

# TRANSPORT POLICIES IN CENTRAL AND EASTERN EUROPE

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## INTRODUCTION

The formerly socialist countries of Central and Eastern Europe have experienced profound political and economic changes since the demise of Communism in the late 1980s and early 1990s. Each country has its own particular history of transformation to a freer, more democratic, more market-based society. The timing and specific circumstances of the revolutions in each country vary. Even today, there are considerable differences among countries in the extent to which their political systems are fully democratic and how market-based their economies are. Thus, it is a bit risky to generalize about this group of diverse countries.

Without exception, however, every formerly socialist country in Central and Eastern Europe has at least moved toward greater democracy and greater market orientation. In every country, that political economic shift has produced a corresponding transport revolution. The most obvious indicator of that revolution is the dramatic growth in levels of private car ownership and use, and a corresponding decline in public transport use. The modal shift in passenger transport is mirrored in most countries by similar changes in goods transport, with substantial shifts from publicly owned and operated rail transport to privately owned and operated trucking firms. While the increasing reliance on roadway transport had already started during the later years of the socialist era, the movement toward market-based capitalism greatly accelerated it, prompted by striking changes in government transport policies. Indeed, a key thesis of this overview is that policy changes were responsible for virtually all of the enormous changes observed in Central and Eastern Europe from 1988 through the 1990s, demonstrating how crucially policies affect every aspect of our transport systems.

This review focuses on three Central European countries for detailed analysis: the Czech Republic, Hungary, and Poland. We also include the former East Germany, whose political, economic, social, and transport systems dramatically changed after German reunification in 1990. Those four formerly socialist countries have the most

reliable long-term series of transport statistics, enabling better analysis of their transport systems, travel behavior, and policies. Moreover, they are typical of developments in other Central and Eastern European countries as well, with most transport trends being in the same direction even if the magnitudes vary from one country to another. This overview is limited mainly to urban passenger transport, although we briefly note developments in long-distance passenger travel and goods transport as well.

## TRENDS IN TRANSPORT SYSTEMS AND TRAVEL

One of the most useful indicators of overall transport orientation in a country is the level of motorization, usually measured by the number of private vehicles per 1,000 population. As shown in Table 1, private car ownership has increased rapidly over the entire period from 1976 to 2001, but the largest jump came from 1990 to 2001 during the first full decade after the overthrow of Communism. Most of the countries roughly doubled their levels of car ownership per capita in only a decade. Moreover, the table hides the especially rapid growth in car ownership in some countries in the late 1980s. As part of their liberalization attempts, governments in Hungary and Poland had already begun expanding offerings of consumer goods such as cars well before socialism's complete overthrow. Likewise, car purchases in the former East Germany and Czechoslovakia boomed almost immediately after their peaceful revolutions in 1989.

**Table 1. Auto ownership trends in formerly socialist countries of Central Europe (cars per 1,000 inhabitants)**

Country	Year					GNI per capita in US \$
	1976	1980	1990	1996	2001	2001
Belarus	12	31	59	101	142	7630
Bulgaria	51	56	146	204	262	6740
Croatia	80	108	147	175	257	8930
Czech Republic	112	148	228	325	369	14320
Eastern Germany	122	151	296	440	486	17668
Estonia	12	31	154	277	347	9650
Hungary	69	85	188	239	244	11990
Latvia	12	31	106	153	250	7760
Lithuania	12	31	133	212	340	8350
Macedonia	80	108	121	139	151	6040
Poland	37	67	138	209	272	9370
Romania	9	11	56	107	144	5780
Russian Federation	12	31	65	92	140	6880
Slovak Republic	112	148	163	198	240	11780
Slovenia	80	108	289	365	433	17060
Ukraine	12	31	63	93	106	4270

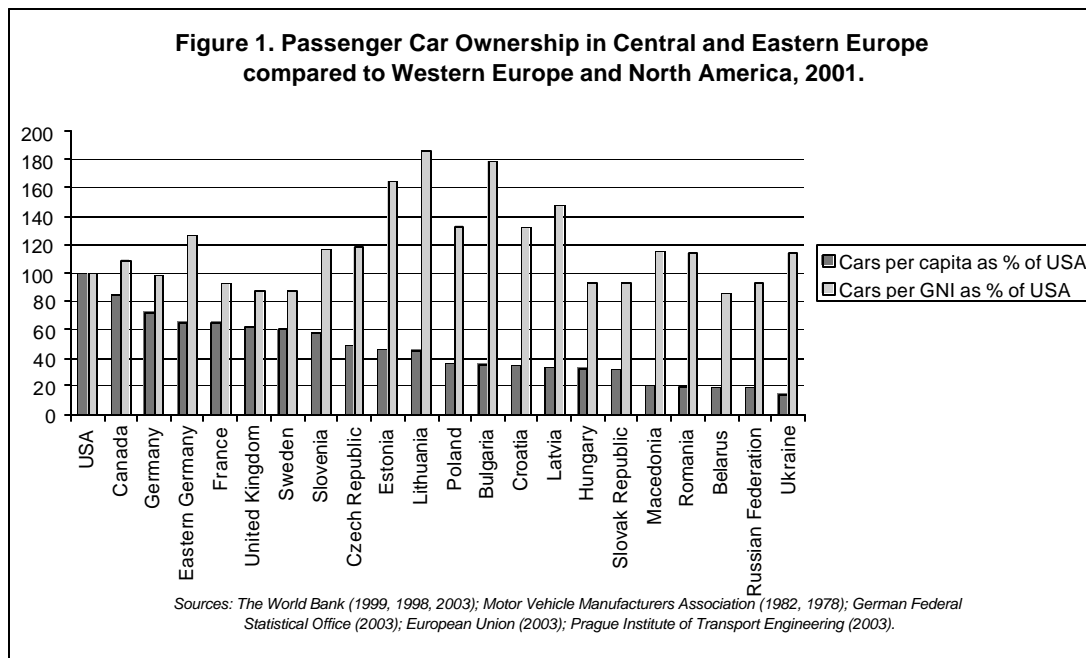
Note: GNI is gross national income. GNI per capita, as reported by the World Bank (2003), reflects the purchasing power parity of incomes in each country instead of simply exchange rates, which can be misleading and understate real incomes in poorer countries.

Sources: The World Bank (1999, 1998, 2003); Motor Vehicle Manufacturers Association (1982,

1978); German Federal Statistical Office (2003); Prague Institute of Transport Engineering (2003).

As one would expect, those countries with higher per-capita incomes in Table 1 also have higher levels of car ownership. Thus, Eastern Germany and Slovenia, which have by far the highest per-capita incomes among these formerly socialist countries, also have the highest levels of motorization. Countries such as Ukraine, Russia, Macedonia, and Romania have the lowest per-capita incomes as well as the lowest levels of car ownership. There is much variation, however, and data irregularities might help explain some anomalies such as Bulgaria, which reports a much higher level of motorization than would be expected from its very low per-capita income.

Figure 1 provides two alternative measures of car ownership to compare levels of car ownership in various countries of Europe and North America. The darkly shaded bars represent the traditional statistic of cars per capita, here expressed relative to the USA, which has the highest rate (748 cars per 1,000 persons). The lightly shaded bars show levels of car ownership per unit of real income or purchasing power, using the gross national income per capita of each country (purchasing power parity), as reported by the World Bank (2003), but also relative to the USA. While Figure 1 shows the expected decline in car ownership per capita from west to east, formerly socialist countries have much higher levels of car ownership than one would predict on the basis of per-capita income.



Note: Both motorization statistics are expressed here relative to the USA (index=100). Cars per 1,000 persons is the statistic most frequently used to compare car ownership among countries. Cars per GNI is a useful supplemental measure, however, since it reflects the number of cars per capita relative to average incomes in each country, using estimates for each country by the World Bank (2003).

There are several possible reasons for the weaker than expected relationship between car ownership and income. First, the statistic only considers the quantity and not the quality of cars. Thus, passenger cars in formerly socialist countries generally are older, often purchased as used cars, and considerably lower quality than those in Western Europe and North America. Second, it has been argued that the private car is

an extremely important symbol of economic and social status as well as personal freedom. Many residents of formerly socialist countries have purchased cars mainly to possess this crucial symbol of success and independence, often far beyond their economic means or actual transport needs (Pucher, 1995, 1999; Suchorzewski, 2002; Komornicki, 2003). Third, as car ownership reaches high levels, as in the USA, there is a saturation effect, so that higher incomes result mainly in more expensive cars instead of more cars. Conversely, at the lower end of the spectrum in Eastern Europe, increases are mainly in quantity, since overall motorization rates are still comparatively low. Finally, cars have become increasingly necessary in some Eastern European countries, especially in smaller cities and rural areas, as public transport systems have sharply deteriorated and fares have skyrocketed.

In addition, however, data problems surely underlie some of the strange patterns seen in Figure 1. Data on car ownership can be notoriously unreliable, based on different data collection techniques and statistical definitions. In many countries, for example, discarded vehicles are not properly de-registered and removed from the vehicle stock reported. National income statistics in some countries may be inaccurate as well, since black markets and hidden economies play a significant role in Eastern Europe, and are not reported in official statistics, thus understating real incomes and purchasing power.

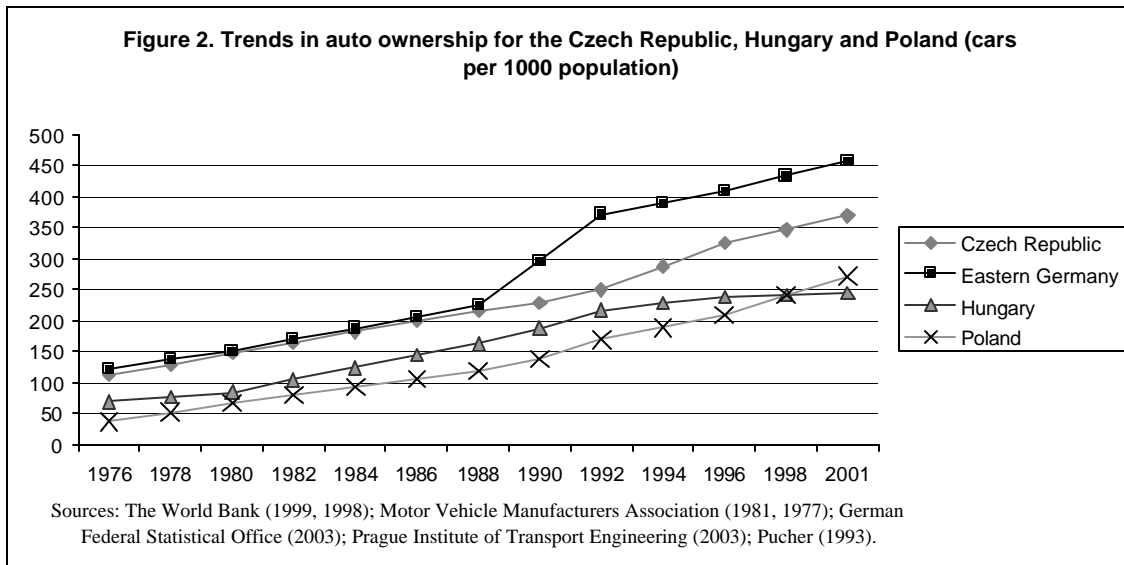
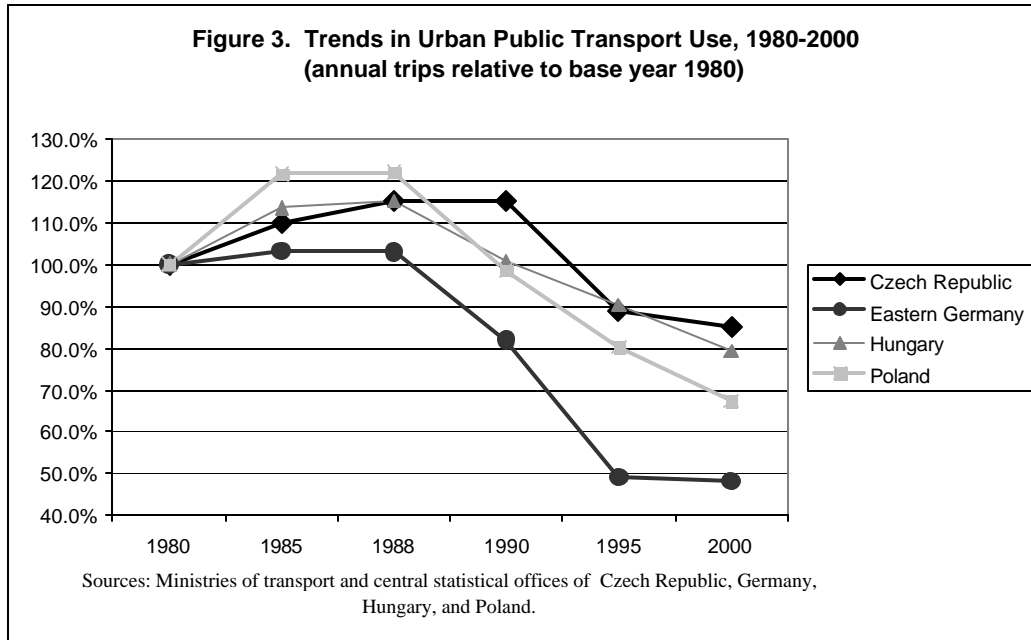


Figure 2 reveals in greater detail the early and particularly rapid growth in car ownership in Eastern Germany, with a 65% increase in only four years (from 1988 to 1992). In the same four years, car ownership rose by 42% in Poland, 33% in Hungary, but only 16% in the Czech Republic. Over the much longer period from 1992 to 2001, car ownership continued to grow, but at lower annual rates. Indeed, the 31% further increase in Eastern Germany over those 9 years was less than half as large as the percentage increase from 1988 to 1992. Likewise, the increase in Hungary was much smaller (12% vs. 33%). In sharp contrast, growth accelerated in the Czech Republic and Poland, with larger increases in the second period. As noted

later, differences in the timing of policy changes explain much of this variation among these countries in the timing of motorization growth.

While car ownership and use were increasing, public transport use plummeted in the late 1980s and early 1990s. Mirroring the sudden and dramatic jump in car ownership in Eastern Germany, public transport systems there lost almost half their riders in only three years after the fall of socialism (from 1988 to 1991). As seen in Figure 3, urban public transport use fell in all four of these countries, albeit with different timing. For example, it declined later and less in the Czech Republic than in Hungary and Poland.

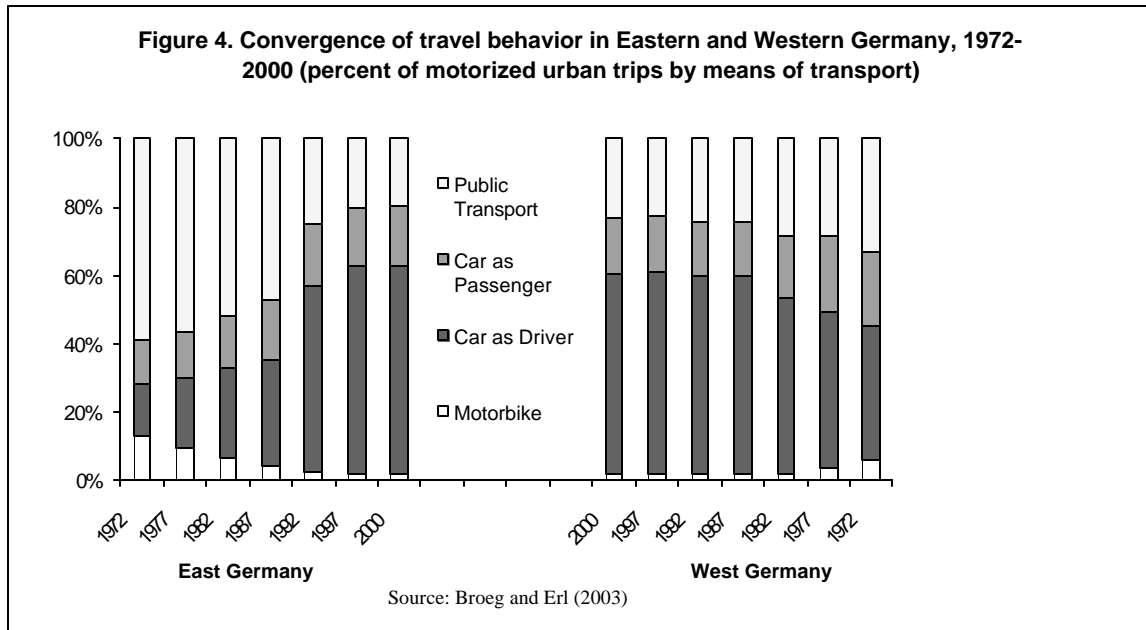


The situation has stabilized in recent years, with much slower declines, but the overall loss of passengers from 1988 to 2000 was stunning. Just as urban public transport use declined, long-distance rail travel declined as well—by 36% in the Czech Republic, by 26% in Hungary, and by 54% in Poland. Intercity and rural bus services suffered even larger losses of passengers—68% in the Czech Republic and 58% in Poland (Czech Statistical Office, 2003; Hungarian Central Statistical Office, 2003; Polish Central Statistical Office, 2003).

The obvious result of the rise in car use and fall in public transport use has been a dramatic change in modal shares of travel. From the mid-1980s to 2000, public transport's share of total *motorized* trips fell from about 75% -85% to only 50% -60% in large Polish, Hungarian, and Czech cities. Public transport has lost even more market share in small cities and villages, many of which now have virtually no public transport at all (Pucher, 1998; Suchorzewski, 1999 and 2002; Institute of Transportation Engineering, 2003).

Perhaps most striking is the complete transformation of travel behavior in the former East Germany. As shown in Figure 4, the distribution of urban trips by means of

transport in Eastern and Western Germany rapidly converged after 1987, so that modal trip distribution is now almost identical. Indeed, public transport now accounts for a slightly higher percentage of total *motorized* trips in the West than in the East (24% vs. 20%) while the reverse was true in 1987 (25% vs. 49%) (Broeg and Erl, 2003).



Just as the modal distribution of urban passenger travel shifted toward the private car and away from public transport, the railroad's share of freight transport has fallen sharply, while the transport of goods by roadway has risen. For example, the rail share of ton-km of total freight fell in the Czech Republic from 73% in 1990 to 25% in 2002. In Poland, rail's share of ton-km of freight transport fell from 67% in 1990 to 39% in 2002. Almost all of the freight traffic lost by rail has been shifted to lorries on roadways. Over the same 12-year period, total ton-km of freight by roadway tripled in the Czech Republic (from 14,951 mill. to 45,059 mill. ton-km.) and almost doubled in Poland (from 40,293 mill. to 74,403 mill. ton-km.) (Czech Statistical Office, 2003; Polish Central Statistical Office, 2003). Combined with the skyrocketing use of private cars, that rapid increase in lorry traffic has put an enormous strain on the limited capacity of roadway networks in Central Europe.

## SHIFTS IN LAND USE PATTERNS

Corresponding to these dramatic changes in travel behavior, land use patterns have also changed. Socialist cities in Central Europe were densely settled around public transport routes. Low-density suburban sprawl was virtually non-existent prior to 1990. Almost all new housing was government-built and government-owned, and it was concentrated in very high-density and appallingly ugly apartment complexes on the periphery of cities, because that was the only land available for such vast projects. Even in these peripheral settlements, there was little need for a car because they were well served by frequent public transport services to the center (Pucher, 1990).

The situation has changed considerably since 1990. Similar to the long-term trends toward decentralization in North America and Western Europe, most new construction has been in the suburbs (Sykorova and Sykora, 1999; Sykora, 2002; Pucher, 1999; Suchorewski, 1999, 2000, and 2002). In order to avoid the congestion and high land prices in large central cities, many firms are now locating on the periphery along key highways. Shopping centers are also emerging far from the center. Already by 2000 there were over 25 shopping centers and megastore complexes in the Warsaw suburbs (Suchorzewski, 2000). Most new housing is also being built at the urban fringe, but unlike the high-density apartment complexes of the Communist era, most housing units are now low-density single-family homes. Public transport services are sparse in these new suburban developments. Especially with the surge in auto ownership and use, suburbs are becoming entirely auto-oriented in their design and travel patterns.

Suburban sprawl is especially pronounced and problematic outside the confining political borders of many large cities. While some central cities themselves have retained strict land-use regulations and building codes on their territory, much new suburban and exurban development is in communities beyond their control. Land-use regulations there are far more lax than in central cities, and suburban towns are tempted to permit virtually any kind of development in order to attract jobs, tax revenues, and economic development away from the center. By comparison, there is less auto-oriented suburban sprawl in smaller cities, with their lower growth rates, lower incomes, and lower car ownership rates. Nevertheless, the trend toward dispersal is perceptible to some extent in almost every city in formerly socialist countries.

While the very strict land-use controls and high-density housing policies under Communism strongly encouraged public transport use, the recent trend toward low-density commercial and residential development at the suburban periphery obviously reinforces the trend toward more auto ownership and use. After decades of being forced to use crowded public transport and to live in monolithic, unattractive, and boring apartment complexes, the shift to the car and the flight to low-density suburbs are not surprising. In addition, the growing cadre of middle- and upper-class professionals and entrepreneurs are obvious customers both for new cars and for single family homes in the suburbs. Firms are locating in the suburbs for the same reasons they do in North America and Western Europe: convenience, lower cost, less regulation, greater land availability, less congestion, cleaner air, and access to the long-distance highway network. Now that firm location decisions are based mainly on profit incentives, the move is definitely to the suburbs, except for those specialized firms and headquarters functions that still need access to the core.

## **TRANSPORT POLICIES IN THE SOCIALIST ERA**

It is not difficult to find the causes of public transport's dominance in socialist countries. Partly as a matter of socialist ideology, Communist dictatorships ensured that private car ownership and use would be extremely expensive and difficult, while public transport

was widely available and subsidized to such an extent that it was almost free. Socialist governments set the costs of car ownership and operation very high through their system of regulated prices. In addition, they sharply restricted their own car production while prohibiting imports of Western cars, thus keeping the supply limited. In Poland, moreover, petrol was rationed from 1981 to 1988, leading to a black market in ration coupons that further increased the price of petrol for anyone wanting to drive more than was possible with the official allotment of 24 to 45 liters per month. There were long waiting times for purchasing new cars—over a decade in East Germany and Poland! The quality of cars was abysmally low. They often broke down, and it was difficult to obtain spare parts for repairs. Finally, the roadway network was primitive by Western standards, and there was a severe shortage of petrol stations, repair shops, and other service facilities for cars (Pucher, 1993, 1994, and 1995).

Until about 1970, Communist governments treated the private car as a luxury and a symbol of capitalism, materialism, and consumerism inimical to the very principles of socialism. During the 1970s, however, restrictions on car ownership had to be relaxed in response to growing popular demand for cars and other consumer goods. Most Eastern Europeans perceived the private car as a higher-quality mode of transport, and its limited availability made the car an important status symbol. Communist governments throughout Eastern Europe rationed the small supply of cars as rewards to the Party faithful. In some countries, the Communist Party used car sales to lure hard Western currency holdings from the general population, which otherwise had to wait over a decade to purchase a car. Even in the last days of socialism, however, car ownership was limited to a small minority, and increases in auto ownership were only grudgingly permitted.

Public transport, by comparison, was seen as being most consistent with a planned economy, with its limits on consumption, mobility, and locational choice. To some extent, restricted automobility probably helped Communist dictatorships keep their populations under control. Public transport users were literally “captive riders.” In contrast to the private car, public transport was treated as a basic necessity of life, to be provided to all at a negligible charge. Central governments in socialist countries provided generous financing for all public transport investments and operations. Yet, with the exceptions of metro systems in large cities such as Prague, Budapest, Moscow, and Leningrad, public transport services in socialist countries generally had much lower quality than public transport in Western Europe. In almost all socialist cities, buses, trams (streetcars), and trolley buses were often overcrowded, slow, poorly coordinated, and subject to frequent breakdowns (Pucher, 1990). Since they had no competition, public transport systems were hardly concerned about rider comfort or convenience. As in so many sectors of socialist economies, overstaffing, incompetence, lack of worker motivation, excessive bureaucracy, and extreme inefficiency also characterized public transport.

Nevertheless, public transport services were extensive, frequent, and cheap. Low fares were an especially strong inducement to public transport use because of the low per-capita incomes in most socialist countries. That was somewhat less true for East Germany, Hungary, and Czechoslovakia, which had the highest incomes of any of the



world's socialist countries, but still much lower than Western European countries. Most people simply could not afford to own cars, let alone use them for daily travel. Even as car ownership rose during the 1970s and 1980s, most cars were used for trips to the countryside on weekends and holidays or to garden plots on the outskirts of the city. As late as 1988, for example, only 10% of Czechs used a car for the journey to work (Institute of Transportation Engineering, 1992).

## **TRANSPORT POLICIES TRANSFORMED BY FALL OF COMMUNISM**

With the overthrow of Communist governments in Central and Eastern Europe from about 1989 to 1992, most of these transport policies changed. One important change was a sharp reduction in central government subsidy to public transport. Most of the burden of financing capital investment and operating subsidy was quickly shifted to municipal governments. Cities now pay the entire operating subsidy for public transport (except for some short-distance railroad services).

The situation for capital subsidies is more complicated and has changed over time. In recognition of a desperate need to renew aging rolling stock and improve deteriorated rights of way, some central governments have established special infrastructure funds with varying degrees of modest assistance. In the Czech Republic, for example, the central government offered to cover 30% of vehicle and infrastructure costs for electric trams and trolley buses, and 10% of bus purchase and rehabilitation costs. As in many countries, however, the local Czech governments were not able to raise the necessary matching funds, and the central government could not afford to offer the promised contribution. Central government subsidy programs in most countries have been completely eliminated and those remaining are often revised, subject to the vagaries of annual budgets. Metro systems in the large capital cities Prague, Warsaw, and Budapest receive some central government subsidies for extensions and modernization, but those special programs have varied from year to year according to annual parliamentary budget agreements. In general, the overall funding contribution of central governments is small and focused on rail projects.

The consequences of this funding cutback have been devastating for public transport, especially since local governments are in terrible financial straits and cannot offset the reduction in central government subsidies. With sharp reductions in subsidy, public transport systems were forced to raise fares drastically, both in absolute terms as well as relative to inflation, wages, and the cost of car ownership and use. In the six years between 1988 and 1994, for example, the price of a one-way tram ticket in Warsaw, Poland rose 400-fold, and the percentage of average hourly wage required to pay for that ticket rose from only 4% to 26%. While a liter of petrol cost eight times as much as a tram ticket in 1988, it cost only twice as much in 1994 (Mitric and Suchorzewski, 1994; Pucher, 1995). In Eastern Germany, public transport fares rose 10-fold from 1990 to 1992, while the price of petrol *fell*. A liter of petrol cost 9 times more than a one-way bus or tram trip in 1990, but *less* than a tram or bus trip by 1992 (Pucher, 1994). Those dramatic shifts in relative prices obviously spurred the shift of travel demand from public to private transport. The situation in the Czech Republic was similar, but not quite so extreme. One-way fares in Prague rose 7-fold between 1989

and 1998, while the price of a liter of petrol and the price of the average car both rose about 3-fold (Czech Statistical Office, 2003).

Not only did public transport systems increase fares, but they also curtailed services, especially in smaller cities. Since funds were not available for modernizing or even maintaining the existing infrastructure and vehicles, service also became less frequent, less comfortable, and less dependable. Thus, both the quality and quantity of public transport services fell in most countries.

The percentage of operating costs covered by passenger revenues rose as fares increased and services declined. In Poland, for example, it rose from an average of about 40% in 1988 to about 65% in 1998, but with considerable variation and generally higher cost coverage in smaller cities. In Budapest, cost coverage rose from 35% to 43%. As in Poland, however, it is currently much higher in smaller Hungarian cities (ranging from 84% in Debrecen to 98% in Győr) (Suchorzewski, 1999 and 2002).

Public transport usage also fell in many countries after the end of socialism because of high unemployment rates caused by the widespread bankruptcies and closings of many formerly state-owned, highly subsidized enterprises, especially in the manufacturing sector. With unemployment rates of almost 20% in Poland, Eastern Germany, and Hungary, there was a sharp fall in work trips beginning around 1990 and continuing throughout the decade. The Czech Republic avoided that problem for a while by continuing large subsidies to heavy industry, but as firm closings increased over the decade, unemployment rates rose there as well, from 0.2% in 1989 to 3.5% in 1995, 7.5% in 1998, and 8.8% in 2000 (Czech Statistical Office, 2003). That might help explain the much later fall in public transport usage in the Czech Republic than in Eastern Germany and Poland, as seen in Figure 3.

Just as government policies in Central Europe became much less favorable for public transport, they became much more accommodating to private car ownership and use. Virtually all restrictions on car ownership were removed, almost immediately opening up the Central European market to foreign carmakers. That greatly increased the quantity and quality of cars that residents of formerly socialist countries could buy. As an economic development strategy, some central governments (such as in Poland and the Czech Republic) have strongly promoted their own car industries through loans and subsidies for expanding and modernizing car production facilities (Pucher, 1999; World Bank, 2002).

Although budgets have been strained at every level, many central and local governments have been devoting considerable expenditures to improving and expanding roadway networks, focusing on high-speed arterials, suburban beltways around cities, bottlenecks at key intersections, and connections to the main intercity and international routes. Thus, the supply of roadway infrastructure is increasing, although much more slowly than the rapid increase in car and lorry use. Similarly, most governments in Central Europe still, in effect, set petrol prices, either directly or by determining the level of petrol taxation. As noted previously, no central

government has raised petrol prices by as much as local governments have raised public transport fares.

In other respects as well, restrictions on car use were either lifted or not enforced. That was especially true of parking, which became very problematic in large cities. In the first few years, parking regulations in both Polish and Czech cities were largely ignored, leading to what some officials described as “parking chaos.” Since then, some cities have set up zonal parking systems enforced by private parking management firms. Nevertheless, the total supply of parking spaces has greatly increased, much to the detriment of historic central cities. In Prague, for example, many of the most scenic squares have been turned into virtual parking lots (Pucher, 1999).

Buses and trams are increasingly stuck in the traffic congestion generated by the skyrocketing car and lorry use. That obviously slows them down and further decreases the quality of public transport relative to car travel. A few cities like Prague have begun introducing bus lanes and traffic signal priority for buses and trams at key intersections. Most cities, however, have undertaken no traffic priority measures at all to facilitate public transport movement on increasingly congested roads. Similarly, car-free zones and traffic-calmed neighborhoods, which are so common in Western Europe, are rare in formerly socialist cities of Central Europe, although a few cities such as Prague have restricted car access to parts of their historic cores.

## **PROBLEMS OF MODAL SHIFT IN CENTRAL EUROPE**

While the dramatic shift from public transport to the private car generally reflects consumer preference for the convenience, comfort, speed, flexibility, independence, and status of the car, it has generated some serious problems: rising roadway congestion, parking shortages, air pollution, noise, and traffic crashes. In only three years between 1988 and 1991, traffic fatalities jumped by 34% in the Czech Republic, 43% in Hungary, 71% in Poland, and 109% in Eastern Germany (Pucher, 1993, 1994, 1999). The sudden increase in car use, especially with faster and more powerful Western cars, overwhelmed the limited and dangerously designed roadway network. In addition, speeding and reckless driving increased, since enforcement of traffic regulations was lax in the first few years after socialism, partly as a reaction to the repressive police states that had existed previously. Driver training was also much less rigorous than in most Western European countries. Since the early 1990s, roadway improvements, safer cars, better driver training, and stricter enforcement of traffic laws have all led to improvements in traffic safety in Central Europe. For example, traffic fatalities in Hungary fell by more than half from 1992 to 2000, with current levels lower than during the socialist era (Hungarian Statistical Office, 2002). The traffic safety improvements have been less impressive in the Czech Republic and Poland, but even there, fatalities have declined since 1997, by 5% and 14%, respectively (Czech Statistical Office, 2003; and Polish Central Statistical Office, 2003).

Likewise, some other acute problems that developed with the sudden jump in car use after the fall of socialism have been mitigated over the years since then, as adjustments to policies were possible. Thus, unleaded petrol is now available throughout Hungary, the Czech Republic, and Poland, and most cars have catalytic converters. That has reduced the severity of certain kinds of pollution (NO<sub>x</sub>, CO, and airborne lead, for example). Yet some problems such as traffic congestion and parking shortages have gotten even worse as traffic volumes continue to increase more rapidly than roadway and parking supply. Traffic management in formerly socialist countries is still primitive or non-existent in most cities, exacerbating whatever problems the limited roadway capacity causes. The modest improvements in roadway infrastructure during the 1990s have helped divert thru-traffic away from some city centers. Similarly, completion of some key missing links in the roadway network has also helped. Nevertheless, the lack of funding makes it virtually impossible to keep up with the rapid growth in roadway travel by private cars and lorries.

## **FURTHER ADJUSTMENTS TO TRANSPORT POLICIES**

In response to the problems that came with sudden increases in private transport and the equally dramatic decline in public transport use, some countries have recognized the need to adjust their policies. In particular, there is growing recognition that unfettered car and lorry use cause significant social and environmental problems and that certain measures must be undertaken to control the negative impacts of private passenger and goods transport. We have already noted above some increasing restrictions on car use, such as stricter parking regulations, safety and environmental standards, driver training, and enforcement of traffic regulations. Tolls are also being charged on some motorways, forcing motorists to help finance them.

For the most part, however, there is so much political support for accommodating increased car ownership and use that it is difficult to implement policies that would greatly inconvenience motorists or significantly raise the price of driving. Perhaps the most frustrating problem is the refusal of local government officials to give buses and trams the traffic priority they need to insulate them somewhat from the seriously congested streets in many cities. While most Western European cities long ago instituted bus lanes and priority traffic signals to ensure fast movement of buses and trams, only a few Central European cities have even begun to adopt such crucially needed measures.

Nevertheless, local governments have at least given more attention to public transport as an essential part of the urban transport system. After the initial shock of the sudden transition to capitalism around 1990, public transport systems have been gradually recovering in recent years. As seen in Figure 3, passenger levels have stabilized in many Czech, Hungarian, and Polish cities. Thanks to cooperation from Western European experts and counterpart systems, many Central European public transport operations have tried to improve the quality of their service, modernize their vehicles and infrastructure, and increase the efficiency of their operations. Prague's system, for example, has a partnership with the Paris public transport system (RATP), which

provides frequent expert advice and assistance. The explicit focus has been improving and monitoring service quality.

While many municipal governments have undertaken vigorous measures to improve their public transport systems, their efforts have been largely frustrated by car-friendly central governments, which have provided very little funding, technical support, coordination, planning, or other guidance. Indeed, the ambitious road building policies of central transport ministries have encouraged more sprawl and car use, thus further worsening the chances of rebuilding public transport's customer base.

In spite of the increasingly adverse environment for public transport, significant improvements have been achieved. Many cities have transformed their systems into publicly owned corporations, with considerable managerial independence for actual operations. While city governments still own the public transport systems and set overall fare and service policies, the corporate management team has more leeway to improve the efficiency of operations. That has increased customer orientation and focus on service quality. Some cities have also been selectively privatizing parts of their operations. Thus, Prague's suburban bus routes are run by private operators under contract to the main public transport system. In spite of longer routes and lower vehicle occupancy in the suburbs, the lower costs of privately run services enable the expansion of bus routes to outlying areas with minimal subsidy.

Even without adequate support from central governments, many local governments have undertaken a range of measures to improve their public transport systems. Several cities have built new light rail lines (fast trams) or extended metro systems. Many cities have reconstructed tram tracks and track beds, modernized metro stations, and gradually replaced their aging bus, tram, and metro fleets with modern, Western-style vehicles. Some cities have also rationalized fare structures, improved fare collection systems, and introduced real-time information for passengers at tram and metro stops. Funds for public transport are so limited in most cities, however, that only a fraction of the necessary improvements can be implemented. That makes it difficult to keep up with the ever-increasing competition from the extremely popular private car, especially in the face of rampant suburban sprawl, whose low density, polycentric layout, and multi-destinational travel patterns are so adverse to public transport.

## **IMPACTS OF EUROPEAN UNION POLICIES ON ACCESSION COUNTRIES**

For two reasons, social, economic, and transport policies in many formerly socialist countries in Central and Eastern Europe are becoming increasingly like the policies of Western European countries. The differences that developed during more than four decades of socialism after World War II arose from Europe's artificial political and economic division by the Iron Curtain. Central European countries, in particular, had been an essential part of Europe for many centuries, so the lifting of the Iron Curtain enabled the return to Europe of countries that had long belonged anyway. Thus, it is only natural that Central European countries would quickly gravitate in many ways

toward their Western European neighbors. For certain countries, however, there is the additional factor of impending membership in the European Union, which has explicit transport policies that all members must adhere to. Hungary, Poland, the Czech Republic, Slovakia, Slovenia, Lithuania, Latvia, and Estonia are among the new members that will join the EU in May 2004. Especially since harmonization of transport policies is a top priority of the EU, the impacts on transport systems and travel behavior are likely to be considerable (World Bank, 2002; Peters, 2003; Harrop, 2000). Indeed, accession countries already started adapting their policies to EU requirements in the 1990s as a pre-condition for approval as EU member states.

For the most part, EU transport policies affect long-distance transport, since they are aimed at restoring rail and road connections that had been interrupted during the Communist era. Thus, the Trans-European Transportation Networks (TEN) program established crucial north-south and east-west corridors that expressed the particular importance of improving transport links between all parts of the EU. Those TEN corridors have been extended through the intended accession countries and beyond. Fourteen specific projects were identified for Central and Eastern Europe (Turre, 1999). Most of them involve improvements in long-distance connections between the capital cities of Europe.

The EU assists in funding Central and Eastern European road and rail projects in these priority corridors both indirectly, through the European Investment Bank (EIB) and the European Bank for Reconstruction and Development (EBRD), and directly, through the EU Structural and Cohesion Funds and the TEN budget. Until 2004, however, transport infrastructure projects relied for most of their funding on the national budgets of each country, with some additional funds from private investment capital for a few selected projects. The tight budgets of most governments in Central and Eastern Europe explain the slow progress of many planned projects within the TEN corridors (Peters, 2003).

Starting in 2004, however, EU funding for transport infrastructure improvements in Central and Eastern Europe will greatly increase for the new member countries. Moreover, further increases are planned around 2007, when the EU is scheduled to initiate its new 7-year cycle of European Regional Funding, which will for the first time include the new EU members in Central and Eastern Europe. The specific EU-approved projects and funding levels for these future years have not yet been determined, but it is certain that the EU will be providing a substantial portion of the funding. The overall increase in funding will facilitate the completion of planned projects that had been delayed by lack of financing prior to joining the EU.

EU transport policies only indirectly influence urban transport policies, since the EU explicitly states that urban transport is a local issue to be determined at a lower level of government. Nevertheless, some long-distance road and rail projects have clearly influenced urban transport. For example, the EU, EIB, and EBRD provided funding for the ring road around Budapest, which has unquestionably affected the urban transport network, generally encouraging more car use and suburban sprawl (Peters,

2003). Likewise, the EIB and EBRD have helped fund a few urban projects like the Warsaw Metro and Krakow tramway (World Bank, 2002; Suchorzewski, 2002).

EU vehicle emissions and fuel standards will eventually apply to all roadway transport in the new member countries (Volkswagen, 2004; Europaeische Umweltagentur, 2002). New cars and trucks will soon have to meet the strict Euro III Standard that became effective January 1, 2001. It requires further reductions in tailpipe emissions of carbon monoxide (53%), hydrocarbons (67%), and nitrogen oxides (68%) relative to the Euro I Standard that became effective in 1992 and required catalytic converters on all cars (Department for Transport, 2003). The even stricter Euro IV Standard that becomes effective January 1, 2006 will require further tailpipe emissions reductions (relative to Euro III) in carbon monoxide (43%), hydrocarbons (33%), and nitrogen oxides (50%). The EU also sets standards for fuel composition to require successively cleaner fuels. Thus, the EU seeks to reduce transport-related air pollution not only by requiring cleaner and more efficient engines and catalytic converters but also by mandating cleaner fuels.

The EU requirement for open competition in the provision of local transport services will affect the organizational structure and economic performance of local public transport systems. Thus, Central and Eastern European countries will eventually be forced to change their legislation to conform to EU regulations that promote cross-border competition. There is the possibility that Western European firms might eventually operate many Central and Eastern public transport systems under contracts won in a competitive tendering process.

## **CONCLUSIONS AND POLICY RECOMMENDATIONS**

After the turbulent decade of the 1990s, the new millenium has already brought more gradual change to the countries of Central and Eastern Europe. Much of the rapid increase in motorization was simply to catch up to Western European levels. With a much smaller gap now between car ownership rates in Western and Central Europe, there is less catching up to do. Car ownership and use will surely continue to grow, just as they are continuing to grow throughout Europe, but the growth will be far less explosive than during the 1990s.

Similarly, it seems likely that public transport use will continue to decline, but more slowly than in recent years. It certainly will not return to the artificially high levels of the Communist Era. Public transport systems throughout Central Europe are making efforts to expand and improve their services. They are fighting a difficult battle against the extremely popular private car, however. Even if they eventually manage to attain a Western European standard of service quality, the best they can hope for is to stabilize usage at current levels. With public transport's modal split share falling throughout Western Europe—in spite of superb public transport systems—it is certain that public transport will be serving a lower and lower percentage of urban trips in the formerly socialist countries of Central Europe as well.

These trends mean that the countries of Central Europe will have to deal with the sorts of urban transport problems plaguing Western European cities for many years, the same problems that emerged so suddenly in formerly socialist countries during the turbulent 1990s: congestion, air pollution, noise, accidents, parking, and transport finance. Central European policymakers and researchers are already looking to Western Europe for guidance, and they have already begun adopting the same policy measures used in the European Union. Technological improvements in car design, for example, should help mitigate the air pollution, noise, energy use, and safety problems. This is already evident in the new cars Central Europeans are now purchasing, partly because they were manufactured in Western Europe anyway. The most common Czech car, the Skoda, was vastly improved after the Skoda Company was bought by Germany's Volkswagen Corporation.

Congestion and parking problems will probably remain as intractable in Central European cities as in the rest of the world. Elaborate pricing schemes (such as in Singapore) are virtually inconceivable, since there is still a strong backlash to the repressive controls under Communism. Expansion and refinement of the current, crude system of differential parking fees would probably help resolve the parking problem, and if well designed, might mitigate congestion in central cities as well. As Western Europe and the United States have learned, massive additions to roadway capacity will not solve the congestion problem, since they generally induce more traffic and more suburban sprawl. Nevertheless, it is clear that the current roadway system in the Central Europe needs some key new links to fill gaps. Moreover, at least some additional capacity must be provided to meet the huge new demand for car and lorry use that has emerged during the 1990s and which will surely continue to grow in the coming years, even if at a slower rate.

Central governments must take on more responsibility for urban transport. At the very least, they should help cities by supporting research, disseminating information about best practices, and establishing a legal framework for regional intermodal coordination of public transport systems. Moreover, local governments desperately need the financial assistance of central governments for crucially needed capital investment—through direct subsidies as well as loan guarantees. Local governments, for their part, must give buses and trams the traffic priority they need. Surveys indicate that the majority of Central European citizens support giving public transport traffic priority even though that requires restrictions on car use (Suchorzewski, 2002). Local politicians should finally implement policies that reflect those preferences.

With their membership in OECD, NATO, and now the EU, Central European countries will have to conform to all EU regulations, laws, and standards for transport. Moreover, Central Europe seems to look toward Western Europe as its model anyway. Thus, the transport systems in Central Europe will become increasingly similar to those in Western Europe. Central European countries could benefit from decades of Western European experience. Although all EU countries depend primarily on the automobile for passenger transport, most of them offer excellent public transport systems and attractive environments for walking and bicycling.



Achieving such a balanced transport system will not be possible without the vigorous support of Central European governments at every level.

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