



UNIVERSITÀ
DEGLI STUDI
FIRENZE

DiSIA

DIPARTIMENTO DI STATISTICA,
INFORMATICA, APPLICAZIONI
"GIUSEPPE PARENTI"

Demographic Change and Official Statistics

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Outline

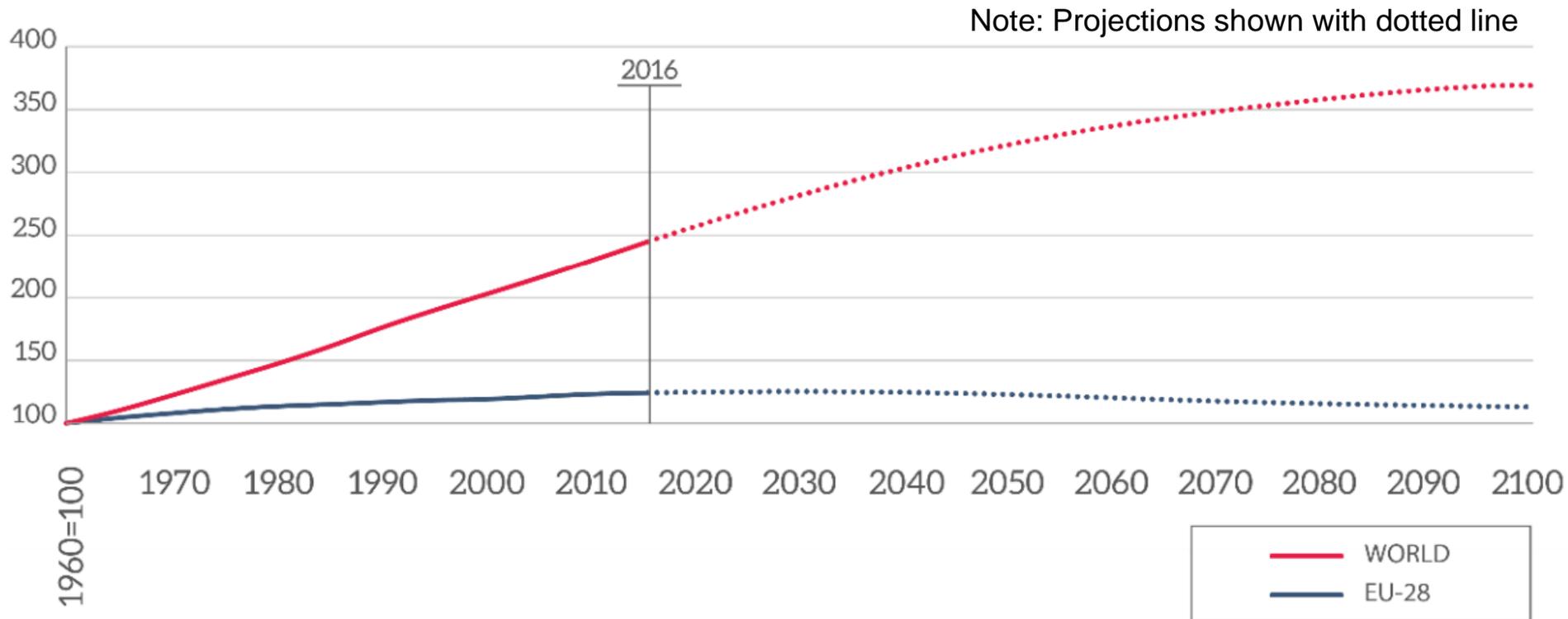
Daniele:

- Demographic change
- Fertility trends in the era of uncertainty
- Open questions
- Challenges for Official Statistics

Eleonora:

- Data from official statistics
- How Official Statistics react to such challenge

Demographic Mega-Trends



Europe Demographics

- **Life expectancy, fertility, and migration** are the three demographic forces that are altering the make-up of Europe's population
- Analyzing the demographics has become increasingly important, since most projections suggest that **ageing populations** will be a major challenge for the EU in the future
- **Migration play an important** in fighting against the population aging of European societies
- **Fertility is the game-changer**

Two is Best?

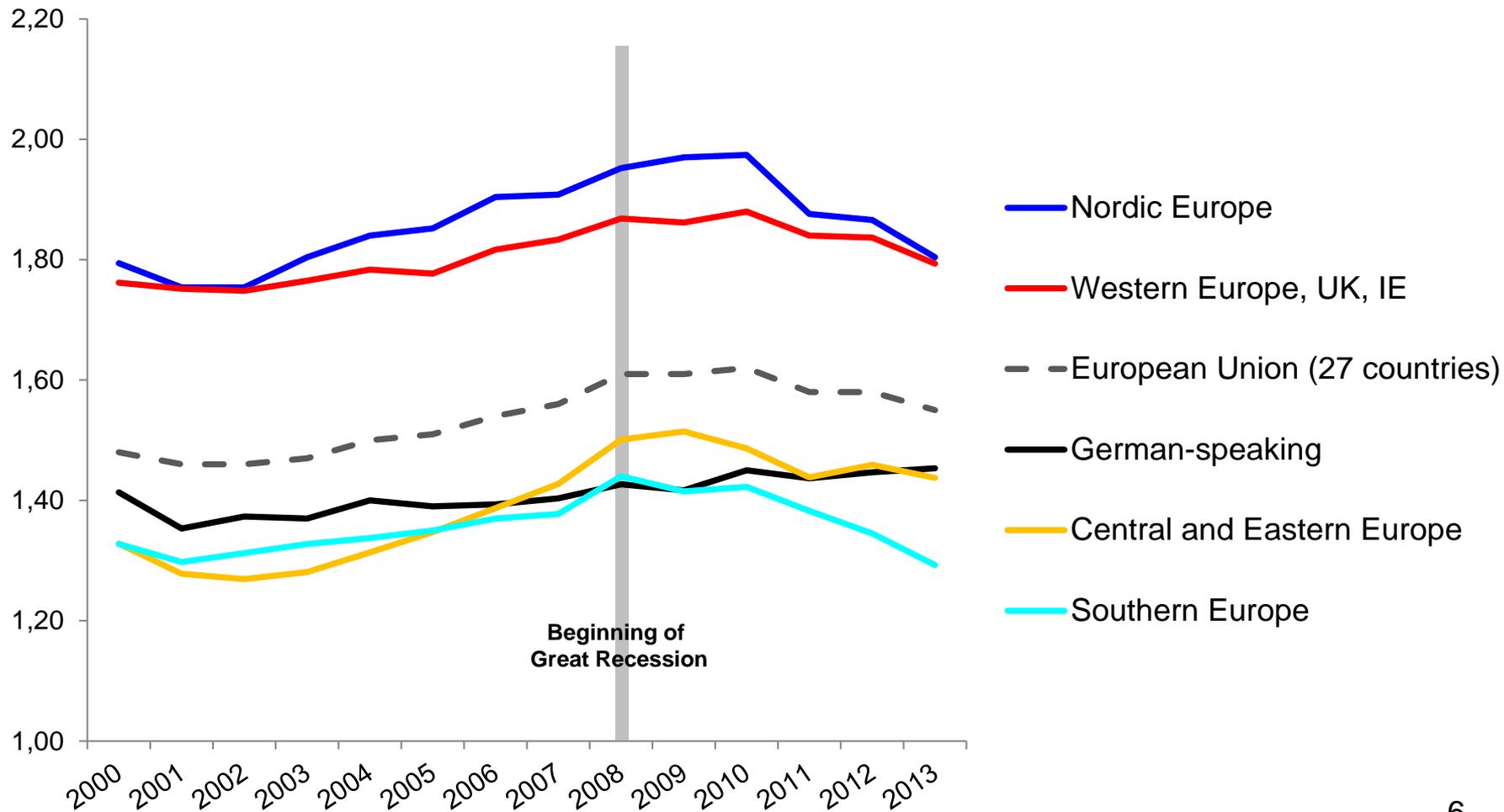
POPULATION AND DEVELOPMENT REVIEW

Two Is Best? The Persistence of a Two-Child Family Ideal in Europe

Tomáš Sobotka, Éva Beaujouan

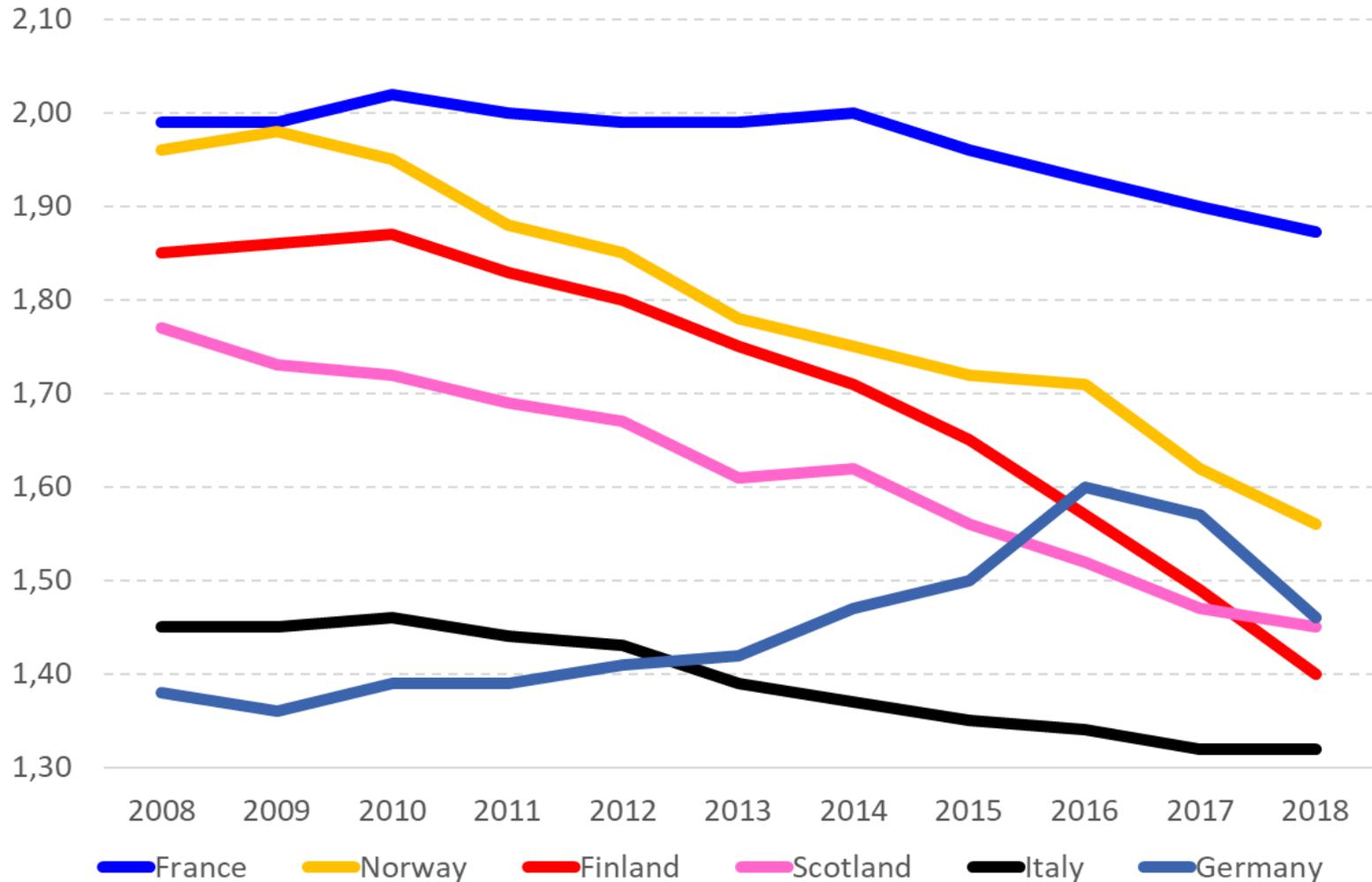
The *Great Recession*

Total Fertility Rate 2000-2013



A New Fertility Winter

Total Fertility Rate 2010-2018



The Rise of Uncertainty

- The increasing speed, dynamics, and volatility of outcomes of **globalization**, and the new wave of **technological change**, make it **increasingly difficult for individuals to predict their future** and choose between alternatives and strategies
- The **Great Recession** has renewed the view that globalization is unpredictable and “out of control”
- This generates an extraordinary level of **uncertainty**, which represents the **game-changer** in contemporary societies and **family life courses**
- The recent COVID-19 emergency has reinforced the perception that **we are living in the era of uncertainty**

The “Traditional” Forces of Uncertainty

- At the micro-level, empirical tradition operationalizes the forces of uncertainty through objective indicators of **actual and past individuals’ labor market situation**
 - Papers addressing the relation between fertility and **unemployment or temporary jobs** are now booming (e.g. Barbieri et al. 2015; Kreyenfeld 2010, 2015; Vignoli, Drefahl & De Santis 2012; for a **meta-analysis**: Alderotti, Vignoli & Baccini 2018)
 - Importance of **persistence of employment uncertainty** in young adults’ life courses (Özcan, Mayer & Luedicke 2010; Pailhé and Solaz 2012; Busetta, Mendola & Vignoli 2018)
 - Not only employment: **Housing uncertainty** (Mulder 2006; Kulu & Milewski 2007; Vignoli, Rinesi & Mussino 2013; Tocchioni, Berrington, Vignoli & Vitali 2019)

Open Questions

- What are the driving forces of fertility decline in **Nordic countries** after a Great Recession that, in “hard numbers”, they really never experienced, or, at least, not to any relevant extent?
- **What are the drivers of the new fertility winter that contemporary European societies are currently facing?**



Open Questions

- The **European post-crisis shift toward very low fertility rates came as highly unexpected**, especially in Nordic countries,
- not only because they have been much less severely hit by the economic crisis,
- but also because they represent a benchmark in terms of **gender equality** and **female labor market participation** (Esping-Andersen and Billari 2015; Goldscheider et al. 2015), **youth emancipation** (Billari 2004), and **diffusion of new family forms** (Lesthaeghe 2010).

Do We Understand Economic Uncertainty?

- **Economic uncertainty**: the lack of clarity about future economic prospects (Bloom 2014); i.e. **unknown probability distributions to possible outcomes** (Knight [1921] 2002; Beckert 1996)
- **Uncertainty is about the future**, not about the present or the past
- (Cumulative) employment disadvantage – and its perception – just identify the “**statistical shadow of the past**” and tell us little about **uncertain futures**
- To properly address the effects of fundamental uncertainty on family dynamics we need to change perspective, recognizing that economic uncertainty is a **prospective notion**

Narratives of the Future

- **Fundamental uncertainty** needs to be conceptualized and operationalized taking into account that people use **works of imagination**, producing their own **narrative of the future** (Bronk and Beckert 2018; Boyer 2018; Tuckett 2018)
- **Uncertainty is anchored in Narratives:** imagined futures embedded in social elements (Bronk and Beckert 2018)
- Personal narratives of the future are potent driving forces of reproductive **decisions in spite of / according to uncertainty**, irrespective of structural constraints and their subjective perception

The Power of Narratives



Within our mandate, the ECB is ready to do whatever it takes to preserve the euro. Believe me, it will be enough.

Mario Draghi

www.thequotes.in

Press and Media Shared Narratives

CORRIERE DELLA SERA / ECONOMIA
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Are You Ready for the
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Storm ahead? Here's how to prepare for a financial crisis

As the IMF warns a downturn could be coming, we examine how you can protect yourself



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Die überraschende Rückkehr der Inflation

Veröffentlicht am 30.10.2018 | Lesedauer: 4 Minuten

POST ITALIA MONDO POLITICA TECNOLOGIA INTERNET SCIENZA CULTURA ECONOMIA SPORT MEDIA
ECONOMIA | MERCOLEDÌ 20 FEBBRAIO 2019
Siamo messi molto male
Lo dicono i numeri esposti oggi sul Corriere, intanto che il governo si occupa d'al

Consulter le journal

Le Monde

ACTUALITÉS ÉCONOMIE VIDÉOS OPINIONS CULTURE M LE MAG

ÉCONOMIE

2019, année à risque pour l'économie mondiale

La crainte d'une guerre commerciale et de la fin de la croissance américaine pèsera sur la conjoncture.

Par Marie de Vergès · Publié le 24 décembre 2018 à 06h39 · Mis à jour le 24 décembre 2018 à 12h18

Global Political Uncertainty



'My Brexit nightmare': readers on how the uncertainty is affecting their lives

We ask readers in Britain and Europe to tell us how they are coping



Fertility in the Era of Uncertainty

- The focus on past and actual structural constraints is not enough to explain the new fertility winter in Europe
- “Net of factors” that operationalize the “statistical shadow of the past”, young adults might postpone fertility because their narrative of the future is uncertain
- Given the recent **COVID-19 emergency**, the specter of the future is even more relevant in understanding demographic change
- More research is needed to study of **fertility dynamics** in the **era of uncertainty**

Research needs survey data

- To address these new challenges we necessarily need survey data
- **Survey data** that collect information about individuals' employment/economic status and their future-oriented perceptions vis a vis family life courses
- We need an integrated demographic data system that collects **family, employment, and education histories** complemented with survey data that include questions on opinions, attitudes, perceptions over major social changes
- We also need **panel data on families** that include rich socio-demographic information

Questions?

How Official Statistics Respond

Official statistics that answer to some question about Italian demographic scenario:

- Data from social surveys give information about individuals (FSS, SILC, LFS):
 - <https://www.istat.it/it/archivio/237448>
 - <https://www.istat.it/it/archivio/4152>
 - <https://www.istat.it/it/archivio/8263>
- Data from registers give information at a macro level (Births register, Resident Population)
 - <https://www.istat.it/it/archivio/235964>
 - <https://www.istat.it/it/archivio/231884>

How Official Statistics Respond

Official statistics data:

1) Surveys

- <https://www.istat.it/it/informazioni-e-servizi/per-i-rispondenti/elenco-delle-rilevazioni>

2) Registries

- http://demo.istat.it/index_e.html
- <http://dati.istat.it/?lang=en>

The screenshot displays the 'Geo demo' section of the Istat website. At the top, there are logos for 'Geo demo istat.it', 'Demography in Figures', and 'Istat Italiano'. Below the logos, a navigation bar contains the word 'Credits'. The main content area is divided into three columns:

- resident population**: A list of years from 2019 down to 2012, with a description: 'Resident Population by age, sex and marital status on 1st January'. The years listed are: Year 2019, Year 2018, Year 2017, Year 2016, Year 2015, Year 2014, Year 2013, and Year 2012.
- demographic balance**: A description: 'Demographic Balance and resident population on 31th December', followed by the years: Year 2018, Year 2017, and Year 2017.
- More**: A section titled 'More recent official data on resident population in the Italian municipalities are available in this site. Data are collected from the Population Register Offices and will be updated from time to time with the last available year. Elaborations on main demographic phenomena are also available.' Below this, there is a 'Last updates' section with two entries: '27 March 2020 - Monthly Demographic Balance' and '28 February 2020 - Monthly Demographic Balance', both describing monthly demographic balance and resident population for January-November 2019 and January-October 2019 respectively.
- elaborations**: A section titled 'elaborations' with a list of links: 'Life Tables of the Population by province and region of residence Years 1974-2018', 'Population Projection Years 2018-2065', 'Intercensal population estimates Population at Jan 1st by age and sex Years 2002-2011 Years 1992-2001 Years 1982-1991', and 'Intercensal population estimates Demographic balance Years 2001-2011 Years 1991-2001'.

FSS

Families, social subjects and life cycle survey collects retrospective histories on:

- family,
- employment,
- educational histories.

Time series data: 1998, 2003, 2009 and 2016

International comparability through GGP (<https://www.ggp-i.org/>)

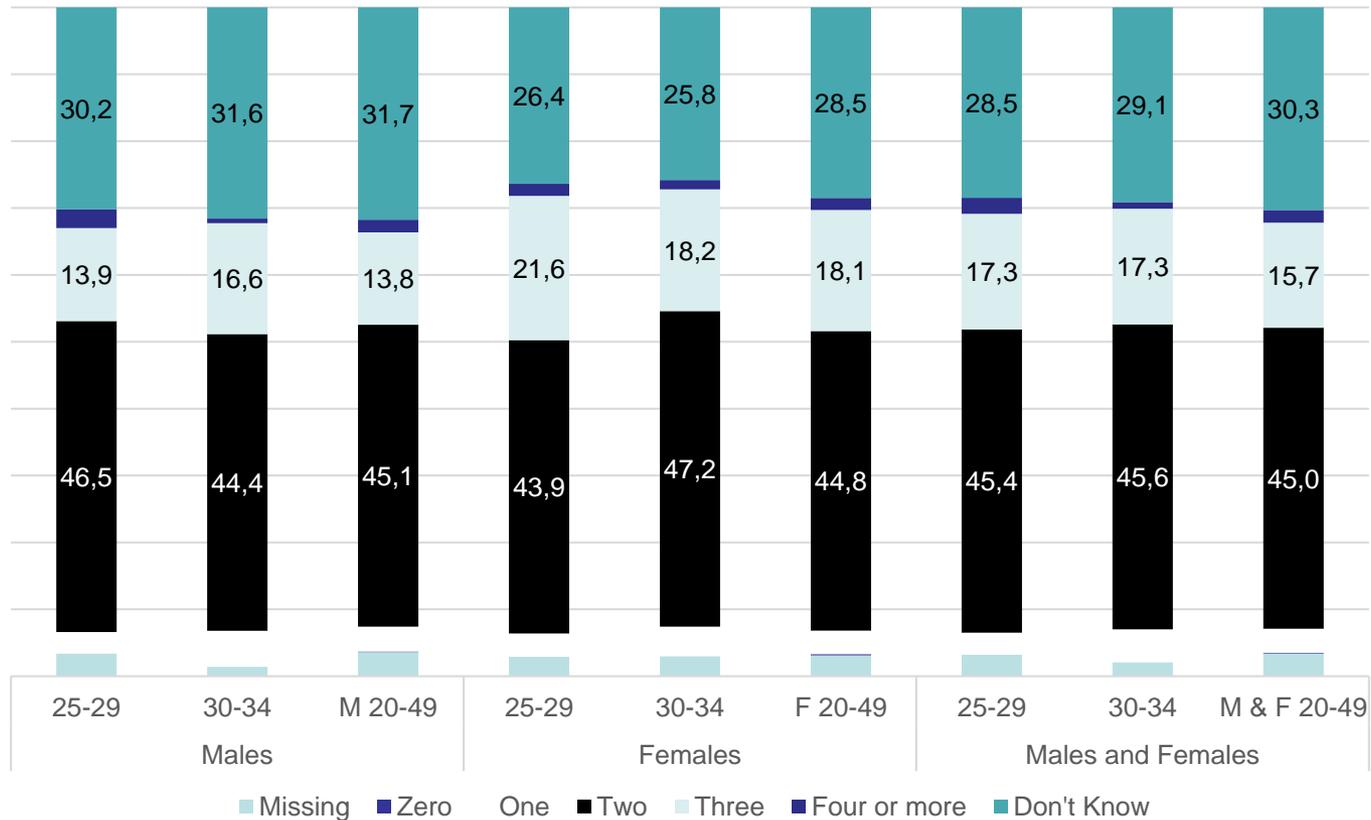
FSS

Main thematic areas:

- **Household structure:** family, family commuters, permanence and leaving family of origin, emerging family forms;
- **Kinship networks:** map of non-cohabitants kinship;
- **Informal aid networks:** solidarity networks of aid given and received by non-cohabitants;
- **Social mobility:** both intergenerational and intra-generational;
- **Life cycle:** unions' formation and dissolution, childbearing, stepchildren, fecundity intentions, opinions and attitudes;
- **Labor market participation:** current job, job histories up to a maximum of 11 episodes.

FSS

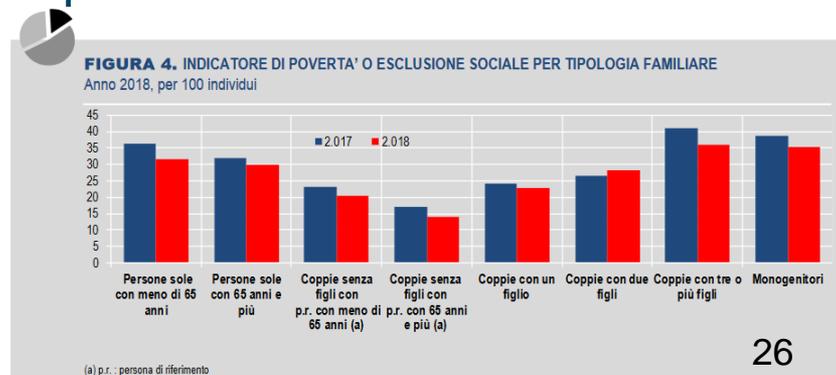
Ideal number of children for Childless



- “Don’t know” still high in the part of population who has the right age to have children
- Two is always “the best”

Silc

- EU-SILC is a **multi-purpose instrument** mainly focuses on income and detailed income components are collected mainly at personal level although a few components are collected at the household level
- It collects many other information covering housing, material deprivation, labor, health, demography, education
- It provides two types of data:
 - ✓ **Cross-sectional data** pertaining to a given time or a certain time period
 - ✓ **Longitudinal data** pertaining to individual-level changes over time, observed periodically over a four year period



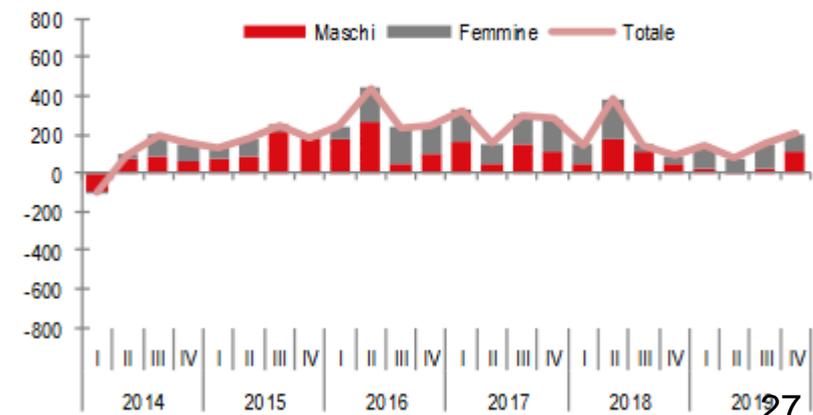
LFS

Labour Force Survey contents:

- A) informations about respondent;
- B) employment during the sampled week;
- C) **main working activity**;
- D) secondary working activity;
- E) previous employment;
- F) job search;
- G) employment services and employment agencies;
- H) professional training and **education**;
- I) self-perceived employment condition;
- L) **household structure**;
- M) information by the interviewer;
- N) pending coding.

FIGURA 7. OCCUPATI PER GENERE

I 2014- IV 2019, variazioni tendenziali assolute in migliaia di unità



How Official Statistics Respond

Some examples in deep:

- **Births registry**
- **Resident population registry**
- **Marriages, separations and divorce registry**

Births Registry

- From 1999
- municipal territorial level (and by census section)
- sex of birth
- date of birth (of the born)
- place of birth
- citizenship (of the born)
- age of the mother (single year of) and cohort
- age of the father (single year of) and cohort
- marital status of the mother
- marital status of the father
- citizenship of the mother
- citizenship of the father.

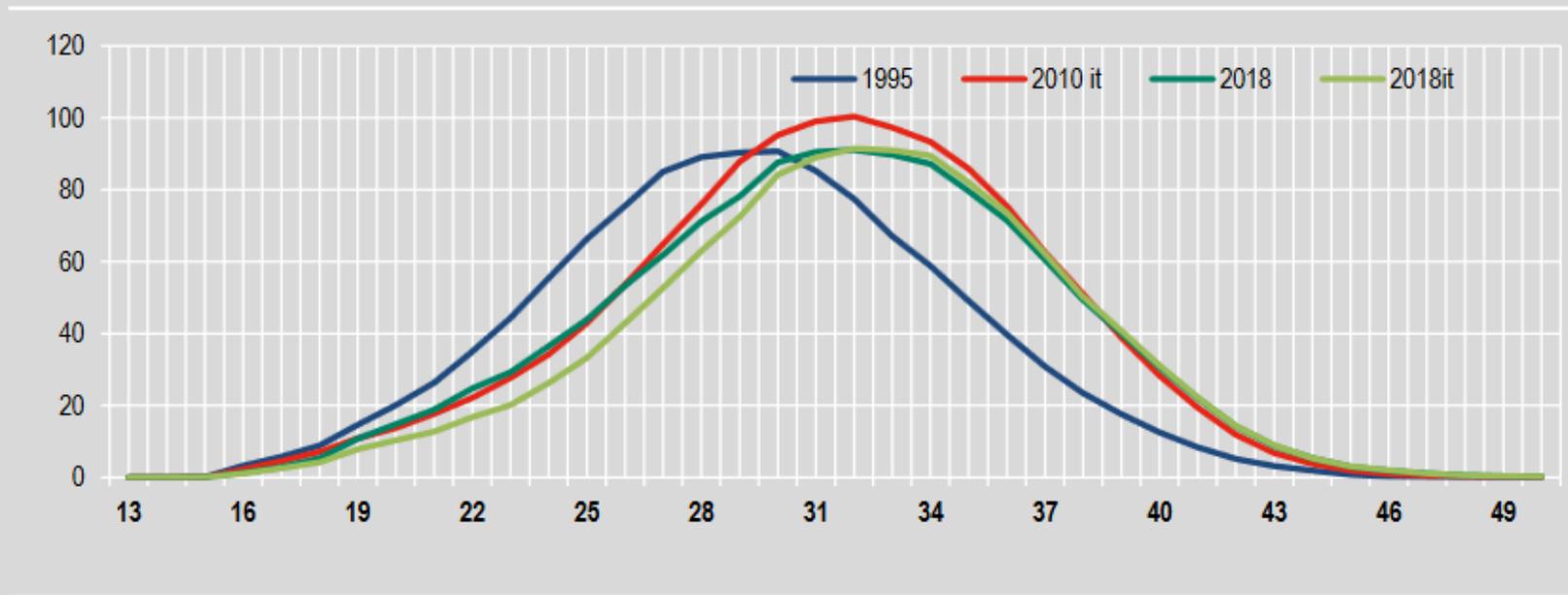
Births Registry

Main fertility indicators:

- **TFT,**
 - **average age at birth for women resident and distinguished by marital status or citizenship**
- **municipal level and by administrative or non-administrative supra-municipal territorial areas (metropolitan areas, province, region and breakdown).**

Births Registry

FIGURA 4. TASSI DI FECONDITÀ SPECIFICI PER ETÀ DELLE DONNE RESIDENTI IN ITALIA
Anni 1995, 2010 e 2018, valori per 1.000 donne



Challenges for Official Statistics

- **Retrospective data are jeopardized by memory effect and social desirability**
 - **Intentions (i.e. leaving home, starting a cohabitation, having a/another child) should be linked to register data to verify their satisfaction**
 - **Employment histories are more and more complex and diversified, new techniques should be designed**
- **The pillar of the new arrangement of Istat data collection is the Integrated System of Registers**

Integrated System of Registers

Integrated System of Registers (ISRs)

Units	Statistical Populations	Variables														
		Base			Extended						Thematic					
		X_1	X_i	X_n	Y_1	Y_i	Y_n	Y'_1	Y'_i	Y'_n	Z_1	Z_i	Z_n	Z'_1	Z'_i	Z'_n
U_1	P_1	[Blue Box]			[Red Box]						[Green Box]					
.....																
U_i																
U_m	P_2	[Blue Box]			[Red Box]						[Green Box]					
U_{m+1}																
.....																
U_{m+i}																
U_{m+p}																
U_{m+p+1}																
.....																
U_{m+p+i}																



Questions?



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