

Baby bust in the wake of the COVID-19 pandemic?

First results from the new STFF data series

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*(with the assistance of Krystof Zeman (Wittgenstein Centre) and colleagues
from the Max Planck Institute for Demographic Research)*

UN DESA, Expert Group Meeting on the impact of the COVID-19 pandemic on fertility (Virtual meeting) New York, 10 and 11 May 2021

COVID-19 and fertility: effects, mechanisms

Negative impact expected especially in the highly developed countries with widespread use of and access to modern contraception (e.g., Aassve et al. 2020; Cohen 2021)

Selected mechanisms: negative impact (Berrington et al. 2021)

- Uncertainty about the future
- Fear of infection and of getting pregnant during the pandemic
- Economic (income) and labour market impact
- Lockdown effects: higher stress, disruption to everyday life, loss of grandparental care and extra workload for parents; disruption to social contact and dating for the childless (Settersen et al. 2020)
- Disruption in the provision of assisted reproduction

Selected mechanisms: positive impact

- More time spent together, more time for intimate relations and for family life among some couples
- Disruption in the supply of contraception in some countries

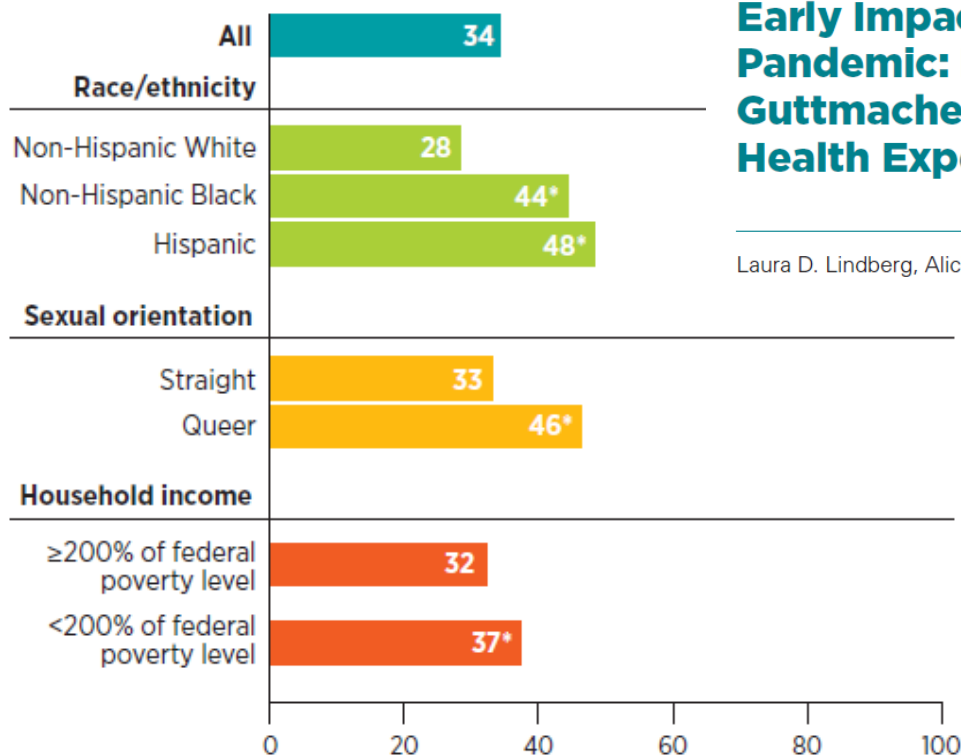
COVID-19 and fertility in Europe and the US: early evidence

Decline in short-term fertility preferences reported in the US and Europe:

- Luppi et al. (2020): survey of fertility plans among young adults (18-34) in 5 European countries; late March and early April (N=6,000)
- Lindberg et al: Internet Survey of US women aged 18-44 (N=2,009) on 30 April-6 May 2020, Guttmacher Institute

FIGURE 1. Many women report that their fertility preferences have shifted in response to the COVID-19 pandemic.

% of women reporting wanting to delay childbearing or have fewer children



Early Impacts of the COVID-19 Pandemic: Findings from the 2020 Guttmacher Survey of Reproductive Health Experiences

Laura D. Lindberg, Alicia VandeVusse, Jennifer Mueller and Marielle Kirstein



*Difference is statistically significant at $p < .05$. Note: Queer category includes responses of "gay or lesbian," "bisexual" and "other."

Source: Internet Survey of US women aged 18-44 (N=2,009) on 30 April-6 May 2020, Guttmacher Institute

COVID-19 and fertility: early evidence

Evidence from online searches:

- Wilde et al. (2020): expected sharp downturn in births in the US from November 2020 to February 2021 based on fertility and pregnancy-related Google searches

Early evidence from birth records:

- Cohen (2021); data for Florida and Ohio: greater decline in births in counties with higher prevalence of infections and stronger reduction in mobility

Analytical focus, data issues

Key question:

- *How did birth (fertility) dynamic change in the wake of the covid-19 pandemic?*

Analytical focus: monthly births by countries and broader regions

Expectations:

- A downward trend associated with the pandemic
- Stronger in more affected countries (and in countries with weaker welfare system?) (especially in Southern Europe)
- Ups and downs in births associated with the waves of the covid outbreak? (Possible short-term recovery; Goldstein 2020)

Data: The STFF (short-term fertility fluctuations) Data Series under the Human Fertility Database

Main page
[Data Availability](#)
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STFF

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[Human Fertility Collection](#)
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EVENTS & PUBLICATIONS

[Events](#)
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For citing STFF data, please follow the [HFD data citation guidelines](#).

We invite you to explore these data using our online [STFF visualization toolkit](#).

Here you can download the following data and documentations:

- [STFF Metadata](#): concise description of country-specific data and data sources.
- [STFF Methodological Note](#): description of input and output data formats and methodology.
- **STFF output file** ([xlsx](#) or pooled [csv](#)): monthly counts of live births for selected countries.
- [Original data](#) (country-specific csv files in one zip file): original birth counts in standardized format.

Last data update: 05-05-2021

Data availability

Country	First month	Last month
Austria	January 2000	December 2020
Belgium	January 2000	January 2021
Bulgaria	January 2000	December 2020
Chile	January 2000	March 2021
Croatia	January 2000	March 2021
Czechia	January 2000	December 2020
Denmark	January 2000	December 2020
Estonia	January 2000	March 2021
Finland	January 2000	March 2021
France	January 2000	February 2021
Germany	January 2000	January 2021
Greenland	January 2000	December 2020
Hungary	January 2000	February 2021
Iceland	January 2000	December 2020
Israel	January 2000	January 2021
Italy	January 2000	January 2021
Japan	January 2000	November 2020

STFF Data series

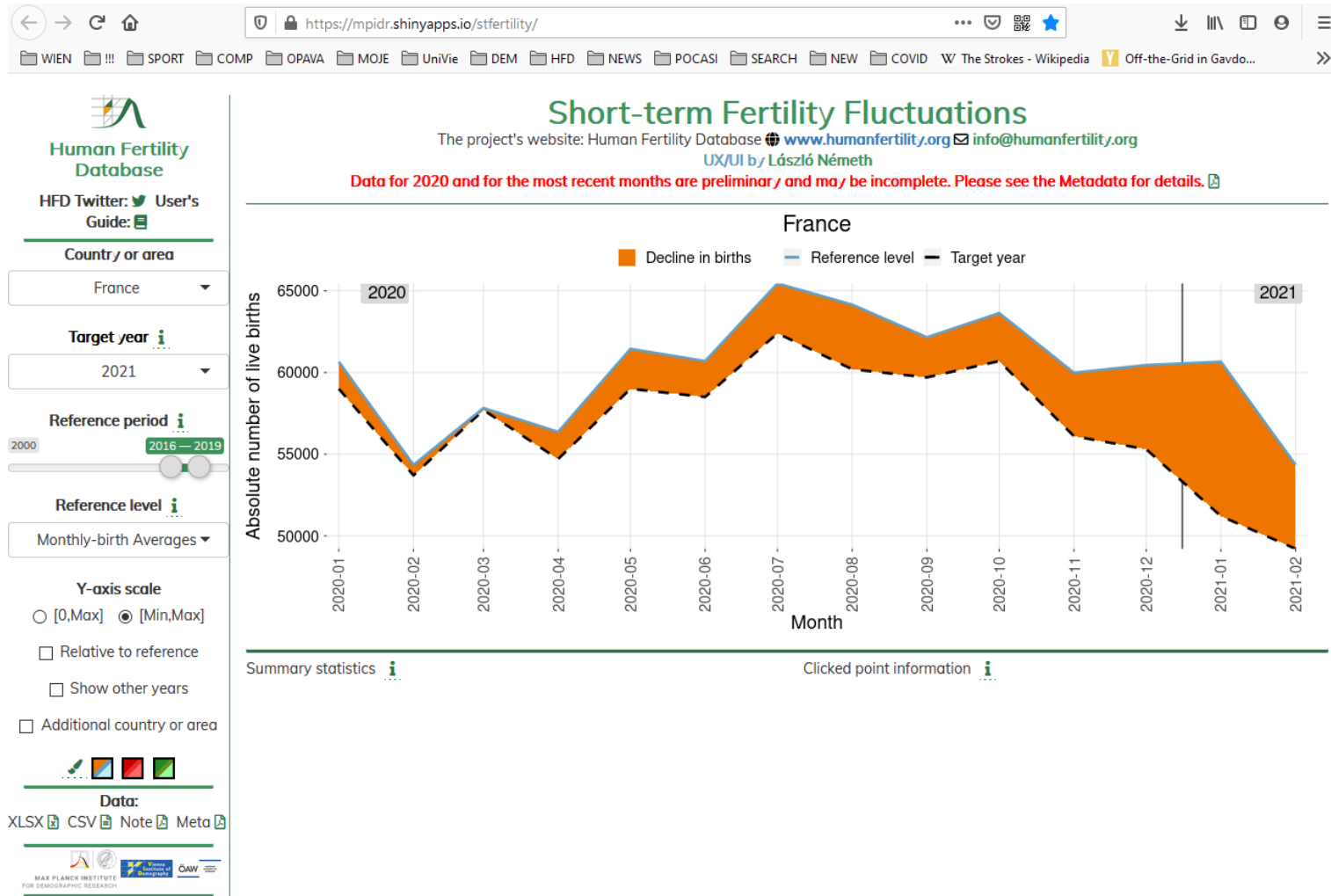
The Short-Term Fertility Fluctuations (STFF) Data Series

- Joint project of the Max Planck Institute for Dem Res. (Rostock) and the Wittgenstein Centre (Vienna)
- Monthly number of births, from Jan 2000 to most recent
- Highly developed countries with good quality data
- Regularly updated (35 countries/areas at present, 23 until Jan 2021)
- Metadata: 47-page document with all information about the data, sources, coverage, notes, warnings
- Methodological Note
- STFF visualization toolkit in Shiny
- Working Paper / Report on first trends at SocArXiv:

<https://osf.io/preprints/socarxiv/mvy62>



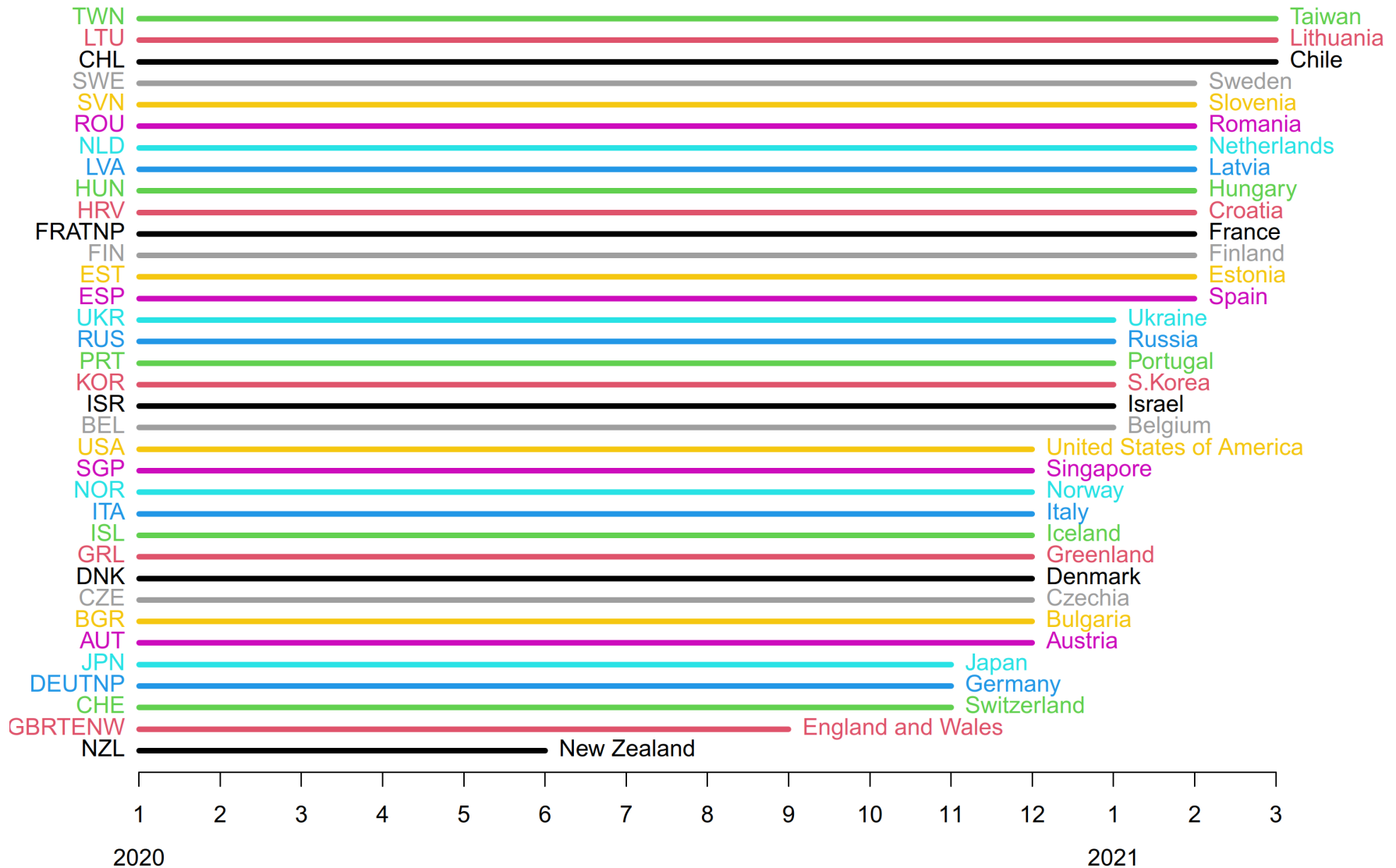
STFF Visualisation Toolkit (Shiny)



<https://mpidr.shinyapps.io/stfertility/>

STFF visualisation toolkit created by Laszlo Nemeth, MPIDR

STFF Data Availability

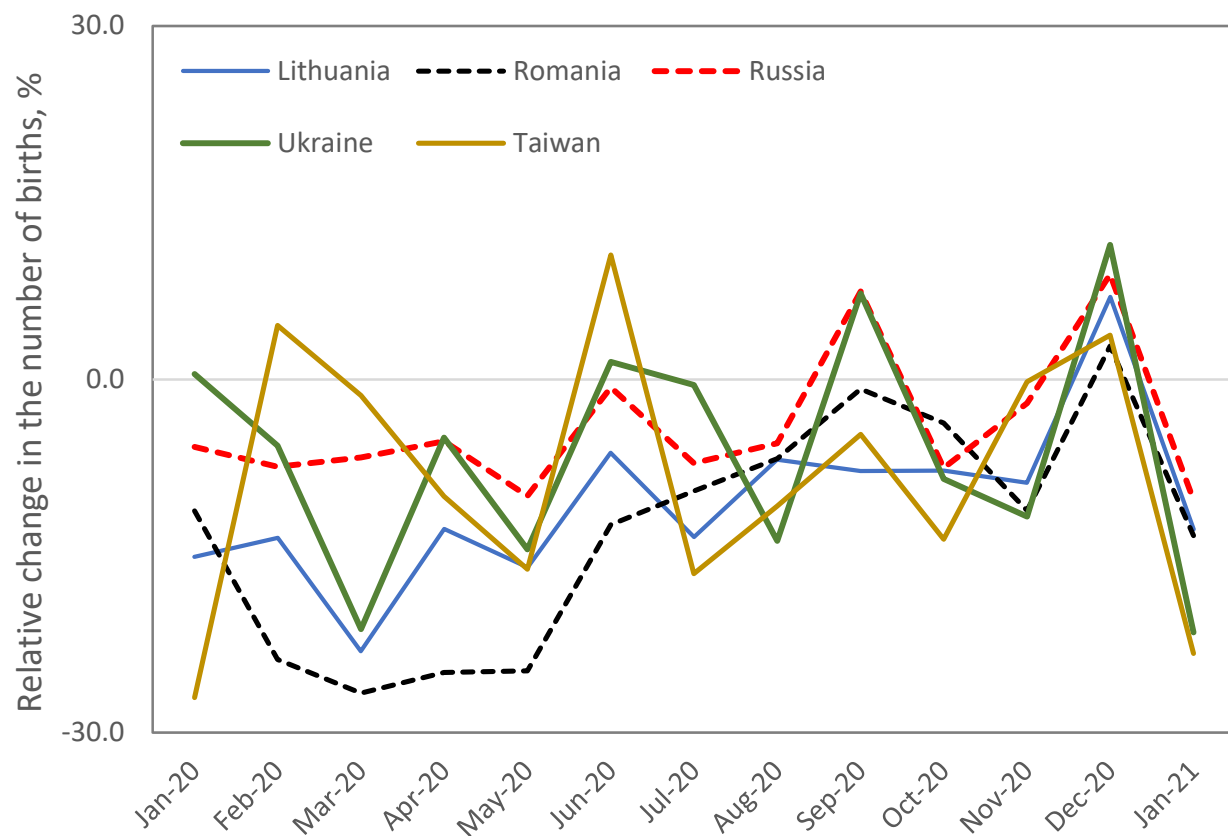


Data issues & adjustments

- Data by month of occurrence vs. registration (e.g. South Korea, Russia)
- Preliminary vs. final data (also incomplete data; e.g. Switzerland)
- Fluctuations, irregularities (also due to small numbers in some countries)
- Monthly data: impact of seasonality
- Main comparison: birth dynamic compared to the same month in the previous year (with an adjustment for 29 days in February 2020)
- Expected impact of the COVID-19: from November 2020 onwards (pregnancies started in early March, based on average pregnancy duration of 266 days or 8.7 months from ovulation to delivery; Jukic et al. 2013)

Data issues: fluctuations in some countries and areas

Relative change in the number of births compared with the same month in the previous year: 5 countries and areas with unstable data



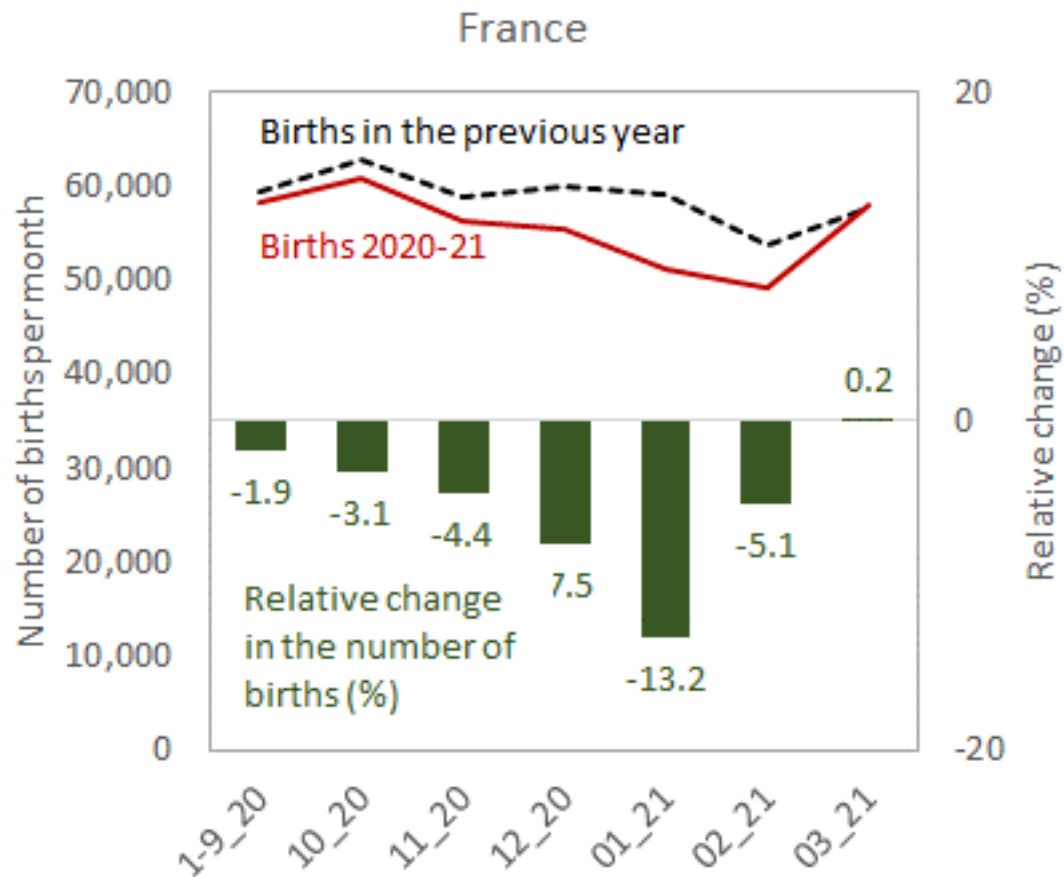
Baby bust in the wake of the COVID-19 pandemic?

Findings: trends by country and region

Most of this research based on the following report:

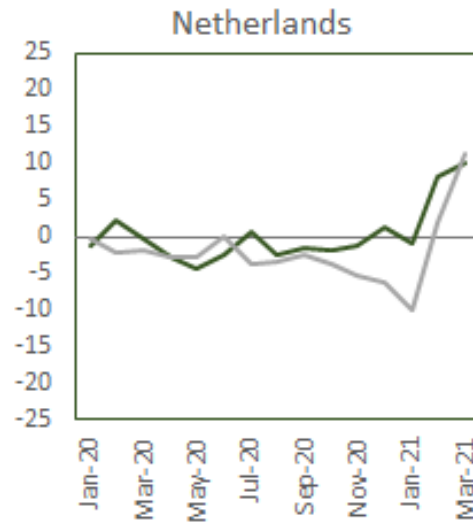
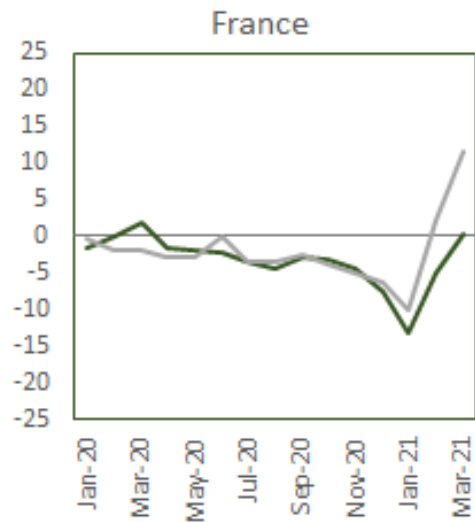
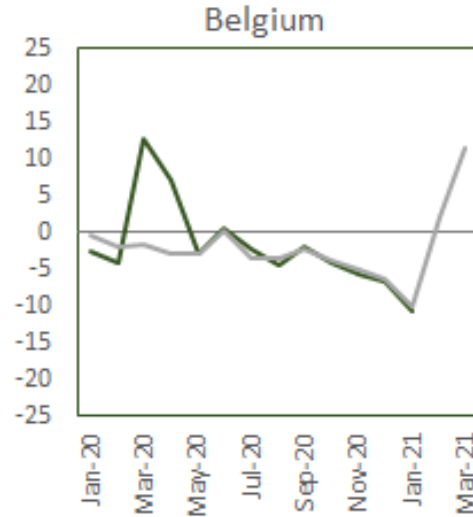
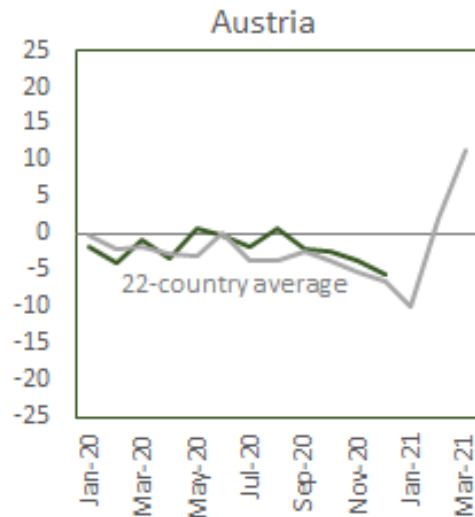
Sobotka, Tomas, Aiva Jasilioniene, Ainhoa A. Galarza, Kryštof Zeman, Laszlo Nemeth, and Dmitri Jdanov. 2021. “Baby Bust in the Wake of the COVID-19 Pandemic? First Results from the New STFF Data Series.” SocArXiv. March 24. doi:10.31235/osf.io/mvy62

Western Europe: France



Relative year-on-year
change in the number of
births (%):
France,
Jan 2020-Mar 2021

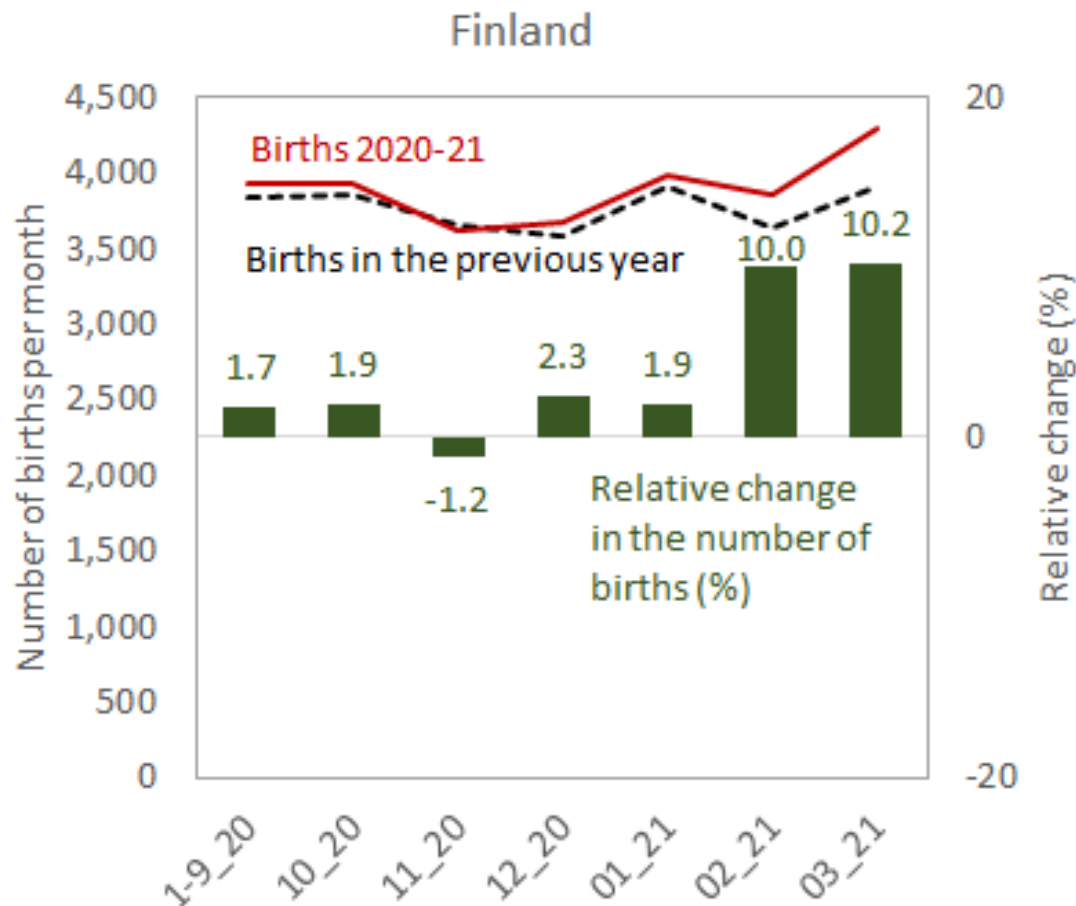
Western Europe (summary)



Relative year-on-year change in the number of births (%)

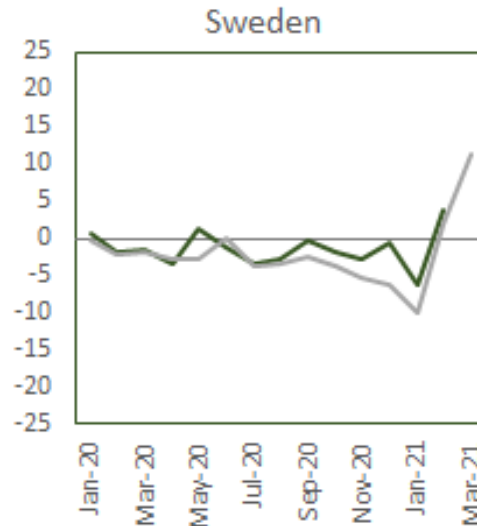
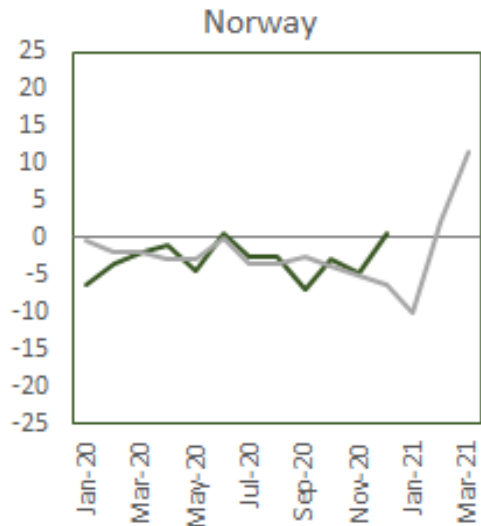
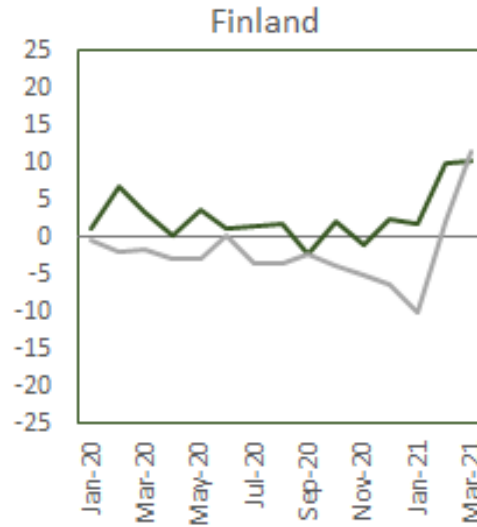
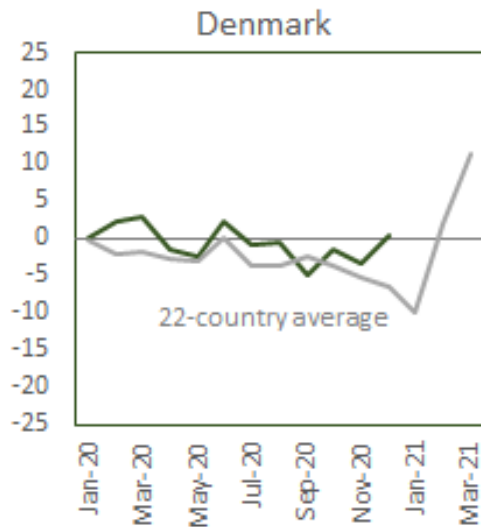
A fall in France, Belgium; less intensive decline in Austria; contrasting trend in the Netherlands

Nordic countries: Finland



Relative year-on-year
change in the number
of births (%):
Finland,
Jan 2020-Mar 2021

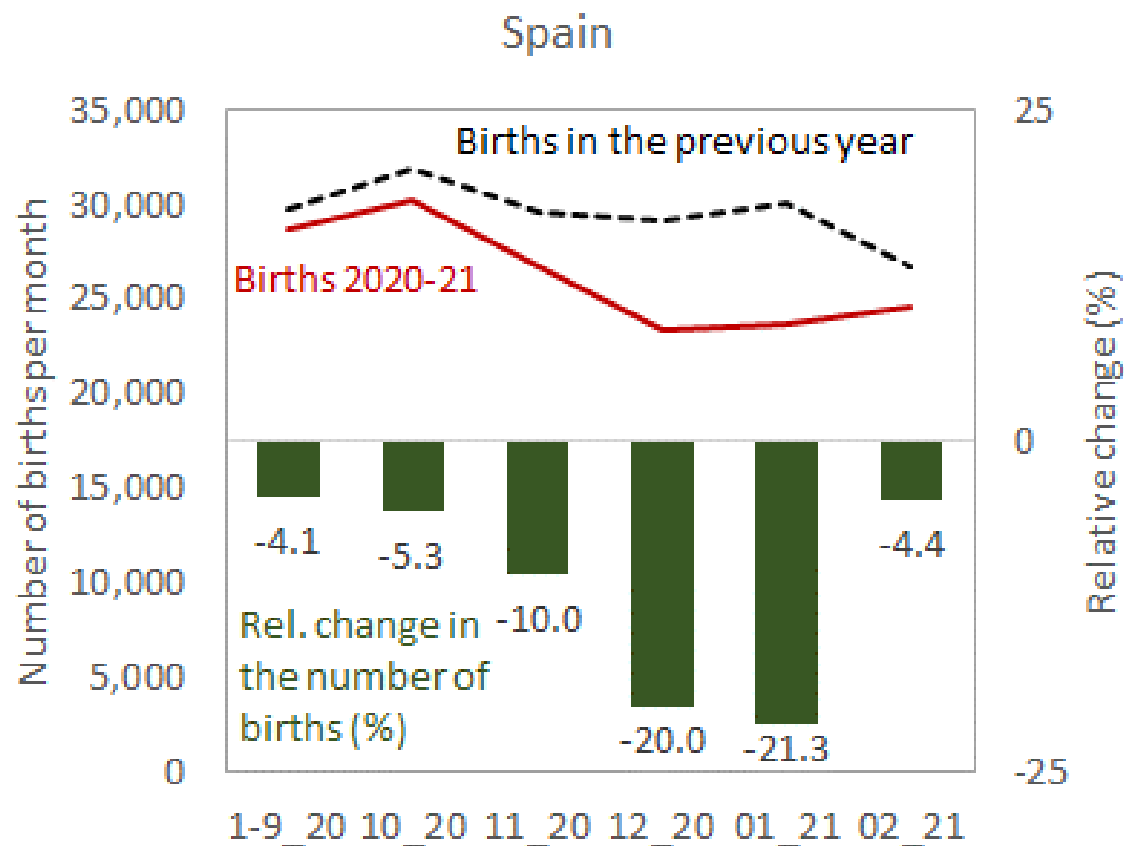
Nordic countries (summary)



Relative year-on-year change in the number of births (%)

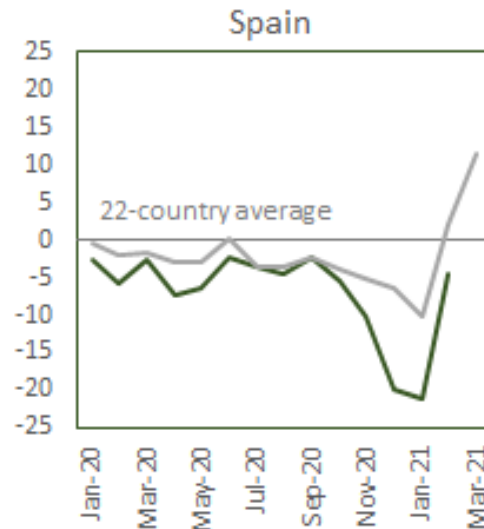
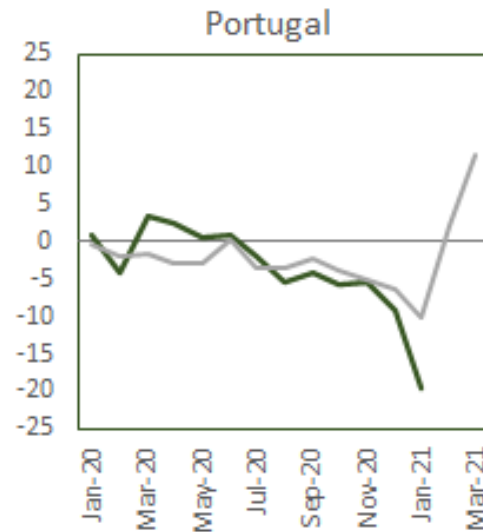
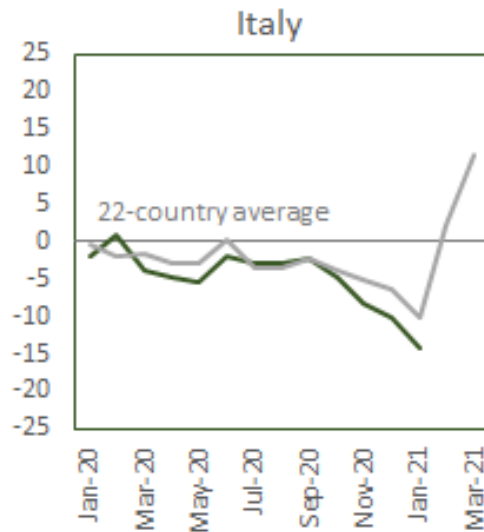
No clear shift in DK, Finland, Norway until Jan 2021

Southern Europe: Spain



Relative year-on-year
change in the number
of births (%):
Spain,
Jan 2020-Feb 2021

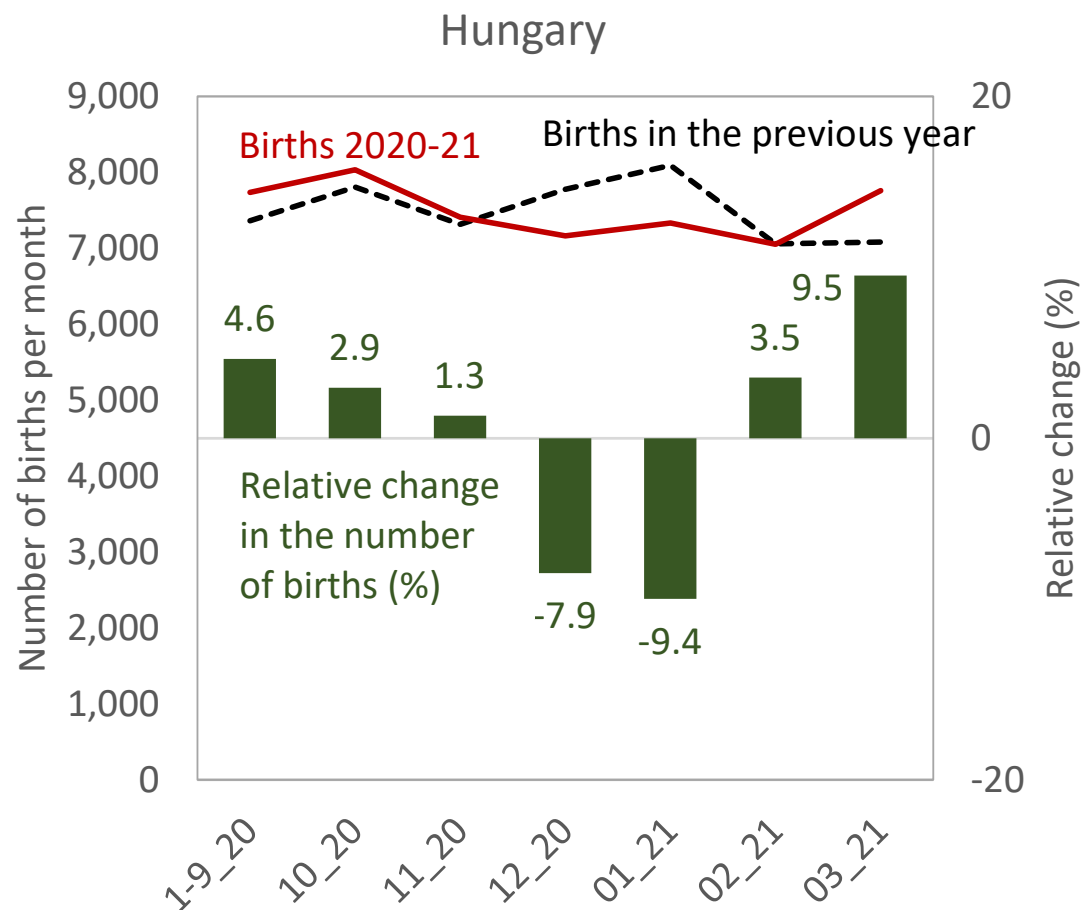
Southern Europe (summary)



Relative year-on-year
change in the number of
births (%)

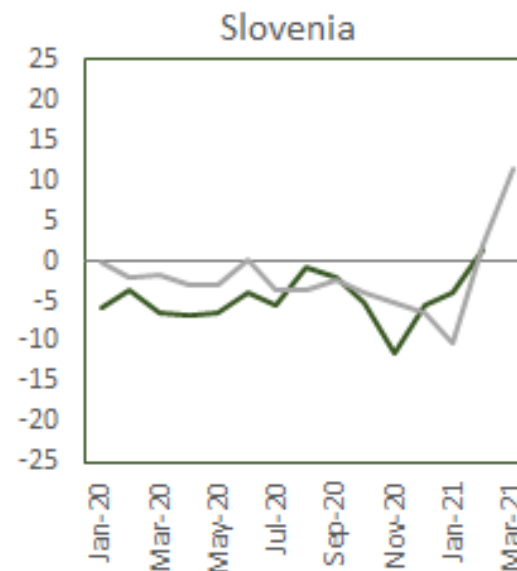
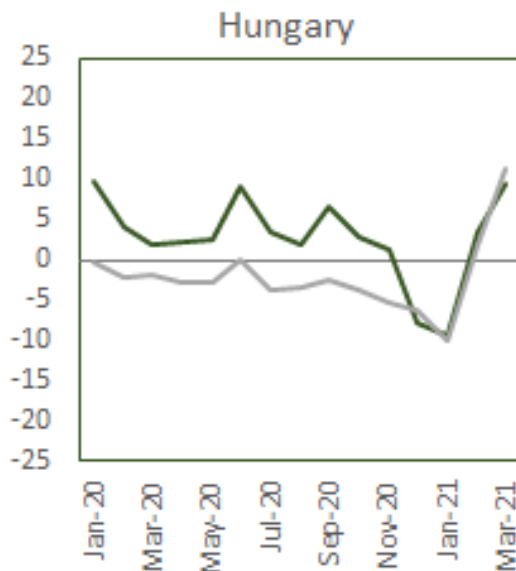
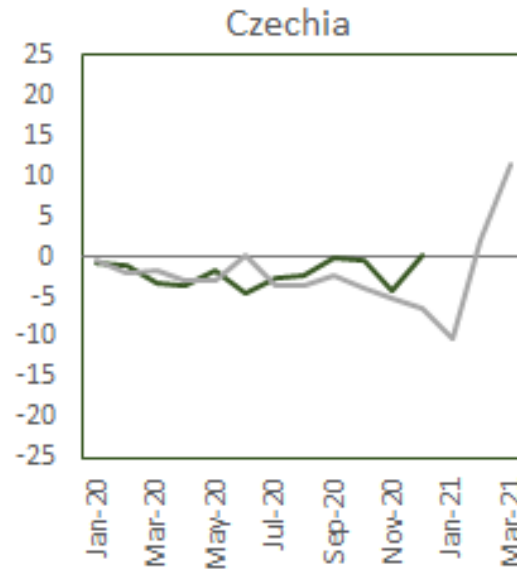
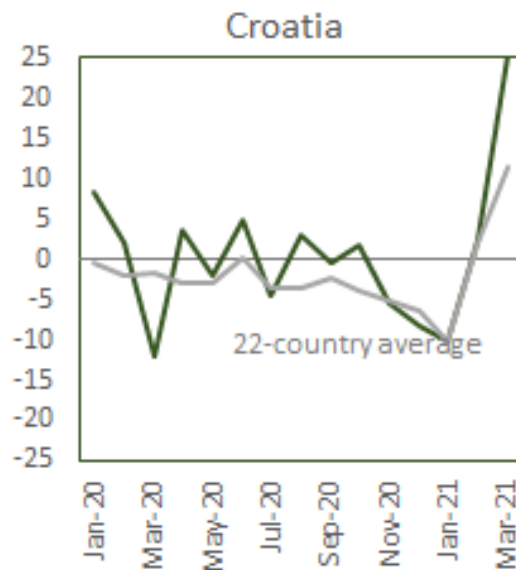
A sharp downturn in
Italy, Portugal and
Spain through Jan 2021

Central Europe: Hungary



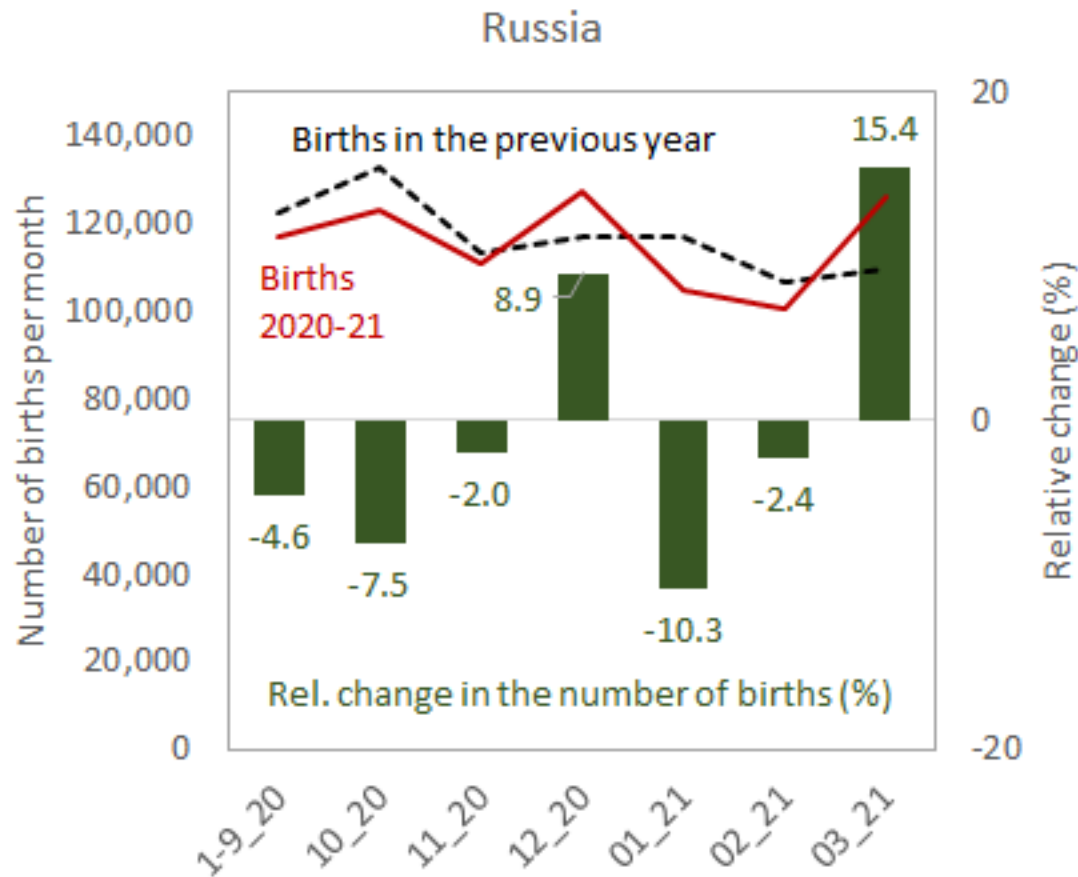
Relative year-on-year
change in the number
of births (%):
Hungary,
Jan 2020-Mar 2021

Central Europe (summary)



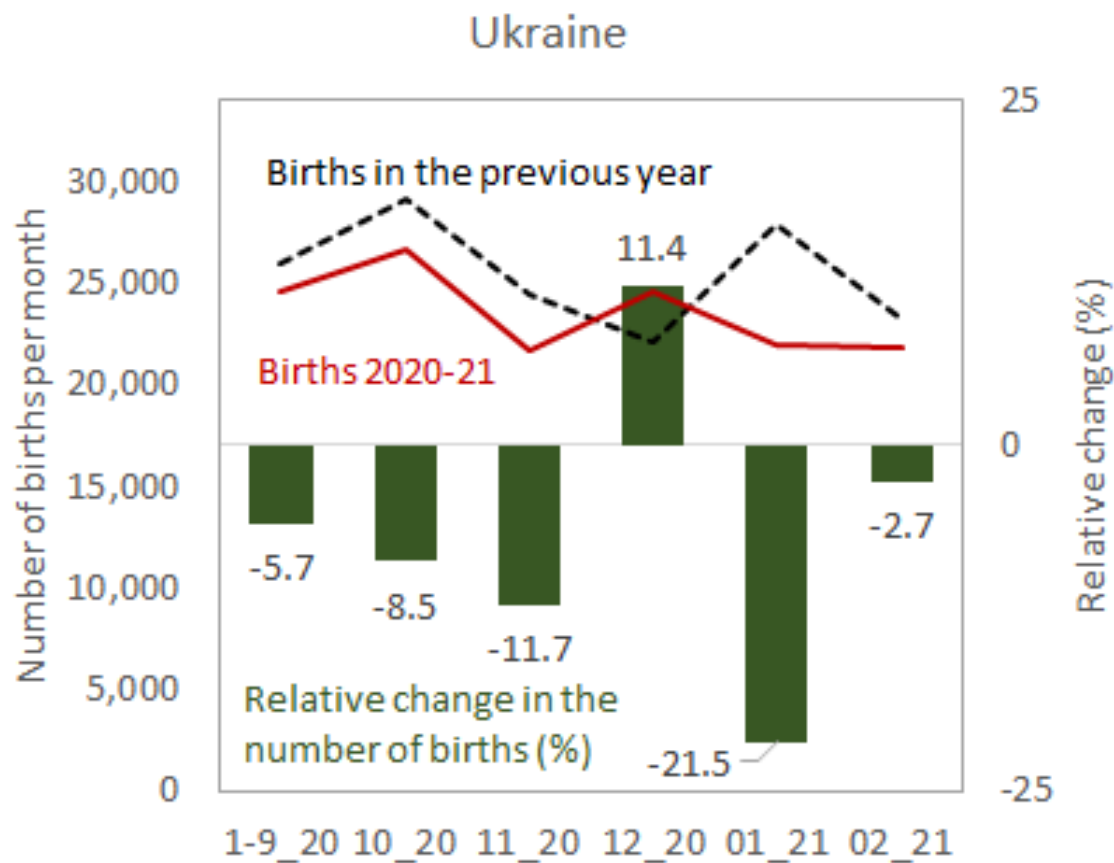
Relative year-on-year
change in the number of
births (%)

Eastern Europe: Russia



Relative year-on-year
change in the number
of births (%):
Russia,
Jan 2020-Mar 2021

Eastern Europe: Ukraine



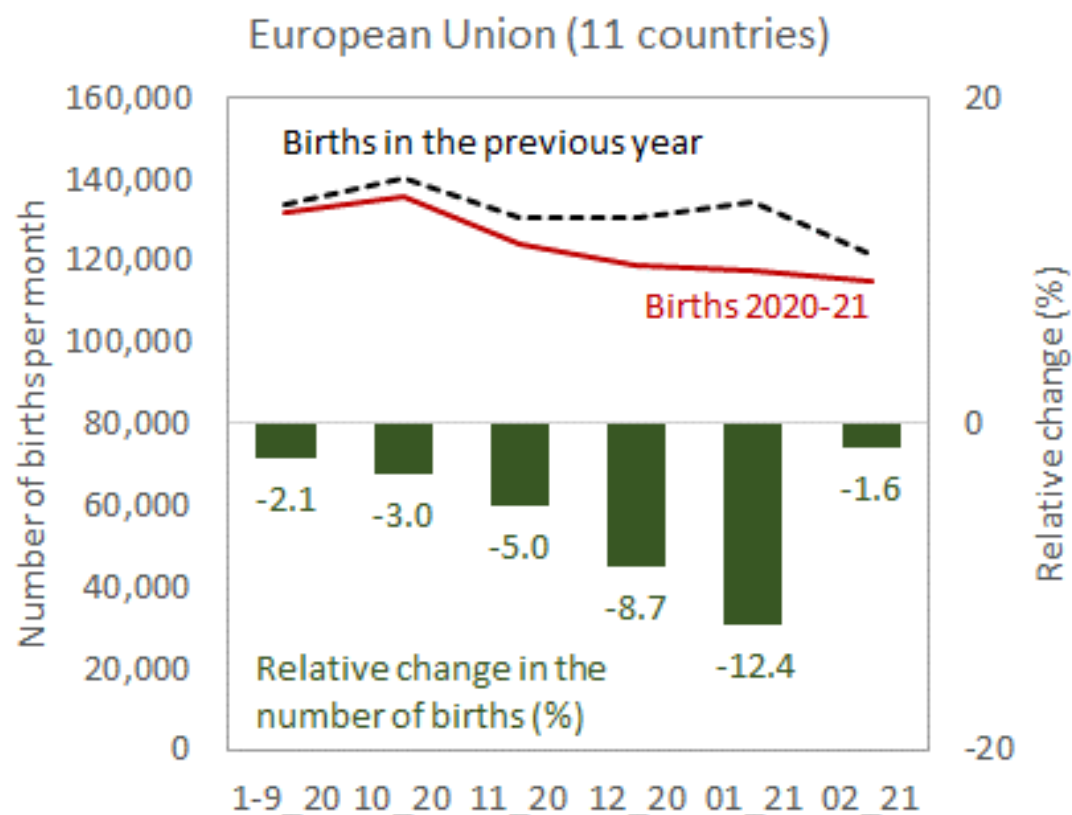
Relative year-on-year
change in the number
of births (%):
Ukraine,
Jan 2020-Feb 2021

Baby bust in the wake of the COVID-19 pandemic?

Findings: summary

European Union

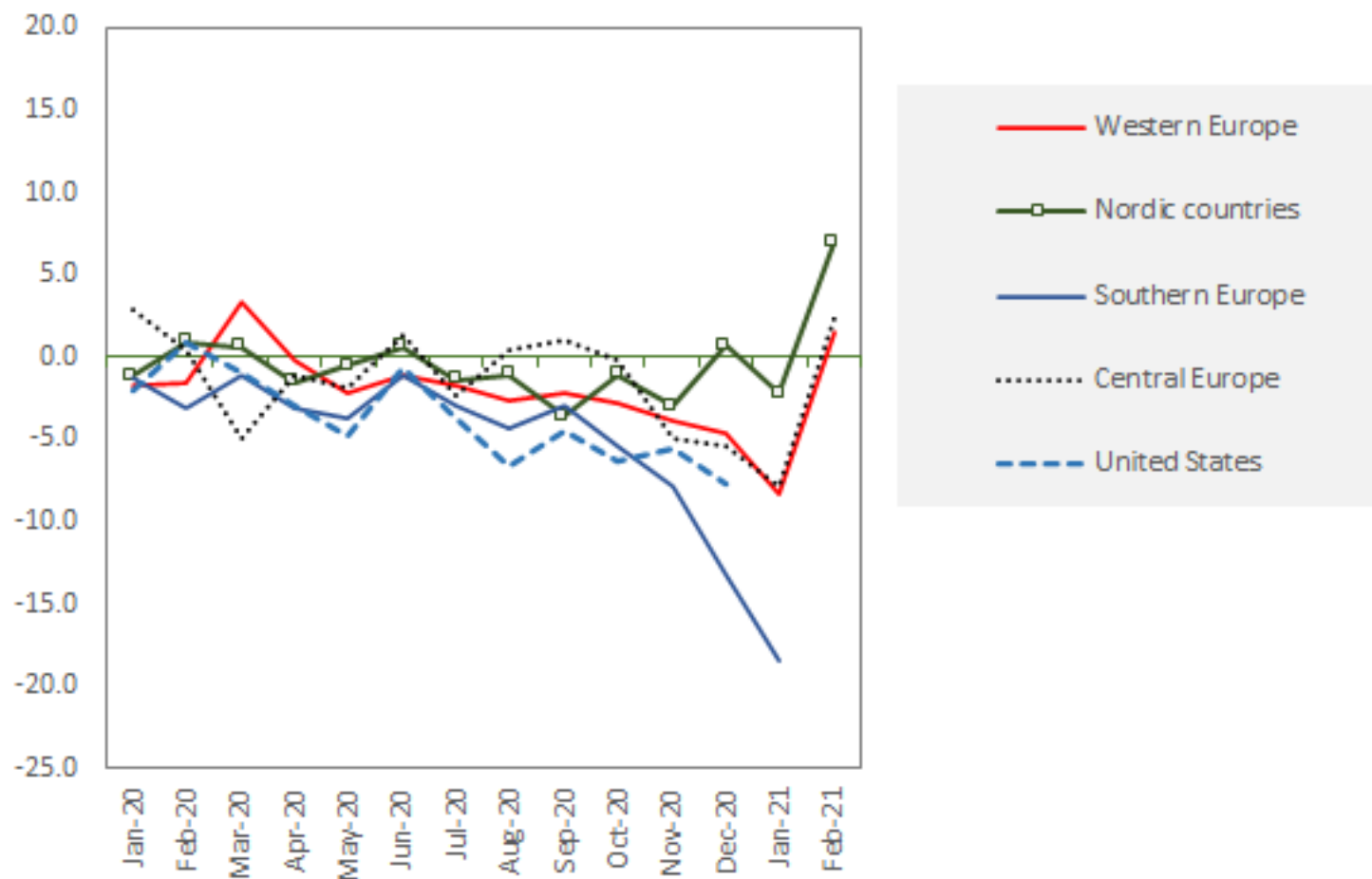
11 countries with data until Jan 2021, ex. Romania, Germany



Relative year-on-year change in the number of births (%):
European Union (11 countries),
Jan 2020-Feb 2021

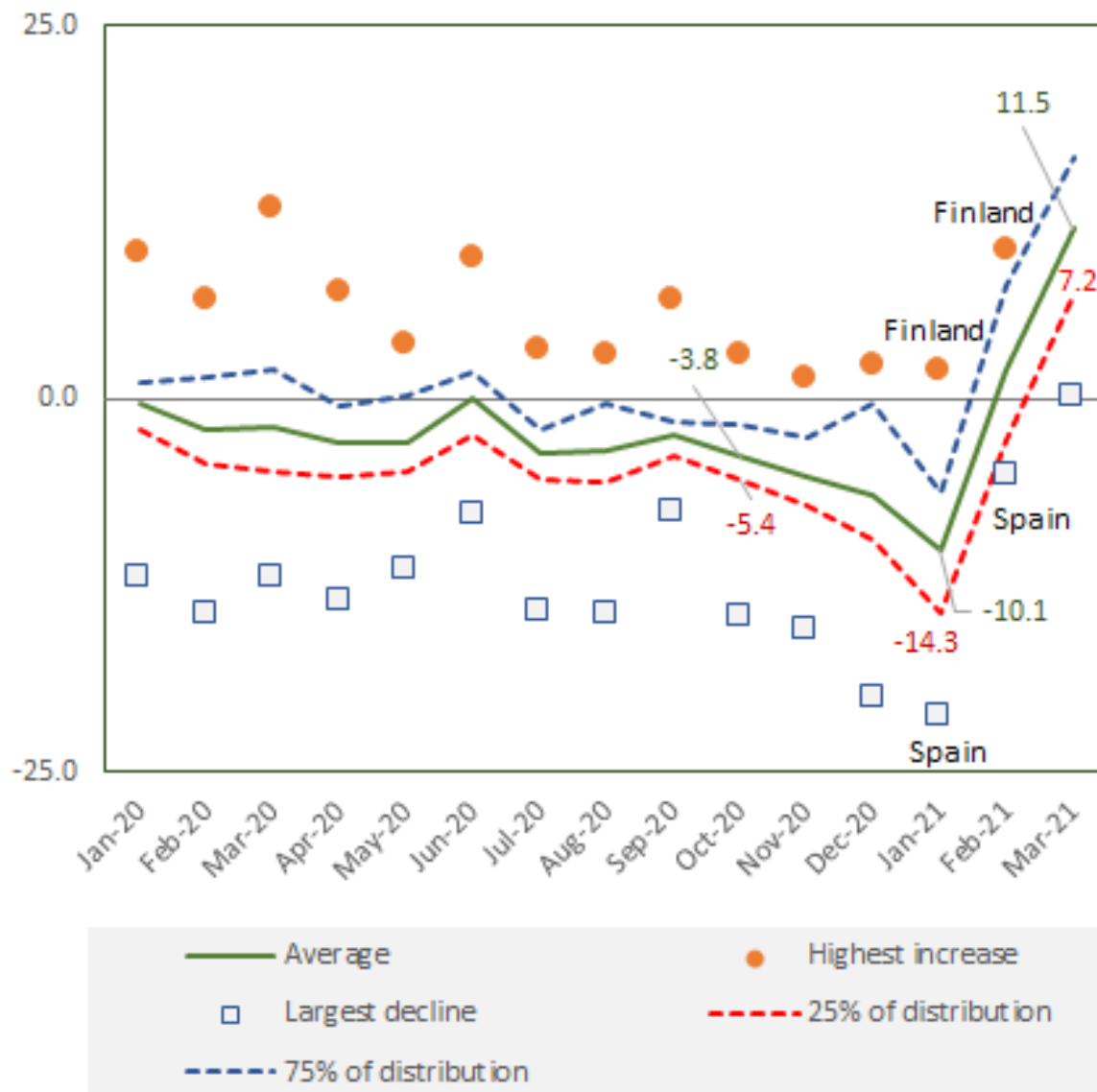
Countries covered: Croatia, Estonia, Finland, France, Hungary, Latvia, Lithuania, Netherlands, Slovenia Spain, Sweden

Huge regional differences until Feb. 2021



Average relative year-on-year change in the number of births (%):
European regions and the United States, Jan 2020-Feb 2021

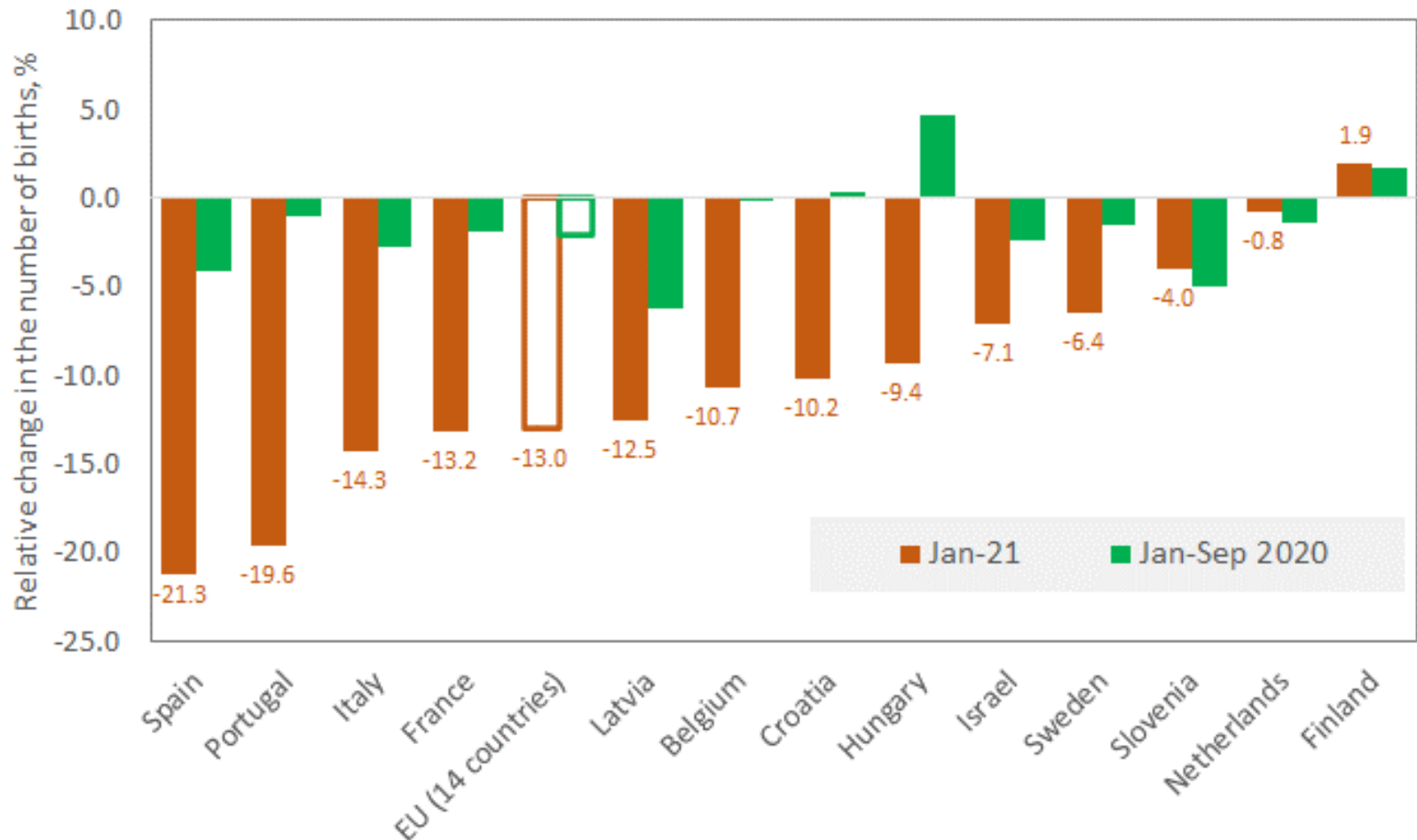
Monthly trends across analysed countries



Average relative year-on-year change in the number of births (%): 21 countries with data until at least Dec. 2020

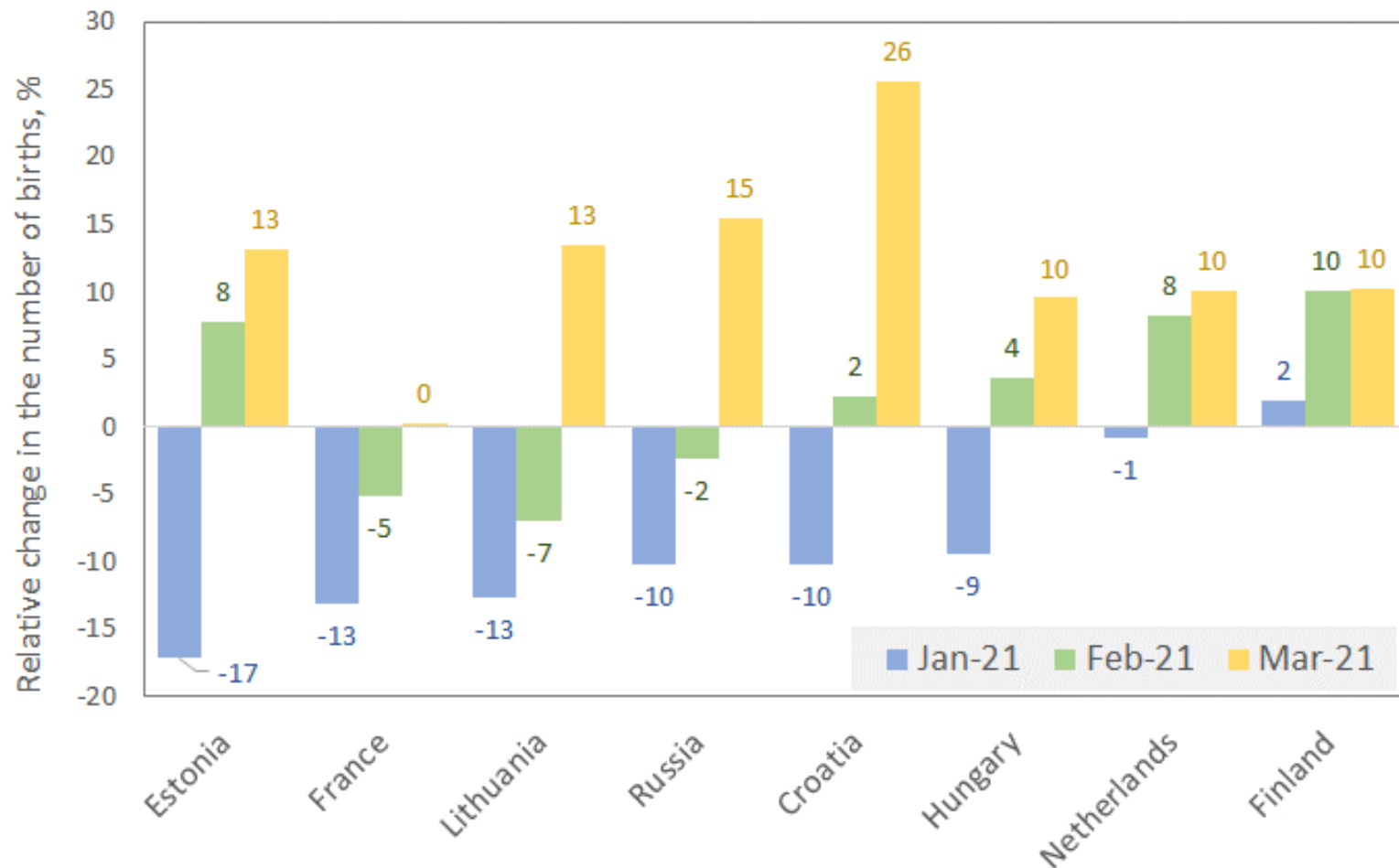
Figure excludes countries with large fluctuations in data or incomplete data: Lithuania, Romania, Russia, Ukraine, Chile, Germany, Switzerland; Data for Feb and Mar 2021 based on a smaller subset of countries

Baby bust in Jan. 2021 (selected countries)



Relative year-on-year change in the number of births (%): January 2021 and Jan-Sep 2020 compared with the same period in the previous year (selected countries without data fluctuations)

Birth upturn in Feb-Mar 2021



Relative year-on-year change in the number of births (%): January 2021 to March 2021 compared with the same month in the previous year (all countries with available data until March 2021)

Baby bust in the wake of the COVID-19
pandemic?

Concluding discussion

Key findings: trends and cross-country differences

- 1st wave of the COVID-19 pandemic associated with baby bust in most countries: accelerated downturn in the year-on-year number of births from Nov 2020 to Jan 2021
- Mostly in line with the expectations

Regional differences

- Strongest impact: Southern Europe, also Belgium, France, Estonia, Hungary; probably Ukraine, Latvia
- No negative impact in some countries: Nordic countries, the Netherlands, Slovenia, Czechia (until Dec 2020)
- Large fluctuations in the data: Romania, Baltic countries (esp. Lithuania, Latvia), Eastern Europe

Period trends: birth recovery after the baby bust?

Downturn in the number of births after Oct 2020 accelerating until Jan 2021

- Consistent across countries: avg. decline by 11.4% across all analysed countries, 13% in 14 EU countries
- These pregnancies mostly started in April and (early) May → peak of the 1st COVID-19 wave & lockdowns

The biggest surprise:

Trend reversal in Feb-Mar 2021: consistent across countries

- February 2021 data show much weaker downturns than January 2021 and some unexpected upturns (esp. Finland, Netherlands, Estonia, Hungary)
 - Further accelerating in Mar 2021, esp. in CEE region
- ➔ *A temporary baby boom associated with ending of the 1st wave?*

Future trends

Short-term trends

- Birth trends might move in cycles of busts and recoveries, similar to the cycles of the COVID-19 pandemic and lockdowns
- Widening cross-country differences in fertility response?

Pregnancy

Lockdown baby boom may be on the way as NHS antenatal bookings rebound

Appointments in third quarter of 2020 at five-year high despite dip earlier in pandemic

- [Coronavirus - latest updates](#)
- [See all our coronavirus coverage](#)

Neil Puffett and Rachel Hall
@rachela_hall
Tue 20 Apr 2021 13:35 BST



▲ Antenatal appointments in the final three months of 2020 were 11.1% higher than the same period in 2019, NHS

The Guardian, 20 April 2021

Longer-term trends

- Overall, a decline in fertility in 2021 likely in most countries
- Downturns past 2021 more likely if COVID-19 leaves long-lasting scars in economy, labour market and if it affects government spending
- Different “starting” position: fertility in some countries record low in 2019
- Moderating impact of social and family policies

Thank you!

➔ also to the fantastic HFD team at the MPIDR!

STFF (Short-Term Fertility Fluctuations) dataset:

<https://www.humanfertility.org/cgi-bin/stff.php>

STFF Visualisation Toolkit:

<https://mpidr.shinyapps.io/stfertility/>



Report on monthly birth trends (to be updated soon, 😊)

<https://osf.io/preprints/socarxiv/mvy62>

(Sobotka, Tomas, Aiva Jasilioniene, Ainhua A. Galarza, Kryštof Zeman, Laszlo Nemeth, and Dmitri Jdanov. 2021. “Baby Bust in the Wake of the COVID-19 Pandemic? First Results from the New STFF Data Series.” SocArXiv. March 24. doi:10.31235/osf.io/mvy62)

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