-0.9	-7.0
15 International business activity	59.2	29.8	11.6

¹³ Percentage change in ten years

¹⁴ Percentage change in five years

¹⁵ Year to year change

LABOUR PRODUCTIVITY INDICATORS

Table 11 Unit Labour Cost

INDUSTRIAL SECTIONS	1997	2002	2006	2007
Total	0.60	0.72	0.89	0.94
01 Agriculture, forestry and fishing	0.47	0.62	0.80	0.79
03 Manufacturing	0.70	0.72	0.86	0.92
04 Electricity, gas and water supply	0.48	0.43	0.54	0.60
05/02 Construction & Quarrying	0.49	0.84	0.81	0.90
06 Wholesale and retail trade and repair services	0.63	0.64	0.70	0.73
07 Hotels and restaurants	0.70	0.83	0.90	0.95
08 Transport and communications	0.52	0.61	0.63	0.61
09 Financial intermediation	0.51	0.58	0.58	0.59
10 Real estate and renting activities	0.03	0.17	0.36	0.19
11 Business activities	0.66	0.71	0.90	0.98
12 Public Administration	1.21	1.19	1.39	1.46
13 Education, health and social work	1.08	0.94	1.19	1.28
14 Other community, social and personal services	0.80	0.81	1.08	1.16
15 International business activity	0.89	1.03	1.26	1.32

LABOUR PRODUCTIVITY INDICATORS

Table 12 Growth in Unit Labour Cost %

INDUSTRIAL SECTIONS	1997/2007 ¹⁶	2002/2007 ¹⁷	2006/2007 ¹⁸
Total	55.6	30.3	5.0
01 Agriculture, forestry and fishing	70.4	27.3	-0.2
03 Manufacturing	30.3	28.1	6.8
04 Electricity, gas and water supply	24.7	37.5	10.4
05/02 Construction & Quarrying	83.3	7.1	10.8
06 Wholesale and retail trade and repair services	15.9	13.8	4.1
07 Hotels and restaurants	36.8	15.2	5.6
08 Transport and communications	16.9	-0.1	-3.1
09 Financial intermediation	16.3	1.5	2.7
10 Real estate and renting activities	471.0	12.8	-46.7
11 Business activities	46.9	36.7	8.8
12 Public Administration	20.3	22.7	5.0
13 Education, health and social work	19.0	35.7	7.8
14 Other community, social and personal services	43.8	42.7	7.1
15 International business activity	49.3	28.0	5.2

¹⁶ Percentage change in ten years

¹⁷ Percentage change in five years

¹⁸ Year to year percentage change

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