



Factsheet

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The benefits of transport

1. Background and starting situation

Road and rail transport generate a wide variety of benefits – through their contribution to value creation and economic growth, as well as in their capacity as "employers". The costs and benefits of transport are favourite topics of debate for many, and various studies examine the costs of transport, including external costs. In the interests of closing the circle, the Federal Office for Spatial Development and the Swiss Federal Roads Authority joined forces to commission a study on the benefits of transport. However, these benefits must be looked at in a way which puts them in their proper context and projects them onto relevant transport policy issues. The study analysed the different ways in which the benefits of transport present themselves. It has also brought a degree of order to the long-standing discussion about the various terms used to describe these benefits, as well as how they can be set off against transport costs. It comprises four subprojects and a synthesis report (see Appendix 1).

2. Key findings

2.1 Positive contribution to growth

The transport infrastructure and its use make an important overall contribution to economic growth. In fact, it is estimated that road and rail transport feed some 2.6 billion francs into the Swiss economy each year. In other words, without the transport infrastructures, economic growth in Switzerland would be considerably lower.

2.2 Enormous value creation effect

Transport is an important sector of the economy. The direct added value created by road and rail transport in Switzerland in 2001 was just under 33 billion francs. When indirect value creation (inputs such as insurance companies and garages) are included, aggregate added value runs to around 52 billion francs, or 12% of gross domestic product. Of this, 46 billion francs is attributable to road traffic and 6 billion to rail traffic (see Appendix 2).



2.3 Major employer

263,000 people (full-time equivalents) or 7.8% of the entire Swiss workforce are employed in the transport sector. Of these, around 47,000 work in rail transport and 216,000 in road transport (see Appendix 2).

2.4 Regional access

The study confirms the importance to economic development of improved accessibility as a result of good transport links. Its findings nonetheless indicate that the impact is different depending on spatial and temporal factors and on the impact of differing economic frameworks. All in all, it can be said that transport infrastructures cannot be used as the sole instrument of regional policy.

3. Summary

The study enables us discuss transport and its benefits in a way which is removed from the ideological debate. In particular, it shows us that:

- **Road and rail are of equal value**
Road transport creates around eight times more value than rail transport. This reflects the higher numbers of kilometres that are travelled by road, the ratio of value to distance being about the same for both modes of transport. Road and rail therefore generate roughly the same value relative to kilometres travelled.
- **Transport creates growth and jobs**
Transport is very important to the economy because of the jobs and incomes that it represents. When taking transport policy decisions, it must be remembered that the size of the transport industry magnifies the impact of these decisions and affects the entire economy. The environmental dimension of transport must also always be taken into consideration.
- **Aggregate benefits are greater than aggregate costs...**
In addition to value creation, transport has additional benefits at the personal level, such as time savings. All in all, the aggregate benefits of transport are greater than the aggregate costs, the difference being between 3 and 8 billion francs. This is unsurprising, as a society based around a market economy will generally act only if its actions will result in more benefits than costs.
- **...but marginal costs and benefits are the key factor in investment decisions**
Aggregate benefits do not provide any information on the potential benefits of additional investments, such as the building of new stretches of road or rail or the expansion of old ones, or indeed additional public transport services. The



only important factor here is the ratio of additional costs to additional benefits for the programme in question.

- **External transport costs cannot be compared with aggregate benefits**

Although transport generates enormous aggregate benefits, the issue of external transport costs cannot be neglected. The decision to make a journey does not depend on the aggregate benefits or aggregate costs of transport, but on the additional benefits and costs in that particular case. Decisions at individual level do not take external costs into account. They therefore result in journeys for which the benefits are less than total (internal and external) costs. From the purely economic viewpoint, unless this behaviour is corrected no optimum can ever be reached in the transport market. Since the distance-related heavy vehicle fee was raised in 2005 Switzerland, heavy goods transport has covered almost 100% of its costs.



Appendix 1: Study entitled "The benefits of road and rail transport"

The study comprises four subprojects and a synthesis report.

- **Subproject 1: The benefits of transport – terms, principles and measurement concepts**
This subproject offers an introduction to the key terms and measurement concepts used in the discussion on the benefits of transport. Past findings from Swiss and international studies are also examined here.
- **Subproject 2: Transport's contribution to value creation in Switzerland**
In this subproject, the value created by transport is used as an indicator for the aggregate benefits of transport (lower threshold). In addition to absolute figures, this subproject looks into the surrounding structures, such as the type and level of inputs, as well as production, demand and employment structures.
- **Subproject 3: Accessibility and regional economic development**
This subproject examines the relationship between transport connections and regional economic growth between 1970 and 2000. It focuses on the impact of changes in transport access on workforce and job trends in the regions studied, as well as the question of which factors in addition to transport accessibility have helped to shape these trends.
- **Subproject 4: Network externalities**
This study looks into whether or not transport generates external benefits which have been given scant, if any, mention in the literature to date. The subproject concentrates on one potential effect: The generation of network externalities in new clusters. It should be regarded as a purely academic exercise; no empirical tests were made, neither were the effects quantified.
- **Synthesis of subprojects 1–4**
The synthesis summarizes the key findings and results of subprojects 1 to 4 and places these in the context of an holistic view of transport benefits.



Appendix 2: Data

Table 1: Value created by road and rail transport in Switzerland, in CHF bn (2001)

	Value creation of transport goods manufacturers (direct effect)	Value creation of manufacturers of transport goods inputs (indirect effect)	Aggregate value creation, transport (sum of direct and indirect effects)
Rail	4.99	1.36	6.35
Rail infrastructures	1.29	0.77	2.06
Rail passenger transport	2.75	0.50	3.25
Rail freight transport	0.95	0.09	1.03
Road	28.42	17.67	46.09
Road infrastructure	6.35	1.23	7.58
Commercial passenger road transport	0.57	0.30	0.87
Road freight transport, contract traffic	2.13	1.47	3.60
Road freight transport, works traffic	1.73	0.93	2.66
Other national public transport	2.21	1.35	3.56
Non-commercial passenger road transport	15.42	12.40	27.82
Road and rail	33.41	19.03	52.44

Source: Ecoplan (2006)

Table 2: Importance of transport to Swiss national value creation (GDP) and employment in 2001

	Gross domestic product		Workforce	
	in CHF bn	in %	Full-time equivalents	in %
Total Switzerland	422.49	100%	3,141,776*	100%
Transport	52.44	12.4%	263,044	8.4%
Rail	6.35	1.5%	46,912	1.5%
Road	46.09	10.9%	216,132	6.9%

* As per corporate census 2001, excl. primary sector

Source: Ecoplan (2006), SFSO (2005)

Enclosed with the media release entitled "First full cost/benefit analysis of transport in Switzerland"