

A first look at monetary (re-)distribution effects of Framework Programme 7

The EU Framework Programme is (essentially) financed by contributions from the Member States, which in turn receive back the vast majority of the FP funds through the financial support to research institutions or firms. Although the net distribution effects of this process are of some political relevance, very little is known on these effects (at least in public...). For the sake of transparency, this paper tries to shed some light on the issue – and presents some astonishing findings...

Intro

Research programmes are intended to strengthen the knowledge base, develop human capital, increase the international competitiveness, support the development of new goods and services, and provide evidence for designing better public policy. These are also some of the explicit and implicit key objectives of the EU Framework Programmes.

This paper is deliberately not touching on these very important key dimensions. Instead, the intention of this paper is to look at the (basically unintended) monetary distribution effects of the Framework Programme, notably the direct distribution effects between Member States. FP7 was never meant to be a policy tool for monetary re-distribution, but nevertheless it is of some importance to get an idea on the size and directions of these effects.

Within the EU budget, the Framework Programme for Research is in a rather singular situation, as two totally different approaches are used to define the relative shares of the Member States:

- For the spending on the Framework Programme (“money out”), funds are coming from the overall EU budget, for which the national contributions are essentially based on economic strength and political bargaining (the most significant example for this is the “British rebate”). The distribution of the financial burden is thus essentially the result of a political negotiation process.
- For the income from the Framework Programme (“money in”), funds are mainly coming through co-financed research projects. The selection is based on a scientific peer-review system, aiming at identifying the proposals of highest scientific quality. The distribution of funds is therefore based on the judgement of independent experts – and entirely outside any political influence.

Against this background it is not surprising at all that the two distributional approaches lead on balance to diverging results – and such differences are therefore not per se “bad” or “unfair”.

Data

For the subsequent analysis, three datasets were used (The complete data and calculations are presented in the Table at the end of this paper):

- For the spending on FP7 (“money out”), the assumption is made that the financing of the FP budget by Member States follows the same pattern as the financing of the overall EU budget. Since the real expenditure on FP projects is linked to the “life time” of the supported projects and will thus cover a period from 2007 up to 2019 or even later, it appears justifiable to use the EU budget for 2013 as reference point – assuming that differences for the five previous years and the yet unknown changes in the five subsequent years are likely to roughly level out. The figures used refer to the “total own resources” per Member State, which are the “final” figures after all calculations for rebates and adjustments have been made.
- For the income from FP7 (“money in”), the latest “FP7 Monitoring Report” provides data on the distribution of funding across Member States for projects registered up to early 2013. The data are accurate per se, but they are to a certain extent incomplete, as notably information on the last round of calls is yet missing and projects from Joint Technology Initiatives are not included. Since the data used cover so far some 60% of the total expected FP7 expenditure, they can be regarded as a robust base for analysis.
- Given the huge differences in the size of Member States, population figures from Eurostat for 2013 are used to complement absolute figures with calculations “per capita”.

For the sake of simplicity, the subsequent analysis is exclusively focused on spending and income related to the Member States – making it a “zero sum game”. The funding of project partners from associated states or third countries is therefore not included here, nor are the contributions from associated countries taken into account. These limitations are however of limited impact, as roughly 90% of the FP funding goes to project partners in Member States. As Croatia became a Member State only during the year 2013, it is not yet included in the current analysis.

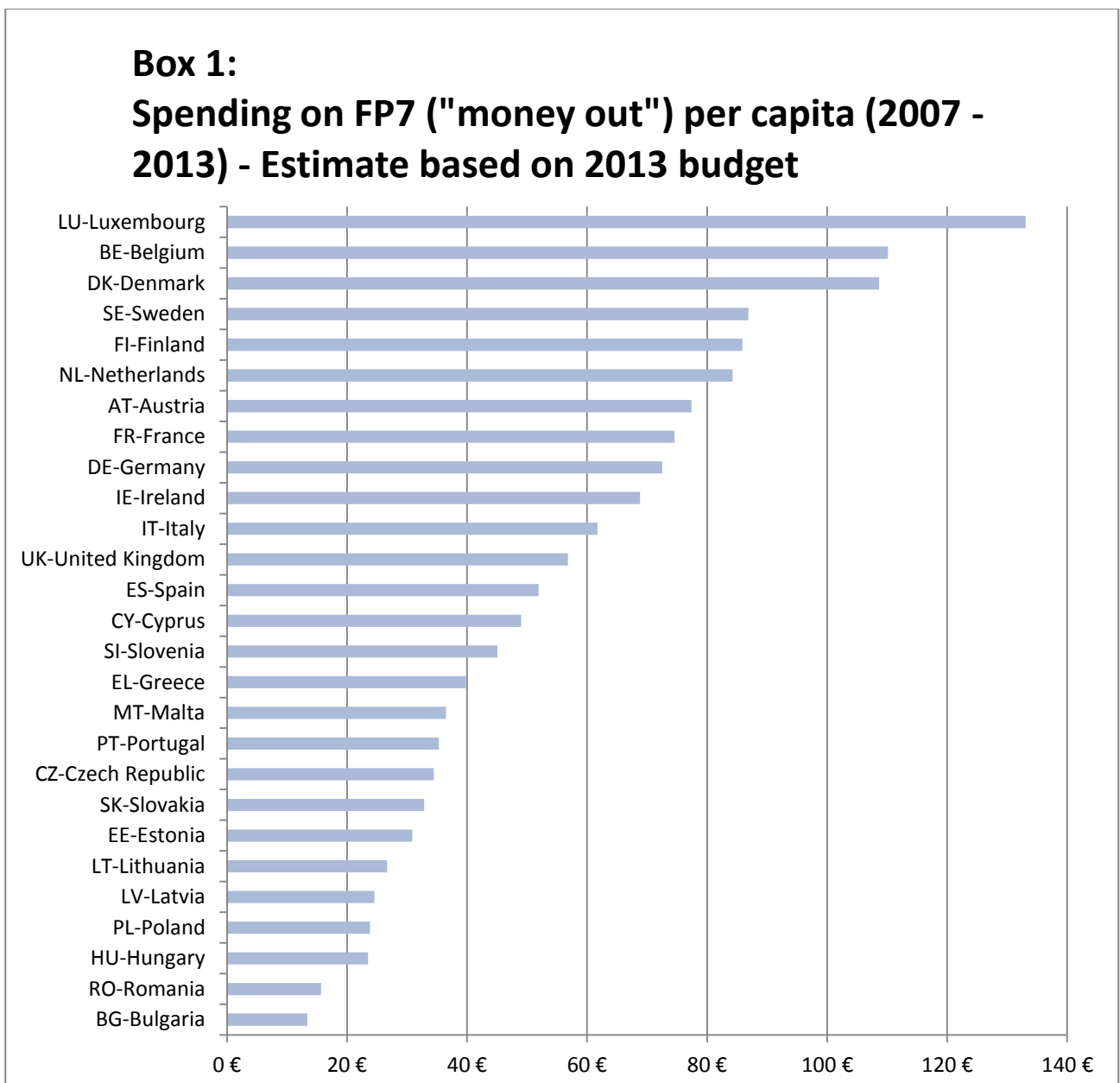
More complete project data on FP7 will in the future lead to more reliable calculation results. It seems however extremely unlikely that this additional information will substantially change the current analysis based on data available today.

Spending on FP7 ("Money out")

The table at the end of this paper presents in column 6 the "total own resources" per Member State for the EU budget 2013. Column 7 shows the percentage share per country, with Germany and France in the lead, contributing 19.9% and 16.7% respectively to the EU budget.

In column 8 these percentage shares are used to calculate the "virtual" financial contribution per Member State to the total FP7 funding (on project partners in Member States). As mentioned above, this calculation assumes that all FP7 funding is financed by the budget for 2013, whereas in reality the budgets for the years from 2007 to 2019 will be involved. Since, however, the percentage figures for the contribution to the EU budget are largely stable over time, this simplification seems justifiable in order to get rough results well before the year 2020...

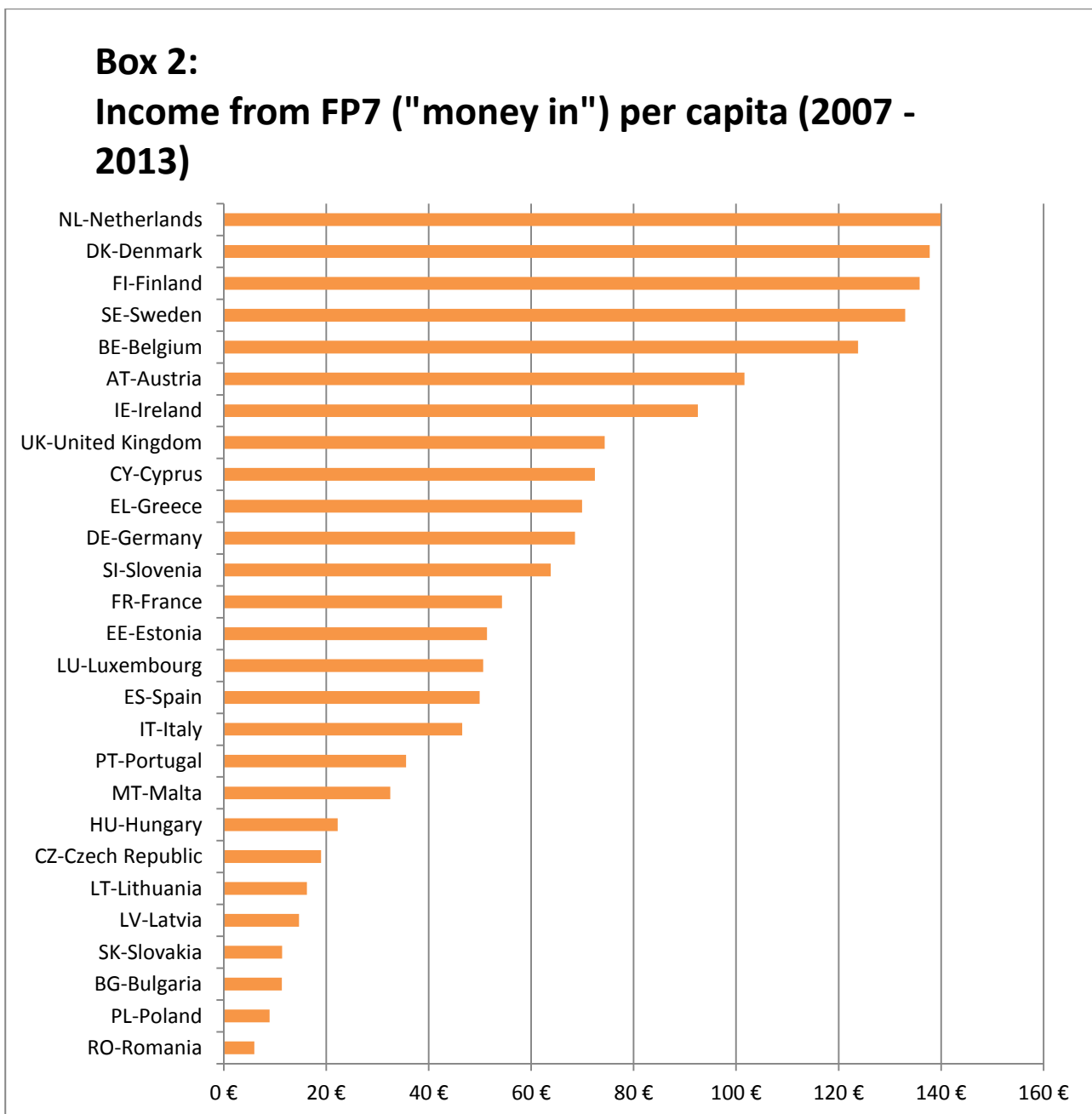
Box 1 presents the amount of spending on FP7 per capita as shown in column 9. Whereas Luxembourg, Belgium and Denmark spent each more than 100€ per capita, the corresponding amounts for Bulgaria and Romania remained well below 20€.



Income from FP7 ("money in")

The table presents in column 3 the amount of FP7 funding going to research organisations or firms from the different Member States. The total financial support across the 27 Member States amounts for the period 2007 to 2013 to almost 29.3 billion €. Column 4 shows the percentage share per country, with Germany and the United Kingdom in the lead with shares of 18.8% and 16.2% respectively.

May-be more revealing is a breakdown of the income from FP7 per capita, as presented in column 5 and illustrated in Box 2. While the Netherlands, Denmark, Finland and Sweden assured over the period from 2007 to 2013 a total income from FP7 per capita of above 130€, these returns per capita were less than 10€ for Romania and Poland. Somewhat surprisingly, the income from FP7 per capita is higher for Ireland than for the United Kingdom, and also Greece is marginally ahead of Germany.

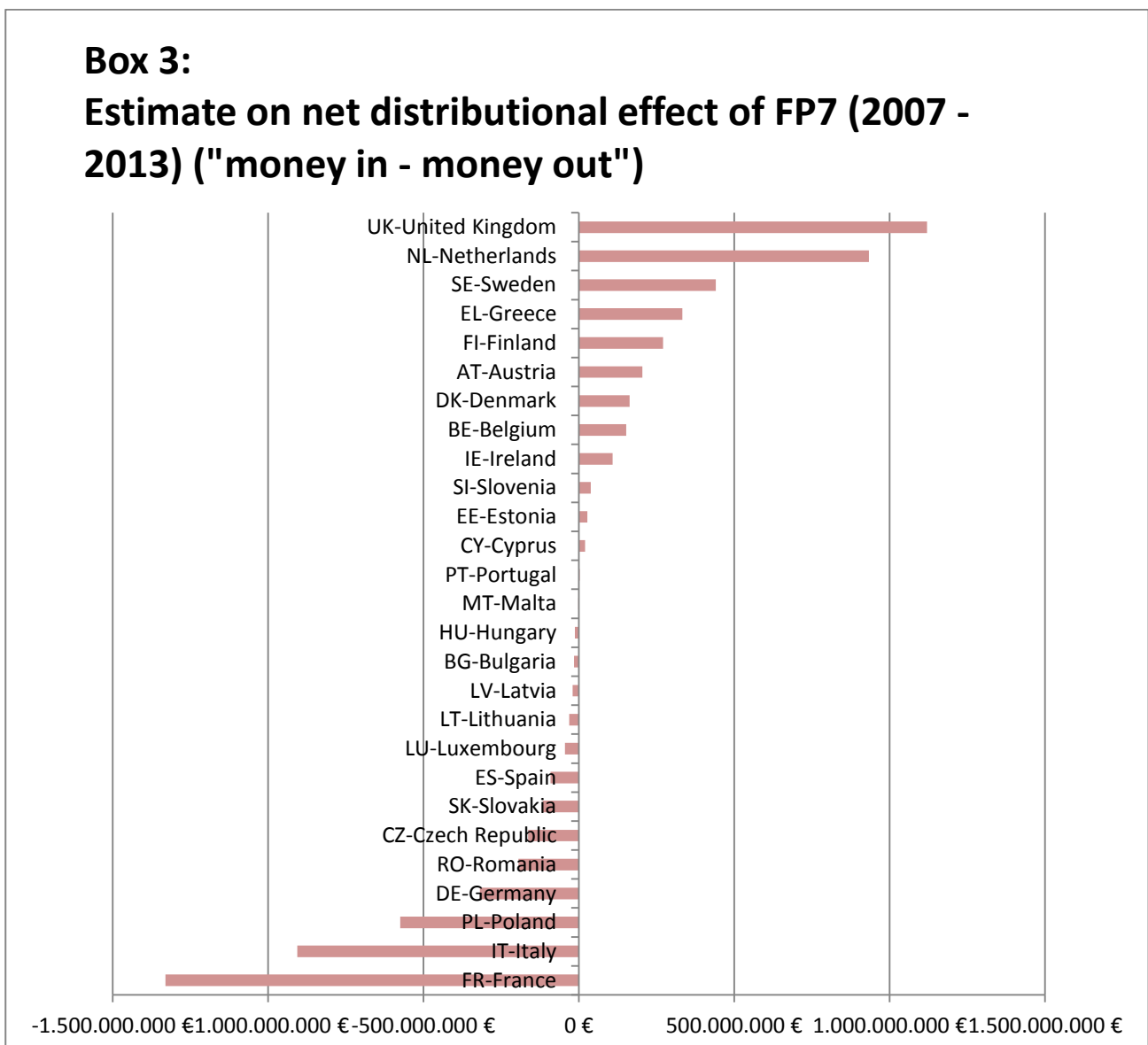


Net monetary distribution effects

The most interesting part of this analysis is now the direct comparison between the spending on FP7 and the income from FP7.

In the table, column 10 presents the difference in absolute amounts per Member State, whereas column 11 shows the difference as percentage figures. Column 12 indicates for all Member States what amount is received by FP7 projects for one € financial contribution. Finally, column 13 shows the net results on a per capita basis.

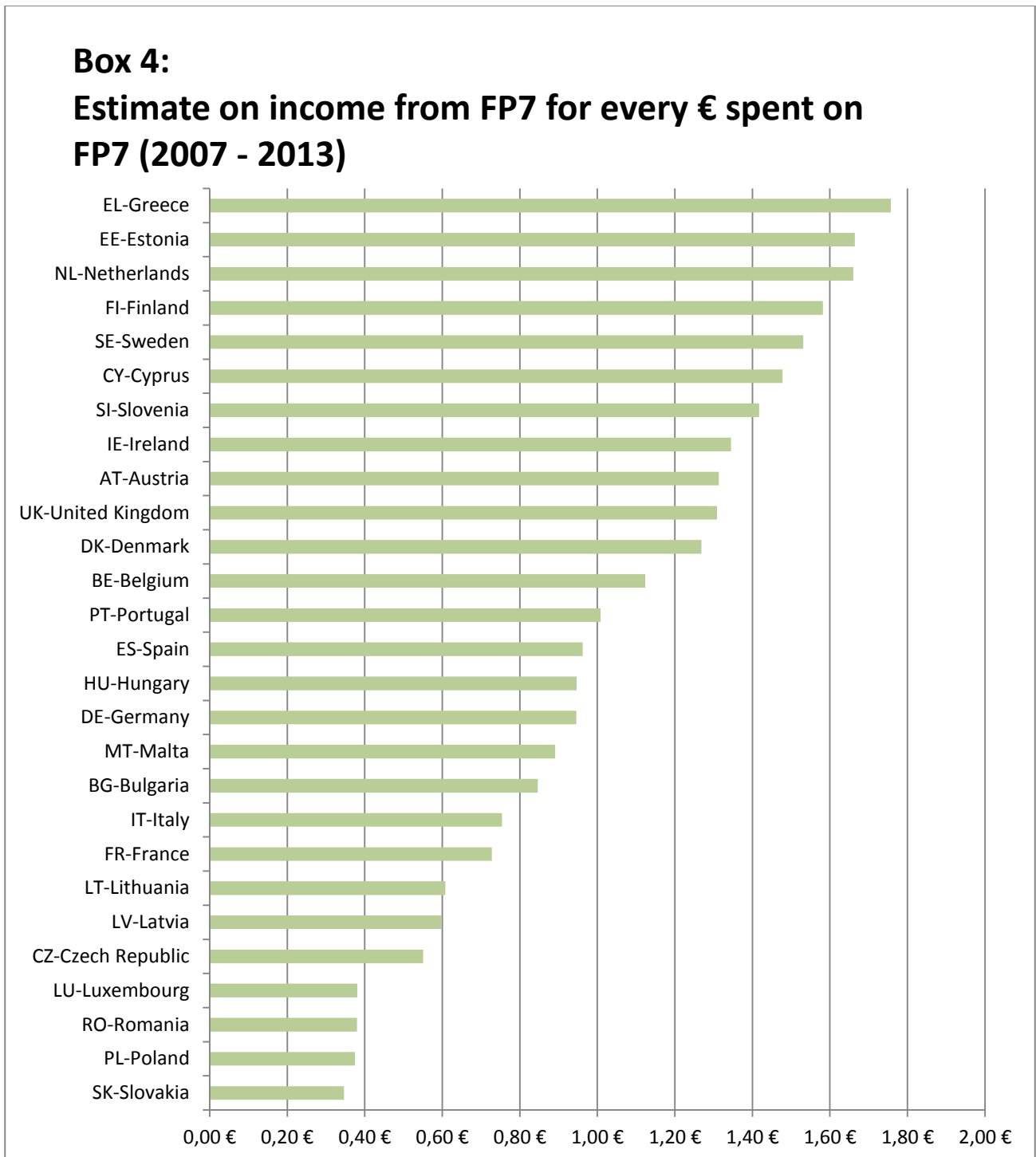
Box 3 (based on column 10) illustrates the position of each Member States in terms of absolute amounts. The most significant distribution effects can be observed for the United Kingdom and the Netherlands with a “surplus” of 1.1 and 0.9 Billion € respectively, and for France and Italy with a “deficit” of 1.3 and 0.9 Billion €.



Besides these four countries at the extreme ends of the scale, it seems worth being noted that Greece performs remarkably well with a net surplus of over 300 million €. Spain, although a net contributor rather than beneficiary, does however remarkably better than for example Italy or

France. Poland is finally by far the highest net contributor from the “New Member States”, with a net position of almost -600 million €, which is almost twice as large as the net contribution from Germany.

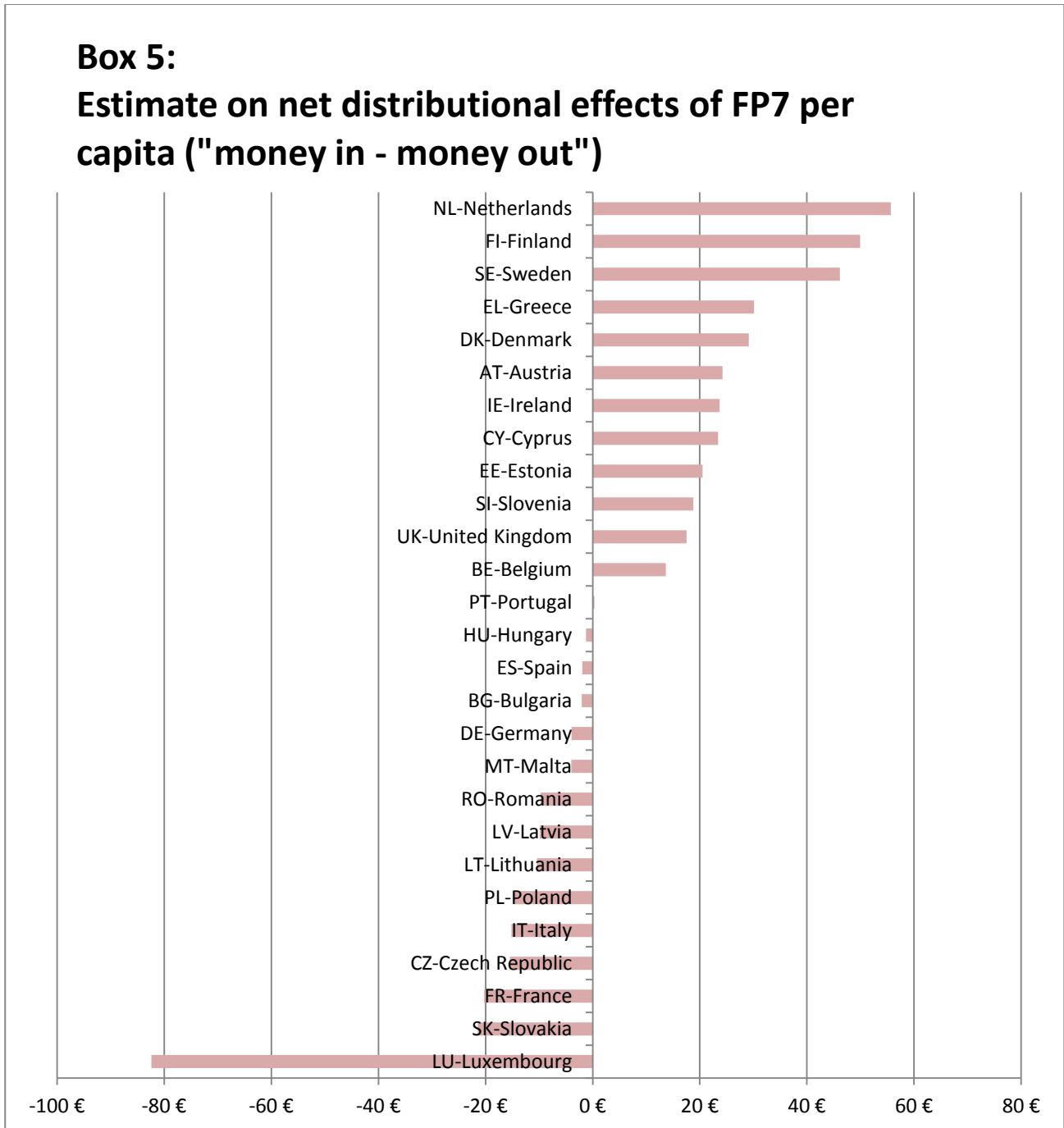
Box 4 (based on column 12) illustrates the relative “success” of Member States in FP7 by indicating what amount of FP7 funding they receive for every € spent on the FP7 budget.



Surprisingly Greece is the country coming out with the highest return ratio, receiving almost 1.80 € for every € spent on the FP budget. Estonia, the Netherlands and Sweden also generated a return of over 1.50 € per € invested. At the other end of the scale, Slovakia, Poland, Romania and Luxembourg received less than 40 cents out of FP7 for every € spent.

Beyond the absolute figures it is also worth being noted that the group of best performing Member States receives roughly a return per € spent which is four times higher than the one for the group at the end of the scale.

Finally, Box 5 (based on column 13) looks again at the situation per capita, estimating the net distributional effects of FP7 for each inhabitant of the Member States.



FP7 generated per head of population net gains in the order of 50 € for the Netherlands, Finland and Sweden. For Greece and Denmark this surplus is still in the order of 30 €.

At the opposite end, every Luxembourger made a net contribution of over 80 € to FP7, whereas for France and Slovakia this figure is close to 20 €.

Some first conclusions

The calculations presented in this paper invite for a wide range of reflections. The following very first conclusions are just meant as starting points for future debates:

- The FP7 project database CORDA provides very powerful data, which are so far heavily underused by the scientific community and professional analysts. This is illustrated by the comparatively simple calculations provided in this paper, which lead to a number of unprecedented data on the FP7 distribution effects. More sophisticated analytical work will generate even more impressive insights.
- The distribution effects of FP7 - in absolute numbers, as percentage figures or on a per capita basis - are far from being negligible. This is per se neither good nor bad, since these effects result from the use of two completely different distribution procedures, which both can't claim to be universally adequate. The size of the divergences, however, means that the issue requires a constant monitoring and probably some more profound analysis.
- Over recent years, the political focus of the debate has been on the adequate role of the "New Member States" in FP7. While the analysis presented here confirms that most "EU-12" countries do actually contribute more money to FP7 than they receive back, it is important to note that this is not a uniform pattern across all "New Member States".
- Somewhat amazingly, the massive "deficits" incurred by both France and Italy have so far not been the subject of any political discussions. With a total amount of over 2.2 billion €, the "manque à gagner" of these two countries is in absolute terms far bigger than the "deficits" observed for the "New Member States" taken together.
- As a country which received massive public attention over recent years, it is worth being highlighted that Greece does remarkably well in terms of FP7 returns with a net surplus of over 300 Million €.
- Analysing research policy on the basis of monetary flows only is by no means adequate. On the other hand, the calculations presented in this paper might indicate some issues which go well beyond the pure monetary analysis. For instance, the figures presented in Box 2 on the income from FP7 per capita illustrate that the independent selection process by peer review of proposals leads to an extremely uneven distribution among the Member States. There is in fact a difference by a factor bigger than 20 for the income from FP7 per capita for Romania on the one hand and the Netherlands, Denmark, Finland or Sweden on the other. Such differences can be partially explained by wage levels, but they do also hint at rather substantial differences in the depth of the research potential and the scientific quality. This might be seen as a somewhat alarming indication that the preconditions for a true European Research Area might actually not yet been met.

Comments and contributions are most welcome and will be published on my website

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Column 1	2	3	4	5	6	7	8	9	10	11	12	13
Member State	Population 2013	FP7 Funding Received 2007 - 2013	Funding %	FP7 Funding received per capita 2007 - 2013	EU Budget Contribution 2013	Contribution %	FP7 Contribution based on Budget 2013	FP7 contribution based on Budget 2013 per capita	Difference between FP7 Funding received and contribution to FP7 budget	Difference between FP7 Funding received and contribution to FP7 budget, in %	Amount of FP7 Funding received per 1 € contribution to FP7 budget	Difference between FP7 Funding received and contribution to FP7 budget per capita
AT-Austria	8.451.860	859.000.000 €	2,93	101,63 €	2.931.927.302 €	2,23	654.192.093 €	77,40 €	204.807.907 €	0,70	1,31 €	24,23 €
BE-Belgium	11.161.642	1.381.700.000 €	4,72	123,79 €	5.510.443.714 €	4,20	1.229.528.681 €	110,16 €	152.171.319 €	0,52	1,12 €	13,63 €
BG-Bulgaria	7.284.552	82.500.000 €	0,28	11,33 €	437.005.538 €	0,33	97.507.727 €	13,39 €	-15.007.727 €	-0,05	0,85 €	-2,06 €
CY-Cyprus	865.878	62.700.000 €	0,21	72,41 €	190.155.310 €	0,14	42.428.781 €	49,00 €	20.271.219 €	0,07	1,48 €	23,41 €
CZ-Czech Republic	10.516.125	199.500.000 €	0,68	18,97 €	1.623.978.090 €	1,24	362.353.332 €	34,46 €	-162.853.332 €	-0,56	0,55 €	-15,49 €
DE-Germany	80.523.746	5.521.800.000 €	18,85	68,57 €	26.174.240.845 €	19,94	5.840.179.393 €	72,53 €	-318.379.393 €	-1,09	0,95 €	-3,95 €
DK-Denmark	5.602.628	772.000.000 €	2,64	137,79 €	2.728.158.040 €	2,08	608.725.673 €	108,65 €	163.274.327 €	0,56	1,27 €	29,14 €
EE-Estonia	1.320.174	67.800.000 €	0,23	51,36 €	182.571.535 €	0,14	40.736.636 €	30,86 €	27.063.364 €	0,09	1,66 €	20,50 €
EL-Greece	11.062.508	773.600.000 €	2,64	69,93 €	1.973.386.637 €	1,50	440.315.807 €	39,80 €	333.284.193 €	1,14	1,76 €	30,13 €
ES-Spain	46.727.890	2.333.900.000 €	7,97	49,95 €	10.869.016.894 €	8,28	2.425.170.948 €	51,90 €	-91.270.948 €	-0,31	0,96 €	-1,95 €
FI-Finland	5.426.674	737.100.000 €	2,52	135,83 €	2.088.482.791 €	1,59	465.996.864 €	85,87 €	271.103.136 €	0,93	1,58 €	49,96 €
FR-France	65.578.819	3.560.200.000 €	12,15	54,29 €	21.917.307.737 €	16,69	4.890.342.752 €	74,57 €	-1.330.142.752 €	-4,54	0,73 €	-20,28 €
HU-Hungary	9.908.798	220.300.000 €	0,75	22,23 €	1.043.337.120 €	0,79	232.796.664 €	23,49 €	-12.496.664 €	-0,04	0,95 €	-1,26 €
IE-Ireland	4.591.087	424.900.000 €	1,45	92,55 €	1.416.171.908 €	1,08	315.986.165 €	68,83 €	108.913.835 €	0,37	1,34 €	23,72 €
IT-Italy	59.685.227	2.778.200.000 €	9,48	46,55 €	16.512.541.084 €	12,58	3.684.393.475 €	61,73 €	-906.193.475 €	-3,09	0,75 €	-15,18 €
LT-Lithuania	2.971.905	48.200.000 €	0,16	16,22 €	355.149.179 €	0,27	79.243.365 €	26,66 €	-31.043.365 €	-0,11	0,61 €	-10,45 €
LU-Luxembourg	537.039	27.200.000 €	0,09	50,65 €	320.298.436 €	0,24	71.467.224 €	133,08 €	-44.267.224 €	-0,15	0,38 €	-82,43 €
LV-Latvia	2.023.825	29.700.000 €	0,10	14,68 €	222.664.412 €	0,17	49.682.438 €	24,55 €	-19.982.438 €	-0,07	0,60 €	-9,87 €
MT-Malta	421.364	13.700.000 €	0,05	32,51 €	68.916.769 €	0,05	15.377.191 €	36,49 €	-1.677.191 €	-0,01	0,89 €	-3,98 €
NL-Netherlands	16.779.575	2.347.500.000 €	8,01	139,90 €	6.335.721.003 €	4,83	1.413.670.313 €	84,25 €	933.829.687 €	3,19	1,66 €	55,65 €
PL-Poland	38.533.299	343.800.000 €	1,17	8,92 €	4.114.329.242 €	3,13	918.017.871 €	23,82 €	-574.217.871 €	-1,96	0,37 €	-14,90 €
PT-Portugal	10.487.289	373.300.000 €	1,27	35,60 €	1.659.021.566 €	1,26	370.172.477 €	35,30 €	3.127.523 €	0,01	1,01 €	0,30 €
RO-Romania	20.020.074	119.300.000 €	0,41	5,96 €	1.406.654.949 €	1,07	313.862.675 €	15,68 €	-194.562.675 €	-0,66	0,38 €	-9,72 €
SE-Sweden	9.555.893	1.271.100.000 €	4,34	133,02 €	3.720.303.190 €	2,83	830.100.027 €	86,87 €	440.999.973 €	1,51	1,53 €	46,15 €
SI-Slovenia	2.058.821	131.400.000 €	0,45	63,82 €	415.588.866 €	0,32	92.729.090 €	45,04 €	38.670.910 €	0,13	1,42 €	18,78 €
SK-Slovakia	5.410.836	61.600.000 €	0,21	11,38 €	796.759.213 €	0,61	177.778.479 €	32,86 €	-116.178.479 €	-0,40	0,35 €	-21,47 €
UK-United Kingdom	63.905.297	4.751.900.000 €	16,22	74,36 €	16.273.889.478 €	12,40	3.631.143.862 €	56,82 €	1.120.756.138 €	3,83	1,31 €	17,54 €
All Member States	501412825	29.293.900.000 €	100,00	58,42 €	131.288.020.848 €	100,00	29.293.900.002 €	58,42 €	-2 €	0,00	1,00 €	

Data Sources:

Column 2

Population Figures Eurostat table tps000001

<http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&tableSelection=1&labeling=labels&footnotes=yes&language=de&pcode=tps00001&plugin=0>

Column 3

FP7 Funding received Sixth FP7 Monitoring Report, Table B8 , page 97

http://ec.europa.eu/research/evaluations/index_en.cfm?pg=fp7-monitoring

Column 6

EU Budget 2013 Definitive Adoption of the European Union's general budget for the financial year 2013 (2013/102/EU, Euratom),
OJ L 66/2013 of 8.3.2013, Table 7, page 21

<http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:L:2013:066:FULL&from=EN>