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Labour markets, commuting and company cars

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CONCLUSIONS AND DISCUSSION

6.1 Summary

This dissertation consists of four empirical studies which provided new insights into the relationship between urban, transport, and labour economics.

Chapter 2 analysed the causal effect of commuting on labour supply. Here, the emphasis was on the question of whether the number of hours worked depends on the worker's commuting distance. This question is relevant because commuting is often related to road congestion. Economists usually advocate the use of road pricing to address the external costs of congestion. In an economy with distortionary income taxes, workers supply less hours than without these taxes. It is nowadays believed (e.g. Parry and Bento, 2001) that road pricing may not be a good idea if revenues of road pricing are not used to reduce distortionary income taxes, because the road tax further reduces the number of hours worked. Using data on a panel of German workers, our innovative way to deal with the endogeneity of commuting distance is to identify changes in distance that are employer-induced, that is, the worker does not change residence or job, but the commuting distance changes. Our main finding is that higher commuting costs do not reduce the number of hours worked per week. We find evidence that workers that face high commuting costs slightly increase the number of hours worked per day, but that the number of workdays is not affected. This finding is consistent with our labour supply model developed in section 2.3.2 that allows workers to choose daily labour supply and number of workdays per week. It is, however, also consistent with a range of other models discussed in section 2.2. Our finding suggests that congestion does not have strong effects on the decisions of employed workers with regard to labour supply.

Subsequently, Chapter 3 studied the causal effect of commuting distance on absenteeism, where absenteeism is related to worker's productivity. A common assumption in the urban economics literature is that worker's productivity and the length of commute are independent, which is challenged by urban efficiency wage theories that allow for a relationship between them. To the best of our knowledge, there is only one other study – Ross and Zenou (2008) – that provides empirical support for this relationship. To be more precise, the authors demonstrate that urban unemployment and the expected length of the commute are positively related. Further, they demonstrate that wages vary across commutes, which is consistent with firms being able to partially observe commutes and minimise shirking by setting wages conditional on the length of the commute. We employ measures of absenteeism, which is a more direct measure of shirking and therefore of worker's productivity. Using data for Germany and the same identification strategy of Chapter 2, we find evidence that workers with high commuting costs are more voluntary absent, that is, they shirk more than those with shorter distances. We, however, cannot exclude the possibility that a part of this effect is channelled through health and therefore affects involuntary absenteeism as well.

Next, Chapter 4 looked at the relationship between wages and work start times, which is relevant for transport economists as start times are closely related to morning peak congestion. Traffic congestion is a major problem in most modern societies. A (plausible) way to alleviate this problem is by using staggered-work-hours programs. By focusing on the effect of start times on wages, we are able to assess whether staggered-hours programs affect productivity and workers' disutility. But the transport literature ignores compensation in the labour market for the chosen start time, by taking wages as given. The only exception – as far as we are aware of – is Wilson (1988). This study, however, has been criticised because it does not control sufficiently for worker characteristics, relying on cross-sectional data (Arnott, 2007). An important contribution of this chapter is that we improve upon the study of Wilson (1988) by taking into account Arnott's criticism. We control for (unobserved) worker characteristics by using worker panel data for Germany. Our results suggest that Wilson's empirical conclusion is unfounded; our main finding is that wages are a

slight inverse U-shaped function of start time. This is an interesting example of the setting of efficiency wages in a world where firms cannot fully observe the (private) costs of commuting, such as the workers' valuation of private time. Furthermore, our findings provide useful information on the costs of staggered-hours programs (productivity and worker's disutility), while the benefits of these programs are relatively easy to determine (a reduction in external congestion costs).

Finally, Chapter 5 estimated the welfare loss to society of favourable tax treatment of company cars in the Netherlands. Using household panel data on car expenditure, our analysis shows how the provision of company cars distorts household demand for cars and, in particular, expenditure on the most expensive car. Because the estimated effect on car expenditure is large, the welfare loss is substantial and economically meaningful. Furthermore, the distortion of company car taxation on the intensity of car use was also examined. We studied whether workers that hold company cars drive longer distances, and we calculated the resulting welfare loss. Using worker data on kilometres driven, the estimated welfare effect on the intensity of car use is smaller than the afore-mentioned effect on car expenditure. This indicates that the main distortion from taxation is through expenditure on cars and not the intensity of car use. The tax treatment of company cars may also affect welfare through an increase in household car ownership. This latter issue is ignored, and as a consequence our reported welfare loss may be expected to be downward biased.

6.2 Implications for policy

Chapter 2 finds evidence that workers that face high commuting costs do not reduce their labour supply. This finding suggests that, when evaluating policies that affect commuting, arguments related to changes in labour supply are likely to be not critical in discussing to what extent these policies affect welfare. For example, our findings suggest that recycling road pricing revenues in order to decrease the level of income taxes is not essential for increasing welfare when road pricing is introduced, which is in contrast to the common assumptions in the literature (see e.g. Parry and Bento,

2001; Calthrop, 2001).

In Chapter 3, we find a negative effect of commuting distance on worker's productivity through absenteeism. This finding suggests that policies aiming to reduce commuting, such as investment on infrastructure, may increase worker's productivity.

Chapter 4 finds hardly any effect of start times on wages. Our results suggest that staggered-hours programs that induce workers to start work at non-peak hours, even when introduced on a large scale, may be beneficial. Therefore, in this respect, we are slightly more optimistic than Arnott et al. (2005), who recommend that governments should not use these programs in order to mitigate congestion. We find that the relationship between wages and start times differs marginally by workers with or without children. Elaborating on this marginal difference – a U-shaped for workers with children and inverse U-shaped for workers without children – congestion may enlarge the negative effect of having children on the labour supply of females, suggesting staggered-hours programs may affect different groups of workers in different ways, which should be taken into account when designing such programs.

Many countries have distortionary tax structures regarding the provision of fringe benefits by employers. In Chapter 5, we looked at the case of company cars. This is relevant, as company cars are common in Europe. The current tax policy results in workers owning overly expensive cars, though the effect on the number of trips is relatively small. One obvious conclusion of our study is that tax authorities must increase the tax on company cars, at least from 22 (the current rate) to 40 or 50 percent. Furthermore, we emphasise that economic theory indicates that optimal taxation must not be based on the company car's purchase price, which is standard in Europe, but must be derived from the employer's costs of providing a company car net of costs related to business use (Katz and Mankiw, 1985), as it is current taxation practice in the US (IRS, 2008). In the US, workers receive a (taxable) monetary contribution from their employers to lease a car and a compensation for business mileage. However, the latter tax policy requires differentiation between business and private kilometres for tax purposes, which entails higher monitoring costs for tax authorities.

6.3 Directions for further research

As in any research, the analyses undertaken in this dissertation rely on several implicit assumptions. In this dissertation, we usually assume competitive markets (e.g. for labour, cars, housing), except in Chapter 3. A possible research agenda deals with the implications of the above assumptions for policies concerning welfare in the fields of transport, labour and urban economics. For example, parking policies addressing traffic congestion may take into account market power by private parking suppliers (Arnott and Rowse, 2009). These policies may benefit from new insights by changing or relaxing the above (competitive markets) assumptions. For example, in the literature on non-competitive car markets, distortionary company car taxation is ignored.

Applying the same kind of reasoning, well-known market failures in the urban literature (e.g. planning; restrictive zoning policies) could also be incorporated into a combined study of market structures including transport and labour. We are less aware of such an effort in the literature. Allowing for different market structures increases the demand for extensive data sets, and requires the usage of more complicated models.

Another underdeveloped topic in the literature is the study of the effect of non-wage components on productivity. Labour contracts, independent of market structure, are the outcome of a bargaining process between employers and workers. Labour contracts contain both wage and non-wage components. In this dissertation we discussed start times and fringe benefits; both are part of the non-wage agreement in the labour contract. One may then study the productivity effects of this non-wage job compensation (e.g. company cars). To study these effects, one should look at the labour market but as well incorporate transport and urban economic views. For example, start times do not only play a role within labour economics due to being a job attribute, but also in transport economics due to congestion issues and in urban economics due to location of firms. It is well-known and well-studied in the labour economics literature that fringe benefits are distortionary regarding income taxation.

The distortions in the other two fields – transport and urban economics – are (usually) not researched. Hence, the total effects on productivity cannot be determined by focusing exclusively on the labour field, but only by integrating the three fields. In this dissertation, we did not look at the productivity effects because we lack explicit data.

The considerations of market structure as well as productivity influence the current views of first- and second-best welfare policies. This dissertation is just a step towards integrating transport, labour and urban economics views and policies.