Why transaction costs do not decrease over time?

Case study of energy efficiency programmes in Czechia

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Motivation

Transaction costs can **impede implementation** of EE and other climate mitigation measures (Mundaca *et al* 2013, Musole, 2009)

Time as one of the factors influencing the level and burden of transaction costs (Shahab, Clinch, and O'Neill, 2018)

- Learning by doing (Coggan et al., 2010)
- Presence the one-off costs (Lee and Han, 2016, Michaelowa and Jotzo, 2005)

Aim to provide **empirical evidence on how transaction costs develop over time**.

1) what is the difference in transaction costs in two programmes and two periods of time,

2) what are the main factors contributing to the change in transaction costs in time.

Definitions

Transaction costs:

costs and resources arranging a contract ex-ante and monitoring and enforcing that contract ex-post (Matthews, 1986; Rao, 2003)

In public policies and programmes: the costs connected to **acquiring information, implementation, monitoring and evaluation, control and enforcement**

Mainly the form of **time and other financial costs** (and opportunity costs) (Stavins, 1995; Ofei-Mensah and Bennett, 2013).

Programmes for energy efficiency in CZ

OP Environment	OP Enterprise and Innovation
Continuously running from 2007 Aimed at EE measures (thermal properties of buildings, technology measures) Investment grant (30 – 60 % of eligible costs) Administration harmonised (funded through ERDF and CF) Acceptance rate 75 – 80 %	
Recipients: Public organizations	Recipients Enterprises
Allocated budget 2007 – 2013 EUR 820 million 2014 – 2020 EUR 530 million Number of applications 2007 – 2013 5,490 2014 – 2020 ~3,060	Allocated budget 2007 – 2013 EUR 418 million 2014 – 2020 EUR 1,217 million Number of applications 2007 – 2013 900 2014 – 2020 ~3,800

Methods

Data through

Desk research (administrative processes)

In-depth interviews and dedicated workshops

Survey among recipients of the support

Transaction costs model

$TC_n = C_t + C_{id} + C_e$ [monetary units]

$TC_r = TC_n / EC \times 100\ \%$

$TC_n = f\,(EC;\ t)$

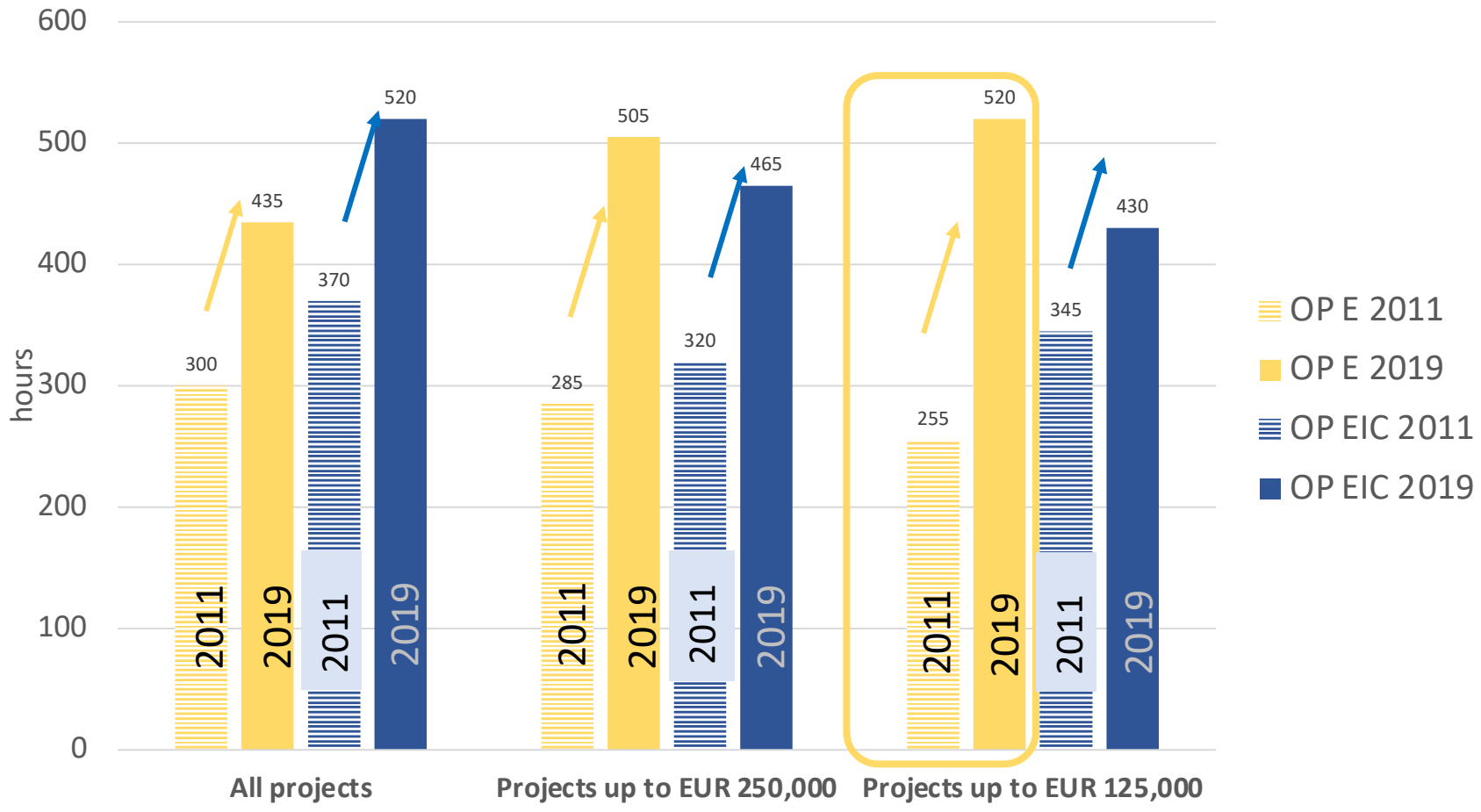
2011: $lnTC_{n1} = \alpha_1 + \beta_1 lnEC_1 + \varepsilon_1$

2019: $lnTC_{n2} = \alpha_2 + \beta_2 lnEC_2 + \varepsilon_2$

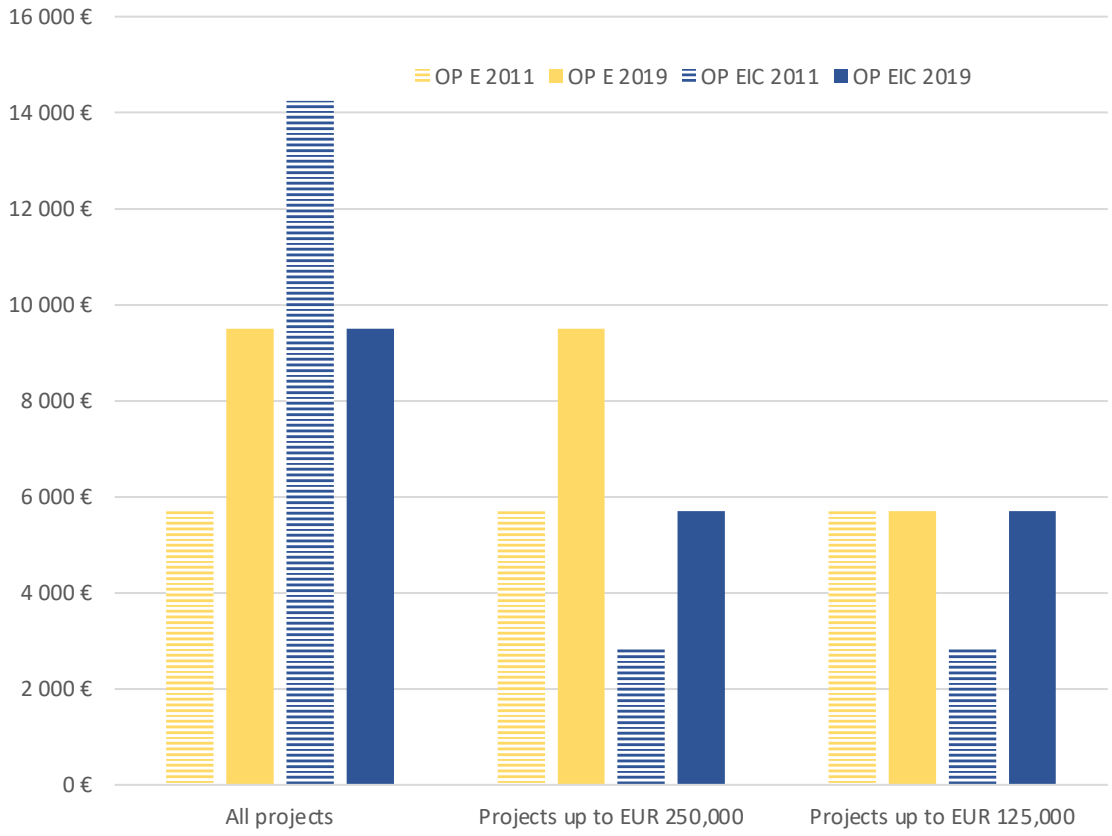
Programmes for energy efficiency Sample

Summary	Year	Count	Eligible costs median sample [EUR]	Eligible costs median all projects [EUR]
OP E	2011	55	200,115	222,574
	2019	53	128,096	126,624
OP EIC	2011	35	286,538	380,577
	2019	46	201,561	240,135
Total		**189**		

Results I
Time spent with administration



Results II
External services



External services include:

Energy assessment

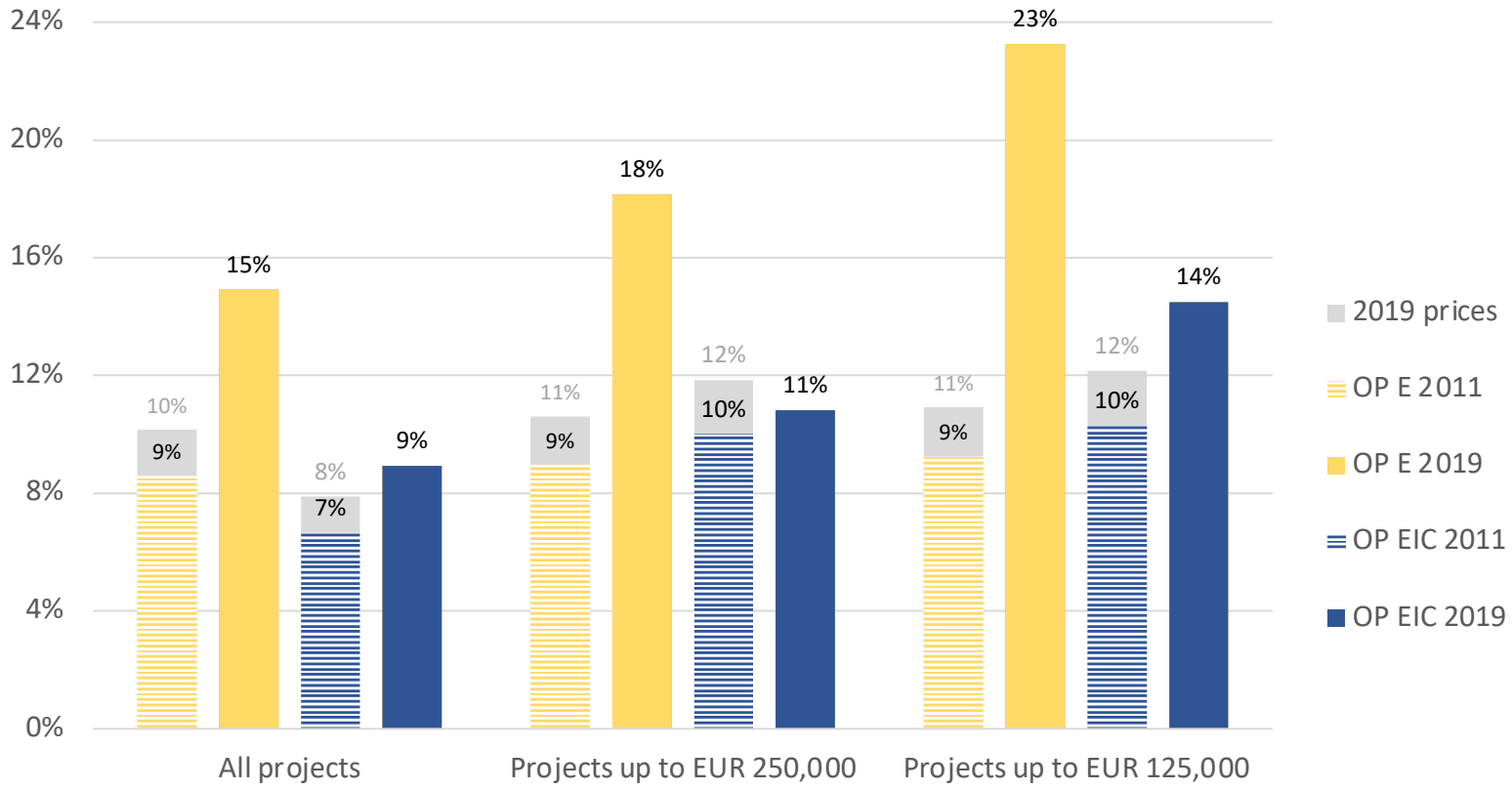
Project documentation

Administrative support

Tender documentation

Organisation of tender for supplier

Results III
Transaction costs



Why?

Time: On-off participants, adding requirements

External services: different according to actors with sharp increase in case of public organisations

> subsidizing the preparation of the project sets the price + increase use of external companies

Overall *smaller projects* prevail in both programmes. The fixed nature of transaction costs increases the burden

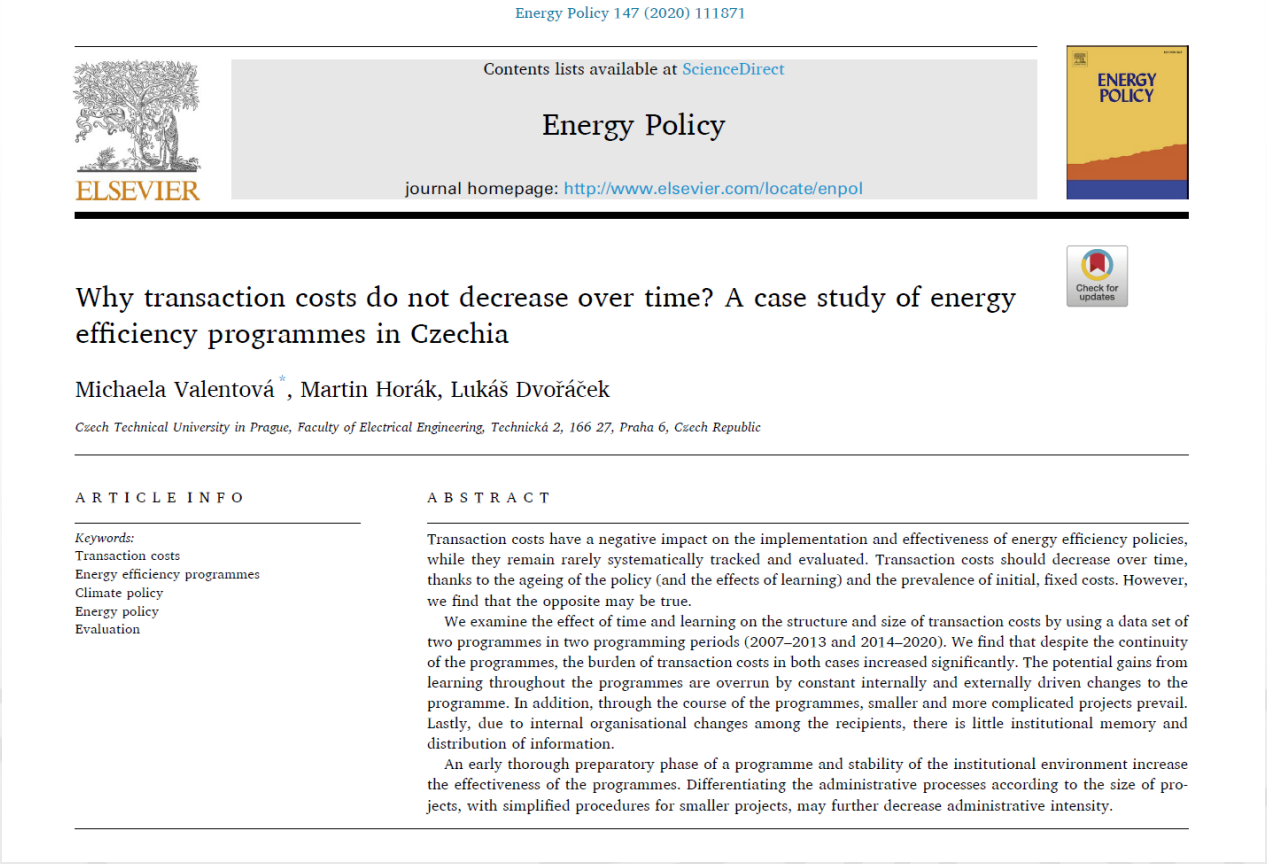
Cost-effectiveness and success rate remain *unchanged* (so "low-hanging fruit" projects not fully explanatory)

Stability of the environment (late start of the second programming period)

Conclusions

- Continuity in the structure of transaction costs, but level and burden increased significantly
- Effects from “learning-by-doing” brought by streamlining, templates, knowledge transfer
    - But other factors overrun these effects
- The age of the programme led to prevailing smaller projects
    - Differentiation of administrative procedures
- Hasty initial, preparatory stages together with late start brought instability

Thank you!



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ABSTRACT

Transaction costs have a negative impact on the implementation and effectiveness of energy efficiency policies, while they remain rarely systematically tracked and evaluated. Transaction costs should decrease over time, thanks to the ageing of the policy (and the effects of learning) and the prevalence of initial, fixed costs. However, we find that the opposite may be true.

We examine the effect of time and learning on the structure and size of transaction costs by using a data set of two programmes in two programming periods (2007–2013 and 2014–2020). We find that despite the continuity of the programmes, the burden of transaction costs in both cases increased significantly. The potential gains from learning throughout the programmes are overrun by constant internally and externally driven changes to the programme. In addition, through the course of the programmes, smaller and more complicated projects prevail. Lastly, due to internal organisational changes among the recipients, there is little institutional memory and distribution of information.

An early thorough preparatory phase of a programme and stability of the institutional environment increase the effectiveness of the programmes. Differentiating the administrative processes according to the size of projects, with simplified procedures for smaller projects, may further decrease administrative intensity.

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