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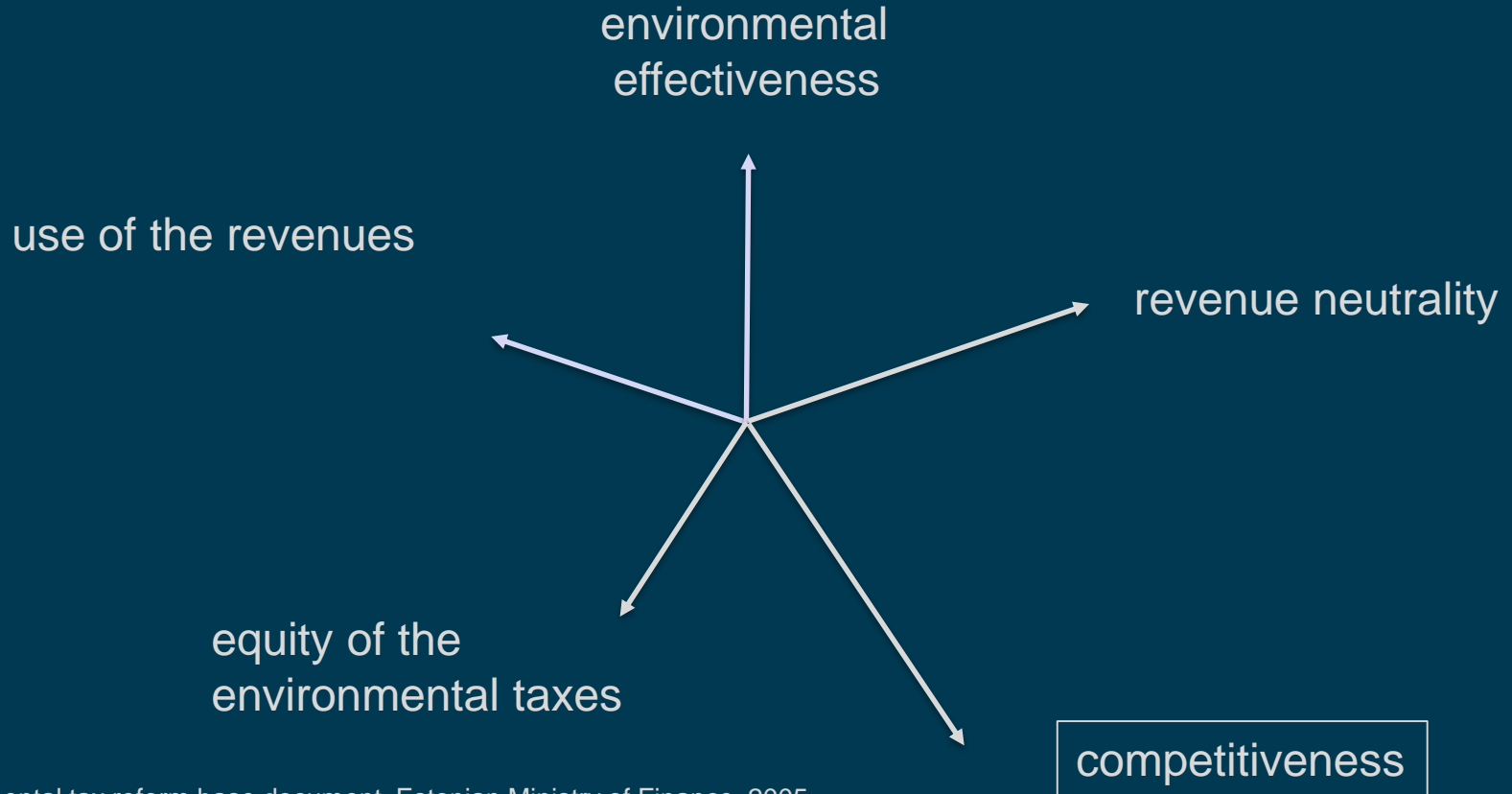
Development of the multidimensional statistical framework for the evaluation of the effectiveness of environmental instruments, present state and way forward



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Kaia Oras, Tea Nõmmann (SEI), Velda Buldas (Ministry of Financial Affairs), Grete Luukas
(Statistics Estonia, EPEA), Kaia Aher (Statistics Estonia, taxes, EGSS),
Presented by Kaia Oras, Statistics Estonia

Dimensions to be covered in monitoring of the ecological tax reform *



* - Environmental tax reform base document. Estonian Ministry of Finance, 2005

- Environmental Taxation A Guide for Policy Makers, OECD, 2011

CRITICISM AND SUGGESTIONS

Integrate the other environmental costs of enterprises before doing analyses of equity and competitiveness aspects of environmental fiscal reform

Analyse the impact of taxes on prices (and vice versa)

Integrate tax exemptions and reduced tax rates e.g. subsidies

Apply the supply-demand side restrictive-supportive approach for evaluating action taken from government fiscal perspective



INTEGRATE RELEVANT ENVIRONMENTAL COSTS

What did we do?

- Linked the taxes to the CEPA/CREMA classes
- Integrated available expenditure and investment data
- added the missing fiscal instruments (fees, charges, resource rent, dividends) into an analysis
- drafted the table template to collect the figures and calculate the relevant variables



SECTORIAL LEVEL VARIABLES FOR ANALYSIS

Environmental variables (more than a hundred)

ENVIRONMENTAL TRANSACTIONS FROM EPEA:

CEPA/CREMA and by institutional sector:

Consumption of EP products (P.2,P.3)

Env. Investments, GFCF (P.51g_NP)

Earmarked taxes received (D.2)

Environmental taxes received (D.2)

Total taxes received (D.2)

Environmental taxes paid (D.2)

Transfers received and paid (D.3,D.7, D.9)

Total national environmental expenditure
(P2+P3+P51g_NP+D2-D.3-D7-D9)

ECONOMIC VARIABLES

by NACE and institutional sector:

Total surplus (B.2g B.3g)

Total taxes paid

Output (P.1)

Export (P.6)

Total expenditures
(P2;P3) + taxes (D2)

SOCIO ECONOMIC VARIABLES

Employment

Social contributions (D 1.)

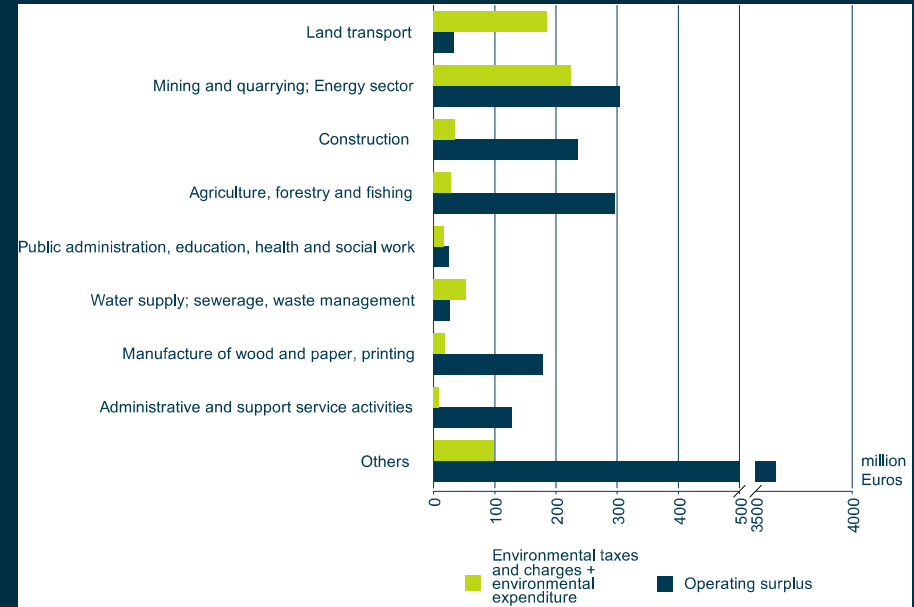
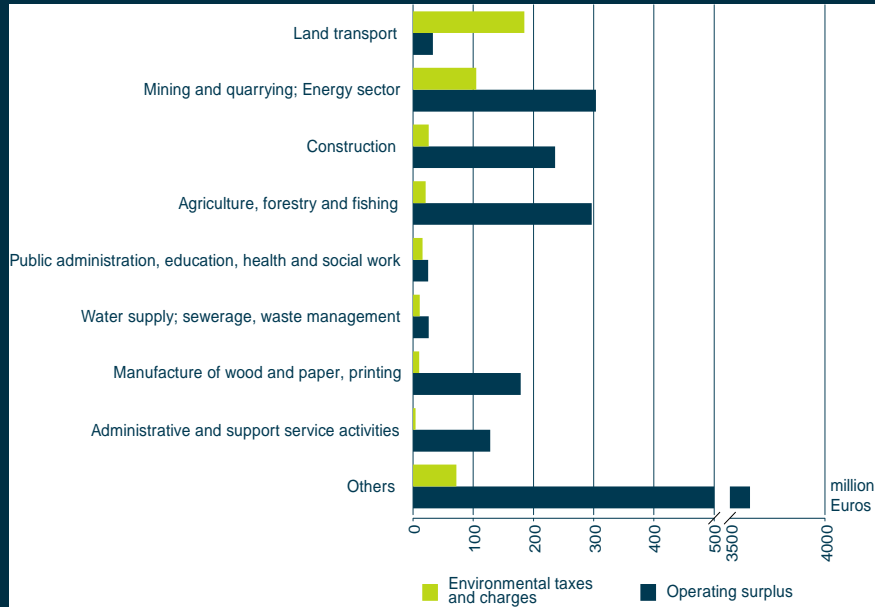


Indicators for the evaluation of the effectiveness of the green fiscal reform

DIMENSION/focus	Indicators, (by NACE, time series)
COMPETITIVENESS: Environmental tax burden	environmental taxes / total expenditures social contributions /total expenditures
COMPETITIVENESS: Environmental expenditure burden	Environmental expenditure / value added Environmental expenditure / surplus
EQUITY: „Polluters pay principle“, who is carrying the burden of environmental taxes?	Paid environmental taxes/ tax base
EQUITY: „Polluters pay principle“, who is carrying the burden of expenditures?	environmental expenditures / respective tax base
ENVIRONMENTAL EFFECTIVENESS: Have the loads of the emissions or resource use decreased?	tax base, environmental pressure
ENVIRONMENTAL EFFECTIVENESS: Have the loads of the emissions or resource use per unit of economic output decreased?	tax base/value added
How have the environmental tax revenues been used?	general government expenditures on environmental protection/ receipts from environmental taxes

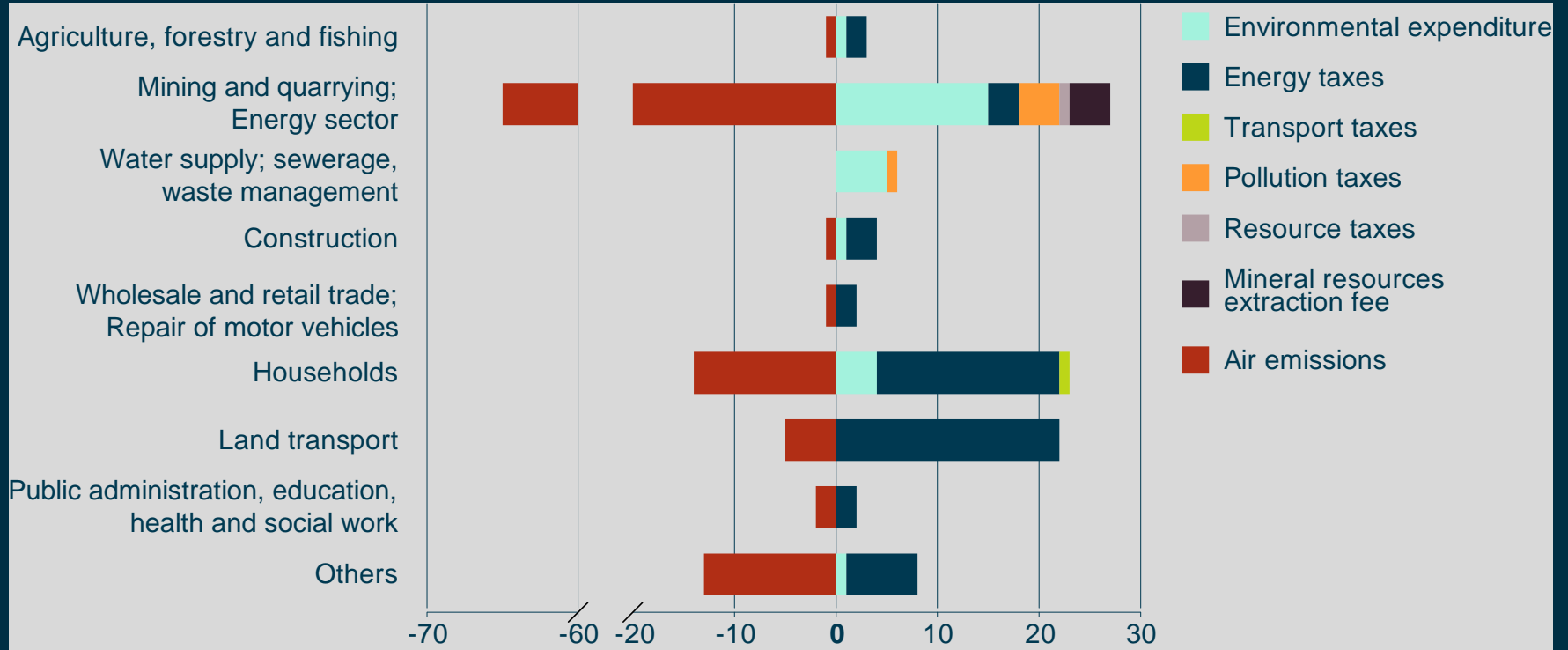


Comparison of the burden of environmental costs of various sectors: on the left environmental taxes versus surplus; on the right all environmental costs versus surplus, 2015





Environmental costs (right) by economic activities compared with total air emissions (as proxy) on the left, 2015





but...the availability of env. cost variables of environmental taxes and tax bases linked to CEPA and CREMA categories

Environmental taxes	Classification of environment (CEPA) and resource management (CREMA) activities	EP/ RM investments	EP/ RM expenditures	Taxes
Pollution taxes	CEPA1, CEPA2, CEPA3 (air and climate, water, waste)	365	193	43
Resource taxes	CREMA 10, CREMA 12 (water, flora, fauna)	n.a	n.a	14
Energy taxes	CREMA 13 B, CEPA1 (energy saving, air pollution)	n.a	n.a	491
Transport taxes	CREMA 16, CREMA 13 (other, energy resources)	n.a	n.a	12
<i>National environmental charges/ transactions beyond ESA taxes boundary</i>	<i>CREMA 13 C, CREMA 14 (minimization of intake of fossils and minerals)</i>	<i>n.a</i>	<i>n.a</i>	<i>72</i>



Summary of the issues we discuss:

- **Resource management expenditures definitions and methods?**
- **Tax exemptions, preferential tax rates and other environmentally harmful subsidies of interest. What should be the logic?**
- **User interference comprising the effects of environmental fiscal instruments on competitiveness, equity, environmental effectiveness. Technical solution or just a publication and database?**

The draft table of the transactions and other figures for calculation of relevant dimensions of the green fiscal reforms has been created (Annex 3).

SUGGESTIONS were...

To integrate the environmental costs (+/-)

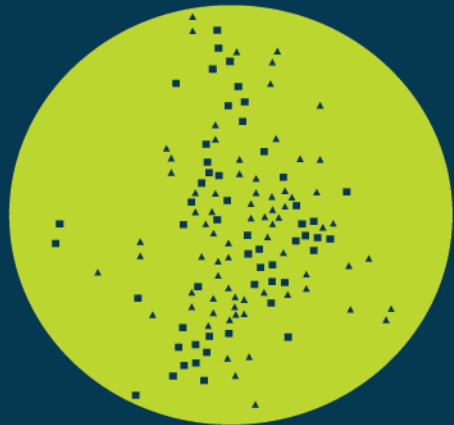
Analyse the impact of taxes on prices and *vice versa*(-)

Integrate environmentally harmful subsidies (-)

To apply the supply-demand side restrictive-supportive approach for the evaluation of the actions taken from government side (+/-)

Simplified example of the supply and demand side restrictive and supportive fiscal measures regarding the measures of phasing out fossil fuels, thousand Euros, 2015

	SUPPLY		DEMAND	
SUPPORTIVE	Renewable energy subsidy	76 000	Resource efficiency support measures for	
	Combined heat and power subsidy	5 600	- heating systems	3 230
			- street lightning	14 240
RESTRICTIVE	Mineral resource extraction charge	14 080	Fuel excise duty	444 300
	Pollution taxes	44 920	Electricity excise duty	34 020



**WORK IN
PROGRESS**



Some questions

1. Is the draft table template of the transactions and other variables for the evaluation of the efficiency of green fiscal reform relevant (Annex 3. “Available variables, breakdowns and feasible indicators for the evaluation of the effectiveness of the green fiscal reform”)? All comments on possible inconsistencies are highly appreciated.
2. Is the supply and demand side supportive and restrictive measures a suitable framework for users while analysing how the tax revenues have been used?
3. As variables still need to be further tested and discussed, are there other statistical offices or institutes interested to try out the draft framework? Who would like to cooperate with us?
4. Is there a need for specific LG research theme dealing with the monitoring issues of green fiscal reforms?

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- The LG for the suggestions received last year

Please send your feedback to: kaia.oras@stat.ee; tea.nommann@sei.org