

Has the EU-Reduced Cigarette Ignition Propensity standard led to fewer fires and fire deaths?

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About the authors



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EU Total Fire Deaths

(incl. non-smoking related fires)

- In general fire deaths have been trending downward for many years.
- Fire prevention methods such as public fire education and smoke alarm systems have proven to be effective.

Smoking-related fires and fire deaths

Smoking is --

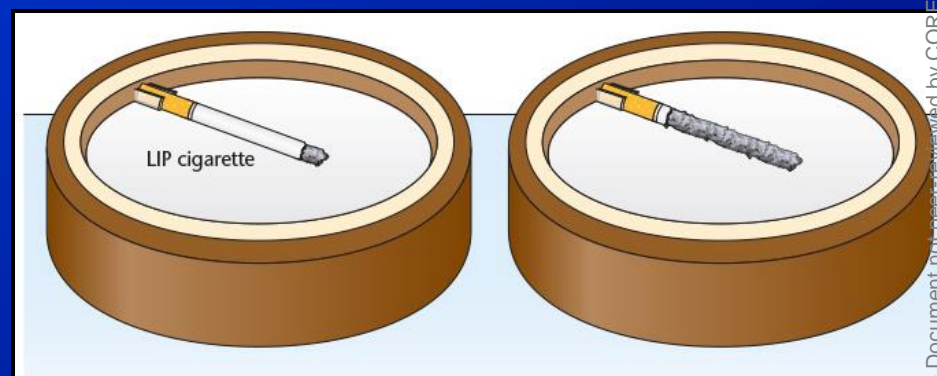
- the most common cause of domestic fires in Europe
- the most common cause of deaths from domestic fires.



Reference: Consumer fire safety: European statistics and potential fire safety measures, Netherlands Institute for Safety Nibra.

Reduced Cigarette Ignition Propensity standard (RCIP)

- The paper: narrow bands are used to reduce air flow.
- ISO Standard 12863 was developed on the basis of the NIST standard.
- EN16156 Implemented by the EU: November 17, 2011.
- Implemented by Finland: April 2010.



Estimated effectiveness of RCIP



EUROPEAN COMMISSION - PRESS RELEASE

Consumers: EU move to reduce cigarette ignited fires to save hundreds of lives each year

Brussels, 14 November 2011 - Cigarettes left unattended are one of the leading causes of fatal fires in Europe. Evidence shows that the number of fatalities can be reduced by over 40% with the introduction of 'Reduced Ignition Propensity' (RIP) cigarettes. This means cigarettes which self extinguish when left unattended and which are thus less likely to cause fire. This safety measure is already in place in some countries globally (US, Canada, Australia), and, in the EU, in Finland since April 2010.

As from 17th November 2011, once the new safety standards are published in the EU Official Journal all cigarettes sold in Europe will have to comply with these measures. It will be the role of the national authorities to enforce this new fire safety measure.

EU Health and Consumer Commissioner, John Dalli said: *"There is no such thing as a safe cigarette, and, obviously, the safest thing is not to smoke at all! But if people choose to smoke then the new standards which are about to fully enter force will require tobacco companies to make only reduced ignition propensity cigarettes, and potentially protect hundreds of citizens from this fire hazard."*

Protecting citizens from fire hazard

Data from Member States covering 2003 to 2008 show that, in the EU, cigarette related fires cause more than 30,000 fires every year, with more than 1,000 deaths and over 4,000 injuries. The experience from Finland, where the number of victims of cigarette-ignited fires has fallen by 43%, suggests that nearly 500 lives could be saved in the EU every year.

It must be stressed that tobacco is the largest avoidable health risk in Europe causing the death of more than an estimated half a million people in the EU each year. The Commission remains committed to a "smoke-free Europe" and address this issue via its on-going [EU "Ex-smokers are unstoppable" campaign](#) (see [IP/11/710](#) and [MEMO/11/405](#)).

New safety standards : how does it work

The change which is required under the new standards is about reducing ignition propensity, which is the ability of a cigarette left unattended to start a fire. Cigarette paper manufacturers have changed their paper production to insert two rings of thicker paper at two points along the cigarette. If the cigarette is left unattended the burning tobacco will hit one of these rings and should then self-extinguish, because the ring restricts the air / oxygen supply. A RIP cigarette cuts down the burning time, thus reducing the chance to ignite furniture, bedding or other material.

IP/11/1342

European Commission
Press release from
Brussels, 14 November
2011

“ . . . Evidence shows that the number of fatalities can be reduced by over 40% with the introduction of 'Reduced Ignition Propensity' (RIP) cigarettes. . . . ”

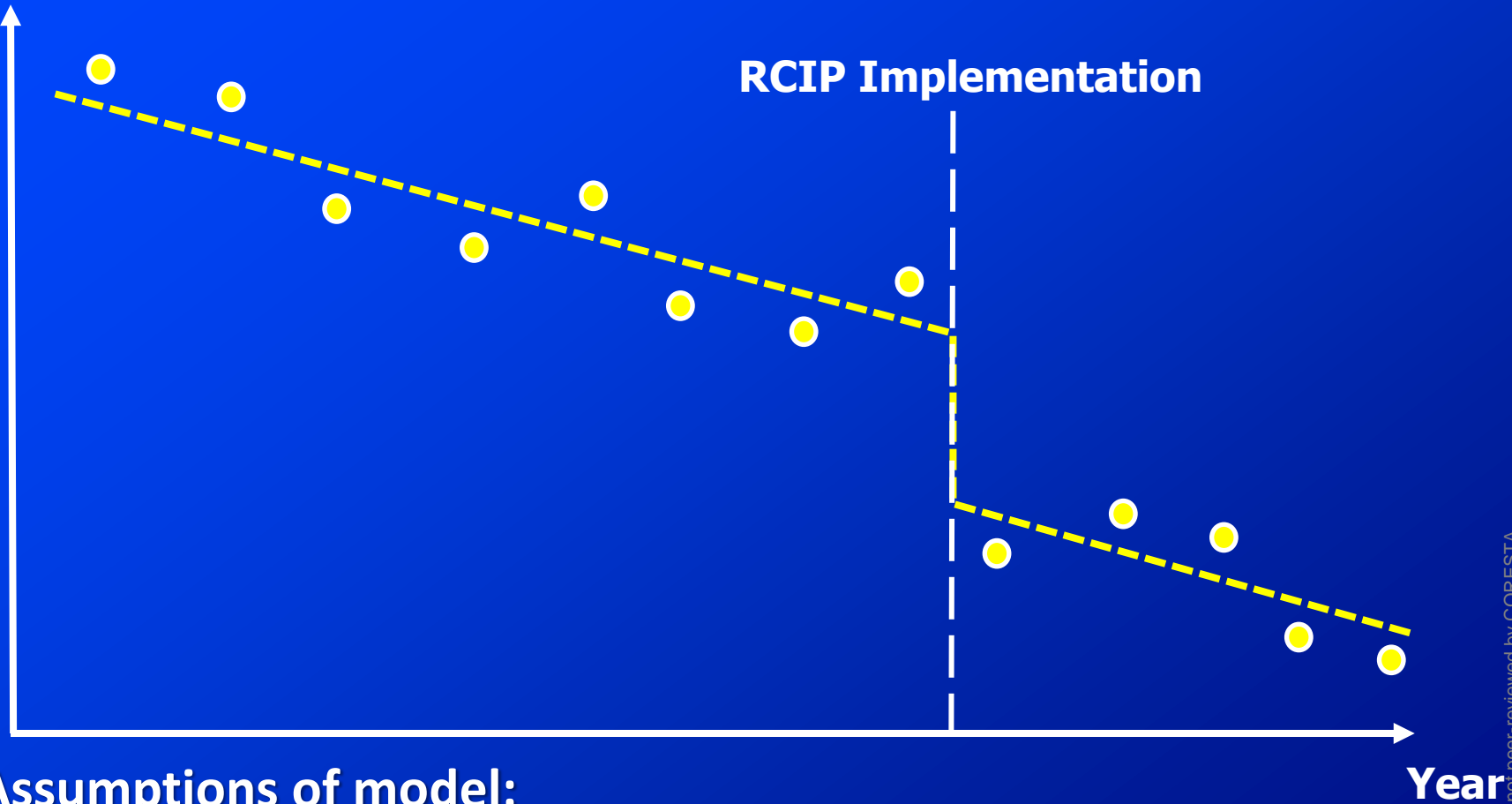
Research question:

Has the RCIP standard reduced smoking-caused fires and/or fire deaths?

Hypotheses:

RCIP standard's impact is a sharp reduction in smoking related fire deaths and fires in the immediate year following the standard's implementation.

**Smoking
related fires /
fire deaths**



Assumptions of model:

- **Linear trend before and after RCIP implementation.**
- **A sharp reduction in the immediate year following the RCIP implementation.**

The Model

$$\text{Fires}(\text{year}) = a * \text{year} + b * \text{cig. sales}(\text{year}) + \text{const.} + \text{delta} * h(\text{year})$$

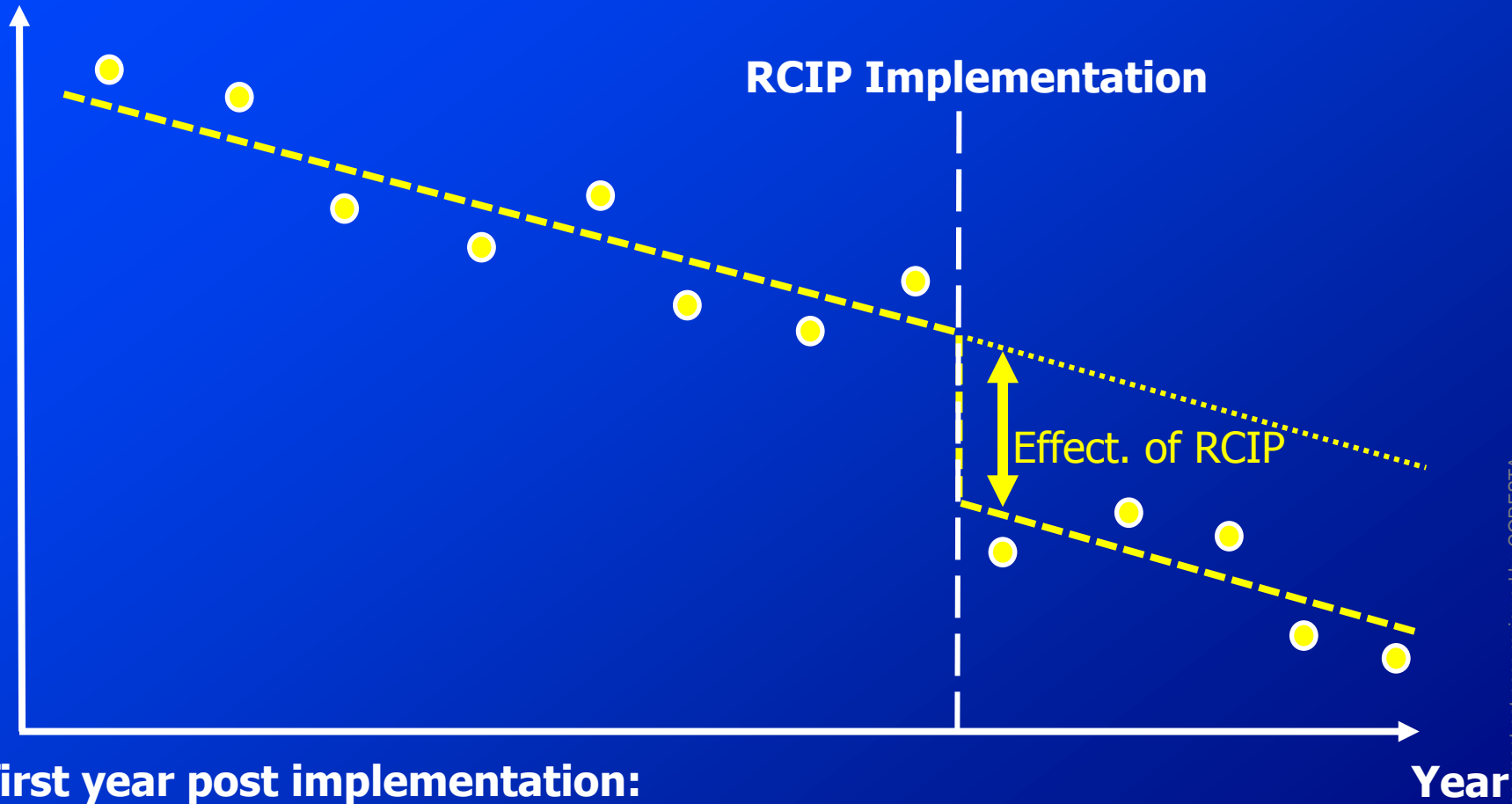
- For years before RCIP implementation (2012): $h(\text{year}) = 0$
- For years after RCIP implementation (2012): $h(\text{year}) = 1$

The parameters a , b , const. and delta are estimated by minimizing the sum of squared differences between the model and the data.

Same model structure applies to smoking related fire deaths.

How is the effectiveness of the RCIP standard's implementation calculated?

Smoking related
fires / fire deaths



For first year post implementation:

$$\text{Effect. of RCIP} = \frac{\text{Theor. value without RCIP affect}}{\text{Value with RCIP affect}} = \frac{\text{Modeled value with } h=0}{\text{Modeled value with } h=1}$$

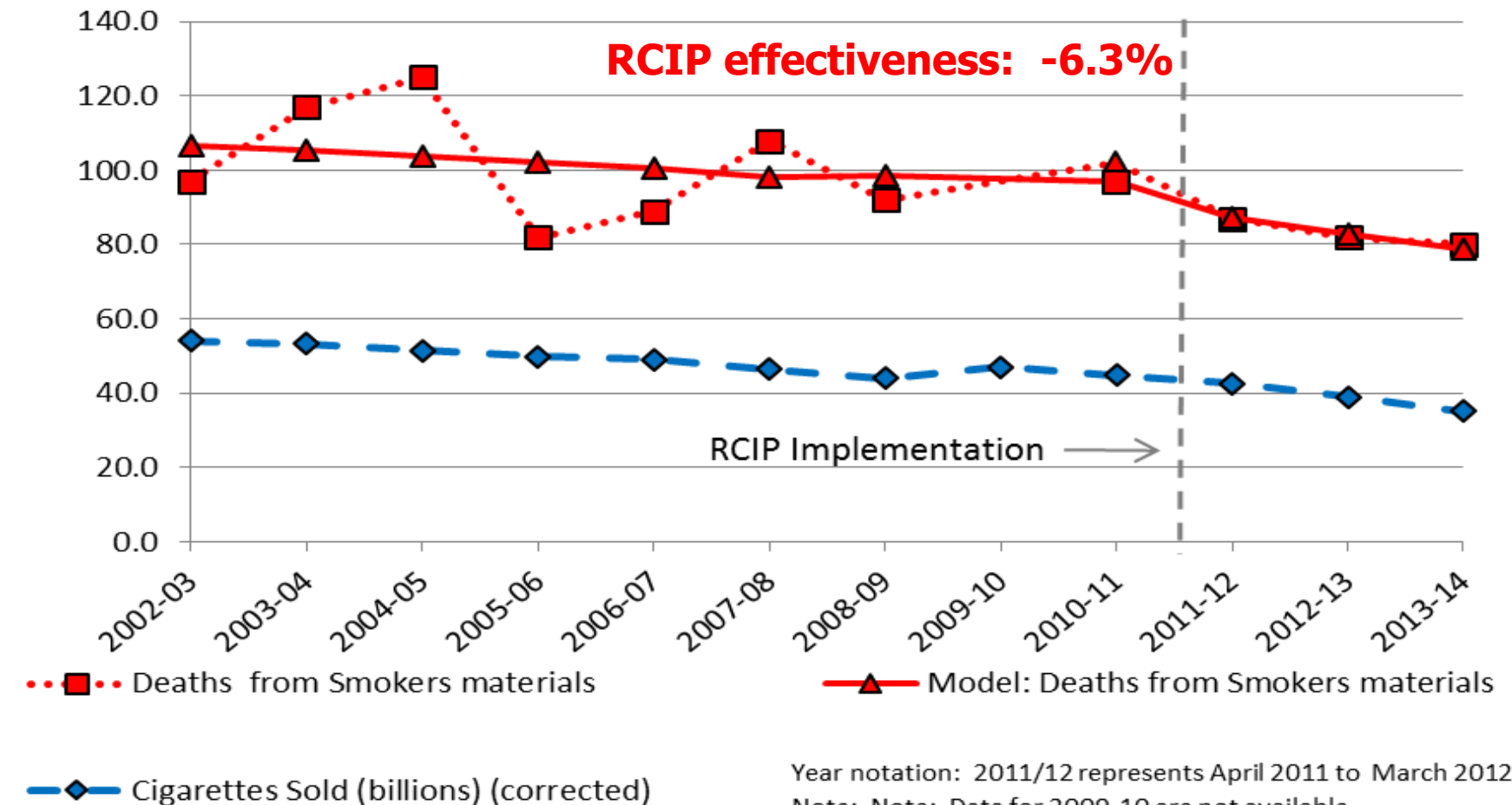
Countries investigated:

- United Kingdom
- Poland
- Czech Republic
- Estonia
- Finland

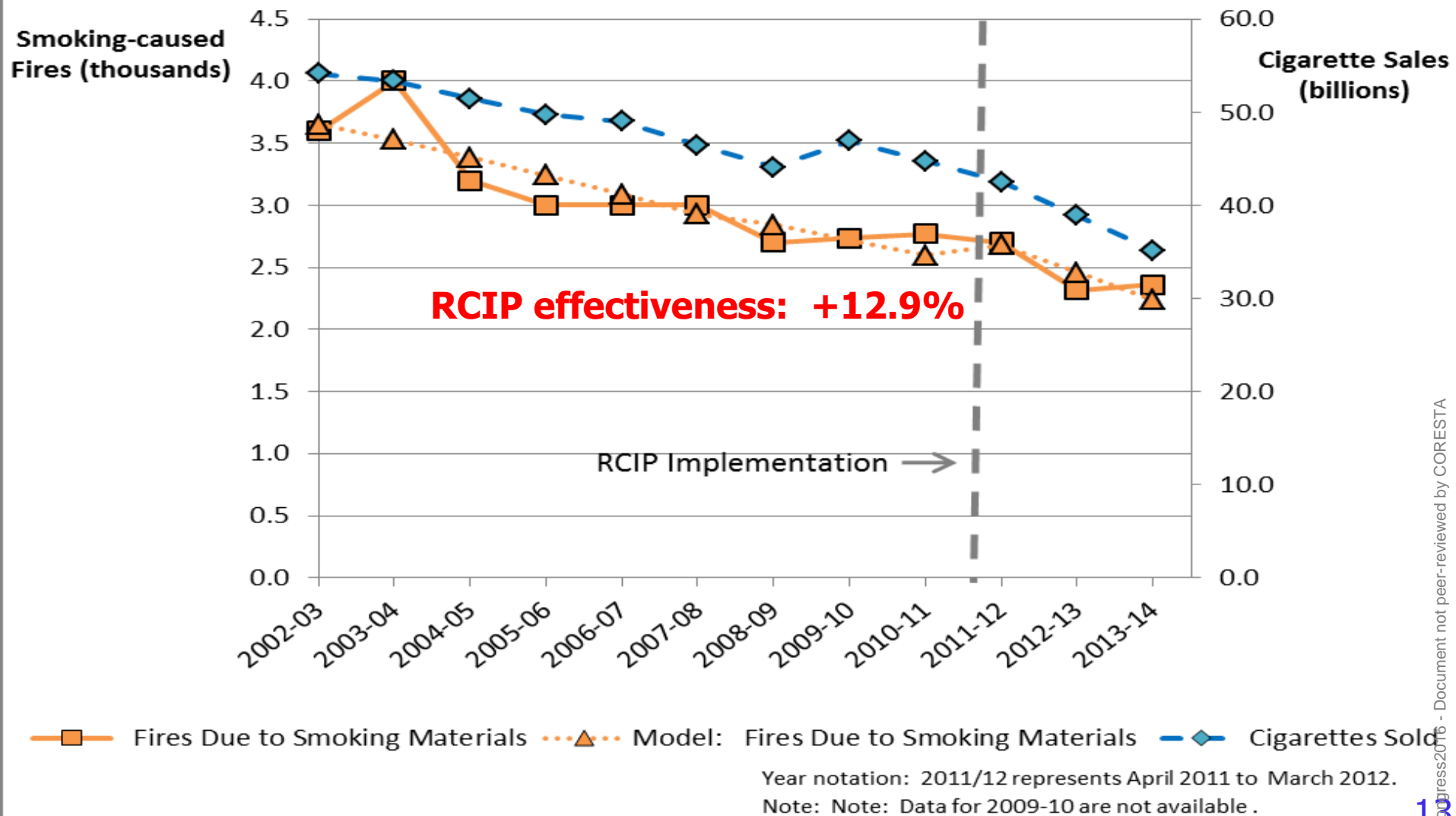
Most countries had general fire statistics data available. However, specifically smoking related data on fires and fire deaths was not available for other countries within the EU.

United Kingdom: Fire Deaths from Smoking Materials

Smoking caused deaths/
Cigarette sales
volume (billions)

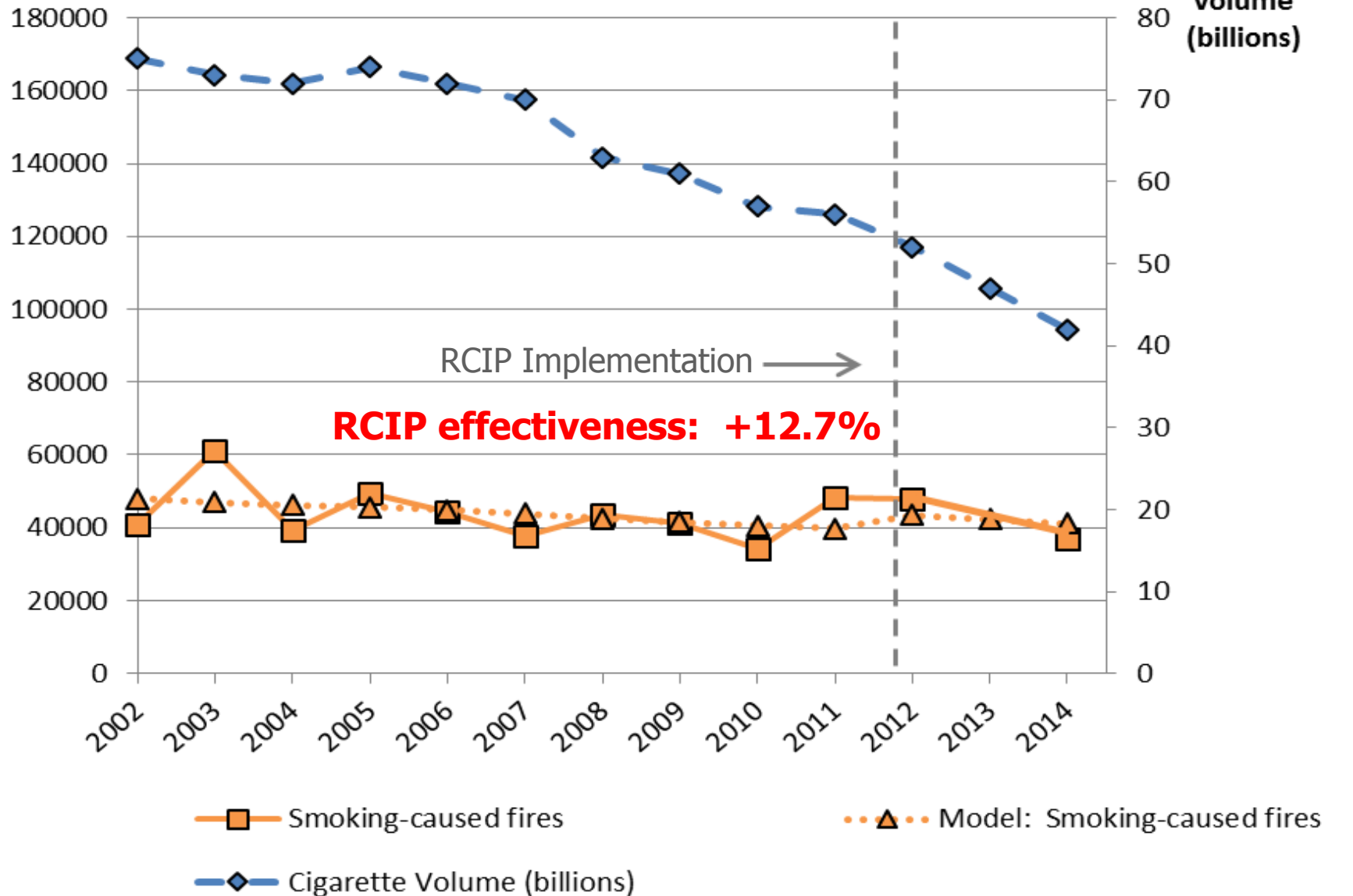


United Kingdom: Fires Due to Smoking Materials



Poland: Smoking-Caused Fires

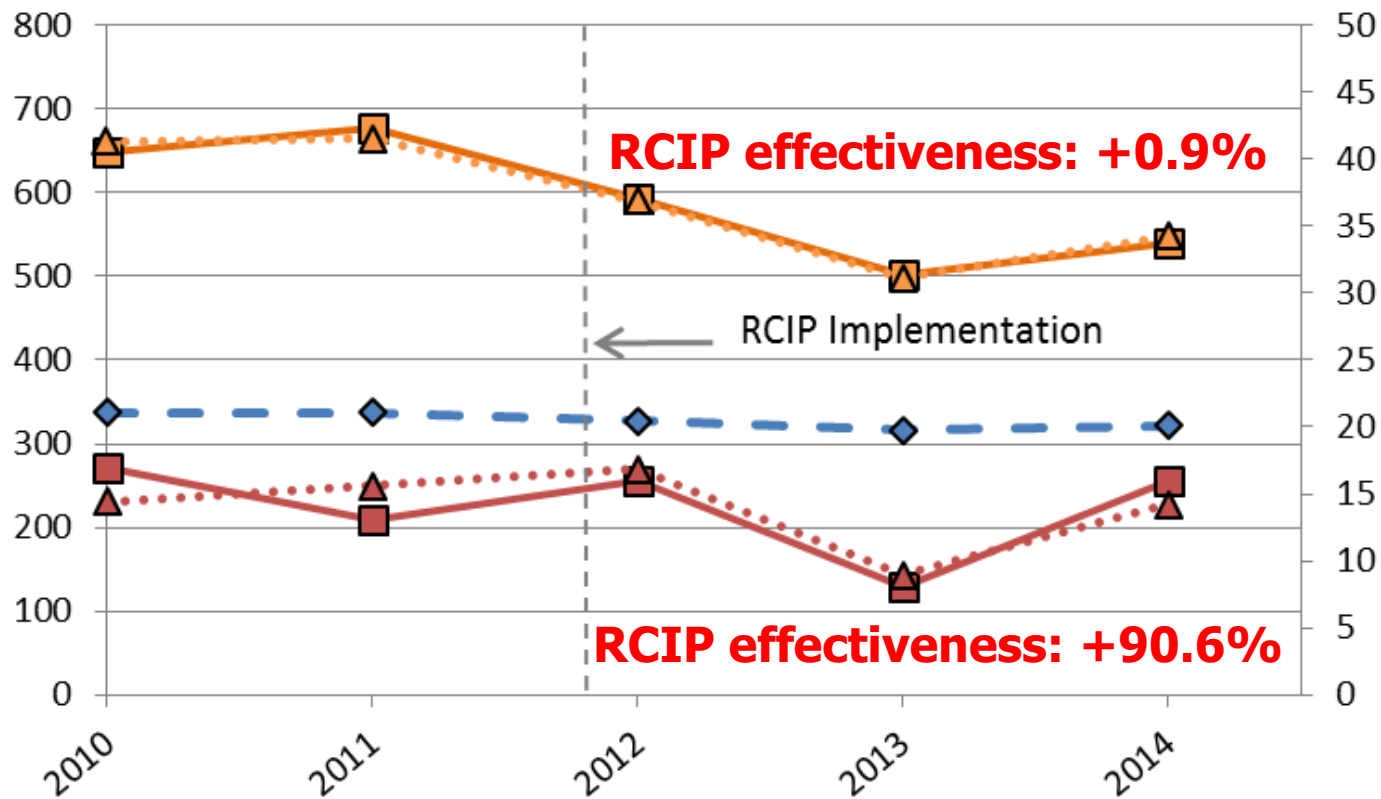
Smoking caused fires



Czech Republic: Smoking-Caused Fires and Fire Deaths

Smoking caused fires

Smoking caused Deaths/
Cigarette sales volume (billions)



Smoking Fires

Cigarette volume

Model: Deaths from Smoking Fires

Model: Smoking Fires

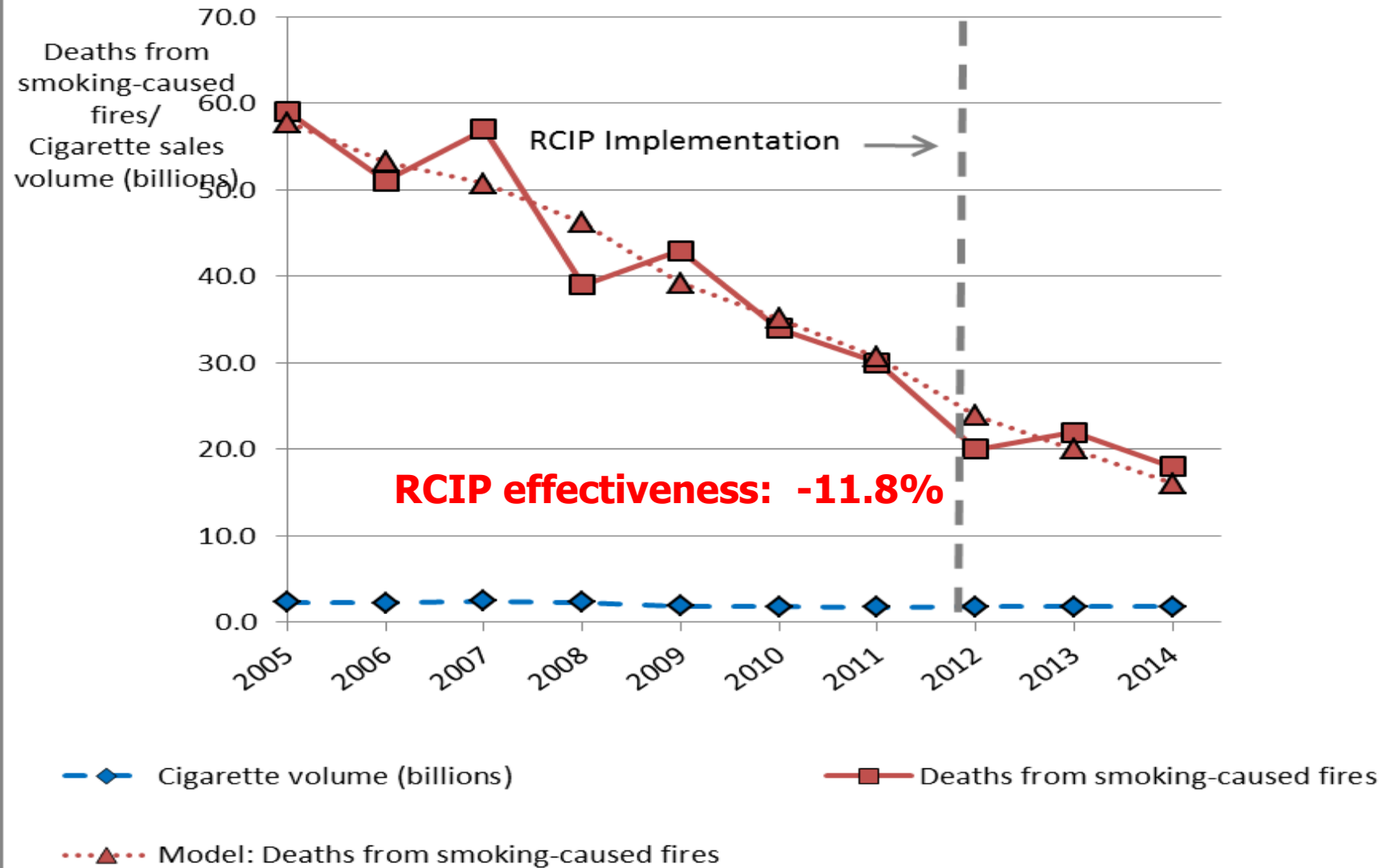
Deaths from Smoking Fires

RCIP effectiveness: +0.9%

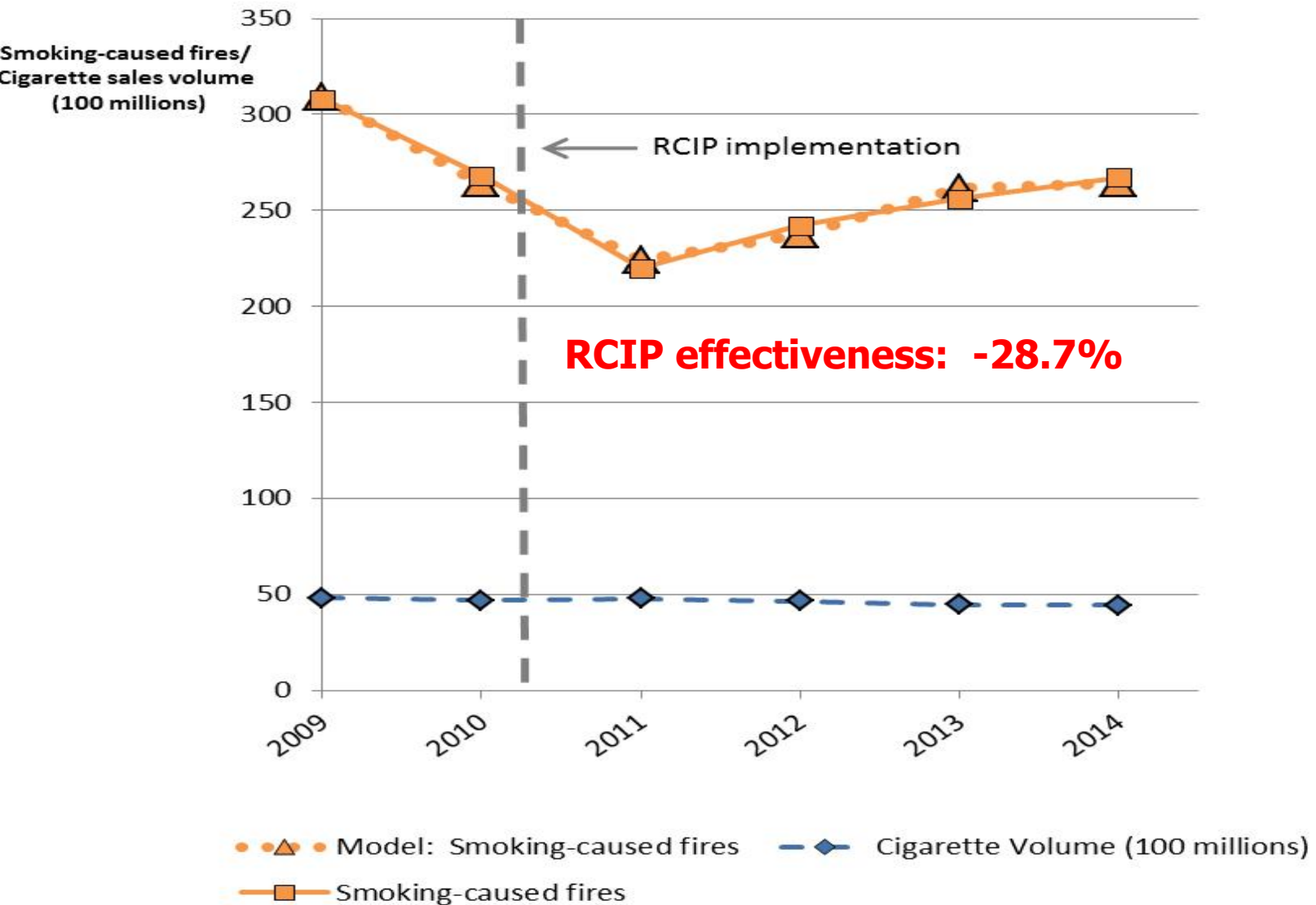
RCIP effectiveness: +90.6%

RCIP Implementation

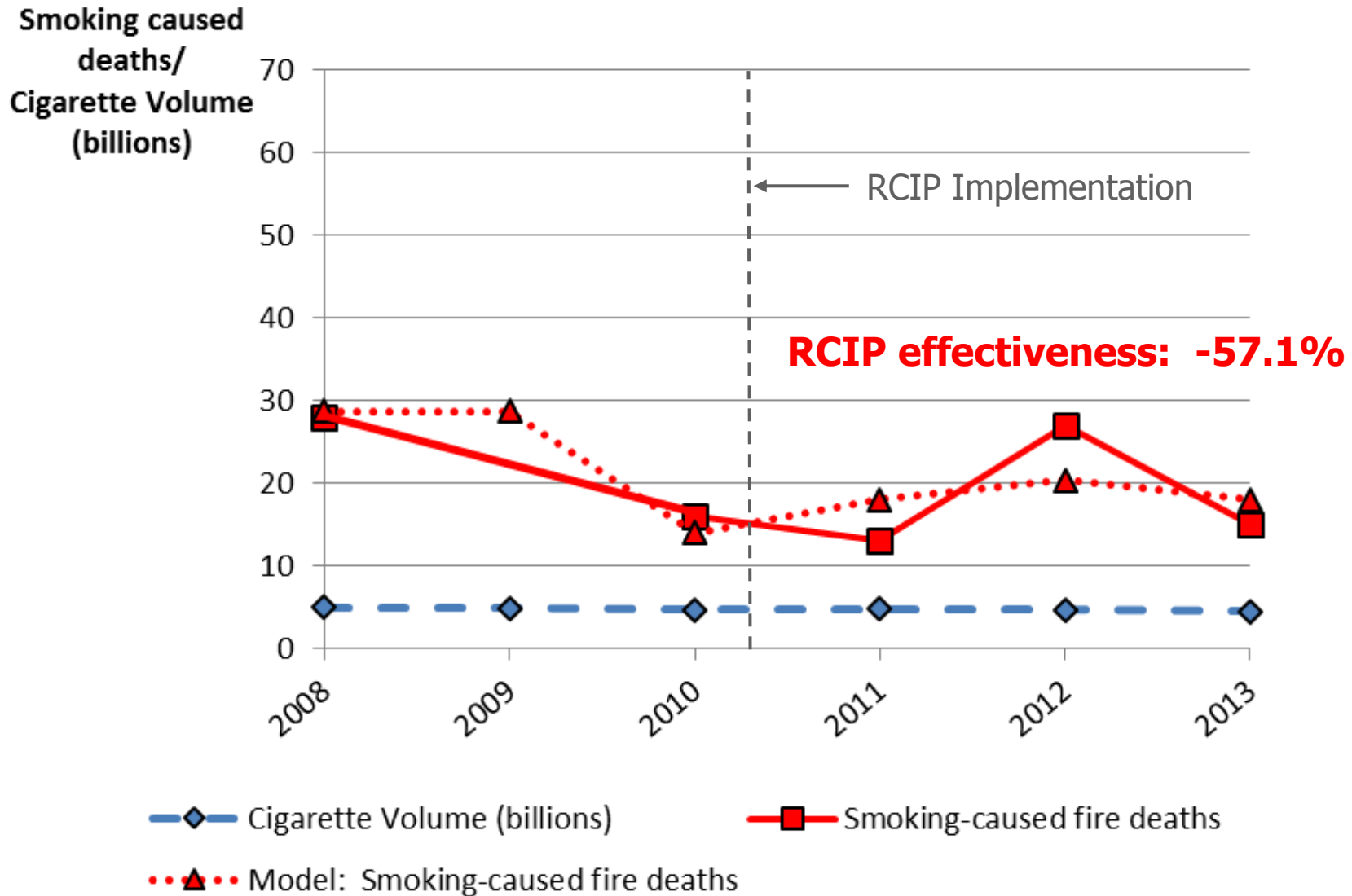
Estonia: Smoking-Caused Fire Deaths



Finland: Smoking-Caused Fires



Finland: Smoking-Caused Fire Deaths



Summary of RCIP effectiveness for first year post implementation

	Smoking caused fires	Smoking caused fire deaths
United Kingdom	+12.9%	-6.3%
Poland	+12.7%	
Czech Republic	+0.9%	+90.6%
Estonia	-12%	
Finland	-28.7%	-57.1%

Conclusion

- No strong indication was found that the implementation of the RCIP standard has led to substantial reductions in smoking-related fires or fire deaths.
- If any impact was seen then the impact was not as great as the 40% reduction in the number of fatalities initially forecast by the EU Commission.
http://europa.eu/rapid/press-release_IP-11-1342_en.htm
- Our results should be considered as preliminary.