EUROPEAN SPATIAL RESEARCH AND POLICY

Volume 6 1999 Number 2

https://doi.org/10.18778/1231-1952.6.2.02

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TRANSPORT INVESTMENT AND LOCAL AND REGIONAL DEVELOPMENT:

perspectives on the emerging motorway system in Poland

Abstract: The planned Polish motorway programme is argued to have beneficial effects on the local, regional, and national economy. Similar arguments were heard during the development of West European motorway systems. The role of such arguments in the development of the Polish system is examined in the light of the results of current research in the UK. The topic has particular importance in Poland as forecasts of interurban traffic are likely to be insufficient to finance more than limited sections of the proposed toll motorways. Pressure for greater governmental support for the network means that possible 'non traffic' justifications for construction are more important.

Key words: transport infrastructure, motorways, regional development.

1. INTRODUCTION

The provision of good quality infrastructure is frequently said, especially by commercial lobbies and local authorities, to be important for local and regional development, encouraging the growth of existing firms, and attracting new firms to depressed areas. For Eastern and Central Europe, the European Union has emphasised the Trans-European Route Network which integrates the main road network of this region with Western Europe by a network of high quality motorways. However, traffic forecasts suggest it may take longer than anticipated for traffic volumes to increase sufficiently to meet the required returns on investment. Demands for greater financial participation by host

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governments to make possible earlier starts on key routes put greater emphasis on non-traffic justifications, such as regional benefits, for construction.

This paper looks at this situation in relation to the Polish motorway network. This has a key location in the extension of motorway networks east from the European Union. The paper reviews firstly theoretical and empirical evidence from the UK, where the issues surrounding the potential impact of transport infrastructure on local and regional economic development are again topical. The paper then considers the situation in Poland, and progress on the development of its motorway network, the role of indirect economic benefits in its planning, the evidence emerging on local expectations of benefit from being linked to the motorway system. It then examines how the most recent research discussed earlier in the paper applies to the country as a whole, and to particular parts of it.

2. THEORETICAL AND EMPIRICAL EVIDENCE

In an era of concern with sustainable development, pressure to reduce the global environmental impact of transport meets the counter argument that if expenditure is cut back on support to transport investment it will harm economic growth and job creation, and impact on local and regional development. While this is currently a key question on the policy agenda in the UK, it is not just a UK question. The conflict exists at a general European Union level. In Eastern Europe environmental pressure groups argue against proposals for heavy investments in motorway systems, even where the economic growth and jobs argument seems more urgent. In the UK, there is a political pressure to give a clear and unequivocal answer to this question. Currently, the Standing Advisory Committee on Trunk Road Appraisal is examining this issue. The section will review research which derives from a UK and West European context. Subsequent discussion will consider how this research applies to Central and Eastern Europe, and Poland in particular.

The need to study arguments about the effect of transport investment on local and regional development issues arises from different angles. One may be simple project appraisal issues. Standardised cost-benefit procedures focus on the direct transport benefits of an investment. The argument is then raised that such procedures do not take account of indirect benefits: new roads, for instance, may be said to encourage the longer term restructuring of the economy, and the standard cost-benefit procedure ignores this. Hence, the interest here arises from general procedural needs, to assess if the outputs of appraisals need to be weighted in some way to reflect uncounted developmental

benefits. An alternative need for evidence may arise from issues around regional planning, and assessments of strategies which will boost a lagging region, or else avoid bottlenecks which may hold back development in a growing region. The justification of transport infrastructure in an overall development strategy may relate to either of these. The question is not so much the aggregate return on the investment, but its distribution.

The key question then initially is whether there is any reason to believe that an investment appraisal does not accurately measure the return to the economy of a transport investment. Theoretical analysis (e.g. Gwilliam, 1970; Dodgson, 1973) until recent years suggested that a conventional economic evaluation of a transport project will provide a reasonable reflection of its worth to an advanced economy with an already well-developed transport infrastructure. In a situation where empirical analysis is difficult, this conclusion will suffice where most of our practical interest is focused at a more disaggregate and sub-national level. In fact, most of the research carried out so far has focused on the impact of transport investment on the interregional distribution of development.

Transport investment as a way of reducing regional disadvantage is an uncertain policy tool. If a depressed region's industries are weak, then making a region more accessible may open it up to even more competition and make it worse off than it was before. Whether improved communication makes depressed regions more attractive to locate in is also open to question. Studies of industrial transport costs suggest that transport costs are only a small proportion of total costs (Diamond and Spence, 1987, suggest 6.6% of operating costs), and moreover that interregional variations in transport costs are not great (e.g. Chisholm, 1987, says 1963 and 1974 transport expenditure by Scottish manufacturing firms was almost identical to the national average). Tyler and Kitson observe that these findings seem:

> ... out of place with the emphasis by government on transport policies, used to stimulate economic development in peripheral areas through the improvement of accessibility and lower transport costs (Tyler and Kitson, 1987: 63).

Alongside such general evidence, much research has focussed on individual transport investments. These have been variously summarised (e.g. Department of Transport, 1977; Rietveld and Nijkamp, 1993; Grieco, 1994) though the number of studies carried out in the UK is limited. The findings of all the studies carried out over 25 years in the Yorkshire and Humberside region of the UK are summarised in Judge (1995). Overall, the results of both British and other studies (Hey *et al.*, 1996, give a gloomy view at a European level) seem to be almost uniform in their findings that major transport investments do not seem to make much difference to the prospects of the regions that are meant to benefit from them (this is not, of course, to say that they are necessarily bad

investments from a cost-benefit view point). On the contrary, research on the overall impact of the trunk road network (Botham, 1983) (rather than on small parts of it) suggests that the UK region likely to have benefited most from the interregional redistribution of jobs due to the network is the West Midlands. This is the reverse of what regional policy would have intended. Of course, though a region may lose or gain employment as a result of a motorway investment, there may be the additional effect of redistributing within the region this increased (or reduced) quantum of jobs as a result of microlevel location decisions of firms.

The most recent work, which has only been published so far as a brief interim report, is that of the UK Standing Advisory Committee on Trunk Road Appraisal. The report concludes that

> The available evidence does not support arguments that new transport investment in general has a major impact on economic growth in a country with an already well-developed infrastructure (SACTRA, 1998, §3: 1).

However, it concedes that there are circumstances where the results of cost benefit analyses undertaken in imperfectly competitive economies may underestimate or overestimate the net benefits of a road investment. Research commissioned by the Committee, and to be featured in the finally published report (now expected in December 1998), provides a theoretical framework for examining linkages between transport and the economy which may provide guidance as to the circumstances in which improved interregional transport links may work to the advantage or disadvantage of peripheral regions, or of industrial sectors within regions. However, it is not yet clear whether the data would be available to make operational the theoretical predictions (derived from input-output type models) and come to a practical judgement. Much of this work derives from work in the field of the 'new economic geography' which provides some exciting new research perspectives which seem particularly relevant to the Polish situation. Conclusions are based on results from small scale models, and there appears to be little empirical work as yet:

> An unfortunate feature of much of the new theorising since the 1970s is that it has failed to lead to much validating empirical work (Krugman, 1998: 172).

It is now appropriate to move on to consider Poland, and after this the situation there will be aligned with the preceding discussion.

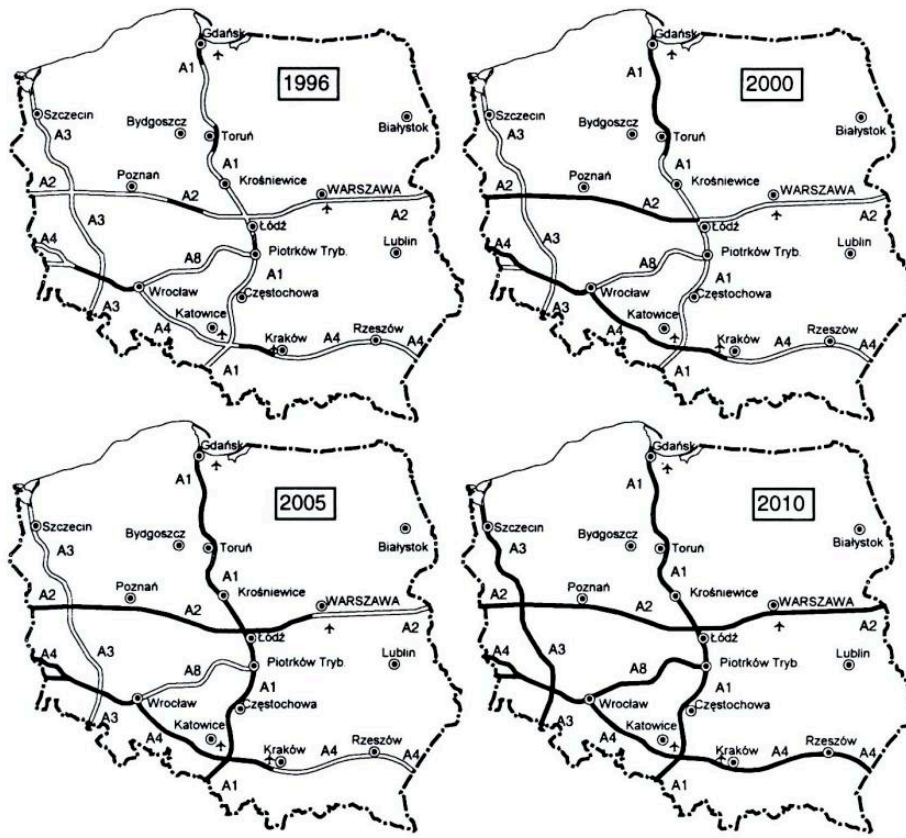
3. THE DEVELOPMENT OF THE POLISH HIGHWAY AND MOTORWAY NETWORK

The open borders after 1989 have generated tremendous international traffic, which has combined with similar internal traffic growth (Judge, 1996). Up to the present time this traffic has been carried on a road network which has not only not been designed for it, but which has been badly maintained (figure 1 illustrates the existing national road system). Thus the most recent report (BPRSD, 1997) stated that in 1996 72% of the surfaces of the national road network were in a 'Bad' or 'Unsatisfactory' condition. Current interurban road speeds are poor with a relative lack of bypasses necessitating the passage of large volumes of traffic through the centres of large, small and medium towns.

Source: NFEPWE (1997), fig. 3.1.

Fig. 1. The existing road system in Poland

Thus the rapid growth in traffic and the prospect of entry to the European Union soon led the Polish government to look at previous motorway plans. The evaluation and updating of plans prepared in the 1970s and 1980s culminated in new proposals (MTME, 1993) and legislation in 1994. As indicated in figure 2, these consisted of a motorway network of 2,600 km consisting of two main east--west routes (A2 and A4), and two north-south routes (A1 and A3), plus a few other sections. The key proposal was that the motorways would be built as tolled motorways with predominantly private finance, while the expressways would come within the public road system financed from government sources. The report's recommendations were enacted in the 1994 Act on Toll Motorways. The implementation of the planned system obviously had to be staged, and the envisaged progress at different dates up to completion is illustrated in figure 2 (note that these dates are now subject to substantial delays, possibly made worse by the economic crisis in Russia).



Source: NFEPWE (1997), fig. 4.4.

Fig. 2. Phasing of Polish Motorway Development Programme

4. THE ROLE OF THE POLISH MOTORWAY NETWORK IN LOCAL AND REGIONAL DEVELOPMENT

This can be considered from three angles. Firstly, there is the role this issue had in the 1993 planning exercise. Secondly, there is the role it has at the current level of implementation. The latter has three aspects: firstly, its role at a central authority level of implementation; secondly, its role at a local authority level; and thirdly, its role at the level of the individual, public and firms. Third, we may consider this topic in relation to the current state of knowledge as discussed in the initial part of this paper. The rest of this section will consider the initial planning stage, and the current phase of implementation at central authority level. Section 5 will consider responses to implementation at a local authority level, and the level of the public and firms. Section 6 will consider the theoretical perspective, and in what directions it might lead us in interpreting the likely impact on regional and local development in reality as a result of the development of the network.

In considering the role of benefits to regional and local development in the initial planning work, hardly any of the latter was formally published, and exists only as internal working documents. However, from the meetings with a range of individuals closely connected with the planning process, and from those documents available, it is possible to make a broad overview. A fairly large exercise looking at the likely economic effects of building the motorway system as part of the overall evaluation exercise was carried out at the Institute for Research on Roads and Bridges in Warsaw. A summary of the overall work from 1992 (IBDM, 1992) includes a section entitled *Effects resulting from the building of motorways*. This forecasts increasing employment in firms building roads and bridges, and producing road materials of about 25,000 per year from 1993–1998, 31,000 from 1998–2002, and 44,000 from 2003–2007, plus thereafter about 6,000 jobs in motorway maintenance. In addition, the report forecasts additional employment in investments and economic activity springing up in the regions traversed by the motorways: this employment will be 5–10 times greater than the employment generated by the building work itself. There will be additional employment in cement works, steel works and plants producing asphalt: additional demand will be, for instance, 175,000 tons of cement annually. Reduced unemployment benefits paid to those finding work in construction, plus taxes paid by them, will benefit the State Treasury by 40 milliard old złoty, and expenditures generated in the corridors affected by the motorways will be five times greater than this. There will be increased tax revenues and increases in land values, all of which are estimated. The 1993 report of similar title from the Ministry of Transport (MTME, 1993) goes over similar ground in greater or lesser detail.

The calculations are based on World Bank recommended procedures. However, one must presume that, without seeing the detailed calculations, these economic benefits are simply different ways of expressing the directly measured user benefits, and are not argued to be new additional benefits. This is not, however, to doubt the relevance or interest of these effects in particular parts of the country which are directly affected. However, it is also worth noting that any large investment programme will have knock on or multiplier effects, and will create new jobs in situations of unemployment. The key issue, of course, is longer term job creation, and the usual problem is to show that all the changes that seem to flow after the building of a new motorway are much different to what might have happened anyway over a larger area and in a more diffuse way.

As we come, only a few years later, to 1997 and 1998 where concessions have been, and are being allocated, one may ask what the significance of these calculations of indirect effects is at central government and agency level. On the one hand, these indirect benefits are quoted in material of a promotional nature. Thus, the first Polish Motorways Supplement the weekly "Warsaw Voice" (April 16th 1995) had an opening article by the then Polish Minister of Transport (Liberadzki, 1995) entitled *Foundations for an economic boom*. Later in the same supplement, it is pointed out that in addition to all the direct transport benefits (e.g. 30–40% reduction in travel time):

> The program will also stimulate the economy, especially in regions where the motorways will be built... . Some 150,000 to 200,000 new jobs will be created in travel centres, hotels, service centers and stores which will be built along the motorways (Liberadzki, 1995: 12).

On the other hand, given that the motorway programme is being developed as a tolled system, the necessity to devise 'bankable' projects with international institutions means that the indirect effects of investments on regional and local development seem to play no practical part, *de facto*, in decisions on particular concessions. The key factors are that within the parameters for environmental protection and impact, a concession has to be sufficiently profitable to repay the bank loans raised to finance the construction. This places the onus on the traffic forecasts from which are derived ultimately the toll revenues. Herein lies the problem at the present stage of network development, inasmuch as the desire of the Polish government to limit its investment to about 15% of the total (mainly in the form of land purchases) means that the forecast traffic levels combined with the toll levels thought feasible are possibly insufficient to provide viable returns on many, if not most, concessions. Hence, there are arguments that the Polish government ought to raise its capital share to up to 50%, to make the private element viable. In other words, the government must foot the loss in financial terms, and then the question is what does it get in return? Benefits to

regional and local development is one answer, but whether that will be the case is the subject of discussion below (cf. Judge 1998a, 1998b).

5. LOCAL EXPECTATIONS OF BENEFIT FROM THE NETWORK

This section considers the role of motorway/highway investment in local and regional development in terms of expectations of benefit at a local authority level, and at the level of the individual, public and firms. There is at the present time, so far as the writer can establish, no body of published research on this issue, and hence the discussion of this section is drawn from a variety of sources, in particular, interviews with many relevant individuals in local authorities, agencies, and institutions in the locations mentioned, plus the scanning of press archives in a number of local authorities and government agencies (which provide a broad indication of the issues which generate concern with the general public). By comparison with the experience of the UK in the 1960s and 1970s, the expectations of the general public in Poland about the likely economic impact of the new motorway system are relatively low key. In the UK there were usually very high expectations that a new motorway would definitely bring enhanced prosperity, new firms and jobs. Whether this was established in fact was seldom checked, and indeed the possible effects would, in a relatively advanced economy, be very difficult to disentangle from all the other changes taking place. In Poland, by comparison, the impression is one of greater concern with the environmental and direct adverse impacts, rather than with positive economic benefits. These reactions may be attributed to the greater immediacy of the environmental impact compared with the uncertain nature of positive economic effects. Thus, the celebrated case of the routing of the A2 Berlin-Moscow motorway through Warsaw is symptomatic. Although it will be several years before the route is built, the finality of actually fixing the route has generated enormous opposition (cf. Judge 1998b). Positive economic arguments in support are difficult to find.

Local authorities, in terms of *gmina* councils and (former) *voivod* administrations present a rather different picture. The general impression gained from a variety of sources and direct interviews is that local authorities are responding to the presence or absence of new highways near to them in different ways. Sometimes responses with relevance to anticipated economic benefits have to be attenuated in relation to the concerns of elected councillors about the anxieties of constituents on environmental and general impact issues. However, once these issues are set on one side, a number of strands of discussion emerge. The advantage of a good location on the motorway or interurban road network is

progressively being incorporated into the promotional activities of the *gminas*, and also into local development strategies. And if *gminas* see themselves as not adequately served by the new proposed networks, lobbying is taking place to modify plans to remedy this. Equally, the issue of phasing of construction in relation to location on the network is important. And finally, the key question is: is there any evidence of actual activity in advance of construction?

The following discussion gives an overview of some of these issues in relation to the country as a whole. The writer has had discussions with local authority representatives in a number of key locations on the network. Overall, they all seek to emphasise that they will be highly central and accessible. Three locations as an example where this appears to be most highly accentuated are Łódź, the Gliwice/Katowice area, and Wrocław. Łódź is at the crossing point of the A2 (Berlin-Moscow) and A1 (Gdańsk-Southern Europe) motorways. A combination of circumstances could accentuate the benefits it might accrue from its motorway location. Thus, the decline of its textile industrial base after the breakdown of the Soviet trading system after 1989 led to an upsurge of small textile businesses using auctioned machinery and innate skills. This combined with an upsurge in free market cross border trade with merchants coming from the former CIS countries to barter goods and carry back finished products in small or large quantities to sell on. This trade produced a rash of 'bazaars' around the country. The largest bazaar in Poland is at Tuszyn some 15 km south of Łódź. Hard figures are difficult to come by, but it is thought (prior to the imposition of EU visa regulations at the Ukrainian and Bialorussian borders in early 1998, and, possibly more importantly, the effect of the Russian economic crisis later in 1998 – Russian imports fell by 50% in September 1998) that the trade going through this bazaar was of the order of $ 2 billion per annum. The products of the Łódź workshops go straight to the bazaar for onward carriage to the east in coaches, vans and private cars. The expectation is that the A1/A2 will increase the 'pulling power' of the area and bring even more business. This potential is publicised in the promotional material of Łódź City Council. Other more concrete responses relate to the location of new 'economic zones' and freight transport interchanges accessible to the motorways. The regional strategy says that insufficient advantage is taken of Łódź's present location (Łódź Regional Development Agency, 1997: 59).

Gliwice and Katowice represent if anything a more interesting case. They are two main centres of the Silesian conurbation, the main industrial region of Poland. On the maps of figure 2 it can be seen that they are already served by sections of what will be the A4 and A1 and A3 motorways. Last year the upgrading of the pre-existing section of A4 to modern motorway standards was completed, and hence the major cities of the Cracow and Katowice voivods are already connected. Gliwice has been a centre of attention because the new

General Motors car plant is located there. The nearness to the new motorway network cannot have been an insignificant factor. Equally, the city has energetically made plans to promote a road rail freight interchange to exploit location on both the motorway and high speed rail network. Similar remarks apply to Wrocław on the A4 motorway, where the Bielany interchange area on the southern perimeter of the city has already seen the location of many Western firms (e.g. Cadbury) in advance of the opening of the motorway itself.

What if a local authority is not at a good location on the new network? Figure 2 indicates in such a large country many centres which will be much longer distances than others from the nearest motorway interchange. *Gmina* councillors in these areas are not slow to realise that their relative attractiveness as a location for new firms may be affected. One good illustration of this is in eastern Poland, where councils in cities like Białystok, Zamość and Przemyśl along the border argue for a further north-south route linking them to avoid the possibility that the east-west A2 and A4 will draw influence away from them to the larger cities further west. This worry is heightened currently by the recently implemented proposals to reduce the fortynine voivods by two thirds to create larger regional units, or *powiats*, which has meant many former voivod capitals losing their status, and causing increasing worries about future prospects. A further symptom of these worries was the study commissioned last year by BPRSD (Politechnika Warszawska, 1997) to look at the existing network proposals in the light of demands around the country that links should be upgraded to motorway or expressway status. While recommending some revisions, the results of hard traffic evaluations and soft assessments of the economic development issues in the as yet unpublished report apparently dashed the hopes of most aspirant local authorities seeking significant changes.

Even if a local authority has a good location on the network, worries may be raised about the projected phasing of development. The most worrying cases here appear to be the north-south routes connecting the northern ports to the rest of the country. In the worst position is the western A3 connecting Szczecin to Wrocław and Silesia and onward south. The problem here is that there are existing parallel motorways in Germany just across the border. But even the traffic projections for the A1 are not that good (Judge, 1998a). The situation with these north-south routes is problematic. There has always been a debate in Poland that the east-west routes were primarily in the interests of the EU, Germany and Russia, while the north-south routes maintained the viability of the northern ports, and were in fact competitive with the east-west routes. This is because it is becoming progressively more feasible to ship cargo to Poland and further east through Rotterdam, Hamburg and Bremen, rather than taking the longer sea route to Szczecin or Gdańsk/Gdynia. There are reports that Polish forwarding companies have already moved to Bremen. This situation will be made worse once the early sections of the A2 and A4 are completed. Figure 2

indicates that the southern and western half of the country will be connected to the motorway system sooner than the northern and eastern half. Thus the relative accessibility position of some areas of the country will be made worse by the phasing of the network development. In particular, the eastern regions have always been the least developed. And these worries are not unsupported by the most recent research which emphasises the role of 'path dependence' (in other words, the order of completion of investments) in influencing which areas are more likely to gain from motorway development.

Finally, one may ask if there is there any evidence of actual activity in advance of construction, and whether new firms are setting up in the expectation of being located near to a motorway interchange, and whether the property market is reflecting these expectations. So far, a rather contradictory set of impressions can be gathered around the country. There has not been much explicit monitoring yet. This may be because it is too far ahead before links will be complete (but it should be noted that the Poznań Office of the Government Centre for Strategic Studies is compiling GIS data on the local authorities along the line of the A2 from the German to the Bialorus border, though no work is published as yet). Equally, no surveys have been done on location decision making to distinguish the effect of the motorway from other location factors. In fact, the evidence quoted earlier may place the existence of a motorway as a lower order micro location factor. In the current development environment it might be suggested that there are other factors much more important, such as access to serviced sites and a responsive and pro-active local authority. If these do not exist then a good motorway location may be of little value. Nevertheless, despite the difficulty in getting any firm impressions in this area, there does appear to have been considerable activity in the property market in some parts of the country, notwithstanding efforts on the part of the Motorways Agency to limit property speculation. As ever, it is difficult to get beyond verbal reports to hard data. Even in the occasional situations where it has been possible to track individual property transactions, or land price trends, it is difficult to separate the influence of motorway accessibility on site values in the often substantial price movements observed from the general trends in a progressively more buoyant market, from inflation, and from currency restructuring. Clearly, there is material here for research for some years hence.

6. RELATING PAST RESEARCH TO THE POLISH SITUATION

The likely influence of the Polish motorway system on local and regional development has only been examined in a partial fashion up to now. The

literature review of section 2 indicates that while it is not hard to defuse the most extravagant claims about the effects of transport investment on local and regional development, this does not mean that the issue should be ignored. Even if traffic evaluations of investments are accurate, some local authorities are bound to benefit at the expense of others, and the variety of possible outcomes needs to be considered in development strategies. And suitable studies will help in this.

However, it is possible to see that the latest research, while recognising that some regions may gain or lose (road investment is not a panacea for local economic problems), also generates the need for further research to predict more precisely the conditions under which areas will gain or lose. But there are two key questions to consider at this point. The first is that the last two sections have addressed practical questions of how developmental issues have figured in the planning process at central and local level, and what are the expectations and initial results on the ground. This is reasonable, as we are considering investments not yet completed. Thus is there any local research which, while not addressing the specific motorway issue, nevertheless casts some light on it? A second question to ask is whether the research for the UK and Western Europe reported earlier in section 2 is uniformly applicable to the Polish situation?

On the first question, it would be useful to know of any Polish studies which suggest that accessibility issues have affected development in the past. An initial reaction might be to suggest that in the period before 1989 location decisions were made on a nonmarket basis, and enterprises were often located to provide employment rather than to minimise costs. One source is the results of recent work on regional disparities in Poland. Zienkowski (1997) analyses the reasons for variations in regional gross product per head (a proxy for the level of economic development of the region) and finds that 83% of the intervoivod variation can be explained by variation in gross value added per worker (a proxy for labour productivity), and percentage of employees in industry. These factors reflect the past economic development pattern of the country, but there appears to be no explicit consideration of accessibility issues. This is not, of course, to say it might not be significant if introduced as a variable. Equally, Orłowski (1997) looks at likely net job creation 5–10 years after Polish accession to the EU, and predicts that almost all the eastern voivods (except Warsaw) will lose 1–5% of their employment, with one (Zamość) losing 9%. Again, location is not suggested to be relevant. There is clearly some scope for further work here in terms of the matters considered in this paper.

If there is limited research in Poland per se on the subject of this paper, can we transfer the results of research reviewed earlier in section 2? While one cannot without care carry over the experience of one country to another (Grieco,

1994: 8), nevertheless, it is a starting point. Thus, the experience of research carried out in the UK and Europe suggests caution in expecting too much effect on local and regional development from motorway investment. However, there is nevertheless a need for assessment of effects, whatever their magnitude. But we should also note that often the results of such research refer to transport developments in advanced economies with well developed infrastructures. The situation in a country like Poland is actually much more complex than the sorts of situations considered in much of the research quoted above. Firstly, the infrastructure being provided is much more than marginal additions to existing networks, but will constitute a qualitative and quantitative jump in accessibility for many parts of the country. Combined with an economy which probably still has great room for the evening out of monopolistic/price distortions, and structural and spatial imbalances, the overall network effect could well be significantly greater than the investment worth calculated in a cost benefit analysis. In addition, the international and cross border effects have to be considered. In situations where borders have been closed for 40 years, the potential for beneficial trade boosted by better roads seems significant. Equally, the strategic position of Poland in relation to Trans European Road networks may well bring benefits which are not considered in the sort of research reviewed so far. Thus, while not expecting any enormous local and regional development benefits at a regional level over and above those estimated by a normal appraisal, there nevertheless seems to be some case for studying the Polish situation to identify the potential gainers and losers at a regional level from transport infrastructure investment, and also to study the way in which the Polish situation differs from the sort of research reviewed earlier in this paper.

7. CONCLUSIONS

This paper has sought to make links between UK and West European research and the current situation in Poland on the likely effects on local and regional development of motorway and highway investment. It has reviewed existing research in this field, and then reviewed the role which this issue has had in the planning and implementation of the Polish motorway and highway network. It then considered the extent to which existing research could be applied to the Polish situation. It concludes that there is some benefit to be gained from evaluating the Polish situation in the light of this research, but that given the paucity of existing research in this field in Poland, and the features of the Polish situation which will not be considered in existing research, there is some

considerable value to be gained from studies of the impact of new investments as they are completed.

Acknowledgments: This paper derives from work by the author at Warsaw School of Economics (SGH) on a PHARE/ACE Programme Research Fellowship under Contract P96-6733-F from October 1997 to May 1998, and is an updated and revised version of an unpublished paper presented at the 38th Congress of the European Regional Science Association, Vienna, September 1998. I am grateful to Professor Eufemia Teichmann and Dr Tomasz Dołęgowski at SGH, and to the very many individuals – too numerous to list – in local authorities, government offices, universities, consultancies and regional organisations in most of the locations mentioned in the paper who I interviewed in the course of the research and who gave generously of time and information. The usual disclaimer applies.

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