

Railways In Eastern Europe

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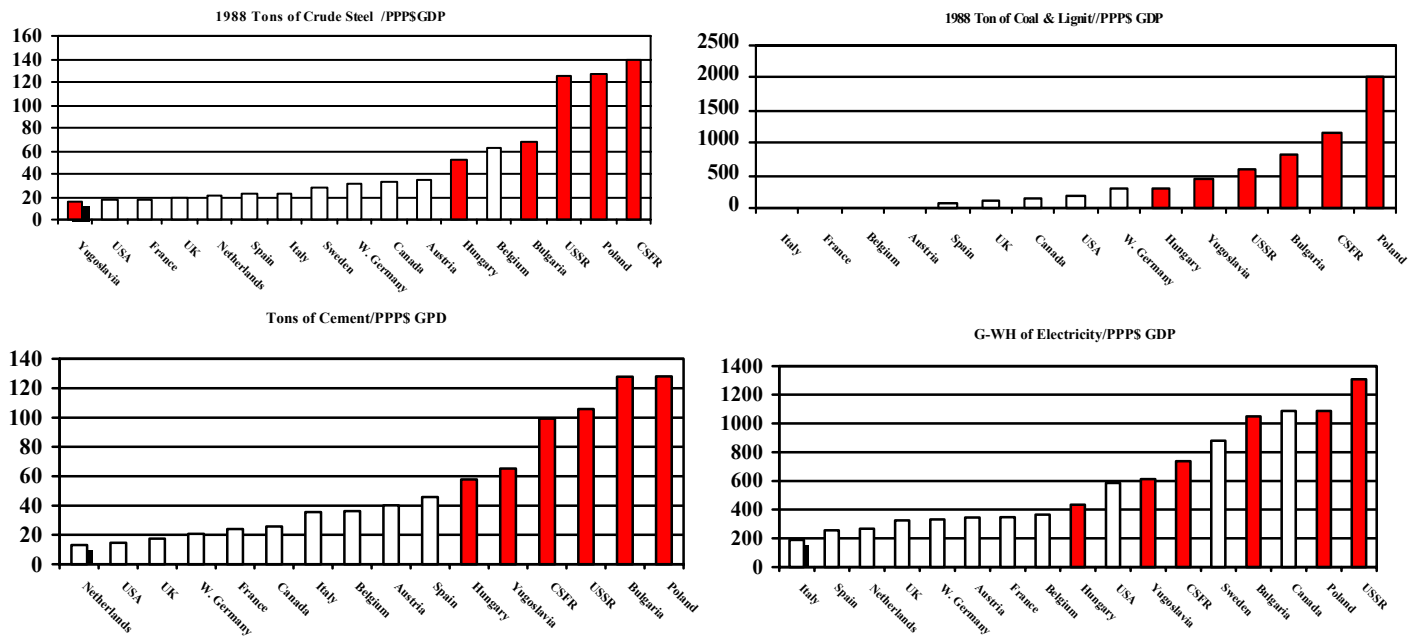
Setting the Scene: When Past Was NOT Prologue

For those whose memories of world events had been heavily shaped by the Cold War and the confrontation between the communist East and the democratic West, there was nothing unusual on the horizon as 1989 began. The deep economic and political divide between Eastern Europe, Western Europe and North America² appeared to be immutable, and not even the watchful eyes of the intelligence agencies of the Western powers were predicting otherwise.

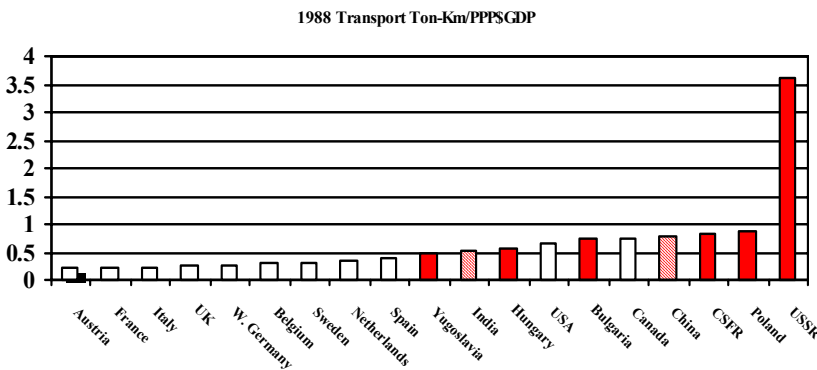
Politically and economically the Western and Eastern camps were far apart at the end of the 1980s. In the West, broad-based participatory democracy combined with market economics and a reliance on the private sector to produce highly diversified economies supporting a wide range of industry, services and financial activities. The role of governments in these economies found its primary focus in provision of public services (defense, welfare, health) and general oversight (regulation and antitrust), with most industrial and service activities provided by private enterprise. In the East, the predominant political role of communist parties combined with command and control economics, and public ownership and operation of most production to produce something quite different. In these economies, it was difficult to separate “government” from “industry” and the absence of market forces meant that decisions as to what to produce (and transport) were based on considerations unlike those in market economies. It is impossible to understand the role (past or future) of eastern European railways without beginning with an appreciation of the impact on the economy, on transport, and on railways in particular, of the planning approach to economic organization.

It has always been difficult to make comparisons between planned and market economies. In part this was because military concerns in the socialist bloc caused much information to be kept secret which was routinely made public in market economies. For example, detailed rail traffic flow data (tonnage and ton-km by commodity, by line, and by origin/destination) was (often still is) considered a state secret in the socialist economies. Next, the extreme focus on meeting the targets in The Plan often meant that reported statistics were manipulated or even distorted in order to protect managers. In addition, reported statistics often dealt with physical parameters that had little comparative value across economies (and surprisingly little value within the economy). Perhaps most significant, the lack of market feedback on prices meant that financial evaluations had only limited meaning even within a single country, and economic comparisons among market and planned economies were effectively exercises in (more or less informed) guesswork which had to be taken with a large grain of salt. This was particularly true because the official values of the various currencies had only a limited relationship to flows of trade among the blocs. Estimates of the real Net National Product or NNP (the measure which communist regimes preferred in place of GDP) of the Soviet Union, for example, varied by as much as a factor of two or more between equally “authoritative” observers.

Even with these caveats in mind, however, comparisons of the two economic systems revealed startling differences in the structure of the economies they created. A particularly striking characteristic of the planned economies was the over emphasis on industrialization – that is, essentially for political reasons, the socialist planners chose to funnel resources into heavy



industry rather than let market forces determine what was produced. The result can be seen in Figure 1 through 4 above. As of 1988, which was (along with 1989) the peak of the planned economies, production of crude steel, coal and lignite, cement and electricity was two to four times as high (per dollar of GDP) in the planned economies as in the market economies.



rough terms, a dollar of GDP tended to require about twice as much freight transport effort in the Eastern European countries as in the West.

Linked to the emphasis on non-market planning was the preference of the planners for rail versus truck transport. To some extent, this preference was based on the apparent savings in transport from the economies of scale in railways, especially in the larger countries with relatively limited access to highways. Though never explicitly stated,

A direct result of the production of too much steel, coal, cement and electric power was that too much of the basic commodities on which these rely had to be produced -- and transported. Thus, as Figure 5 shows, the planned economies used far more transport as a share of total economic activity than did the market economies of the West. Again in

planners may also have preferred railways to highways because access to railways could be more readily controlled, and thus enforcement of the plan enhanced. Even though the structure of trucking in the CEE/CIS economies was also monolithic, “in-house” and sector level trucking possibilities, as well as “common carrier” trucking gave shippers more opportunities than the planners could fully control because some use of trucking, particularly for local distribution, was unavoidable. In any event, it would have been difficult to carry all the freight that the Soviet rail system did on highway, even with an intensively developed superhighway system.

Equally important for CEE/CIS railways was the fact that the lack of market signals from shippers meant that the logistics chains, based on the total cost of product distribution and marketing, which the market economies developed were lacking in the planned economies. For this reason, the market-based shift in freight transport from low quality (but cheap) rail to higher quality, higher cost trucking had not yet begun in the planned economies.

Figure 6
*Rail Share of Rail + Truck Traffic (%) versus
Average Rail Length of Haul
1988*

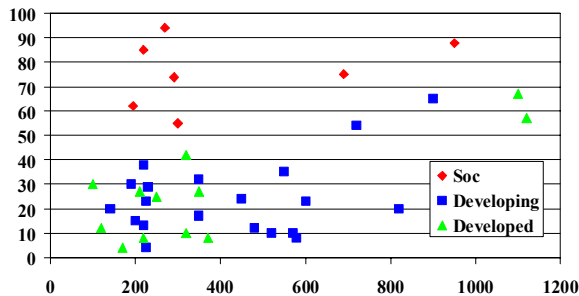


Figure 6 shows that, adjusted by a rough measure of the size of the country (the average length of haul for rail shipments), railways in socialist countries carried a far larger share of transport activity in 1988 than did comparable railways in market economies. As Figure 6 shows, even adjusted for the fact that the share of railways **should** increase (*ceteris paribus*) as the length of haul increases, planned economy railways carried an unusually high share of transport vis a vis **trucks**. Whether this larger share was due to the distorted

predominance of basic commodities, the absence of a weighting for total logistics costs or (as was true in some countries) a simple lack of highways, or all three taken together, the net result was that the freight role of the CEE/CIS railways was like the level of water behind a dam -- a lot higher than it would have been without the blockage caused by economic and policy distortions.

The role of the planned economy railways in passenger service was the necessary mirror image of the policies which caused an unusually high role for rail freight. Putting too much of an economy’s resources into the industrial sector meant that far fewer resources than should have gone into consumer goods, specifically consumer durables such as automobiles. In addition, the lack of a functioning real estate market meant that population densities in urban areas did not follow the market economy pattern of rising values in relation to proximity to the city center. Paradoxically, lacking market feedback on property values, planners tended to put low-density industrial users near to city centers and (as a result of housing shortages) to locate people “efficiently” in mega-apartment complexes at city peripheries which were served by bulk, underpriced passenger transport including bus and rail. The result of these policies appears clearly in Figure 7 and Figure 8 which show rate of motorization and urban population density

distributions. The rate of motorization (the ratio of automobiles to population) was far lower in the socialist countries, and the location of residences was artificially displaced from city centers (generating more demand for transport). Clearly, a market approach would have produced far more individual transport as opposed to mass transport, and it would have encouraged people to live and work in very different places – both of which would have acted to reduce the role of rail

Figure 7
Rate of Motorization in 1988 and
Growth of Motorization 1988 to 1998

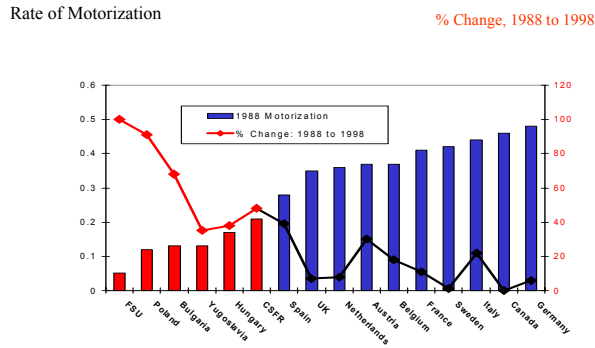
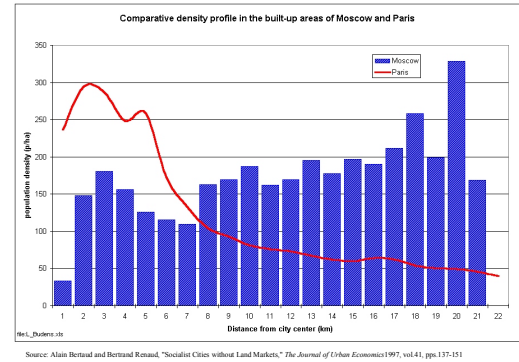
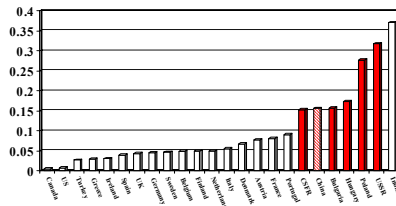


Figure 8



vis a vis highway modes. The net result of these factors was, as with freight, a higher role for passenger transport in East than West, as Figure 9 shows.

Figure 9
1988 Rail Passenger-Km/PPPS GNP



Taken together, the unique characteristics of the planning model produced some of the largest and most intensively used railways in the world, as Figure 10 demonstrates. Indeed, it is fair to conclude that the railways may have been among the better performing parts of the planned economy. Within the rules of the game that they had to play, the leaders of the CEE/CIS railways truly did an impressive job of producing transport output in one of the key sectors of the

Figure 10						
Comparisons of Major Railways in 1998						
	Total Route km	Passenger- Kilometers (000,000)	Freight Ton- km (000,000)	Staff	Employee Productivity	Employees per km of Line
USA:All Class I Railways	160,113		2,094,656	177,557	11,797	1.1
Russia	86,000	141,042	1,204,547	1,236,700	1,088	10.1
India	63,506	403,884	281,513	1,578,802	434	24.9
China	59,000	404,627	1,257,789	1,567,000	1,061	26.6
USA:Amtrak	40,234	8,314		23,000	361	0.6
Germany	37,477	72,543	71,494	194,901	739	5.2
France	31,423	66,495	53,438	174,400	688	5.6
Canada:Canadian National	28,124		152,904	22,364	6,837	0.8
Canada:Canadian Pacific	28,063		151,329	17,065	8,868	0.6
South Africa	25,555	9,675	95,591	123,367	853	3.6
Poland	22,891	26,187	55,460	204,000	400	8.9
Ukraine	22,473	47,600	156,336	367,900	554	16.4
Japan	20,200	240,877	22,321	179,800	1,464	8.9
United Kingdom	16,536	28,656	12,292	106,748	384	6.3
Italy	16,108	40,971	21,549	114,200	547	7.1
Spain	14,059	18,144	11,423	34,500	857	2.5
Kazakhstan	13,660	8,859	91,700	122,500	821	9.0
Canada: Via Rail	13,490	1,341		3,718	361	0.3
Romania	11,364	12,304	15,927	105,300	268	9.3
USA:Suburban	10,425	14,035		22,399	627	2.1
Sweden	9,978	7,434	14,400	17,900	1,220	1.8
Czech Republic	9,365	6,929	16,456	89,200	262	9.5
Turkey	8,607	6,146	8,237	42,700	337	5.0
Hungary	7,769	6,699	6,642	56,000	238	7.2
Finland	5,836	3,415	9,753	13,600	968	2.3
Belarus	5,543	12,505	25,510	75,534	503	12.5
Austria	5,345	7,899	14,733	51,800	437	9.7
Bulgaria	4,290	3,819	5,209	46,400	195	10.8
Slovakia	3,662	2,968	9,862	48,900	262	13.4
Uzbekistan	3,641	1,898	13,883	61,000	259	16.8
Belgium	3,472	7,354	7,392	40,600	363	11.7
Portugal	2,813	4,329	2,179	12,500	521	4.4
Netherlands	2,808	14,330	3,549	26,500	675	9.4
Croatia	2,726	943	1,685	19,500	135	7.2
USA:Heavy Rail	2,488	19,781		45,155	438	18.1
Latvia	2,413	984	12,210	17,000	776	7.0
Denmark	2,324	5,113	1,938	10,500	672	4.5
Greece	2,299	1,583	326	10,500	182	4.6
Lithuania	1,905	745	7,849	16,700	515	8.8
Georgia	1,575	355	3,218	12,404	288	5.3
Slovenia	1,201	623	2,571	9,000	355	7.5
Estonia	968	238	7,020	6,100	1,190	6.3
Armenia	845	46	323	4,345	85	5.1
Macedonia	699	150	380	4,199	126	6.0
Albania	447	95	23	3,000	39	6.7

economy. It is hard to conceive of these economies functioning as well as they managed to do had it not been for their relatively well operated railways. Moreover, many of the Soviet era railways were “profitable” in that their tariffs were set well above accounting “cost” as defined under the planning rules.³

By the end of the 1980s, however, the inefficiencies and contradictions of command and control economies could no longer be managed. The immensely powerful industrial sectors, like the muscles on a weightlifter, gradually became too strong for the rest of the body on which they were built: rather than adding to strength, the weightlifters became muscle bound – good at simple and basic heavy lifting, but incapable of competing with more nimble opponents when the task involved mobility and flexibility of response. The planned economies could no longer subsist on production of basic commodities that had no rational demand, nor could they continue to ship these (or other) commodities on a mode that no longer served shipper's or travelers' needs.

Transition: The Dam Breaks

As the level of water behind a dam continues to rise, it is rare that the water simply relieves the pressure by gradually leaking through. Instead, the rising pressure eventually shatters the dam, allowing the water to rush through and seek the level of its surroundings. This not a bad metaphor for the sweeping changes that began in 1989 as the Communist governments collapsed and gave way to increasingly market oriented, democratic governments. Along with the political changes came an economic transition unprecedented in its speed and depth of impact.

The transition has been painful. Despite a burst of initial optimism, it has proven to be impossible to reform the economies in one decade, and in the beginning of reform the economies fell farther and faster than most observers expected. Figure 11 shows that GDPs fell quickly, and few economies have returned to their pre-1989 levels.

Figure 11												
GDP Index: 1988=100												
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000 est.
Albania	110	99	71	66	72	78	89	97	90	97	105	110
Bulgaria	101	91	81	75	74	75	77	69	65	67	68	71
Croatia	98	91	72	64	59	62	66	70	75	77	76	78
Czech Republic	101	100	89	86	86	88	93	98	97	95	95	96
Estonia	108	101	87	75	68	67	70	72	80	84	83	86
Macedonia	101	91	85	78	71	69	69	69	70	72	74	76
Hungary	101	97	86	83	82	85	86	87	91	96	100	105
Latvia	107	110	98	64	55	55	54	56	61	63	64	65
Lithuania	102	96	91	72	60	54	56	59	63	66	63	64
Poland	100	89	82	85	88	92	99	105	112	117	122	128
Romania	94	89	77	71	72	74	80	83	78	73	71	71
Slovak Republic	101	99	84	79	76	80	85	91	96	101	103	105
Slovenia	98	94	85	81	83	87	91	94	98	102	106	110
CEE & Baltics	100	93	83	80	81	84	88	92	95	98	99	103
Armenia	114	106	88	42	35	37	40	42	44	47	48	51
Azerbaijan	96	84	84	65	50	40	35	36	38	42	45	47
Belarus	108	105	104	94	86	76	68	70	78	84	87	88
Georgia	95	83	66	37	27	24	25	27	30	31	32	33
Kazakhstan	100	99	86	84	76	67	61	61	62	61	62	64
Kyrgyzstan	108	111	106	86	72	57	54	58	64	65	68	69
Moldova	109	106	87	62	61	42	42	38	39	35	34	34
Russia	100	96	91	78	71	62	60	58	58	55	57	59
Tajikistan	97	96	89	63	56	45	40	38	39	41	42	44
Turkmenistan	93	95	90	86	77	64	59	55	49	51	60	70
Ukraine	104	100	89	77	66	51	44	40	39	38	38	39
Uzbekistan	104	105	105	93	91	87	86	88	90	94	98	99
CIS	101	97	91	78	71	61	58	56	56	54	56	58

Source: EBRD, "Transition report update," London, May, 2000, Table 1.1, pg 4

Figure 12 shows the turmoil in currency values that accompanied the GDP reductions.

Figure 12												
Median Inflation Rates in Percent												
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000 est.
CEE and Baltics	10.0	55.1	238.4	217.9	35.6	26.3	21.6	13.1	10.0	5.6	4.4	5.1
CIS			153.0	1,380.0	2,083.0	1,220.0	100.7	31.8	13.0	18.3	23.2	18.3

Source: EBRD, "Transition report update," London, May, 2000, Table 1.3, pg 9

Coupled with falling GDP was the change in the structure of these economies, with basic commodities yielding to a better balance between industry and services, and a rapid growth in automobile ownership gnawing away at the rail share in passenger transport. Figures 13 and 14 -- freight and passenger traffic in CEE and in CIS countries -- show that the CEE/CIS railways were hard hit by the impact of transition on total output and on the rail share of the transport

market. In fact, in all but one country (Estonia), rail ton-km fell much faster than did GDP and in all but two countries (Belarus and Ukraine) rail passenger-km fell faster than GDP as well.

Figure 13												
Tonne-Kilometer Index: 1988=100												
RAILWAY:	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
CEE COUNTRIES:												
Bulgaria	100	97	80	49	44	44	44	49	43	42	35	30
Czech + Slovakia	100	95	86	66	63	54	51	52	49	48	43	38
Hungary	100	94	80	56	42	37	35	39	36	38	38	32
Poland	100	91	68	53	47	52	54	55	57	57	51	46
Romania	100	97	70	47	35	32	31	35	39	32	27	23
Turkey	100	95	99	99	103	105	103	106	114	123	107	104
Yugoslavia	100	102	91	60	21	7	5	6	8	10	10	5
Croatia	100		91	50	25	22	22	27	24	26	28	23
Macedonia	100	105	89	82	67	57	17	19	31	32	46	44
Slovenia	100	105	104	81	64	56	61	77	58	65	66	64
CIS AND BALTIC COUNTRIES:												
Russia	100	98	97	89	75	62	45	46	43	42	39	46
Ukraine	100	107	94	80	67	49	40	39	32	32	31	31
Kazakhstan	100	98	98	90	68	45	34	30	27	31	29	22
Belarus	100	99	92	80	69	52	34	31	34	37	37	37
Estonia	100		97	91	47	52	47	50	54	66	80	97
Latvia	100		93	84	51	49	48	49	62	70	65	61
Lithuania	100	98	87	80	51	45	36	33	37	39	37	35
Armenia	100	107	102	87	27	9	8	8	7	8	9	7
Georgia	100	97	95		33	23	15	10	10	15	19	25
WESTERN COUNTRIES:												
Austria	100	106	113	115	108	105	122	128	130	130	135	137
Finland	100	102	107	98	100	118	127	122	113	126	126	125
France	100	102	98	98	96	87	95	93	96	105	105	104
Sweden	100	102	104	101	104	102	105	104	101	102	103	81
United Kingdom	100	92	88	95	86	76	68	76	76	93	98	99
Germany	100	104	104	105	95	88	120	118	116	123	124	121
USA:Class I Rwy's	100	102	104	104	107	111	119	129	134	133	136	142

Figure 14												
Passenger-Kilometer Index 1988=100												
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
CEE COUNTRIES:												
Bulgaria	100	93	96	60	66	72	62	58	62	72	58	47
Czech + Slovak	100	101	100	99	87	68	67	63	61	56	52	51
Hungary	100	103	99	86	79	74	74	73	75	75	77	59
Poland	100	107	97	78	63	63	53	51	51	49	49	50
Romania	100	102	88	73	70	56	53	54	53	46	39	36
Turkey	100	102	96	90	93	107	94	86	78	87	92	92
Yugoslavia	100	47	47	41	42	29	28	26	13	28	26	
Croatia	100	-	89	39	26	25	25	25	31	30	28	25
Macedonia	100	96	92	53	29	19	17	17	31	37	39	39
Slovenia	100	99	92	54	35	36	38	38	39	40	42	40
CIS AND BALTIC COUNTRIES:												
Russia	100	99	100	94	93	100	83	71	67	63	56	52
Ukraine	100	100	104	98	105	104	97	87	81	75	69	65
Kazakhstan		102	106	104	106	110	99	86	76	69	57	49
Belarus	100	103	105	99	113	122	100	78	74	81	83	106
Estonia	100		101	85	63	48	36	28	29	17	16	16
Latvia	100			100	93	60	46	35	31	28	28	25
Lithuania	100			110	93	92	53	38	30	26	24	25
Armenia	100	91	76	77	107	104	85	40	20	20	13	11
Georgia	100					59	69	22	22			
WESTERN COUNTRIES:												
Austria	100	109	110	118	123	120	118	124	124	105	102	101
Finland	100	100	104	101	96	94	95	99	102	105	105	107
France	100	102	101	98	99	92	93	88	94	98	102	105
Sweden	100	100	100	91	86	96	97	102	102	103	115	122
United Kingdom	100	97	97	93	92	88	84	84	93	98	102	108
Germany	100	100	106	111	113	116	150	148	148	146	144	177
USA: Amtrak	100	103	107	110	107	109	104	98	89	91	93	94

Though the fall was rapid, the beginnings of new structures did not arrive overnight. Not only did the transition require a wrenching shift in economic activity with large movements in capital and labor that would take years in any economy. Transition also involved the actual destruction of generations of intellectual capital (communist economic theory) and its replacement with economic and political ideas that were different in a revolutionary way. In effect, transition required a generational shift in economic and political power – and older generations never give up such power willingly. Combined with the “crony capitalism” that occurred in some countries (by definition the cronies are older and better connected), transition thus has encountered a number of mental and financial barriers that will take years yet to overcome fully.

For railways, the challenge was even greater because railways are notoriously the most resistant to change of all sectors in most countries. Railways are inevitably focused on tradition (how things have always been done), and are managed as military organizations where thought and originality necessarily give way to operating discipline. Change was (and still is) made even harder because of the major role that many railways played in the transport sector. Because

railways were so important⁴, the countries could ill afford the risks of disruption associated with radical change, so most countries took a gradual approach. Because the railway labor forces were so large relative to the rest of the economy, and the railway labor unions well organized and politically powerful, governments were reluctant to undertake an adjustment of railway labor when they already had enormous labor challenges throughout the economy even though, as Figure 15 shows, rail labor productivity in most socialist countries had fallen well below 1990 levels and posed a threat to the profitability of the railways.

Figure 15					
Output/Employee (000 T-km + P-Km)					
	1980	1988	1993	1999	Ratio: 1999/1988 (%)
CEE COUNTRIES					
Bulgaria		312	211	195	62
Czech + Slovakia	392	376	305	262	70
Hungary	276	249	209	238	96
Poland	516	480	372	400	83
Romania	576	530	249	268	51
Turkey	190	278	320	337	121
Macedonia		200	106	126	63
Croatia		323	111	135	42
Slovenia	366	343	236	355	103
CIS and BALTICS					
Russia		1,635	1,144	1,088	67
Ukraine		1,700	706	554	33
Kazakhstan		3,100	1,224	821	26
Belarus		1,600	783	604	38
Estonia		611	523	1,190	195
Latvia		718	551	776	108
Lithuania		910	686	515	57
Armenia		702	183	85	12
WESTERN COUNTRIES					
Austria	240	286	333	437	153
Finland	472	472	671	968	205
France	505	512	579	687	134
Italy	250	286	419	547	191
Germany*	324	397	447	739	186
Canada:Canadian National	2,494	3,578	4,230	8,100	226
USA:Amtrak	324	387	399	358	92
USA:All Class I Railways	3,040	6,264	8,503	11,797	188
* Western Germany is basis for 1988 productivity					

Finally, many of the CEE/CIS railways had the same kinds of entrenched interest groups (subsidies to favored passengers) that prevailed in other countries: in addition, many of these railways had a well established tradition of requiring shippers to pay inducements in order to obtain a reliable supply of empty wagons. There were many reasons why railways would lag well behind in economies that were already slow to change.

To be fair, the track record of expert forecasters was no better than the prior estimates of Soviet GDP. Partly for lack of information, and partly to avoid offending rail management, even the “pessimistic” forecasts of traffic on the CIS railways made in the early 1990s were far too optimistic, and the “realistic” forecasts now look ludicrous. It is hard to see how any CIS railway manager, even if inclined to carry out radical change, could have made a case for planning to deal with what actually happened.

However understandable the slowness to change might be, the impact of reluctant adjustment has been expensive. Falling freight traffic dramatically reduced the revenue base of the CEE/CIS railways. Though passenger traffic did not fall as fast as freight, the traditionally lower passenger fares meant that railway earnings (revenue minus operating costs) actually suffered from retaining more passenger traffic than freight. Most significantly, when labor productivity fell, and labor costs thus rose relative to other expenses, railways either had to raise fares and tariffs (and lose even more traffic) or lose even more money. Some railways even did both.

When earnings started to erode, the CEE/CIS railways did exactly what all railways do – they began to postpone maintenance and to delay replacement of rolling stock. In the first few years this was acceptable because traffic had fallen so far that the existing rolling stock fleets were far too large, and track structures were initially strong enough to survive a few years of neglect. Unfortunately, again as is common in most railways, the expected fat years never came, and many railways are increasingly in need of spare parts and maintenance expenditures just to be able to handle current levels of traffic. Though the problem of neglected maintenance is more severe in some railways than others, especially because the fall in traffic has reduced wear and tear on track, the need to resume normal maintenance schedules will become serious for all in the near future. Perhaps more important, many of the CEE/CIS railways, which began the transition period with technology that was not economically operable with inputs priced at real world levels,⁵ have not been able to reequip themselves with world class technology because neither they nor their governments have been able to afford it. Unable to invest properly in up-to-date technology, their costs are too high and quality control inadequate – and they have fallen even farther behind.

Probably more important than the physical deficits are shortages in the skills needed for planning and management in a market-driven context. For years observers have concluded that even market economy railways tended to be production oriented with practically no knowledge of, or interest in, customer needs. The basic tools for market management, especially the ability to relate costs directly to revenues for particular market segments, are only now beginning to be applied in Western Europe (some in the European Commission would argue that this has not happened even yet, mostly because many of the E.U. railways feel no real pressure to do so). For the most part, the information and managerial infrastructure of communications, computers and managerial methods that is slowly emerging in market railways has not yet begun to emerge in the CEE/CIS railways. Even railways that bought computers normally do not have in place the organizational structure or managerial objectives needed to make use of (and sense of) business information. And the young and market-sophisticated professionals who are beginning to take over many companies are not at all interested in railways when other sectors of the economy are so much more profitable.

The CEE and CIS railways are hopefully now witnessing the end of the worst of the downward spiral in their economies. As Figures 13 and 14 show, their traffic has stabilized and has even resumed growth some countries. They are in weakened physical condition, and lack most of the tools needed to become successful in the market economies that are growing around them. They are carrying labor forces and physical plants that are far too large for current, or rationally predictable future business. They have inherited tariff structures (especially cross-subsidies between freight and passenger services, and among various freight categories or commodities) that will require thorough change in a competitive context. They know that the future structure of the economies they serve will never recreate past traffic levels or patterns, and they know that the role of government in assuring their market share will never recur. They face manifest challenges in restructuring, and must do so in the face of large investment backlogs and strong competition. These are massive challenges, and there is no assurance that the challenges can be met, nor is there a blueprint for meeting them.

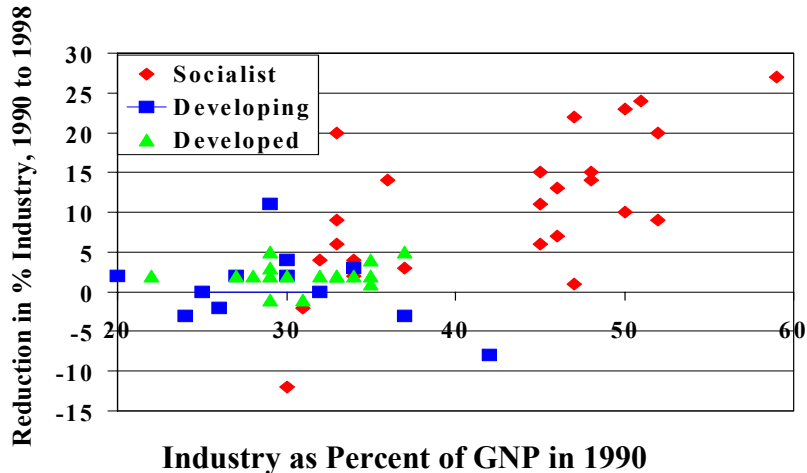
The Changing Environment for Transport and for Railways

Railways exist to provide transportation, and transportation demand is a result of the structure and size of the economy. In the planning era, railways were spared the uncertainty of predicting economic trends because they responded to instructions from planners. In the market era, though the role of government in managing the economy will still be large, railways will have to become far more sophisticated in understand market needs and trends.

In looking at the broad future of the transition economies, the EBRD reached four general conclusions:⁶ 1) Transition will be a long and difficult process (i.e., the first ten years have only been the beginning); 2) While conditions at the start (and at present) limit what can be done, making the right decision among the crucial policy choices can still have an influence on future outcomes; 3) There is a need not only to pass new laws and regulations, but also to create the cultures that will accept and enforce them; and, 4) New firms will be vital to the process of economic growth and the restructuring of the old dinosaurs. This is a critical set of conditions to be kept in mind in attempting to translate country scenarios into railway futures.

In looking at the future of the economies of the countries involved, we need to emphasize that it has proven to be extraordinarily difficult to get predictions right. Few economists foresaw the Tequila Crisis, or the Asian Crisis, and predictions about the U.S. and Japanese economies over the next few years are best left to the foolhardy. About the best we can hope for is a general indication of what may happen. In the broadest terms, the first determinant of railway growth will be overall economic growth with those countries doing best which make the fastest and best conceived transitions. This said, Figure 16 compares the change in the share of the industrial sector for a number of developed, developing and socialist countries between 1990 and 1998. It is significant that the socialist countries had the highest degree of industrialization in 1990, and that they had the highest reduction in the degree of industrialization between 1990 and 1998. The nature of this transition inherently implies a different structure of the economy, with far less emphasis on the traditional railway-shipped products than in the past, so the rail freight markets in most countries will almost certainly grow somewhat more slowly than the economies as a whole, at least until the transition is fully completed. The transition from muscle bound to limber is proceeding.

Figure 16
 Industry as Percent of GNP: Change 1990 to 1998 versus percentage in 1990



Moreover, the types of products and services increasingly demanded in the new economies will put a premium on higher quality of transport, meaning that trucking shares will grow much faster than railways except in countries or regions where highways are so rudimentary that no highway growth is possible. If development is successful, then rising incomes will mean more automobiles and greater use of airlines, both of which will act to limit demand for rail passenger services, especially in the wealthier CEE countries. Overall prospects for rail traffic do not offer an assured living.

The generalized approach may even be more difficult in many of the CEE/CIS countries because the development of the economies may be as much related to politics and policies as to economic developments inside and outside the countries. If the transition from planning to market follows three phases – an initial collapse as the old economy is dismantled, stabilization while putting new institutions and laws into place, and finally a resumption of growth – then the countries are definitely at different points in the process. Some (Poland, Czech Republic, Hungary, Slovenia and Estonia) are well into the third phase. Others (Romania, Russia and Ukraine) are into the second phase. Some (Belarus) may not have even reached the first phase. Some countries (Serbia, FYR Macedonia, Armenia, Georgia, Azerbaijan, Russia) face internal conflicts that could seriously restrict their ability to develop at all. Unfortunately, conflicts in these countries, if they cannot be resolved, will inevitably restrict the ability of neighboring countries to develop and (because they are physically interconnected) will impact with particular weight on the railways in the region.

One of the primary forces affecting the region will be the impact of the accession policies of the E.U.. As the EBRD conditions suggest, E.U. accession would be important in two ways: first, the accession countries are likely to receive a boost in growth and investment from their initial years of membership, and their growth is likely to spread to adjoining countries; and, second,

accession will enforce exactly the kinds of change in policy, laws and private sector development that are crucial to sustain the transition after the initial changes are made. It is at least reasonable to hope that non-accession, adjoining countries will also benefit from much closer exposure to the changes in the legal and policy environment that are necessary to underpin a modern market economy.

A similar set of changes may result from the impact of the World Trade Organization (WTO) in both accession and non-accession countries. Despite the controversy that surrounds the WTO, it is clear that the implementation of WTO policies will act to greatly expand trade and increase contacts across borders. The ensuing growth in trade, especially, will pose both an opportunity and a challenge to CEE and CIS railways. Countries that positively respond to the opportunities of enhanced trade will both grow faster and increase their need for higher quality, long distance transport – the natural market area for rail transport (especially because customs formalities are more easily handled on railways than on trucks).

More broadly, there will be several policy questions that governments need to face that will have an impact on their transport sector and their railways. The first is likely to be the attitude of the governments toward market-driven structures. Governments which are in favor of market economies should logically favor market organization and incentives for their transport sector and especially their railways: unfortunately, even in Western Europe this is often not the case. Instead, political philosophies and special interest pressures have caused some countries to shield state “enterprises,” especially railways, from market forces. These practices have created nearly as many economic dinosaurs in the West as in the East, as the deficits of the E.U. railways demonstrate. Fortunately for the E.U. railways (and despite their resistance to change), the European Commission is equally determined to force the adoption of market structures for rail enterprises and to prevent them from being shielded from national and international competitive forces.

Governments in both Eastern and Western Europe have also differed greatly in their reliance on competitive forces to bring about efficiency and market responsiveness. The alternative to competition (and sometimes its concomitant) is good regulation. Without competition or regulation, there is only state ownership and management that might ensure responsible behavior on the part of enterprises.

Both competition and public interest regulation are difficult concepts for those emerging from a planned economy. Competition looks chaotic and wasteful, especially to railway managers who believe strongly in economies of scale. Good regulation is based on exactly the kinds of legal and ethical reform that are difficult for countries used to the more arbitrary exercise of power that planning featured. For parts of Eastern Europe, especially the smaller countries like Slovenia or Hungary, rail freight regulation may not be particularly important because trucking competition will adequately constrain rail pricing behavior as it does in all of Western Europe. For the larger CIS countries, especially Russia where over 90 percent of surface ton-km goes by rail, competition will not be possible without rail versus rail competition which will almost certainly need to be delivered by different companies operating on the same tracks: that is, infrastructure separation with competing freight enterprises. This will require a degree of regulation and oversight more akin to the North American model as applied in the U.S. and

Canada. In all of these cases governments will decide on the structure and depth of regulation, but these regulatory decisions will have a strong impact on the resulting structure and behavior of CEE and CIS railways.

A paired issue is the role of the private sector, both because of its implications for organization of the transport sector, and because of implications for regulation. Since the 1940s or earlier, European governments have shared the common belief that railways are part of the “commanding heights” of the economy which are too important to be left to the private sector to own or operate. Events outside Europe began to call this belief into substantial question. U.S. railways, and the Canadian Pacific railroad in Canada, had long been privately owned and operated, and they are among the most efficient carriers of freight in the world. In 1987 the Japanese Government, confronting a financial disaster even larger than that of many European railways, decided to break up and privatize major parts of the old Japanese National Railway (JNR), and the results have been highly favorable. In the early 1990s, governments in Latin America and Africa have decided to shift responsibility for delivery of rail services to the private sector: today virtually all of the railways in the Americas, including suburban passenger services and some major Metros, are in private hands for operations. Results of this concessioning effort have been encouraging as well. In the mid-1990s, the UK Government broke the old British Railway into a number of parts, including a separate company for infrastructure and a number of companies for rolling stock supply and for operation of passenger and freight services.

Whatever the perception of the success of the individual experiences, taken together they have eliminated any argument that there is anything necessarily public about the provision of rail operating services. Experience clearly establishes that the private sector can provide rail services as well or better than the public sector. The experiences are also raising the question of whether there is any reason why the public sector **needs** to run railways and the burden of proof is gradually shifting toward a presumption that the private sector is at least a good option to consider.

Another increasingly important influence on European transport and railway policy is concern for the environment. Many Western European countries are giving more intensive consideration to environmental issues such as localized air pollution in urban areas, greenhouse gas emissions (directly driven by energy efficiency), highway congestion, especially in the transalpine transit areas, and related issues such as highway safety. These environmental concerns are certain to be exported into the accession countries as a part of the overall set of common E.U. policies; as in the E.U., they may materialize as inducements meant to increase rail traffic as rail is (sometimes erroneously) seen as a favorable alternative to highway transport. Typically these inducements will include reduced or marginal cost infrastructure access charge regimes for rail freight (as recently announced in the UK), and subsidies for urban or regional passenger transport. CEE and CIS countries have tended not to share the same environmental concerns, partly because they cannot afford the cost of fixing them, and partly because it has paradoxically proven harder for governments to regulate the environmental misbehavior of their own government enterprises than that of private enterprises – what should be called “bear hug” versus “arm’s length” treatment. As economic development and privatization proceed, the impact of environmental concerns is certain to be felt more strongly in both CEE and CIS railways.

“Marketization,” competition, regulation, private sector involvement and environmental concerns should all be good reform platforms for railways – both East and West. Though the existing monoliths may not enjoy the way in which these considerations are likely to force change in the current “fortresses,” the overall effect on railway traffic will be favorable. The arguments behind the Commission’s White Paper on Railway policy and its conclusion that the only way to save the Community’s railways is to force change in this direction were forcefully stated. Though not always stated so explicitly, many of the Governments in CEE and CIS countries have reached similar conclusions about the need for a railway shakeup.

There are also clear yellow and even red signals that will influence the general speed and direction of railway changes. Deepening of the E.U. and extension of its policies – either directly through accession, or indirectly through the need for adjoining countries to harmonize policies – will limit the ability of countries to pay rail subsidies, for two reasons. First, the E.U. rules will restrict rail subsidies (and service provision will increasingly be open to competition from other providers) to local passenger services and to infrastructure (which will be open for all licensed users on a non-discriminatory basis). Second, countries wishing to join the Euro zone will have to meet stringent limitations on total government spending, and rail subsidies will loom large within these limits.

More broadly, rapidly growing trade (be it accession, freer trade agreements, or the WTO) will increasingly expose closed national economic practices to international practices and competition. The comfortable protections of the past will be pressured by international comparisons and suppliers. Perhaps most important, within the next decade most European governments will have to face a crisis in how to fund expensive social programs (especially retirements) in the face of a shrinking and aging labor force. Overall, though there may be good reasons why CEE and CIS governments may want to foster the growth of their rail sectors, there will also be a lot of reasons why they (and their Western counterparts) will find it hard to put much money behind such policies. The CEE and CIS (and, in fact, E.U.) railways will have to move forward without having much access to the national treasury except for support for critically needed social programs for local transport.

It is also important to emphasize that the smaller and medium-sized railways in CEE and CIS countries cannot simply aim at the conditions in the E.U. of today as their target for reform. The European Commission is moving strongly to force further change in the directions already established. Infrastructure separation, now required only at an accounting level, will be required on an institutional level so that there are no links and conflicts of interest between operators and infrastructure providers. Pressures to open up national rail infrastructure for more competition, especially by freight providers, are likely to intensify. Private sector operators, particularly for various types of freight services (especially containerized freight) will surely enjoy a growing role. Separation of regional and suburban passenger operators from national operators will be extended, and local and regional governments will increasingly demand that they be allowed to put their services up for competition.

Nor is the North American model immutable as a broad target for the larger CIS railways. Deregulation (of trucking, railways and airlines) in the U.S. and in Canada touched off rapid growth in productivity and market development that shows no signs of slowing. In fact, events in

the U.S. and Canada are perhaps the best evidence to support the European Commission's evident intention to reform the E.U. railways. Merger trends over the past decade have dramatically changed the structure of North American railroads, and it is likely that at least a few more consolidations are in prospect. Moreover, many observers in North America are arguing that the rail industry does not have, and may never have, the kind of earnings that would support a stable and growing industry. At the same time, the Surface Transportation Board (STB) has concluded that enhanced rail versus rail competition should be a consideration in any future merger proposals. All in all, wherever they look, the CEE/CIS railways face difficult challenges in restructuring based on unclear, and rapidly moving targets.

Future Rail Structures in the CEE/CIS Countries: Where to from Here?

If, to paraphrase the EBRD Transition report, the first ten years of transition have left a lot of hard policy questions unanswered, then it would be heroic to provide anything more than a general scenario here for what might happen. Any discussions about the future of CEE/CIS railways will have to be seen as having a considerable range of uncertainty. With this in mind, there are a set of assumptions that could provide a basis for looking ahead, even if it is likely that at least some of them will not turn out to be true in all cases:

1. With only a few potential exceptions due to conflicts (Macedonia, Serbia, Armenia, Azerbaijan, Georgia) or unusual slowness to start transition (Belarus), the period of collapse is ending and the basis for stability and new economic restructuring is in place in many of the countries. Subject to the influences of economic cycles worldwide, the CEE and CIS economies can look forward to steady growth. Growth rates will vary, with those countries doing best which move the fastest to adopt democratic governments and implement the legal and regulatory regimes needed to support market systems.
2. The planned economy structures will shift to a market structure in which increasingly higher value goods and services will play a larger role, and in which individuals will have more income with which to make their own transport decisions. Highways will be built or expanded, leading to increased use of trucks and autos. Airline travel will play a much larger role in longer haul passenger transport. Urban densities will shift toward forms which will require less transport (or, at least, less rail-dependent transport). In short, transport networks and services will increasingly resemble those of Western Europe for the accession countries and the smaller CEE countries, and in the larger countries (particularly Russia) they will come to resemble those of North America.
3. Although rail market shares will be falling toward those experienced in the market economy countries of similar size -- between 10 to 15 percent of ton-km in Western European freight to 40 percent in the U.S. and Canada, and around 8 percent of the passenger markets as in Western Europe -- rail market shares will remain higher in CEE and especially CIS countries for the foreseeable future because it will not be possible to construct and maintain adequate highway networks rapidly, and because the income per capita levels will not catch up to the West for many years if they ever can do so completely.⁷ It is also interesting to see that, as Figure 17 shows, there has been a shift in the traffic pattern of the CEE and CIS railways (except the Baltic countries) from freight toward passenger. It is not clear whether this is a permanent situation, or is merely an artifact of the transition which may have impacted freight generation more than passenger

demand. It is possible that this is permanent since the shift brings the CEE railways much more in line with E.U. conditions than before.

	Figure 17		
	Passenger-kilometers as		
	% of total traffic units		
	1988	1993	1999
CEE COUNTRIES			
Bulgaria	31.7	43.1	42.3
Czech Rep. + Slovakia	21.8	25.8	27.3
Hungary	35.5	52.4	50.2
Poland	30.2	34.2	32.1
Romania	33.4	47.0	43.6
Turkey	45.9	46.3	42.7
Yugoslavia	19.9	49.8	-
Croatia	28.9	37.4	35.9
FYR Macedonia	28.9	12.7	35.9
Slovenia	27.9	20.0	28.3
CIS AND BALTIC COUNTRIES			
FSU	9.5	9.6	10.3
Russia	9.5	14.4	10.5
Ukraine	12.6	23.6	23.3
Kazakhstan	4.3	9.8	8.1
Belarus	16.3	31.2	35.6
Estonia	17.2	16.2	3.3
Latvia	16.4	19.3	7.5
Lithuania	11.7	21.4	8.7
Armenia	8.0	49.1	12.5
WESTERN COUNTRIES			
Austria	42.1	45.4	35.5
Finland	29.1	24.5	25.9
France	55.0	56.4	55.4
Sweden	25.5	24.3	34.0
United Kingdom	65.5	68.8	67.3
Germany	41.0	47.9	50.4
USA: Amtrak Only	0.6	0.6	0.4

4. Russia furnishes a particular example of the difficulty of changing rail's market share because the highway network is and will remain limited, especially in eastern Russia. In addition, the mineral production base in Russia is enormous, and much of this production will be rail dependent. Kazakhstan's coal reserves may also act to keep a higher share in Kazakhstan than otherwise would be the case.
5. Policies concerning rail industry structure, including infrastructure separation, competition and subsidy management will be heavily influenced by E.U. practice. There will be a wide range of variation in attitudes toward private sector involvement (as, indeed, there is in the E.U.) and countries will be free to find their own approaches toward privatization.

Structure and ownership. Against this backdrop, at least the broad outlines of the future structures of CEE and CIS railways are emerging. These options are being driven by a number of considerations, including country specific factors (size of the country, existing rail role including the mix of services,), privatization objectives (and methods for doing so such as concessioning, franchising or privatization), the need for competition (passenger and freight, intermodal versus intramodal) and regulation, and the feasible time frame for reforms.

Figure 18 – interactions between structure and private role -- gives some examples of the structural and private sector options which are evolving in Western Europe and which appear likely in CEE and CIS countries. This Figure shows three basic structural options. First is integral infrastructure and operations with an accounting separation for infrastructure in order to permit lines of business for the operating companies and (if desired) non-discriminatory entry of outside operators. The second is a middle option in which infrastructure remains integrated with the dominant operator, while the minority operators are separated from infrastructure and pay an access fee. There would likely also be accounting separation of infrastructure from the dominant operator in order to permit competition with the dominant operator if this is desired. This is in effect the situation in the U.S. with Amtrak and the freight railways, and in Japan with the passenger railways and JR freight. The third option is full institutional separation in which infrastructure has no relationship with any of the operators and may be open to competing operators. Accession countries will likely be required to adopt the third option, while non-accession countries at least in principle can choose any of the three.

Figure 18

Structure and Ownership Interactions



On this scale, railways will tend to minimize institutional separation when traffic density is low and the traffic mix is simple (overwhelmingly passenger or freight), and when the railway is

relatively small. When the traffic mix is predominantly a single market (freight, or intercity passenger), but there are significant other users for which the economics need to be separate (especially PSO supported), then keeping the dominant user integrated with infrastructure makes sense. When there is a balance of uses with no single user predominant, when there is a need for real competition among users on the same line, and when the economics of the various services need to be clearly separated, then institutional separation becomes necessary.

Arrayed against these three structural options are the private sector possibilities. The starting point is the status quo – essentially total public ownership and operating control. The second option is public ownership of many of the assets, but a shift to private delivery of services using management contracts, concessions or franchises. The third option is privatization of assets and private operation. Privatization, per se, is only a means, not a goal in itself and the choice of preferred option is, for example, not prescribed by E.U. regulation. Some countries oppose privatization as a matter of principle, others are willing to have private operators but prefer to own major assets in the public sector, and others want the best transport solution regardless of ownership.

The location of CEE/CIS railways on the diagram is based either on announced government intentions, or on a rough estimate of the likely status of the railway within the next decade. The exact placement of some railways is of course arguable; but, the diagram emphasizes several useful conclusions. First, there is no “one size fits all” recipe. Depending on policy and circumstance, there are a number of approaches which are consistent with E.U. objectives and with the economy the railway serves. Equally important, mixed solutions are likely, and there is no basis for dogma on the role of the private sector. Subject only to the basic need to have an accounting separation of infrastructure costs and internal profit centers for different lines of business activity, including an allocated share of infrastructure costs, it is entirely possible that the CEE/CIS railways will be **represented in** many of the cells of the matrix -- and each could be the “right” approach. **A few examples are of market economy railways are included in order to show the range of experience worldwide: every cell has at least one example.**

Competition. Reaching competition objectives can be achieved in a number of ways. The simplest, as in the UK, is to rely on trucks to provide adequate competition for freight railways. In the UK (where the freight company carries only 8 percent of intercity ton-km) or indeed in the E.U. (where railways carry only 15 percent of freight ton-km), this will suffice to ensure that railways have no market power to abuse. Intra-rail competition in the freight market can be achieved either by competition between different rail **lines** (today, this only happens in the U.S. and Canada), by one company operating over the lines of another (trackage rights or haulage agreements, both of which are common in the U.S. and Canada) and by having two or more companies compete over the lines of a neutral infrastructure owner (the E.U. objective).

Competition in passenger markets is somewhat different. With very few exceptions, there is already enough competition from passenger automobiles, buses and air transport to ensure that intercity rail passenger enterprises will have no market power. And, as discussed, this intermodal competition is likely to get much stronger over the next decade as new businesses develop and as incomes rise, so it does not seem likely that CEE and CIS countries will need to develop competing rail passenger enterprises. Certainly there is nothing in the rail passenger markets in

the US, Europe or Japan to suggest that abuse of market power in the intercity markets is a matter of concern and it is hard to see how the CEE/CIS countries would be much different.

While competition **IN** rail freight and intercity passenger markets may be driven by intermodal forces, competition **FOR** socially determined rail passenger services is already well established in market economies, and seems likely to intensify both in the West and in the CEE and CIS countries. It is not feasible to have intra-rail competition for suburban rail services, and increasing urban density (with related congestion and pollution) can rule out buses and private autos. Passenger franchising in the U.K., concessioning of suburban services and the Metros in Buenos Aires and Rio de Janeiro, and competitive concessioning of suburban services in Sweden, for example, have all established the benefits to be achieved from competition for markets on a minimum subsidy basis. The new Polish railway has announced intentions to bring in concessionaires to operate the suburban systems in Warsaw and Gdansk/Gdynia/Sopot, and concessions have already been awarded in Estonia. Given the widespread use of competition for these social services in the E.U., it seems highly likely that a similar process will eventually be used in CEE/CIS railways eventually.

The creation of competition will be particularly important in the CEE/CIS countries (especially the non-accession countries) because it will be difficult to create regulatory agencies that could serve in the place of competition to protect against exercise of market power. The 1999 EBRD report highlighted the importance of creating the legal and regulatory framework, and a culture of compliance with the set of rules and values that market economies depend on. The report emphasized that creation of these rules will be a challenge in all areas of the economy: when expectations of regulatory success are not high, competition in and for markets is the only workable alternative. In some cases, creation of competition **for** railways will have to go beyond trucking and water to include creation of competition **from** railways on common infrastructure.

Non-core activities. CEE/CIS railways face another distinct set of problems as a result of the practice in planned economies of organizing railways as “states within a state.” Railways were not only monolithic transport monopolies, but also vertically integrated producers of their own supplies and services (often including wagons, coaches and even locomotives and concrete sleepers) and mini-welfare agencies providing their own restaurants, food stores, schools, hospitals, and a panoply of other activities which were only marginally related to transportation activity. As a general rule of thumb, half of the employees of CEE/CIS railways were actually involved in providing transport, and the other half were involved in activities which would be provided separately in market economies.

Railways have found it particularly hard to spin off non-core activities for several reasons. They believe that railway needs are so specialized that outsiders could never fully understand or meet railway requirements. For example, they argue that spinning off locomotive manufacture would only confront them with exchanging an international monopolist they do not control for a local monopoly they think they do control. They argue that generalized engineering education will not suffice for specialized railway needs, so internal schools are needed. Many railway health services are provided “free” as a form of non-cash income and it would be difficult to replace these with outside services unless salaries are increased accordingly, and this would be difficult to do because of the implications for wages in the rest of the economy. Also important (but

unstated) is the fact that bureaucratic status is based on the largest possible (labor) turf, and that managers (if not always employees) benefit from a wide range of economic rents and unpriced perquisites which would be harder to retain under external competition and supply.

Under a planned economy, it was argued that really large entities, such as railways, could efficiently be independent of the rest of the economy because their needs were large enough to justify self-provision. Whether or not this was true under socialism, it is clearly not sustainable under market conditions because equipment, supplies and services can invariably be purchased at lower cost and higher quality by competition from sources outside the railway. Education and health services are recognized in market economies as governmental and not enterprise responsibilities, and these are being shifted outside the railway to public control. Railway social burdens and internal inefficiencies become critical under competition because their competitors do not carry the same costs and gain a competitive advantage. Non-core activities rapidly get driven out of railways because they are a distraction for management trying to survive in the transport arena, and because they are a burden on the costs of the enterprises. The process of spinning off of these non-core activities has already begun in many countries, and it will be driven to completion as reform proceeds.

Overall, and allowing for the differences among countries and railways, the agenda for change in the railways of the CEE and CIS countries is clear: first, massive institutional change will be needed for these railways to adapt to the challenges of management in a market context and, second, given a market-based organization, infrastructure and rolling stock will need repair and updating. The priority for institutional change before investment is deliberate in order to counter the invariable railway response which is to try to fix the assets first and then argue about the organization later (“with more investment, all my problems will be solved”). Beyond any argument, the overwhelming issue is structure and organization because that is the only basis for defining which assets will be needed, and in which condition, in the future.

Priorities in reform. The first stage in reform is structuring around markets so that revenues and costs (and profits or required subsidies) can be related to each market -- often called Line of Business management. This will be consistent with current E.U. practice if infrastructure is treated as a cost center with related infrastructure access charges passed on to the operating companies (intercity passengers, suburban and regional passengers and freight). If (as seems likely) E.U. rules eventually require actual institutional separation for infrastructure, the accession countries will be required to separate infrastructure: non-accession countries could remain with accounting cost separation if they wish. Directly related to Line of Business management is a mandatory agreement on public service obligation (PSO) payments from government to operator for social service deficits caused by mandated services or socially controlled fares (or both). In the E.U., such agreements must be in contractual form which has proven to be the best way to enforce the relationship: CEE/CIS countries are likely to adopt contractual agreements especially if the services are provided by concessions or franchises competing for the market.

Competition objectives will also be of high priority in setting structures. At least in principle, E.U. accession railways will meet competitive objectives through the open access and subsidy rules for social services: beyond this, intermodal competition will be sufficient and development

of economic regulation (as opposed to safety regulation) may not be a high priority. CIS countries, especially Russia, may either adopt open access or various forms of controlled access to promote intramodal competition. Because of the relative lack of a highway alternative, they will not be able to rely on intermodal competition to control railway market behavior and development of adequate regulation will be a substantial question.

Though not typically thought of as “regulation”, in fact, the oversight function for competitively awarded concessions and franchises involves many of the same issues as traditional economic regulation. The oversight agency has to review efficiency, reasonableness of charges, coordination with other modes, anti-competitive behavior, and compliance with applicable laws. Since most CEE/CIS countries will be considering some forms of competition for markets, they will also not be able to avoid development of the appropriate oversight agency.

Ownership will be as much a question of politics as economics. The E.U. is officially agnostic about use of the private sector as opposed to the public sector and there is nothing in E.U. directives that would directly require countries to adopt a policy of promotion of the role of the private sector. The economic case for private operation (and to a lesser degree ownership of infrastructure) based on experience in North America, Europe, Japan and Latin America, is not without dispute, but is about as compellingly favorable as real world experience ever is. Private sector operation rapidly improves efficiency, increases demand and improves market focus. For this reason, a number of CEE and CIS countries, including Estonia, Poland, Romania and Russia, have begun to bring the private sector into operations, and there is every reason to believe that other countries in the East will be looking at the possibility.

Private sector involvement does have opposition which will limit its adoption. Some oppose privatization on principle. Some, particularly labor unions and local suppliers in protected markets are afraid (rightly) that efficiency gains might come at their expense. Some are reluctant to open up railway transactions to transparent competition.

The net result of this tugging and hauling is that most of the eventual solutions will be a mixture – which is probably the right answer anyway. True public monoliths are dying, and few will remain within a decade even in the CEE/CIS region. Total privatizations (as in the UK, Japan, New Zealand, parts of Australia or the US) will be equally rare because most European governments, and the CEE and CIS countries, view rail infrastructure as being an essential part of public infrastructure. Most systems will thus be mixes, with infrastructure ownership remaining in public hands, some passenger services publicly operated and some operated under concession or privatized, and all freight services either concessioned or privatized in their entirety.

These structural priorities are driving investments in a direction different than in the past. Highest priorities will be in getting the new organization structures established, including management analyses, installation of accounting systems based on international accounting standards, and acquisition and installation of modern management information systems including computers and communications needed to operate them. Where there is infrastructure separation from operators, additional investment will be needed to acquire and separate infrastructure costs, and plan and manage track capacity in a non-discriminatory way. Where there are PSO contracts

or concessions, there will be an added burden on information systems to collect and verify information needed to agree on PSO or concession contract payments. Taken together, this “managerial software” package is critical to all of the transformations needed to support market-based management and no railway should undertake reform without it.

A equal and high priority could be called the “social software” which will be needed to support restructuring. These are not strictly railway investments, but they are crucial to the political process that will permit restructuring to go forward. Of these, the most important is rail labor. Figure 15 showed that labor productivity on the CEE/CIS railways actually fell during the transition because labor forces did not adjust as fast as traffic fell. Though some gains have been made recently (because labor forces are finally being adjusted and traffic is stable or rising), the CEE/CIS railways are still well behind their previous levels and at best half of the labor productivity levels achieved by private operations. All seriously reforming railways will thus need to find a way to adjust their labor forces faster than mere attrition would yield. The Polish railway, for example, is undertaking (with World Bank and EBRD assistance) a program of early retirement, redundancy compensation, retraining and relocation that can be a model for other railways (and governments) to examine.

PSO systems are equally a part of the social safety nets needed. In the past, social service subsidies could be buried within freight “profits.” E.U. rules, and economic rationality, will force a more direct approach to funding these services. If this is to be done, however, the political process will need to pass laws, provide funding and institute procedures to support PSO contracts. These will be especially important for the urban poor who will otherwise have a difficult time traveling to their places of employment. Establishing these laws will be more than a matter of money: in most of the socialist countries power was highly centralized, as was tax collection and control over finances. Shifting responsibility for rail activities to local levels will require a decentralization of power and finance that may be a key step in the overall process of rail restructuring.

There is a similar social issue in many rural communities where local lines have been operated at a loss for years while being subsidized by freight profits. These lines will become much more difficult to support in the future as their actual economic performance becomes clear. For example, better economic analysis estimated that nearly one-third of the line-km in Poland are light density, loss making local lines. While it will be positive for Poland to eliminate these lines, it will also be disruptive to the areas involved unless adjustment efforts are undertaken. It seems likely that all countries will have similar problems of uneconomic services, and transitional programs will be needed in which rail services can continue while acceptable alternative arrangements are made.

There will, of course, be a need for “hardware” investments, but rarely for new capacity. Under the best of circumstances, rail traffic will be growing slowly on a physical plant that carried twice as much traffic a decade ago, so growth and gross capacity are not issues. Instead, physical investment programs will be targeted at rehabilitating that part of the current system that new market demands and traffic flow patterns will support. A well recognized need will be to make up for infrastructure maintenance neglected during the last ten years when earnings had evaporated: of this, repairs to urban and high density intercity trackage will be important.

Similarly, in most countries rolling stock was maintained only by cannibalizing other wagons or locomotives that the drop in traffic had made surplus. This worked in the very short term, but the carcasses have now been picked dry, and fresh blood will be needed. In addition, there will be some need for investment in higher efficiency locomotives, particularly diesel traction.

Fortunately, privatization can also play a role in these investment needs. Under concessioning or privatization, the new operators can be required to make appropriate investments (appropriate meaning profitable, or course). Included in the private investment domain is new rolling stock under various types of consortia or leasing.

Time frame. Under the most favorable of circumstances, railway reforms take place slowly. Against the internal bureaucratic and political resistance, there are two strong forces bringing reform – the need to meet E.U. requirements for accession countries (and countries which hope to be in the next stages of accession), the impact of E.U. policies on countries subject to the E.U. demonstration effect, and (E.U. aside) the growing realization everywhere that good railways enrich countries through efficient service and effective links to the global economy, while bad railways impoverish them. Many CEE/CIS railways are also large drains on the national budget, sometimes with deficits in excess of one percent of GDP, so finance ministers also have a stake in change. This said, reforms in most countries take at least 5, and sometimes 15 years to implement⁸, and there is no reason to expect that the process will be radically faster in CEE and CIS countries. E.U. accession for the most immediate countries may take until 2005, and for the next stage will be a few years later. Overall, a safe prediction is that railway transitions will be fully underway within 5 years in many countries, but will not be completed in most until the end of the decade at the earliest.

IFI Roles. There are a number of International Financial Institutions (IFIs) with an interest in helping with the railway transition. These include the World Bank, the EBRD, the European Investment Bank, and a number of E.U. institutions. Each of these has a slightly different emphasis, but taken together, they can support virtually all aspects of the investment needs. To date these needs have included: planning and analyses to support reform (World Bank, EBRD, and E.U. institutions); investments to support restructuring and the managerial “software” discussed above (World Bank and EBRD); labor transitions and social safety nets (World Bank and EBRD); environmental cleanup (World Bank and EBRD); infrastructure investments for rehabilitation (EBRD, EIB and World Bank); infrastructure investments for upgrading or new capacity (EBRD and EIB); rolling stock investments (EBRD and EIB); and, support for all aspects of private sector involvement (World Bank and EBRD).

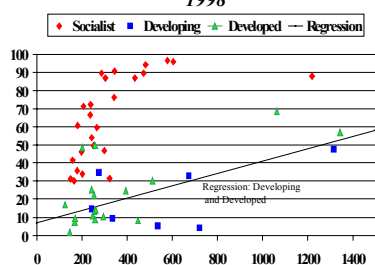
Summing Up.

Change and restructuring have been difficult in the formerly planned economies, nowhere more so than for their railways. Shifting to market-driven organization attacks established ways of thinking, threatens entrenched power bases and erodes secure economic positions. In many ways, the resulting resistance to change in CEE and CIS railway simply mirrors the same resistance that has been shown by E.U. and North American railways as their transport markets have grown and changed. If change is the only constant, then resistance to that change and fear of an

uncertain future (and nostalgia for a better understood, usually idealized, past) are the only absolutely certain predictions.

In one sense, CEE and CIS railway are right to be fearful of change since their dominant role in the economy must eventually end. Railways in the U.S. and Canada, operating in long distance markets where rail economics have full sway, carry no more than 40 percent of the ton-km, and earn only about 10 percent of the freight revenue, in their transport markets. E.U. railways carry only about 15 percent of ton-km. Comparing Figure 19 with Figure 6 shows that rail market shares in CEE/CIS countries are **still** unusually high compared with either North America for large railways or with the E.U. for smaller railways. This suggests either that the physical impediments to use of alternative modes, especially highways, are still a governing factor, or that the main impact of transition so far has been felt mostly in total economic output while the full impact of downward shifts in rail modal share due to changes in economic composition may remain to be felt.

Figure 19
Rail Share of Rail + Truck Traffic (%) versus
Average Rail Length of Haul
1998



The positive face of changes in structure is equally clear: when the economy and the political system are moving ahead, it is dangerous for railways to insist on looking to the side, or even backwards. Transition is changing not only the structure and level of demand, but also the nature of competition. A positive response to these trends could assure railways of a secure (if not stable) future, and it would significantly decrease the cost to governments of the valuable social

contribution which rail services could make.

¹ Opinions expressed in this paper are those of the author alone, and should not be attributed to the World Bank, its Directors or any of its members.

² The focus of this paper is “Eastern Europe” which includes the European countries in Central and Eastern Europe (CEE) and the European members of the Commonwealth of Independent States (CIS). Partly in order to bring a useful comparison to the larger CIS railways, and partly to bring additional comparisons for larger market economies, data from North America will be used as well. Unless explicitly otherwise stated, comparisons from other regions of the world will not be used.

³ “Profitable” was questionable because the costs of inputs were not themselves based on costs, and the accounting treatment of depreciation was often different than in Western GAAP. In fact, many socialist railways earned profits even after covering non-operating costs such as schools and health systems.

⁴ For example, because of their “profitability”, some CIS railways were also among the largest taxpayers – a significant barrier to changes that might expose rail operations to market forces.

⁵ For example, socialist systems did not price energy properly, leading to locomotive designs that used far more energy (as much as 30 percent) than their Western counterparts.

⁶ EBRD, “Transition report 1999: Ten Years of Transition”, London, 1999, page 9.

⁷ The difficulty of catching up can be seen in Germany where, despite the existence of a common language and culture, and expenditure of enormous amounts of grants, incomes in the former Eastern Germany are still only 70 percent of those in the West.

⁸ The first notice of the EU’s intentions came in 1991 with the publication of Order 91/440. Ten years later, this Order is not fully enforced. Partly as a result of frustration at the slowness of reforms ordered in 91/440, in early 2001, the Commission Orders 2001/12, 2001/13 and 2001/14 have made clear

the Commission's intention to enforce institutional separation of infrastructure from operations and to require separation of the various operating entities.