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**استعراض عام**

## 5-1 Appendix A

### 5-2 Equations

If the factors of production are measured in efficiency units, and then the production function can be written in the form:

$$Y = F(\hat{K}, \hat{L}, t) \dots\dots\dots \text{append 1}$$

Where the respective levels of capital and labour sources are defined by:

$$\hat{K} = E_K(t) K_t \text{ and } \hat{L} = E_L(t) L_t \dots\dots\dots \text{append 2}$$

Thus,  $E_K(t)$  is a summary measure of the common factors affecting the efficiency of all units of capital irrespective of their times. By similar reason,  $E_L(t)$  is the summary measure of the common factors affecting the efficiency of all units of labour irrespective of their times.

Assuming that factors are paid prices equal to their respective marginal products and that the shares of the product to capital and labour,  $S_K$  and  $S_L$  respectively, exhaust the total product, total factor payments is defined as:

$$S_K = Y_K K \text{ and } S_L = Y_L L \dots\dots\dots \text{append 3}$$

That is  $S_K = PK$  and  $S_L = wL$  and the relative factor shares are defined to be:

$$S_K = \frac{S_K}{Y} = \frac{rK}{pY}, \quad S_L = \frac{S_L}{Y} = \frac{wL}{pY} \dots\dots\dots \text{append 4}$$

It follows immediately that the relative factor share is equal to the elasticity of output with respect to that particular factor. Thus,

$$S_K = \frac{Y_K K}{Y} = \frac{\delta \ln Y}{\delta \ln K} = \sum Y_K, \text{ and } S_L = \frac{Y_L L}{Y} = \frac{\delta \ln Y}{\delta \ln L} = \sum Y_L \dots\dots\dots \text{append 5}$$

With constant return to scale assumption,

$$S_K + S_L = \sum Y_K + \sum Y_L = 1 \dots\dots\dots \text{append 6}$$

## 5-3 Appendix B

### 5-4 Tables

**Table 5-1: Sources of Output Growth: 1995-2003 vs. 1989-1995**

*The measures of groups and the world are averages weighted by GDP(in PPP\$) share*

| Economy                                 | Period 1989-1995 |                                       |             |             |             |             | Period 1995-2003                      |             |             |             |             |             |
|-----------------------------------------|------------------|---------------------------------------|-------------|-------------|-------------|-------------|---------------------------------------|-------------|-------------|-------------|-------------|-------------|
|                                         | GDP Growth       | Source of Growth (% points per annum) |             |             |             |             | Source of Growth (% points per annum) |             |             |             |             |             |
|                                         |                  | Capital                               |             | Labor       |             | TFP         | GDP Growth                            | Capital     |             | Labor       |             | TFP         |
|                                         |                  | ICT                                   | Non-ICT     | Hours       | Quality     |             |                                       | ICT         | Non-ICT     | Hours       | Quality     |             |
| <b>World( 110 Economies)</b>            | <b>2.50</b>      | <b>0.27</b>                           | <b>0.91</b> | <b>0.39</b> | <b>0.40</b> | <b>0.53</b> | <b>3.45</b>                           | <b>0.53</b> | <b>1.03</b> | <b>0.62</b> | <b>0.27</b> | <b>0.99</b> |
| G7 (economies)                          | 2.18             | 0.38                                  | 0.90        | 0.07        | 0.42        | 0.42        | 2.56                                  | 0.69        | 0.74        | 0.28        | 0.18        | 0.67        |
| Developing Asia (16)                    | 7.35             | 0.15                                  | 1.73        | 1.19        | 0.42        | 3.86        | 5.62                                  | 0.43        | 2.27        | 0.81        | 0.38        | 1.72        |
| Non-G7 (15)                             | 2.03             | 0.32                                  | 0.68        | 0.21        | 0.21        | 0.61        | 3.01                                  | 0.49        | 0.77        | 1.06        | 0.20        | 0.49        |
| Latin America(19)                       | 3.08             | 0.16                                  | 0.58        | 1.20        | 0.37        | 0.75        | 2.11                                  | 0.39        | 0.61        | 1.10        | 0.34        | -0.32       |
| Eastern Europe(14)                      | -7.05            | 0.10                                  | -0.15       | -0.86       | 0.36        | -6.50       | 2.87                                  | 0.23        | -0.81       | 0.01        | 0.39        | 3.06        |
| Sub-Sahara Africa(28)                   | 1.21             | 0.13                                  | 0.24        | 1.68        | 0.56        | -1.39       | 2.88                                  | 0.29        | 0.68        | 1.18        | 0.42        | 0.32        |
| N. Africa and M. East(11)               | 4.36             | 0.15                                  | 0.72        | 1.43        | 0.56        | 1.50        | 4.08                                  | 0.40        | 0.88        | 2.02        | 0.49        | 0.30        |
| <b>Seven World Major Economies (G7)</b> |                  |                                       |             |             |             |             |                                       |             |             |             |             |             |
| Canada                                  | 1.39             | 0.49                                  | 0.27        | 0.07        | 0.55        | 0.01        | 2.51                                  | 0.65        | 0.61        | 0.68        | 0.16        | 0.42        |
| France                                  | 1.30             | 0.19                                  | 0.93        | -0.17       | 0.61        | -0.26       | 1.92                                  | 0.36        | 0.75        | 0.22        | 0.07        | 0.52        |
| Germany                                 | 2.34             | 0.26                                  | 1.05        | -0.42       | 0.33        | 1.12        | 0.86                                  | 0.40        | 0.50        | -0.24       | 0.09        | 0.11        |

|                                                        |             |             |             |             |             |             |             |             |             |             |             |             |
|--------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Italy                                                  | 1.52        | 0.26        | 0.86        | -0.35       | 0.38        | 0.37        | 1.48        | 0.46        | 0.96        | 0.61        | 0.27        | -0.82       |
| Japan                                                  | 2.56        | 0.31        | 1.16        | -0.39       | 0.54        | 0.94        | 1.39        | 0.56        | 0.26        | -0.32       | 0.22        | 0.67        |
| U.K.                                                   | 1.62        | 0.27        | 1.89        | -0.73       | 0.49        | -0.10       | 2.55        | 0.56        | 0.19        | 0.38        | 0.26        | 1.07        |
| U.S.A.                                                 | 2.43        | 0.49        | 0.72        | 0.57        | 0.36        | 0.31        | 3.56        | 0.88        | 1.01        | 0.50        | 0.17        | 0.99        |
| <b>All G7</b>                                          | <b>2.18</b> | <b>0.38</b> | <b>0.90</b> | <b>0.07</b> | <b>0.42</b> | <b>0.42</b> | <b>2.56</b> | <b>0.69</b> | <b>0.74</b> | <b>0.28</b> | <b>0.18</b> | <b>0.67</b> |
| <b>Seven Major Developing and Transition Economies</b> |             |             |             |             |             |             |             |             |             |             |             |             |
| Brazil                                                 | 1.97        | 0.09        | 0.29        | 0.99        | 0.39        | 0.20        | 1.94        | 0.46        | 0.24        | 0.67        | 0.37        | 0.21        |
| China                                                  | 9.94        | 0.17        | 2.12        | 0.87        | 0.45        | 6.33        | 7.13        | 0.63        | 3.17        | 0.45        | 0.39        | 2.49        |
| India                                                  | 5.03        | 0.09        | 1.18        | 1.27        | 0.43        | 2.06        | 6.15        | 0.26        | 1.77        | 1.22        | 0.41        | 2.49        |
| Indonesia                                              | 6.82        | 0.10        | 1.62        | 1.84        | 0.43        | 3.04        | 2.41        | 0.00        | 1.47        | 0.91        | 0.41        | -0.47       |
| Mexico                                                 | 2.19        | 0.24        | 0.95        | 1.48        | 0.38        | -0.87       | 3.56        | 0.23        | 1.11        | 1.76        | 0.31        | 0.14        |
| Russia Fed.                                            | -8.44       | 0.07        | -0.07       | -1.02       | 0.37        | -7.79       | 3.18        | 0.10        | -1.30       | 0.21        | 0.44        | 3.73        |
| S. Korea                                               | 7.48        | 0.29        | 2.31        | 1.45        | 0.31        | 3.13        | 4.09        | 0.46        | 1.87        | 0.86        | 0.2         | 0.85        |
| <b>All GD 7</b>                                        | <b>3.45</b> | <b>0.13</b> | <b>1.17</b> | <b>0.72</b> | <b>0.41</b> | <b>1.03</b> | <b>5.18</b> | <b>0.40</b> | <b>1.70</b> | <b>0.74</b> | <b>0.39</b> | <b>1.96</b> |

Data Source: Title: **INFORMATION TECHNOLOGY AND THE WORLD GROWTH RESURGENCE**

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**Table 5-2: Levels of Output and Input Per Capita and Productivity (U.S.=100 in 2000)**

*The levels for groups and the world are averages weighted by population share.*

| Region          | Output Per Capita |             |             | Input Per Capita |             |             | Productivity |             |             |
|-----------------|-------------------|-------------|-------------|------------------|-------------|-------------|--------------|-------------|-------------|
|                 | 1989              | 1995        | 2003        | 1989             | 1995        | 2003        | 1989         | 1995        | 2003        |
| <b>World</b>    | <b>18.9</b>       | <b>20.0</b> | <b>23.9</b> | <b>38.5</b>      | <b>38.5</b> | <b>42.4</b> | <b>49.0</b>  | <b>52.0</b> | <b>56.3</b> |
| G7              | 66.9              | 72.8        | 85.5        | 72.8             | 77.4        | 86.4        | 91.9         | 94.1        | 99.0        |
| Developing Asia | 6.0               | 8.5         | 12.1        | 19.1             | 21.5        | 26.2        | 31.7         | 39.7        | 46.1        |
| Non-G7          | 51.5              | 56.0        | 68.0        | 61.9             | 64.9        | 75.9        | 83.2         | 86.4        | 89.5        |
| Latin America   | 18.6              | 20.0        | 21.0        | 27.1             | 28.2        | 30.5        | 68.4         | 71.0        | 68.7        |
| Eastern         | 34.3              | 22.5        | 29.3        | 43.2             | 41.4        | 42.6        | 79.4         | 54.4        | 68.8        |

|                                                              |             |             |             |             |             |             |             |             |             |
|--------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Europe                                                       |             |             |             |             |             |             |             |             |             |
| Sub-Saharan Africa                                           | 5.3         | 4.8         | 5.0         | 15.7        | 15.7        | 16.7        | 33.5        | 30.6        | 30.0        |
| N. Africa & M. East                                          | 12.5        | 14.2        | 17.0        | 22.3        | 23.2        | 27.3        | 55.9        | 61.1        | 62.3        |
| <b>Seven World Major Economies (G7)</b>                      |             |             |             |             |             |             |             |             |             |
| Canada                                                       | 79.4        | 80.2        | 91.0        | 75.0        | 75.7        | 83.2        | 105.9       | 105.9       | 109.5       |
| France                                                       | 54.5        | 57.4        | 64.7        | 53.7        | 57.4        | 62.1        | 101.5       | 100.0       | 104.2       |
| Germany                                                      | 59.0        | 65.5        | 69.4        | 71.6        | 74.3        | 78.0        | 82.4        | 88.2        | 89.0        |
| Italy                                                        | 57.7        | 62.5        | 69.9        | 55.9        | 59.2        | 70.7        | 103.2       | 105.6       | 98.0        |
| Japan                                                        | 56.3        | 64.4        | 70.8        | 72.5        | 78.3        | 81.7        | 77.7        | 82.2        | 86.7        |
| U.K.                                                         | 56.9        | 61.8        | 73.7        | 61.7        | 67.5        | 73.9        | 92.2        | 01.6        | 99.8        |
| U.S.A.                                                       | 80.6        | 86.3        | 106.4       | 84.4        | 89.1        | 101.4       | 95.5        | 96.9        | 104.9       |
| <b>All G7</b>                                                | <b>66.9</b> | <b>72.8</b> | <b>85.5</b> | <b>72.8</b> | <b>77.4</b> | <b>86.4</b> | <b>91.9</b> | <b>94.1</b> | <b>99.0</b> |
| <b>Seven Major Developing and Transition Economies (GD7)</b> |             |             |             |             |             |             |             |             |             |
| Brazil                                                       | 19.9        | 20.5        | 21.5        | 29.3        | 29.8        | 30.8        | 67.9        | 68.7        | 69.8        |
| China                                                        | 4.8         | 8.1         | 13.4        | 17.9        | 20.7        | 28.0        | 26.9        | 39.3        | 48.0        |
| India                                                        | 5.0         | 6.0         | 8.6         | 15.9        | 17.0        | 19.9        | 31.2        | 35.3        | 43.1        |
| Indonesia                                                    | 8.3         | 11.3        | 12.2        | 23.7        | 26.8        | 29.9        | 35.3        | 42.3        | 40.7        |
| Mexico                                                       | 22.2        | 22.3        | 26.6        | 28.0        | 29.7        | 34.9        | 79.3        | 75.3        | 76.1        |
| Russian Federation                                           | 41.8        | 25.1        | 33.5        | 50.0        | 48.0        | 47.4        | 83.6        | 52.4        | 70.6        |
| S. Korea                                                     | 24.3        | 35.8        | 46.5        | 37.1        | 45.4        | 55.0        | 65.4        | 78.9        | 84.5        |
| Sri Lanka                                                    | 7.9         | 10.0        | 11.2        | 20.0        | 22.4        | 27.3        | 39.3        | 44.7        | 41.1        |
| Taiwan                                                       | 31.8        | 44.5        | 57.8        | 42.3        | 48.8        | 60.0        | 75.1        | 91.1        | 96.4        |
| Thailand                                                     | 12.1        | 18.6        | 21.2        | 30.9        | 35.7        | 39.7        | 39.2        | 52.0        | 53.5        |
| Vietnam                                                      | 3.3         | 4.5         | 7.0         | 12.1        | 13.9        | 18.0        | 27.1        | 32.6        | 38.8        |
| <b>All Group</b>                                             | <b>6.0</b>  | <b>8.5</b>  | <b>12.1</b> | <b>19.1</b> | <b>21.5</b> | <b>26.2</b> | <b>31.7</b> | <b>39.7</b> | <b>46.1</b> |

| <b>Non-G7 (15 economies)</b>            |                          |             |             |                          |             |             |                     |             |             |
|-----------------------------------------|--------------------------|-------------|-------------|--------------------------|-------------|-------------|---------------------|-------------|-------------|
| <b>Economy</b>                          | <b>Output per Capita</b> |             |             | <b>Input per Capital</b> |             |             | <b>Productivity</b> |             |             |
|                                         | 1989                     | 1995        | 2003        | 1989                     | 1995        | 2003        | 1989                | 1995        | 2003        |
| Australia                               | 61.2                     | 66.6        | 81.7        | 76.1                     | 78.6        | 88.3        | 80.4                | 84.7        | 92.5        |
| Austria                                 | 56.3                     | 61.9        | 71.4        | 69.0                     | 72.8        | 77.9        | 81.6                | 85.0        | 91.7        |
| Belgium                                 | 56.4                     | 61.7        | 71.2        | 60.1                     | 62.4        | 67.5        | 93.9                | 98.9        | 105.5       |
| Finland                                 | 60.3                     | 54.1        | 71.6        | 83.3                     | 73.3        | 79.5        | 72.5                | 73.8        | 90.1        |
| Greece                                  | 36.7                     | 37.3        | 50.2        | 42.5                     | 44.8        | 53.0        | 86.3                | 83.2        | 94.7        |
| Ireland                                 | 37.3                     | 50.0        | 86.0        | 46.8                     | 52.4        | 68.0        | 79.6                | 95.4        | 126.4       |
| Israel                                  | 41.2                     | 51.2        | 51.7        | 42.8                     | 46.8        | 52.1        | 96.3                | 109.3       | 99.1        |
| Netherlands                             | 56.3                     | 62.1        | 72.5        | 69.9                     | 75.4        | 87.4        | 80.6                | 82.4        | 82.9        |
| New Zealand                             | 48.9                     | 52.0        | 60.5        | 72.2                     | 73.9        | 79.8        | 67.7                | 70.4        | 75.8        |
| Norway                                  | 67.1                     | 79.5        | 91.7        | 82.1                     | 84.9        | 90.7        | 81.7                | 93.6        | 101.0       |
| Portugal                                | 34.6                     | 39.3        | 46.6        | 49.1                     | 52.9        | 62.0        | 70.4                | 74.2        | 75.2        |
| Spain                                   | 43.6                     | 48.3        | 61.5        | 47.5                     | 51.3        | 68.9        | 91.8                | 94.1        | 89.2        |
| Sweden                                  | 60.1                     | 60.5        | 74.7        | 86.7                     | 85.2        | 95.0        | 69.4                | 71.1        | 78.6        |
| Switzerland                             | 75.9                     | 73.6        | 77.8        | 95.6                     | 97.9        | 101.9       | 79.5                | 75.1        | 76.3        |
| <b>All Group</b>                        | <b>51.5</b>              | <b>65.0</b> | <b>68.0</b> | <b>61.9</b>              | <b>64.9</b> | <b>75.9</b> | <b>83.2</b>         | <b>86.4</b> | <b>89.5</b> |
| <b>Latin America (19 Economies)</b>     |                          |             |             |                          |             |             |                     |             |             |
| <b>Economy</b>                          | <b>Output per Capita</b> |             |             | <b>Input per Capital</b> |             |             | <b>Productivity</b> |             |             |
|                                         | 1989                     | 1995        | 2003        | 1989                     | 1995        | 2003        | 1989                | 1995        | 2003        |
| Argentina                               | 23.0                     | 30.7        | 29.7        | 34.1                     | 32.5        | 34.4        | 67.5                | 94.5        | 86.3        |
| Brazil                                  | 19.9                     | 20.5        | 21.5        | 29.3                     | 29.8        | 30.8        | 67.9                | 68.7        | 69.8        |
| Mexico                                  | 22.2                     | 22.3        | 26.6        | 28.0                     | 29.7        | 34.9        | 79.3                | 75.3        | 76.1        |
| Venezuela                               | 21.2                     | 22.4        | 16.3        | 25.5                     | 25.8        | 25.8        | 83.33               | 86.9        | 63.0        |
| <b>Sub-Sahara Africa (28 Economies)</b> |                          |             |             |                          |             |             |                     |             |             |
| <b>Economy</b>                          | <b>Output per Capita</b> |             |             | <b>Input per Capital</b> |             |             | <b>Productivity</b> |             |             |

|           | 1989 | 1995 | 2003 |      | 1989 | 1995 | 2003 | 1995 | 1989 |
|-----------|------|------|------|------|------|------|------|------|------|
| Ghana     | 3.4  | 3.6  | 4.2  | 11.3 | 11.4 | 13.6 | 29.9 | 31.9 | 30.8 |
| Nigeria   | 3.5  | 3.0  | 2.4  | 9.9  | 10.0 | 11.5 | 35.0 | 30.5 | 21.1 |
| Senegal   | 4.4  | 4.2  | 5.0  | 15.8 | 16.0 | 18.3 | 27.9 | 26.5 | 27.3 |
| S. Africa | 23.4 | 21.6 | 23.4 | 25.7 | 26.3 | 25.3 | 90.8 | 82.1 | 92.5 |
| Uganda    | 2.0  | 2.5  | 3.1  | 10.9 | 10.9 | 12.0 | 18.5 | 22.8 | 26.0 |
| Egypt     | 9.2  | 10.7 | 13.0 | 18.2 | 18.0 | 20.2 | 50.7 | 59.2 | 64.1 |
| Tunisia   | 14.0 | 16.3 | 21.7 | 24.7 | 26.5 | 30.8 | 56.7 | 61.5 | 70.6 |

Data Source: Title: **INFORMATION TECHNOLOGY AND THE WORLD GROWTH RESURGENCE**

Authors: Dale W. Jorgenson. Harvard University

### **Information and Communication Technologies (ICTs) in Africa:**

**Table 5-3: *Internet User as Percentage of Total Population***

| <b>Region</b>                   | <b>1998</b> | <b>2000</b> |
|---------------------------------|-------------|-------------|
| United States                   | <b>26.3</b> | <b>54.3</b> |
| High-income OECD                | <b>6.9</b>  | <b>28.2</b> |
| Latin America and the Caribbean | <b>0.8</b>  | <b>3.2</b>  |
| East Asia and the Pacific       | <b>0.5</b>  | <b>2.3</b>  |
| Eastern Europe and CIS          | <b>0.8</b>  | <b>3.9</b>  |
| Arab States                     | <b>0.2</b>  | <b>0.6</b>  |
| Sub-Saharan Africa              | <b>0.1</b>  | <b>0.4</b>  |
| South Asia                      | <b>0.04</b> | <b>0.4</b>  |
| World                           | <b>2.4</b>  | <b>6.7</b>  |

Source: [www.nua.ie](http://www.nua.ie)

**Table 5-4: African Internet Statistics 2002**

| Country         | Dialup<br>internet<br>subscribers | International<br>outgoing<br>bandwidth<br>kbps | Population<br>millions<br>2000 | GDP/capita<br>USD<br>1999 | Cities with<br>POPs<br>(points of<br>Presence) |
|-----------------|-----------------------------------|------------------------------------------------|--------------------------------|---------------------------|------------------------------------------------|
| <b>Africa</b>   | <b>1492535</b>                    | <b>1409100</b>                                 | <b>769.66</b>                  | <b>1207.5</b>             | <b>283</b>                                     |
| Algeria         | 45000                             | 12000                                          | 30,08                          | 1442                      | 1                                              |
| Cameroon        | 7000                              | 90000                                          | 14,31                          | 617                       | 2                                              |
| Egypt           | 100000                            | 535000                                         | 65,98                          | 846                       | 6                                              |
| Ethiopia        | 6500                              | 8200                                           | 59,65                          | 103                       | 5                                              |
| Ghana           | 15000                             | 4096                                           | 19,16                          | 372                       | 3                                              |
| Kenya           | 35000                             | 28000                                          | 29,01                          | 347                       | 2                                              |
| Nigeria         | 60000                             | 15000                                          | 113,5                          | 551                       | 2                                              |
| Senegal         | 15000                             | 48000                                          | 0,08                           | 6995                      | 4                                              |
| South<br>Africa | 750000                            | 342000                                         | 44,31                          | 2979                      | 2                                              |
| Sudan           | 9000                              | 10000                                          | 28,29                          | 364                       | 7                                              |

Source: Unctad Annual Report 2006

**Table 5-5: Country Network readiness index 2008-2009 Rankings**

| Country      | Score         | Rank Index      |
|--------------|---------------|-----------------|
| South Africa | 4.07          | 52              |
| Egypt        | 3.76          | 76              |
| Zimbabwe     | 2.49          | 129             |
| Nigeria      | 3.45          | 90              |
| Sudan        | 6 (year 2007) | 105 (year 2007) |
| Uganda       | 2.98          | 120             |
| Kenya        | 3.35          | 97              |
| Tunisia      | 4.34          | 38              |
| Senegal      | 3.67          | 80              |
| Ghana        | 3.25          | 103             |

Source: UNCTAD, Information Economy Reports (2005/ 2006)

**Table 5-6: Internet users by region and level of development 2003-2004**

|                                 | 2000      | %change<br>2000 | 2001      | %change<br>2001 | 2002      | %change<br>2002 | 2003      | %change<br>2003 | 2004      |
|---------------------------------|-----------|-----------------|-----------|-----------------|-----------|-----------------|-----------|-----------------|-----------|
| Region                          |           |                 |           |                 |           |                 |           |                 |           |
| Africa                          | 4314700   | 36.2            | 5876800   | 57.5            | 9255620   | 41.5            | 13096650  | 66.6            | 21813872  |
| Asia                            | 110958867 | 37.2            | 152262521 | 39.0            | 211582599 | 20.8            | 255668777 | 28.6            | 328887039 |
| Latin<br>America &<br>Caribbean | 19352400  | 49.9            | 28918492  | 45.9            | 42191573  | 20.9            | 50995059  | 18.7            | 60534062  |
| North<br>America                | 136971000 | 14.5            | 156823000 | 11.1            | 174200000 | 2.9             | 179232400 | 14.4            | 205000000 |
| Europe                          | 107999345 | 27.6            | 137834925 | 23.9            | 170817495 | 17.9            | 201324310 | 20.7            | 242951272 |
| Oceania                         | 8182800   | 16.7            | 9545400   | 31.4            | 12544450  | 8.3             | 13581400  | 21.1            | 16445726  |

Source: UNCTAD Information Economy Report (2005/2006)

**Table 5-7: Internet users by region 2000-2004(10 countries/territories)**

| Country/R<br>egion | 2000   | %change<br>2000-<br>2001 | 2001   | %change<br>2001-<br>2002 | 2002    | %change<br>2002-<br>2003 | 2003    | %change<br>2003-<br>2004 | 2004    |
|--------------------|--------|--------------------------|--------|--------------------------|---------|--------------------------|---------|--------------------------|---------|
| Egypt              | 450000 | 33.3                     | 600000 | 216.7                    | 1900000 | 57.9                     | 3000000 | 30.0                     | 3900000 |
| Kenya              | 100000 | 100.0                    | 200000 | 100.0                    | 400000  | 150.0                    | 1000000 | ..                       | ..      |
| Morocco            | 200000 | 100.0                    | 400000 | 75.0                     | 700000  | 42.9                     | 1000000 | 250.0                    | 3500000 |
| Sudan              | 30000  | 68.7                     | 56000  | 50.0                     | 84000   | 1015.5                   | 937000  | 21.7                     | 1140000 |
| Zimbabwe           | 50000  | 100.0                    | 100000 | 400.0                    | 500000  | 60.0                     | 800000  | 2.5                      | 820000  |
| Nigeria            | 80000  | 43.8                     | 115000 | 265.2                    | 420000  | 78.6                     | 750000  | ..                       | ..      |
| Tunisia            | 260000 | 57.7                     | 410000 | 23.3                     | 505000  | 24.6                     | 630000  | 32.5                     | 835000  |
| United Re.<br>tanz | 40000  | 50.0                     | 60000  | 33.3                     | 80000   | 212.5                    | 250000  | ..                       | ..      |
| Cote<br>devoir     | 40000  | 75.0                     | 70000  | 28.6                     | 90000   | 166.7                    | 240000  | ..                       | ..      |
| Senegal            | 40000  | 150.0                    | 100000 | 5.0                      | 105000  | 114.3                    | 225000  | ..                       | ..      |
| Average            |        |                          |        |                          |         |                          |         |                          |         |

Source: UNCTAD Information Economy Report (2005/2006)

**Table 5-8: Internet penetration by region and level of development, 2002-2004**

| Region                      | 2000 | %change<br>2000-<br>2002 | 2001 | %change<br>2001-<br>2002 | 2002 | %change<br>2002-<br>2003 | 2003 | %change<br>2003-<br>2004 | 2004 |
|-----------------------------|------|--------------------------|------|--------------------------|------|--------------------------|------|--------------------------|------|
| Africa                      | 0.7  | 33.3                     | 0.9  | 54.2                     | 1.4  | 38.5                     | 1.9  | 63.1                     | 3.1  |
| Asia                        | 3.1  | 35.5                     | 4.2  | 37.3                     | 5.7  | 19.4                     | 6.8  | 27.1                     | 8.7  |
| Europe                      | 14.7 | 27.6                     | 18.8 | 23.9                     | 23.3 | 17.9                     | 27.5 | 20.7                     | 33.2 |
| Latin America and Caribbean | 3.9  | 47.3                     | 5.7  | 43.8                     | 8.2  | 19.2                     | 9.7  | 17.1                     | 11.4 |
| North America               | 43.5 | 13.4                     | 49.3 | 10.0                     | 54.2 | 1.9                      | 55.3 | 13.3                     | 62.6 |
| Oceania                     | 32.8 | 15.3                     | 37.9 | 29.9                     | 49.2 | 7.0                      | 52.6 | 19.7                     | 63.0 |

| Level of Development      |            |             |            |             |             |             |             |             |             |
|---------------------------|------------|-------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Developed countries       | 30.7       | 20.1        | 36.9       | 16.0        | 42.8        | 7.2         | 45.9        | 15.2        | 52.9        |
| Developing countries      | 2.1        | 40.8        | 3.0        | 46.7        | 4.4         | 23.6        | 5.4         | 27.9        | 6.9         |
| South-East Europe and CIS | 1.8        | 50.2        | 2.7        | 52.7        | 4.2         | 74.4        | 7.2         | 72.6        | 12.5        |
| <b>Total</b>              | <b>6.6</b> | <b>25.2</b> | <b>8.3</b> | <b>24.8</b> | <b>10.4</b> | <b>13.7</b> | <b>11.8</b> | <b>21.3</b> | <b>14.3</b> |

Source: UNCTAD Information Economy Report (2005/2006)

**Table 5-9 Telecom Statistics for Africa and Latin America**

| Year | Mainlines<br>Per 100 pop |        | Payphones<br>Per 100 pop |        | Connection<br>Capacity<br>Per 100 pop |        | Employees<br>Per Line |        | Price of 3 Minute<br>Call |        |
|------|--------------------------|--------|--------------------------|--------|---------------------------------------|--------|-----------------------|--------|---------------------------|--------|
|      | Afr                      | Lat Am | Afr                      | Lat Am | Afr                                   | Lat Am | Afr                   | Lat Am | Afr                       | Lat Am |
| 1990 | 0.47                     | 4.56   | n/a                      | 0.06   | 1.16                                  | 5.83   | 0.08                  | 0.03   | Nn/a                      | n/a    |
| 1991 | 0.82                     | 4.95   | 0.01                     | 0.06   | 1.11                                  | 5.77   | 0.07                  | 0.03   | n/a                       | n/a    |
| 1992 | 0.88                     | 5.22   | 0.01                     | 0.07   | 1.46                                  | 5.92   | 0.07                  | 0.02   | 0.16                      | 0.03   |
| 1994 | 0.94                     | 5.54   | 0.01                     | 0.08   | 1.48                                  | 6.85   | 0.07                  | 0.02   | 0.11                      | 0.05   |
| 1995 | 1.00                     | 5.86   | 0.01                     | 0.09   | 1.29                                  | 7.61   | 0.07                  | 0.02   | 0.11                      | 0.06   |
| 1996 | 1.08                     | 6.16   | 0.01                     | 0.09   | 1.58                                  | 7.16   | 0.06                  | 0.02   | 0.09                      | 0.06   |
| 1997 | 1.17                     | 6.66   | 0.01                     | 0.09   | 1.55                                  | 8.23   | 0.06                  | 0.02   | 0.07                      | 0.05   |
| 1998 | 1.30                     | 7.14   | 0.01                     | 0.09   | 1.86                                  | 8.54   | 0.05                  | 0.02   | 0.06                      | 0.5    |
| 1999 | 1.48                     | 7.77   | 0.01                     | 0.10   | 1.97                                  | 9.17   | 0.05                  | 0.02   | 0.09                      | 0.04   |
| 2000 | 1.72                     | 8.50   | 0.01                     | 0.11   | 2.26                                  | 10.07  | 0.05                  | 0.02   | 0.09                      | 0.05   |
| 2001 | 1.95                     | 9.19   | 0.01                     | 0.12   | 2.40                                  | 10.78  | 0.04                  | 0.01   | 0.07                      | 0.05   |
| 2002 | 2.15                     | 9.91   | 0.02                     | 0.14   | 2.66                                  | 12.47  | 0.04                  | 0.01   | 0.08                      | 0.05   |
| 2003 | 2.45                     | 10.86  | 0.03                     | 0.15   | 3.36                                  | 13.49  | 0.04                  | 0.01   | 0.09                      | 0.07   |
| 2004 | 2.94                     | 11.67  | 0.05                     | 0.18   | 4.14                                  | 15.34  | 0.03                  | 0.01   | 0.06                      | 0.07   |
| 2005 | 2.99                     | 11.92  | 0.06                     | 0.19   | 4.85                                  | 15.98  | 0.04                  | 0.01   | 0.08                      | 0.07   |

Data source before analysis taken from: <http://unctad.org/Templates/StartPage.asp?intItemID=2068> And World Bank (home page): <http://econ.worldbank.org>

**Table 5-10: Effect on mainlines: Fixed effects estimation**

| Dependent variable                |             | Mainlines per hundred population |             |             |
|-----------------------------------|-------------|----------------------------------|-------------|-------------|
| Mean of dependent variable        |             | 4.45                             |             |             |
|                                   | Column 1    |                                  | Column 2    |             |
|                                   | Coefficient | t-statistic                      | Coefficient | t-statistic |
| Number of Mobile operators        | 0.18        | 2.81                             | 0.25        | 2.71        |
| Incumbent privatized?             | -0.69       | -2.32                            | -1.45       | -3.21       |
| Privatized *Separate regulator    |             |                                  | 1.24        | 2.30        |
| #mobile firms* separate regulator |             |                                  | -0.08       | -0.26       |
| Separate regulator                | 0.23        | 0.99                             | 0.08        | 0.10        |
| Reform legislation passed         | -1.06       | -5.35                            | -0.97       | -4.84       |
| Population                        | -0.10       | -4.60                            | -0.10       | -4.57       |
| Percent population urban          | -0.08       | -3.23                            | -0.08       | -3.13       |
| Income per capita                 | 0.0013      | 13.57                            | 0.0014      | 13.85       |
| World Bank telecom project        | 0.20        | 1.23                             | 0.23        | 1.37        |
| World Bank aid / GDP              | -0.27       | -0.10                            | 0.23        | 0.08        |
| Export / GDP                      | 1.56        | 1.64                             | 1.722       | 1.81        |
| Expropriation risk                | 0.21        | 3.00                             | 0.20        | 2.87        |
| R-square                          | 0.96        |                                  | 0.96        |             |
| Number of observations            | 410         |                                  | 410         |             |

Data source before analysis taken from: <http://unctad.org/Templates/StartPage.asp?intItemID=2068> And World Bank (home page): <http://econ.worldbank.org>

**Table 5-11: Effects on payphones: Fixed effects estimation**

| Dependent variable                | Payphones per million population |             |             |             |
|-----------------------------------|----------------------------------|-------------|-------------|-------------|
| Mean of dependent variable        | 816.3                            |             |             |             |
|                                   | Column 1                         |             | Column 2    |             |
|                                   | Coefficient                      | t-statistic | Coefficient | t-statistic |
| Number of Mobile operators        | 53.55                            | 2.98        | 98.10       | 4.28        |
| Incumbent privatized?             | 264.26                           | 3.01        | -219.96     | -1.95       |
| Privatized *Separate regulator    |                                  |             | 867.69      | 6.39        |
| #mobile firms* separate regulator |                                  |             | -47.12      | -1.56       |
| Separate regulator                | 55.92                            | 0.81        | -141.16     | -1.81       |
| Reform legislation passed         | -100.88                          | -1.73       | -17.94      | -0.33       |
| Population                        | 53.04                            | 7.35        | 51.32       | 7.73        |
| Percent population urban          | -2.22                            | -0.23       | 0.96        | 0.11        |
| Income per capita                 | 0.09                             | 3.02        | 0.11        | 4.08        |
| World Bank telecom project        | -48.21                           | -0.81       | -24.24      | -0.43       |
| World Bank aid / GDP              | 1718.24                          | 0.90        | 2394.74     | 1.37        |
| Export / GDP                      | 203.00                           | 0.63        | 238.63      | 0.80        |
| Expropriation risk                | -17.33                           | -0.66       | -12.37      | -0.51       |
| R-square                          | 0.92                             |             | 0.94        |             |
| Number of observations            | 285                              |             | 285         |             |

Data source before analysis taken from: <http://unctad.org/Templates/StartPage.asp?intItemID=2068> And  
World Bank (home page): <http://econ.worldbank.org>

**Table 5-12: Effects on connection capacity: Fixed effects estimation**

|                                   |                                            |             |             |             |
|-----------------------------------|--------------------------------------------|-------------|-------------|-------------|
| Dependent variable                | Connection capacity per hundred population |             |             |             |
| Mean of dependent variable        | 5.29857                                    |             |             |             |
|                                   | Column 1                                   |             | Column 2    |             |
|                                   | Coefficient                                | t-statistic | Coefficient | t-statistic |
| Number of Mobile operators        | 0.26                                       | 3.23        | 0.23        | 2.19        |
| Incumbent privatized?             | -0.72                                      | -1.93       | -1.48       | -2.80       |
| Privatized *Separate regulator    |                                            |             | 1.57        | 2.41        |
| #mobile firms* separate regulator |                                            |             | 0.20        | 1.23        |
| Separate regulator                | 0.47                                       | 1.63        | --0.12      | -0.36       |
| Reform legislation passed         | -0.83                                      | -3.34       | -0.71       | -2.86       |
| Population                        | -0.12                                      | -4.03       | -0.10       | -3.69       |
| Percent population urban          | -0.08                                      | -2.46       | -0.08       | -242        |
| Income per capita                 | 0.00                                       | 12.55       | 0.00        | 13.09       |
| World Bank telecom project        | -0.03                                      | -0.14       | 0.04        | 0.18        |
| World Bank aid / GDP              | 2.72                                       | 0.80        | 4.24        | 1.26        |
| Export / GDP                      | 1.04                                       | 0.91        | 1.41        | 1.25        |
| Expropriation risk                | 0.08                                       | 0.87        | 0.06        | 0.62        |
| R-square                          | 0.96                                       |             | 0.97        |             |
| Number of observations            | 348                                        |             | 348         |             |

Data from World Bank (home page): <http://econ.worldbank.org>. Analyzed by Dale Jorgenson discusses productivity and ICT. (The Harvard professor Dale W. Jorgenson discusses the relation between productivity and information technologies (ICT) in his paper. The cases of the United States, the European Union and Latin America are compared).

**Table 5-13: Effects of employees peer mainline: Fixed effects estimation**

|                                   |                                 |             |             |             |
|-----------------------------------|---------------------------------|-------------|-------------|-------------|
| Dependent variable                | Employees per hundred mainlines |             |             |             |
| Mean of dependent variable        | 1.5115                          |             |             |             |
|                                   | Column 1                        |             | Column 2    |             |
|                                   | Coefficient                     | t-statistic | Coefficient | t-statistic |
| Number of Mobile operators        | 0.09                            | 3.36        | 0.09        | 2.41        |
| Incumbent privatized?             | -0/06                           | -0.51       | 0.15        | 0.80        |
| Privatized *Separate regulator    | n/a                             | n/a         | -0.35       | -1.62       |
| #mobile firms* separate regulator | n/a                             | n/a         | -0.02       | -0.40       |
| Separate regulator                | -0.02                           | -0.18       | 0.09        | 0.85        |
| Reform legislation passed         | -0.17                           | -2.07       | -0.21       | -2.50       |
| Population                        | -0.02                           | -2.39       | -0.02       | -2.36       |
| Percent population urban          | 0.04                            | 3.97        | 0.04        | 3.92        |
| Income per capita                 | 0.00                            | -7.29       | 0.00        | -7.55       |
| World Bank telecom project        | -0.05                           | -0.72       | -0.07       | -1.00       |
| World Bank aid / GDP              | -1.80                           | -1.63       | -2.09       | -1.88       |
| Export / GDP                      | 0.66                            | 1.69        | 0.63        | 1.61        |
| Expropriation risk                | 0.05                            | 1.73        | 0.05        | 1.80        |
| R-square                          | 0.98                            |             | 0.98        |             |
| Number of observations            | 394                             |             | 394         |             |

Data from World Bank (home page): <http://econ.worldbank.org>. Analyzed by Dale Jorgenson discusses productivity and ICT. (The Harvard professor Dale W. Jorgenson discusses the relation between productivity and information technologies (ICT) in his paper. The cases of the United States, the European Union and Latin America are compared).

**Table 5-14: Effects on the price of a local call: Fixed estimation**

|                                   |                                |             |             |             |
|-----------------------------------|--------------------------------|-------------|-------------|-------------|
| Dependent variable                | Price of a 3-minute local call |             |             |             |
| Mean of dependent variable        | 0.072                          |             |             |             |
|                                   | Column 1                       |             | Column 2    |             |
|                                   | Coefficient                    | t-statistic | Coefficient | t-statistic |
| Number of Mobile operators        | -0.0090                        | -2.58       | -0.0095     | -2.00       |
| Incumbent privatized?             | -0.0192                        | -0.89       | -0.0075     | -0.27       |
| Privatized *Separate regulator    |                                |             | -0.0200     | -0.75       |
| #mobile firms* separate regulator |                                |             | 0.0000      | 0.01        |
| Separate regulator                | 0.0130                         | 1.14        | 0.0184      | 1.37        |
| Reform legislation passed         | 0.0083                         | 0.76        | 0.0044      | 0.36        |
| Population                        | 0.0054                         | 1.99        | 0.0055      | 2.01        |
| Percent population urban          | 0.0040                         | -1.77       | 0.0042      | -1.83       |
| Income per capita                 | 0.0000                         | 1.05        | 0.0000      | 1.12        |
| World Bank telecom project        | 0.0298                         | 2.23        | 0.0281      | 2.03        |
| World Bank aid / GDP              | -0.0193                        | -0.06       | -0.0692     | -0.221      |
| Export / GDP                      | - 0.1655                       | -1.90       | -0.1599     | -1.82       |
| Expropriation risk                | 0.0054                         | 0.96        | 0.0056      | 1.00        |
| R-square                          | 0.76                           |             | 0.76        |             |
| Number of observations            | 168                            |             | 168         |             |

Data from World Bank (home page): <http://econ.worldbank.org>. Analyzed by Dale Jorgenson discusses productivity and ICT. (The Harvard professor Dale W. Jorgenson discusses the relation between productivity and information technologies (ICT) in his paper. The cases of the United States, the European Union and Latin America are compared).

**Table 5-15: Number of Radios and TVs in Sub-Saharan-Africa**

| <b>Country</b> | <b>Number of TVs</b> | <b>Year</b> | <b>Number of Radios</b> |
|----------------|----------------------|-------------|-------------------------|
| Egypt          | 33                   | 2005        | 38                      |
| Ghana          |                      |             |                         |
| Kenya          |                      | 2005        |                         |
| Senegal        |                      | 2005        |                         |
| Nigeria        | 137                  | 2005        | 101                     |
| South Africa   | 4                    | 2005        | 19                      |
| Sudan          | 3                    | 2005        | 15                      |
| Tunisia        | 3                    | 2005        | 8                       |
| Uganda         | 4                    | 2005        |                         |
| Zimbabwe       |                      | 2005        |                         |

Source:- [http://data.un.org/Data.aspx?q=null&d=UNESCO&f=series%3aC\\_RT\\_600139](http://data.un.org/Data.aspx?q=null&d=UNESCO&f=series%3aC_RT_600139)

## 5-5 Appendix C

## 5-6 Data Measurement

### Gross Domestic Products

Country or

Country or

| Area  | Year | Value |
|-------|------|-------|
| Egypt | 2007 | 1,770 |
| Egypt | 2006 | 1,512 |
| Egypt | 2005 | 1,350 |
| Egypt | 2004 | 1,152 |
| Egypt | 2003 | 1,097 |
| Egypt | 2002 | 1,305 |
| Egypt | 2001 | 1,394 |
| Egypt | 2000 | 1,497 |
| Egypt | 1999 | 1,465 |
| Egypt | 1998 | 1,415 |
| Egypt | 1997 | 1,349 |
| Egypt | 1996 | 1,246 |
| Egypt | 1995 | 1,136 |
| Egypt | 1994 | 1,031 |
| Egypt | 1993 | 910   |
| Egypt | 1992 | 841   |
| Egypt | 1991 | 757   |
| Egypt | 1990 | 715   |

| Area  | Year | Value |
|-------|------|-------|
| Ghana | 2007 | 647   |
| Ghana | 2006 | 561   |
| Ghana | 2005 | 476   |
| Ghana | 2004 | 402   |
| Ghana | 2003 | 354   |
| Ghana | 2002 | 292   |
| Ghana | 2001 | 258   |
| Ghana | 2000 | 247   |
| Ghana | 1999 | 392   |
| Ghana | 1998 | 389   |
| Ghana | 1997 | 367   |
| Ghana | 1996 | 378   |
| Ghana | 1995 | 361   |
| Ghana | 1994 | 312   |
| Ghana | 1993 | 352   |
| Ghana | 1992 | 418   |
| Ghana | 1991 | 437   |
| Ghana | 1990 | 400   |

Country or

Country or

| Area  | Year | Value |
|-------|------|-------|
| Kenya | 2007 | 786   |
| Kenya | 2006 | 623   |
| Kenya | 2005 | 537   |
| Kenya | 2004 | 469   |
| Kenya | 2003 | 444   |
| Kenya | 2002 | 400   |
| Kenya | 2001 | 405   |

| Area    | Year | Value |
|---------|------|-------|
| Nigeria | 2007 | 1,169 |
| Nigeria | 2006 | 1,005 |
| Nigeria | 2005 | 794   |
| Nigeria | 2004 | 637   |
| Nigeria | 2003 | 502   |
| Nigeria | 2002 | 450   |
| Nigeria | 2001 | 345   |

|       |      |     |         |      |     |
|-------|------|-----|---------|------|-----|
| Kenya | 2000 | 403 | Nigeria | 2000 | 372 |
| Kenya | 1999 | 420 | Nigeria | 1999 | 295 |
| Kenya | 1998 | 472 | Nigeria | 1998 | 297 |
| Kenya | 1997 | 451 | Nigeria | 1997 | 294 |
| Kenya | 1996 | 425 | Nigeria | 1996 | 289 |
| Kenya | 1995 | 427 | Nigeria | 1995 | 278 |
| Kenya | 1994 | 342 | Nigeria | 1994 | 281 |
| Kenya | 1993 | 277 | Nigeria | 1993 | 315 |
| Kenya | 1992 | 411 | Nigeria | 1992 | 321 |
| Kenya | 1991 | 429 | Nigeria | 1991 | 341 |
| Kenya | 1990 | 471 | Nigeria | 1990 | 371 |

| Country or Area | Year | Value | Country or Area | Year | Value |
|-----------------|------|-------|-----------------|------|-------|
| Senegal         | 2007 | 908   | South America   | 2007 | 6,131 |
| Senegal         | 2006 | 768   | South America   | 2006 | 5,102 |
| Senegal         | 2005 | 738   | South America   | 2005 | 4,296 |
| Senegal         | 2004 | 700   | South America   | 2004 | 3,409 |
| Senegal         | 2003 | 614   | South America   | 2003 | 2,848 |
| Senegal         | 2002 | 490   | South America   | 2002 | 2,671 |
| Senegal         | 2001 | 460   | South America   | 2001 | 3,410 |
| Senegal         | 2000 | 453   | South America   | 2000 | 3,761 |
| Senegal         | 1999 | 511   | South America   | 1999 | 3,592 |
| Senegal         | 1998 | 513   | South America   | 1998 | 4,527 |
| Senegal         | 1997 | 489   | South America   | 1997 | 4,686 |

|         |      |     |                  |      |       |
|---------|------|-----|------------------|------|-------|
|         |      |     | America<br>South |      |       |
| Senegal | 1996 | 545 | America<br>South | 1996 | 4,473 |
| Senegal | 1995 | 538 | America<br>South | 1995 | 4,258 |
| Senegal | 1994 | 450 | America<br>South | 1994 | 3,591 |
| Senegal | 1993 | 689 | America<br>South | 1993 | 3,072 |
| Senegal | 1992 | 786 | America<br>South | 1992 | 2,883 |
| Senegal | 1991 | 737 | America<br>South | 1991 | 2,787 |
| Senegal | 1990 | 786 | America<br>South | 1990 | 2,718 |

| Country or<br>Area | Year | Value | Country or<br>Area | Year | Value |
|--------------------|------|-------|--------------------|------|-------|
| Sudan              | 2007 | 1,443 | Tunisia            | 2007 | 3,390 |
| Sudan              | 2006 | 1,164 | Tunisia            | 2006 | 3,031 |
| Sudan              | 2005 | 898   | Tunisia            | 2005 | 2,873 |
| Sudan              | 2004 | 737   | Tunisia            | 2004 | 2,827 |
| Sudan              | 2003 | 626   | Tunisia            | 2003 | 2,525 |
| Sudan              | 2002 | 522   | Tunisia            | 2002 | 2,152 |
| Sudan              | 2001 | 461   | Tunisia            | 2001 | 2,064 |
| Sudan              | 2000 | 394   | Tunisia            | 2000 | 2,033 |
| Sudan              | 1999 | 329   | Tunisia            | 1999 | 2,200 |
| Sudan              | 1998 | 343   | Tunisia            | 1998 | 2,121 |
| Sudan              | 1997 | 343   | Tunisia            | 1997 | 2,048 |
| Sudan              | 1996 | 273   | Tunisia            | 1996 | 2,151 |
| Sudan              | 1995 | 382   | Tunisia            | 1995 | 2,009 |
| Sudan              | 1994 | 445   | Tunisia            | 1994 | 1,769 |
| Sudan              | 1993 | 317   | Tunisia            | 1993 | 1,680 |
| Sudan              | 1992 | 304   | Tunisia            | 1992 | 1,814 |
| Sudan              | 1991 | 286   | Tunisia            | 1991 | 1,552 |
| Sudan              | 1990 | 615   | Tunisia            | 1990 | 1,498 |

| Country or<br>Area | Year | Value | Country or<br>Area | Year | Value |
|--------------------|------|-------|--------------------|------|-------|
|--------------------|------|-------|--------------------|------|-------|

| Area   |      |     | Area     |      |     |
|--------|------|-----|----------|------|-----|
| Uganda | 2007 | 403 | Zimbabwe | 2007 | 159 |
| Uganda | 2006 | 340 | Zimbabwe | 2006 | 167 |
| Uganda | 2005 | 316 | Zimbabwe | 2005 | 172 |
| Uganda | 2004 | 278 | Zimbabwe | 2004 | 236 |
| Uganda | 2003 | 239 | Zimbabwe | 2003 | 387 |
| Uganda | 2002 | 229 | Zimbabwe | 2002 | 422 |
| Uganda | 2001 | 227 | Zimbabwe | 2001 | 439 |
| Uganda | 2000 | 232 | Zimbabwe | 2000 | 445 |
| Uganda | 1999 | 251 | Zimbabwe | 1999 | 476 |
| Uganda | 1998 | 273 | Zimbabwe | 1998 | 507 |
| Uganda | 1997 | 292 | Zimbabwe | 1997 | 734 |
| Uganda | 1996 | 280 | Zimbabwe | 1996 | 725 |
| Uganda | 1995 | 285 | Zimbabwe | 1995 | 607 |
| Uganda | 1994 | 251 | Zimbabwe | 1994 | 596 |
| Uganda | 1993 | 165 | Zimbabwe | 1993 | 579 |
| Uganda | 1992 | 166 | Zimbabwe | 1992 | 610 |
| Uganda | 1991 | 160 | Zimbabwe | 1991 | 759 |
| Uganda | 1990 | 205 | Zimbabwe | 1990 | 836 |

## Foreign Direct Investment

| Country or Area |      |               | Country or Area |      |             |
|-----------------|------|---------------|-----------------|------|-------------|
| Area            | Year | Value         | Area            | Year | Value       |
| Egypt           | 2005 | 5,375,600,000 | Ghana           | 2005 | 106,500,000 |
| Egypt           | 2004 | 1,253,300,000 | Ghana           | 2004 | 139,270,000 |
| Egypt           | 2003 | 237,400,000   | Ghana           | 2003 | 136,750,000 |
| Egypt           | 2002 | 646,900,000   | Ghana           | 2002 | 58,900,000  |
| Egypt           | 2001 | 509,900,000   | Ghana           | 2001 | 89,300,000  |
| Egypt           | 2000 | 1,235,000,000 | Ghana           | 2000 | 165,900,000 |
| Egypt           | 1999 | 1,065,300,000 | Ghana           | 1999 | 243,700,000 |
| Egypt           | 1998 | 1,076,000,000 | Ghana           | 1998 | 167,400,000 |
| Egypt           | 1997 | 890,550,000   | Ghana           | 1997 | 81,800,000  |
| Egypt           | 1996 | 636,000,000   | Ghana           | 1996 | 120,000,000 |
| Egypt           | 1995 | 598,000,000   |                 |      |             |

|       |      |               |       |      |             |
|-------|------|---------------|-------|------|-------------|
| Egypt | 1994 | 1,256,000,000 | Ghana | 1995 | 106,500,000 |
| Egypt | 1993 | 493,000,000   | Ghana | 1994 | 233,000,000 |
| Egypt | 1992 | 459,000,000   | Ghana | 1993 | 125,000,000 |
| Egypt | 1991 | 253,000,000   | Ghana | 1992 | 22,500,000  |
| Egypt | 1990 | 734,000,000   | Ghana | 1991 | 20,000,000  |

| Country or Area | Year | Value       | Country or Area | Year | Value         |
|-----------------|------|-------------|-----------------|------|---------------|
| Kenya           | 2005 | 21,211,685  | Nigeria         | 2005 | 2,013,367,378 |
| Kenya           | 2004 | 46,063,932  | Nigeria         | 2004 | 1,874,032,997 |
| Kenya           | 2003 | 81,738,243  | Nigeria         | 2003 | 2,005,390,033 |
| Kenya           | 2002 | 27,618,447  | Nigeria         | 2002 | 1,874,042,130 |
| Kenya           | 2001 | 5,302,623   | Nigeria         | 2001 | 1,190,632,024 |
| Kenya           | 2000 | 110,904,550 | Nigeria         | 2000 | 1,140,137,660 |
| Kenya           | 1999 | 13,821,304  | Nigeria         | 1999 | 1,004,916,719 |
| Kenya           | 1998 | 11,413,577  | Nigeria         | 1998 | 1,051,326,217 |
| Kenya           | 1997 | 19,665,653  | Nigeria         | 1997 | 1,539,445,718 |
| Kenya           | 1996 | 12,746,244  | Nigeria         | 1996 | 1,593,459,222 |
| Kenya           | 1995 | 32,471,426  | Nigeria         | 1995 | 1,079,271,551 |
| Kenya           | 1994 | 3,728,775   | Nigeria         | 1994 | 1,959,219,858 |
| Kenya           | 1993 | 1,568,929   | Nigeria         | 1993 | 1,345,368,587 |
| Kenya           | 1992 | 6,363,133   | Nigeria         | 1992 | 896,641,283   |
| Kenya           | 1991 | 18,830,977  | Nigeria         | 1991 | 712,373,363   |
| Kenya           | 1990 | 57,081,096  | Nigeria         | 1990 | 587,882,971   |

| Country or Area | Year | Value       | Country or Area | Year | Value         |
|-----------------|------|-------------|-----------------|------|---------------|
| Senegal         | 2005 | 54,000,000  | South Africa    | 2005 | 6,257,328,229 |
| Senegal         | 2004 | 77,028,526  | South Africa    | 2004 | 701,422,008   |
| Senegal         | 2003 | 52,494,810  | South Africa    | 2003 | 783,136,092   |
| Senegal         | 2002 | 78,052,971  | South Africa    | 2002 | 735,214,838   |
| Senegal         | 2001 | 31,942,387  | South Africa    | 2001 | 7,270,344,987 |
| Senegal         | 2000 | 62,937,491  | South Africa    | 2000 | 968,831,356   |
| Senegal         | 1999 | 153,246,927 | South Africa    | 1999 | 1,503,332,454 |
| Senegal         | 1998 | 70,619,332  | South Africa    | 1998 | 550,338,596   |
| Senegal         | 1997 | 176,017,459 | South Africa    | 1997 | 3,810,543,923 |
| Senegal         | 1996 | 8,722,469   | South Africa    | 1996 | 816,389,274   |
| Senegal         | 1995 | 31,673,945  | South Africa    | 1995 | 1,248,424,933 |

|         |      |            |              |      |             |
|---------|------|------------|--------------|------|-------------|
| Senegal | 1994 | 66,876,236 | South Africa | 1994 | 374,410,441 |
| Senegal | 1993 | -812,254   | South Africa | 1993 | 11,290,546  |
| Senegal | 1992 | 21,383,360 | South Africa | 1992 | 3,358,018   |
| Senegal | 1991 | -7,550,329 | South Africa | 1991 | 254,133,622 |
| Senegal | 1990 | 56,893,145 | South Africa | 1990 | -75,722,412 |

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| Country or Area |      |               | Country or Area |      |             |
|-----------------|------|---------------|-----------------|------|-------------|
| Area            | Year | Value         | Area            | Year | Value       |
| Sudan           | 2005 | 2,304,640,000 | Tunisia         | 2005 | 722,965,856 |
| Sudan           | 2004 | 1,511,070,000 | Tunisia         | 2004 | 593,351,890 |
| Sudan           | 2003 | 1,349,190,000 | Tunisia         | 2003 | 540,956,570 |
| Sudan           | 2002 | 713,180,000   | Tunisia         | 2002 | 794,804,464 |
| Sudan           | 2001 | 574,000,000   | Tunisia         | 2001 | 457,353,363 |
| Sudan           | 2000 | 392,200,000   | Tunisia         | 2000 | 752,179,570 |
| Sudan           | 1999 | 370,800,000   | Tunisia         | 1999 | 349,849,312 |
| Sudan           | 1998 | 370,700,000   | Tunisia         | 1998 | 649,849,613 |
| Sudan           | 1997 | 97,900,000    | Tunisia         | 1997 | 339,087,779 |
| Sudan           | 1996 | 400,000       | Tunisia         | 1996 | 238,337,799 |
| Sudan           | 1995 | 12,000,000    | Tunisia         | 1995 | 264,340,471 |
| Sudan           | 1994 | 99,180,000    | Tunisia         | 1994 | 432,008,502 |
| Sudan           | 1993 | -160,000      | Tunisia         | 1993 | 561,897,567 |
| Sudan           | 1992 | 90,000        | Tunisia         | 1992 | 525,760,374 |
| Sudan           | 1991 | -620,000      | Tunisia         | 1991 | 125,456,831 |
| Sudan           | 1990 | -31,130,000   | Tunisia         | 1990 | 76,280,835  |

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| Country or Area |      |             | Country or Area |      |             |
|-----------------|------|-------------|-----------------|------|-------------|
| Area            | Year | Value       | Area            | Year | Value       |
| Uganda          | 2005 | 257,056,445 | Zimbabwe        | 2005 | 102,800,000 |
| Uganda          | 2004 | 222,213,983 | Zimbabwe        | 2004 | 8,700,000   |
| Uganda          | 2003 | 202,192,594 | Zimbabwe        | 2003 | 3,800,000   |
| Uganda          | 2002 | 184,648,059 | Zimbabwe        | 2002 | 25,900,000  |
| Uganda          | 2001 | 151,496,151 | Zimbabwe        | 2001 | 3,800,000   |
| Uganda          | 2000 | 160,700,000 | Zimbabwe        | 2000 | 23,200,000  |
| Uganda          | 1999 | 140,200,000 | Zimbabwe        | 1999 | 59,000,000  |
| Uganda          | 1998 | 210,000,000 | Zimbabwe        | 1998 | 444,300,000 |
| Uganda          | 1997 | 175,000,000 | Zimbabwe        | 1997 | 135,100,000 |
| Uganda          | 1996 | 121,000,000 | Zimbabwe        | 1996 | 80,900,000  |
| Uganda          | 1995 | 121,200,000 | Zimbabwe        | 1995 | 117,700,000 |

|        |      |            |          |      |             |
|--------|------|------------|----------|------|-------------|
| Uganda | 1994 | 88,200,000 | Zimbabwe | 1994 | 34,688,239  |
| Uganda | 1993 | 54,600,000 | Zimbabwe | 1993 | 27,986,891  |
| Uganda | 1992 | 3,000,000  | Zimbabwe | 1992 | 14,966,882  |
| Uganda | 1991 | 1,000,000  | Zimbabwe | 1991 | 2,793,656   |
| Uganda | 1990 | -5,910,000 | Zimbabwe | 1990 | -12,219,713 |

Source: <http://data.un.org/Data.aspx?q=GDP&d=SOWC&f=inID%3a93>

| Information and Communication Technology |      |          |  |                 |      |         |
|------------------------------------------|------|----------|--|-----------------|------|---------|
| Country or Area                          | Year | Value    |  | Country or Area | Year | Value   |
| Egypt                                    | 2008 | 1.26E+07 |  | Ghana           | 2008 | 997000  |
| Egypt                                    | 2007 | 1.05E+07 |  | Ghana           | 2007 | 880000  |
| Egypt                                    | 2006 | 9837734  |  | Ghana           | 2006 | 609810  |
| Egypt                                    | 2005 | 9026950  |  | Ghana           | 2005 | 401310  |
| Egypt                                    | 2004 | 3900000  |  | Ghana           | 2004 | 368000  |
| Egypt                                    | 2003 | 3000000  |  | Ghana           | 2003 | 250000  |
| Egypt                                    | 2002 | 1900000  |  | Ghana           | 2002 | 170000  |
| Egypt                                    | 2001 | 600000   |  | Ghana           | 2001 | 40000   |
| Egypt                                    | 2000 | 450000   |  | Ghana           | 2000 | 30000   |
| Egypt                                    | 1999 | 200000   |  | Ghana           | 1999 | 20000   |
| Egypt                                    | 1998 | 100000   |  | Ghana           | 1998 | 6000    |
| Egypt                                    | 1997 | 60000    |  | Ghana           | 1997 | 5000    |
| Egypt                                    | 1996 | 40000    |  | Ghana           | 1996 | 1000    |
| Egypt                                    | 1995 | 20000    |  | Ghana           | 1995 | 60      |
| Egypt                                    | 1994 | 4000     |  | Ghana           | 1990 | 0       |
| Egypt                                    | 1993 | 600      |  |                 |      |         |
| Egypt                                    | 1990 | 0        |  |                 |      |         |
|                                          |      |          |  |                 |      |         |
| Nigeria                                  | 2008 | 1.10E+07 |  | Senegal         | 2008 | 1020000 |
| Nigeria                                  | 2007 | 1.00E+07 |  | Senegal         | 2007 | 820000  |
| Nigeria                                  | 2006 | 8000000  |  | Senegal         | 2006 | 650000  |
| Nigeria                                  | 2005 | 5000000  |  | Senegal         | 2005 | 540000  |

|              |      |         |  |         |      |         |
|--------------|------|---------|--|---------|------|---------|
| Nigeria      | 2004 | 1769000 |  | Senegal | 2004 | 482000  |
| Nigeria      | 2003 | 750000  |  | Senegal | 2003 | 225000  |
| Nigeria      | 2002 | 420000  |  | Senegal | 2002 | 105000  |
| Nigeria      | 2001 | 115000  |  | Senegal | 2001 | 100000  |
| Nigeria      | 2000 | 80000   |  | Senegal | 2000 | 40000   |
| Nigeria      | 1999 | 50000   |  | Senegal | 1999 | 30000   |
| Nigeria      | 1998 | 30000   |  | Senegal | 1998 | 7500    |
| Nigeria      | 1997 | 20000   |  | Senegal | 1997 | 2500    |
| Nigeria      | 1996 | 10000   |  | Senegal | 1996 | 1000    |
| Nigeria      | 1990 | 0       |  | Senegal | 1995 | 60      |
|              |      |         |  |         |      |         |
| South Africa | 2008 | 4187000 |  | Sudan   | 2008 | 3800000 |
| South Africa | 2007 | 3966000 |  | Sudan   | 2007 | 3500000 |
| South Africa | 2006 | 3700000 |  | Sudan   | 2006 | 3200000 |
| South Africa | 2005 | 3600000 |  | Sudan   | 2005 | 500000  |
| South Africa | 2004 | 4000000 |  | Sudan   | 2004 | 300000  |
| South Africa | 2003 | 3283000 |  | Sudan   | 2003 | 200000  |
| South Africa | 2002 | 3100000 |  | Sudan   | 2002 | 160000  |
| South Africa | 2001 | 2890000 |  | Sudan   | 2001 | 50000   |
| South Africa | 2000 | 2400000 |  | Sudan   | 2000 | 9000    |
| South Africa | 1999 | 1820000 |  | Sudan   | 1999 | 3000    |
| South Africa | 1998 | 1266000 |  | Sudan   | 1998 | 1600    |
| South Africa | 1997 | 700000  |  | Sudan   | 1997 | 400     |
| South Africa | 1996 | 355000  |  | Sudan   | 1996 | 0       |

|              |      |         |  |        |      |         |
|--------------|------|---------|--|--------|------|---------|
| South Africa | 1995 | 280000  |  | Sudan  | 1995 | 0       |
| South Africa | 1994 | 100000  |  | Sudan  | 1994 | 0       |
| South Africa | 1993 | 45000   |  | Sudan  | 1990 | 0       |
| South Africa | 1992 | 15000   |  |        |      |         |
| South Africa | 1991 | 5000    |  |        |      |         |
|              |      |         |  |        |      |         |
| Tunisia      | 2008 | 2800000 |  | Uganda | 2008 | 2500000 |
| Tunisia      | 2007 | 1722190 |  | Uganda | 2007 | 1125000 |
| Tunisia      | 2006 | 1294910 |  | Uganda | 2006 | 750000  |
| Tunisia      | 2005 | 953770  |  | Uganda | 2005 | 500000  |
| Tunisia      | 2004 | 835000  |  | Uganda | 2004 | 200000  |
| Tunisia      | 2003 | 630000  |  | Uganda | 2003 | 125000  |
| Tunisia      | 2002 | 505500  |  | Uganda | 2002 | 100000  |
| Tunisia      | 2001 | 410000  |  | Uganda | 2001 | 60000   |
| Tunisia      | 2000 | 260000  |  | Uganda | 2000 | 40000   |
| Tunisia      | 1999 | 150000  |  | Uganda | 1999 | 25000   |
| Tunisia      | 1998 | 10000   |  | Uganda | 1998 | 15000   |
| Tunisia      | 1997 | 4000    |  | Uganda | 1997 | 2300    |
| Tunisia      | 1996 | 2500    |  | Uganda | 1996 | 1000    |
| Tunisia      | 1995 | 1000    |  | Uganda | 1995 | 600     |
| Tunisia      | 1994 | 650     |  | Uganda | 1990 | 0       |
| Tunisia      | 1990 | 0       |  |        |      |         |
|              |      |         |  |        |      |         |
| Zimbabwe     | 2008 | 1421000 |  | Kenya  | 2008 | 3359552 |
| Zimbabwe     | 2007 | 1351000 |  | Kenya  | 2007 | 3000000 |
| Zimbabwe     | 2006 | 1220000 |  | Kenya  | 2006 | 2770296 |
| Zimbabwe     | 2005 | 1000000 |  | Kenya  | 2005 | 1111000 |
| Zimbabwe     | 2004 | 820000  |  | Kenya  | 2004 | 1054920 |
| Zimbabwe     | 2003 | 800000  |  | Kenya  | 2003 | 1000000 |
| Zimbabwe     | 2002 | 500000  |  | Kenya  | 2002 | 400000  |
| Zimbabwe     | 2001 | 100000  |  | Kenya  | 2001 | 200000  |
| Zimbabwe     | 2000 | 50000   |  | Kenya  | 2000 | 100000  |

|          |      |       |  |       |      |       |
|----------|------|-------|--|-------|------|-------|
| Zimbabwe | 1999 | 20000 |  | Kenya | 1999 | 35000 |
| Zimbabwe | 1998 | 10000 |  | Kenya | 1998 | 15000 |
| Zimbabwe | 1997 | 4000  |  | Kenya | 1997 | 10000 |
| Zimbabwe | 1996 | 2000  |  | Kenya | 1996 | 2500  |
| Zimbabwe | 1995 | 900   |  | Kenya | 1995 | 200   |
| Zimbabwe | 1994 | 200   |  | Kenya | 1990 | 0     |
| Zimbabwe | 1990 | 0     |  |       |      |       |

## Fixed Capital

| Country or Area | Year | Value           | Country or Area | Year | Value              |
|-----------------|------|-----------------|-----------------|------|--------------------|
| Egypt           | 2006 | 115,699,998,720 | Ghana           | 2006 | 38,293,261,516,800 |
| Egypt           | 2005 | 96,499,998,720  | Ghana           | 2005 | 28,207,713,615,872 |
| Egypt           | 2004 | 79,600,001,024  | Ghana           | 2004 | 22,670,196,342,784 |
| Egypt           | 2003 | 68,100,001,792  | Ghana           | 2003 | 15,377,710,972,928 |
| Egypt           | 2002 | 67,499,999,232  | Ghana           | 2002 | 9,635,066,019,840  |
| Egypt           | 2001 | 63,600,001,024  | Ghana           | 2001 | 10,127,236,136,960 |
| Egypt           | 2000 | 64,399,998,976  | Ghana           | 2000 | 6,509,453,901,824  |
| Egypt           | 1999 | 64,000,000,000  | Ghana           | 1999 | 4,251,609,464,832  |
| Egypt           | 1998 | 61,299,998,720  | Ghana           | 1998 | 3,867,999,993,856  |
| Egypt           | 1997 | 47,700,000,768  | Ghana           | 1997 | 3,364,000,104,448  |
| Egypt           | 1996 | 39,700,000,768  | Ghana           | 1996 | 2,301,604,397,056  |
| Egypt           | 1995 | 39,099,998,208  | Ghana           | 1995 | 1,637,999,968,256  |
| Egypt           | 1994 | 33,999,998,976  | Ghana           | 1994 | 1,175,000,055,808  |
| Egypt           | 1993 | 28,999,999,488  | Ghana           | 1993 | 921,000,017,920    |
| Egypt           | 1992 | 27,700,000,768  | Ghana           | 1992 | 356,974,198,784    |
| Egypt           | 1991 | 24,750,000,128  | Ghana           | 1991 | 384,118,259,712    |
| Egypt           | 1990 | 25,899,999,232  | Ghana           | 1990 | 276,329,365,504    |
|                 |      |                 |                 |      |                    |
| Country or Area | Year | Value           | Country or Area | Year | Value              |
| Kenya           | 2006 | 261,340,807,168 | Nigeria         | 2005 | 2,709,729,050,624  |
| Kenya           | 2005 | 263,062,994,944 | Nigeria         | 2004 | 2,141,269,393,408  |
| Kenya           | 2004 | 208,247,996,416 | Nigeria         | 2003 | 1,797,520,490,496  |
| Kenya           | 2003 | 179,248,005,120 | Nigeria         | 2002 | 1,477,286,035,456  |

|       |      |                 |
|-------|------|-----------------|
| Kenya | 2002 | 177,780,998,144 |
| Kenya | 2001 | 185,185,992,704 |
| Kenya | 2000 | 161,713,995,776 |
| Kenya | 1999 | 141,402,996,736 |
| Kenya | 1998 | 133,365,997,568 |
| Kenya | 1997 | 118,534,995,968 |
| Kenya | 1996 | 110,141,997,056 |
| Kenya | 1995 | 99,496,599,552  |
| Kenya | 1994 | 75,616,436,224  |
| Kenya | 1993 | 56,505,798,656  |
| Kenya | 1992 | 43,853,058,048  |
| Kenya | 1991 | 42,671,198,208  |
| Kenya | 1990 | 40,560,001,024  |

|         |      |                   |
|---------|------|-------------------|
| Nigeria | 2001 | 1,286,197,477,376 |
| Nigeria | 2000 | 947,555,467,264   |
| Nigeria | 1999 | 750,843,985,920   |
| Nigeria | 1998 | 682,052,026,368   |
| Nigeria | 1997 | 512,396,001,280   |
| Nigeria | 1996 | 399,883,993,088   |
| Nigeria | 1995 | 322,786,000,896   |
| Nigeria | 1994 | 242,612,994,048   |
| Nigeria | 1993 | 224,799,997,952   |
| Nigeria | 1992 | 134,897,999,872   |
| Nigeria | 1991 | 76,664,799,232    |
| Nigeria | 1990 | 37,904,101,376    |

| Country or Area | Year | Value             | Country or Area | Year | Value           |
|-----------------|------|-------------------|-----------------|------|-----------------|
| Senegal         | 2006 | 1,010,060,165,120 | South Africa    | 2006 | 319,416,532,992 |
| Senegal         | 2005 | 936,554,135,552   | South Africa    | 2005 | 261,429,002,240 |
| Senegal         | 2004 | 929,838,137,344   | South Africa    | 2004 | 225,315,995,648 |
| Senegal         | 2003 | 759,173,218,304   | South Africa    | 2003 | 198,904,004,608 |
| Senegal         | 2002 | 569,087,426,560   | South Africa    | 2002 | 175,593,996,288 |
| Senegal         | 2001 | 629,085,110,272   | South Africa    | 2001 | 153,524,994,048 |
| Senegal         | 2000 | 528,034,004,992   | South Africa    | 2000 | 139,646,992,384 |
| Senegal         | 1999 | 566,684,549,120   | South Africa    | 1999 | 125,753,999,360 |
| Senegal         | 1998 | 482,686,926,848   | South Africa    | 1998 | 126,913,003,520 |
| Senegal         | 1997 | 401,750,163,456   | South Africa    | 1997 | 113,221,001,216 |
| Senegal         | 1996 | 386,970,451,968   | South Africa    | 1996 | 100,632,002,560 |

|                 |      |                   |                 |      |                     |
|-----------------|------|-------------------|-----------------|------|---------------------|
| Senegal         | 1995 | 327,634,518,016   | South Africa    | 1995 | 87,041,998,848      |
| Senegal         | 1994 | 324,347,330,560   | South Africa    | 1994 | 73,045,000,192      |
| Senegal         | 1993 | 207,089,745,920   | South Africa    | 1993 | 62,600,998,912      |
| Senegal         | 1992 | 222,936,383,488   | South Africa    | 1992 | 58,254,999,552      |
| Senegal         | 1991 | 209,342,480,384   | South Africa    | 1991 | 56,953,999,360      |
| Senegal         | 1990 | 200,348,565,504   | South Africa    | 1990 | 55,485,001,728      |
|                 |      |                   |                 |      |                     |
| Country or Area | Year | Value             | Country or Area | Year | Value               |
| Sudan           | 2006 | 1,661,411,393,536 | Tunisia         | 2006 | 9,341,924,352       |
| Sudan           | 2005 | 1,283,074,818,048 | Tunisia         | 2005 | 8,409,999,872       |
| Sudan           | 2004 | 960,419,201,024   | Tunisia         | 2004 | 7,913,800,192       |
| Sudan           | 2003 | 652,762,611,712   | Tunisia         | 2003 | 7,536,099,840       |
| Sudan           | 2002 | 518,682,509,312   | Tunisia         | 2002 | 7,607,099,904       |
| Sudan           | 2001 | 384,194,805,760   | Tunisia         | 2001 | 7,541,799,936       |
| Sudan           | 2000 | 384,075,300,864   | Tunisia         | 2000 | 6,922,800,128       |
| Sudan           | 1999 | 279,045,111,808   | Tunisia         | 1999 | 6,277,600,256       |
| Sudan           | 1998 | 231,017,693,184   | Tunisia         | 1998 | 5,610,200,064       |
| Sudan           | 1997 | 165,193,203,712   | Tunisia         | 1997 | 5,152,799,744       |
| Sudan           | 1996 | 35,326,001,152    | Tunisia         | 1996 | 4,422,300,160       |
|                 |      |                   | Tunisia         | 1995 | 4,120,699,904       |
|                 |      |                   | Tunisia         | 1994 | 4,278,700,032       |
|                 |      |                   | Tunisia         | 1993 | 4,122,299,904       |
|                 |      |                   | Tunisia         | 1992 | 3,728,600,064       |
|                 |      |                   | Tunisia         | 1991 | 2,892,300,032       |
|                 |      |                   | Tunisia         | 1990 | 2,634,800,128       |
|                 |      |                   |                 |      |                     |
| Country or Area | Year | Value             | Country or Area | Year | Value               |
| Uganda          | 2006 | 4,182,429,401,088 | Zimbabwe        | 2006 | 131,753,524,068,352 |
| Uganda          | 2005 | 3,174,592,937,984 | Zimbabwe        | 2005 | 16,028,519,104,512  |
| Uganda          | 2004 | 2,908,467,757,056 | Zimbabwe        | 2004 | 4,079,782,723,584   |

|        |      |                   |          |      |                 |
|--------|------|-------------------|----------|------|-----------------|
| Uganda | 2003 | 2,366,967,119,872 | Zimbabwe | 2003 | 712,651,505,664 |
| Uganda | 2002 | 1,940,385,955,840 | Zimbabwe | 2002 | 122,590,699,520 |
| Uganda | 2001 | 1,819,499,954,176 | Zimbabwe | 2001 | 68,421,955,584  |
| Uganda | 2000 | 1,759,899,942,912 | Zimbabwe | 2000 | 38,775,001,088  |
| Uganda | 1999 | 1,574,100,008,960 | Zimbabwe | 1999 | 30,272,000,000  |
| Uganda | 1998 | 1,205,490,024,448 | Zimbabwe | 1998 | 29,592,999,936  |
| Uganda | 1997 | 1,120,670,056,448 | Zimbabwe | 1997 | 18,424,000,512  |
| Uganda | 1996 | 1,039,089,991,680 | Zimbabwe | 1996 | 15,434,000,384  |
| Uganda | 1995 | 878,510,014,464   | Zimbabwe | 1995 | 15,144,999,936  |
| Uganda | 1994 | 643,949,002,752   | Zimbabwe | 1994 | 12,001,999,872  |
| Uganda | 1993 | 588,881,002,496   | Zimbabwe | 1993 | 10,021,999,616  |
| Uganda | 1992 | 436,981,989,376   | Zimbabwe | 1992 | 7,690,999,808   |
| Uganda | 1991 | 277,633,990,656   | Zimbabwe | 1991 | 6,097,999,872   |
| Uganda | 1990 | 174,775,992,320   | Zimbabwe | 1990 | 3,913,999,872   |
|        |      |                   |          |      |                 |

## Labour Force

| Country or Area | Year | Value  | Country or Area | Year | Value  |
|-----------------|------|--------|-----------------|------|--------|
| Egypt           | 2008 | 24,673 | Ghana           | 2008 | 10,579 |
| Egypt           | 2007 | 24,085 | Ghana           | 2007 | 10,313 |
| Egypt           | 2006 | 23,484 | Ghana           | 2006 | 10,055 |
| Egypt           | 2005 | 22,881 | Ghana           | 2005 | 9,802  |
| Egypt           | 2004 | 22,277 | Ghana           | 2004 | 9,556  |
| Egypt           | 2003 | 21,678 | Ghana           | 2003 | 9,309  |
| Egypt           | 2002 | 20,991 | Ghana           | 2002 | 9,099  |
| Egypt           | 2001 | 20,312 | Ghana           | 2001 | 8,884  |
| Egypt           | 2000 | 20,009 | Ghana           | 2000 | 8,658  |
| Egypt           | 1999 | 19,602 | Ghana           | 1999 | 8,453  |
| Egypt           | 1998 | 18,375 | Ghana           | 1998 | 8,248  |
| Egypt           | 1997 | 18,091 | Ghana           | 1997 | 8,051  |
| Egypt           | 1996 | 17,808 | Ghana           | 1996 | 7,906  |
| Egypt           | 1995 | 17,525 | Ghana           | 1995 | 7,710  |

|       |      |        |       |      |       |
|-------|------|--------|-------|------|-------|
| Egypt | 1994 | 17,468 | Ghana | 1994 | 7,495 |
| Egypt | 1993 | 16,675 | Ghana | 1993 | 7,280 |
| Egypt | 1992 | 16,304 | Ghana | 1992 | 7,086 |
| Egypt | 1991 | 16,086 | Ghana | 1991 | 6,886 |
| Egypt | 1990 | 16,577 | Ghana | 1990 | 6,709 |

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|--|--|--|--|--|--|

| Country or Area |      |        | Country or Area |      |        |
|-----------------|------|--------|-----------------|------|--------|
| Area            | Year | Value  | Area            | Year | Value  |
| Kenya           | 2008 | 16,766 | Nigeria         | 2008 | 51,529 |
| Kenya           | 2007 | 16,327 | Nigeria         | 2007 | 50,259 |
| Kenya           | 2006 | 15,905 | Nigeria         | 2006 | 49,027 |
| Kenya           | 2005 | 15,500 | Nigeria         | 2005 | 47,835 |
| Kenya           | 2004 | 15,115 | Nigeria         | 2004 | 46,701 |
| Kenya           | 2003 | 14,700 | Nigeria         | 2003 | 45,165 |
| Kenya           | 2002 | 14,352 | Nigeria         | 2002 | 44,583 |
| Kenya           | 2001 | 13,990 | Nigeria         | 2001 | 43,789 |
| Kenya           | 2000 | 13,631 | Nigeria         | 2000 | 42,561 |
| Kenya           | 1999 | 13,270 | Nigeria         | 1999 | 41,660 |
| Kenya           | 1998 | 12,924 | Nigeria         | 1998 | 40,568 |
| Kenya           | 1997 | 12,558 | Nigeria         | 1997 | 39,640 |
| Kenya           | 1996 | 12,192 | Nigeria         | 1996 | 38,636 |
| Kenya           | 1995 | 11,815 | Nigeria         | 1995 | 37,651 |
| Kenya           | 1994 | 11,435 | Nigeria         | 1994 | 36,533 |
| Kenya           | 1993 | 11,018 | Nigeria         | 1993 | 35,404 |
| Kenya           | 1992 | 10,634 | Nigeria         | 1992 | 34,515 |
| Kenya           | 1991 | 10,209 | Nigeria         | 1991 | 33,594 |
| Kenya           | 1990 | 9,830  | Nigeria         | 1990 | 32,712 |

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|--|--|--|--|--|--|
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|--|--|--|--|--|--|

| Country or Area |      |       | Country or Area |      |        |
|-----------------|------|-------|-----------------|------|--------|
| Area            | Year | Value | Area            | Year | Value  |
| Senegal         | 2008 | 4,978 | South Africa    | 2008 | 19,788 |
| Senegal         | 2007 | 4,844 | South Africa    | 2007 | 19,801 |
| Senegal         | 2006 | 4,715 | South Africa    | 2006 | 19,800 |
| Senegal         | 2005 | 4,594 | South Africa    | 2005 | 19,786 |
| Senegal         | 2004 | 4,480 | South Africa    | 2004 | 19,759 |
| Senegal         | 2003 | 4,383 | South Africa    | 2003 | 19,724 |
| Senegal         | 2002 | 4,281 | South Africa    | 2002 | 19,636 |
| Senegal         | 2001 | 4,172 | South Africa    | 2001 | 19,506 |

|                 |      |        |                 |      |        |
|-----------------|------|--------|-----------------|------|--------|
| Senegal         | 2000 | 4,071  | South Africa    | 2000 | 19,310 |
| Senegal         | 1999 | 3,971  | South Africa    | 1999 | 19,106 |
| Senegal         | 1998 | 3,874  | South Africa    | 1998 | 18,815 |
| Senegal         | 1997 | 3,777  | South Africa    | 1997 | 18,456 |
| Senegal         | 1996 | 3,684  | South Africa    | 1996 | 18,069 |
| Senegal         | 1995 | 3,588  | South Africa    | 1995 | 17,671 |
| Senegal         | 1994 | 3,497  | South Africa    | 1994 | 17,223 |
| Senegal         | 1993 | 3,414  | South Africa    | 1993 | 16,721 |
| Senegal         | 1992 | 3,303  | South Africa    | 1992 | 16,175 |
| Senegal         | 1991 | 3,211  | South Africa    | 1991 | 15,583 |
| Senegal         | 1990 | 3,117  | South Africa    | 1990 | 15,054 |
|                 |      |        |                 |      |        |
| Country or Area |      |        | Country or Area |      |        |
|                 | Year | Value  |                 | Year | Value  |
| Sudan           | 2008 | 11,293 | Tunisia         | 2008 | 4,203  |
| Sudan           | 2007 | 11,022 | Tunisia         | 2007 | 4,095  |
| Sudan           | 2006 | 10,761 | Tunisia         | 2006 | 3,986  |
| Sudan           | 2005 | 10,515 | Tunisia         | 2005 | 3,875  |
| Sudan           | 2004 | 10,288 | Tunisia         | 2004 | 3,765  |
| Sudan           | 2003 | 9,804  | Tunisia         | 2003 | 3,658  |
| Sudan           | 2002 | 9,665  | Tunisia         | 2002 | 3,546  |
| Sudan           | 2001 | 9,474  | Tunisia         | 2001 | 3,433  |
| Sudan           | 2000 | 9,225  | Tunisia         | 2000 | 3,327  |
| Sudan           | 1999 | 9,179  | Tunisia         | 1999 | 3,223  |
| Sudan           | 1998 | 9,049  | Tunisia         | 1998 | 3,123  |
| Sudan           | 1997 | 8,876  | Tunisia         | 1997 | 3,023  |
| Sudan           | 1996 | 8,866  | Tunisia         | 1996 | 2,940  |
| Sudan           | 1995 | 8,490  | Tunisia         | 1995 | 2,858  |
| Sudan           | 1994 | 8,340  | Tunisia         | 1994 | 2,777  |
| Sudan           | 1993 | 8,105  | Tunisia         | 1993 | 2,696  |
| Sudan           | 1992 | 8,006  | Tunisia         | 1992 | 2,617  |
| Sudan           | 1991 | 7,906  | Tunisia         | 1991 | 2,538  |
| Sudan           | 1990 | 7,810  | Tunisia         | 1990 | 2,462  |
|                 |      |        |                 |      |        |
| Country or Area |      |        | Country or Area |      |        |
|                 | Year | Value  |                 | Year | Value  |
| Uganda          | 2008 | 13,097 | Zimbabwe        | 2008 | 6,014  |
| Uganda          | 2007 | 12,662 | Zimbabwe        | 2007 | 5,927  |

|        |      |        |          |      |       |
|--------|------|--------|----------|------|-------|
| Uganda | 2006 | 12,254 | Zimbabwe | 2006 | 5,843 |
| Uganda | 2005 | 11,858 | Zimbabwe | 2005 | 5,761 |
| Uganda | 2004 | 11,483 | Zimbabwe | 2004 | 5,684 |
| Uganda | 2003 | 11,138 | Zimbabwe | 2003 | 5,542 |
| Uganda | 2002 | 10,783 | Zimbabwe | 2002 | 5,506 |
| Uganda | 2001 | 10,463 | Zimbabwe | 2001 | 5,457 |
| Uganda | 2000 | 10,157 | Zimbabwe | 2000 | 5,337 |
| Uganda | 1999 | 9,894  | Zimbabwe | 1999 | 5,216 |
| Uganda | 1998 | 9,651  | Zimbabwe | 1998 | 5,202 |
| Uganda | 1997 | 9,401  | Zimbabwe | 1997 | 5,174 |
| Uganda | 1996 | 9,163  | Zimbabwe | 1996 | 5,067 |
| Uganda | 1995 | 8,953  | Zimbabwe | 1995 | 4,957 |
| Uganda | 1994 | 8,753  | Zimbabwe | 1994 | 4,833 |
| Uganda | 1993 | 8,528  | Zimbabwe | 1993 | 4,709 |
| Uganda | 1992 | 8,301  | Zimbabwe | 1992 | 4,572 |
| Uganda | 1991 | 8,059  | Zimbabwe | 1991 | 4,418 |
| Uganda | 1990 | 7,813  | Zimbabwe | 1990 | 4,260 |

## Education Expenditure

| country | year | Value      |  | Country | year | Value     |
|---------|------|------------|--|---------|------|-----------|
| Egypt   | 1990 | 7592539    |  | Ghana   | 1990 | 1959122   |
| Egypt   | 1991 | 7060370    |  | Ghana   | 1991 | 2027697   |
| Egypt   | 1992 | 7,353,786  |  | Ghana   | 1992 | 2066819   |
| Egypt   | 1993 | 8,352,453  |  | Ghana   | 1993 | 2,158,973 |
| Egypt   | 1994 | 8,010,026  |  | Ghana   | 1994 | 2,154,646 |
| Egypt   | 1995 | 9,035,081  |  | Ghana   | 1995 | 2,197,172 |
| Egypt   | 1996 | 8,243,137  |  | Ghana   | 1996 | 2,333,347 |
| Egypt   | 1997 | 7,499,303  |  | Ghana   | 1997 | 2,344,410 |
| Egypt   | 1998 | 10,533,318 |  | Ghana   | 1998 | 2,377,444 |
| Egypt   | 1999 | 7,947,488  |  | Ghana   | 1999 | 2,705,544 |
| Egypt   | 2000 | 7,856,340  |  | Ghana   | 2000 | 2,542,088 |
| Egypt   | 2001 | 7,855,433  |  | Ghana   | 2001 | 2,924,823 |
| Egypt   | 2002 | 10,028,173 |  | Ghana   | 2002 | 2,589,565 |

|         |      |            |  |              |      |            |
|---------|------|------------|--|--------------|------|------------|
| Egypt   | 2003 | 15,711,773 |  | Ghana        | 2003 | 2,748,880  |
| Egypt   | 2004 | 7,928,380  |  | Ghana        | 2004 | 2,876,500  |
| Egypt   | 2005 | 9,563,627  |  | Ghana        | 2005 | 3,049,095  |
| Egypt   | 2006 | 9,687,665  |  | Ghana        | 2006 | 3,147,869  |
| Egypt   | 2007 | 9,679,999  |  | Ghana        | 2007 | 3,298,760  |
|         |      |            |  |              |      |            |
| Area    | Year | Value      |  | Area         | Year | Value      |
| Kenya   | 1990 | 5,427,740  |  | Nigeria      | 1990 | 13,607,249 |
| Kenya   | 1991 | 5,455,996  |  | Nigeria      | 1991 | 13,776,854 |
| Kenya   | 1992 | 5,554,977  |  | Nigeria      | 1992 | 14,805,937 |
| Kenya   | 1993 | 5,643,000  |  | Nigeria      | 1993 | 16,078,262 |
| Kenya   | 1994 | 5,557,008  |  | Nigeria      | 1994 | 16,190,947 |
| Kenya   | 1995 | 5,544,998  |  | Nigeria      | 1995 | 15,741,078 |
| Kenya   | 1996 | 5,656,790  |  | Nigeria      | 1996 | 14,078,473 |
| Kenya   | 1997 | 5,764,855  |  | Nigeria      | 1997 | 14,098,760 |
| Kenya   | 1998 | 5,480,689  |  | Nigeria      | 1998 | 16,868,845 |
| Kenya   | 1999 | 5,504,856  |  | Nigeria      | 1999 | 18,802,361 |
| Kenya   | 2000 | 5,798,539  |  | Nigeria      | 2000 | 20,116,361 |
| Kenya   | 2001 | 5,927,070  |  | Nigeria      | 2001 | 20,742,139 |
| Kenya   | 2002 | 5,590,143  |  | Nigeria      | 2002 | 25,510,542 |
| Kenya   | 2003 | 5,698,765  |  | Nigeria      | 2003 | 25,567,520 |
| Kenya   | 2004 | 5,753,439  |  | Nigeria      | 2004 | 25,585,432 |
| Kenya   | 2005 | 5,953,420  |  | Nigeria      | 2005 | 25,598,769 |
| Kenya   | 2006 | 5,900,056  |  | Nigeria      | 2006 | 7,492,310  |
| Kenya   | 2007 | 5,965,430  |  | Nigeria      | 2007 | 7,587,654  |
|         |      |            |  |              |      |            |
| Area    | Year | Value      |  | Area         | Year | Value      |
| Senegal | 1990 | 727,137    |  | South Africa | 1990 | 7,390,784  |
| Senegal | 1991 | 747,058    |  | South Africa | 1991 | 7,677,150  |
| Senegal | 1992 | 761,557    |  | South Africa | 1992 | 6,133,819  |
| Senegal | 1993 | 798,036    |  | South Africa | 1993 | 6,311,337  |

|         |      |            |  |              |      |           |
|---------|------|------------|--|--------------|------|-----------|
| Senegal | 1994 | 829,518    |  | South Africa | 1994 | 8,589,667 |
| Senegal | 1995 | 898,463    |  | South Africa | 1995 | 8,159,430 |
| Senegal | 1996 | 977,555    |  | South Africa | 1996 | 8,159,321 |
| Senegal | 1997 | 1,052,455  |  | South Africa | 1997 | 8,158,070 |
| Senegal | 1998 | 1,063,368  |  | South Africa | 1998 | 8,631,863 |
| Senegal | 1999 | 1,107,712  |  | South Africa | 1999 | 8,568,132 |
| Senegal | 2000 | 1,159,721  |  | South Africa | 2000 | 8,089,565 |
| Senegal | 2001 | 1,197,081  |  | South Africa | 2001 | 7,982,002 |
| Senegal | 2002 | 1,287,093  |  | South Africa | 2002 | 8,231,450 |
| Senegal | 2003 | 1,287,990  |  | South Africa | 2003 | 8,345,211 |
| Senegal | 2004 | 1,283,000  |  | South Africa | 2004 | 8,456,200 |
| Senegal | 2005 | 1,284,569  |  | South Africa | 2005 | 8,533,310 |
| Senegal | 2006 | 12,856,760 |  | South Africa | 2006 | 8,612,120 |
| Senegal | 2007 | 12,856,987 |  | South Africa | 2007 | 8,634,560 |
|         |      |            |  |              |      |           |
| Area    | Year | Value      |  | Area         | Year | Value     |
| Sudan   | 1990 | 2,102,567  |  | Tunisia      | 1990 | 1,474,200 |
| Sudan   | 1991 | 2,168,180  |  | Tunisia      | 1991 | 1,502,312 |
| Sudan   | 1992 | 2,218,900  |  | Tunisia      | 1992 | 1,528,740 |
| Sudan   | 1993 | 2,377,437  |  | Tunisia      | 1993 | 1,572,340 |
| Sudan   | 1994 | 3,023,955  |  | Tunisia      | 1994 | 1,584,441 |
| Sudan   | 1995 | 3,056,041  |  | Tunisia      | 1995 | 1,581,632 |
| Sudan   | 1996 | 3,000,048  |  | Tunisia      | 1996 | 1,527,703 |
| Sudan   | 1997 | 3,456,909  |  | Tunisia      | 1997 | 1,615,265 |
| Sudan   | 1998 | 2,713,362  |  | Tunisia      | 1998 | 1,600,383 |
| Sudan   | 1999 | 2,859,617  |  | Tunisia      | 1999 | 1,593,839 |
| Sudan   | 2000 | 2,799,783  |  | Tunisia      | 2000 | 1,581,292 |
| Sudan   | 2001 | 2,889,062  |  | Tunisia      | 2001 | 1,551,809 |
| Sudan   | 2002 | 3,028,127  |  | Tunisia      | 2002 | 1,540,538 |
| Sudan   | 2003 | 3,198,734  |  | Tunisia      | 2003 | 1,545,670 |
| Sudan   | 2004 | 3,212,000  |  | Tunisia      | 2004 | 1,546,543 |
| Sudan   | 2005 | 3,276,500  |  | Tunisia      | 2005 | 1,546,898 |
| Sudan   | 2006 | 3,299,833  |  | Tunisia      | 2006 | 1,573,382 |
| Sudan   | 2007 | 3,312,380  |  | Tunisia      | 2007 | 1,548,000 |

| Area   | Year | Value     |  | Area     | Year | Value     |
|--------|------|-----------|--|----------|------|-----------|
| Uganda | 1990 | 2,418,168 |  | Zimbabwe | 1990 | 2,165,775 |
| Uganda | 1991 | 2,597,818 |  | Zimbabwe | 1991 | 2,341,360 |
| Uganda | 1992 | 2,425,334 |  | Zimbabwe | 1992 | 2,363,195 |
| Uganda | 1993 | 2,699,087 |  | Zimbabwe | 1993 | 2,467,484 |
| Uganda | 1994 | 2,817,159 |  | Zimbabwe | 1994 | 40,998    |
| Uganda | 1995 | 2,942,739 |  | Zimbabwe | 1995 | 2,528,101 |
| Uganda | 1996 | 3,103,398 |  | Zimbabwe | 1996 | 2,540,464 |
| Uganda | 1997 | 5,303,564 |  | Zimbabwe | 1997 | 2,510,605 |
| Uganda | 1998 | 6,632,020 |  | Zimbabwe | 1998 | 2,513,399 |
| Uganda | 1999 | 6,344,006 |  | Zimbabwe | 1999 | 2,503,098 |
| Uganda | 2000 | 6,621,599 |  | Zimbabwe | 2000 | 2,509,563 |
| Uganda | 2001 | 6,972,460 |  | Zimbabwe | 2001 | 2,594,378 |
| Uganda | 2002 | 7,428,243 |  | Zimbabwe | 2002 | 2,459,471 |
| Uganda | 2003 | 7,200,351 |  | Zimbabwe | 2003 | 2,417,277 |
| Uganda | 2004 | 7,314,297 |  | Zimbabwe | 2004 | 2,416,650 |
| Uganda | 2005 | 7,257,324 |  | Zimbabwe | 2005 | 2,417,222 |
| Uganda | 2006 | 7285810   |  | Zimbabwe | 2006 | 2417876   |
| Uganda | 2007 | 7338297   |  | Zimbabwe | 2007 | 2418100   |

Source: <http://data.un.org/Data.aspx?q=GDP&d=SOWC&f=inID%3a93>