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TAXATION OF CROSS-BORDER LABOR
INCOME AND TAX REVENUE SHARING IN
THE ÖRESUND REGION

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Abstract

Due to the Nordic Tax Treaty, commuters pay their income taxes where they earn income. This creates problems in local government finances in Scania County of Sweden, because the number of commuters received on both sides of the Öresund Strait is not symmetric, but the flow from Scania County of Sweden into Copenhagen County of Denmark is about 25 times as large as the other way around. This paper aims to document asymmetries in commuter flows in the Öresund Region and the loss in income tax revenue due to the asymmetric magnitudes in the flow of commuters. We propose renewed negotiations between Sweden and Denmark on the income taxation in the Öresund Region in order to sustain local public services in the region.

Keywords: *Labor Taxation, Commuting, Model Tax Convention, Nordic Tax Treaty, Source vs. Residence Principle*

JEL Codes: *H24, H61, H71, J61, K34*

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I. INTRODUCTION

Free mobility of labor across the European Union (EU) is a crucial condition for sustaining the European single market. Double taxation of labor income arises as an important problem when an individual resides in one country and commutes to work in a neighboring country. Although countries usually negotiate on special tax treaties to avoid double taxation of cross-border commuters' labor income, significant differences in local public finances, social security and pension systems remain as important problems for cross-border commuters as well as for regions involved. Thus these differences create barriers to free movement of labor within the EU.

This paper focuses on commuter flows and labor income taxation problems in the Öresund Region. The Öresund Region consists of the Scania (*Skåne*) County of Sweden and the Zealand County of Denmark and observes the largest amount of cross-border commuter flow in Scandinavia ranking among the top three⁴ largest cross-border commuter flows in the EU that does not involve Germany or France⁵. Opening of the Öresund Bridge on July 1st, 2000 connecting two largest cities of the region, Malmö on the Swedish side and Copenhagen on the Danish side, marked the beginning of a decade that would witness a very steep increase in the number of cross-border commuters in the region, a new tax treaty between Sweden and Denmark (tax treaty of 2003), and finally an urge to renegotiate some aspects of that very same treaty.

The dramatic increase in the number of cross-border commuters has not been symmetric on both sides of the strait: presently more Swedes commute from Sweden to Denmark than Danes commute from Denmark to Sweden⁶. This situation has given rise to a number of questions concerning taxation and social benefits. In this paper it is our objective to identify some of the major tax⁷ obstacles that the present situation gives rise to. We especially focus on the financing problem of local public services in parts of the Öresund Region where cross-border commuters heavily reside.

There has been very little academic discussion on the 2003 tax treaty in an international tax law context. Hence an important objective of this paper is to document current problems related to labor income taxation of cross-border commuters between Sweden and Denmark as well as discussing alternative solutions to these problems.

The paper has the following outline: in *section 2* the major tax principles are identified. The way in which they are applied in Swedish law is also presented. The OECD Model Tax Convention (MTC) is used as a model for both Sweden and Denmark when entering new treaties and revising old treaties. Two

⁴ The other top two cross-border commuter routes are Belgium-Netherlands and North Ireland- Republic of Ireland.

⁵ European Commission, DG Employment and Social Affairs (2009) "Scientific Report on the Mobility of Cross-Border Workers within the EU-27/EEA/EFTA Countries". Annex. pp.17-19.

⁶ See Øresundsinstitutet (2007).

⁷ We focus on taxation of individuals' labor income, even though there are related problems regarding business taxation as well.

important treaties between Sweden and Denmark concerning cross-border commuter flows in the Öresund Region, namely the multilateral Nordic tax treaty and the 2003 tax treaty, are discussed in *section 3*. Empirical facts on cross-border commuter flows in Öresund are documented, and our proposal to replace current “repayment charges” is discussed in *section 4*. Further ideas to improve the 2003 tax treaty are discussed in *section 5*.

II. INTERNATIONAL JURIDICAL DOUBLE TAXATION

A sovereign state exercises its right to levy tax according to national, primarily constitutional law and tax law. States normally apply two principles according to which they levy tax: the residence principle and the source country tax principle. The residence principle focuses on the tax *subject*: does the person have sufficient connection or ties to a state for that state to tax that person’s income? The source principle focuses on the tax *object*: does the raised income have sufficient connection to a state for that state to tax that income?

International juridical double taxation is the classic problem which tax treaties aim to mitigate the effects of. International juridical double taxation occurs when a person is taxed more than once for the same income in at least two states. It is common that the residence and source principles collide. That will for example be the case when an individual is resident in one state and earns employment income in another state. The first state will tax the employment income on the basis of the residence principle, and the second state will tax that income because it is considered to have its source in that state.

Sweden taxes according to both the residence and source principles. An individual may be considered to be resident in Sweden for tax purposes if one of the following three criteria is met:⁸

- i. The first criteria is “residence” (*bosatt*) in Sweden: an individual is considered to be resident in Sweden if he or she is recorded in the register of a Swedish municipality. An individual has to be recorded in such a register if he or she stays in the municipality on a regular basis.
- ii. The second criterion is pure tax criterion and applies if an individual has his “habitual abode” (*stadigvarande vistelse*) in Sweden: this applies if someone stays in Sweden for a period of about six months.
- iii. The third criterion applies if someone has “considerable ties” (*väsentlig anknytning*) to Sweden.⁹ This criterion has the characteristics of an anti-avoidance provision. It applies if someone was previously considered to be a resident in Sweden according to the rule i. above, but has transferred residence from Sweden to another state. If that individual still has considerable family ties or economic ties with Sweden, he or she may still be considered to be subject to an unlimited tax liability to Sweden. A large number of connecting factors are noted in the Income Tax Act (ITA): e.g. having previous permanent home in Sweden, having

⁸ Chapter 3, section 3 of the Income Tax Act (ITA).

⁹ Several requirements are stipulated in chapter 3, section 7 of the ITA.

spouse or children (below the age of 18 years) in Sweden, or having considerable business activities in Sweden.

Sweden has considerable tax rates on employment income. In the first bracket there is a municipal tax of about 32 per cent. On income above the first bracket there is an additional 20 per cent federal tax, and on income above the second bracket there is an additional 5 per cent federal tax.¹⁰ Accordingly, the maximum marginal tax rate is about 57 per cent.

Non-residents that are subject to a limited tax liability are taxed on their employment income according to a specific act, the Act on the Taxation of Non-Residents (*lagen om särskild inkomstskatt för utomlands bosatta*, frequently abbreviated SINK). Employment income earned in Sweden by a non-resident is subject to a tax of 25 per cent according to this act. No deductions for costs or basic allowances are permitted. The European Court of Justice considered this to be in breach of the free movement of workers in the Wallentin case¹¹. As a consequence of this decision any person subject to tax according to SINK may opt to be taxed according to the ITA which permits deduction of costs as well as a basic allowance.

Methods used for elimination of double taxation constitute another important aspect of international taxation. Tax credit is the standard method used for this end in Sweden. Most Swedish tax treaties opt for tax credit, and Swedish tax treaties regularly refer to the internal Swedish Tax Credit Act (TCA). However other methods apply as well. Tax exemption may be applied according to Chapter 3, section 9 of the ITA, which applies according to two alternative rules: the first one is called the six-month rule. It applies when a Swedish resident is abroad for a period of at least six months, earns income abroad in another state, and this earned income is subject to taxation in that state. If those conditions are met, the income will be tax exempt in Sweden. The second one is called the one-year rule. It applies when a Swedish resident works abroad for a period of at least one year. The income will be tax exempt in Sweden even if it is not taxed in the other state. According to this rule, exemption from taxation in Sweden will be granted even if the income has not been subject to tax in the other state.

III. TAX TREATIES BETWEEN SWEDEN AND DENMARK

In this section we discuss specific treaties between Sweden and Denmark that address the problem of the taxation of cross-border commuters. Both Sweden and Denmark are members of the OECD and follow the OECD MTC when entering into new tax treaties and when revising old treaties. In both states the commentary to the OECD MTC has a considerable value when interpreting tax treaties.

¹⁰ In 2014 the first bracket is 413,000 Swedish Krone (SEK) and the second bracket is 591,600 SEK.

¹¹ Case C-169/03 Wallentin.

A. The multilateral Nordic tax treaty

The first multilateral Nordic tax treaty was signed in 1983¹². This treaty includes Denmark, the Faroe Islands, Finland, Iceland, Norway, and Sweden. It largely follows the OECD MTC. The treaty has been renegotiated several times and the latest amendment was made in 2007. In this context there are three categories of articles that are the most important ones:

- i. Residence for tax purposes contained in Article 4 of the treaty.
- ii. Distributive rules, primarily concerning employment income which is covered in Article 15 of the treaty.
- iii. The method article, which in some cases provide for the credit method and in other cases the exemption method.

One of the most important articles in this respect is Article 15, which covers the taxation of employment income. Article 15 (1) states:

“Subject to the provisions of Articles 16, 18, 19, 20 and 21, salaries, wages and other similar remuneration derived by a resident of a Contracting State in respect of an employment shall be taxable only in that State unless the employment is exercised in another Contracting State. If the employment is so exercised, such remuneration as is derived therefrom may be taxed in that other state.”

Since Article 15 (1) provides a taxing right to both the state of residence and the source state, it is necessary to consult the method article. Let us assume that a cross-border worker is resident in Malmö (Sweden) and works in Copenhagen (Denmark). The applicable method would be Article 25 (6) in this case, which exempts income from taxation in Sweden. The effect of this exemption is that Swedes working in Denmark will be taxed in Denmark but will in general receive social benefits in Sweden.

Article 15 (2) provides an exemption if the employee works less than 183 days in the source state. Under such circumstances the state of residence is granted an exclusive taxing right. But this rule does not normally apply to cross-border workers since they tend to work more than 183 days in the source state.

In effect Swedish commuters to Denmark are supported by the non-community taxpayers in the Scania County of Sweden, since large parts of the social welfare system is funded and provided for at regional level in Sweden. There are considerable differences in public finance systems between Sweden and Denmark. The Danish social welfare system relies much more heavily on financing through taxation compared to the Swedish social welfare system. In addition to its taxation of employment income, Sweden also levies high rates for social benefits. At present, the rate for social benefits on employment income is about 32 per cent.

¹² See Anderson et al. (1991).

B. The 2003 tax treaty between Sweden and Denmark

In 2003 Sweden and Denmark signed a special tax treaty regarding the taxation of cross-border workers. This treaty is primarily a supplementary bilateral treaty to the multilateral tax treaty addressed in the previous section.

1. Article 1 of the 2003 tax treaty: work in the state of residence of the employee or in a third state

This article contains further conditions for the taxation according to Article 15 of the Nordic tax treaty and concerns the following situation: suppose an individual is resident in one of the contracting states, e.g. Sweden, and earns employment income from an employment that is normally exercised in the other contracting state, in this case Denmark. Nevertheless it is possible that the work will actually not be undertaken in the source state but in the state of residence or in a third state. According to Article 1, the work will be regarded as being exercised in the formal source state under two special circumstances: first, if the work is performed in the permanent residence of the employee; or second, if the work necessitates job-related travel to any state outside the source state. For either situation to apply it is a necessary condition that the work in the formal source state amounts to at least half of the working time during every three-month period.

2. Article 2 of the 2003 tax treaty: the taxation of pensions

Taxation of pensions is addressed in Article 2 of the 2003 tax treaty. The article concerns the following types of income: business income (Article 7 of the Nordic treaty), income from independent personal services (Article 14 of the Nordic treaty), employment income (Article 15) or income from government services (Article 19). If an individual is resident in one of the contracting states and is party to a pension scheme in the other state, then the following applies: the pension premium paid to the insurance company in the source state will be deductible in the state of residence. Furthermore, a premium payment made by the employer to an insurance company in the source state will not be deductible in the state of residence for that individual, but it will be deductible for the employer in the source state. Limits for deducting pension premiums that arise due to national law in the concluding states, will also apply following Article 2 of the 2003 tax treaty.

There are two general preconditions for the right to deduct pension premiums in the way described here, and they are provided in Article 2 (3): the first condition is that the individual earns at least 75 per cent of her income in the source state, which shall be calculated after the deduction of all necessary expenses for income creation. The second condition is that the individual may be taxed only in the state of residence, if he is party to the pension scheme, and premium payments were made shortly before he became resident of that state. Both conditions must be fulfilled in order to be granted the right to deduct pension premiums. The applicable pension schemes in Denmark and Sweden are identified in Article 2 (4) by references to internal law in those states.

The above discussed premium deductions should be considered in light of the case law from the European Court of Justice (ECJ). The first case law in this area was the Bachmann case¹³, where the ECJ denied insurance premium deductions where the eventual insurance payments would not have been taxable. This ground of justification has been labeled “the preservation of fiscal coherence”. Some years ago, the ECJ declared both Danish and Swedish requirements for the deduction of premiums based on the residence of insurance provider to be in breach of the freedom of establishment.

3. *Article 6 of the 2003 Swedish-Danish tax treaty*

This article states that if an individual with residence in one contracting state earns income from employment in the other contracting state, the state of employment shall pay the state of residence a certain “repayment charge”. We discuss the repayment charge more in detail in the next section where we also provide a counter-factual example to replace the current exercise of the repayment charge.

IV. FLOW OF COMMUTERS ACROSS ÖRESUND BETWEEN 1997 AND 2008

In this section we turn to data and provide descriptive statistics on commuters’ labor income in the Öresund Region. We further discuss the current “repayment charge” as introduced in the article 6 of the 2003 Swedish-Danish tax treaty and propose an alternative to the current exercise of the repayment charge. We calculate tax earnings under the alternative scenario using individual level data that are available on individuals’ earnings in the region.

A. **Commuter Flows and Earnings in the Öresund Region**

We document size and growth of commuter flows between Sweden and Denmark across the Öresund strait in this section. For this end, we break down commuter flows across Öresund into four groups: we group commuters according to their direction of flow (whether they are commuting from the Swedish to the Danish side of the strait or vice versa) and we divide these groups further into two according to the citizenship of commuters (whether they are citizens of Sweden or Denmark).

Transregional Register is an individual level dataset constructed by Statistics Sweden (SCB) and Statistics Denmark (DST) using individual level data on migrants and commuters in the Öresund Region between 1997 and 2008. Commuters’ data contain 95,580 observations on 36,651 unique individuals, and migrants’ data contain 67,099 observations on 47,427 unique individuals.

Figures 1 and 2 show size of commuter flows from the Swedish to the Danish side of the strait and vice versa, respectively, broken down by commuters’ citizenship.

¹³ Case C-204/90 Bachmann.

Figure 1. Commuters from Sweden to Denmark across Öresund, 1997-2008.

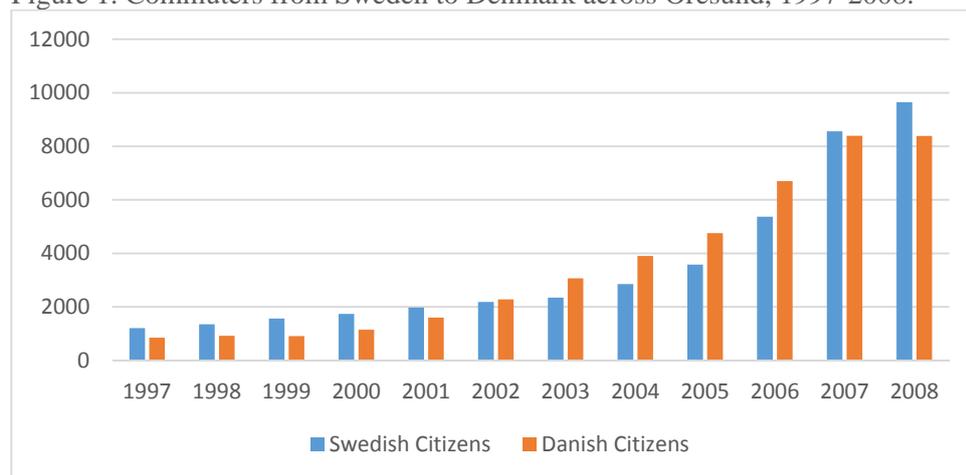
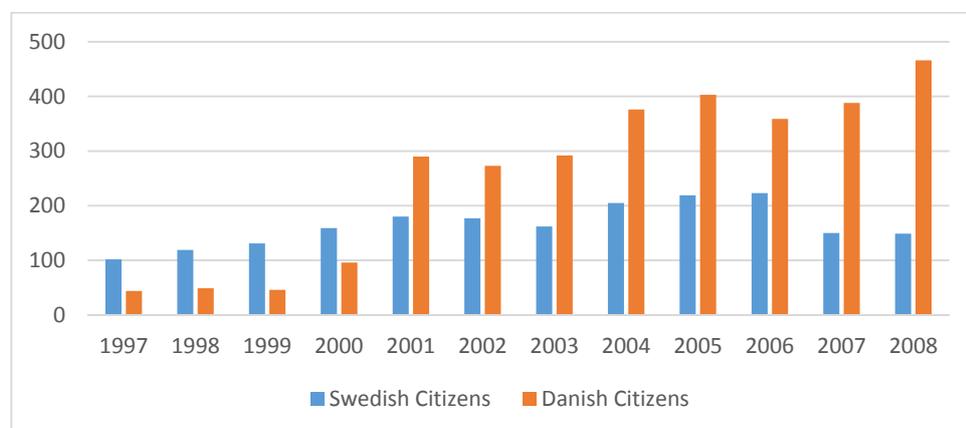


Figure 2. Commuters from Denmark to Sweden across Öresund, 1997-2008.

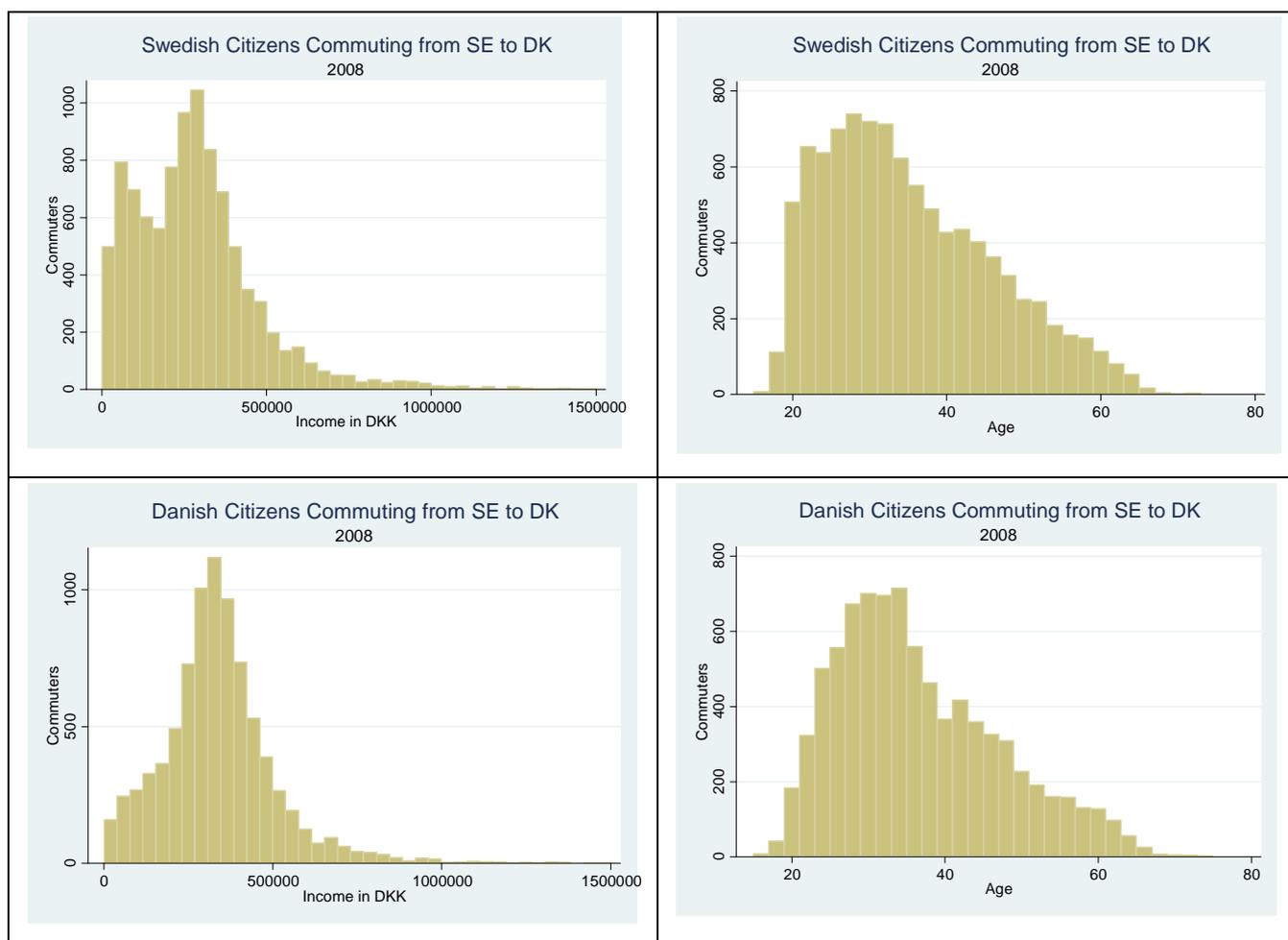


Year 2000 marks the opening of the Öresund Bridge connecting Copenhagen and Malmö at the southern end of the Öresund strait. Two trends stand out after this date: first, number of commuters from the Swedish to the Danish side of the Öresund increase (Swedish as well as Danish citizens) drastically. Second, starting from 2001 onwards increasingly more Danish citizens commute from Denmark to Sweden. Comparing size of commuter flows in either direction, one immediately observes that commuter flows from Sweden to Denmark account for about 95% of commuter flows in the region at each year (and 96.7% in 2008).

We focus next on commuters flow from Sweden to Denmark, hence we investigate those individuals in the Öresund Region who reside in Sweden and work in Denmark. Labor income (wage) distribution as well as age distribution of these commuters in year 2008 is shown in figure 3.

Histograms presented in figure 3 show two interesting comparison points between Swedish and Danish citizens residing in Sweden and working in Denmark: first, Danish commuters are older, and, second, Danish citizens work in better paying jobs. Swedish citizens' double-peaked labor income distribution reveals that there are many Swedes who work in low paying jobs in Denmark, hence the low average labor income for Swedish citizens whereas top percentiles do not differ as much, as shown in table 1.

Figure 3. Labor Income and Age Distribution of Öresund Commuters, 2008.



A closer look at the data reveals that this group contains mainly young people (in their 20s). This can be taken as a suggestion that availability of the Danish job market (esp. in Copenhagen) has a dampening effect on the youth unemployment in the southern part of Sweden.

Table 1. Labor Income of Commuters Residing in Sweden and Working in Denmark*

	<i>Swedish Citizens</i>			<i>Danish Citizens</i>		
	<i>Average</i>	<i>90th Percentile</i>	<i>99th Percentile</i>	<i>Average</i>	<i>90th Percentile</i>	<i>99th Percentile</i>
1997	292 723.0	516 476.6	1 081 126.1	311 693.8	477 736.4	1 171 079.6
1998	315 607.1	546 802.5	1 270 323.3	330 188.3	520 035.1	1 046 769.8
1999	301 285.8	532 523.1	1 213 528.8	345 942.4	535 816.5	1 078 507.4
2000	309 773.8	560 291.9	1 235 484.3	339 075.7	538 236.2	1 093 217.5
2001	341 899.4	604 341.1	1 378 521.4	364 126.5	578 899.1	1 335 377.2
2002	360 146.5	641 558.1	1 429 352.9	352 054.7	560 262.0	1 221 992.5
2003	377 777.1	678 588.3	1 252 428.5	350 467.2	554 877.4	1 092 269.0
2004	389 035.1	696 596.6	1 697 216.0	346 855.9	535 400.3	1 098 827.5
2005	378 042.9	661 871.6	1 443 580.9	375 218.7	573 598.0	1 159 797.8
2006	345 085.3	636 975.9	1 350 518.0	379 154.3	587 008.4	1 080 611.4
2007	327 824.4	610 160.3	1 282 483.2	398 373.5	620 733.6	1 112 422.9
2008	381 621.5	657 968.7	1 401 159.4	445 877.4	679 582.3	1 227 107.0

*Figures are reported in Swedish Krona

B. Local Taxation as an Alternative to the Repayment Charge

According to the 2003 treaty between Sweden and Denmark repayment for the tax revenue generated from taxing an individual's labor income is due only if this individual is working in the private sector and their employment income is at least 150.000 Danish Krone (DKK). When Danish tax authorities calculate the repayment to be sent to Sweden, this calculation is based on the average municipal tax according to the Article 15 of the Nordic tax treaty and incomes of those commuters from Sweden to Denmark who earn at least 150.000 DKK annually. The same method applies to the repayment sent from Sweden to Denmark.

Article 6 of the 2003 tax treaty provides that after two years the Contracting States intend to evaluate the system for equalization, especially considering the fact that only municipal tax is taken into account, and not regional taxes. Thereafter, a re-evaluation of the equalization regime will take place every five years. To the best of our knowledge, there have been no re-negotiations between Sweden and Denmark on this issue so far.

There are two important problems due to which we deem the current repayment scheme inadequate for the fiscal balance of the region. The first problem is that commuter flows are asymmetric not only in numbers, but also in commuters' occupancy and hence employment income. The base of the repayment charge is made of incomes of individuals earning at least 150.000 DKK in the private sector, which can be a significant hurdle for young Swedish residents working for low paying jobs in Denmark.

The second problem with the current calculation of the repayment is the following: although municipal taxes are accounted for in the repayment, it does not include any scheme to compensate for the loss in the regional tax¹⁴. As a result of this, Scania County of Sweden suffers fiscal imbalance. There is considerable criticism on the equalization regime from the Scania County, and this criticism has already found support in an inquiry made by the Swedish Tax Agency. The Swedish Tax Agency has suggested several amendments to the present treaty, including the abolishment of the minimum income condition involved in current calculations of compensation, extension of compensation regime to include income and pensions from public employment, and inclusion of regional taxes when calculating the compensation payment.

We calculate repayment under alternative schemes in table 2. We obtain the number of commuters, their residence, citizenship, and annual income from the Transregional Register database. We estimate the actual repayment charge by taking those Swedish commuters who earn more than 150.000 DKK annually in Denmark as the base for our calculations. These results are shown in column (4) in table 2. This compensation scheme is the one that has been in place since the 2003 tax treaty up to the present day and was intended to make up for the lack of local public financing, however its insufficiency has long been criticized by local authorities in Scania.

¹⁴ See Coomes and Hoyt (2008) and Braid (2005) for a detailed analysis of effects of cross-border commuting on local public finances.

Table 2. Repayment Charge and Local Taxation Scenario*

	(1)	(2)	(3)	(4)	(5)	(6)
2001	5.948	2.823	1.205	113.000.000	190.000.000	360.000.000
2002	7.003	3.114	1.495	139.000.000	225.000.000	462.000.000
2003	8.114	3.215	1.630	158.000.000	249.000.000	564.000.000
2004	15.234	5.288	2.224	234.000.000	385.000.000	848.000.000
2005	17.777	6.495	2.712	273.000.000	453.000.000	1.050.000.000
2006	22.857	9.246	3.666	358.000.000	602.000.000	1.400.000.000
2007	29.216	14.132	5.696	528.000.000	895.000.000	1.920.000.000
2008	31.615	15.901	7.198	677.000.000	1.130.000.000	2.300.000.000

*Figures are reported in Danish Krona. Columns are:

- (1) All commuters from Sweden to Denmark in the Öresund Region
- (2) Commuters that are Swedish citizens
- (3) Commuters that are Swedish citizens, work in the private sector and earn more than DKK 150000 in Denmark. (Hence their municipal tax payments in Denmark qualify for the "Repayment Compensation" from Denmark to Sweden)
- (4) Estimated compensation from Denmark to Sweden based on number of Swedish commuters shown in (3).
- (5) Estimated local tax revenue in Scania if only Swedish-citizen commuters paid local taxes in Sweden.
- (6) Estimated local tax revenue in Scania if all commuters paid local taxes in Sweden.

We consider two alternative scenarios which we propose as alternatives to the current compensation scheme of the 2003 tax treaty. We propose that municipal taxes should be collected on residence principle. Taking labor income earned (net of Danish state income tax) by Swedish citizen cross-border commuters residing in Scania and working in Denmark as the tax base for such a municipal tax, and applying current municipal taxes to this tax base (municipal tax rates are very close across Scania, thus we use an average rate for all residents in Scania), we obtain local tax revenues listed in column (5) in table 2. It is not easy to justify why Danish citizens who choose to reside in the Scania County of Sweden should not be considered within the tax base of that region¹⁵. In column (6), we revise our calculations from column (5) to include income of Danish citizens residing in Scania within our "alternative" repayment scheme.

Estimated municipal tax revenues under the two alternative scenarios where municipal taxes are paid by citizenship-basis (hence only by Swedish commuters residing in Scania) as shown in column (5) and by residence-basis (hence by Swedish and Danish commuters residing in Scania) as shown in column (6) are about 60 to 70 percent, and about 250 percent, respectively, larger than what we estimate as the current repayment in column (4). With continuously increasing number of cross-border commuters over years, these differences correspond to highly significant amounts, lack of which leads to important fiscal problems in the Scania County.

¹⁵ See Gillette (2010) for a detailed discussion on commuter tax base and authorization.

V. CONCLUSION AND FURTHER IDEAS FOR DEVELOPMENT OF THE SWEDISH-DANISH TAX TREATY

We suggest that the 2003 bilateral treaty between Sweden and Denmark needs to be renegotiated, because it has detrimental effects on the funding of the Scania County. The primary concern is that the order for compensation is based on figures for commuting that are outdated and thus no longer in line with reality. A possible revision could be such that municipal taxes on labor income will be allowed to be collected by the residence principle. As shown in the previous section, even such a simple revision generates considerable tax revenue for local public financing.

An important factor for the general evaluation that goes beyond regional governments' fiscal imbalance is the difference between Sweden and Denmark when funding the social welfare system. Sweden relies much more heavily on social contributions, whereas Denmark almost exclusively relies on the tax system. Social security taxes are not covered by the tax treaties at issue. They should also be taken into account when calculating the compensation order according to Article 6 of the 2003 treaty.

In a broader perspective we must mention that the Swedish social welfare system may after all be benefiting from the increased commuting, as far as unemployment payments are concerned. Youth unemployment rate is high in Sweden, which also includes the Scania County. Asymmetries in local unemployment rates leads to increased cross-border commuting¹⁶, as expected. If young people in the south of Sweden did not have the possibility to work in Denmark, there is a high risk that they would be unemployed in Sweden and thus relying on the Swedish social security system, with resulting extra burden for the Swedish tax payers.

A final comment concerns the wording of the 2003 treaty. It is not easy to follow the provisions. A key for applying a tax treaty is which state that is considered to be the state of residence according to Article 4 of treaties following the OECD Model Tax Convention, which the Nordic tax treaty closely follows. It is an overall requirement for good tax legislation that it is easy to understand, not the least when it concerns the ordinary tax payer and not primarily the corporate sector with its support from tax consultants. It should, however, be noted that the regional offices of the Swedish and Danish tax agencies have done considerable efforts with informing the general public of the applicable rules.

Several other regions within the EU observe similar cross-border commuter flows. Local governments in such regions may experience in the near future (or may already be experiencing) problems similar to those observed in the Öresund Region that could not be satisfactorily solved by the OECD Model Tax Convention. Lessons obtained from the Öresund Region and discussion of potential solutions or proposals as we provide in this paper will hopefully also benefit those other international regions with excessive and asymmetrical cross-border commuter flows.

¹⁶ See Mathä and Wintr (2009).

REFERENCES

- Andersson, E., Mattsson, N., Michelsen, A., and F. Zimmer (1991) *Det Nordiska Skatteavtalet med Kommentarer*, 2nd Edition, Norstedts, Stockholm.
- Braid, R.M. (2005) "Tax Competition, Tax Exporting and Higher-Government Choice of Tax Instruments for Local Governments," *Journal of Public Economics*, 89: 1789-1821.
- Coomes, P.A. and W. Hoyt (2008) "Income Taxes and the Destination of Movers to Multistate MSAs," *Journal of Urban Economics*, 63(3): 920-937.
- Gillette, C.P. (2010) "Who Should Authorize a Commuter Tax," *The University of Chicago Law Review*, 77: 223-248.
- Mathä, T. and L. Wintr (2009) "Commuting Flows across Bordering Regions: a Note," *Applied Economics Letters*, 16: 735-738.
- Øresundsinstitutet (2007) *Analys av Skatteavtalet Sverige-Danmark*, Malmö.

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