Energy Poverty

Conference 2024

DATE
6th November 2024
VENUE
ESRI, Whitaker Square, Sir John Rogerson's Quay,
Dublin 2

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An international perspective

Miguel Tovar

Research questions

1. **When using a composite index for energy poverty, how does Ireland compare with other European countries?**

2. **How does Ireland compare with EU countries in targeting vulnerable households?**

Javier Palencia González, Jose Maria Labeaga Azcona (UNED, Madrid, Spain)

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Data and methods

- We use data from the year 2021 of the EU-SILC.

- We imputed energy expenditure from the HBS

- We use this particular year because it is the only year that provides data on the allocation of the utility-reduced cost subsidy.

- We employ factor analysis and the multidimensional methodology proposed by Alkire and Foster (2011).
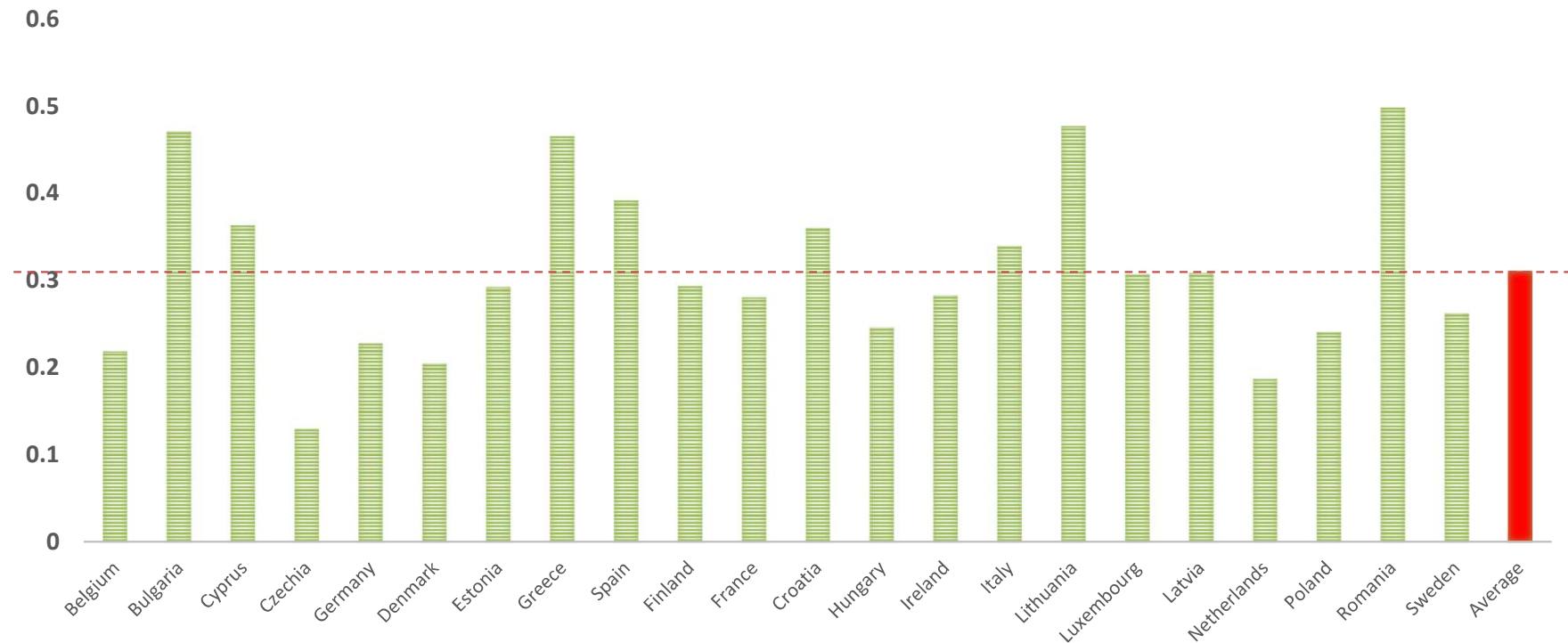
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Data and methods

Dimensions

- Income
- Inability to keep home adequately warm
- Arrears on utility bills
- Financial burden of the repayment of debts from hire purchase or loans
- Inability to make ends meet
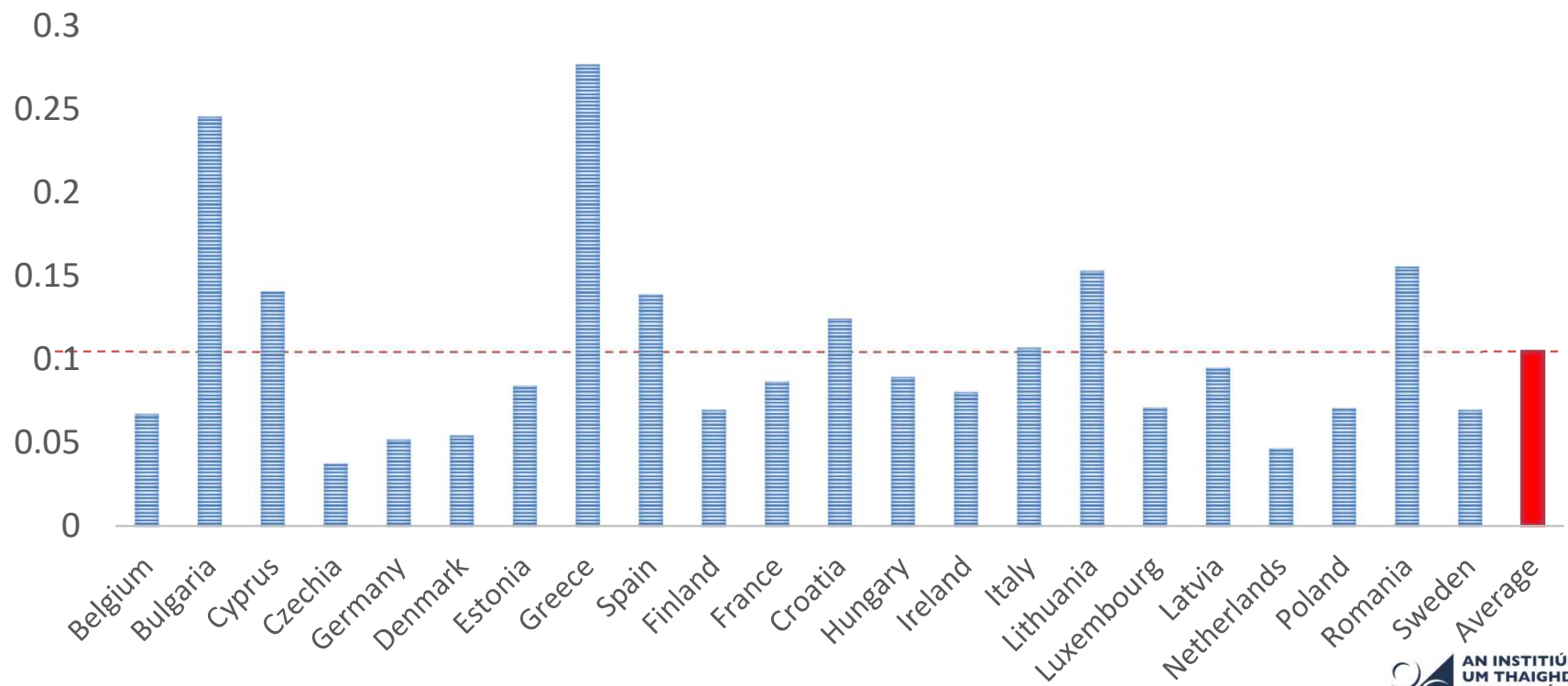- $EE < Median(EE)/2$

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Results, extensive metric (Preliminary results)

Proportion of the population

# Results, intensive metric (Preliminary results)

Proportion of the population

Results (Preliminary results)

Note: Statistical significance. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

	Extensive		Intensive	
	Odds Ratio	Std. Err.	Coefficient	Std. Err.
Owner Type: (Base type: unknown ownership type)				
Tenant, rent at market price	4.30***	(0.00)	0.13***	(0.00)
Tenant, rent at reduced price	5.03***	(0.00)	0.14***	(0.00)
Household Type: (Base type: One person household)				
Single parent, one or more children	1.68***	(0.00)	0.06***	(0.00)
Other adults with children	1.24*	(0.10)	0.03	(0.19)
Reason for decrease in income (Base type: Reduced working time, wage or salary)				
Lost job/unemployment/ bankruptcy of (own) enterprise	1.59***	(0.00)	0.07***	(0.00)
Became unable to work because of illness or disability	1.42***	(0.00)	0.06***	(0.00)
Cut in social benefits	1.85***	(0.00)	0.10***	(0.00)
Other	1.20*	(0.09)	0.04	(0.12)

Results, targeting efficiency (Preliminary results)

The proportion of the population covered by the utility-reduced cost subsidy
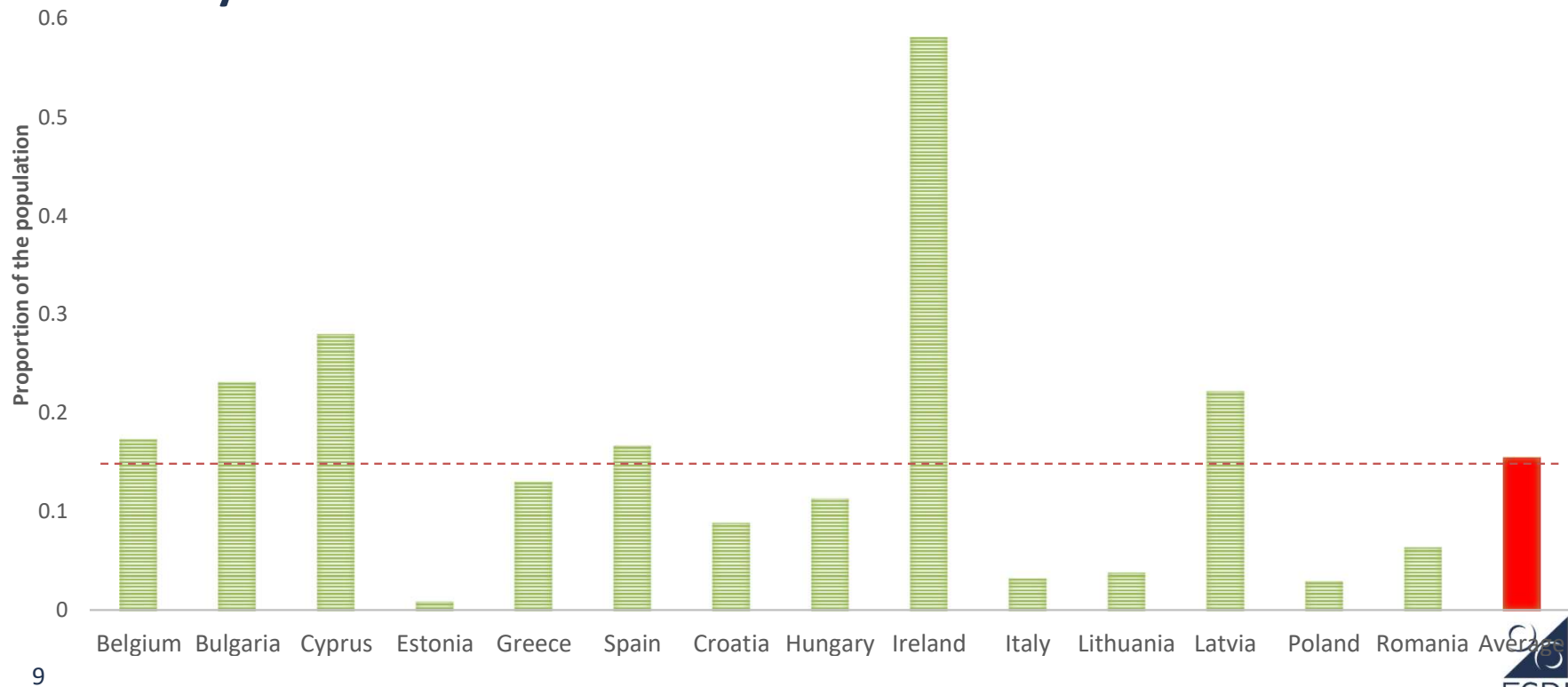
Research questions

1. **What is the role of demand responses in reducing energy affordability?**

2. **How does Ireland compare with EU countries regarding the effectiveness of transfers to reduce poverty induced by increases in ener prices?**

David Juarez-Luna (Universidad Anahuac, Mexico)

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Data and methods

- European Household Budget Survey 2010 and 2015
- Price indices

- Demand system approach

- Poverty approach

Data and methods

Foster–Greer–Thorbecke:

$$\frac{1}{N}\sum_{i=1}^{H}\left(\frac{z-y_i}{z}\right)$$

Z=poverty line
y_i=Household income
N=population size
H=number of vulnerable households

Data and methods

$$y_R = y - q_f x_f (\mathbf{q}, y).$$

y=household disposable income

q_f = energy price

x_f = Energy demand

$$AFI_1 = \theta \int_0^{z_R} \left(\frac{z_R - y_R^1}{z_R} \right) \hat{g} (y_R) \, dy_R$$

z_R=Residual income thresholds

y_R=Residual income

g(y_R)= Distribution function

θ=The proportion of households in energy poverty

Data and methods

$$\frac{\partial AFI_1}{\partial m} = \frac{\lambda}{z_R}\left(E \cdot [\varepsilon_y s_f] - 1\right)$$

ε_y= Expenditure elast

s_f= Budget share

λ= Proportion of those below the thresholds and energy poverty
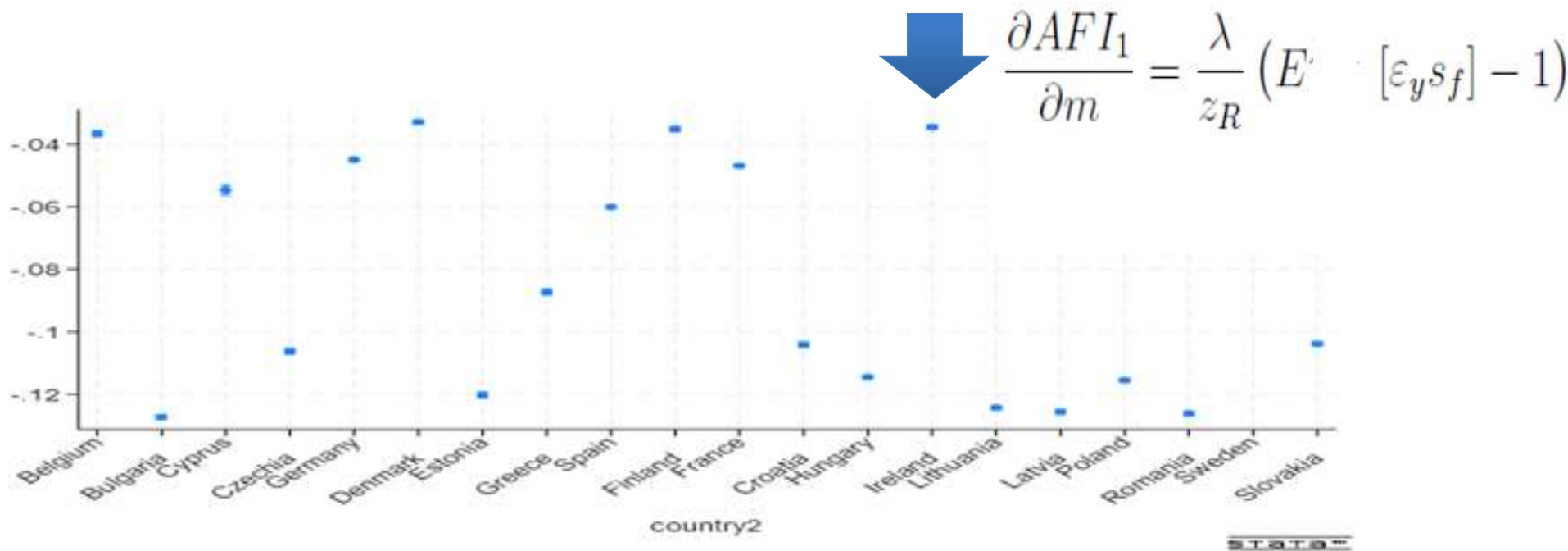
z_R=Residual income thresholds

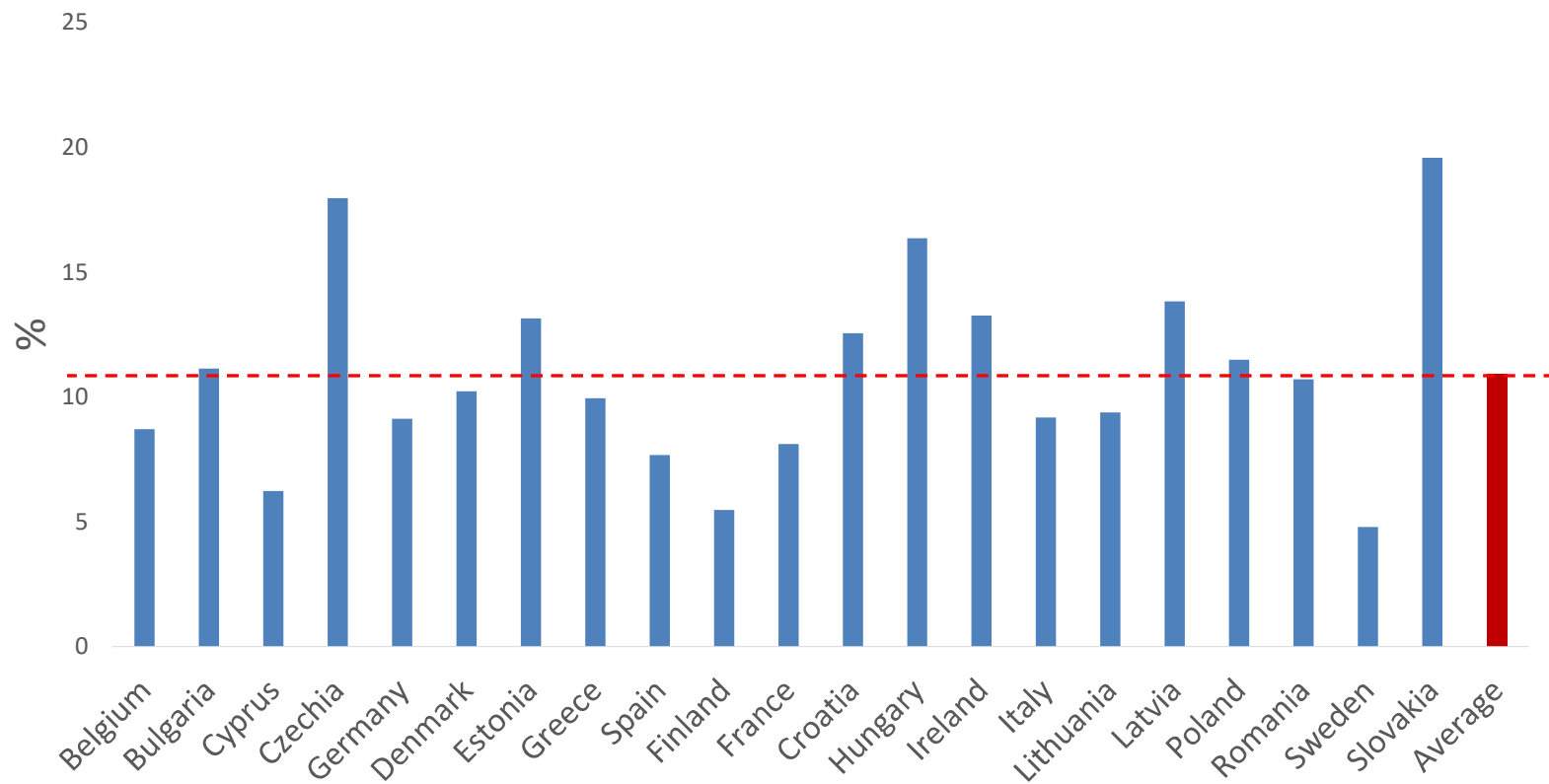# Results, cross-price elasticities (Preliminary results)

	Food	Housing	Energy	Transport	Education	Other
Ireland						
Energy	-0.067***	0.011	-0.766***	-0.016***	0.003	-0.034***

Note: Statistical significance. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

Results, marginal effects of transfers on the AFI (Preliminary results)

$$\frac{\partial AFI_1}{\partial m} = \frac{\lambda}{z_R}\left(E' \quad [\varepsilon_y s_f] - 1\right)$$

Results, energy budget shares (Preliminary results)

Results, daily thresholds (Preliminary results)
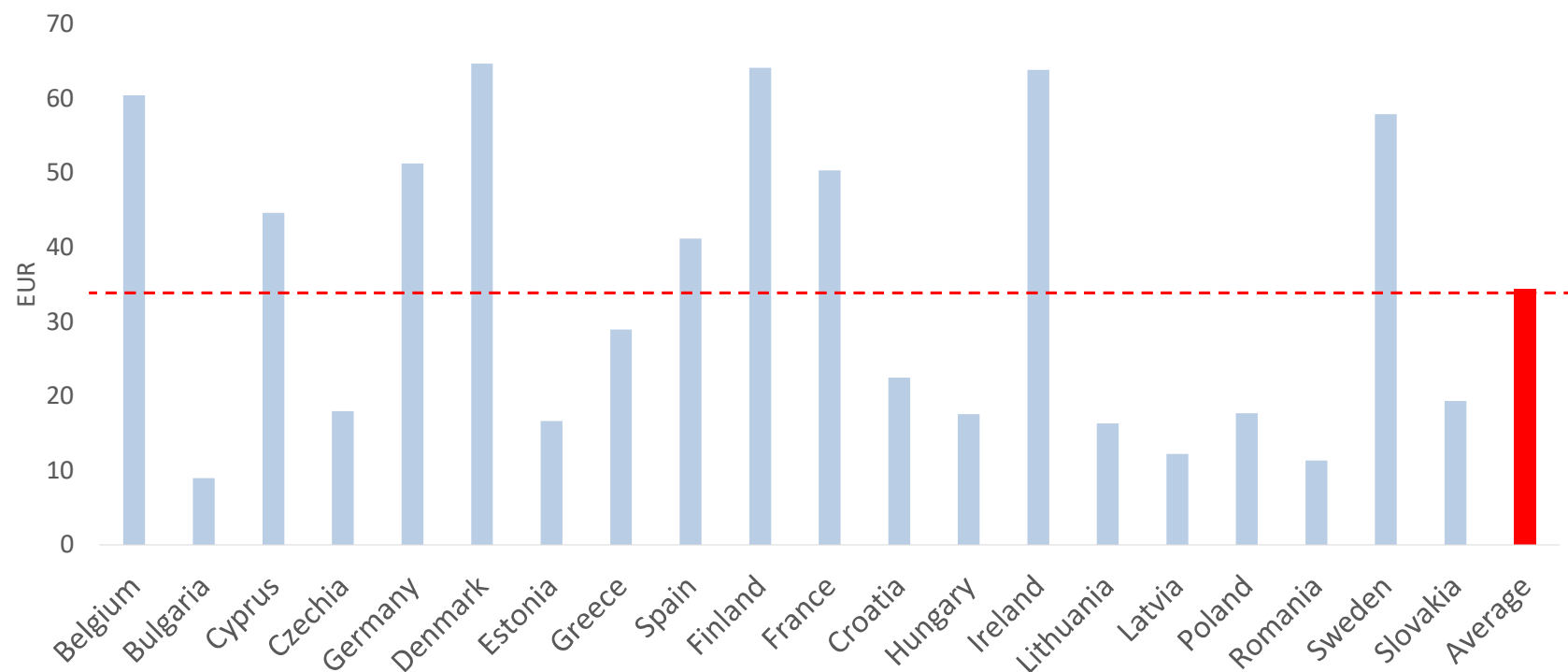
Summary

- Our preliminary results suggest that:

- Ireland has average values of multidimensional poverty compared with other EU countries

- We identify households with income shocks that require protection

- Ireland does well in targeting vulnerable households, but there is still room for improvement

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Summary

- Households in Ireland could be cutting expenditure on food and transportation when facing higher energy prices

- Reducing affordability issues is more difficult for countries with high residual income thresholds

Thank you

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