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The Struggle between Equity and Efficiency - Do Nordic Countries Have a Free Lunch?

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Zusammenfassung

Obwohl in der theoretischen Literatur die Existenz eines Trade-Offs zwischen Effizienz und Gerechtigkeit deutlich bejaht wird, ist dieser in der Empirie nur schwierig zu finden. Darüber hinaus scheint der Trade-Off von den verschiedenen europäischen Sozialmodellen unterschiedlich gut bewältigt zu werden. In einigen Ländern scheint sogar kein Trade-Off zu bestehen, so dass die Vermutung besteht, dass ein „free lunch“ existiert. In diesem Paper nutzen wir Daten der Luxembourg Income Studies (LIS) um empirisch zu evaluieren, ob (a) tatsächlich ein „free lunch“ existiert und ob (b) eine strukturelle Überlegenheit des nordischen Sozialsystems vorliegt.

Abstract

Although there is a vast theoretical literature on the existence of a trade-off between equity and efficiency, empirical investigations often fail to find evidence for this proposition. Furthermore there are hints that some social models in Europe can cope better with this trade-off and are actually able to provide what economists call a "free lunch". In this paper we use data from the Luxembourg Income Studies (LIS) to evaluate (a) whether there really exists something like a free lunch and (b) whether some social systems are actually better in coping with the trade-off between equity and efficiency.

JEL-Classification: D61, D63
Keywords: equity, efficiency, tradeoff, welfare states

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1 Preface

The existence of a trade-off between equity and efficiency is a well-known theoretical concept in economics.[1] Government action in the market for equity's sake usually leads to a loss in efficiency. Nevertheless this "well known" trade-off is empirically hard to find.[2] To make things even more confusing, there are hints that some countries may be more able in coping with this trade-off. The Scandinavian welfare system seems to provide more equity than any other European social systems at virtually no GDP cost. As a result, there is an urgent need to understand and solve this "free lunch" puzzle.

On the other hand there has been rather a lot of discussion on the supposed steady decline of "social justice" in Europe. Globalization and economic freedom are suspected to incite inequality and poverty as rising global competition puts pressure on the welfare states resulting in a race to the bottom. However, this suggestion does not match with the evidence from the Nordic countries: openness and more economic freedom have not rolled back social justice.[3] After all, the relationship between equity and efficiency seems rather cumbersome to grasp. In this paper we therefore try to evaluate the magnitude of the trade-off between equity and efficiency and further explore whether the trade-off is so small that it would be fair to claim that a free lunch exists. We moreover concentrate on the Nordic Welfare Sytems, which seem to have an outstanding performance in coping with this trade-off. Thus, we aim to make a useful contribution to the ongoing discussion of this topic.[4]

In the remainder of this paper we first give a brief summary of the different welfare systems in Europe (Chapter 2). After that we show some descriptive evidence for the existence of a free lunch, using aggregate data from the Luxembourg Income Studies (Chapter 3). Furthermore we investigate the existence of a free lunch empirically (Chapter 4) and present the corresponding results

[1] **Okun, A.M. (1975)**, , **Friedman, M. (1975)**,

[2] **Lindert, P.H. (2004a)**, , **Lindert, P.H. (2003)**, .

[3] **Bergh, A. (2006a)**,

[4] **Bergh, A. (2006a)**, , **Bergh, A. (2006b)**, , **Bergh, A. (2006c)**, , **Lindert, P.H. (2003)**, , **Lindert, P.H. (2004a)**, , **Lindert, P.H. (2004b)**, , **Lindert, P.H. (2006a)**, , **Lindert, P.H. (2006b)**,

(Chapter 5). After a short discussion of these, we finally present our conclusions (Chapter 6).

2 European Welfare Systems

The existence of one European Welfare System can be confidently discarded. Since Gosta Esping-Andersen's *"Three Worlds of Welfare Capitalism"*[5] at the latest, the idea of a typology of welfare states is rather common in the social sciences. He puts a special emphasis on the importance of history and norms in classifying the different systems, since it is not only the amount of money which is dedicated to welfare, but also the institutional design of the distributional channels that matter. Although money and institutional design sometimes conincide, there are still important differences. The quite generous German welfare state is characterized by its rather strong stratification of benefits, while the Nordic model is also generous but much more universal, i.e. a Beveridge-style welfare system. On the other hand, the Scandinavian and the Anglo-Saxon system can be described as both universal but the latter is much stricter than the former. These basic criteria simplify the designs of the welfare regimes and of course there are still huge differences within each of these worlds, but at least some features can be found that help distinguish the worlds from each other. Albeit being far from perfect, we use the concept of classifying the different kinds of welfare systems for our further analysis. We do not use the original concept of three classifications but rather adopt the suggestion proposed by e.g. *Ferrara*[6] and *Sapir*[7] to distinguish between four systems, as the Mediterranean countries which were classified as "corporatist" in the original *Esping-Andersen* in the meantime systematically differ from the Continental countries. As we use LIS data, we only consider those countries for which we have sufficient data.[8] As suggested by *Ferrara* we then assign each of these countries to one "world" of welfare capitalism, namely Nordic (Sweden, Finland, Denmark, Norway),

[5] **Estping-Andersen, G. (1990)**,

[6] **Ferrara, M. (1998)**,

[7] **Sapir, A. (2005a)**, .

[8] "Sufficient" for our purposes means, that there are at least data in three of the five LIS waves for a country.

Anglo-Saxon (Great Britain, Ireland), Continental (Germany, France, Austria, Benelux-Countries, Switzerland) and Mediterranean (Italy, Spain).[9] The corrseponding classification can be found in table 1.

World	**Member Countries**
Nordic	Sweden, Finland, Denmark, Norway
Anglo-Saxon	Great Britain, Ireland
Continental	Germany, France, Austria, Benelux-Countries, Switzerland
South	Italy, Spain

Table 1: Classification

As a first step we use these country clusters for some descriptive statistics to get a main overview of the performance of the different worlds of welfare systems. Therefore it is worthwhile to first evaluate the generosity of the different welfare regimes expressed as social spending as percentage of total GDP. Not surprisingly we find a lot of variation between the different worlds. As we can see in figure 1 (p. 7), the Nordic countries assign the largest share of GDP to social spending, while the Anglo-Saxon Countries only attribute a comparatively small amount to welfare. The Mediterranean and Continental clusters are somewhere in between, with the latter being somewhat more generous, even showing some evidence of overtaking the Nordics.

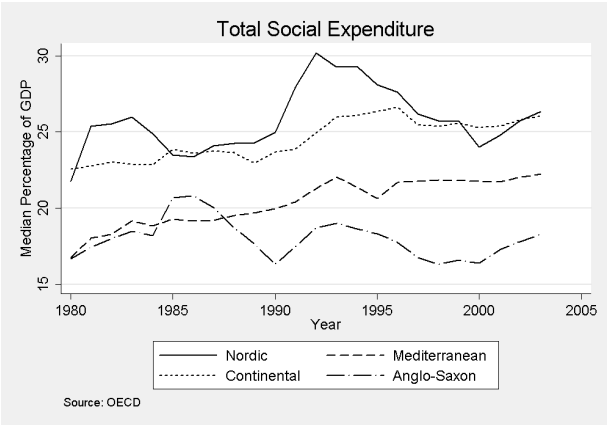

Figure 1: Expenditure

When we look not at social spending but total government expenditure, the first

[9] **Ferrara, M. (1998)**, p. 85-87.

impression is confirmed (See figure 2, p. 7). Recent development shows, that the Nordic countries have the largest governments, although there has been a significant cutback since the middle of the 1990s. In any case, there is still a large difference between the top and the bottom welfare regimes. Putting together this evidence, economic theory would therefore suggest that the generous welfare state and the immense encroachment in the market mechanism that goes with it would lead to a huge loss of efficiency, which should result in a relatively low GDP per capita.

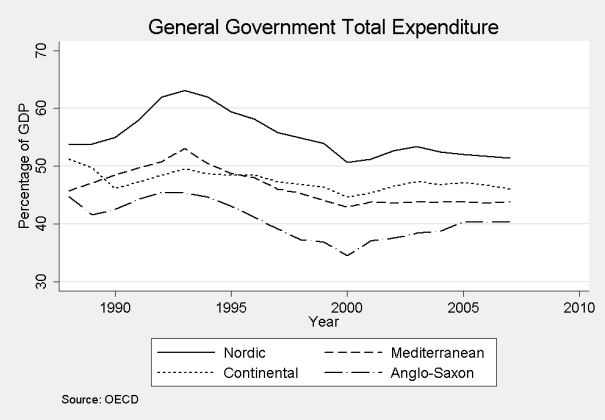

Figure 2: Total Government Expenditure

As a matter of fact, the huge difference in the generosity of the welfare state does not correspond with a much lower GDP per capita as can be seen in figure 3 (p. 8). Albeit the median GDP per capita of the Nordic countries is not the highest in comparison, there is no large gap between them and the Anglo-Saxon countries, which have the highest GDP per head. The latter is especially due to the fact that the economic development of Ireland has been one of the most remarkable and unexpected trends in Europe's latest history. In any case, with respect to the huge involvement of the government in the market, the Nordic countries make a surprising stand. As a matter of fact, this is the first part of the free lunch puzzle. The second part shall be the difference in the performance of the welfare state in the pursuit of equity.

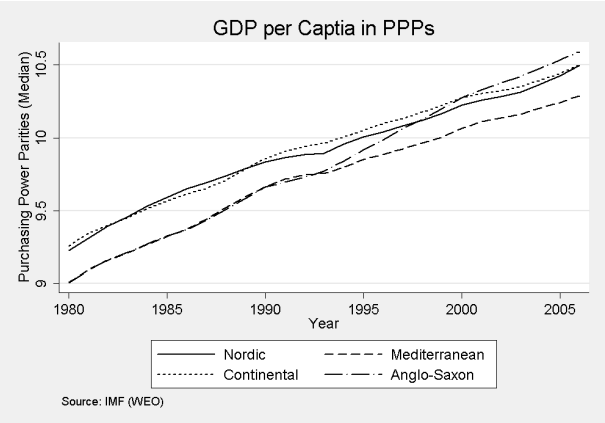

Figure 3: Log GDP

3 Welfare State Performance

Measuring equity is rather cumbersome. For example, the scope of poverty is not restricted to the financial situation of the family, as social exclusion is a complex phenomenon that affects the life of people at the risk of poverty in many different ways. Being aware of this, we refer to the huge literature on this topic.[10] In the present paper, we restrict our analysis to financial indicators of equity, making quantification much easier. As our main aim is to evaluate the tradeoff between equity and efficiency, i.e. the effect of government spending on GDP, we regard this approach as sufficient. To evaluate the performance with respect to the pursuit of equity of the four "worlds" we use the LIS data, that is to say the Gini-Coefficient, the 80/20-ratio and the 90/10-ratio. Unfortunately, the observations are not provided continuously. Hence we restrict (as described above) our analysis to countries with at least three observed waves.[11]

As a measure of performance of the different welfare regimes we use, among other things, the poverty rate. This indicator has a crucial relevance, as fighting poverty can be seen as the major target of redistributive welfare policy. Unfortunately even the measurement of financial poverty is rather arduous with respect to the "right" unit of measurement and the corresponding definition of

[10] **Atkinson, T., B. Cantillon, E. Marlier, B. Nolan (2002)**,

[11] We assign the observations of each country to one of the five waves around 1980, 1985, 1990, 1995 and 200 respectively, as suggested by the LIS. Cf. http://www.lisproject.org/techdoc/datasets.htm.

a poverty line.[12] None of the different approaches can be considered as being the only "correct" one, so there is still some leeway for ideological creed in the definition. For our purposes we adopt the definition of the LIS Project, which refers to the household as the appropriate unit of analysis. A household is considered as being at the risk of poverty if the equivalence disposable household income lies below the poverty line, expressed as a given percentage (here: 50% and 60%) of the overall median equivalence disposable income in a country. The equivalence income (economic "well being" W) is computed as the fraction of disposable income (D) and household size (S) in the following way: $W = \frac{D}{S^E}$, where, "E" is the equivalence elasticity which is assumed to be 0.5.[13]

Using equality indicators as measures of equity is much more problematic than the poverty rate. The pursuit of income equality as a policy aim is far more ideologically shaped. Although the measures poverty and equality are highly correlated, it is worthwhile to use different measurements to carefully evaluate the different impacts of encoachment in the market mechanism.[14] However it has to be stressed that the aim of our paper is solely the evaluation of the tradeoff between equity and efficiency. We therefore explicitly do not want to take sides in the debate of what kind of social justice is desirable or not.

Our first concern is the performance of the different regimes regarding the equality of income distribution. We therefore compute the median of the Gini-coefficient for each world over time. As we can see in table 2, the Nordic countries make a surprising stand, having the lowest inequality in comparison.

world	1980	1985	1990	1995	2000
Continental	0.290	0.248	0.262	0.266	0.275
Nordic	0.210	0.225	0.230	0.220	0.249
Anglo-Saxon	0.270	0.316	0.336	0.336	0.328
Mediterranean	0.318	0.319	0.300	0.346	0.338

Table 2: Development of the Gini-Coefficient

[12] **Hagenaars, A., K. de Vos (1988)**,

[13] **Atkinson, A.B., L. Rainwater, T.M. Smeeding (1995)**, . It goes without saying that this value is rather arbitrary.

[14] The correlation of the gini with the poverty rate is roundabout 87%.

The other equality indicators all point in the same direction. Although there has been some rise in the $\frac{80}{20}$ and the $\frac{90}{10}$ ratio, the Nordic countries still have the lowest inequality in comparison to the other welfare states (Cf. table 3).

world	1980	1985	1990	1995	2000
Continental	2.117	2.066	2.086	2.152	2.151
	(3.392)	(2.941)	(3.003)	(3.301)	(3.302)
Nordic	1.822	1.924	1.908	1.892	1.996
	(2.597)	(2.815)	(2.783)	(2.640)	(2.849)
Anglo-Saxon	2.343	2.633	2.947	2.791	2.756
	(3.530)	(4.006)	(4.668)	(4.397)	(4.526)
Mediterranean	2.597	2.615	2.487	2.841	2.714
	(4.368)	(4.267)	(3.896)	(4.884)	(4.631)

Table 3: Development of the $\frac{80}{20}$ and (in brackezs) $\frac{90}{10}$ ratio.

Taking a look at the development of the poverty indicators, the previous picture remains valid. As we can see in table 4, the Nordic countries are the most successfull in fighting poverty. Only the Continental countries provide a comparable performance in fighting poverty, leaving the Mediterranean and the Anglo-Saxon countries far behind. After all, there seems to be a clear difference with respect to the pursuit of equity between the different worlds of welfare capitalism. Albeit this result is not surprising in the light of the huge redistributive activities of the Nordic countries, it is indeed noteworthy that the huge governmental encroachment in the market does not come along with a pronounced loss in efficiency. So at first glance, there is no sign of a considerable loss of general welfare due to redistributive activities. In fact, the most equitable world, the Nordic, one seems to outperform the other worlds in respect of GDP per head in PPPs.

4 Modeling

The impression derived from our first glance at the performance of the different *welfare regimes* on behalf of equity and efficiency tells us that there is indeed a free lunch, i.e. there is no trade-off. Yet, this conclusion is premature. Economic

world	1980	1985	1990	1995	2000
Continental	13.504	11.385	12.219	13.886	13.431
	(7.614)	(5.952)	(6.049)	(8.121)	(7.614)
Nordic	10.552	12.604	12.114	11.017	12.336
	(5.110)	(7.359)	(6.557)	(5.872)	(5.894)
Anglo-Saxon	17.294	18.810	22.756	21.026	21.788
	(9.163)	(10.088)	(14.587)	(12.251)	(14.306)
Mediterranean	19.492	18.261	17.766	21.006	20.611
	(12.148)	(10.835)	(10.075)	(13.862)	(13.814)

Table 4: Development of the poverty rate [60% povertyline resp. (in brackets) 50% povertyline].

efficiency and wealth are fostered by several factors. These might overcompensate the harms of redistributional activities, leaving an overall surplus on the balance sheet. In addition, a very liberal economic policy might well raise overall efficiency but induce a more volatile and risky environment for the individual, increasing on the one hand her demand for social protection and on the other hand augmenting her willingness to contribute to public redistribution. The protection against risk is indeed an important incitement for the expansion of the welfare states in the last 50 years.[15] Therefore an expansion of the welfare state could foster efficiency as it could work as an insurance against risk, which cannot be provided in the market place.

Indeed there is repeated evidence for this argument. Especially with regard to the Scandinavean countries several authors make convincing points. Some suggest that this apparent inconsistency with economic theory is due to the fact that the Nordic countries can reap huge gains from international trade, as they are very open economies and they have increased their openness substantively.[16] Another proposition is built on the development of economic liberty in these countries, as there have been several reforms, e.g. regarding monetary policy, labour markets and so on, that could have provided some efficiency gains.[17] As the argument goes, some of this rise was invested to maintain the generous welfare state, with loss of efficiency, leaving still some welfare bulge after deduction.

[15] **Bergh, A. (2006a)**, , p. 4-6; **Rodrik, D. (1998)**, , p. 28-30.

[16] **Bergh, A. (2006a)**, , p- 11-13.

[17] **Bergh, A. (2006a)**, , p. 9-11.

To test this hypothesis we must evaluate the influence of equity on efficiency, controlling for other influences.[18] For further analysis we concentrate now on *country data*. Nevertheless we will control for an influence of the *Nordic System* as a whole, as we suspect it to be possibly superior compared to the other systems. For our empirical investigation we use GDP per capita in purchasing power parities to measure the efficiency of a country. Social spending as share of GDP should have a negative influence on efficiency if a tradeoff exists. As social spending not only captures redistributive activites but also insurance against risk, we can use the Gini-Coefficient as a correlate to control for this effect. We expect a moderate negative effect when not controlling for income redistribution. This is, because the *redistributive* and the *insurance* effect can not be told apart. After controlling for income distribution, the influence could be even minor, as we then observe the partial effect of social spending, that has no egalitarian effect on income distribution. The effect of the Gini itself also captures two effects: change in income distribution due to *redistribution* and *market income*. Thus, a very careful interpretation of the results is essential.

In addition, we use an interaction effect for the social expenditure variable to check our hypothesis that the Nordic countries - i.e. the Nordic Welfare System - face a different trade-off than the other countries. This interaction term should capture the possibility that the Nordic countries face a free lunch or that they can provide social security with less efficiency costs. This could give a hint that the institutional design of the Nordic might be superior to the other welfare systems.

On the other hand we use some correlates for Economic Freedom as this should be a major driver of efficiency. International trade, employment and other aspects of Economic Freedom should have a positive impact on efficiency. Since economic freedom cannot be measured directly, we use the EFI as a proxy variable. As the Economic Freedom Index already accounts for Economic Openness we have to keep in mind that this could lead to some multicollinearity problems. Additionally, one important factor for the development of GDP is education resp. Human Capital. To capture this effect, we use the overall public

[18] For an elaborate summary of data sources see appendix A.

spending on education as a percentage of GDP. This yields another possibility to distinguish between different kinds of public expenditure. In an increasing risky environment, social spending and educational spending might well go hand in hand, so it is important to control for each other. Furthermore, to check for unknown drivers of growth, we use time dummies as correlates to capture technological change and other effects. Since we expect some influence of unobservable country characteristics, we further use a fixed-effects panel estimation framework. Adding all correlates gives us the full model:

$$\begin{aligned} logGDP_{it} = CONS + \beta_1 SOCIALGDP_{it} + \beta_2 NORDSOCIAL_{it} + \beta_3 EFI_{it} + \\ + \beta_4 OGAP_{it} + \beta_5 UNEMPRATE_{it} + \beta_6 EDUGDP_{it} + \beta_7 GINI_{it} + \\ + \beta_8 TRADE_{it} + \sum_{t=2}^{5} \beta_{8+t-1} TIME_t + u_i + \epsilon_{it} \end{aligned}$$

This model should capture all neglected effects on logGDP through time dummies and fixed-effects. Nevertheless, it can be readily assumed that over drivers of growth (especially capital and labour) stock will be at least uncorrelated to social spending. So our main variable of interest should be unbiased.

5 Results

To verify the existence of a free lunch we proceed step by step: we start with a simple OLS regression with cluster robust standard errors as a baseline specification. As we can see in table 5, we do not find a significant influence of social spending and the interaction term on the logged GDP. When using a FE panel estimation, thereby controlling for unobservable heterogeneity between the different countries, we still get no statistcally significant results.

The picture changes after controlling for Economic Freedom, Output Gap and Unemployment rate. As can be seen in the last three columns of table 5, we now find a significant influence of social expenditure and the correlates Economic Freedom and unemployment rate.[19] An increase of social expenditure by one

percentage point will on average go along with a loss of .4 to 1.3 percentage points of GDP. This can be considered as quite a strong effect. Nevertheless the result is mixed for the Nordic countries. Although we find no statistically significant effect of the interaction term, we can draw some careful conclusion. In all configurations we find a slightly positive impact of the interaction term, implying that there are indeed some hints that the Nordic countries are better in coping with the tradeoff. As a matter of fact, after controlling for severable variables which do hardly affect the magnitude of the interaction term, i.e. in the last two columns of table 5, we are confirmed that the Nordic countries do face a trade-off, but that it migth well be lower compared to the other countries. These findings do not collide with economic theory, as it is conceivable that the special institutional design of the Nordic countries derogates the trade-off without totally eliminating it.

On the other hand, we also find expected sings for the other correlates. Increasing Economic Freedom by one point[20] leads to an increase of GDP per head of about 5%. The approximately same increase is reached by augmenting educational spending by one percentage point. Yet, a caveat has to be made with this interpretation, as it might be possible that reverse causality holds: richer countries do spend more on education. Nevertheless, the interpretation of a rise of the unemployment rate by one percentage point is easier to interpret: it lowers GDP by roundabout 2%. Trade-to-GDP ratio and Output Gap on the other hand have no statistical or economically significant effect. The former might be due to the fact that the there is considerable multicollinearity between the EFI and the ratio.[21] The latter just gives some implication that the business cycle has only minor importance.[22]

As a matter of fact, we should distinguish between the two tasks of the welfare state, i.e. insurance against risk and redistribution. Since social spending as a

[19] In the last column, we don't find a significant influence of the EFI. However, EFI and ttgdp are jointly significant with $F(2, 11) = 4.34; p < 0.05$.

[20] The Econmic Freedom Index is scaled between 0 and 10. An increase of one whole point might therefore considered to be a lot. On the other hand several countries, e.g. the UK and Sweden, indeed had a rise of the index by more than one point.

[21] The correlation of the to factors is about .55 which can be considered as a medium large effect.

[22] It is also possible that this might be due to the fact, that the unemployment rate and the output gap are correlated. Indeed there is some correlation by a mere .22.

Dep. Var. $Log(GDP_{percapita})$	OLS cluster robust se b/t	FE cluster robust se b/t	FE cluster robust se b/t	FE cluster robust se b/t	FE cluster robust se b/t
$SOCIALGDP$	-0.005	-0.010	-0.004*	-0.012***	-0.013*
	(-0.78)	(-1.74)	(-1.86)	(-3.27)	(-2.09)
$NORDSOCIAL$	0.005	0.009	0.005	0.006	0.007
	(1.41)	(1.18)	(0.51)	(0.79)	(0.78)
EFI			0.051*	0.056***	0.048
			(1.95)	(3.43)	(1.75)
$OGAP$			-0.004	-0.002	-0.002
			(-0.67)	(-0.41)	(-0.36)
$UNEMPRATE$			-0.019*	-0.022**	-0.021**
			(-1.95)	(-2.76)	(-2.48)
$EDUGDP$				0.050**	0.048**
				(2.73)	(2.61)
$GINI$					-0.178
					(-0.35)
$TRADE$					0.000
					(0.41)
$CONS$	9.216***	9.310***	9.013***	8.884***	8.981***
	(57.94)	(96.21)	(65.69)	(94.08)	(41.37)
time dummies	yes	yes	yes	yes	yes
N	48.000	48.000	48.000	48.000	48.000
$R^{2\,a}$	0.875	0.966	0.978	0.982	0.982
$R^{2\,b}$	0.031	0.02	0.437	0.457	0.440
F	171.670	92.582	1666.742	6132.977	1038.501

[a] R^2 computed *including* time dummies. R^2 in the fixed effects estimation correspons to the *overall* R^2.

[b] R^2 computed *excluding* time dummies. R^2 in the fixed effects estimation correspons to the *overall* R^2.

Table 5: Estimation

percentage of GDP definitely captures both issues, we use the gini-coefficient as a correlate to distingush between those different effects. As can be seen in table 5 in the last column, the gini-coefficient has a small negative effect on the GDP per head, i.e. an increasement of inequality lowers the GDP. The influence of social expenditure essentially remains the same. Therfore social spending has a negative effect on GDP even when no redistribution takes place, i.e. the gini-coefficient is held constant. This is a little surprising but actually it makes sense, as the insurance against risks might be provided more efficiently by the market compared to the government. Furthermore it is still possible that the government has advantages in providing *some* insurance, but that the amount provided at the moment is too huge. This argumentation is backed by the effect of the interaction term: in the first three columns of table 5 the overall effect of social spending for the Nordic countries is about zero. But after controlling for educational spending, we find an alltogether negative effect. I.e. if we keep education constant, the effect of social spending is negative at large. This could be due to the fact that educational spending increases with social spending, being a major insurance against cumulative risks. Therefore, an increasing demand for security is counteracted with more social security and education. This result remains stable when adding trade openness and gini as correlates (column 5, table 5). Additionally, the (statistically not significant) positive impact of more income equality on GDP makes perfect sense. As we control for social expenditure, we see the partial effect of more income equality which is *not* due to redistribution as the case may be public expenditure, but a result of a more equal market income. Higher income equality which is not obtained by redistribution but by market forces kann well foster growth. Indeed, this might be a hint for high social mobility and equality of opportunity in a certain country. Nevertheless, as it is not a sigificant effect, we must not worry too much about this.

6 Discussion

In this paper we started off with the four European Welfare Systems. In Chapter 3 we studied descriptive statistics that should give some evidence for the superi-

ority of the Nordic Model. Though we found that this conclusion is premature, as after controlling for other factors the "free lunch" of the Nordic countries vanishes (Chapter 5). The main finding of our paper is that we can confidently discard the thesis that a free lunch exists. We find rather strong evidence for a trade-off between equity and efficiency. Yet, we find some minor influence of the Nordic system on the GDP costs of social expenditure. This implies that the Nordic system might work more efficiently than the other social systems in Europe and face a *"smaller"* trade-off. As this effect is not statistical significant however, more research has to be done on this topic to figure out whether the Nordic System is really superior or not.

So far, we have some policy implications:

- **Economic Freedom:** Economic Policy should promote Economic Freedom and liberalism as a major driver of prosperity. As we have seen in the first chapters, the Nordic countries are able to maintain a high standard of equity although - or even - because of their Economic Freedom and openness.
- **Redistribution:** The institutional design of a welfare system does indeed matter. Albeit we found a negative influence of social spending on GDP, there are some hints that the instituional design of the Nordic system is more efficient. Therefore, it is truely conceivable that the trade-off between equity and efficiency can be ameliorated.
- **Unemployment:** Employment is a major driver of efficiency. The more people are employed, the higher the economic efficiency. It goes without saying that this might also lead to higher equity.
- **Education:** Educational spending fosters economic growth. Albeit causality is not totally clear, there are several clues that educatio might be one of the best insurances against risk that can be provided by the government.

Alltogether, we can conclude that the trade-off between equity and efficiency continues to exist. The optimal amount of redistribution is to be decided by the

preferences of the citizens of each country and the electoral process. However, it might be possible to adopt some aspects of the Nordic system that can milden the efficiency costs. Finding these particular advantages and confirming our empirial results should be left to further research.

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