The Competitive Advantage of South Africa

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Johannesburg, South Africa
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Perspectives on Firm Success

- Competitive advantage resides solely inside a company or in its industry
- Competitive success depends primarily on company choices
- Competitive advantage (or disadvantage) resides partly in the locations at which a company’s business units are based
- Cluster participation is an important contributor to competitiveness
What is Competitiveness?

- Competitiveness is determined by the productivity with which a nation uses its human, capital, and natural resources. Productivity sets a nation’s or region’s standard of living (wages, returns to capital, returns to natural resource endowments)
  - Productivity depends both on the value of products and services (e.g. uniqueness, quality) as well as the efficiency with which they are produced.
  - It is not what industries a nation competes in that matters for prosperity, but how firms compete in those industries
  - Productivity in a nation is a reflection of what both domestic and foreign firms choose to do in that location. The location of ownership is secondary for national prosperity.
  - The productivity of “local” industries is of fundamental importance to competitiveness, not just that of traded industries
  - Devaluation does not make a country more competitive

- Nations compete in offering the most productive environment for business
- The public and private sectors play different but interrelated roles in creating a productive economy
• Innovation is **more than just scientific discovery**
• There are **no low-tech industries**, only low-tech firms
South African Competitiveness 2003

• **Economic growth** has been sluggish since the late 1990s; registered employment has fallen since 1990

• **GDP per capita growth** is lagging other middle and low income countries

• Government is increasingly recognizing the need for **microeconomic reform** and a greater focus on business development

• Internationally, **trade agreements** with African neighbors, the United States, and the European Union create new opportunities
Comparative Economic Performance
Selected Sub-Saharan African Economies over Time

Growth Rate of Real GDP per Capita (PPP)

Countries sorted by 1990 – 2002 CAGR of Real GDP per Capita:
- Mauritius
- Uganda
- Botswana
- Ghana
- Namibia
- Senegal
- Tanzania
- South Africa
- Nigeria
- Gabon
- Cameroon
- Kenya
- Cote d'Ivoire
- Zambia
- Zimbabwe

Source: EIU 2003
Comparative Economic Performance
Selected Middle- and Lower-Income Economies

GDP per Capita, 2001, US=100

CAGR of GDP per Capita Relative to the US, 1995-2001

Source: World Development Indicators 2002
South African Microeconomic Performance

- South Africa has one of the highest levels of **prosperity** (GDP per capita) and **labor productivity** in Africa

  **However**

- South Africa’s competitive position is clearly **eroding**
- South Africa has registered only slow **labor productivity growth** in the last few years, falling behind many other African economies
- South Africa’s **world export market share** has been flat over the last decade despite the devaluation of the Rand
- South Africa has low **domestic investment** and low inflows of **foreign direct investment**

- A **new approach** to economic development will be necessary
Comparative Labor Productivity Performance
Selected Middle Income Economies

- South Africa’s labor productivity growth has been low and lagged all but the South American economies in its income group.

Source: EIU 2003
South Africa’s world market share has been flat over the last decade. Export growth has been driven by growing world trade volumes and long-term devaluation.

Source: WTO (2002)
South Africa has a relatively high stock of foreign direct investment, but inflows have been small in recent years.

Note: For African countries only 2000 data available
Determinants of Productivity and Productivity Growth

Macroeconomic, Political, Legal, and Social Context for Development

Microeconomic Foundations of Development

- A sound macroeconomic, political, legal, and social context creates the potential for competitiveness, **but is not sufficient**
- Competitiveness ultimately depends on improving the **microeconomic capability** of the economy and the **sophistication of local companies and local competition**
Integration of Macro- and Microeconomic Reforms

Stability and confidence support investment and upgrading

Create the opportunity for productivity

Required to achieve productivity

Productivity growth allows economic growth and rising incomes without inflation, making macroeconomic stability easier to achieve

Macro reform alone leads to short term capital inflows and growth spurts that ultimately are not sustainable

Micro reform is impeded by macroeconomic volatility that reduces company investment

Macroeconomic reform

Microeconomic reform
Productivity and the Business Environment

Context for Firm Strategy and Rivalry

- A local context and rules that encourage investment and sustained upgrading
  - e.g., Intellectual property protection
- Meritocratic incentive systems across all major institutions
- Open and vigorous competition among locally based rivals

Factor (Input) Conditions

- Presence of high quality, specialized inputs available to firms
  - Human resources
  - Capital resources
  - Physical infrastructure
  - Administrative infrastructure
  - Information infrastructure
  - Scientific and technological infrastructure
  - Natural resources

Demand Conditions

- Sophisticated and demanding local customer(s)
- Local customer needs that anticipate those elsewhere
- Unusual local demand in specialized segments that can be served nationally and globally

Related and Supporting Industries

- Access to capable, locally based suppliers and firms in related fields
- Presence of clusters instead of isolated industries

Successful economic development is a process of successive economic upgrading, in which the business environment in a nation evolves to support and encourage increasingly sophisticated ways of competing.
The California Wine Cluster

Sources: California Wine Institute, Internet search, California State Legislature. Based on research by MBA 1997 students R. Alexander, R. Arney, N. Black, E. Frost, and A. Shivananda.
The Houston Oil and Gas Cluster

**Upstream**
- Oil & Natural Gas Exploration & Development
- Oil & Natural Gas Completion & Production

**Downstream**
- Oil Transportation
- Oil Trading
- Oil Refining
- Oil Distribution
- Oil Wholesale Marketing
- Oil Retail Marketing

- Gas Gathering
- Gas Processing
- Gas Trading
- Gas Transmission
- Gas Distribution
- Gas Marketing

**Oilfield Services/Engineering & Contracting Firms**
- Equipment Suppliers
  - (e.g. Oil Field Chemicals, Drilling Rigs, Drill Tools)
- Specialized Technology Services
  - (e.g. Drilling Consultants, Reservoir Services, Laboratory Analysis)
- Subcontractors
  - (e.g. Surveying, Mud Logging, Maintenance Services)
- Business Services
  - (e.g. MIS Services, Technology Licenses, Risk Management)

**Specialized Institutions**
- (e.g. Academic Institutions, Training Centers, Industry Associations)
Clusters and Competitiveness

Clusters increase productivity and efficiency

- Efficient **access** to specialized inputs, services, employees, information, institutions, and “public goods” (e.g. training programs)
- Ease of **coordination** and transactions across firms
- Rapid **diffusion** of best practices
- Ongoing, visible **performance comparisons** and strong incentives to improve vs. local rivals

Clusters stimulate and enable innovation

- Enhanced ability to **perceive innovation opportunities**
- Presence of multiple suppliers and institutions to assist in **knowledge creation**
- Ease of **experimentation** given locally available resources

Clusters facilitate commercialization

- Opportunities for **new companies** and **new lines of established business** are more apparent
- **Commercializing** new products and starting new companies is easier because of available skills, suppliers, etc.

Clusters reflect the fundamental influence of **externalities / linkages** across firms and associated institutions in competition
Levels of Clusters

• There is often an **array of clusters** in a given field in different locations, each with different levels of specialization and sophistication.

• Global **innovation centers**, such as Silicon Valley in semiconductors, are few in number. If there are multiple innovation centers, they normally **specialize** in different market segments.

• Other clusters focus on **manufacturing**, outsourced **service functions**, or play the role of **regional** production, assembly or service centers.

• Firms based in the most advanced clusters often **seed or enhance clusters** in other locations in order to reduce the risk of a single site, access lower cost inputs, or better serve particular regional markets.

• The challenge for an economy is to move from **isolated firms** to an array of **clusters**, enhance **interaction** within clusters, and then to **upgrade the breadth and sophistication** of clusters to more advanced activities.
Leading Footwear Clusters

Portugal
- Production
- Focus on short-production runs in the medium price range

Romania
- Production subsidiaries of Italian companies
- Focus on lower to medium price range

Vietnam/Indonesia
- OEM Production
- Focus on the low cost segment mainly for the European market

China
- OEM Production
- Focus on low cost segment mainly for the US market

Italy
- Design, marketing, and production of premium shoes
- Export widely to the world market

United States
- Design and marketing
- Focus on specific market segments like sport and recreational shoes and boots
- Manufacturing only in selected lines such as hand-sewn casual shoes and boots

Source: Research by HBS student teams in 2002
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Institutions for Collaboration

**General**
- Chambers of Commerce
- Professional associations
- School networks
- University partner groups
- Religious networks
- Joint private/public advisory councils
- Competitiveness councils

**Cluster-specific**
- Industry associations
- Specialized professional associations and societies
- Alumni groups of core cluster companies
- Incubators

• Institutions for collaboration (IFC) are formal and informal organizations that
  - facilitate the exchange of information and technology
  - conduct joint activities
  - foster coordination among firms

• IFCs can improve the business environment by
  - creating relationships and level of trust that make them more effective
  - defining of common standards
  - conducting or facilitating the organization of collective action in areas such as procurement, information gathering, or international marketing
  - defining and communicating common beliefs and attitudes
  - providing mechanisms to develop a common economic or cluster agenda
Stages Of Competitive Development

Factor-Driven Economy

Low Cost Inputs

Investment-Driven Economy

Efficiency Through Heavy Domestic and Foreign Investment

Innovation-Driven Economy

Unique Value

South Africa’s Competitiveness Agenda 2003

- Upgrade the business environment
  - Foster cluster development
  - Shift the roles of government and business in economic development
  - Integrate social and economic policies
  - Create economic strategies at the provincial level
  - Lead a cross-national economic strategy for Southern Africa
The South African Business Environment
Selected Observations

**Context for Firm Strategy and Rivalry**

- Increasing openness to international competition
- Low corruption
- Uncertainty about economic policy context (e.g., BEE)
- Slow progress on privatization and other market reforms

**Related and Supporting Industries**

- Presence of many but unsophisticated suppliers due to history of economic sanctions
- Few developed clusters like mining, tourism, and financial services

**Factor Input Conditions**

- Huge endowments of natural resources (ore, gold, diamonds, coal)
- Capable financial markets
- Strong physical infrastructure
  - Skill deficits in the workforce
  - Decreasing spending on R&D

**Demand Conditions**

- Low sophistication of domestic consumers
- Increasing openness to international competition
- Low corruption
- Uncertainty about economic policy context (e.g., BEE)
- Slow progress on privatization and other market reforms

- Presence of many but unsophisticated suppliers due to history of economic sanctions
- Few developed clusters like mining, tourism, and financial services
## Factor (Input) Conditions

### South Africa’s Relative Position

#### Competitive Advantages
Relative to GDP per Capita

<table>
<thead>
<tr>
<th>Factor (Input)</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Market Sophistication</td>
<td>13</td>
</tr>
<tr>
<td>Local Equity Market Access</td>
<td>16</td>
</tr>
<tr>
<td>Adequacy of Public Sector Legal Recourse</td>
<td>17</td>
</tr>
<tr>
<td>University/Industry Research Collaboration</td>
<td>18</td>
</tr>
<tr>
<td>Intellectual Property Protection</td>
<td>19 ▲</td>
</tr>
<tr>
<td>Judicial Independence</td>
<td>20</td>
</tr>
<tr>
<td>Quality of Management Schools</td>
<td>20 ▼</td>
</tr>
<tr>
<td>Air Transport Infrastructure Quality</td>
<td>21</td>
</tr>
<tr>
<td>Quality of Scientific Research Institutions</td>
<td>21 ▲</td>
</tr>
<tr>
<td>Overall Infrastructure Quality</td>
<td>24</td>
</tr>
<tr>
<td>Railroad Infrastructure Quality</td>
<td>25 ▼</td>
</tr>
</tbody>
</table>

#### Competitive Disadvantages
Relative to GDP per Capita

<table>
<thead>
<tr>
<th>Factor (Input)</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of Math and Science Education</td>
<td>71</td>
</tr>
<tr>
<td>Availability of Scientists and Engineers</td>
<td>65</td>
</tr>
<tr>
<td>Police Protection of Businesses</td>
<td>59 ▲</td>
</tr>
<tr>
<td>Telephone/Fax Infrastructure Quality</td>
<td>58 ▼</td>
</tr>
<tr>
<td>Extent of Bureaucratic Red Tape</td>
<td>53</td>
</tr>
<tr>
<td>Quality of Public Schools</td>
<td>50 ▲</td>
</tr>
<tr>
<td>Cell phones per 100 people (2001)</td>
<td>44</td>
</tr>
<tr>
<td>Internet users per 100 people (2001)</td>
<td>44</td>
</tr>
<tr>
<td>Ease of Access to Loans</td>
<td>34</td>
</tr>
<tr>
<td>Port Infrastructure Quality</td>
<td>31 ▼</td>
</tr>
</tbody>
</table>

Note: Rank by countries; overall South Africa ranks 29 out of 80 countries (33 on National Business Environment, 37 on GDP pc 2001)

Source: Global Competitiveness Report 2002
International Patenting Output
Selected Middle Income Countries

Annual U.S. patents per 1 million population, 2001


### U.S. Patenting by South African Institutions

<table>
<thead>
<tr>
<th>Organization</th>
<th>Patents Issued from 1996 to 2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 DENEL (PROPRIETARY) LIMITED</td>
<td>11</td>
</tr>
<tr>
<td>2 SASOL TECHNOLOGY (PROPRIETARY) LIMITED</td>
<td>10</td>
</tr>
<tr>
<td><strong>3 WATER RESEARCH COMMISSION</strong></td>
<td><strong>9</strong></td>
</tr>
<tr>
<td>3 CIRCUIT BREAKER INDUSTRIES LIMITED</td>
<td>9</td>
</tr>
<tr>
<td>3 ATOMIC ENERGY CORPORATION OF SOUTH AFRICA</td>
<td>9</td>
</tr>
<tr>
<td>6 IMPLICO B.V.</td>
<td>8</td>
</tr>
<tr>
<td>6 CSIR</td>
<td>8</td>
</tr>
<tr>
<td>8 ESKOM</td>
<td>7</td>
</tr>
<tr>
<td>8 BRITISH TECHNOLOGY GROUP LIMITED</td>
<td>7</td>
</tr>
<tr>
<td>10 FARMARC NEDERLAND B.V.</td>
<td>5</td>
</tr>
<tr>
<td>10 AE + CI LIMITED</td>
<td>5</td>
</tr>
<tr>
<td>12 IPCOR NV</td>
<td>4</td>
</tr>
<tr>
<td>12 MICROCHIP TECHNOLOGY INCORPORATED</td>
<td>4</td>
</tr>
<tr>
<td>12 WINDSOR TECHNOLOGIES LIMITED</td>
<td>4</td>
</tr>
<tr>
<td>12 MINTEK</td>
<td>4</td>
</tr>
<tr>
<td>12 BILLITON SA LIMITED</td>
<td>4</td>
</tr>
<tr>
<td>12 SCORPIO CONVEYOR PRODUCTS LIMITED</td>
<td>4</td>
</tr>
<tr>
<td>12 SLIC TRADING COMPANY LIMITED</td>
<td>4</td>
</tr>
<tr>
<td>12 ELECTRO CHEMICAL HOLDINGS SOCIETE ANONYME</td>
<td>4</td>
</tr>
<tr>
<td><strong>12 UNIVERSITY OF PRETORIA</strong></td>
<td><strong>4</strong></td>
</tr>
<tr>
<td>12 H L &amp; H TIMBER PRODUCTS (PROPRIETARY) LIMITED</td>
<td>4</td>
</tr>
<tr>
<td>22 EUROPEAN SPORTS MERCHANDISING BV</td>
<td>3</td>
</tr>
<tr>
<td>22 L'AIR LIQUIDE</td>
<td>3</td>
</tr>
<tr>
<td>22 AECI EXPLOSIVES LIMITED</td>
<td>3</td>
</tr>
<tr>
<td>22 PRESS ENGINEERING PTY. LTD.</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: Shading indicates universities, research institutions, and other government agencies. Nine more institutions with three patents are not listed.

## Context for Firm Strategy and Rivalry
### South Africa’s Relative Position

<table>
<thead>
<tr>
<th>Competitive Advantages Relative to GDP per Capita</th>
<th>Country Ranking, Arrows indicate a change of 5 or more ranks since 1998</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extent of Distortive Government Subsidies</td>
<td>9  ↑</td>
</tr>
<tr>
<td>Efficacy of Corporate Boards</td>
<td>12</td>
</tr>
<tr>
<td>Effectiveness of Anti-Trust Policy</td>
<td>22  ↑</td>
</tr>
<tr>
<td>Extent of Locally Based Competitors</td>
<td>23  ↓</td>
</tr>
<tr>
<td>Costs of Other Firms' Illegal/Unfair Activities</td>
<td>25</td>
</tr>
<tr>
<td>Intensity of Local Competition</td>
<td>25  ↑</td>
</tr>
</tbody>
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</thead>
<tbody>
<tr>
<td>Cooperation in Labor-Employer Relations</td>
<td>70</td>
</tr>
<tr>
<td>Decentralization of Corporate Activity</td>
<td>47</td>
</tr>
<tr>
<td>Favoritism in Decisions of Government Officials</td>
<td>39</td>
</tr>
<tr>
<td>Tariff Liberalization</td>
<td>35  ↑</td>
</tr>
</tbody>
</table>

Note: Rank by countries; overall South Africa ranks 29 out of 80 countries (33 on National Business Environment, 37 on GDP pc 2001)
Source: Global Competitiveness Report 2002
**Demand Conditions**

**South Africa’s Relative Position**

**Competitive Advantages Relative to GDP per Capita**

Country Ranking, Arrows indicate a change of 5 or more ranks since 1998

- Consumer Adoption of Latest Products
- Government Procurement of Advanced Technology Products
- Laws Relating to Information Technology
- Buyer Sophistication
- Stringency of Environmental Regulations
- Presence of Demanding Regulatory Standards

**Competitive Disadvantages Relative to GDP per Capita**

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<table>
<thead>
<tr>
<th>Factor</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Availability of Components and Parts</td>
<td>13</td>
</tr>
<tr>
<td>Extent of Product and Process Collaboration</td>
<td>27</td>
</tr>
<tr>
<td>Local Supplier Quantity</td>
<td>28</td>
</tr>
</tbody>
</table>

**Country Ranking, Arrows indicate a change of 5 or more ranks since 1998**

### Competitive Disadvantages Relative to GDP per Capita

<table>
<thead>
<tr>
<th>Factor</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Availability of Specialized Research and Training Services</td>
<td>44</td>
</tr>
<tr>
<td>State of Cluster Development</td>
<td>35</td>
</tr>
<tr>
<td>Local Availability of Process Machinery</td>
<td>33</td>
</tr>
<tr>
<td>Local Supplier Quality</td>
<td>30</td>
</tr>
</tbody>
</table>

**Country Ranking, Arrows indicate a change of 5 or more ranks since 1998**

- South Africa needed to produce many supplies domestically to overcome **trade sanctions** but did not develop deep clusters

**Note:** Rank by countries; overall South Africa ranks 29 out of 80 countries (33 on National Business Environment, 37 on GDP pc 2001)

**Source:** Global Competitiveness Report 2002
## Company Operations and Strategy
### South Africa’s Relative Position 2002

### Competitive Advantages
Relative to GDP per Capita

<table>
<thead>
<tr>
<th>Category</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence of Foreign Technology Licensing</td>
<td>6</td>
</tr>
<tr>
<td>Reliance on Professional Management</td>
<td>13</td>
</tr>
<tr>
<td>Extent of Incentive Compensation</td>
<td>15</td>
</tr>
<tr>
<td>Extent of Marketing</td>
<td>18</td>
</tr>
<tr>
<td>Willingness to Delegate Authority</td>
<td>23</td>
</tr>
<tr>
<td>Company Spending on R&amp;D</td>
<td>27</td>
</tr>
<tr>
<td>Extent of Regional Sales</td>
<td>28</td>
</tr>
<tr>
<td>Extent of Staff Training</td>
<td>28</td>
</tr>
</tbody>
</table>

### Competitive Disadvantages
Relative to GDP per Capita

<table>
<thead>
<tr>
<th>Category</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature of Competitive Advantage</td>
<td>68</td>
</tr>
<tr>
<td>Value Chain Presence</td>
<td>65</td>
</tr>
<tr>
<td>Degree of Customer Orientation</td>
<td>61</td>
</tr>
<tr>
<td>Extent of Branding</td>
<td>51</td>
</tr>
<tr>
<td>Capacity for Innovation</td>
<td>43</td>
</tr>
<tr>
<td>Production Process Sophistication</td>
<td>38</td>
</tr>
<tr>
<td>Control of International Distribution</td>
<td>36</td>
</tr>
<tr>
<td>Breadth of International Markets</td>
<td>31</td>
</tr>
</tbody>
</table>

Note: Rank by countries; overall the South Africa ranks 29 out of 80 countries (31 on Company Operations and Strategy, 37 on GDP pc 2001)
Source: Global Competitiveness Report 2002
South Africa’s Competitiveness Agenda 2003

- Upgrade the business environment

- Foster cluster development
  - Shift the roles of government and business in economic development
  - Integrate social and economic policies
  - Create economic strategies at the provincial level
  - Lead a cross-national economic strategy for Southern Africa
South Africa’s Export Performance By Broad Sector
1997-2001

South Africa’s average change in world goods export share:
+ 0.07%

South Africa’s average goods export share:
0.52%

- Materials/Metals
- Personal (Diamonds)
  (3.6%, +1.3%)
- Defense
- Multiple Business
- Textiles/Apparel
- Petroleum/Chemicals
- Housing/ Household
- Transportation
- Power
- Health Care
- Office
- Food/Beverages

Change in South Africa’s World Export Share, 1997 - 2001

South Africa’s exports continue to be dominated by natural resource-intensive products

Source: UNCTAD Trade Data. Author’s analysis.

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The Australian Wine Cluster
Trade Performance

Australian Wine Exports in million US Dollars

$0 $100 $200 $300 $400 $500 $600 $700 $800 $900 $1,000


Australian Wine World Export Market Share

0% 1% 2% 3% 4% 5% 6% 7% 8%

Value
Market Share

Source: UN Trade Statistics
The Australian Wine Cluster

History

1930
First oenology course at Roseworthy Agricultural College

1955
Australian Wine Research Institute founded

1965
Australian Wine and Brandy Corporation established

1970
Winemaking school at Charles Sturt University founded

1980
Winemaker’s Federation of Australia established

1990
New organizations created for education, research, market information, and export promotions

1991 to 1998

1950s
Import of European winery technology

1960s
 Recruiting of experienced foreign investors, e.g. Wolf Bass

1970s
Continued inflow of foreign capital and management

1980s
Creation of large number of new wineries

1990s
Surge in exports and international acquisitions

## The Australian Wine Cluster

**Recently founded Institutions for Collaboration**

<table>
<thead>
<tr>
<th><strong>Winemakers’ Federation of Australia</strong></th>
<th><strong>Cooperative Centre for Viticulture</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Established in 1990</td>
<td>- Established in 1991</td>
</tr>
<tr>
<td>- Focus: Public policy representation of companies in the wine cluster</td>
<td>- Focus: Coordination of research and education policy in viticulture</td>
</tr>
<tr>
<td>- Funding: Member companies</td>
<td>- Funding: other cluster organizations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Australian Wine Export Council</strong></th>
<th><strong>Grape and Wine R&amp;D Corporation</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Established in 1992</td>
<td>- Established in 1991 as statutory body</td>
</tr>
<tr>
<td>- Focus: Wine export promotion through international offices in London and San Francisco</td>
<td>- Focus: Funding of research and development activities</td>
</tr>
<tr>
<td>- Funding: Government; cluster organizations</td>
<td>- Funding: Government; statutory levy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Wine Industry Information Service</strong></th>
<th><strong>Wine Industry National Education and Training Council</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Established in 1998</td>
<td>- Established in 1995</td>
</tr>
<tr>
<td>- Focus: Information collection, organization, and dissemination</td>
<td>- Focus: Coordination, integration, and standard maintenance for vocational training and education</td>
</tr>
<tr>
<td>- Funding: Cluster organizations</td>
<td>- Funding: Government; other cluster organizations</td>
</tr>
</tbody>
</table>

Public / Private Cooperation in Cluster Upgrading
Minnesota’s Medical Device Cluster

Context for Firm Strategy and Rivalry
- Aggressive trade associations (Medical Alley Association, High Tech Council)
- Effective global marketing of the cluster and of Minnesota as the “The Great State of Health”
- Full-time “Health Care Industry Specialist” in the department of Trade and Economic Development

Factor (Input) Conditions
- Joint development of vocational-technical college curricula with the medical device industry
- Minnesota Project Outreach exposes businesses to resources available at university and state government agencies
- Active medical technology licensing through University of Minnesota
- State-formed Greater Minnesota Corp. to finance applied research, invest in new products, and assist in technology transfer

Demand Conditions
- State sanctioned reimbursement policies to enable easier adoption and reimbursement for innovative products
Appropriate Roles of Government in Cluster Development

• A successful cluster policy builds on **sound overall economic policies** and improvements in the **general business environment**

• Government, in cooperation with the private sector, must identify all **existing** and **emerging** clusters

  - To **qualify** as an emerging cluster there must be
    – Some viable companies present
    – A core of cluster-specific advantages in the diamond

• Government policy should **reinforce established and emerging clusters** rather than attempt to create entirely new ones

• Government should support the development of **all clusters**, not choose among them

• Government’s role in cluster initiatives is as **facilitator** and **participant**. The most successful cluster initiatives are a public-private partnership
Cluster Policy versus Industrial Policy

Industrial Policy

- Target **desirable** industries / sectors
- Focus on domestic companies
- Intervene in competition (e.g., protection, industry promotion, subsidies)
- Centralizes decisions at the national level

Cluster-based Policy

- **All** clusters can contribute to prosperity
- Domestic and foreign companies both enhance productivity
- Relax impediments and constraints to productivity
- Emphasize cross-industry linkages / complementarities
- Encourage initiative at the state and local level

Distort competition

Enhance competition
South Africa’s Competitiveness Agenda 2003

• Upgrade the business environment

• Foster cluster development

• **Shift the roles of government and business in economic development**

• Integrate social and economic policies

• Create economic strategies at the provincial level

• Lead a cross-national economic strategy for Southern Africa
Shifting Responsibilities for Economic Development

**Old Model**

- Government drives economic development through policy decisions and incentives

**New Model**

- Economic development is a collaborative process involving government at multiple levels, companies, teaching and research institutions, and institutions for collaboration
Roles of Government in Economic Development

• **Improve the macroeconomic, political, legal, and social context**
  – Establish a **stable and predictable** macroeconomic, legal, and political environment
  – Improve the **social conditions** of citizens

• **Upgrade the general microeconomic business environment**
  – Improve the availability, quality, and efficiency of **cross-cutting or general purpose inputs, infrastructure, and institutions**
  – Set **overall rules and incentives** governing competition that encourage productivity growth

• **Facilitate cluster formation and upgrading**
  – Identify **existing and emerging clusters**
  – Convene and participate in the identification of **cluster constraints and action plans** to address them

• **Lead a collaborative process of economic change**
  – Create institutions and **processes for upgrading competitiveness** that inform citizens and mobilize the private sector, government at all levels, educational and other institutions, and civil society to take action
Role of the Private Sector in Economic Development

- A company’s competitive advantage is partly the result of the local environment
- Company membership in a cluster offers collective benefits
- Private investment in “public goods” is justified

- Take an active role in upgrading the local infrastructure
- Nurture local suppliers and attract new supplier investments
- Work closely with local educational and research institutions to upgrade quality and create specialized programs addressing cluster needs
- Provide government with information and substantive input on regulatory issues and constraints bearing on cluster development
- Focus corporate philanthropy on enhancing the local business environment

- An important role for trade associations
  - Greater influence
  - Cost sharing
South Africa’s Competitiveness Agenda 2003

- Upgrade the business environment
- Foster cluster development
- Shift the roles of government and business in economic development
- **Integrate social and economic policies**
- Create economic strategies at the provincial level
- Lead a cross-national economic strategy for Southern Africa
# Human Development Index 2002

<table>
<thead>
<tr>
<th>Country</th>
<th>HDI Rank</th>
<th>Distance to GDP Rank</th>
<th>Health</th>
<th>Education</th>
<th>Income</th>
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<td>Congo</td>
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<td>27</td>
<td>0.44</td>
<td>0.75</td>
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</tr>
</tbody>
</table>

Source: UNDP Human Development Report 2002
Causes of Economic Inequality

• Inadequate **education** and skill development
• Monopolies and restraints to **competition**
• **Discrimination**
• Faulty **incentives** for disadvantaged groups
• Command and control **regulation**
• **Managerial** ignorance
Integrating Economic and Social Policy

• In the new thinking on competition, there is not an inherent conflict between economic and social objectives, but a long term synergy.

• The competitiveness of companies depends heavily on:
  – Rising skill levels
  – Safe working conditions
  – A sense of equal opportunity
  – Low levels of pollution (pollution is a sign of unproductive use of physical resources)

• However, efforts to meet “social” objectives must be aligned with productivity and prepare and motivate individuals to succeed in the market system.

• Efforts to meet “economic” objectives must include explicit programs to raise human capability, improve the lives and sense of opportunity for individuals, and enhance the broader business environment.
Integrating Economic and Social Policy

Examples

**Training**
- Organize training investments around clusters

**Housing**
- Create mechanisms to encourage home ownership; provide incentives for new company formation in the construction cluster; reduce unnecessary costs of housing construction due to regulatory and approval requirement; secure property rights to residents

**Health Care**
- Create incentives for private health insurance; open health care delivery to competition

**Social Security**
- Create incentives for saving; encourage a private pension system that agglomerates investment capital

**Environmental Quality**
- Institute a regulatory regime that encourages movement to more environmental friendly methods; invest in technical assistance in eco-efficient processes and practices
Towards Sustainable Black Economic Empowerment
Selected Policies

• Improve **social conditions**
• Improve and extend **public education**
• Invest aggressively in **managerial training** for black citizens
• Create incentives and support the hiring and promotion of black employees into **low- and middle-management** positions in white-owned local companies as well as multinationals
• Focus on upgrading **indigenous local businesses**, including in agriculture, local services, and manufacturing businesses serving local needs
• Place early attention to **clusters** involving small- and medium size enterprises
• Create incentives for **risk capital investments** in business with significant (>10%) black ownership. Avoid programs that apply only to majority black-owned businesses, especially when other owners are passive investors or private equity firms

• There a **no short cuts** for addressing this long-term challenge
South Africa’s Competitiveness Agenda 2003

- Upgrade the business environment
- Foster cluster development
- Shift the roles of government and business in economic development
- Integrate social and economic policies

- **Create economic strategies at the provincial level**

- Lead a cross-national economic strategy for Southern Africa
Influences on Competitiveness
Multiple Geographic Levels

- World Economy
- Broad Economic Areas
- Groups of Neighboring Nations
- Nations
- States, Provinces
- Cities, Metropolitan Areas
Regional Performance
Per Capita Income and Employment Growth by UK Region

GDP Per Capita, 1999

Annual Growth in Employment, 1996-2000

Source: Office for National Statistics

R² = 0.245
Regional Performance
Poverty Levels by South African Provinces

Source: The DTI, 2002
Specialization of Regional Economies

Select U.S. Geographic Areas

- Chicago
  - Communications Equipment
  - Processed Food
  - Heavy Machinery
- Houston
  - Heavy Construction Services
  - Oil and Gas
  - Aerospace Vehicles and Defense
- Pittsburgh, PA
  - Construction Materials
  - Metal Manufacturing
  - Education and Knowledge Creation
- Wichita, KS
  - Aerospace Vehicles and Defense
  - Heavy Machinery
  - Oil and Gas
- Denver, CO
  - Leather and Sporting Goods
  - Oil and Gas
  - Aerospace Vehicles and Defense
- Seattle-Bellevue-Everett, WA
  - Aerospace Vehicles and Defense
  - Fishing and Fishing Products
  - Analytical Instruments
- San Francisco-Oakland-San Jose
  - Communications Equipment
  - Agricultural Products
  - Information Technology
- Raleigh-Durham, NC
  - Communications Equipment
  - Information Technology
  - Education and Knowledge Creation
- Los Angeles Area
  - Apparel
  - Building Fixtures, Equipment and Services
  - Entertainment
- San Diego
  - Leather and Sporting Goods
  - Power Generation
  - Education and Knowledge Creation
- Boston
  - Analytical Instruments
  - Knowledge Creation
- Atlanta, GA
  - Construction Materials
  - Transportation and Logistics
  - Business Services

Note: Clusters listed are the three highest ranking clusters in terms of share of national employment.
Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School
Principles of Provincial Economic Development

• Delegate **authority and accountability** for economic policy to the provincial level

• Improve the **provincial business environment** rather than attempting to distort location decisions with subsidies or mandates

• Identify and enhance **existing and emerging local clusters**. Clusters may trade either internationally or primarily with other provinces

• Efforts to attract investment should capitalize on the **uniqueness** of the provinces and build on **clusters** rather than across-the-board promotional schemes
Export Processing Zones and Competitiveness

• Export processing zones are more successful if they are targeted around the needs of specific clusters
  – Use a cluster-based approach to FDI promotion
  – Involve companies already present in the zone to attract further specialized suppliers and service providers

• Export processing zones can improve a country’s or province’s competitiveness if they trigger broader changes in the business environment
  – Creation of specialized input factors, such as specialized suppliers and research facilities
  – Upgrading of rules and regulations, for example in the labor market
  – Improvement of government services, for example in customs services

South Africa’s Competitiveness Agenda 2003

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South Africa’s Export Destinations
1997-2001

Note: Excludes exports to unspecified destinations (2001: 28%)
Source: UNCTAD Trade Data. Author’s analysis.
The Importance of Regional Trade for Developing Economies

Trade Solely with Advanced Nations

- Exports based on **inherited** comparative advantages
  - Natural resources
  - Cheap labor
- Can lead to narrow export base and limited local company presence in the value chain
- Inbound FDI can focus heavily on accessing resources versus more productive activities
- Vulnerable to exchange rate swings and macroeconomic shocks

- Can create a **dead-end strategy** leading to domestic pressure for intervention
- Policies must focus on upgrading local capabilities and improving a nation’s value proposition for more advanced activities

Trade with Developing Nations/Neighbors

- Exports can be based on **created** competitive advantages
  - Industries where a country has achieved greater productivity than neighbors
  - Differentiated products that meet regional needs
  - More efficient production processes given factor costs
- Broadening export base
- Widening skills in the value chain
- Outbound not just inbound FDI

- Boosts **productivity** across many parts of the national economy
- Stimulates the improvement of skills by local firms and provides a **stepping stone** for wider internationalization
Cross-National Regions and Economic Strategy

Traditional Views

• Regions as **free trade zones**; regions as **economic unions** (e.g., United States, European Union)

New View

• A regional strategy as a powerful tool to enhance **competitiveness** in autonomous countries
  
  – Internal trade and investment
    • Gains from internal trade and investment
    AND
  
  – Company operations and strategy
    • Enhancing the **competitive capability** of firms
    • Expanding trade in **non-traditional** export industries
  
  – Business environment
    • Mutual benefits to the **productivity of the business environment** through policy coordination that captures **external economies** and the benefits of **specialization** in institutions and infrastructure across borders
  
  – Cluster development
    • **Cross-border cluster** specialization and integration
  
  – Foreign investment
    • Enhancing interest and investment in the region by the **international community**
  
  – Economic policy process
    • Improving economic policy formulation and implementation **at the national level**
Cross-National Economic Coordination
Alternate Geographic Levels

- World Economy
  - Broad Economic Areas
    - Groups of Neighboring Nations
      - Nations
        - States, Provinces
          - Cities, Metropolitan Areas

Examples:
- e.g. Sub-Saharan Africa
- e.g. Southern African nations
- e.g. South Africa
- e.g. Northern Cape
Cross-National Economic Coordination

Illustrative Policy Areas

**Factor (Input) Conditions**
- Improve regional transportation infrastructure
- Create an efficient energy network
- Upgrade/link regional communications
- Upgrade/link financial markets
- Upgrade higher education through facilitating specialization and student exchanges
- Expand cross-border business and financial information access and sharing
- Coordinate activities to ensure personal safety

**Context for Strategy and Rivalry**
- Coordinate macroeconomic policies
- Eliminate trade and investment barriers within the region
- Simplify cross-border regulations and paperwork
- Guarantee minimum basic investor protections

**Demand Conditions**
- Agree on foreign investment promotion guidelines to limit forms of investment promotion that do not enhance productivity
- Coordinated competition policy
- Set minimum environmental standards
- Set minimum safety standards
- Establish reciprocal consumer protection laws

**Related and Supporting Industries**
- Establish ongoing upgrading process in clusters that cross national borders, e.g.
  - Tourism
  - Agribusiness
  - Textiles and Apparel
  - Information Technology

**Regional Governance**
- Share best practices in government operations
- Improve regional institutions
  - Regional development bank
  - Dispute resolution mechanisms
  - Policy coordination body
- Develop a regional marketing strategy
South Africa’s Competitiveness Agenda 2003

- Upgrade the business environment
- Foster cluster development
- Shift the roles of government and business in economic development
- Integrate social and economic policies
- Create economic strategies at the provincial level
- Lead a cross-national economic strategy for Southern Africa
Selected References

Web resources

• Institute for Strategy and Competitiveness

• ISC Cluster Mapping Data (US)

• Cluster of Innovation Initiative
  – Council on Competitiveness
  – Monitor Company

www.isc.hbs.edu

data.isc.hbs.edu/isc/index.jsp

www.compete.org

www.monitor.com
Comparative Economic Performance
Selected Middle Income Economies over Time

Growth Rate of Real GDP (PPP) per Capita

Source: EIU 2003
Comparative Labor Productivity Performance
Selected Sub-Saharan African Economies

South Africa’s labor productivity is high relative to other African economies, but its growth has been only average over recent years.

Source: EIU 2003
# Top 10 Listed South African Companies By Market Capitalization

<table>
<thead>
<tr>
<th>Company</th>
<th>Sector</th>
<th>Market Capitalization (US$m, 12/2002)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglo American</td>
<td>Mining Finance</td>
<td>21,751</td>
</tr>
<tr>
<td>BHP Billiton</td>
<td>Mining</td>
<td>12,996</td>
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<tr>
<td>C. Financiere Richemont</td>
<td>Appliances</td>
<td>9,736</td>
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<tr>
<td>Sasol</td>
<td>Oil &amp; Gas</td>
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<tr>
<td>Anglo American Platinum</td>
<td>Mining</td>
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<tr>
<td>SAB Miller</td>
<td>Breweries</td>
<td>6,994</td>
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<tr>
<td>Gold Fields</td>
<td>Mining</td>
<td>6,523</td>
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<tr>
<td>Old Mutual</td>
<td>Insurance</td>
<td>5,273</td>
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<td>Standard Bank Group</td>
<td>Banking</td>
<td>4,631</td>
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<tr>
<td>Firstrand</td>
<td>Banking</td>
<td>4,610</td>
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</table>

Source: UNDP, 2003
## Top 30 South Africa’s Export Industries by Export Value, 2000

<table>
<thead>
<tr>
<th>No.</th>
<th>Industry</th>
<th>Cluster</th>
<th>Sub-cluster</th>
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<td>1</td>
<td>Diamonds unset, rough, unsort</td>
<td>Personal</td>
<td>Precious, Semi-P Stones</td>
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<tr>
<td>2</td>
<td>Special Transactions</td>
<td>Multiple Business</td>
<td>Misc Multi Business Gds</td>
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<td>3</td>
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<td>Coal, Lignite, Peat, Briquets, Coke</td>
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<td>4</td>
<td>Pass Motor Veh exc buses</td>
<td>Transportation</td>
<td>Passenger Motor Vehicles</td>
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<td>Materials/Metals</td>
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<tr>
<td>8</td>
<td>Dmnds nmind, unset, cut not set</td>
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<td>Sugar</td>
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<td>Food/Beverages</td>
<td>Wine</td>
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<td>16</td>
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<td>Forest Products</td>
<td>Wood Pulp</td>
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<td>17</td>
<td>Prec Metal Scrap, waste</td>
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<td>Precious Metal Concentrts, Ores</td>
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<td>Steel Coil, Rod, Bars</td>
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<td>19</td>
<td>Sntless Steel etc coils</td>
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<tr>
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<td>Pulpwood Chips, particles</td>
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<td>Wood Fiber</td>
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Source: UNCTAD Trade Data. Author’s analysis.