

M U N I
E C O N

Waste Management Incentive Programs and Municipal Finance

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WM incentives programs in CZE

- ⇒ Standard of flat fee per person, includes
 - scheduled pickups, drop-off sites, CA sites, etc.
 - ⇒ Little motivation for waste separation, even with no extra costs

- ⇒ Occasional efforts to employ incentives with aim to increase waste separation in municipalities
 - ⇒ Typical forms include some PAYT variants, rewards for separation, or some other alternatives

Economic aspects of incentives

⇒ Evidence shows that WM incentives significantly

increase waste separation rates

⇒ Clear environmental benefits, less residual waste, more jobs, etc.

⇒ But what is the effect on municipal finance?

⇒ Less residual waste = less expenses on residual waste, right?

- But incentive programs are not free
- Separated waste collection is not free either, more separation = more expenses
- Also people tend to pay less with incentive programs, thus less revenues

Goal of the study

- ⇒ Examine effects of waste management incentive programs on municipal WM finance
- ⇒ What are the differences between municipalities with and without WM incentive programs in terms of WM revenues and expenditures?

Data

⇒ Municipal finance data related to WM, 2010-2018

- ⇒ Per capita values for more appropriate comparison
- ⇒ Revenues and current expenditures examined
- ⇒ South Moravia Region in CZE, all municipalities (672)

⇒ Reversed PAYT incentive program

- ⇒ Unlike regular PAYT, people get discounts based on W separation
- ⇒ 14 municipalities identified
 - 1 (2011), 7 (2012), 10 (2013), 12 (2014), 13 (2015), 14 since 2016
- ⇒ Several other municipalities with WM incentives, but inconsistent

Sample statistics

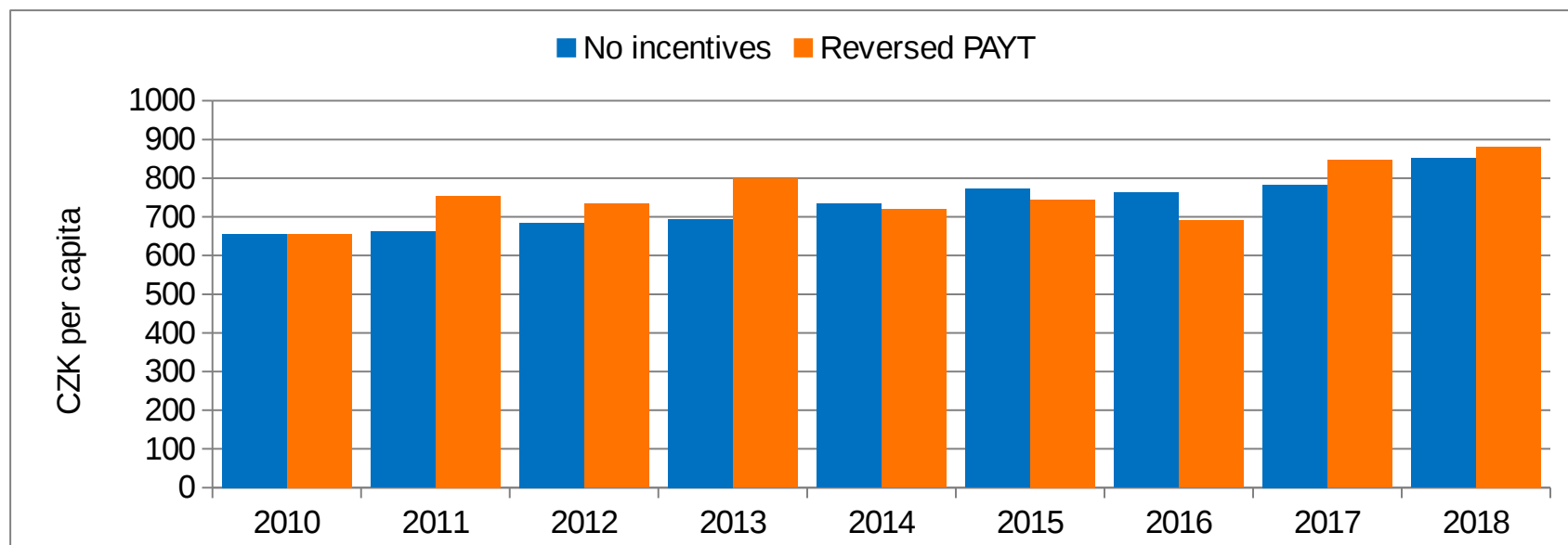
		2010	2012	2014	2016	2018
Population	1 st quartile	269	269	271	275	279
	Median	556	570	581	584	593
	3 rd quartile	1 072	1 093	1 103	1 116	1 134
MWE x p.c. (CZK/ year)	1 st quartile	507	545	559	589	632
	Median	610	632	654	710	763
	3 rd quartile	720	750	794	844	940
MWR e p.c. (CZK/ year)	1 st quartile	444	470	505	526	539
	Median	493	523	564	586	613
	3 rd quartile	550	576	631	657	685

⊖ Initially 672 municipalities from South Moravia Region in CZE

⊖ 8 removed due to the extreme values reported (no Exp/Rev, landfill revenues) – 664 in analysis

⊖ 14 municipalities with reversed PAYT incentive program

Current MW expenditures

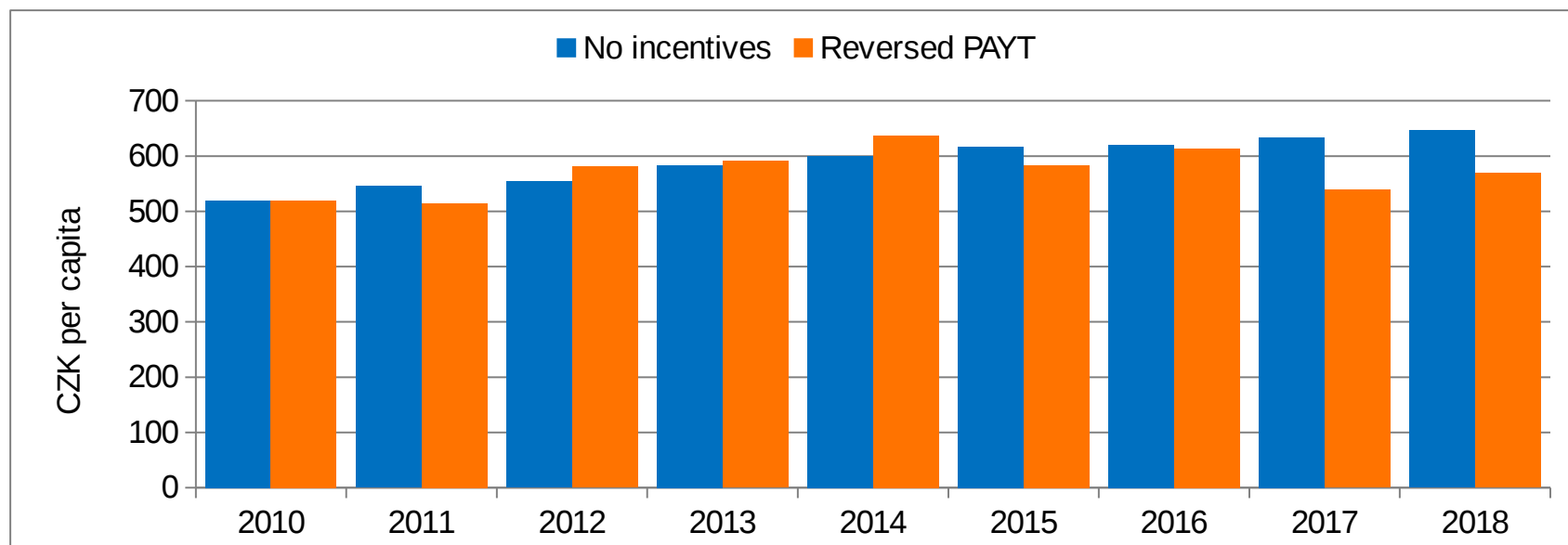


⊖ Comparable levels

⊖ Until 2013 higher, then decrease until 2016, higher in last 2 years

⊖ Overall, MW in municipalities is not necessarily cheaper, actual levels differ notably between municipalities due to individual characteristics

Municipal waste revenues

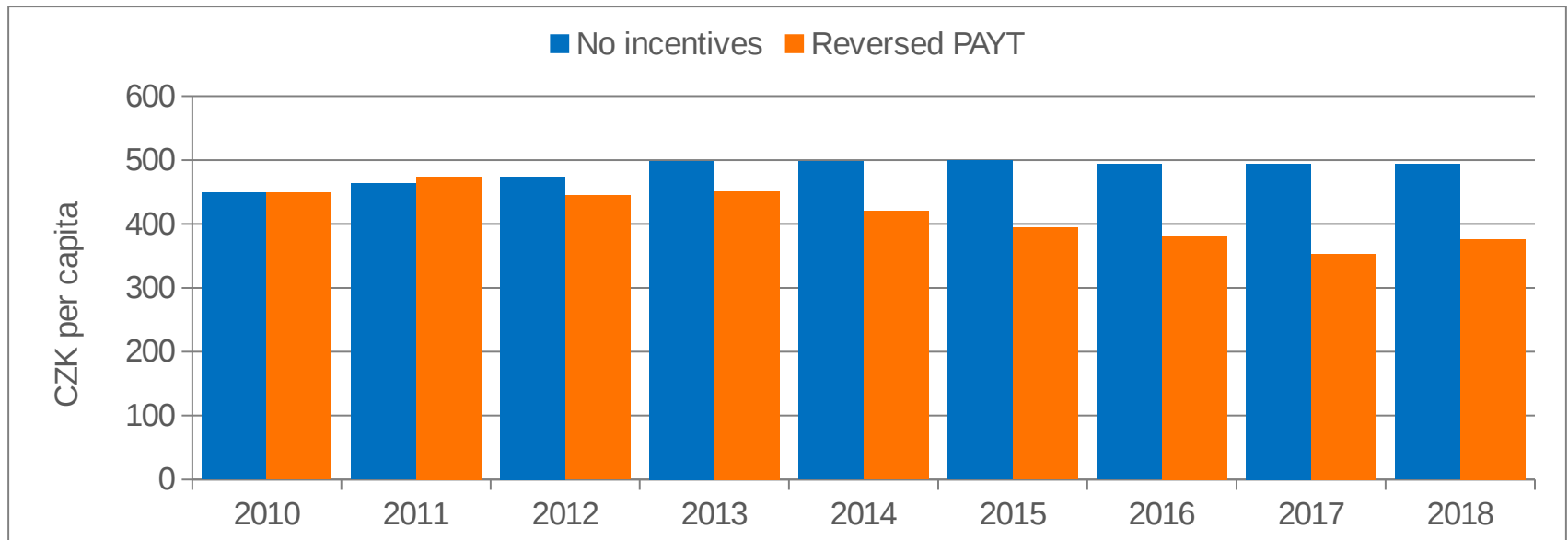


⊖ Comparable levels in 2010-2010

⊖ Decrease in last years (reasons to be further examined...)

⊖ Overall, revenues in municipalities with MW incentives tend to be somewhat lower, but in most years not by much

MW revenues from fees/charges

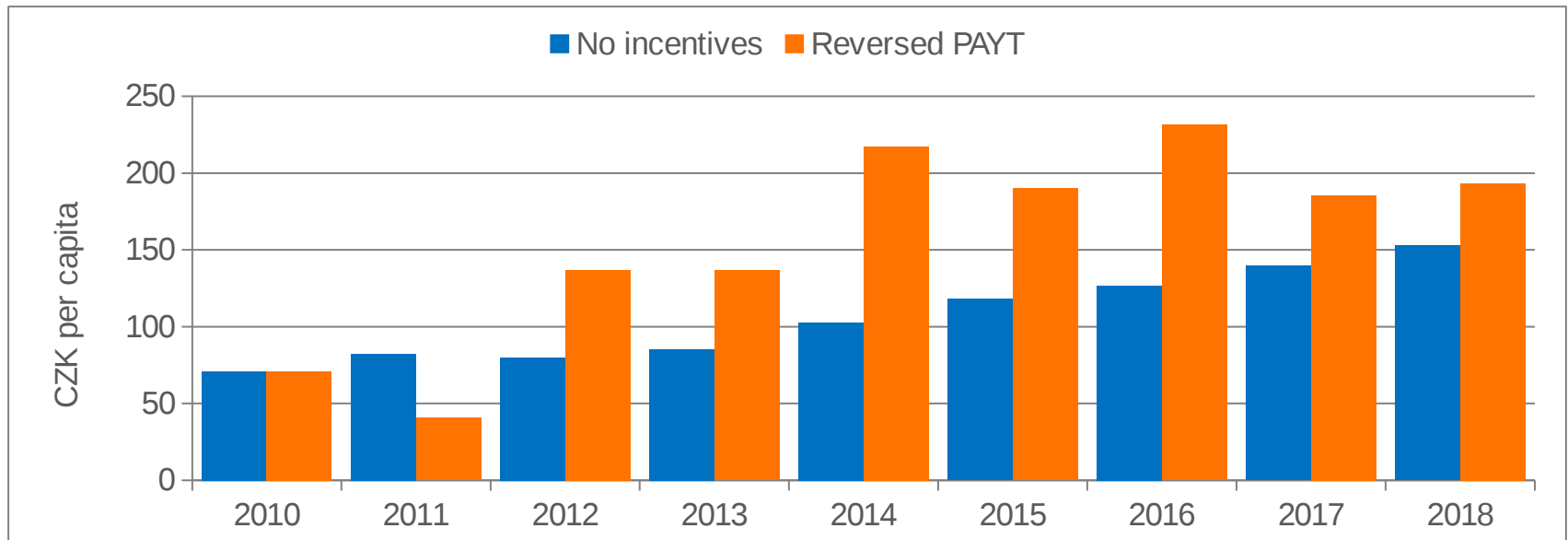


ⓘ Municipalities with reversed PAYT tend to collect continuously less

from people through fees/charges – but is this good or bad?

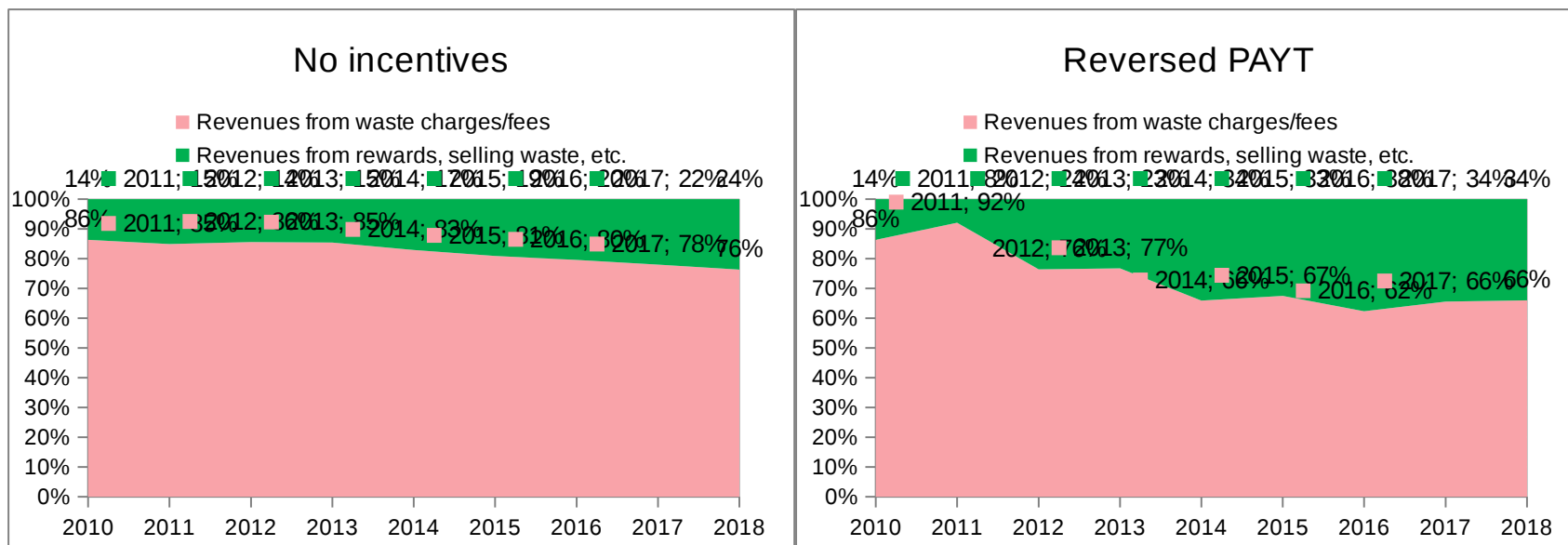
- ⓘ Over 30% less in recent years – WM incentives make it cheaper for people
- ⓘ People are rewarded with fee discounts based on their waste separation behavior

MW revenues from W separation



- ⊕ Growing trend for revenues based on W separation, not on fees
- ⊕ Municipalities with reversed PAYT show significantly higher levels of revenues, some years even double per capita levels
- ⊕ In recent years 30% higher per capita revenues from this source

Revenues distribution



Revenues from fees/charges still dominant

- Ratio with reversed PAYT is 1:2, without incentives is 1:3
- Revenues from W separation gained significantly in importance
- Higher diversification of revenues for the municipality
- More room for maneuvering with fee/charges levels for municipal authorities

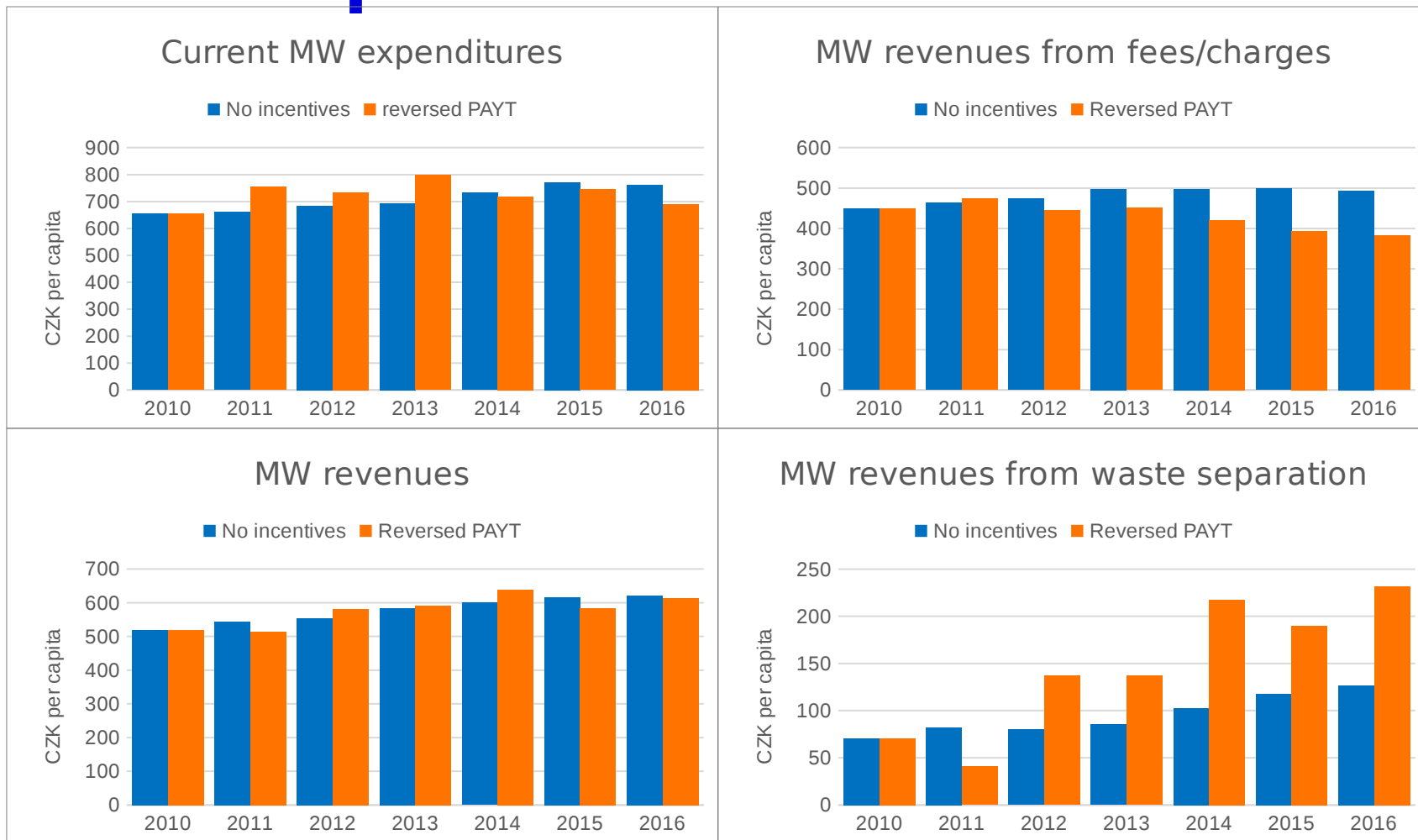
Overall findings

- ⊖ MW expenditures are comparable whether incentives are employed or not, so it is generally not cheaper for the municipality
- ⊖ MW revenues tend to be slightly lower in municipalities with reversed PAYT, so it is not more profitable for the municipality
- ⊖ Municipalities with reversed PAYT collect 1/3 less from fess, but cover most of this gap with higher revenues from waste separation

Conclusions

- ⊖ While MW incentive programs have clear environmental benefits in terms of higher waste separation, financially the evidence is not so straightforward
 - ⊖ Also additional effort from municipal administration and related costs are necessary, in order to persuade and teach people how the new incentive system works (not to be underestimated)
- ⊖ Main difference between municipalities is in the revenue sources distribution
 - ⊖ Municipalities with incentive program tend to earn significantly more from waste separation
 - ⊖ Increase room for charging people less for WM – politically very appreciated
- ⊖ If considering adopting incentive programs, reasons should not be primarily financial, but rather environmental

Development in 2010-2016



Thank you for your attention

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