Competitiveness: Implications for Central and Europe and the Czech Republic

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This presentation draws on ideas from Professor Porter’s articles and books, in particular, The Competitive Advantage of Nations (The Free Press, 1990), “Building the Microeconomic Foundations of Competitiveness,” in The Global Competitiveness Report 2006 (World Economic Forum, 2006), “Clusters and the New Competitive Agenda for Companies and Governments” in On Competition (Harvard Business School Press, 1998), and ongoing research on clusters and competitiveness. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means - electronic, mechanical, photocopying, recording, or otherwise - without the permission of Michael E. Porter. Further information on Professor Porter’s work and the Institute for Strategy and Competitiveness is available at www.isc.hbs.edu
Perspectives on Firm Success

- Competitive advantage resides solely inside a company or in its industry.
- Competitive success depends primarily on company choices.
- Cluster participation is an important contributor to competitiveness.

- Competitive advantage (or disadvantage) resides partly in the locations at which a company’s business units are based.
Prosperity Performance
Selected Countries

PPP-adjusted GDP per Capita, 2006

Growth of Real GDP per Capita (PPP-adjusted), CAGR, 1998-2006

Source: EIU (2007), authors calculations
Central and Eastern European Economies in 2007

Common Themes

• Strong economic growth and fast rate of prosperity catch-up
• Opening to foreign investment and European integration have driven growth

However

• Rapid wage growth is threatening a key traditional source of the region’s attractiveness
• Concerns about macroeconomic overheating are rising

• The region needs to prepare for the next stage of economic development in a more challenging global economic environment
What is Competitiveness?

- Competitiveness is determined by the **productivity** with which a nation uses its human, capital, and natural resources.
  - Sets the **standard of living** (wages, returns on capital, returns on natural resources) that a country can sustain
  - Productivity depends on the **prices per unit** that a nation’s products and services can command (due to uniqueness and quality), not just on efficiency
  - It is not **what** industries a nation competes in that matters for prosperity, but **how** it competes in those industries
  - Productivity requires a **combination of domestic and foreign firms** operating in the nation
  - The productivity of **“local” or domestic industries** is fundamental to competitiveness, not just that of traded industries

- 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
What Creates Sustainable Prosperity?

Prosperity

Productivity

Innovative Capacity
Decomposing Prosperity

Prosperity
- Standard of living
- Inequality

Per Capita Income
- Consumption taxes
- Local prices
  - Efficiency of local industries
  - Level of local market competition

Domestic Purchasing Power

Labor Productivity
- Skills
- Capital stock
- Total factor productivity

Labor Utilization
- Working hours
- Unemployment
- Workforce participation rate
  - Population age profile
Comparative Labor Productivity Performance
Selected Developing Countries

Source: EIU (2007)
Labor Force Mobilization
Selected Countries

Employees as % of Population, 2006

Source: EIU, 2007
Labor Mobilization
Hours Worked Per Employee

United States

EU-8

EU-15

Source: Groningen Growth and Development Center (2007)
Unemployment Performance
Selected Countries

Unemployment Rate, 2006

Change of Unemployment Rate in Percentage Points, 1998 - 2006

Source: EIU (2007)
Enablers and Indicators of Competitiveness

Productivity

Exports
Imports
Inbound Foreign Direct Investment
Domestic Investment
Outbound Foreign Direct Investment
Domestic Innovation

Competitiveness Environment
Export Intensity
Selected Countries

Exports as % GDP (2006)

Compound Annual Growth Exports (as % of GDP), 2001 - 2006

Source: EUI (2007), authors’ analysis
Inbound Foreign Investment Performance
Stocks and Flows, Selected Countries

FDI Stocks as % of GDP, Average 2002 - 2006

FDI Inflows as % of Gross Fixed Capital Formation, Average 2002 - 2006

Fixed Investment Rates
Selected Countries

Gross Fixed Investment as % of GDP (2006)

CAGR Gross Fixed Investment (as % of GDP), 2001 - 2006

International Patenting Output

Selected Countries

Source: USPTO (2006)
Determinants of Competitiveness

A strong context creates the potential for competitiveness, but is **not sufficient**

Competitiveness ultimately depends on improving the **microeconomic competitiveness** of the economy.
# Macroeconomic, Political, Legal, and Social Context

## Macroeconomic policies

- **Sound fiscal and monetary policies** create stability and encourage business investment and upgrading
- **Sound and stable macroeconomic conditions** hold down interest rates and provide accurate price signals for market transactions

## Political governance

- **Due process in political decisions and orderly transfers of power** create a stable planning horizon for business
- **Checks and balances** in the political system mitigate instability and the abuse of power

## Legal system

- An **independent, timely, effective and trusted legal system** solidifies the rule of law and provides a *fair environment for business*, encouraging investment
- Strict monitoring and prosecution of *corruption* rewards productivity instead of favoritism

## Social conditions

- **Improving social conditions** in basic education, housing, health, and absence of discrimination enhance productivity
- A **functioning social safety net** gives citizens the confidence to accept and deal with change in the economy
- **Improvements of social conditions** signal the benefits of reforms and *increase the political support* for policies to enhance competitiveness
Corruption Perception Index, 2007

Note: Ranks only countries available in both years (91 countries total)
Source: Global Corruption Report, 2007
Improving the Business Environment: The Diamond

- **Context for Firm Strategy and Rivalry**
  - Local **rules and incentives** that encourage investment and productivity
    - e.g., incentives for capital investments, intellectual property protection
  - Vigorous **local competition**
    - Openness to foreign and local competition

- **Factor (Input) Conditions**
  - High quality, efficient and specialized **inputs to business**
    - Natural endowments
    - Human resources
    - Capital availability
    - Physical infrastructure
    - Administrative infrastructure (e.g. registration, permitting)
    - Scientific and technological infrastructure

- **Demand Conditions**
  - **Demanding and sophisticated local customers and needs**
    - Challenging quality, safety, and environmental standards
  - Capable, locally based **suppliers and supporting industries**
  - The presence of **clusters** instead of isolated firms

- **Related and Supporting Industries**

- Successful economic development is a process of **successive upgrading**, in which the business environment improves to enable increasingly sophisticated ways of competing
# Quality of the Business Environment

**Czech Republic**

## Competitive Advantages Relative to GDP per Capita

<table>
<thead>
<tr>
<th>Factor</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellular Telephones per 100 inhabitants</td>
<td>4</td>
</tr>
<tr>
<td>Availability of scientists and engineers</td>
<td>5</td>
</tr>
<tr>
<td>Quality of math and science education</td>
<td>8</td>
</tr>
<tr>
<td>Quality of primary education</td>
<td>10</td>
</tr>
<tr>
<td>Absence of trade barriers</td>
<td>10</td>
</tr>
<tr>
<td>Intensity of local competition</td>
<td>11</td>
</tr>
<tr>
<td>Decentralization of economic policymaking</td>
<td>13</td>
</tr>
<tr>
<td>Extent of regional sales</td>
<td>16</td>
</tr>
<tr>
<td>Stringency of environmental regulations</td>
<td>16</td>
</tr>
<tr>
<td>Local supplier quantity</td>
<td>16</td>
</tr>
<tr>
<td>Quality of electricity supply</td>
<td>22</td>
</tr>
<tr>
<td>Presence of demanding regulatory standards</td>
<td>22</td>
</tr>
<tr>
<td>Local supplier quality</td>
<td>23</td>
</tr>
</tbody>
</table>

## Competitive Disadvantages Relative to GDP per Capita

<table>
<thead>
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<th>Factor</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control of international distribution</td>
<td>59</td>
</tr>
<tr>
<td>Neutrality in decisions of government officials</td>
<td>56</td>
</tr>
<tr>
<td>Local equity market access</td>
<td>53</td>
</tr>
<tr>
<td>Reliability of police services</td>
<td>51</td>
</tr>
<tr>
<td>Efficiency of legal framework</td>
<td>51</td>
</tr>
<tr>
<td>Venture capital availability</td>
<td>49</td>
</tr>
<tr>
<td>Ease of access to loans</td>
<td>48</td>
</tr>
<tr>
<td>Quality of port infrastructure</td>
<td>45</td>
</tr>
<tr>
<td>Extent of incentive compensation</td>
<td>43</td>
</tr>
<tr>
<td>Business costs of corruption</td>
<td>43</td>
</tr>
<tr>
<td>Nature of competitive advantage</td>
<td>42</td>
</tr>
<tr>
<td>Financial market sophistication</td>
<td>42</td>
</tr>
<tr>
<td>Degree of customer orientation</td>
<td>41</td>
</tr>
<tr>
<td>Judicial independence</td>
<td>41</td>
</tr>
</tbody>
</table>


Change up/down of more than 5 ranks since 2002
Ease of Doing Business
Czech Republic

Ranking, 2006 (of 175 countries)

Favorable

Unfavorable

Median Ranking, EU8 countries

Czech Republic per capita GDP rank: 33

Enhancing Cluster Development
Tourism Cluster in Cairns, Australia

Public Relations & Market Research Services
Food Suppliers
Property Services
Maintenance Services
Travel agents
Tour operators
Restaurants
Attractions and Activities e.g., theme parks, casinos, sports
Hotels
Airlines, Cruise Ships
Local retail, health care, and other services
Local Transportation
Souvenirs, Duty Free
Banks, Foreign Exchange
Government agencies e.g. Australian Tourism Commission, Great Barrier Reef Authority
Educational Institutions e.g. James Cook University, Cairns College of TAFE
Industry Groups e.g. Queensland Tourism Industry Council

Sources: HBS student team research (2003) - Peter Tynan, Chai McConnell, Alexandra West, Jean Hayden
State of Cluster Development
Massachusetts, Life Sciences

- Health and Beauty Products
- Surgical Instruments and Suppliers
- Medical Equipment
- Dental Instruments and Suppliers
- Ophthalmic Goods
- Diagnostic Substances
- Containers
- Analytical Instruments

- Teaching and Specialized Hospitals

- Biological Products
- Biopharmaceutical Products

- Specialized Business Services
  - Banking, Accounting, Legal
- Specialized Risk Capital
  - VC Firms, Angel Networks
- Specialized Research Service Providers
  - Laboratory, Clinical Testing

- Cluster Organizations
  - MassMedic, MassBio, others

- Educational Institutions
  - Harvard University, MIT, Tufts University, Boston University, UMass
Institutions for Collaboration
Selected Massachusetts Organizations, Life Sciences

**Life Sciences Industry Associations**
- Massachusetts Biotechnology Council
- Massachusetts Medical Device Industry Council
- Massachusetts Hospital Association

**General Industry Associations**
- Associated Industries of Massachusetts
- Greater Boston Chamber of Commerce
- High Tech Council of Massachusetts

**Economic Development Initiatives**
- Massachusetts Technology Collaborative
- Mass Biomedical Initiatives
- Mass Development
- Massachusetts Alliance for Economic Development

**University Initiatives**
- Harvard Biomedical Community
- MIT Enterprise Forum
- Biotech Club at Harvard Medical School
- Technology Transfer offices

**Informal networks**
- Company alumni groups
- Venture capital community
- University alumni groups

**Joint Research Initiatives**
- New England Healthcare Institute
- Whitehead Institute For Biomedical Research
- Center for Integration of Medicine and Innovative Technology (CIMIT)
Czech National Cluster Export Portfolio
1997-2005

Change in Czech Republic's world export market share, 1997 – 2005

The Process of Economic Development
Shifting Roles and Responsibilities

**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

- Competitiveness must become a bottoms-up process in which many individuals, companies, and institutions take responsibility
- **Every** community and cluster can take steps to enhance competitiveness
Variation in BCI score explains 82% of variation in GDP per capita.
Competitiveness versus Wage Level Across Countries


Table 1.3: Hourly Wage in Manufacturing (USD), 2005

<table>
<thead>
<tr>
<th>Country</th>
<th>Hourly Wage (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>2.45</td>
</tr>
<tr>
<td>Denmark</td>
<td>32.03</td>
</tr>
<tr>
<td>Finland</td>
<td>25.4</td>
</tr>
<tr>
<td>Germany</td>
<td>31.6</td>
</tr>
<tr>
<td>Portugal</td>
<td>15.8</td>
</tr>
<tr>
<td>USA</td>
<td>15.6</td>
</tr>
<tr>
<td>Brazil</td>
<td>2.45</td>
</tr>
<tr>
<td>Mexico</td>
<td>1.81</td>
</tr>
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</tr>
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Historical Economic Growth Model
Czech Republic

• Strong manufacturing legacy

• Skill base at attractive wage levels

• Proximity to Germany and other Western European economies

• Strong focus on FDI attraction

• Export-led growth
Improving Czech Competitiveness

• Improve business regulation and governance

• Upgrade financial markets

• Drive cluster development, including the strengthening of local supplier networks around foreign investments

• Improve innovative capacity

• Strengthen collaboration with neighbors
The Australian Wine Cluster

History

1930
First oenology course at Roseworthy Agricultural College

1955
Australian Wine Research Institute founded

1965
Australian Wine Bureau established

1970
Winemaking school at Charles Sturt University founded

1980
Australian Wine and Brandy Corporation established

1990
Winemaker’s Federation of Australia established

1991 to 1998
New organizations created for education, research, market information, and export promotions

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

Clusters and Economic Policy

- Clusters provide a framework for organizing the implementation of public policy and public investments towards economic development.

Clusters

- Specialized Physical Infrastructure
- Natural Resource Protection
- Environmental Stewardship
- Standard setting
- Science and Technology Investments (e.g., centers, university departments, technology transfer)
- Market Information and Disclosure
- Export Promotion
- Business Attraction
- Education and Workforce Training
The Evolution of National and Regional Economies

San Diego

Climate and Geography

U.S. Military

Hospitality and Tourism

Transportation and Logistics

Power Generation

Aerospace Vehicles and Defense

Communications Equipment

Analytical Instruments

Information Technology

Education and Knowledge Creation

Medical Devices

Biotech / Pharmaceuticals

Bioscience Research Centers

Diversifying the Economy
Harnessing Linkages Across Clusters

Note: Clusters with overlapping borders or identical shading have at least 20% overlap (by number of industries) in both directions.
Geographic Influences on Competitiveness

Levels of Influence

- World Economy
- Broad Economic Areas
- Groups of Neighboring Nations
- Nations
- States, Provinces
- Metropolitan Areas
- Distressed Urban and Rural Communities
The Role of European Union Membership

Key Advantages

• Access to large markets

• Rapid implementation of credible and tested regulatory framework

• Stabilization of fragile political systems through external anchor, i.e. reforms needed to achieve EU membership

• Access to financial resources for competitiveness upgrading

Key Disadvantages

• Complex rules and regulations not aligned with needs of transition economies

• Bureaucracy and inflexibility
• Neighboring countries can move further than the European Union on economic integration
• Neighboring countries can together influence EU policies more effectively than alone
Regional Economic Coordination
Illustrative Policy Areas

Factor (Input) Conditions
- Improve regional transportation infrastructure
- Create an efficient energy network
- Interconnect regional communications
- Link financial markets
- Facilitate the movement of students to enhance higher education
- Harmonize regulatory requirements for business
- Coordinate programs to improve public safety

Context for Strategy and Rivalry
- Coordinate macroeconomic policies
- Eliminate trade and investment barriers within the region
- Simplify and harmonize cross-border regulations and paperwork
- Coordinate antimonopoly and fair competition policies

Demand Conditions
- Harmonize environmental standards
- Harmonize product safety standards
- Establish reciprocal consumer protection laws

Related and Supporting Industries
- Coordinate development of cross-border clusters, e.g.
  - Tourism
  - Agribusiness
  - Transport & Logistics
  - Business services
- Coordinate antimonopoly and fair competition policies

Regional Governance
- Share best practices in government operations
- Create regional institutions
  - Dispute resolution mechanisms
  - Regional development bank
- Develop a regional marketing strategy

Factor (Input) Conditions
- Regional Governance
- Demand Conditions
- Related and Supporting Industries
- Context for Strategy and Rivalry
- Factor (Input) Conditions
Role of the Private Sector in Economic Development

• A company’s competitive advantage depends partly on the quality of the business environment
• A company gains advantages from being part of a cluster
• Companies have a strong role to play in upgrading their business environment
  
  • Take an active role in upgrading the local infrastructure
  • Nurture local suppliers and attract foreign suppliers
  • Work closely with local educational and research institutions, to upgrade their quality and create specialized programs addressing the cluster’s needs
  • Inform government 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 if many companies are united
    – Cost sharing between members