



UN Economic Commission for Europe

**Restructuring of the Coal Industries in the
Economies in Transition – An Overview of
the Last Decade**

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- **Economic performance**
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UNECE – Who are we?

- **One of 5 UN Regional Commissions**
 - **ECA** (Economic Commission for Africa)
 - **ECE** (Economic Commission for Europe)
 - **ECLAC** (Economic Commission for Latin America & the Caribbean)
 - **ESCAP** (Economic & Social Commission for Asia & the Pacific)
 - **ESCWA** (Economic & Social Commission for Western Asia)
- **55 member countries**
- **Western, Central & Eastern Europe, Central Asia, Canada, USA & Israel**
- **Mission: promote economic cooperation and better relations in the ECE region**



ECE Fields of Activity

- **Environment**
- **Transport**
- **Statistics**
- **Trade**
- **Timber**
- **Sustainable Energy**
- **Human Settlements**
- **Economic Analysis**
- **Industry & Enterprise**



ECE Programme of Work: Energy

Activities

- **Energy Strategies & Policies**
- **Energy Efficiency**
- **Natural Gas**
- **Coal & Thermal Power**
- **Electricity**

Objectives

- **Sustainability**
- **Integration of Energy Systems & Networks (technical assistance)**



ECE Energy-Related Activities **focussing on Economies in Transition**

- **Capacity building/institutional strengthening (training)**
- **Market formation activities/reforms**
- **Project preparation**
- **Regional cooperation/networking**
- **Technical assistance**



Who are the 27 economies in transition?

- **CETE-5: *Central European Economies***
 - Czech Republic, Hungary, Poland, Slovakia, Slovenia
- **SETE-7: *South-East European Economies (Balkans)***
 - Albania, Bosnia & Herzegovina, Bulgaria, Croatia, Romania, The former Yugoslav Republic of Macedonia, Yugoslavia
- **Baltic States**
 - Estonia, Latvia, Lithuania
- **CIS: *Commonwealth of Independent States***
 - Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan



Annual Changes in Real GDP in Transition Economies 1999 – 2002 (%)

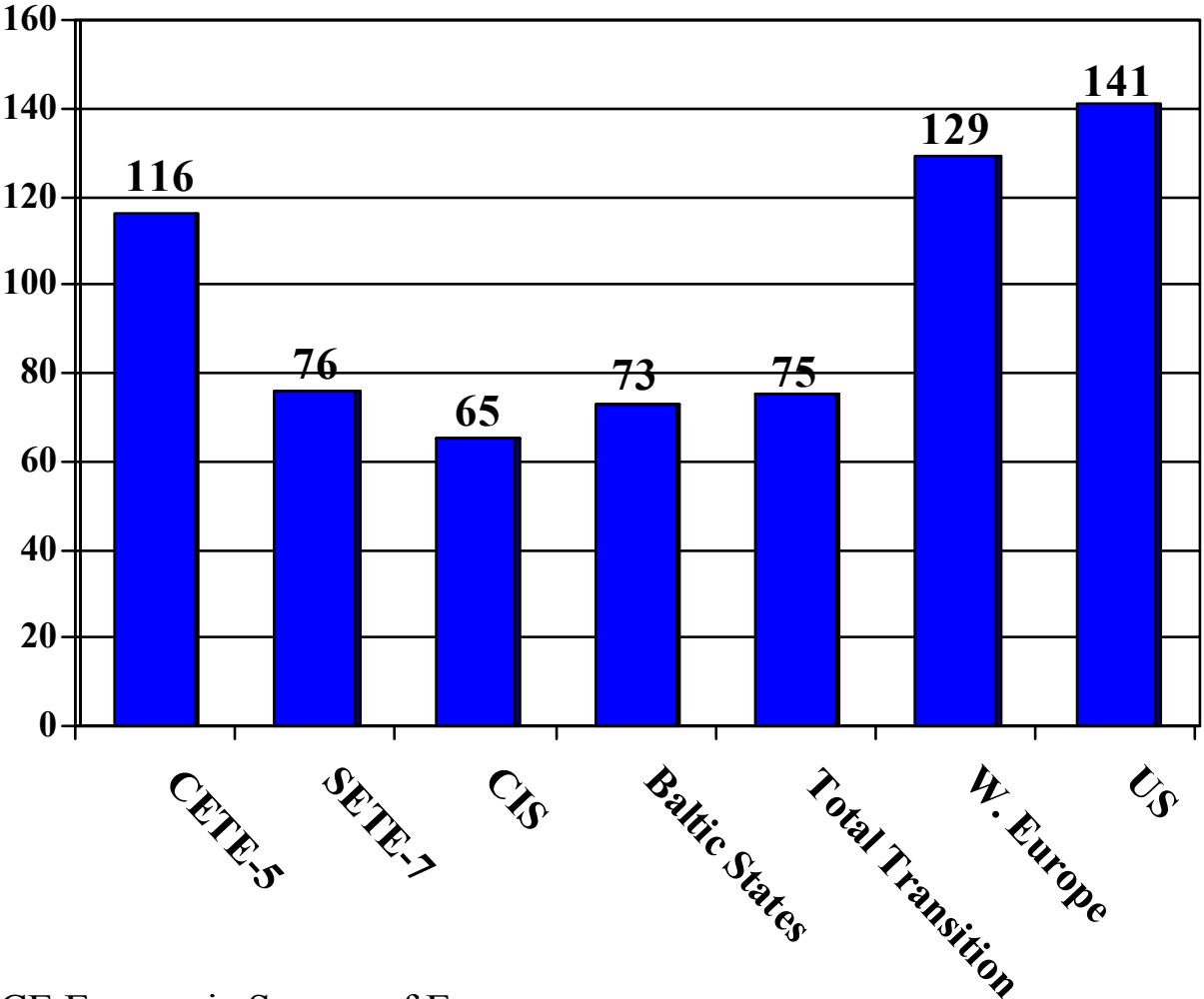
	1999	2000	April '01 Forecast	Actual '01 Outcome	'02 Official Forecast
CETE-5	3.0	3.8	4.1	2.3	2.1
<i>Poland</i>	<i>4.1</i>	<i>4.0</i>	<i>4.5</i>	<i>1.1</i>	<i>1</i>
SETE-7	-1.7	3.5	4.5	4.9	4.4
Baltic States	-1.7	5.4	4.7	6.2	4.2
CIS	4.5	8.3	4.2	6.2	4.8
<i>Kazakhstan</i>	<i>2.7</i>	<i>9.8</i>	<i>4</i>	<i>13.2</i>	<i>7</i>
<i>Russian Fed</i>	<i>5.4</i>	<i>9.0</i>	<i>4</i>	<i>5.0</i>	<i>4.3</i>
<i>Ukraine</i>	<i>-0.2</i>	<i>5.9</i>	<i>3-4</i>	<i>9.1</i>	<i>6</i>
Total Above	3.3	6.5	4.2	5.0	4.0

* Aggregates based on UNECE secretariat calculations.

Source: UNECE Economic Survey of Europe 2002, No. 1



Economic Activity: 2001 versus 1989 = 100

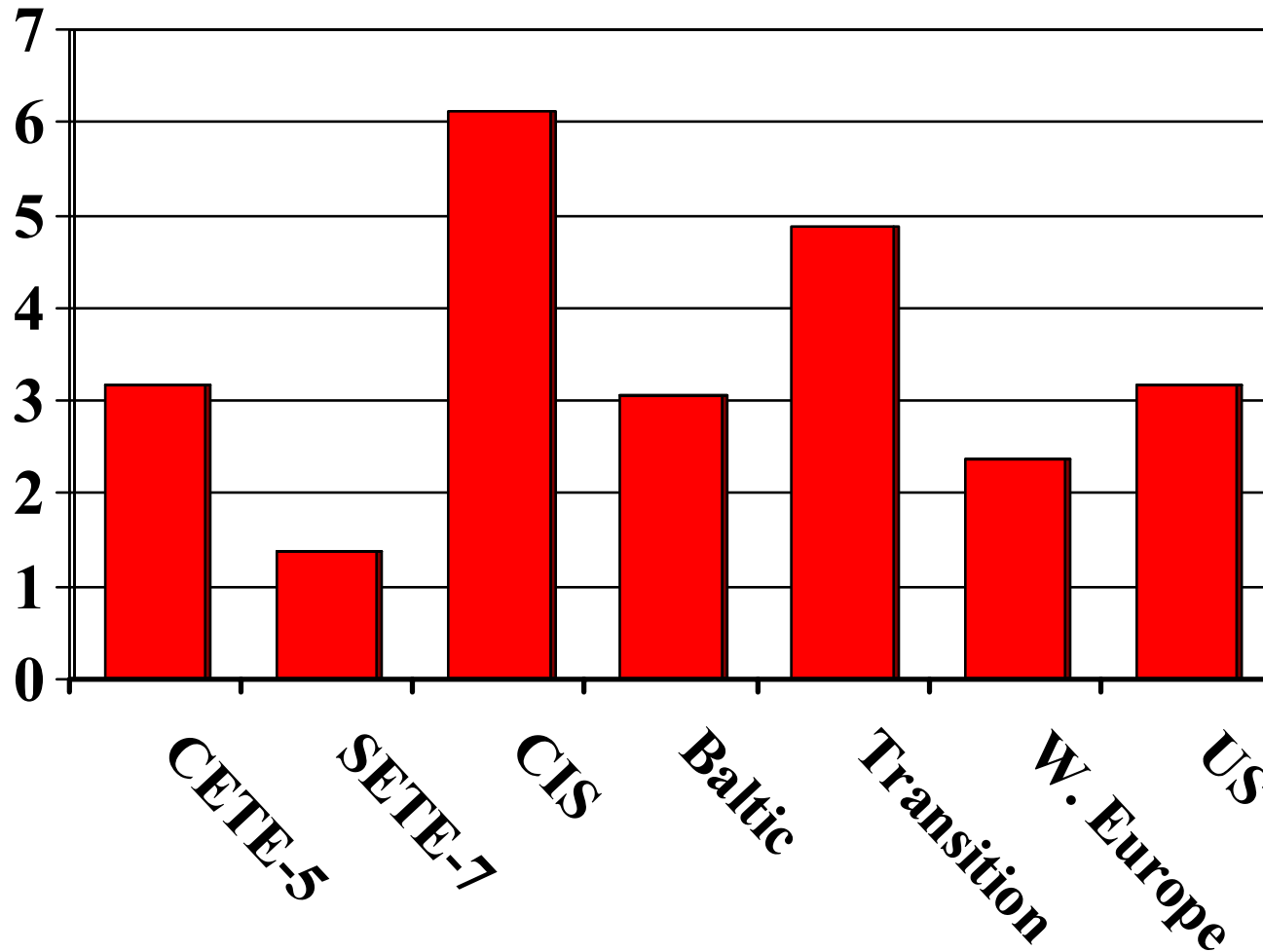


Source: UNECE Economic Survey of Europe



Economic Activity

Average Annual Growth Rate – % 1998-2001



Status of Reforms

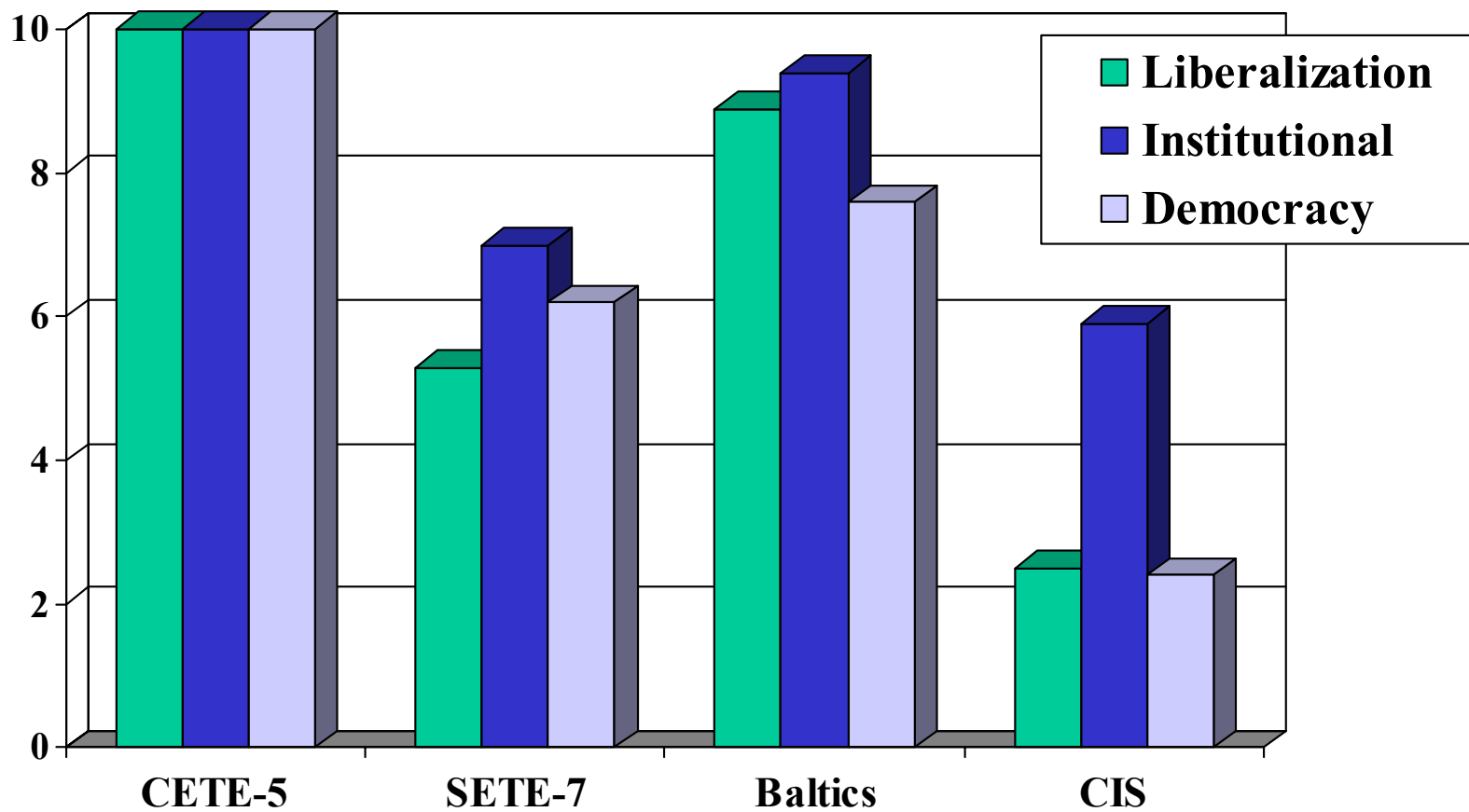
Three categories of countries:

- **Transition nearly completed**
 - pluralistic democracies
 - sustained market-based reforms
 - 2nd generation reforms to be addressed
- **Stuck in partial reform equilibrium**
 - concentrated/entrenched corporate and political elite
 - critical reform threshold not reached
- **Non-Reformers**
 - centralized political power
 - state administered economy



State of Reforms

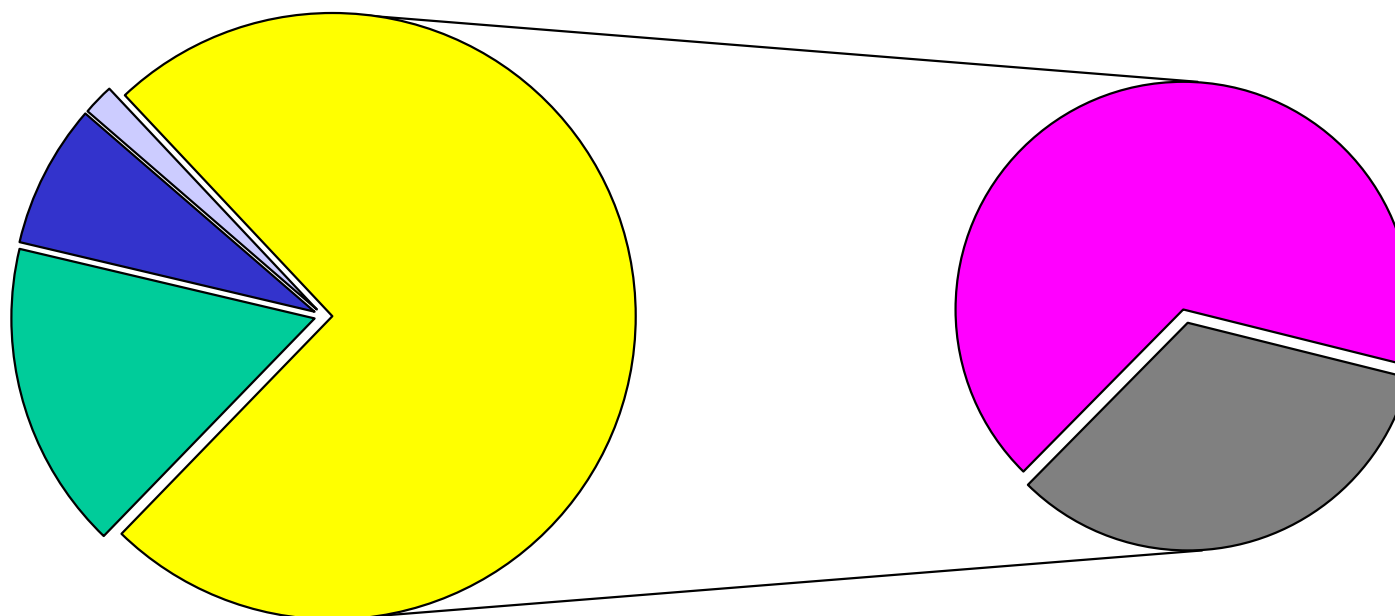
CETE-5 = 10



Source: EBRD



Share of Energy Consumption



■ CETE-5 ■ SETE-7 ■ Baltics ■ Russia ■ Other CIS

Transition countries: 13% of global energy consumption



UNECE Overview of Restructuring of the Coal Industries of the Economies in Transition

- *Restructuring* – broad definition “policies and measures that aim to make the coal sector competitive and profitable as well as to improve efficiency and environmental levels to generally accepted international standards”.
- UNECE ongoing collection of data to contribute to a better understanding of complex and controversial restructuring process.
- 2001 review opportunity to assess timeframe 1990-2000.
- Representative sample covering 12 countries.



What are the issues?

- **Difficult transition in last 10 years.**
- **More competitive energy market and decrease in coal demand.**
- **Gradual withdrawal of state involvement.**
- **Complex associated social and employment issues.**
- **Simultaneous changes in the electricity sector.**
- **Liberalised energy markets bring obligation to move to stand-alone profitable and competitive industry.**
- **Increased awareness of potential environmental impact of coal mining and coal combustion.**
- **Political interference and uncertainty.**



Characteristics of the Country Sample

- **12 countries reviewed:**
Bosnia & Herzegovina, Bulgaria, Czech Republic, Hungary, Kazakhstan, Poland, Romania, Russian Federation, Slovakia, Slovenia, Turkey and Ukraine.
- **Turkey also included – not country in transition, however, due to its relatively low income level and restructuring experience appropriate for inclusion.**
- **In 2000, 12 countries represented 75% of the total coal production of Europe & CIS.**
- **Excluding Turkey, countries cover 96% of the total coal production of all economies in transition.**



Key Indicators of Restructuring Assessed

- **Coal production**
- **Number of mines/pits**
- **Workforce**
- **State subsidies**
- **Productivity**
- **Investment**



Coal Production (Mt) ... in decline 1990 compared to 2000

COUNTRY	1990	2000	Decline
Bosnia & Herzegovina	18.1	7.4	59%
Ukraine	164.8	80.3	51%
Kazakhstan	131.4	74.8	43%
Czech Republic	101	65	36%
Russian Federation	395.4	257.9	35%
Poland	147	102.2	30%
Romania	37.6	29.1	23%
Hungary	17.6	13.8	22%

Overall outcome: 34% reduction from 1,050 Mt to 700 Mt



Declining Coal Production: Driving Forces

Drivers

- Deep recession
- Budgetary and international (IMF) constraints
- Competition from other energy sources, especially gas
- Associated pollution of coal mining and combustion
- Energy reforms in general
- Coal specific policies

Brakes

- Sheer size of the industry
- Inertia of the industry
- Social and regional importance
- Security of supply and balance of payment considerations
- Technological advances in both mining and combustion techniques
- Long-term energy needs



Number of Mines/Pits ... also in decline 1990 compared to 2000

COUNTRY	1990	2000
Hungary	41	11
Czech Republic	47	16
Romania	100/37	33/32
Poland	70	41
Ukraine	268/6	197/3

Overall outcome: 31% reduction from 946 to 650 mines/pits



Workforce (in thousands) ... in serious decline 1990 compared to 2000

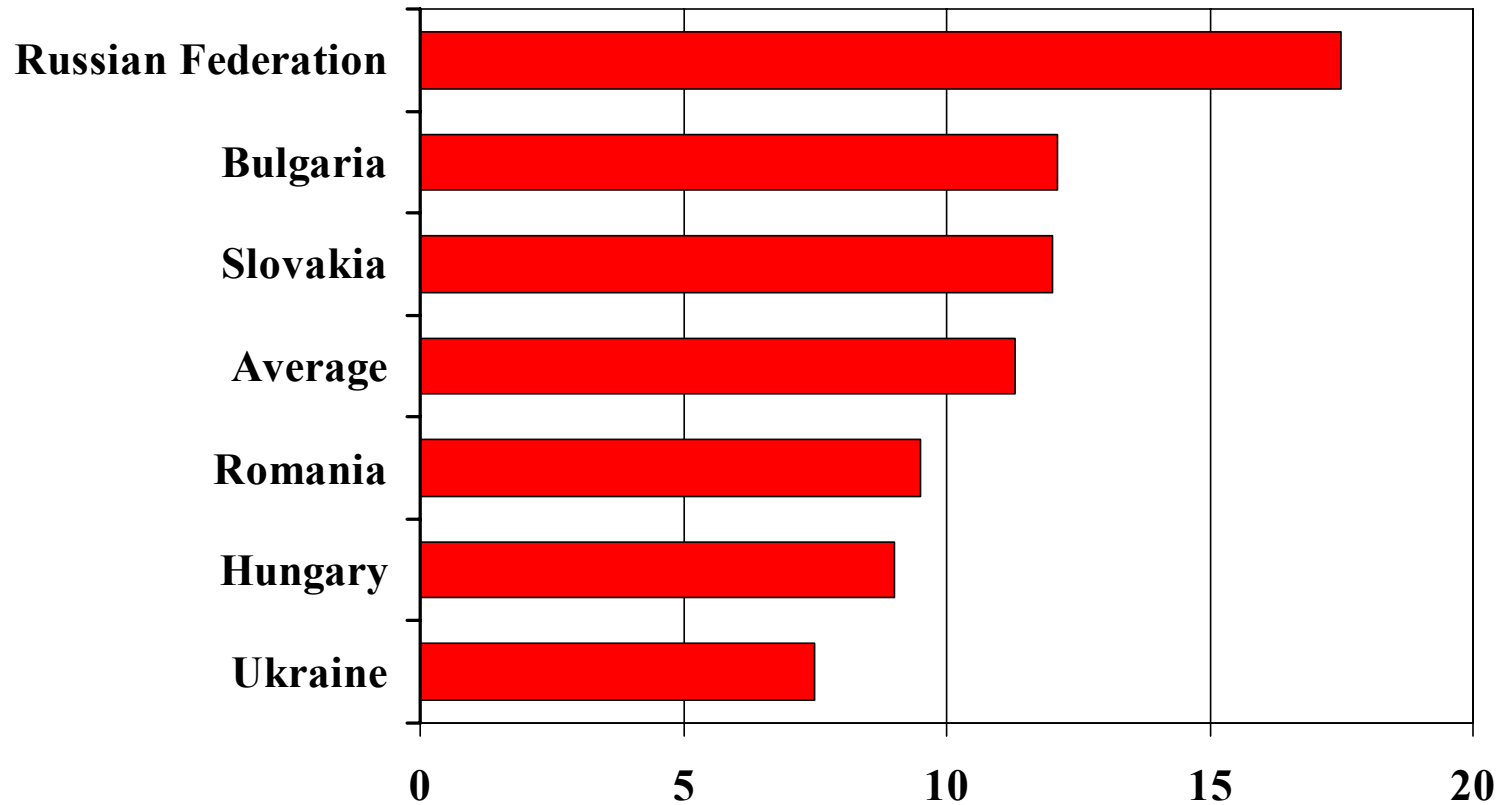
COUNTRY	1990	2000
Bosnia & Herzegovina	30.1	17.5
Czech Republic	110	41
Hungary	49	11
Kazakhstan	89	51
Poland	388	155
Romania	134	47
Russian Federation	559	242
Ukraine	609	530

**Overall outcome: 50% reduction in workforce
from 2 to 1 million employees**



State Subsidies to the Coal Industry in Selected Economies in Transition in 2000

1990 = 100



Note: subsidies discontinued in the other countries reviewed



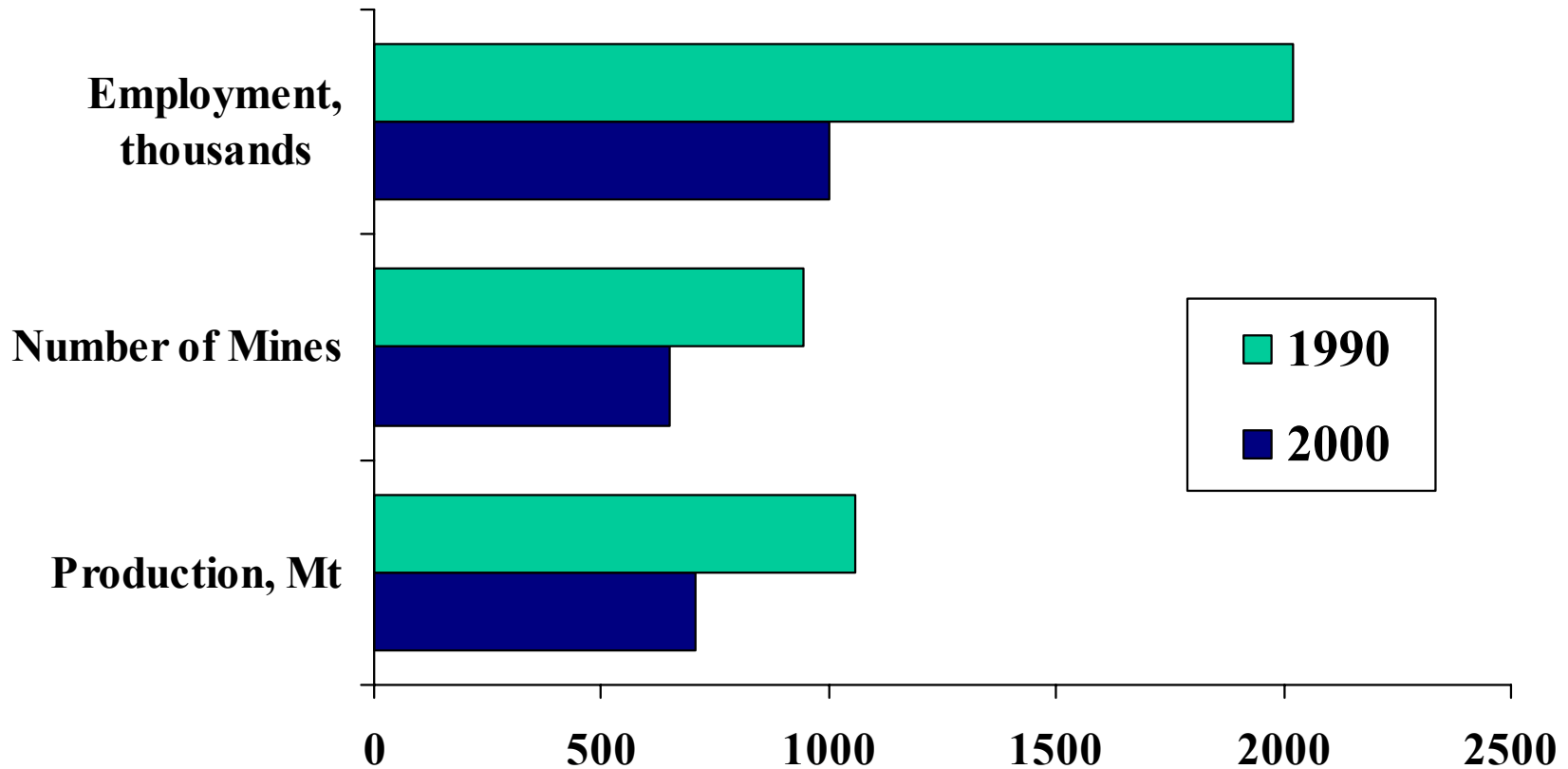
Dynamics of Major Indicators of Coal Industry Restructuring 12 Selected Economies in Transition

INDICATOR	1990	1995	2000	Total Change (%)	Av Annual Growth Rate (%)
Production, Mt	1,060	771	705	-33.5	-4.1
No of Mines/Pits	946	904	650	-31.3	-3.8
Employees, thousands	2,021	1,521	1,015	-49.8	-6.9
State Subsidies, 1990 = 100	100	38	7.5	-92.5	-25.8
Productivity Growth, 1990 = 100	100	150	179	79.0	5.8
Investment, 1990 = 100	100	54	36	-64.4	-10.3

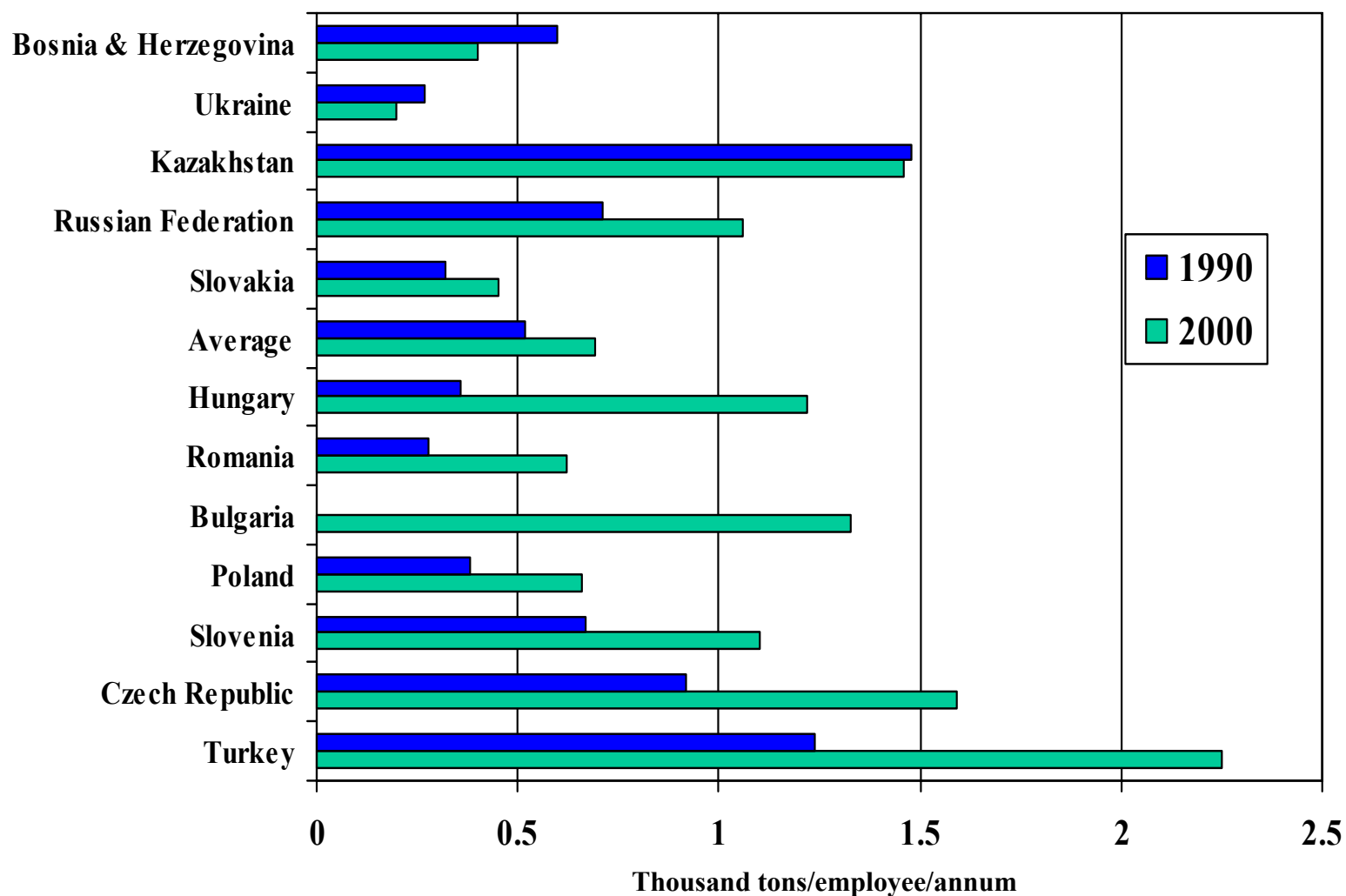


Coal Industry Restructuring

12 Selected Economies in Transition



Productivity Growth for Selected Economies in Transition Thousand Tons per Employee per Annum, 1990 and 2000

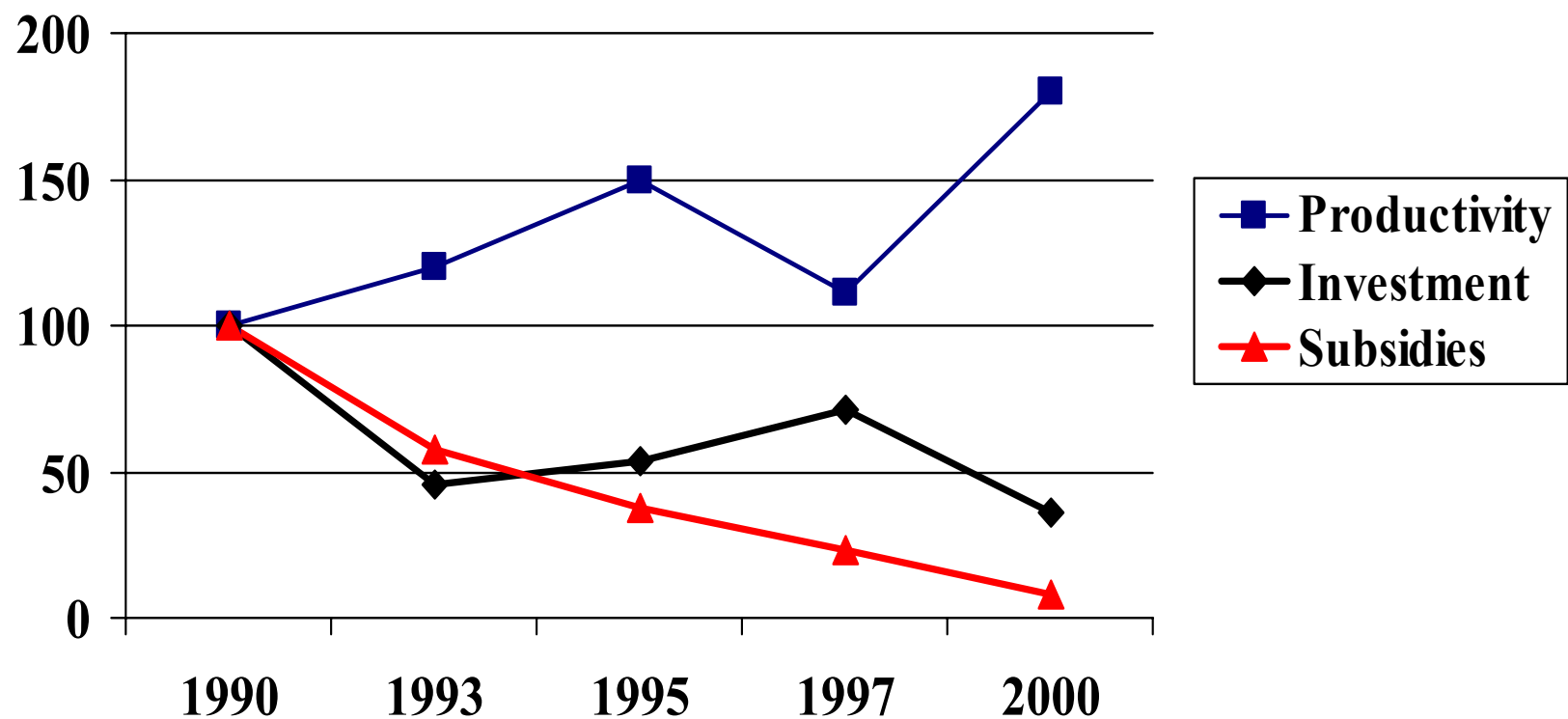


Productivity Growth – Trends and Variations

- Developments varied significantly between countries.
- Productivity growth seen in Central & Eastern Europe, but largely stagnated in CIS. Growth, however, was seen in Russia.
- In Ukraine, productivity fell due to a lack of determination and means to implement a coal industry restructuring policy.
- Productivity rose in Bulgaria and Romania despite a policy to slow the shrinking of coal production.
- In Hungary significant increase in productivity (over 150%) due to reduction in the number of mines and employees.



Coal Industry Restructuring (12 Selected Economies in Transition)



Productivity and Investment

- Recorded productivity growth not positively correlated with investments.
- Aside from systematic closure of u/g mines in favour of opencast operations where possible productivity gains largely result of lay-off of employees and closure of mines.
- Future investments in the industry could prompt a significant productivity gain quickly as the employment surplus has been drastically reduced
- Continued lack of required investment and inability of governments to inject necessary capital bring privatisation high on policy making agenda.



Investment and Privatization...

- Privatization is gaining momentum. Private investors have begun to commit themselves – over 20% of mining capacity already investor owned (primarily in Kazakhstan and Hungary ... and forthcoming in Poland).
- Importance of domestic policy – need to conclude reform and respect calendars (a precondition for private investors); need to dispense industry from past liabilities (financial and environmental), need to encourage private investors, etc.
- Vast investment needed to render coal sector viable – estimates indicate 14 US\$/t (= US\$12-14 billion) for modernising mines, US\$38-40 billion for upgrading coal-based power generation and US\$35-40 billion for environmental clean-up.

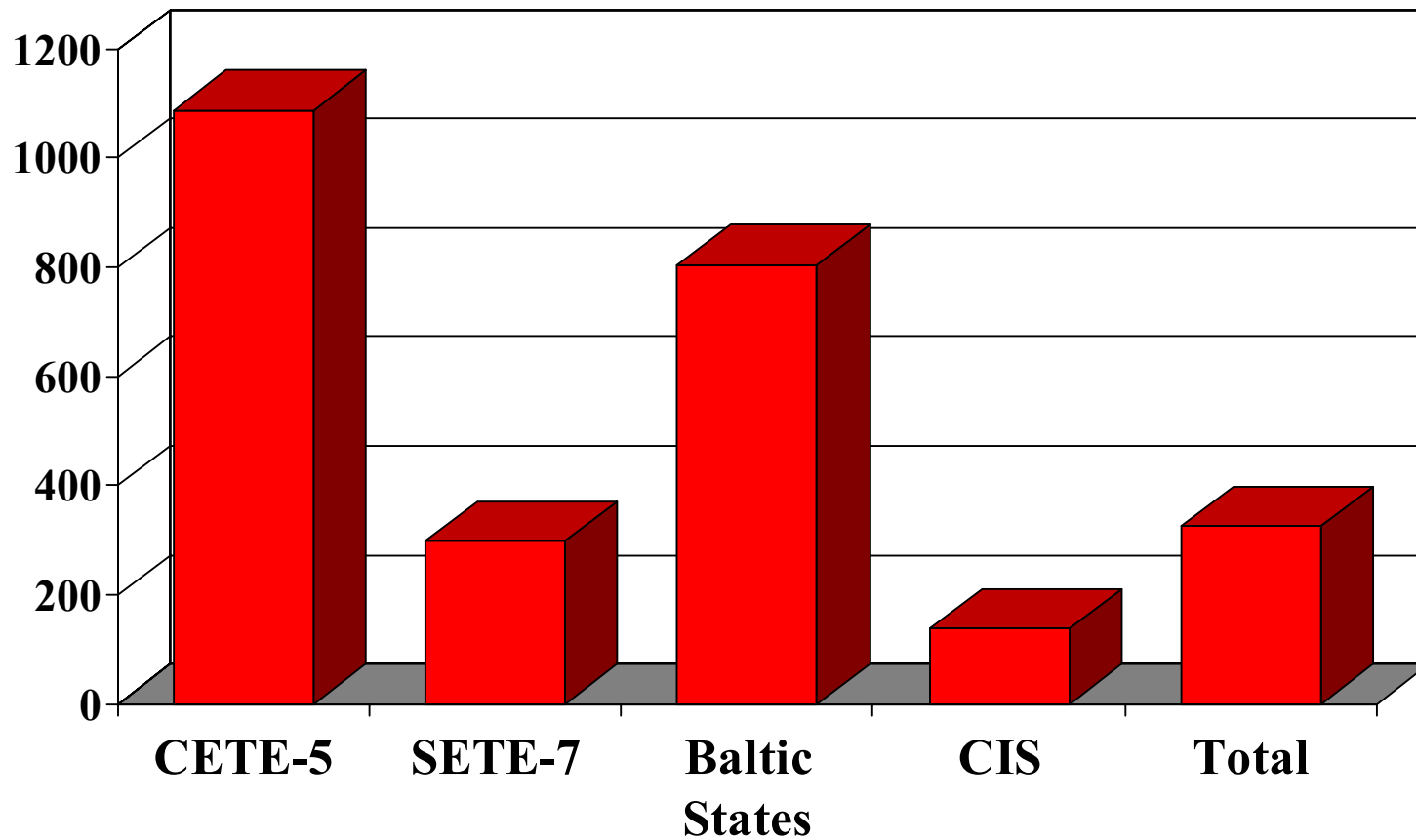


Role of Foreign Direct Investment (FDI)

- Important catalyst for economic transformation of economies in transition.
- Key role in providing finance for purchase of new plant, equipment etc.
- Facilitator for technology transfer, organisational forms etc from more advanced economies.
- Countries with high degree of macroeconomic and political stability attract FDI.
- Since 1990, FDI largely flowed to selected Central European countries eg Poland, Hungary, Czech Republic.



Foreign Direct Investment Cumulative Dollars per Capita 1988 to 1999



Role of World Bank in Coal Sector Restructuring in Transition Economies

- **World Bank views coal sector restructuring integral part of energy sector reform**
- **Continuing focus of assistance since early 1990s**
- **Assistance provided to key coal producing transition economies - Poland, Romania, Russian Federation and Ukraine**
- **World Bank undertakes annual review of development effectiveness**
- **Poland**
 - **SECAL I for US\$300 million in 1999**
 - **SECAL II for US\$100 million in 2001**



World Bank Assistance *continued*

- Romania
 - Mine Closure & Social Mitigation Project loan for US\$44.5 million in 1999, consisting of Mine Closure Program, Social Mitigation Program and Institutional Strengthening
- Russian Federation
 - SECAL I for US\$500 million in 1996
 - Coal Sector Restructuring Implementation Assistance Project Loan for US\$25 million in 1996
 - SECAL II for US\$800 million in 1997
 - Co-Guarantee loan for US\$50 million in 2000
- Ukraine
 - Coal Pilot Project loan for US\$28.5 million in 1996
 - SECAL I for US\$300 million at end-1996



Western European Restructuring Experience

- Experience of Western European coal industry of value to economies in transition – already half a century of experience.
- During second half of 20th Century hard coal production decline of 80%, from a high of over 450 Mt.
- Employment decline from 1.8 million to less than 100,000 (1960-2000: 94% reduction in employment in Belgium, France, Germany, Netherlands and UK).
- Belgium and Netherlands now ceased coal production, with France, Germany, Spain and UK progressively declining.
- Key problems facing Western Europe coal industries: high cost of production in comparison to price of imported coal from Australia, Colombia, South Africa and declining domestic demand.
- All countries have adopted different approaches to restructuring.



Social and Economic Issues

- Effects of mine closure on individual communities can be devastating.
- Economic and social impacts not only on industry itself but wider knock-on effect on business and commerce.
- Severity of impact can be mitigated: consultation, planning, measures to maintain economic activity, key role of small and medium-sized enterprises in new job creation, early retirement, retraining etc.
- Next area of focus for ECE.



Conclusions

- UNECE review highlights that the process of coal industry restructuring is progressing in economies in transition.
- Coal industries moving towards a more viable, efficient and socially-acceptable activity.
- But, review shows only a part of the transition.
- Need to broaden and deepen the restructuring indicators.
- Financial and competitiveness indicators.
- Environmental indicators eg conversion to ‘cleaner’ coal operations.



Conclusions ...

- Has the ‘transition’ been successful?
- Massive reduction of production, but modest productivity gains.
- Massive reduction in workforce imposing devastating economic and social consequences.
- Worrying lack of investment – need for Governments to address why this is as future momentum of transition process potentially at risk.
- Key (and high) dependence on foreign investments – serves to make the course and length of the restructuring process still to be undertaken unpredictable.



BUT the worst is over. A viable hard core of industry – in local and national terms – has clearly emerged.

A final thought....

“It is important to appreciate that industrial restructuring does not imply purely negative consequences for society, but with the appropriate policies and positive commitment and resources, may lead to the renewal of individual skills and career prospects, and the regeneration of coalfield communities and regions.”

International Mining Consultants Ltd (1998)

