Swiss national research programe Transport and Environment

High Value Added by Transport

Summary

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1 The debate on Benefits of Transport

The benefits of transport represent an important issue in the political debate in many European countries. It is presented as an argument in a context of infrastructure extension, pricing of transport and environmental policy. A decision on a specific transport infrastructure investment raises big hopes with respect to the resulting benefits for a region. External benefits often are presented as an argument to countervail proposals to internalise external costs of transport via tariffs. In case where traffic restraints are negative economic effects of such measures are brought up as an issue. More generally, the benefit of transport issue has gained importance in the context of the sustainable transport debate.

These examples show that the benefit of transport has several dimensions. Swiss transport research has focused for some time now on transport externalities. Ecoplan (1993) stated in a –National Science Foundation Program (NRP 25) that it is essential to distinguish between benefits from transport infrastructure and benefits deriving from transport as such. The benefits of transport are huge but mainly internal. Important external benefits do not exist. So far overall benefits of transport have hardly been analysed in Switzerland. The automobile associations have sponsored most research on the issue. A recent study by Baum (2000) for the VSAI finds additional benefits from Swiss transport activities (excluding transit) of 57.9 billion Swiss Francs. According to the author, 14.9 Billion Francs of these have to be considered external benefits.

2 Scope and content of the study

The present study attempts to bring some light into the discussion, proposing, on the one hand, a theoretically sound overview on the state of the international discussion of the issue and presenting, on the other hand, empirical estimates in selected fields in order to fill existing knowledge gaps.

The overview is mainly based on an analysis of foreign literature that has been discussed with international experts during a workshop jointly organised with CEMT in Bern. The works undertaken in UK by the SACTRA committee (1999) played a key role

The empirical research for Switzerland regards the macroeconomic and microeconomic benefits of transport. From a macroeconomic perspective value added in the transport sector is a valid and periodically available indicator for utility. An investigation of the input-output matrix permits to identify the value chains in transport and to indicate the interactions between transport and the other sectors of the economy. On the microeconomic level this study concentrates on transport benefits in the short run. The benefits of specific mobility have been estimated based on detailed empirical inquiries.

3 Benefits of transport: an overview

When do benefits matter?

There is little use in investigating the benefits of transport in a general way and not related to any specific problem. All goods and services in an economy require resources and create benefits – otherwise they would not be produced and consumed.

This holds also for transport. But transport is different from other goods in some respects. Transport is facilitating to overcome spatial frictions and is undertaken to exercise other beneficial activities (e.g. freight transport, commuter trip). Transport is a resource intensive activity with important impacts on the environment and, finally, transport is relying on heavy infrastructure investments.

This permits to distinguish three fields for discussion:

- How does transport relate to the development of GDP? Does it contribute to growth, and if so, which industries gaining most?
- What are the benefits created by a specific infrastructure investment? Are these benefits exceeding the cost?
- Where do the benefits accrue? Are the benefits internal or external? Do the answers to these questions justify transport subsidies?

The following paragraphs synthesise the current view of international experts (CEMT 2000).

Comparing GDP and transport

Several studies try to measure the relationship between GDP development and transport volume growth. Typically changes in economic output are assumed to be causally related to changes in input factors capital, labour and infrastructure, where infrastructure is transport infrastructure. Other approaches try to analyse the correlation between transport and economic development across regions or over time using general indicators for transport development.

The output elasticities with respect to transport resulting form the first kind of approach show a large variance. The range from zero to 0.7[1], the latter figure being typical for time series. A specific approach, the so called growth accounting used also by Baum (2000) tries to compare effective growth with hypothetical growth resulting from keeping transport constant over a certain time period. The growth difference is considered as transport benefits.

All these approaches are a matter of debate among academics for the following reasons:

- The causality between transport and GDP growth is not clear. The inverse relationship is also plausible – economic growth provokes transport growth. The „quasi" production functions do not allow to take account of this interdependency in an accurate way.
- The single factors of production cannot be measured adequately. Apart for capital and labour, infrastructure can be represented in such an analysis by various parameters like e.g. telecoms, energy, health care etc. However, the information available does often not allow including several parameters.

1 Illustration: An increase in transport infrastructure of 10% provokes an increase in GDP of 7%.

Infrastructure extension and economic development

Investments in regional transport infrastructure are often said to create benefits of the following kind:

- Among the operators (suppliers of public transport services): lower transport costs and – if demand increases - additional revenue. This can create/increase producer surplus.
- Among the users: time and cost savings. These can give rise to an increase in consumer surplus among users of private and public transport.
- For the society:
  - Improved access to highly qualified labour force/jobs (labour market)
  - Market extension for goods and services (product markets)
  - Additional incentives for investments in the region (growth effect)
  - Reinforced regional identity (image)
  - Better use of inaccessible land (accessibility effect).

While it is normally relatively easy to calculate operator and user benefits in the framework of a cost benefit analysis (using transport models) the issue of the benefits for the society is not that simple. The SACTRA committee in UK has reached the following conclusions in that matter:
- These effects are normally overestimated. The effects can be positive or negative.
- The importance of the effects depends heavily on the initial situation.
- These effects can be considered additional benefits only if there are no external costs and if the infrastructure helps to reduce price differences (due to monopolistic markets) among regions.

The SACTRA committee proposes therefore to analyse first the market conditions in a consistent way, and conclude on eventual benefits for the society only afterwards. In absence of market imperfections, operator and user benefits reflect the total benefits - there are no additional benefits for the society.

Internal and external benefits

Which of these benefits are internal and which are external? Two levels have to be distinguished:

- Transport infrastructure: As said above, an infrastructure investment can, depending on the initial conditions, create additional benefits, not accruing to the users. In addition there can be minimal external benefits in form of separation effects in case or fire of protection against avalanches.
- Transport: The expert panel has confirmed existing analysis: Additional transport services do not create relevant external benefits. Among the few quantifiable external benefits that would justify subsidisation figures ambulance services. A further additional benefit exists from increasing density of operation in public transport, which has a positive effect on existing users. But these benefits are clearly internal and can be included in normal cost benefit analysis.

Conclusion for tariffication in transport

According to economic theory transport prices should reflect social marginal cost. The latter should include the costs caused by an additional trip (road wear and tear, congestion, accidents, and environment). As is well known, this tariffication principle would lead to higher transport prices than we have today (see e.g. Maibach et al. 1999). In addition, the attribution of fixed cost according to economic rules has distributional impacts that represent a challenge for policy makers.

According to the principle of social marginal cost tariffication there is no reason to subsidise transport; except for specifically provided (public) services. The latter holds for public transport services provided in the framework of a public service contract for guaranteeing basic via bus and rail. Such a contract cannot be considered to be a benefit of public transport but as a service that would not be provided under market conditions.

4. Value added in transport

Value added as a measure of utility

Value added is an element social accounting. It shows the contribution of a sector to the gross domestic product at factor prices.[2] . Value added can be measured as revenue of a firm/sector minus the amounts paid to other firms/sectors (for raw and semi-finished materials and services). Equivalently, the value added is the sum of all payments from the firm/sector to households and the state - including wages, interest, profits and indirect taxes minus subsidies. In this form, value added can be considered an inferior bound of the benefits of transport. It considers only value added in the transport sector itself and not the one induced in other sectors. Apart from the level of the value added by a sector, also the structure of its contribution to the GDP is interesting, This is indicated by the position of the sector in the input output matrix. It shows which industries contribute to the transport sector and to which industries the transport sector's output goes. Input output analysis is providing the necessary tools for performing such an analysis. The following figure illustrates the structure.

2 Prices free of taxes and subsidies.

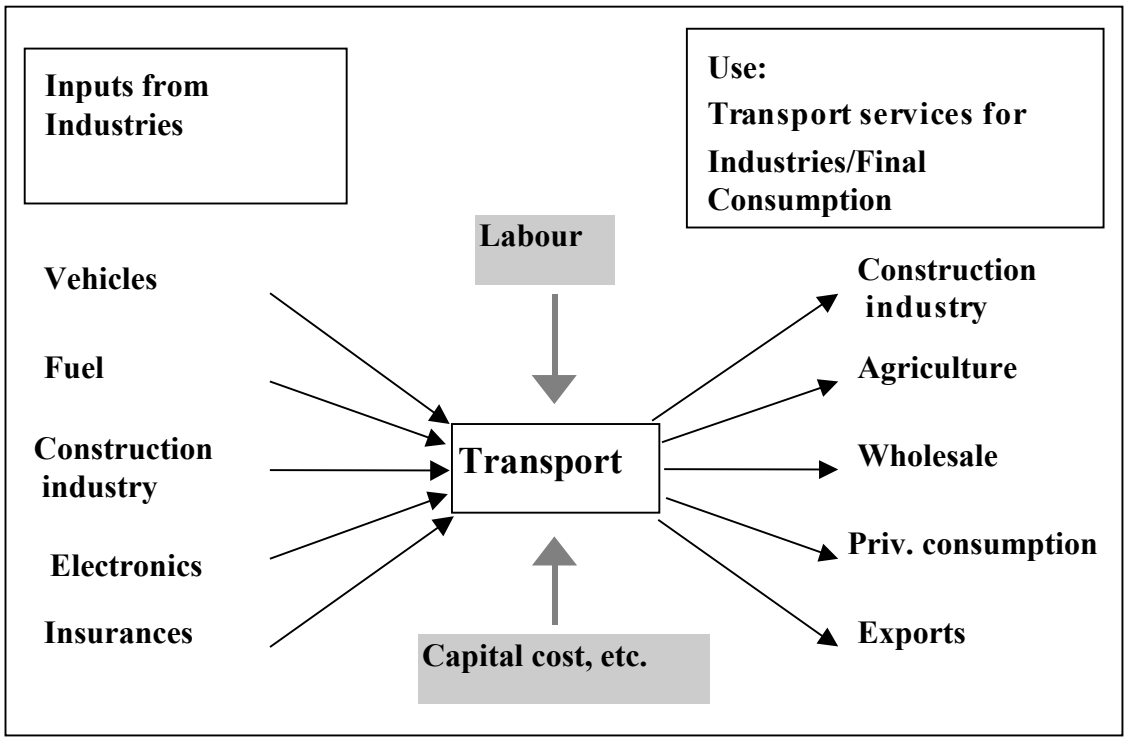

Figure 1: Producing transport services requires various inputs. On the other hand transport services serve as inputs for most other economic sectors. The difference between the revenue created by selling transport services and the sum paid to other sectors for the inputs equals the value added of transport, employing capital and labour to produce these services.

The analysis of value added in the Swiss economy is based on the input output models provided by KOF and BFS. The underlying matrix has been updated and has been differentiated and extended with respect to several transport sub-sectors. In order to calculate the value added of total transport in Switzerland it is necessary to include work and leisure trips by private cars as a branch of the transport industry. This „sector" is not included separately bur is being considered as final demand.

Amount of value added 1995

The Swiss transport industry created a gross production value of 58 billion Francs or 8.3% of GDP. Subtracting inputs amounting to 28 billion Francs results in a total value added of 30 billion Francs or 7.6% of total value added in Switzerland. Private road traffic contributes almost half of this figure.

	Gross Production in Mio. CHF	Value added in Mio. CHF	In % of Swiss value added
Transport on water	460	285	0.07%
Passenger transport on rail	6'570	4'970	1.28%
Freight transport on rail	2'300	1'600	0.41%
Public transport: Tram	500	329	0.09%
Public Transport: Bus	1'600	990	0.26%
Private road traffic	30'800	13'100	3.38%
Freight traffic on road (for third parties)	5'700	3'330	0.86%
Freight traffic on road (own transport)	4'450	2'500	0.64%
Aviation	5'130	2'470	0.64%
Pipelines	110	51	0.01%
Total	58'000	30'000	7.6%

Table 1: Gross production, value added in absolute terms and in percentage of total value added in the Swiss economy in 1995 by sector

Value added and inputs

Among the transport sectors two rail transport industries create the highest value added per unit of input from other sectors. The share of capital and labour in their gross production is highest. All public transport sectors have an above average value added per input, while the road freight transport sector equals the Swiss average with respect to this measure.

The table of input interdependencies allows identifying the distribution of the required inputs among the different transport sectors. The following figure illustrates the input intensities (inputs as a percentage of gross production) for the transport sectors analysed.

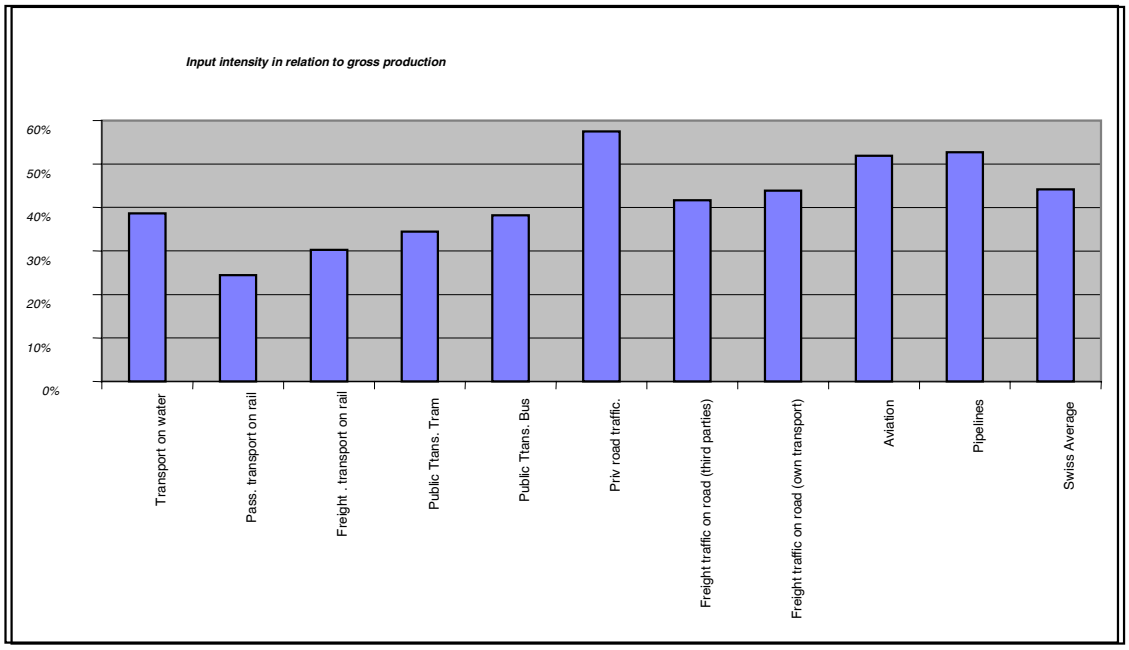

Figure 2: Inputs in relation to gross production for the different transport sectors. The public transport sectors have significantly lower input intensities than the Swiss industry average. Private road transport has the highest intensity with inputs amounting to 58% of gross production.

Intensity of import and labour

With respect to all Swiss industries, the transport sectors show a below average import intensity. Among the transport sectors the share of imported gross production is lower in rail freight transport than in freight transport on road.

All sectors of public transport have an above average labour intensity. This implies that an identical change in final demand across al transport sectors would create the most important employment effects in public transport.

Transport intensity in freight transport

The following figure shows transport cost as a percentage of gross production for Swiss industries.

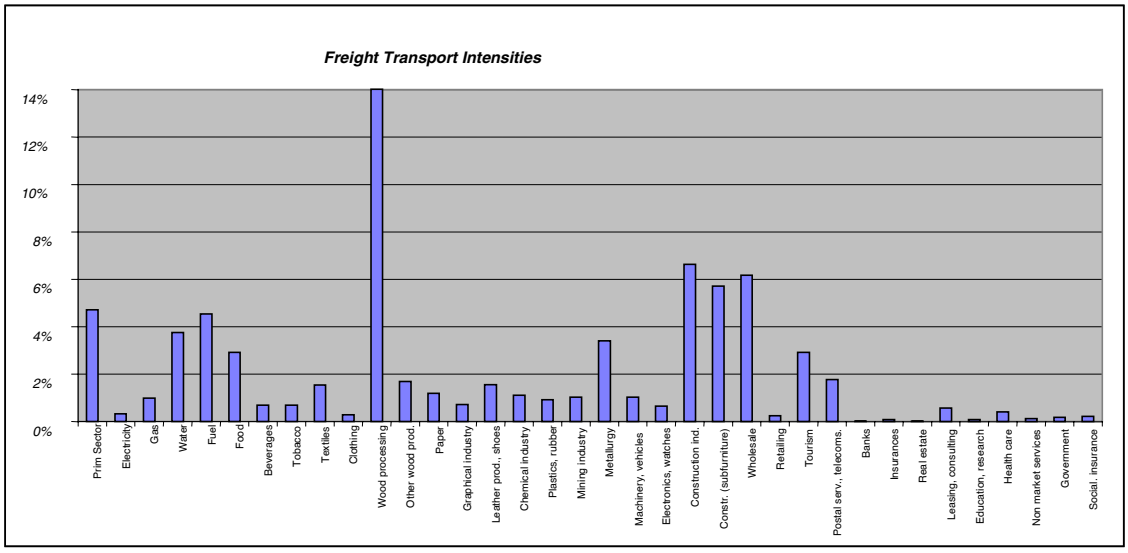

Figure 3 *Freight transport intensities. Wood processing provides an exceptional case. It implies a large amount of transport process carrying goods of low value.*

5 Short run benefits of transport

The aim of this part of the research is the measurement of the internal benefits of transport service consumption using a microeconomic approach. This is not feasible for the whole economy and across all transport modes. For this reason partial benefits are estimated calculating consumer surpluses. More precisely, the question being analysed is: Which benefits does a typical individual extract from using a specific transport service. As a consequence, the benefits accruing to the production sector from freight transport are neglected.

The benefits of road transport

The measurement of consumer benefits from transport has been estimated separately for road and rail. Regarding road transport data from a non-representative pilot survey in view of the microcensus 2000 has provided the empirical base. Therefore, the empirical results are of an illustrative kind. The study of benefits from public rail transport is based on specifically designed surveys on different weekdays on two different rail links (Zürich - Bern and Arth-Goldau - Bellinzona) in Switzerland.

Calculating the consumer surplus as a microeconomic measure of benefit necessitates the estimation of a demand function for a specific service. According to this logic, measuring the benefits of transport services is not an easy task, given that transport is normally a derived demand. Travelling is rarely undertaken for its own sake. Consuming transport services requires time and money. In order to make individuals consume the respective services this cost has to be compensated by a benefit.

These benefits are measured in the case of road transport using the hedonic approach. This approach permits to assign different implicit prices to different characteristics of car mobility. Having estimated these implicit prices in a first step they can be used in a second step to estimate demand functions for various characteristics. Here, the yearly kilometres driven by an individual are considered as the key characteristic for the estimation of the benefits. The mentioned data set contains 1000 individual observation, about 200 of which could be used of the purpose, the others not being complete with respect to the variables of interest. The estimations performed resulted in the consumer surpluses presented in the following table.

Values in Swiss Francs/year	Income		
	Min: 13'000	Med: 65'000	Max: 169'000
Occasional driver (1st Quartile) 6'900 Km	2'800	3'100	3'300
Median driver 11'000 km	3'600	4'000	4'400
Frequent driver (3rd Quartile) 15'000 km	4'300	4'800	5'200

Table 3 Estimation results for the benefits of transport (car mobility)

According to the above statistics the median individual in our data set with an income of approx. 65'000 Swiss Francs drives around 11'000 kilometres a year with one car. The average price of this car is about 30'000 Swiss Francs and the total yearly cost of the car amounts to 9'200 Francs.

Note that these figures serve only for illustration, as the data are not representative. Moreover, only the first car in a household could be included in the analysis to avoid a further reduction of the observation. Also, using representative data, the estimated utilities would have to be corrected by the average occupation rate of the cars.

The benefits of public rail transport

The estimates of utility from public transport services are based on the *travel-cost* approach. The demand function is based on the generalised cost[3] borne by the individual undertaken a certain trip. As in the case of the automobile, the estimation of a demand function serves to calculate consumer surplus as a measure for the benefits. A characteristic of the chosen modelling approach is the consideration of the dual role of time. On the one hand, time is a cost to be incurred in order to travel; on the other hand it enters the utility function because the time at the destination generates utility.

Leisure traffic

[3] The generalised costs are the sum of the monetary cost and the time cost (travel time evaluated at the marginal value of time).

The demand function has been estimated separately for work travel and leisure mobility. In the latter case, leisure activities at destination were also taken into consideration, while in the former the focus was on activity during the trip and on value of time. Significantly higher time values were found for persons working during a non-leisure trip than for those not working during the same kind of trip. The value of time was again used for estimations of the benefits of transport.

The data were gather using a questionnaire and distributing it on the trains on three different weekdays (Thursday, Friday, Saturday) between Zürich and Bern and between Arth-Goldau and Bellinzona. The sample size was over 2000 in the first and around 1200 in the second case. For leisure mobility the calculated benefits of transport resulted in the figures presented in the following table.

Values in Swiss Francs / year	Income		
	Min: 13'000	Med: 54‘800	Max: 86‘600
Occasional trip (1st Quartile) 1 trip per year	50	110	140
Median number of trips 6 trips per year	220	460	580
Frequent trips (3rd Quartile) 12 trips per year	380	810	1'030

Table 4 Estimation results for the benefits of transport (train mobility for leisure purposes between Arth-Goldau and Bellinzona[4].

The average passenger on a leisure trip found on a train Arth-Goldau and Bellinzona makes the same trip around 10 times a year (Zürich - Bern 20 times) and incurs a generalised cost of 91 Swiss Francs (Zürich - Bern 67 Francs) with an average fare 53 Swiss Francs (Zürich - Bern 36 Francs). The expenditure at destination amount 25 Francs (Zürich - Bern 25 Francs) on average. The average age is 47 (Zürich - Bern 43) and the average income approx. 55'000 Francs (Zürich - Bern 55‘000).

[4] The values are presented per year and not per trip for several reasons. First, the values for car mobility cannot be calculated per trip and hence would not be comparable. Second, the table illustrates the different trip frequencies by link and purpose and with this the impact on the generalised cost. Third, in the chosen way the diminishing benefit per additional trip becomes evident (decreasing marginal utility). The benefit per trip can easily be calculated from the figures presented.

Values in Swiss Francs/year	Income		
	Min: 13'000	Med: 54‘800	Max: 86‘600
Occasional trip (1st Quartile) 1 trip per year	40	90	110
Median number of trips 6 trips per year	170	380	500
Frequent trips (3rd Quartile) 12 trips per year	300	680	870

Table 5 Estimation results for the benefits of transport (train mobility for leisure purposes between Zürich and Bern)

The higher benefits on this route are due to the longer travel time on the north-south axis. A single train trip by a low-income individual travelling only occasionally on this route creates a benefit of 40 Swiss Francs on the link Zürich - Bern and of 50 Francs on the link to the Ticino. Individuals with a median income and making around 6 trips a year benefit to an amount 380 Swiss Francs per year on the axes Zürich - Bern and around 460 Francs on the north-south route. Note that also in this case the additional benefit per trip is decreasing with increasing trips. The higher values on the north-south trips are due to the higher travel time per person.

Work traffic

The evaluation of the benefits in the case of work trips has been performed considering the activities undertaken during the trip. For econometric reasons the income has been excluded from the estimations. This implies that the tat the following tables contain only the benefits for the average earner.

Values in Swiss Francs/year	Activity during the trip		
	Reference[5]	Work	Work on laptop
Occasional trip (1st Quartile) 1 trip per year	200	260	290
Median number of trips 48 trips per year	1'370	1'730	1'940
Frequent trips (80th Percentile) 240 trips per year	5'990	7'580	8'480

[5] This refers to all passengers not falling under the two other categories.

Table 6 Estimation results for the benefits of transport (work trips between Zürich and Bern)

The average work traveller[6] on the link Zürich - Bern undertakes this trip about 74 times a year (Arth-Goldau - Bellinzona 29 times) and incurs a generalised cost of 46 Swiss (Arth-Goldau - Bellinzona 78 Swiss Francs) with an average fare 25 Francs (Arth-Goldau - Bellinzona 46 Francs). The expenditure at destination amounts to only 6 Francs (Arth-Goldau - Bellinzona 4 Francs). The average age is 37 (Arth-Goldau - Bellinzona 38) and the average income around 75'000 Francs (Arth-Goldau - Bellinzona 70'000 Francs).

Values in Swiss Francs / year	Activity during the trip		
	Reference	Work	Work on laptop
Occasional trip (1st Quartile) 1 trip per year	60	80	90
Median number of trips 12 trips per year	620	780	940
Frequent trips (3rd Quartile) 48 trips per year	2'260	2'860	3'440

Table 7 Estimation results for the benefits of transport (work trips between Arth-Goldau and Bellinzona)

The significantly higher values for Zürich - Bern as compared to Arth-Goldau – Bellinzona stem from the high frequency on the former link. Calculated per trip, the benefit is more important for trips to the Ticino – again due to the longer travel time. For the median passenger a benefit of 50 Swiss Francs is found on the north-south route in case the individual is not working during the trip. The respective value for a trip between Zürich and Bern is 30 Francs

Generally it can be said that the benefits are lower for the same number of trips in the case of work travel than in the case of leisure. The main reason for this is the shorter travel times for work related mobility (on both links about 30 to 40 minutes difference). The generally lower monetary cost of work travel[7] has an additional impact on the relative generalised cost. The significantly higher frequencies of work trips are obviously related to the lower generalised cost. The lower benefit per trip is an expression of this optimisation.

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6 This includes commuters, business and educational trips.

7 Work travellers are more likely to possess a monthly or yearly ticket with accordingly lower fares per trip and moreover do ver often not have to pay the tickets themselves.

Because the research has been specifically designed and performed for two selected links in Switzerland, it is for the moment impossible to compare and validate these results with those of other studies.

As to the comparison between the benefits of road and rail transport it has to be noted that the much higher values in road transport are due to the fact that they are based on all trips undertaken by an individual with his/her first car during a year. In the case of rail transport the estimations are base only on a part of the trips on two selected links. Therefore, the results should not be directly compared.

It is also important to remember that in the transport research field the methods of benefit evaluation leave still many questions open. This has also become clear in the *Expert Workshop* organised for the scope of this project. Nevertheless, the proposed research seems to indicate a feasible way towards the estimation of the benefits of transport though the limited availability of representative data does not permit to draw general conclusions for Switzerland. Estimations based on larger data sets (e.g. the microcensus 2000) would permit to significantly improve the research and produce more valid results.

6 Conclusions

The results presented in this study could give new impulses to the debate on transport policy in Switzerland. Selected aspects of the relationship between transport and the economy have been inquired and translated into quantitative results. The deliberate renunciation to try and measure the total benefits of transport permits to direct the debate towards specific issues.

A first and implicit conclusion therefore is that the total benefit of transport is a theoretical construct, and that the attempt to measure it will necessarily crate confusion. As a valid reference situation for an economy without transport is empirically not feasible, attempts to isolate the role of the transport system in economic development are doomed to fail. Such research would have to admit that an economy without transport is not imaginable and that hence the whole GDP is „generated" by transport.

A second conclusion regards the discussion about internal and external benefits. This discussion risks ending up in a dead end street. On the one hand real external benefits are theoretically not plausible (who has an interest not to be compensated to the benefits he or she creates?) and empirically irrelevant. On the other hand eventual evidence for external benefits is not needed for justifying the internalisation of existing external costs of transport – an economy in which decisionmakers to not have to incur all costs they are creating is necessarily inefficient and leads to a waste of resources.

The empirical research on the value added in transport helps to get rid of a misunderstanding in the debate on internal and external benefits. The input output analysis permits to calculate the direct contribution of transport for the economy (net value added). This is the correct measure of the direct contribution of this sector to the GDP. It represents obviously an internal benefit. In addition, the transport sector creates the realisation of profits in other sectors of the economy, increases their competitiveness at specific locations etc. These effects are not captured by the value-added figures. It

might be attempted to evaluate these effects too in further analyses. It should however be kept in mind that such an undertaking would have to define precise context (reference) in order to isolate the transport effects. In any case such additional impacts of transport would not represent external benefits. They influence profits and benefits of other participants in the market process. In case one should try to consider them as external benefits, one would have to do the same for the benefits induced by the production of tools used by all industries and households. In such a perspective an economy would consist of external benefits only.

The research on value added demonstrates the interaction among the transport sector, the rest of the economy, other economies and the factor markets. An interesting detail is the high labour intensity of the rail sector. If one is interested in employment impacts of transport demand one would conclude that such impacts are more relevant in the rail sector than in road transport. In view of the contribution of transport to economic growth, however, this result will induce an interest of inquiries into the productivity and efficiency of the sector.

The analysis of value added also permits to measure the transport intensity of industries with respect to freight transport. This is relevant because the demand for freight transport is a derived demand. The smaller the transport intensity of an industry, the lower also the elasticity of demand for the products of this industry with respect to transport prices. Policy measures in freight transport intervening on prices will have differentiated impacts according to the transport intensities. The respective indicators allow also evaluating freight transport as a location factor in a differentiated way. Depending on the industry portfolio regions will depend to a different degree on quality and price of freight transport services.

The microeconomic analyses are focussing on individual internal benefits from mobility. Mobility is considered to be a normal good, the production of which is characterised by the use of a specific transport mode as input. Car mobility as well as mobility by public transport will thus create benefits. The estimation of such benefits from the production and consumption of a good is performed via the estimation of demand functions for mobility of a certain kind.

The benefit from car mobility is directly related to the number of kilometres driven per year and the expenditures for this mobility. The benefits calculated here comprise therefore all trips undertaken with the car that may have created further benefits at various destinations through consumption of further goods and services. The benefit measure also contains eventual benefits from pleasure trips. If the figures would be confirmed using representative data, they would permit to calculate an indicator for the benefits of individual car mobility.

Measuring the benefits of transport is relevant for cost benefit analysis and distributional issues in transport policy. A confrontation of social benefits and social cost is superfluous because in the social optimum (marginal cost is equal to marginal benefits) the calculated net benefits will indicate exactly the difference between social cost and total benefit. In an ideal case, these net benefits would be calculated for individual mobility costs reflecting full social marginal cost. Die benefit measures could furthermore

give an idea of the rent that could be extracted from users for contributing to the financing of infrastructure.

The benefits of mobility using public transport as input is calculated in the base of train trips for leisure and work purposes. Again the calculation of the benefits relies on the estimation of a demand function. In this case the demand function is defined for the number of trips to a specific destination in dependence of the generalised cost of the trip. In this way only part of the public transport mobility of individuals during a year can be considered. The measure used assigns all benefits from a trip to the mobility itself, and not, as in other applications of the travel cost approach, to the destination. In how far this is justified remains a matter of judgement. When attempting to aggregate the individual benefits one would in any case have to be careful to avoid double counting. The study distinguishes benefits from leisure mobility and utility from work related trips. The benefits from the latter can be differentiated according to the activity undertaking during the trip. The results can be of interest for transport modelling but also for marketing strategies of the railways. The benefits can be confronted with the infrastructure costs borne by the public sector. The values of time calculated can be used in cost benefit analyses of single projects. The implementation of the results in this respect is not content of the present study, however.

The research presented here leaves many questions unanswered. Apart from possible improvements of the estimations by way of better data, it could be attempted to extend the input output analysis to include multiplicators. This would allow evaluating the impact of transport in other sectors of the economy. Priority should be given, however, to further research on partial growth impacts of transport.

The empirical results presented do not give any immediate advice on optimal transport infrastructure policy. This was among else the aim of the expert panel. The most important outcome of this panel is that the additional benefits from transport depend on the market conditions in the transport sector as well as in the remaining sectors of the economy. Therefore, an optimal transport policy will include an optimal regulation of markets, and will be linked on the one hand to a marginal cost tariffication and on the other to a distribution of the financing of the fixed cost of infrastructure according to the benefits.

There exists no justification for subsidising transport with the motivation of creating additional benefits and not either for compensating non-existing external benefits. The main elements of a modern transport policy will consist in a correct financing of infrastructure, a social marginal tariffication and an optimal regulation of the market. For the evaluation of single projects cost benefit analyses should be undertaken.