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Marginal Cost Controversies in Swedish Transport Infrastructure Policy

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Abstract

This article analyses pricing and taxation policies for road and railroad infrastructure. According to an institutional perspective a full cost coverage principle is appropriate. Viewed through the lens of neo-classical welfare economics marginal cost based pricing is generally recommended. These questions were analyzed by Ronald Coase in a series of articles from 1946-1970 arguing that there was a controversy between the two perspectives. Here Coase's view, which seems surprisingly up to date nearly 70 years later, is applied to the Swedish government's financing principles for transport infrastructure from the 1940s to the 2010s.

It is argued that it seems reasonable to interpret the discussion in Sweden around pricing and financing policies related to transport infrastructure as a controversy between the two perspectives. The controversy seems to have been strongest during the 1970s-80s, when the shift from a 'cost responsibility principle' to a marginal cost principle was most discussed. Reasons for the shift are discussed. The impact by the shift on the earlier policy focus on organizational efficiency of the road and railroad agencies is discussed.

1 Introduction

Transport infrastructure systems are expensive to build but generally cheap to use for every single additional car driver or train passenger. There has been a major controversy in many countries around how to form an efficient framework for the pricing of the use of roads and railroads. Should e.g. the users pay the full cost or only the marginal cost connected to the use of roads and railroads? Is it appropriate for the government to cover the financing deficit with general tax revenues, if users pay only the marginal cost? Do such subsidies lead to wasteful resource allocation and poor incentives for efficiency?

As the Swedish government had nationalized of the roads and railroads in the late 1930s and 1940s, it had to decide on how to set the fees and taxes for the users of the infrastructure. In brief two different principles have been applied in this respect; full cost coverage and marginal cost based financing.

These two principles also reflect two different perspectives when it comes to the incentive structure that is applied for the management and funding of the organizations responsible for roads and railroads. According to one perspective ('ear-marking') a direct link between fees and taxes paid by users and spending by the government is most appropriate.. According to another perspective 'someone else', i.e. the general tax payers, via government subsidies or cross-subsidies, have to pay for a considerable part of the cost of roads and railroads, leading to less clear incentive structures.

A direct connection between the users and the provider of roads and railroads through 'the payment channel' could generally be expected to give stronger incentives for efficiency and user orientation than a system where funds are channeled through the government with all the possible disturbances and sources of mis-allocation risks that the public sector system has. 'Ear-marking' by which tax income is allocated for e.g. road-purposes is an alternative to direct payments by the users to the infrastructure organizations, which resembles some of the features of a direct connection between users and producers

The different perspectives for how to finance systems such as transport infrastructure were reflected in a series of articles by Ronald Coase in the 1940s and again in the 1970s (1946, 1947, and 1970). The reasoning in the articles seems surprisingly up to date after nearly 70 years.

Questions that are focused in this article are:

- Is it possible to interpret the government's formation of pricing and taxation policies for the use of roads and railroads as a controversy between a full cost coverage principle and a marginal cost pricing principle?
- How can the gradual shift from the full cost coverage policy to the marginal cost policy be interpreted?
- Did the change in policies also change the policy focus on the incentives for organizational efficiency?

2 Government's role - Visible or invisible hand?

2.1 Government activism or market reliance

Over time successive investments in roads and railroads have led to the accumulation of a major asset-base which, from an economic point of view can be treated as 'sunk costs'. One reason is that even if the assets represent a considerable value they have few alternative uses. The cost of tearing down roads and railroads are also considerable.

The operation and maintenance of pavements, platforms, signal systems etc. is necessary for the use of roads and railroads. The use of roads and railroads induces additional wear and tear of the assets. Combined these costs are more or less equivalent to the marginal short term costs.

There is a sound economic basis for charging the users of the present road and railroad system only for these marginal costs. If also the depreciation of the current systems, as well as investment costs for re-construction and new-construction of roads and railroads are considered, the cost basis is of course considerably much wider than what is represented by short term marginal costs. An even wider cost base is represented by additional (generally) net negative external costs.

According to the principles developed in welfare economics through the late 19th and 20th century (Ruggles, 1949) a number of scholars such as Marshall, Wickcell, Pigou, Hotelling and Lerner, consumers' marginal utility when choosing different 'packages' of goods and services, should be the basis for the analysis of resource allocation in the economy. These theories are generally based on assumptions of perfect information, free entry and competition and rational actors. The view on organizations is less well developed and equilibrium on markets more in focus.

Part of the same view is that decreasing-cost industries, such as roads and railroads could be expected to be run as nationalized or regulated monopolies in order to avoid inefficiencies such as overpricing by a private sector monopolist. In these cases (only) marginal costs should be charged for the use of the products or services. The unfinanced part of the costs, which are not covered for by marginal cost pricing based revenues should, according to the same line of reasoning, primarily be paid for by the government funded with tax revenues.

Coase in his articles on the 'Marginal Cost Controversy' (1946, 1947) presented a different view on the preferable way of handling the pricing of services and goods in decreasing cost sectors. The original article was written in relief to the Hotelling-Lerner view, with its basis in marginal cost pricing and supporting government subsidies. Coase presented four arguments in favor of an alternative pricing system based on multipart pricing, with separate payments to cover fixed and variable costs. With such a system the user would face the full cost of the resources that are used for the production of the good or service, which would confer a correct combined price signal leading to an efficient resource allocation

Coase's arguments against marginal cost pricing without full cost coverage are condensed into the following arguments:

- Marginal cost pricing would lead to 'mal-distribution' of the production factors to different uses, since the full costs of these would not be obvious to the user
- Marginal cost pricing would lead to income distribution from non-users to users and from tax payers to users
- Marginal cost pricing if combined with tax subsidies would lead to "other harmful effects" as the economy is more heavily tax-burdened
- Marginal cost pricing would lead to a risk for over-consumption and lack of information on how to spend resources in the future, since price signals are distorted.

Coase's discussion emphasizes the central role of the producing organization and its relation to users or customers. The organizational view can be traced back to Coase's 1937-article 'The Nature of the Firm'. This is a clear difference towards the neo-classical view.

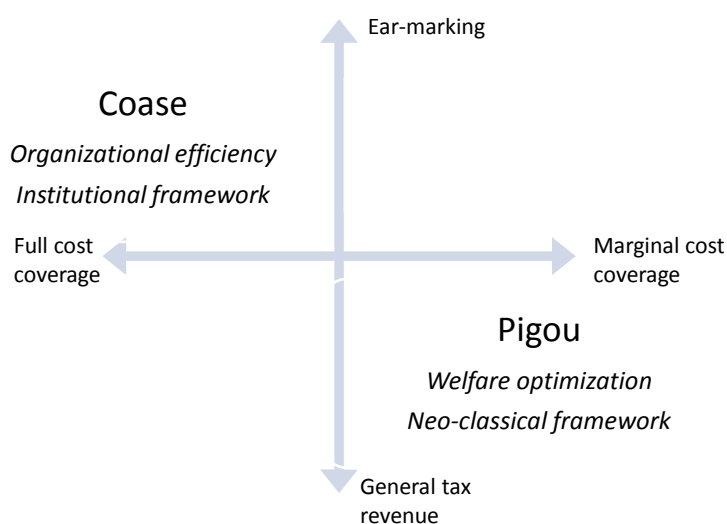
Lindsey (2006), going through the later development of economists' views on road pricing up to the 2000s, notes (p 315) that the more institutional sentiment that Coase represents has not been the core element of economists' handling of issues related to road pricing in general. The view represented by Pigou has, since the 1940s, according to Lindsey, largely been developed by a number of scholars such as Vickrey, Walters and Mohring. Pricing of road-use based on short run marginal cost has been the basis for these later scholars' writing, combined with congestion based charging. Small, Winston and Evans, among others, according to Lindsey, have shown that under some assumptions congestion and road damage charges can pay for the costs both for capacity and maintenance (p 312). This line of theorizing has also been possible to express in mathematics and in graphical form, which has probably added to the strength of this view among economists, and also to its strong influence on the public discussion of the pricing issues.

The institutional view, which was exemplified by road and railroad-related themes in Coase's 1940s articles have, according to Lindsey, not been widely developed with further applications in this sector of the economy. As an exception the writings of Gabriel Roth can be mentioned. Roth (2006) has edited one of the later works where a number of articles discuss the prospects and favors of a more privatized road provision. A similar approach is presented by Winston (2010). Winston suggests privatization experiments to be introduced as a means for addressing many of the problems of the US transportation system, such as lack of innovativeness, lack of resources and slow productivity growth. These two examples show that the institutional view is represented also by contemporary scholars, even if the welfare or neo-classical view is generally the stronger in discussions around transport infrastructure.

While Coase favored a system where roads and railroads were financed without government subsidies the more recent institutional studies mentioned above seem mostly to focus on an improvement and methodological refinement of the application of marginal cost based financing models. By reducing cross-subsidies between different transport modes, and striving for setting prices more in line with 'real' marginal costs (including congestion induced costs) a higher level of efficiency could, , be achieved than in many present systems.

This seems to be a view where a move from weaker to more powerful incentives is sought for, while not necessarily meeting Coase's requirements, aiming for full cost coverage. Even if short run marginal cost pricing could be expected to raise sufficient resources to cover the full costs of roads in urban congested areas this would clearly not be the case in less populated areas. There would thus still be need for substantial tax-financing if these models are applied. This is of course something that is even truer when it comes to railroads.

Figure 1
Coase and Pigou – different views on cost coverage and financing



The different perspectives are summarized in Figure 1 above. The x-axis shows different views on whether marginal cost vs. full cost coverage should be strived for. On the y-axis the dichotomy between 'ear-marking' (all revenues are directly allocated to the supplier) and the handling of revenues as general tax revenues is displayed. Coase's model, placed in the upper left, combines full cost coverage with ear-marking (which is not explicitly stated by Coase but might be assumed from the general reasoning in the articles). The Pigovian welfare model is displayed in the lower right, combining marginal cost coverage with the treatment of revenues from taxes and fees as general tax income.

In Sweden a pricing policy in line with multipart pricing was used for road financing from the 1940s until the early 1970s. Fixed taxes for vehicles related to the weight of the vehicle were combined with per liter taxes on fuel. Ear-marking of collected revenues for road purposes made the connection between users and providing rather close. For railways the pricing structure during the same time period included different pricing models tuned to the different market segments, but under a (formal) full cost coverage policy.

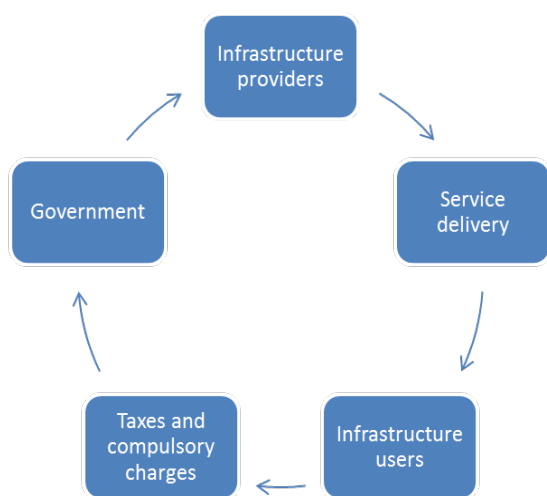
Pigovian pricing models have, however, been dominating for roads and railroads since the 1970s. On the one hand marginal cost pricing models have been introduced, with rising government subsidies to meet the

financing deficit. Ear-marking has also become less obvious and to some extent even abolished by more strict fiscal regulation in Sweden aiming for preserved macro economic and fiscal balance.

2.2 Differences between the theoretical approaches

According to welfare economics it is relatively easy to draw the conclusion that market failures are at hand and that government intervention is justified to correct market outcomes. There is only limited focus in this perspective on the organizational aspects of government operation, such as transaction costs, lack of information and weak incentives for efficiency in public sector organizations. Equilibrium oriented analysis is generally in focus in this view. By applying marginal cost financing and pricing principles the government is inserted between the users and the infrastructure providers for channeling additional funding or redirecting funding between transport modes. This makes the relation between the provider and the user less clear. This is illustrated in Figure 2.

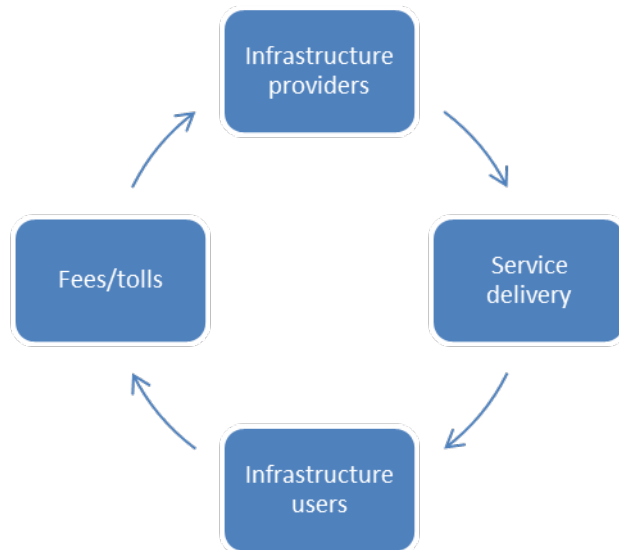
Figure 2
Government intervention connected to marginal cost financing



On the other hand Coase presents a view where organizations and institutions matter. According to this view it is not at all taken for granted that market failures are at hand as often as neo-classics claim. Instead market solutions, where actors learn over time when facing full-cost based prices, are an important alternative to government intervention. Government action is seen as problematic with possible inefficiencies both when it comes to the internal operations of the public sector system and the negative effects on price signals tax-funded activities might bring. Private sector organizations directly financed by users are believed to be more dynamic and efficient, according to this view. Organizational change and learning is generally more closely connected to the institutional view than to neoclassic welfare theories.

The more direct relation between user and infrastructure provider according to this model is illustrated in Figure 3.

Figure 3
Direct relation between user and provider



3 Controversies over marginal costs and the government's role in Sweden

This section is based on studies of the public documents from government committees, government bills and Parliamentary reports and decisions from the mid-1920s until the 2010s.

3.1 The Full Cost Coverage Period

Following the nationalization of roads and railroads in Sweden by the late 1930s and early 1940s the government initiated the post war planning in the transport-sector. The first post world-war two **Transport Policy Committee** started its work in 1944. It presented its final report in 1947 (SOU 1947:85). The overriding principle for the management, planning and financing of transport infrastructure was defined to be to aim for efficiency, expressed as the highest possible output in relation to the resources used in the sector. In addition to this a principle of full cost responsibility for every single transport mode was proposed.

Overall the Committee had a positive view on the value of free enterprise and competition as a basis for the development of a sound and efficient transport system. Dynamism, technological development and competition were seen as superior aspects of a free market, compared to a government controlled development or 'dirigisme'. A number of proposals were put forward by the Committee in order to improve the organizations' functioning and to set a more stable institutional environment in the sector, fostering efficiency.

The 1944 Transport Policy Committee's proposals were, according to Sannerstedt (p 5, 1979), never followed by any explicit proposals by the government. When reading the government's yearly budget bills for the years following the war-end the government instead focused on the need for tackling the overriding economic policy dilemma with a strong growth in consumption and imports and the need for investments in most areas of the economy. To set up a separate road-management structure, as suggested by the 1944 Committee, was never proposed.

The future of the general transport policy was in focus of the **1953 Transport Policy Committee**, reporting in 1961 (SOU 1961:23). It presented a coherent plan for a sustained market oriented transport policy with focus on deregulation, where major parts of the remaining war-time regulations should be abolished. The basic strategy with the business-economic framework and the 'cost responsibility principle' was also to be kept.

The basis for efficiency of the system was, according to the Committee, that the true costs of the different transport modes were reflected in the prices that the transport users met. This was a direct link to the 'cost responsibility principle' of the 1940s and 50s. This would make the choices in each situation efficient and also lead to a subsequent separation of transport flows to the different modes according to their relative strengths.

The Committee also discussed marginal cost-based pricing principles, which were said to be the correct pricing principle for the existing network at any given time. The Committee had at the same time the view that for new-construction the users should be charged the full costs of the projects. In a situation with a strong projected investment growth full-cost coverage would set a frame for the total investment volumes. There had been concerns over risks for 'over-investment', mainly voiced by the ministry of finance. These concerns could be met by this 'two-tier' pricing policy.

The Transport Policy Committee's work was commented on in the government's proposal to Parliament in 1963 (1963:119). The government more or less endorsed the proposals of the Committee. This decision also summarizes the rather strong focus on the 'cost responsibility principle' during this period.

3.2 The Mixed Policies Period

Through the 1960s there was a growing public discussion on the future development of the transport system. One of the effects was that there were political claims for the railroad to be protected from further reductions and questions were also raised whether the projected strong growth of the number of motor vehicles. The proper estimation of the social costs of the road-system, and the possible application of the socio-economic principles also for the railroads was therefore one of the concerns in the late 1960s and early 1970s when discussing transport policy.

In order to answer to the public pressure for a revised transport policy as the critique against the perceived road-transport 'favoritism' and the cautions that the railroad-system was disadvantaged by the prevailing policies, the government decided to set up a new Committee, the **1972 Transport Policy Committee**.

The government aimed for a redirection of transport policy. The Committee expressed the main features of the new transport policy to be the wider socio-economic goals. Within a framework of government ownership of transport infrastructure and socio-economic principles the transport services should, however, be carried out with the overriding aim to achieve business economic efficiency.

In a report from the Committee in 1978 (SOU 1978:31), focusing on the cost responsibility principles and fee-structures, the view that the cost responsibility perspective should be abolished for both railroads and roads was advocated.

The Committee thus emphasized the socio-economic perspective when it came to the management, financing and planning of transport infrastructure. At the same time it only slightly discussed the need for efficiency in the production of the services and the management of the government agencies in the area. Only one paragraph was included in the 1978-report (p 41) discussing the need for a focus on the 'internal efficiency' of the agencies (and other organizations) in the transport sector. Little was said in this respect other than that "intense rationalization- and cost-reduction" should be the focus of the organizations and

that “motivation” (for reaching efficiency) is important as the marginal cost principle for fees will probably not give the best prerequisites for (‘internal’) efficiency.

The government sent its proposal to Parliament in 1979 (1978/79:99). The 1963 goal for transport policy was proposed to be changed in line with the proposal from the 1972 Transport Policy Committee. A new overriding goal for transport policy reflecting the shift to a socio-economic stance was proposed by the government.

Marginal cost based pricing was seen as the preferable principle for future decisions on the prices and taxes in the area, and primarily when it came to the use of the existing network. At the same time the difficulties in applying these principles were reflected on. The fiscal objectives of the government were emphasized, showing that the full cost perspective was still valid to some extent.

The 1979 parliamentary transport policy decision did, however as it turned out, not have enough stability and impact to change the actual policies pursued by the government and the agencies.. The government therefore had initiated a renewed work for analyzing the transport policies already by the mid 1980s.

A number of **reports were presented by the ministry of communication** during the 1980s as a result of preparations for a coming transport policy decision. One of the reports prepared for the decision concerned the cost responsibility of the transport sector, and was published in 1987 (DsK 1987:4). In this report the connection between the financing principles and the organizational or internal efficiency of the separate transport modes was also discussed. It was argued that a cost-responsibility principle would give stronger incentives for efficiency than if fixed costs were covered by general tax-income. The report finally proposed something close to a mix of the 1963 and 1979 transport policy decisions in these respects.

The government, in its **proposal to Parliament in 1988** (1987/88:50), concluded that the principles of the 1979-decision had not fully been implemented in the sector. The different market-conditions in the sub-sectors where the transport modes operate had, according to the government, over time been more important than the overriding political principles as decided in the transport policy decisions.

As the communication minister discussed the cost-responsibility principle in transport policy area the conclusions and proposals were very close to the proposals in the 1987 ministry report. A marginal cost principle was thus proposed as a principle for short term costs while a (full) cost responsibility principle was proposed to cover for all fixed costs, which should be borne on a decentralized level in the system.

Competition between the transport modes and the importance of the free choice of transport customers and users were further emphasized in the proposal. Here, the government took a step back from the more vaguely formulated principles from 1979, where the basic principle was that the ‘financing gap’, following the introduction of marginal cost based prices, should be covered by government financing rather than by sub-sector cost responsibility.

The period from 1963 to 1988 was clearly a mix of principles and shifting policies. The period started and finished with more or less similar formal policies; a market friendly policy with focus on full cost coverage, with a foreword for socio-economic calculation to guide investment decisions combined with marginal cost based pricing to some extent. During this period there had, however, clearly been a controversy over which principles to follow.

3.3 The Social Marginal Cost Period

The 1988 parliamentary decision seems to have had as limited impact on the ‘real world’ practical policies as the 1979 decision. One main result of the 1988 decision was the split of the former railroad agency into an infrastructure manager and a new transport service oriented railroad agency. Growing deficits in the railroad operationis however, once again, was one of the main concerns of the government. Once again a

government Committee was launched. The focus was a general reform of transport policy. The Committee proposed a widened role for transport policy to explicitly include areas such as regional policy, sustainability, traffic safety etc. This marked a shift to a more clearly politicized agenda for transport policy than earlier.

The report (SOU 1997:35) from the **1996 Transport Policy Committee** was also more openly political in its style than earlier reports in this policy area. Transport policy was described as a clearly political policy area where the main focus should be the achievement of political goals rather than to see transport policy and transport systems as functional systems.

The Committee reflected on the issue of 'internal' and 'external' efficiency of the transport system with a view that a cost responsibility principle would give a good framework for internal efficiency, more so than a socio-economic framework with tax-funding of fixed costs. A number of reasons were, at the same time, presented as support for rejecting the cost-responsibility principle.

In a few sections in its final report (p 138 ff) the Committee concluded that the former (1963 and 1988) policies were deficient as guiding principles. The (once again) new policy was proposed to be that short term socio-economic costs should be the basis for fees and taxes. Financing of fixed costs should (normatively expressed) be covered for by general tax revenues. At the same time some additional funding from users should be possible in specific cases, to open for efficiency gains in addition to what cost benefit analysis shows.

In its **proposal to Parliament in 1998** (1997/98:56) the government held a view close to the 1996 Transport Policy Committee. However, as in earlier decisions that have been reflected on in this article, the government was more pragmatic in its stance than the Committees working with the questions. The government thus, in its basic "transport policy principles" (p 36 ff) clearly outlined that, even though transport policy was one policy area among many other and that transport issues mainly are to be treated in relation to the political goals and not primarily as a functional system, transport services at the same time have to be based on the principles of decentralization of demand and user choices. It is, according to the government's proposal, through the active choices of users and customers of transport actors that efficiency and development is achieved.

When it comes to the view on the cost responsibility in the transport sector the government was clear that the basic principle should be that prices and taxes should reflect the marginal socio-economic costs of the use of the transport infrastructure, with a focus on internalization of 'external effects'.

The decision in 1998 has been confirmed by two later decisions on transport policy in 2006 (2005/2006:160) and 2008 (2008/09:35). Short term social marginal costs as the basis for the charging of fees and taxes has been the 'new cost responsibility principle' of transport policy since the late 1990s and it is also part of the EU transport policy framework.

The third period clearly marks a shift towards a policy with marginal cost pricing and an internalization of cost elements representing external effects when it comes to transport infrastructure, signaling openness to government 'interventionism'. The focus on the incentives for efficiency in the organizations delivering the services had been reduced compared to earlier periods.

4 Theory and practice – has there been a controversy?

4.1 A controversy?

The discussion around the government's view on the principles that should govern the financial regulation and pricing principles for roads and railroads since the 1940s shows a general trend from the 'cost responsibility principle' to the marginal cost coverage principle. The basic principle that each transport mode should cover the full costs through the collection either of fees from the users (as for railroads) or

through taxes or compulsory fees (as for roads) has, over time, more or less been abandoned in favor of a view more based in neo-classical welfare economics, with a marginal cost coverage principle as the basic concept.

This article has shown that, at least on the official policy level which is the focus here, the discussion around pricing and financing policies related to transport infrastructure can be seen as a controversy between the two different perspectives as outlined by Coase in his 1946 and 1947 articles. The controversy seems to have been most obvious during the 1970s-80s. Since then the marginal cost principle has been the dominant policy. This development has been underpinned through an emphasis on this perspective also in EU-policies.

4.2 Reasons for the change in policies

The change in policies can be seen as influenced by a number of reasons. Some of these reasons are outlined here as suggestions or hypotheses to be further developed and exemplified in coming research. Among those reasons is a general shift towards a government intervention-stance of the political debate in Sweden that might be seen as a 'common denominator' explaining the move away from the cost-coverage policy to the marginal cost policy. Growing environmental concerns in combination with a generally less road-friendly stance in the society at large worked together in favor of a stronger political support for subsidizing railways, perceived to be the 'environmental friendly' alternative. Government intervention was seen as a remedy to many different perceived shortcomings on the market.

As Sannerstedt (1979) has shown there was a wide-spread criticism towards the reduction of the railroad system in the public debate in the 1960s, following the 1963 transport policy decision. The critical standpoints were reflected in a debate-book ('Ska vi asfaltera Sverige'¹) by a group of social democrats (Anell, Hedborg, Lönnroth, Ingelstam, 1971) discussing the effects of the expansion of the road system and arguing for a revised transport policy. One main point in the book was the perceived too road-transport friendly stance of transport policy. Another key element of the critique was that road traffic in general did not pay for its full 'social' cost, claiming in specific that 'externalities' were not included in the calculations of the cost-base. Rail-roads on the other hand, it was argued, had to pay their full costs, which rendered them a too weak competitive situation in relation to road traffic.

Another critical standpoint was raised by Peter Bohm, a well known Swedish economist at the time, active e.g. in transport economics. Bohm argued (Bohm, 1973) that the 1972 road tax Committee was heading for the 'right' principles for the future; socio-economic short term marginal costs as the basis for pricing decisions. The ministry officials and the prevailing transport policy could though, according to Bohm, be expected to work for a too strong focus on the principle of full cost coverage.

A general and comprehensive critique of the 1963 transport policy and its effects was published in 1974 by Bohm (et al). Here, the critical voices of the late 1960s and early 1970s, in specific against road-planning, were the starting point of the discussion. Through a wider use of cost-benefit analysis and welfare economic principles a redirection of the transport policy to focus more on welfare based efficiency should be achieved, it was argued.

Welfare economic based marginal cost-theory, besides being theoretically backed, seems also to have opened for more active policy and government intervention, which could be a political solution to a situation with demand for a wider policy orientation.. The fiscal interest in revenues from road-transport based taxes, which grew stronger through the 1970s, might also have made the earlier strict connection between revenues and government appropriations less favored from a fiscal policy (ministry of finance)

¹ "Should Sweden be asphalted?"

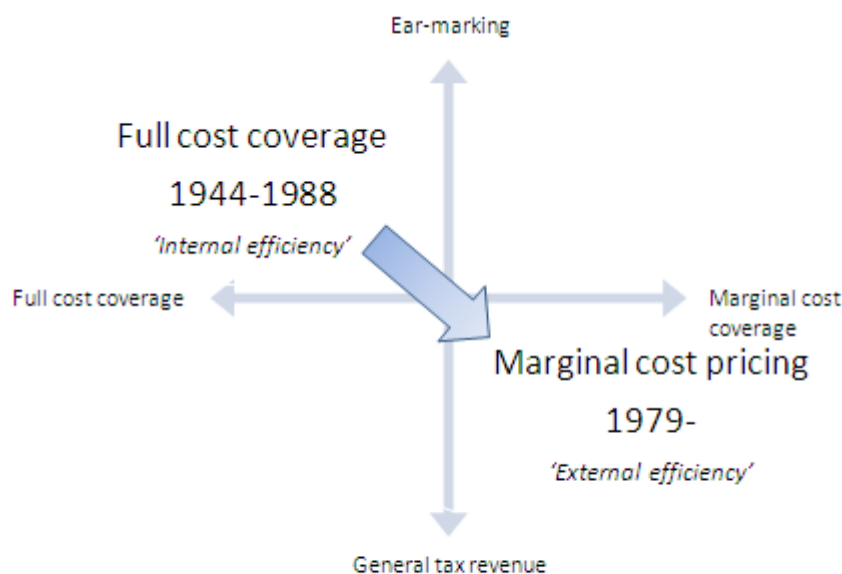
perspective. The income surplus from these taxes could be used for other purposes in a situation with growing public funding of different activities, e.g. coverage of growing deficits in railroads.

The academic support for a shift to socio-economic calculation for transport infrastructure spending, also seems to have fitted well into a political system looking for a way of ‘formalizing’ the stronger interest in deliberative planning processes of roads and railroads. Through the use of calculation of social costs (with cost benefit analysis) there was a method for including external variables into the discussion without losing too much of the rationalist stance of earlier government infrastructure planning.

4.3 Focus on incentives for efficiency changed?

A possible way to express this change in policies might be that there has been a shift in focus of the discussion from a view close to Coase’s standpoint in the 1940s, where organizations matter for the overall efficiency of the sector and where the efficient operation of the road and railroad agencies was an important concern for the government and government committees analyzing the policy area. The present focus, which has grown stronger since the 1970s, has been that maximization of welfare-surplus should be the overriding goal of the government’s policies. This shift in policy stance is presented in Figure 4 below.

Figure 4
The marginal cost controversy of Sweden’s transport infrastructure policy



The shift might be interpreted as a departure from the focus on ‘internal efficiency’ of the producing organizations and their relation to the users to a focus on ‘external efficiency’. As Figure 2 shows this focus-change has also been combined with a move from a principle of ‘ear-marking’ of the government’s revenues from (primarily) road transport to be used for road-maintenance and investments, to a model where all government revenues are treated as ‘general tax revenues’ to be used at the discretion of the Parliament and government in yearly budget decisions.

The incentive effects connected to the different pricing principles were discussed in the public documents as shown earlier. However, the focus on these questions has become less marked over time. The post

second world war discussion was clear in this respect. Later discussions on these matters have been less developed.

The shift in practical handling of the revenues and costs has been combined with a growing fiscal net surplus from road taxes and fees compared to government's spending on roads. For railroads the opposite is true. Growing deficits in the railroad sector have led to a strong dependence on government funding in the railroad sector. If Coase's cautions towards policies of this kind should be listened to we should expect the overall efficiency of the operations of the systems to have been reduced as the incentives for efficiency has become weaker.

One additional observation is that the government, at least since the 1990s, has acted with a 'market-failure stance' as the dominant view on the functioning of the transport infrastructure system, quite a move from the market-economy stance expressed e.g. by the 1944 Transport Policy Committee. There are less obvious examples where the government has acted in order to strengthen the institutional arrangements, such as proprietary rights, in order to have a more efficient spontaneous process of negotiations between parties involved in 'market-failure' situations.

The possible reciprocity of such negotiations and the institutional variance that Coase (1960) pointed to as important for efficiency and sustainability have not been a focus of the government's policies. The government's interventionist stance might have enforced less efficient structures compared to those Coase suggested, if analyzed from a cost efficiency and customer perspective. The fulfillment of the wider political goals developed over time for the infrastructure sector might though have been improved.

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