Gender gap in depression and gender equality

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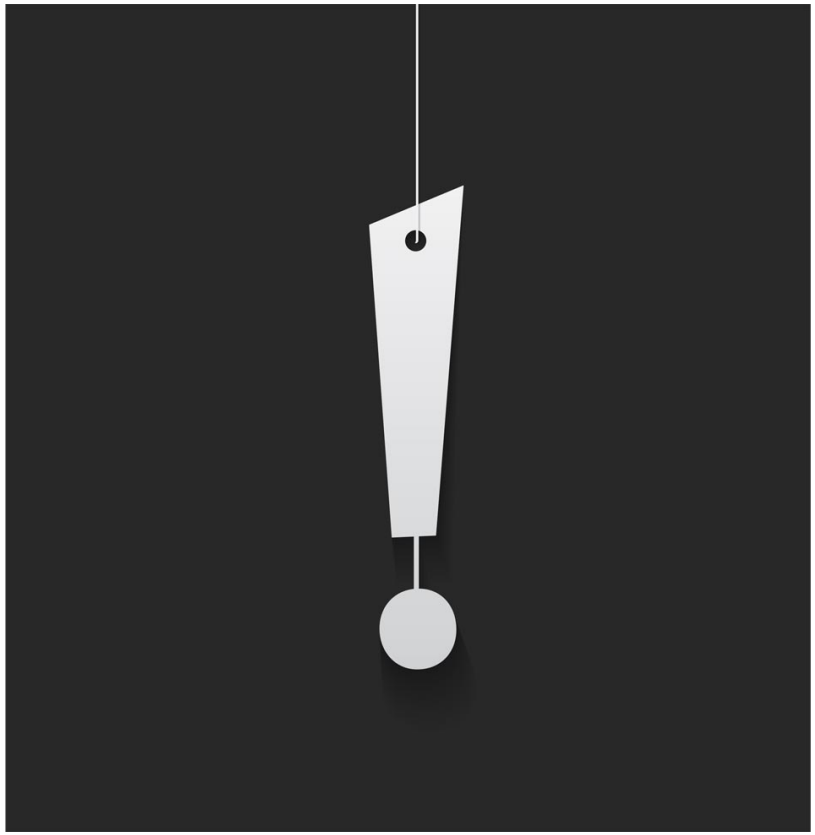
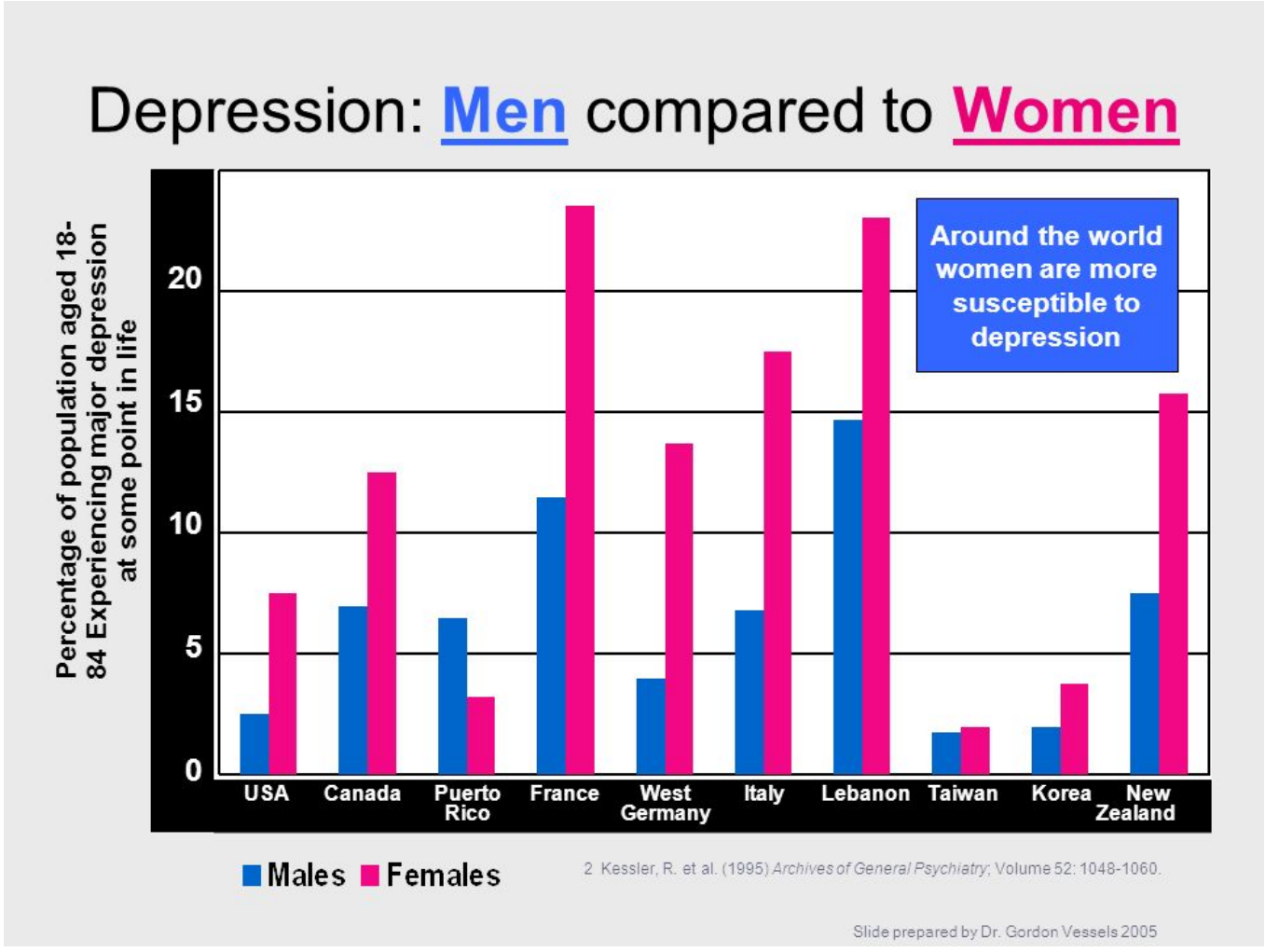
MZES, Mannheim University

Gender equality

Gender equality





- partly explained by socioeconomic disadvantage

Does gender equality correlate with lower depressive symptoms among women?

Does it correlate with narrower gender gap?

Does gender equality correlate with lower depressive symptoms among women?

Does it correlate with narrower gender gap?

Isn't it obvious?

Gender equality and women's mental health?

Hopcroft and Bradley (2007), Hopcroft and McLaughlin (2012)

gender equality correlates with wider gender gap in depression

Van de Velde, Huijts, Bracke, and Bambra (2013)

gender equality correlates with lower gender gap in depression only in some groups (single, employed)

So, what does this mean?

My goal: check again

- new data
  - larger individual data-set (3 waves of the ESS)
  - 4 measures of gender equality
- tackle past limitations
  - macro-level controls

But also provide stronger results:

- new approach
  - changes over time vs. differences across countries

New data: European Social Survey waves: 3, 6, 7

Depressive symptoms (CES-D8):

- felt depressed
- felt that everything was an effort
- restless sleep
- feeling happy
- feeling lonely
- enjoying life
- feeling sad
- feeling that one could not get going

1 – *none/almost none of the time*, 4 – *all/almost or all of the time*

Gender Equality (0-100)

Gender Equity Index

2007 & 2012

EU Gender Equality Index

2005 & 2012

Gender Inequality Index

2005 & 2013 (rev)

Global Gender Gap Index

2006, 2012 & 2014

	GEI	EU	GII	GGGI
educational enrolment	⋆			⋆
educational attainment		⋆	⋆	
educational segregation		⋆		
life-long learning		⋆		
literacy	⋆			⋆
income	⋆	⋆		⋆
wage equality				⋆
wealth		⋆		
poverty risk		⋆		
employment	⋆	⋆	⋆	⋆
job segregation		⋆		
highly qualified jobs	⋆			⋆
executive positions	⋆	⋆		⋆
parliamentary seats	⋆	⋆	⋆	⋆
ministers and heads of states		⋆		⋆
regional assemblies		⋆		
care time		⋆		
health		⋆		⋆
healthcare access		⋆		
maternal mortality			⋆	
adolescent birth rates			⋆	
sex ratio at birth				⋆

Past limitations: controls

GDP and income inequality: reflect chances to meet basic needs $\rightarrow$ likely correlate with the risk of depression

	Gini	GDP	% Muslim
Van de Velde et al. (2013)	$\star$	–	–
Hopcroft et al. (2007, 2012)	–	–	$\star$
this analysis	$\star$	$\star$	–

Pseudo-panel: Changes vs. differences

- macro-level (pseudo) panel: between and within effects
- within effects control for the unobserved heterogeneity among countries

Example: Gini in Spain	2006	2012	2014
Gini	31.1	33.9	34.1
μ Gini	33.1	33.1	33.1
Δ Gini	-2.0	0.9	1.1

Sample and method

- ESS waves 3, 6 and 7 (2006, 2012 and 2014)
- 28 countries, 69 country waves (22 & 57 for EU-GEI)
- 3-level multilevel model: individuals – country-waves – countries
- random intercepts at country and country-wave level
- standard errors clustered at countries

$$
\begin{aligned}
\text{Depr}_{iwc} =& \alpha_{0wc} + \beta_1 \text{woman}_{iwc} + \\
&+ \beta_2 \mu\text{GEq}_c + \beta_3 \mu\text{GEq}_c \text{woman}_{iwc} + \\
&+ \beta_3 \Delta\text{GEq}_{wc} + \beta_4 \Delta\text{GEq}_{wc} \text{woman}_{iwc} + \\
&+ \mathbf{B}_5 \mu\mathbf{Z}_c + \mathbf{B}_6 \mu\mathbf{Z}_c \text{woman}_{iwc} + \\
&+ \mathbf{B}_7 \Delta\mathbf{Z}_{wc} + \mathbf{B}_8 \Delta\mathbf{Z}_{wc} \text{woman}_{iwc} + \\
&+ \mathbf{B}_9 \mathbf{X}_{iwc} + \epsilon_{iwc} \\
\alpha_{0wc} =& \gamma_{00c} + \tau_{wc} \\
\gamma_{00c} =& \gamma_{000} + \tau_c
\end{aligned}
\tag{1}
$$

Dep: Depressive symptoms

	GEI	EU-GEI	GII(rev)	GGGI
age	1.26***	1.31***	1.26***	1.26***
age^2	−0.05$^+$	−0.07*	−0.05$^+$	−0.05$^+$
woman	13.97	2.72	17.04**	13.74$^+$
single (ref: married)	3.28***	3.24***	3.28***	3.28***
divorced, widowed (ref:married)	5.62***	5.67***	5.62***	5.62***
unemployed	2.01***	1.60***	2.00***	2.01***
income: living comfortably (ref: coping)	−3.17***	−3.27***	−3.17***	−3.17***
income: difficult (ref: coping)	6.15***	6.53***	6.15***	6.15***
income: very difficult (ref: coping)	14.04***	14.89***	14.04***	14.04***
educ: elementary (ref: secondary)	3.23***	2.82***	3.23***	3.22***
educ: lower secondary (ref: secondary)	1.59***	1.55***	1.59***	1.59***
educ: post-secondary (ref: secondary)	−0.36	−0.35	−0.36	−0.36
educ: tertiary (ref: secondary)	−0.85***	−0.89***	−0.86***	−0.85***

Dep: Depressive symptoms

	GEI	EU-GEI	GII(rev)	GGGI
Δ gender equality	-0.13	-0.22	-0.22^{*}	-0.25^{*}
woman x Δ gender equality	0.05^{*}	0.10	0.04	0.15^{***}
Δ Gini	-0.33	-0.10	-0.22	-0.34
woman x Δ Gini	0.28^{***}	0.27^{***}	0.24^{***}	0.30^{***}
Δ GDP (ln)	-8.13^{***}	-10.43^{***}	-6.80^{**}	-7.11^{***}
woman x Δ GDP (ln)	-0.55	-0.69	-0.32	-1.44^{+}
μ gender equality	-0.09	-0.21^{**}	-0.09	-0.19
woman x μ gender equality	-0.02	-0.02	0.09^{*}	-0.08
μ Gini	0.07	-0.10	0.08	0.02
woman x μ Gini	0.01	0.04	0.05	-0.01
μ GDP (ln)	-3.81^{**}	0.59	-2.93^{+}	-3.03^{*}
woman x μ GDP (ln)	-0.97	0.02	-2.29^{***}	-0.48

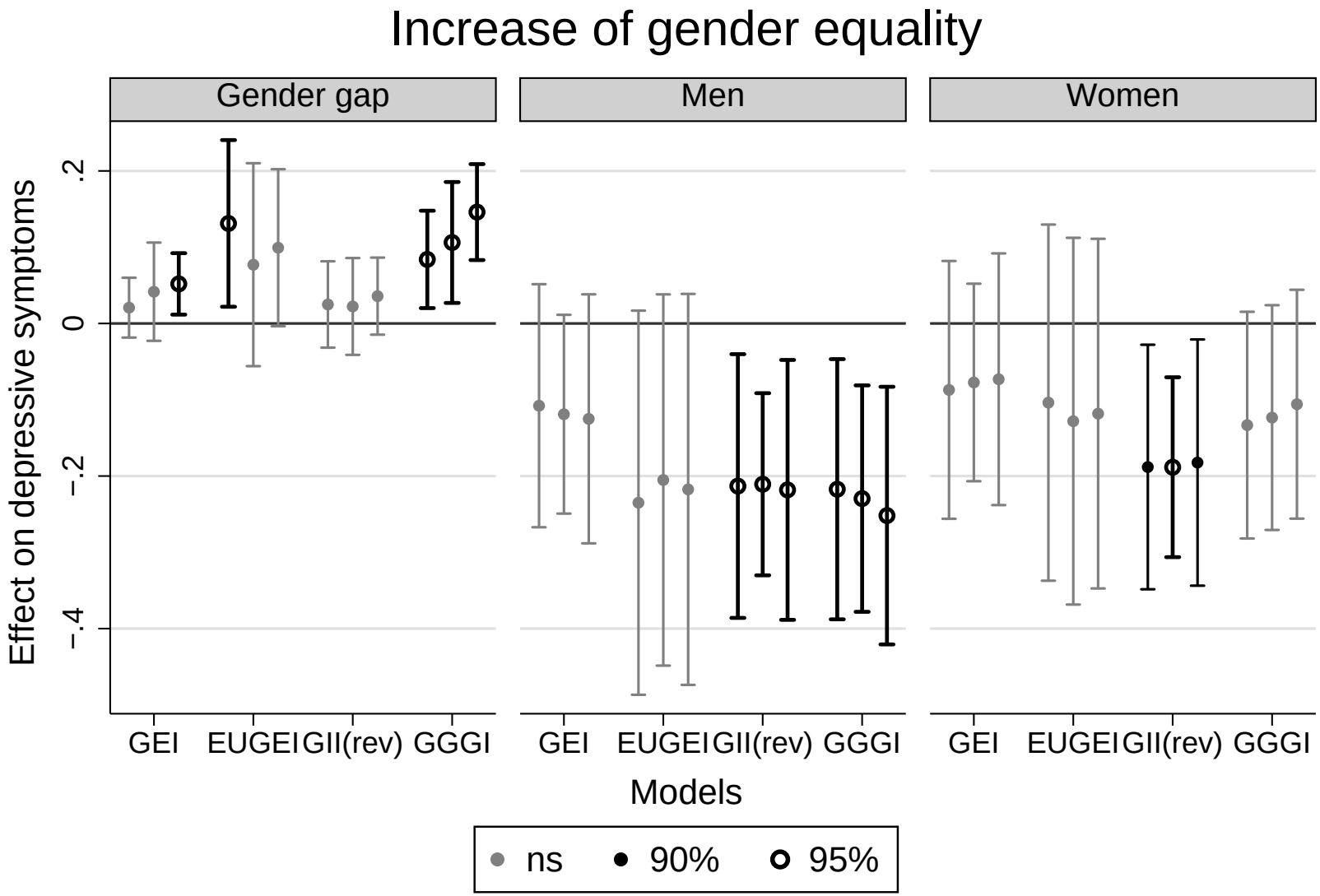
Dep: Depressive symptoms

	GEI	EU-GEI	GII(rev)	GGGI
AIC	1054831	877548	1054805	1054810
Model's df	25	21	25	25
nr of countries	28	22	28	28
nr of country-waves	69	57	69	69
converged	1	1	1	1
N	126474	105094	126474	126474
Country var(_cons)	3.1	2.3	3.3	2.6
Country-Year var(_cons)	1.2	1.2	1.0	1.1
var(Residual)	244.8	247.2	244.7	244.8
rho country	1.2	0.9	1.3	1.0
rho country-year	0.5	0.5	0.4	0.4

Does the increase of gender equality correlate with lower depressive symptoms among women?

...with lower gender gap in depression?

Dep: depressive symptoms – raw

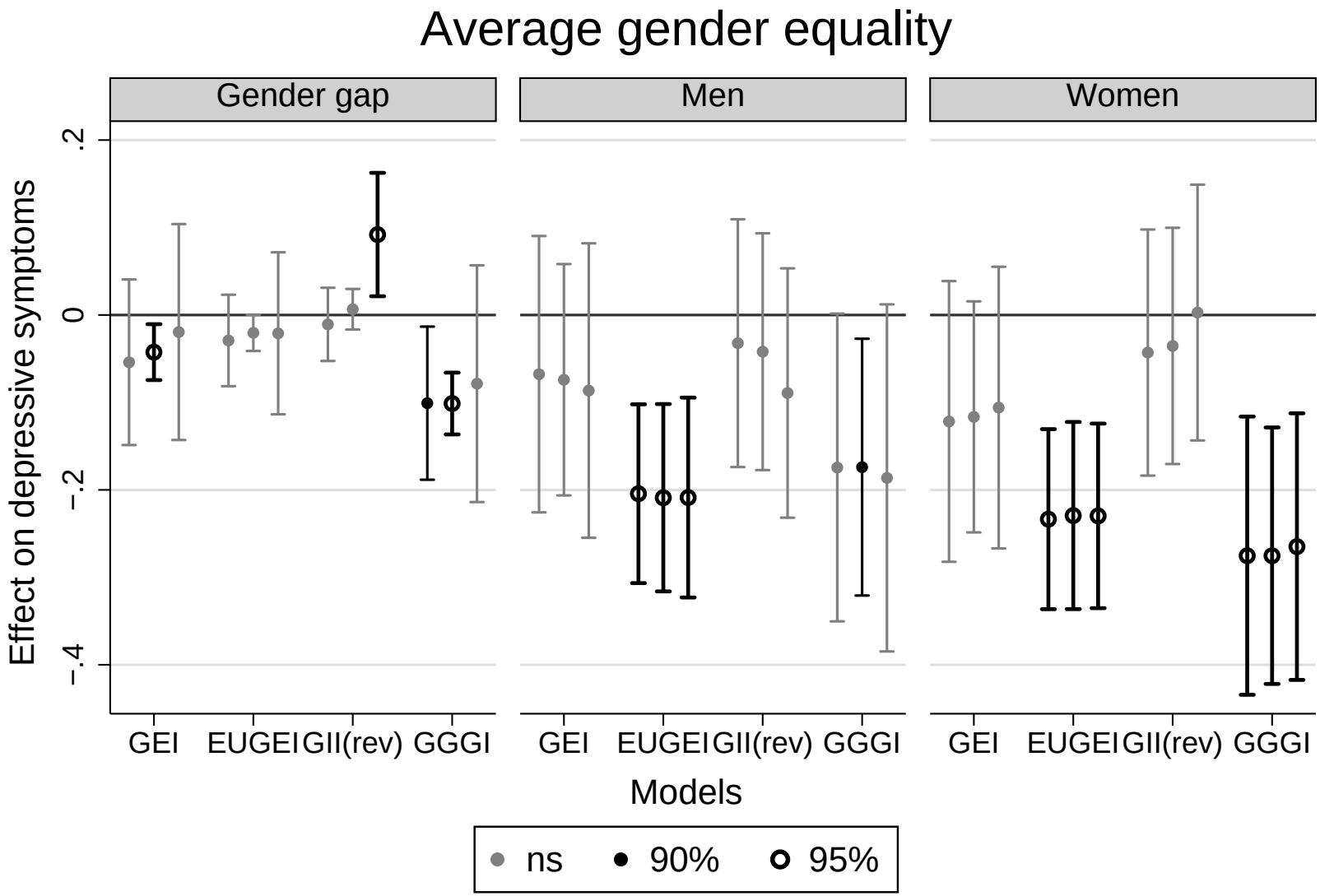


Graphs by women

In more gender equal countries, do women report less depressive symptoms?

...is the gender gap in depression smaller?

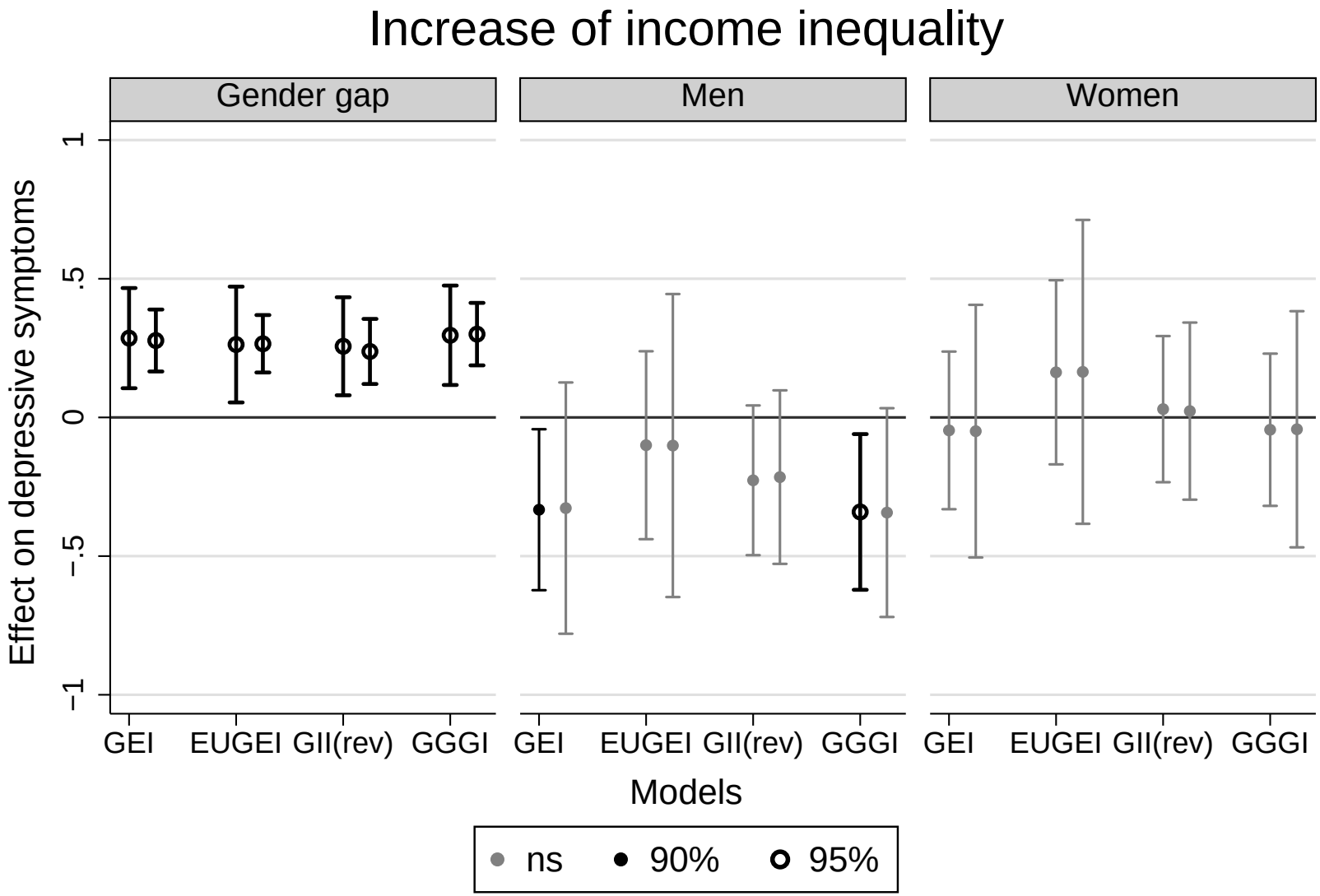
Dep: depressive symptoms – raw



Graphs by women

Macro-level controls (Δ)

Dep: depressive symptoms – raw



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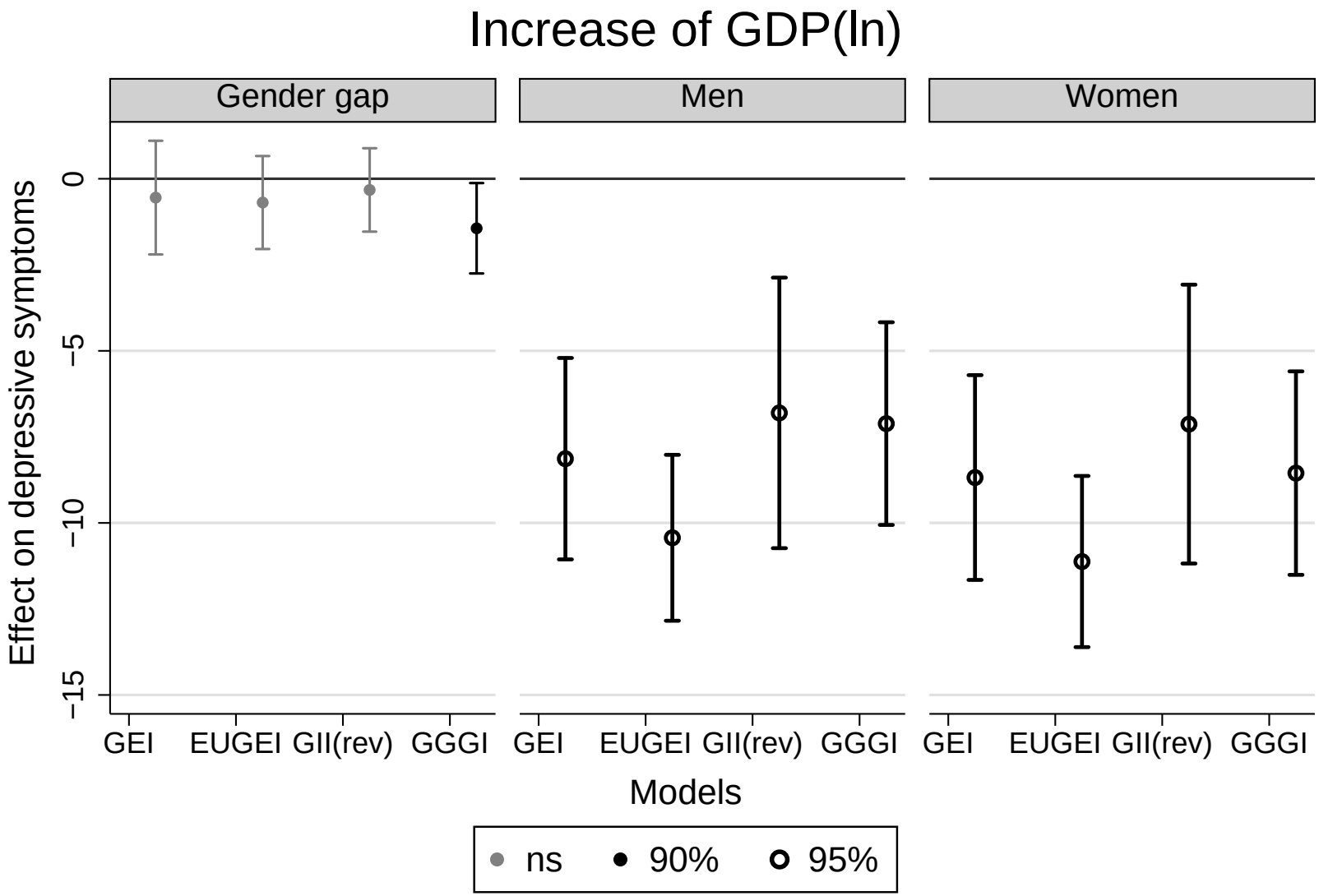

Graphs by women

Macro-level controls (μ)

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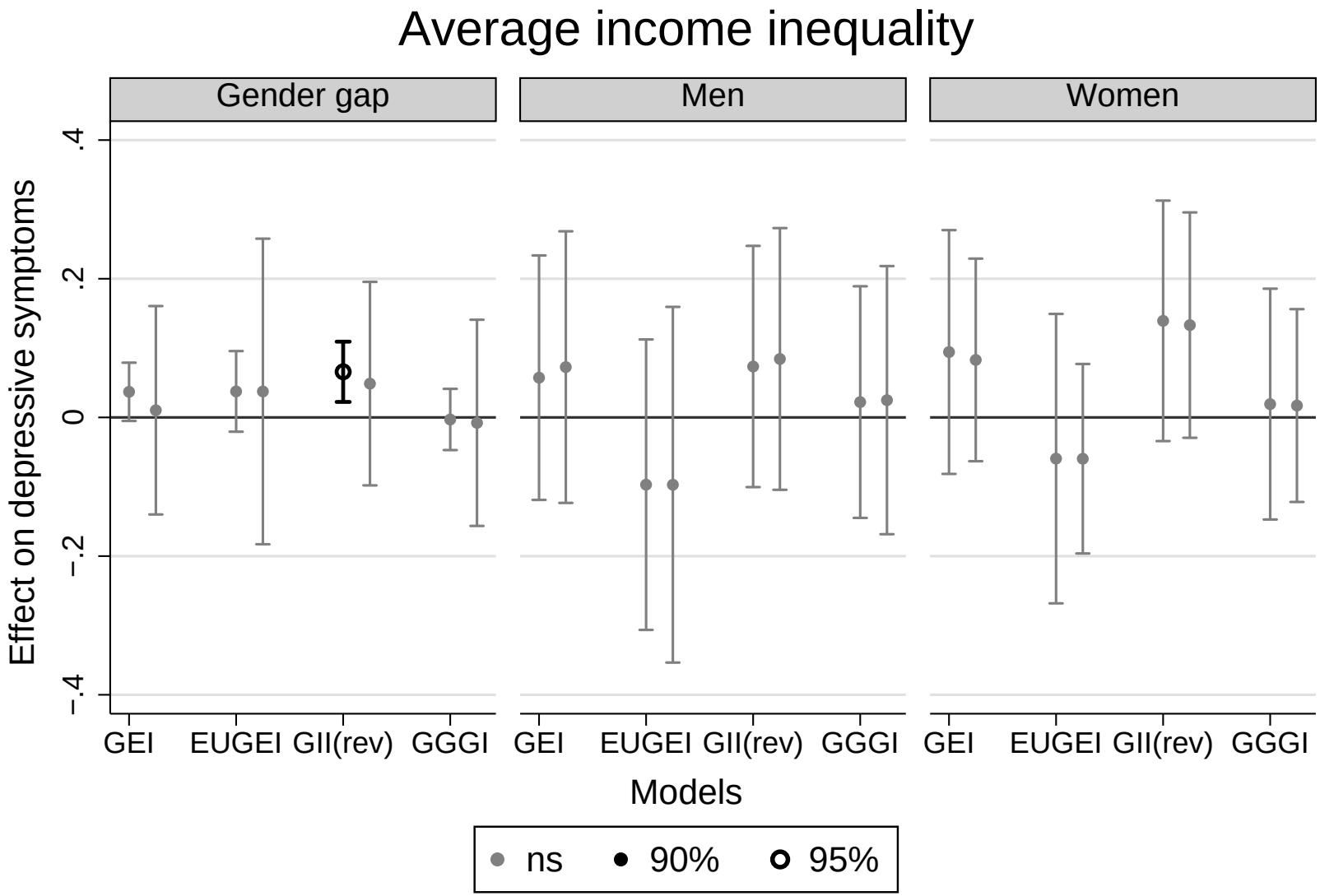

Graphs by women

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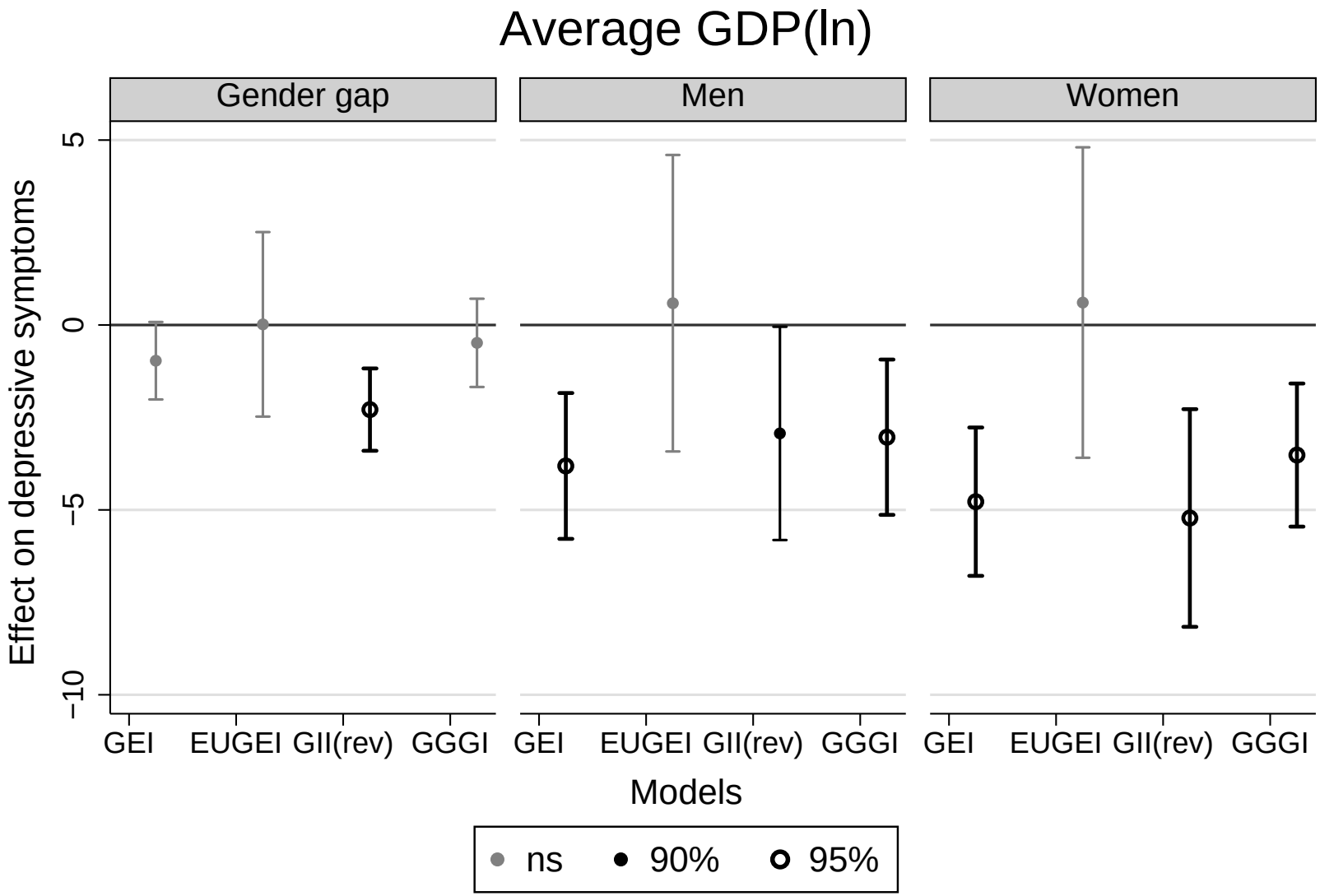


Graphs by women

Summing up – gender equality

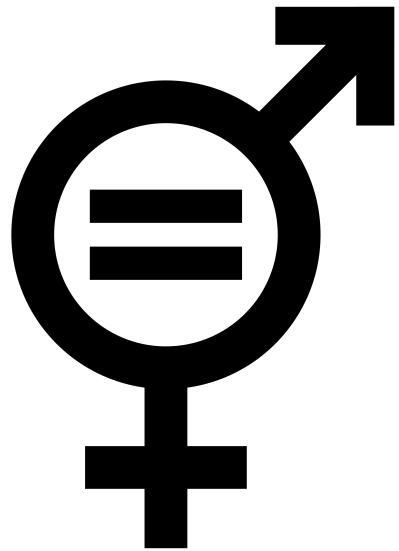
- increasing gender equality:
  - lower depressive symptoms (men and women)
  - men benefit more strongly than women
- higher gender equality:
  - lower depressive symptoms (men and women)
  - gender differences not conclusive (narrower gap for GEI and GGGI, wider gap for GII and EU-GEI)

Summing up – income inequality & GDP

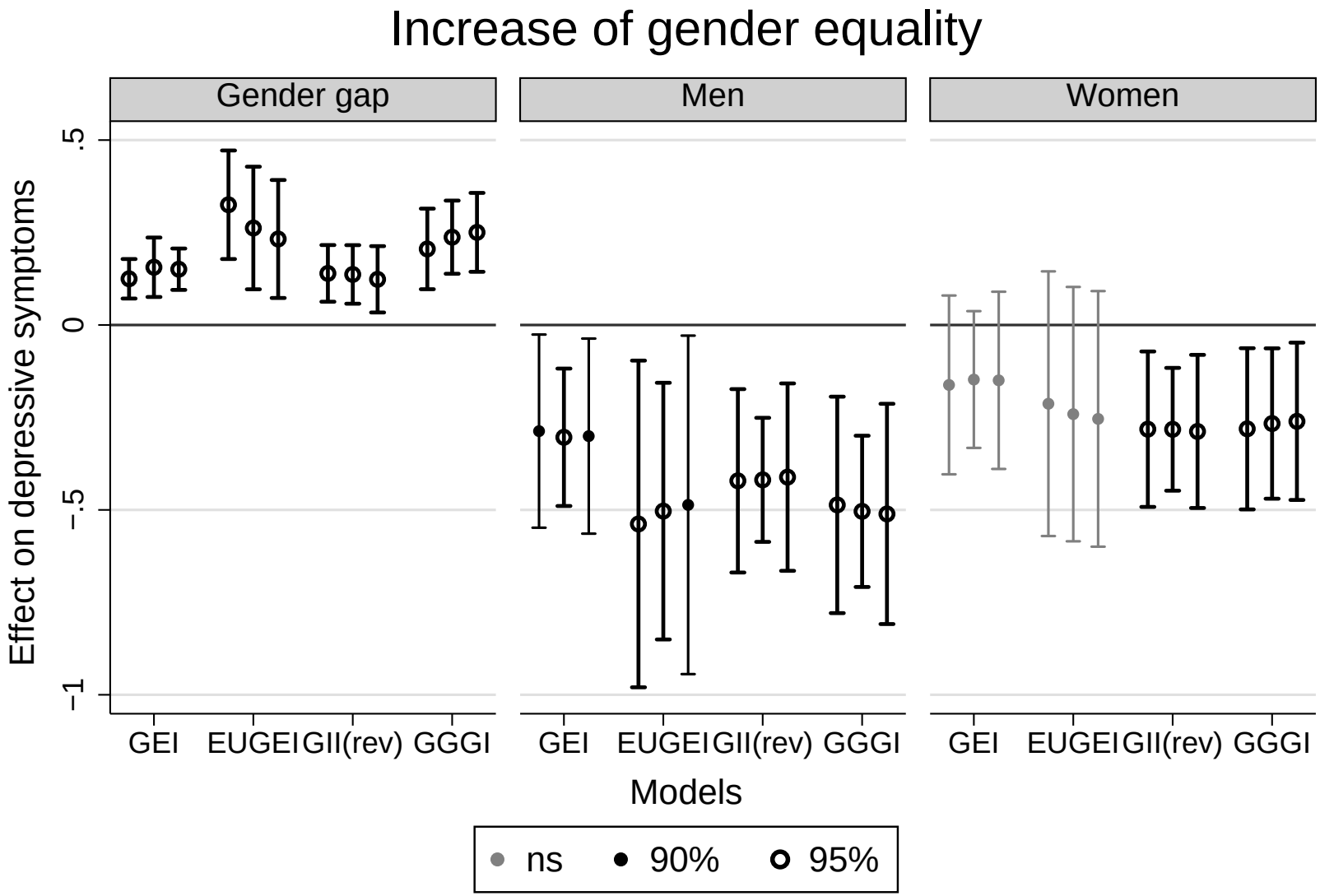
- increasing income inequality:
  - wider gender gap in depressive symptoms
- economic growth:
  - lower depressive symptoms among men and women

$+$ the effects of Δs are stronger and more consistent than the effects of μs

Thank you!

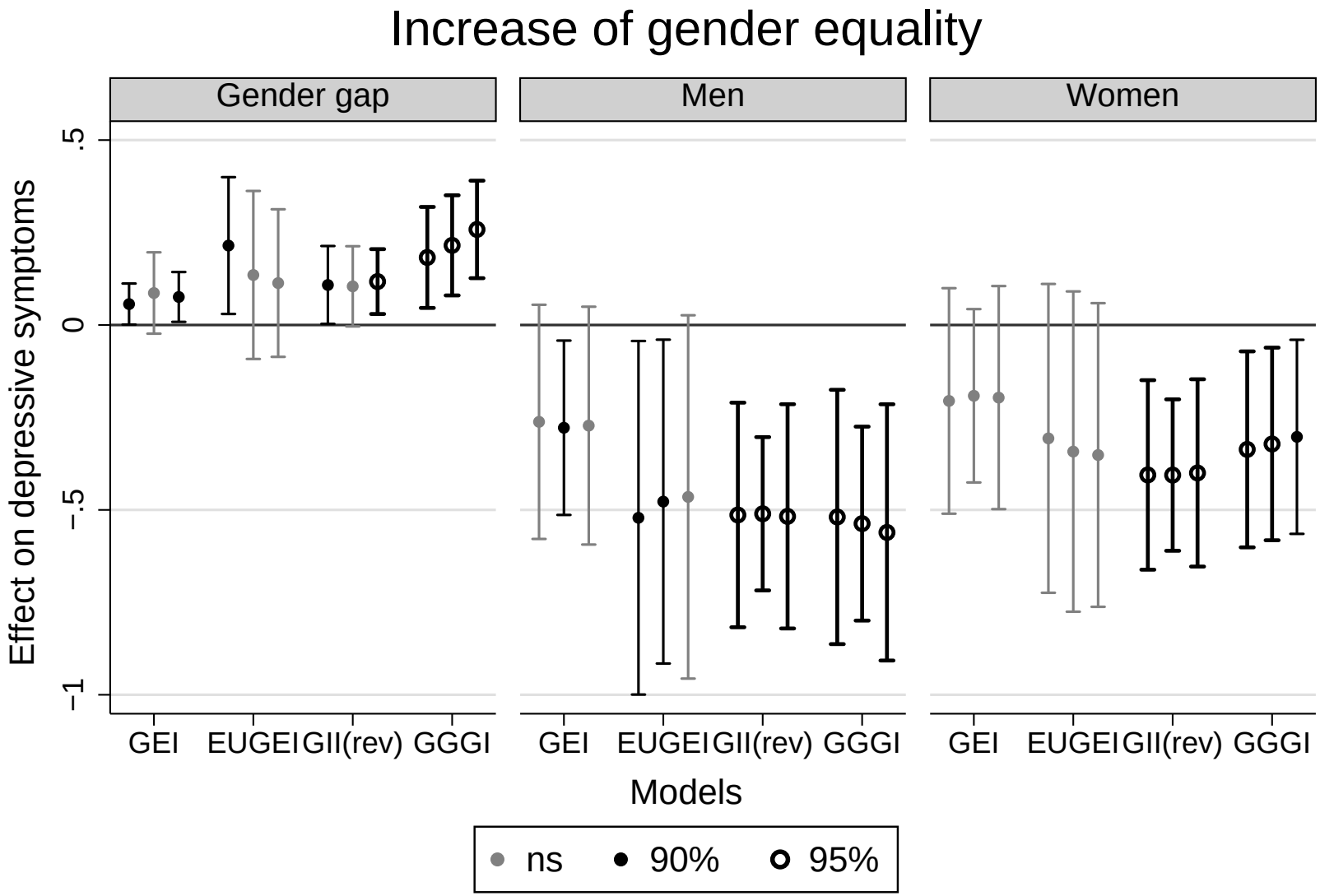


Dep: depressive symptoms – log



Graphs by women

Dep: depressive symptoms – perc. scores



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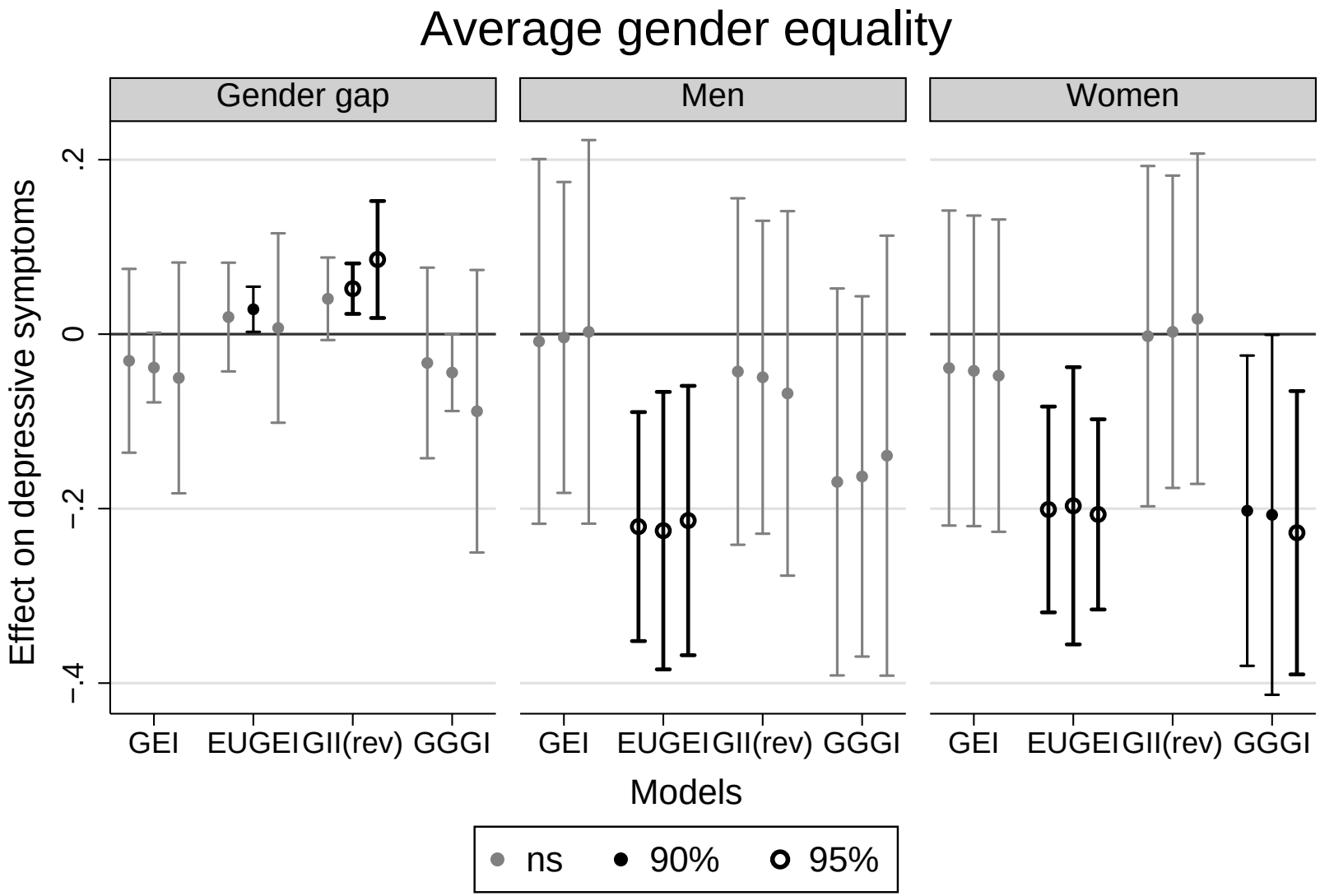

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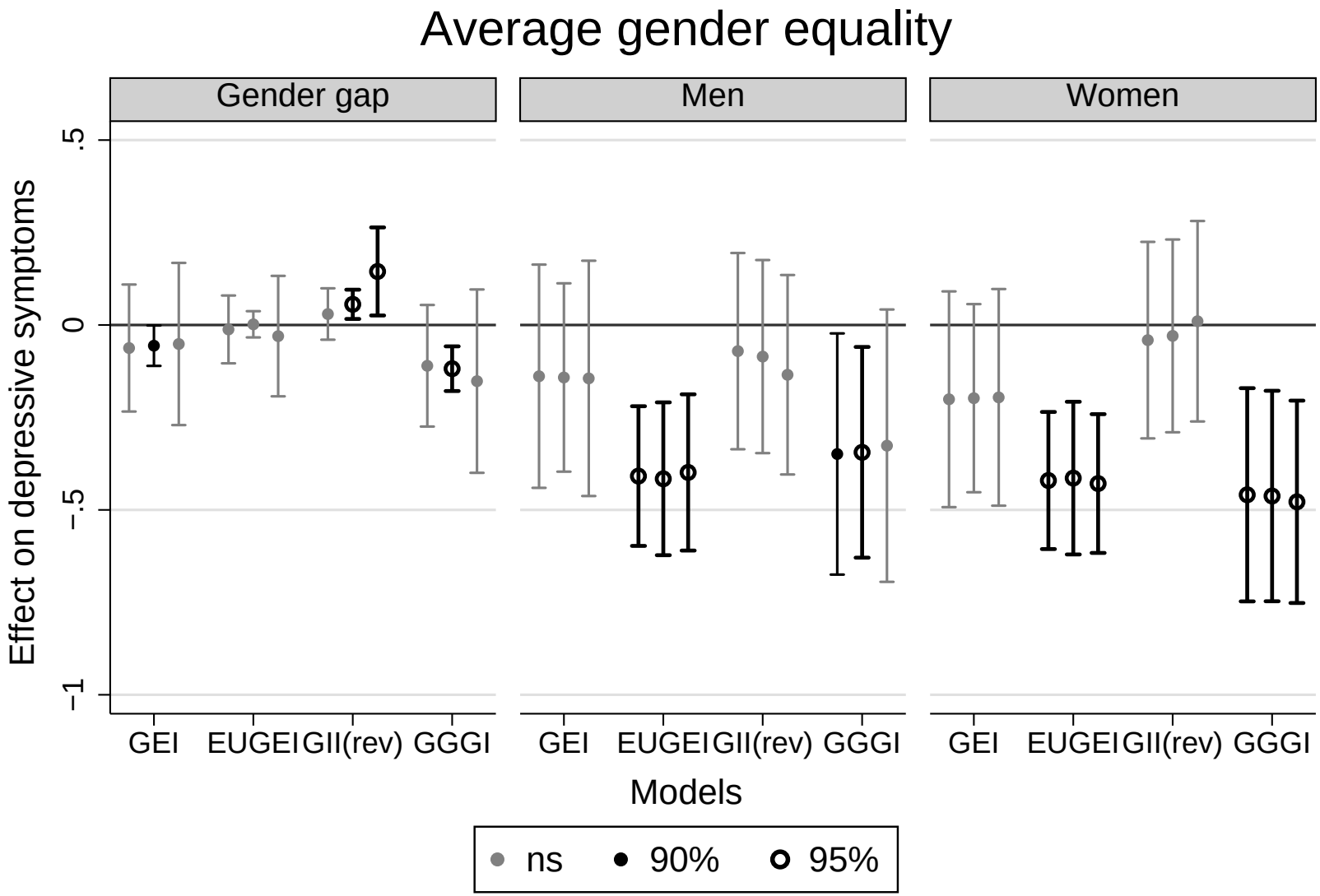
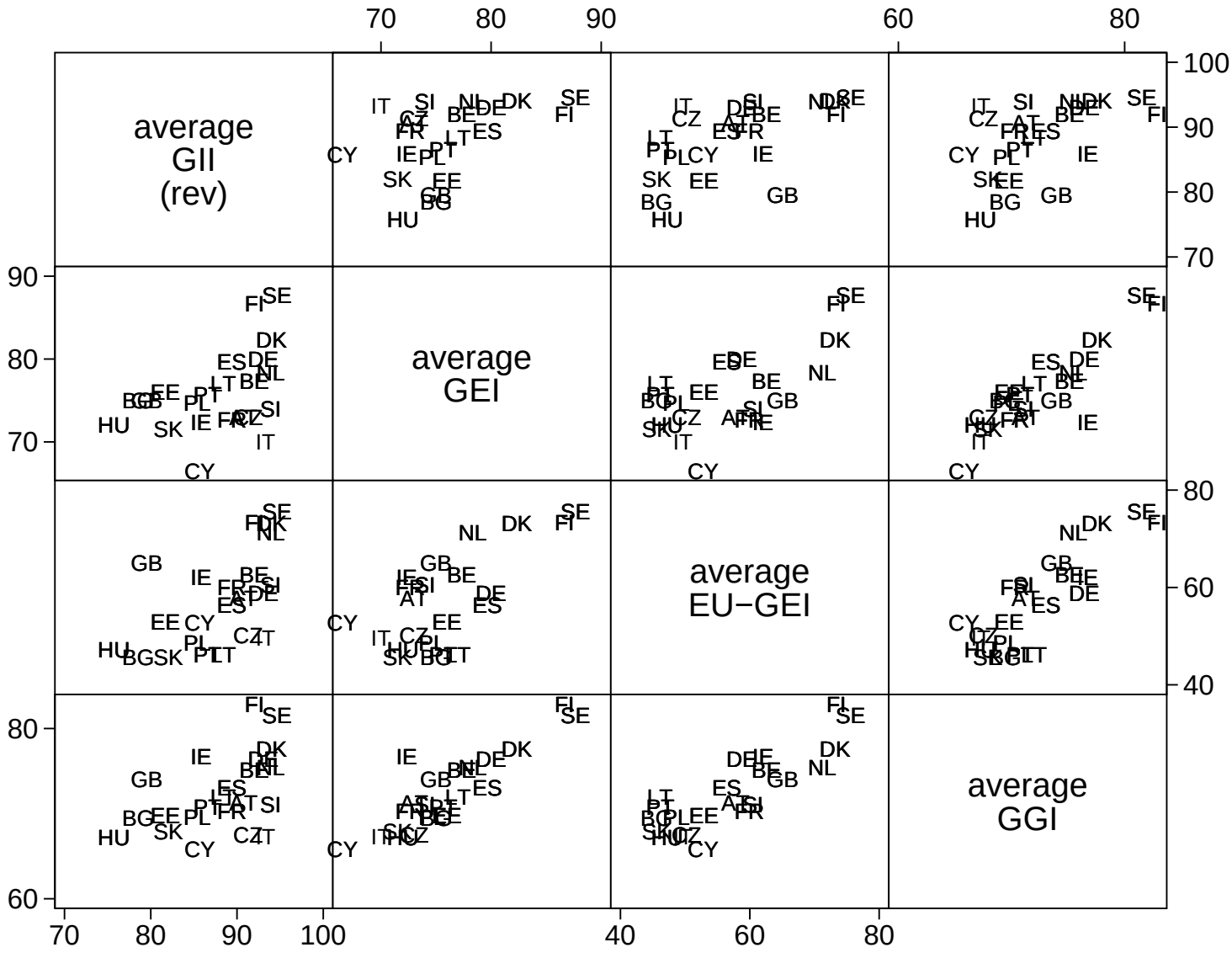


Graphs by women

Limitations



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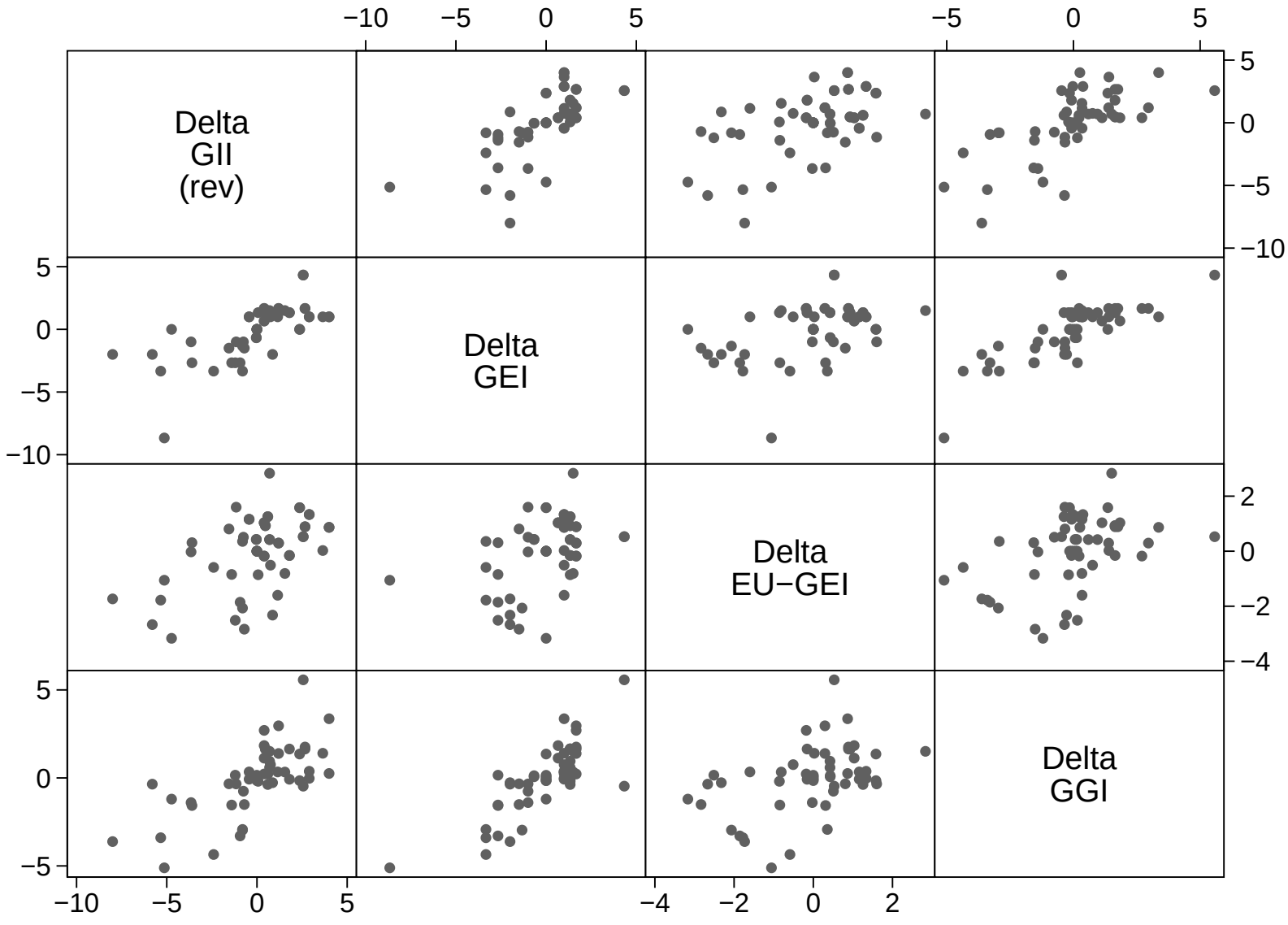
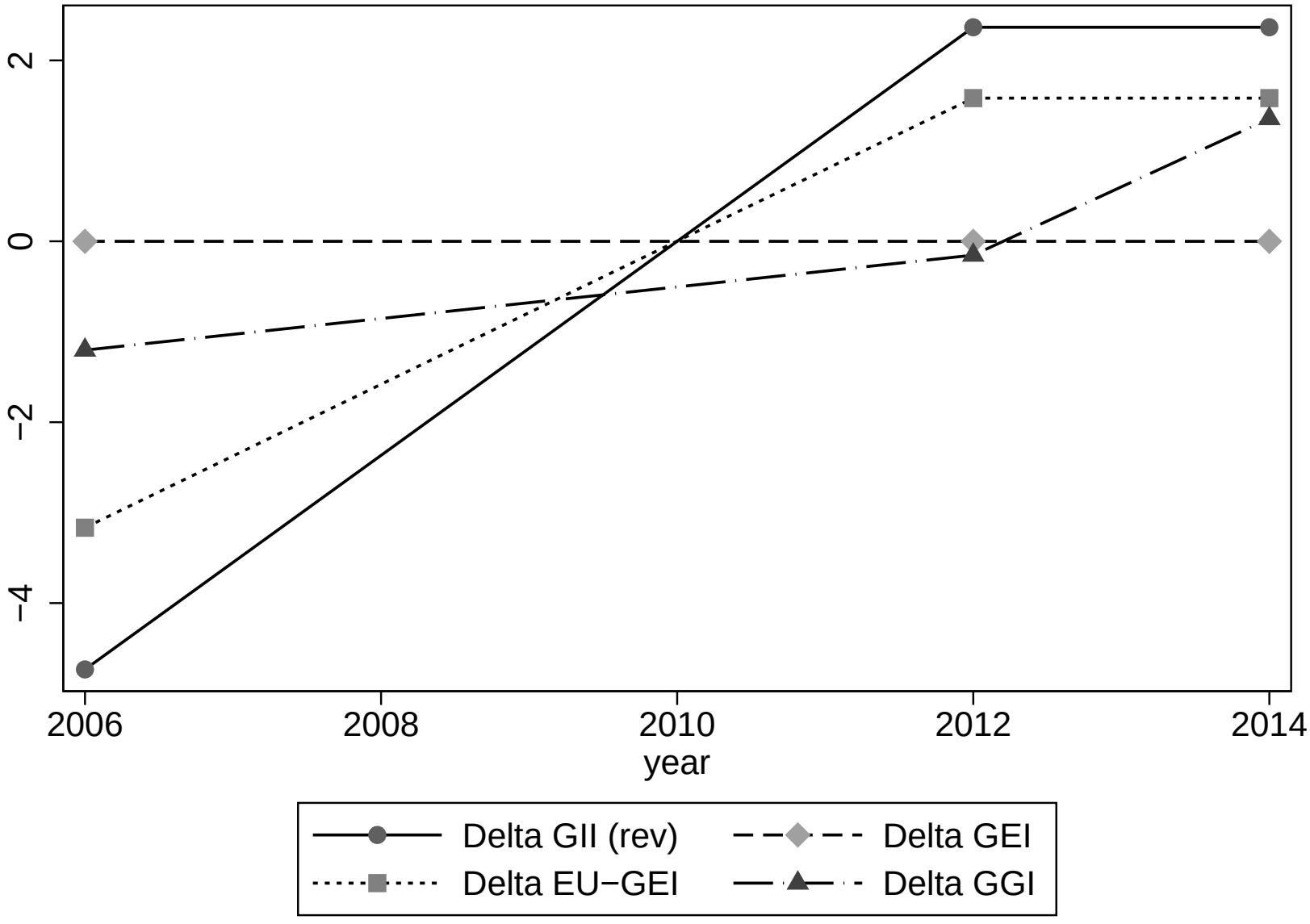
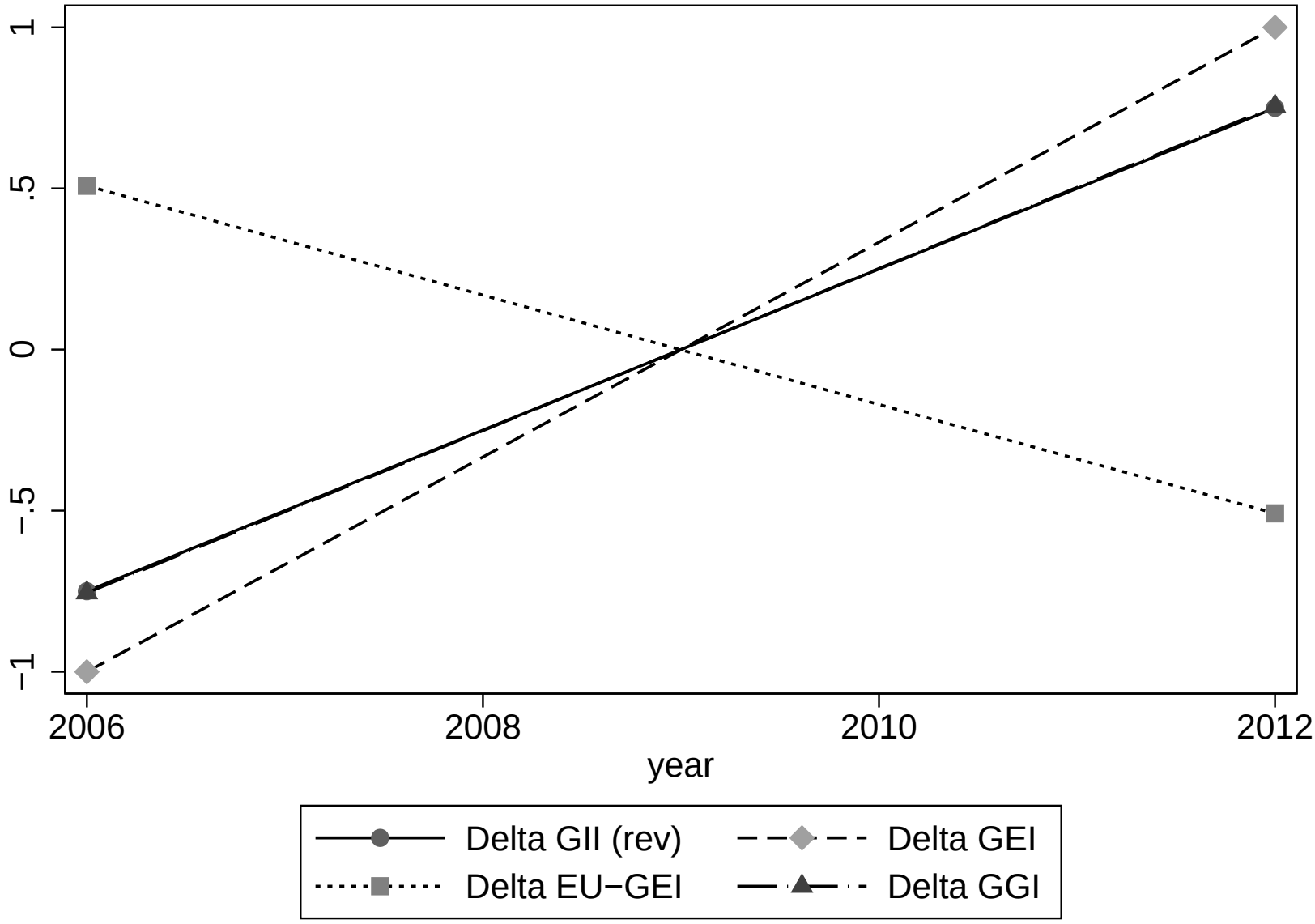


Case of Germany

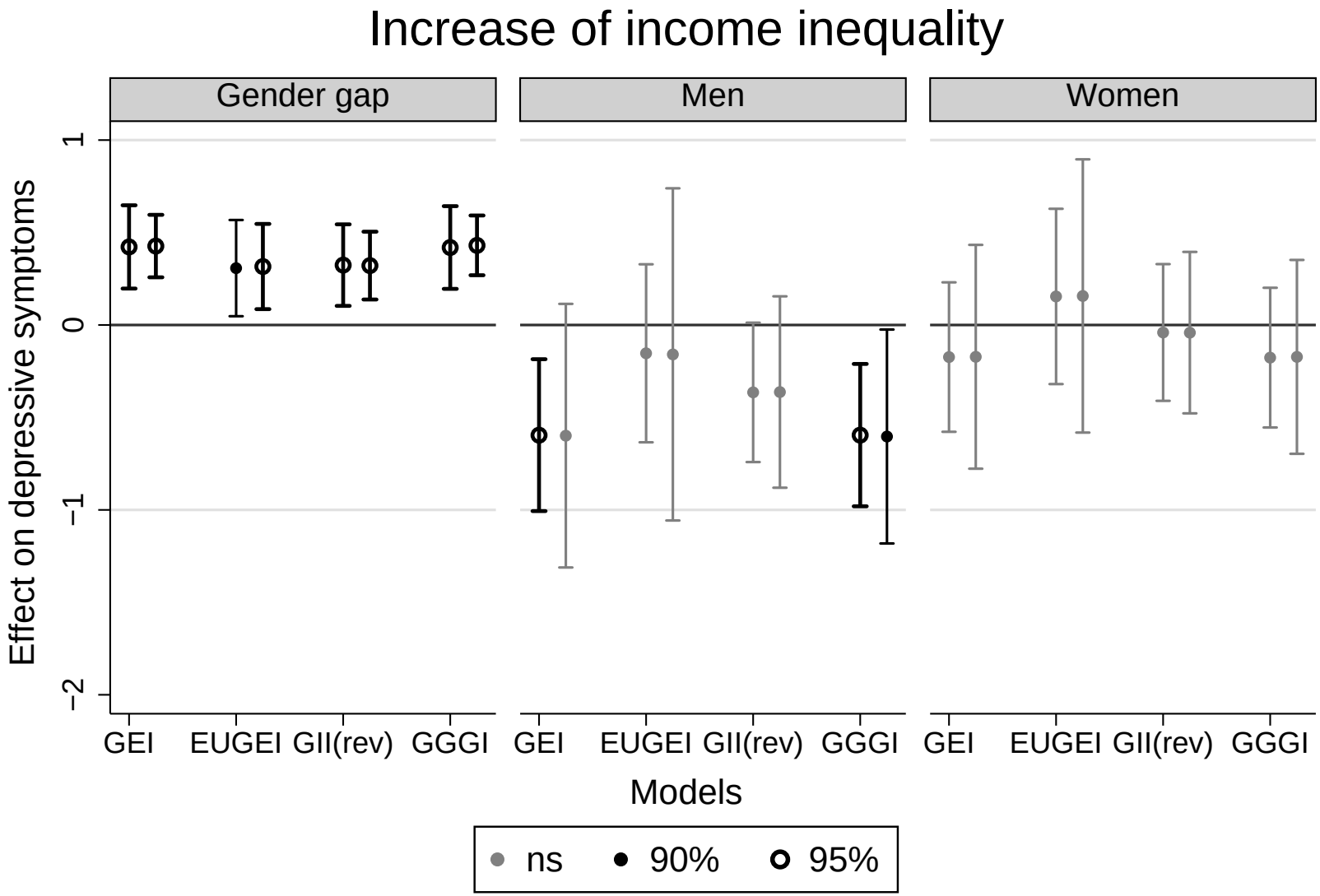


Case of Bulgaria



Macro-level controls (Δ) – other dep vars

Dep: depressive symptoms – log



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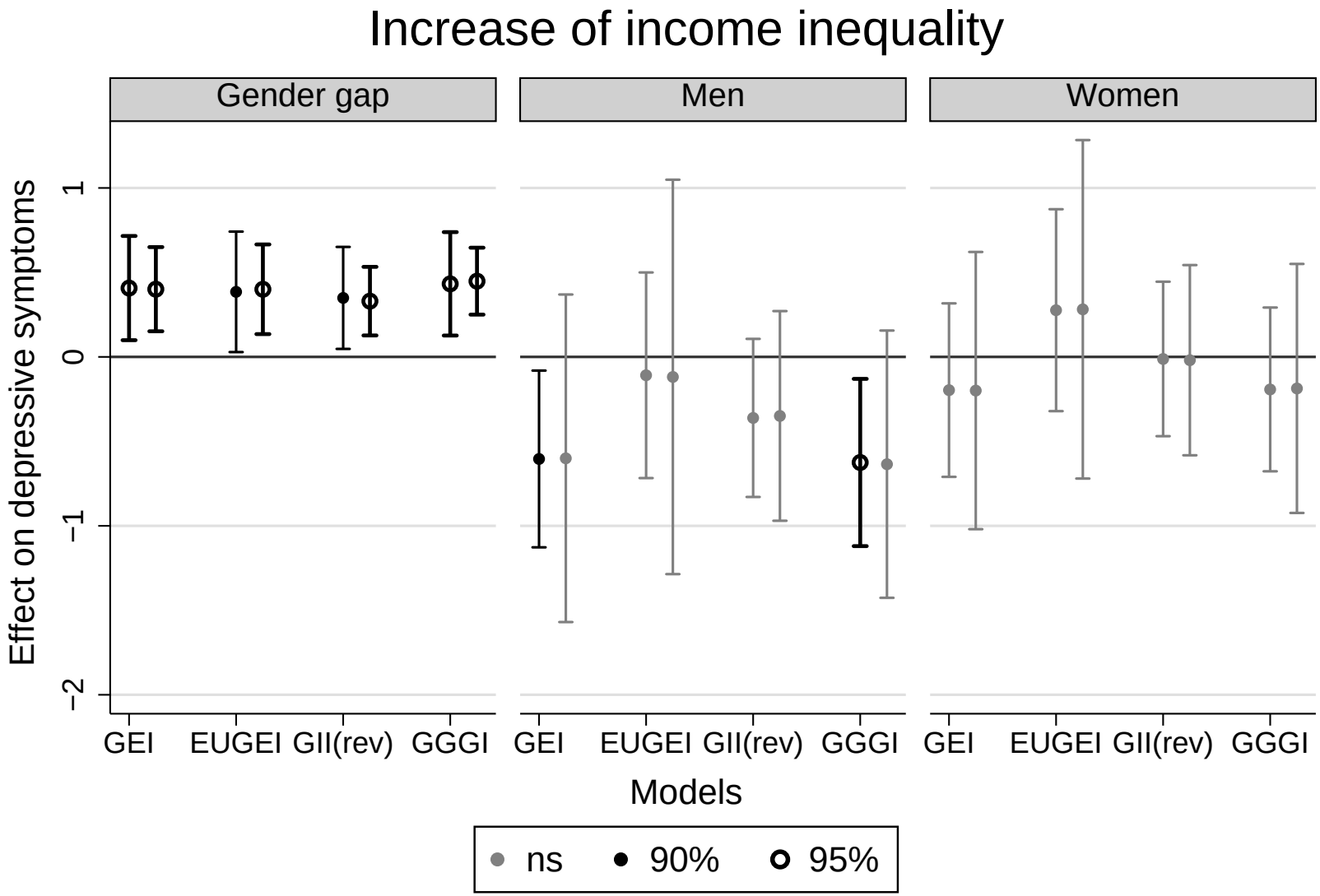

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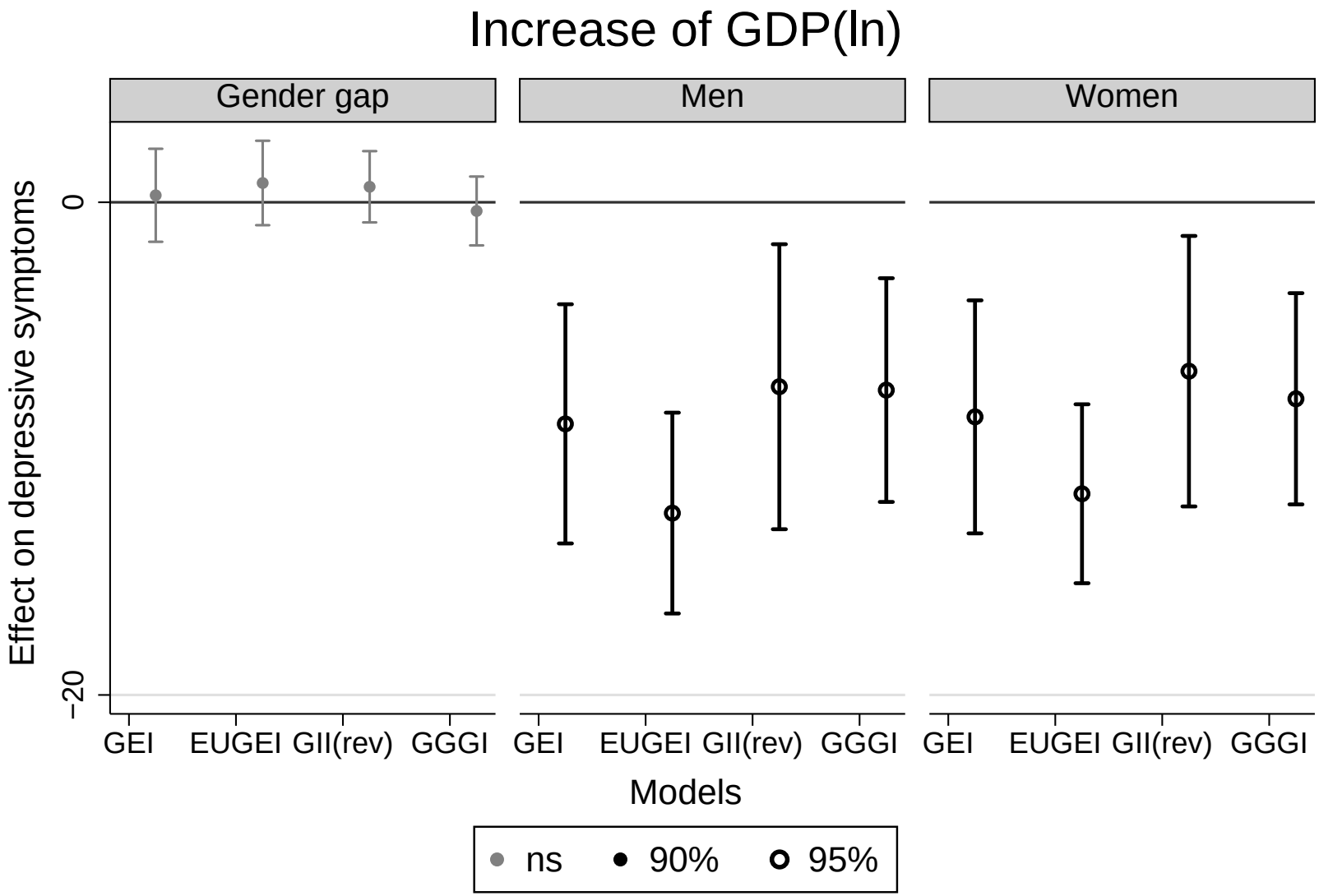

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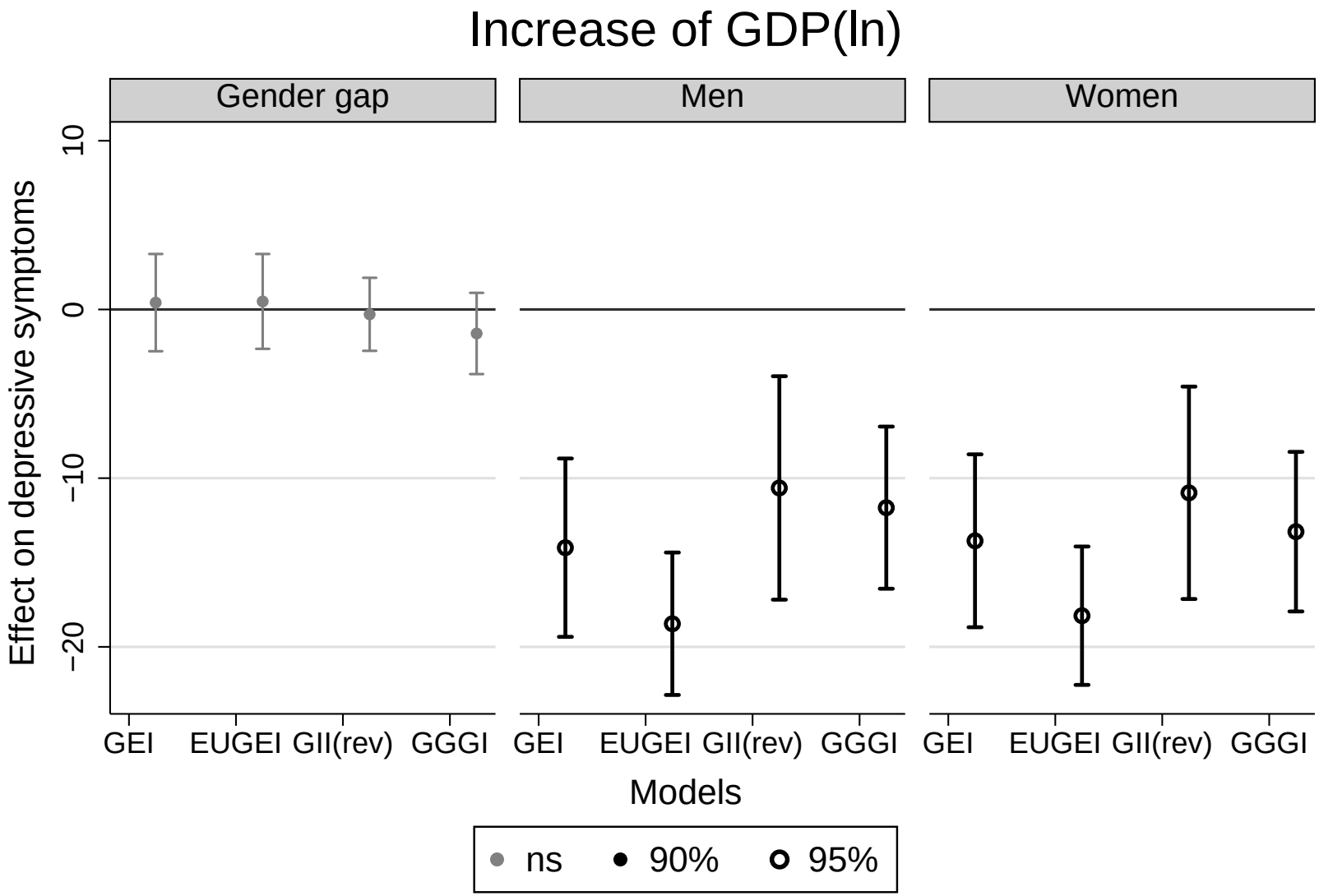

Graphs by women

Macro-level controls (μ) – other dep vars

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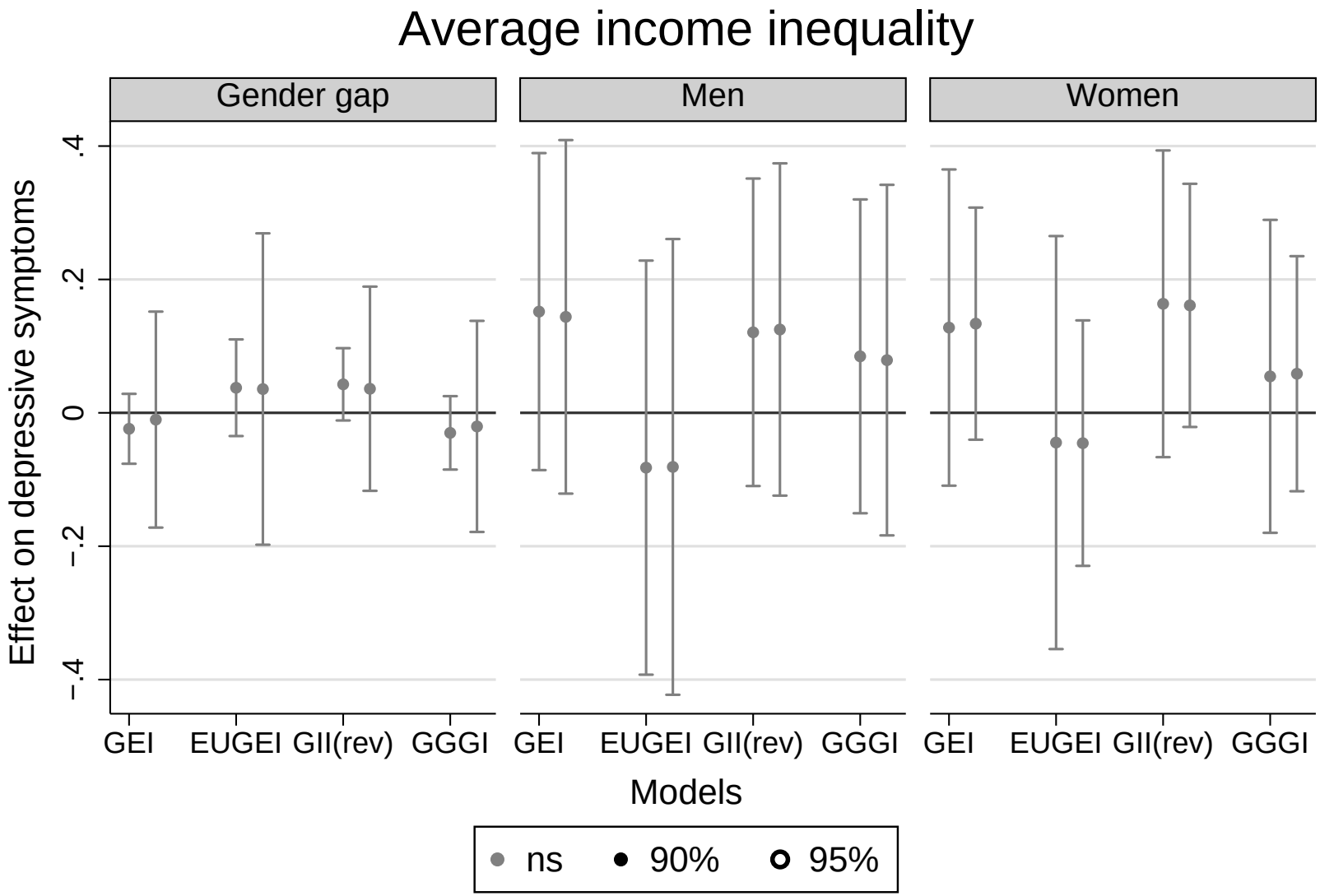

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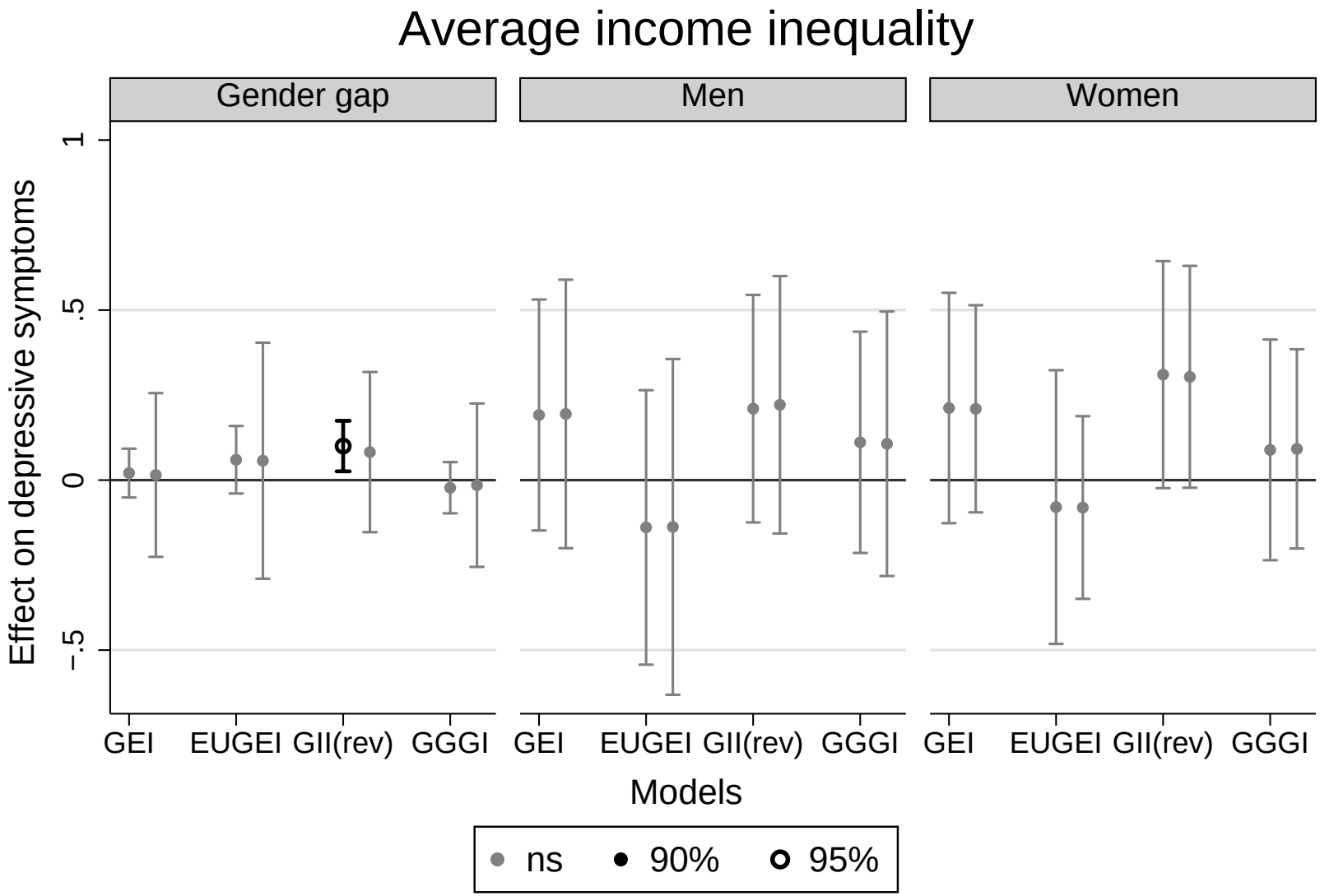

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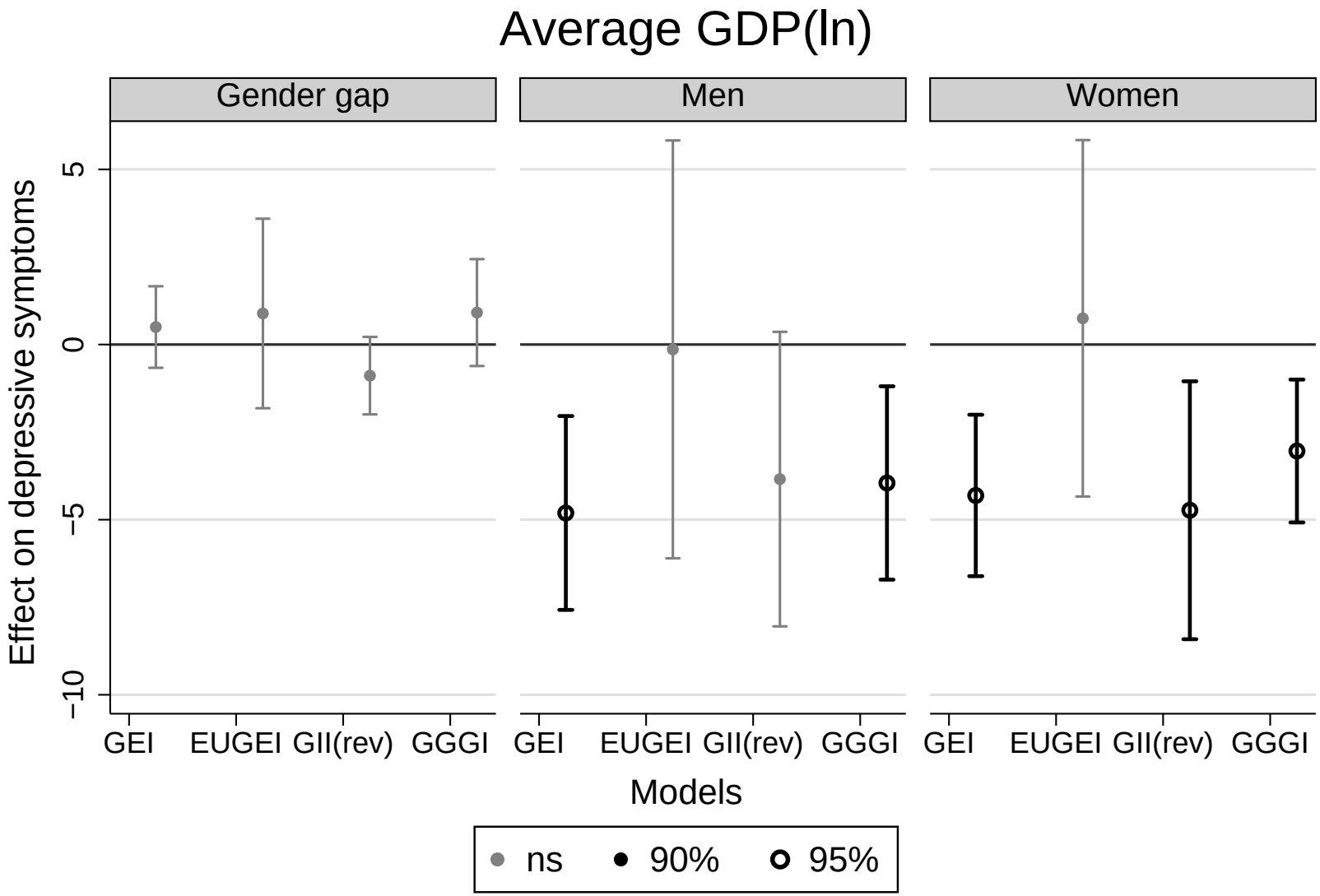

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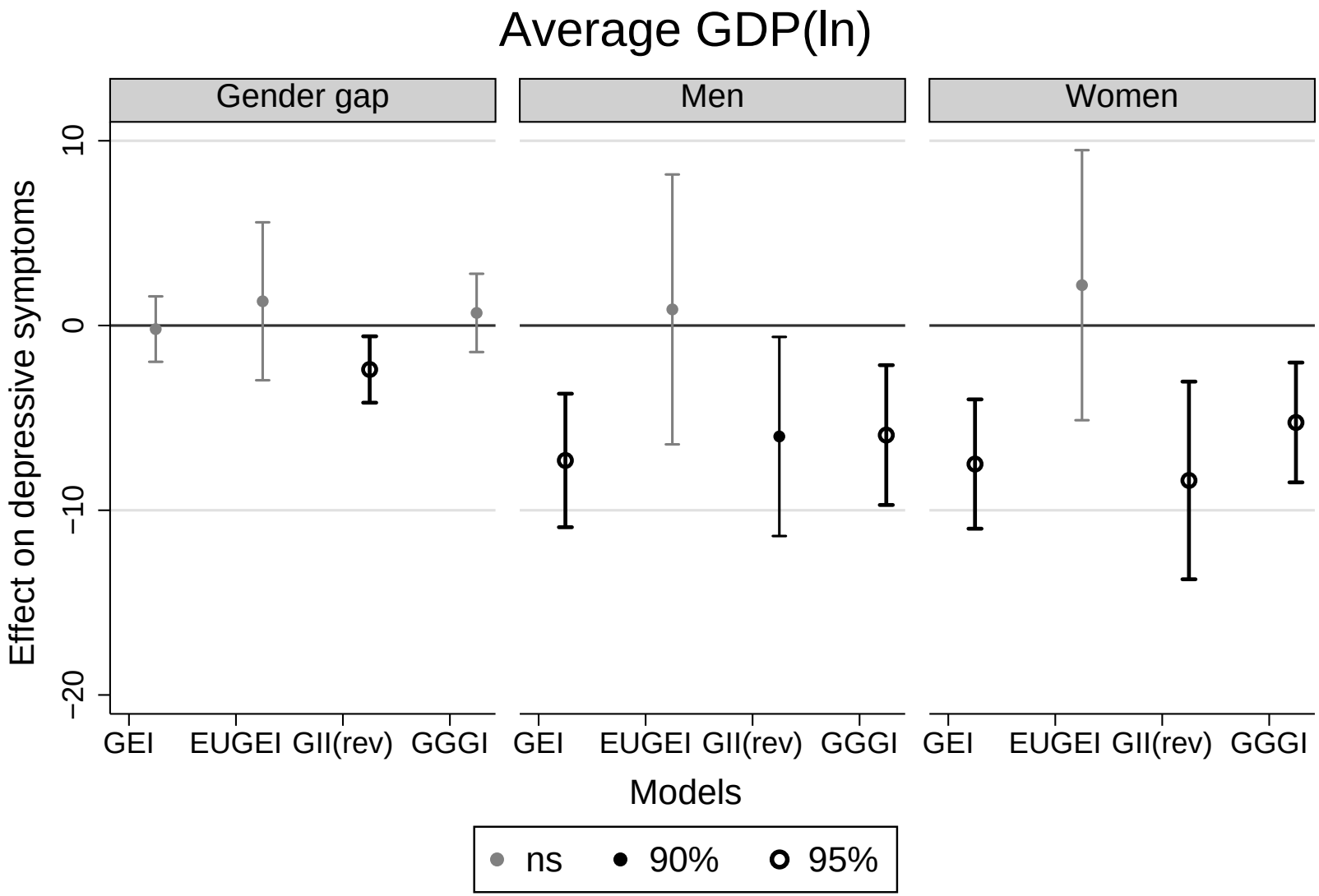

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