



# Fertility Decline: The German Case

**Work in Progress!**

**First draft prepared for:**

*POLITICHE DELLA NATALITÀ E FLUSSI MIGRATORI IN ITALIA*

*Università Cattolica del Sacro Cuore, Milano*

9 November 2018

# Outline

- Introduction
- Fertility decline
- Fertility turnaround
- Immigration
- Resilience

# Introduction

- Regional data from official and freely available sources
- Data sources
  - Eurostat (NUTS)
  - Destatis (*Regionalstatistik* → equiv. NUTS-3)
- Two papers
  - Martin Klein, Tobias Weirowski, Rahel Künkele, Geburtenwende in Deutschland – Was ist dran und was sind die Folgen?, Wirtschaftsdienst 2016, pp. 1-9
  - Martin Klein, Tobias Weirowski, Jana Windwehr, Reversing Fertility Decline: Profiling German Regions, RISS 2018, n. 1, pp. 3-26
- New research with additional data

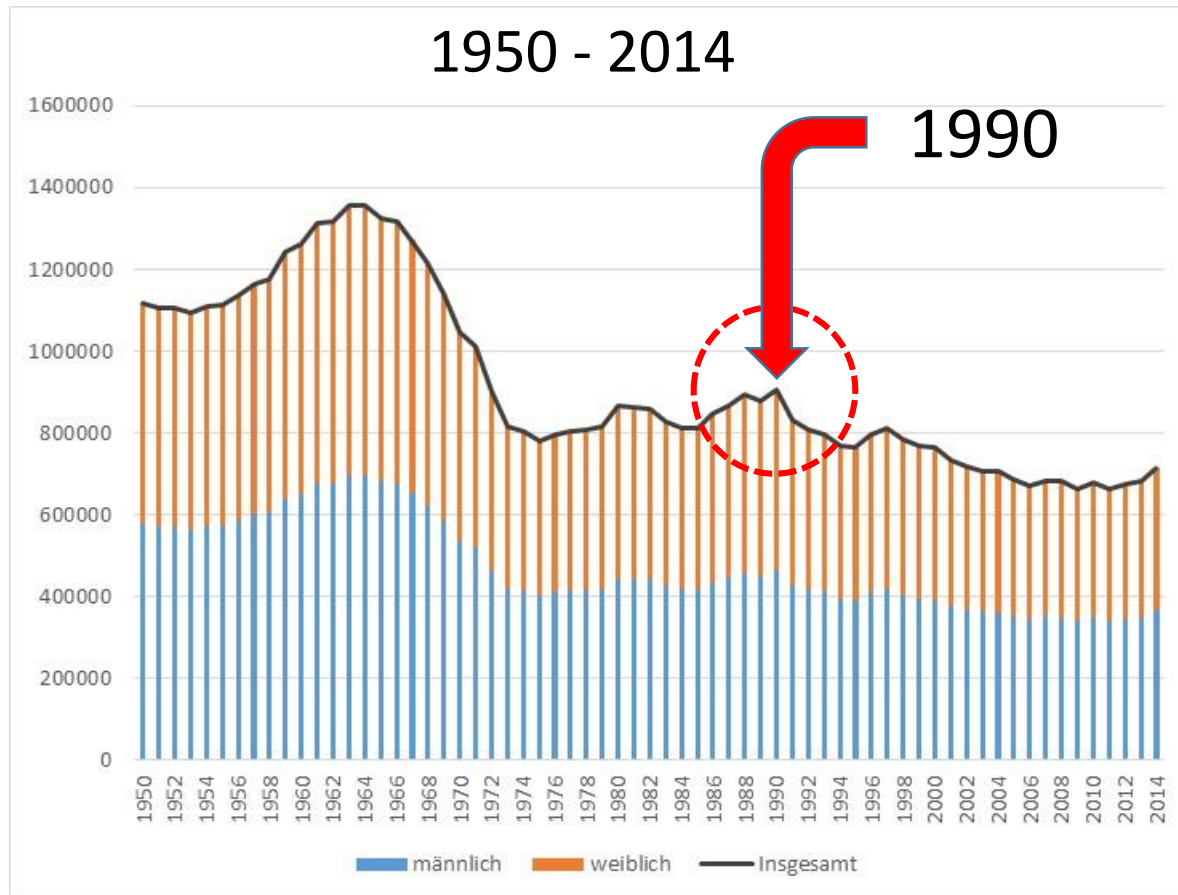
# Take-aways

- After many years of decline, fertility is on the rise again in Germany.
- The trend change in fertility took place around the year 2009, in the wake of a paradigm change in family policy. However, causality is difficult to ascertain because other fertility drivers also changed at this time.
- The surge in immigration observed since 2010 contributes to the fertility turn-around but also leads to growing regional resistance to immigration. Germany is thus confronted with an emerging integration crisis.
- Key question: what makes regions resilient to master the integration crisis?

Part 1

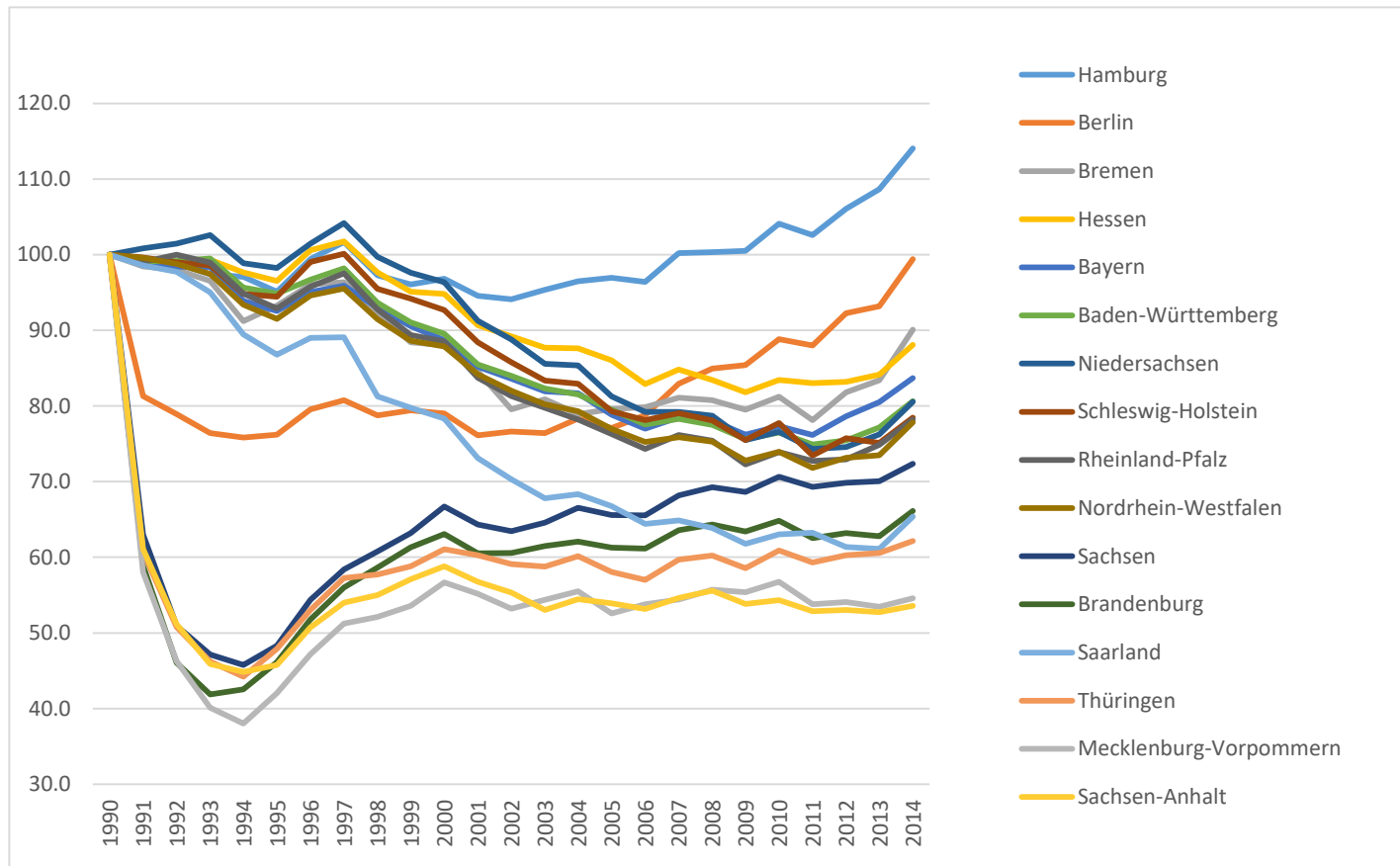
Fertility decline

# Live Births in Germany 1950 - 2014



# Live Births in German *Länder*

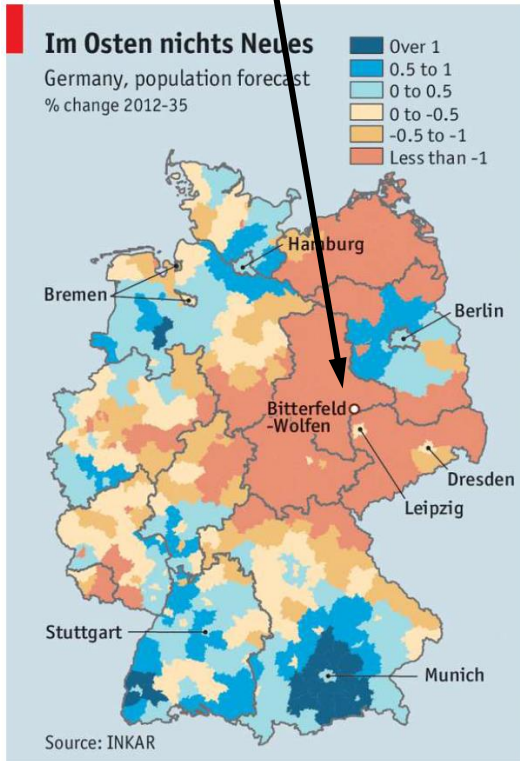
(Indices, 1990 = 100)



# The Economist on East-German Demography

17.04.2017

Bitterfeld



## Fading echoes

### East Germany's population is shrinking

*The rest of the country, and large swathes of Europe, will face similar problems in future*



**Source:** The Economist, Fading echoes: East Germany's population is shrinking. 15 April 2017. URL: <https://www.economist.com/news/finance-and-economics/21720578-rest-country-and-large-swathes-europe-will-face-similar-problems>

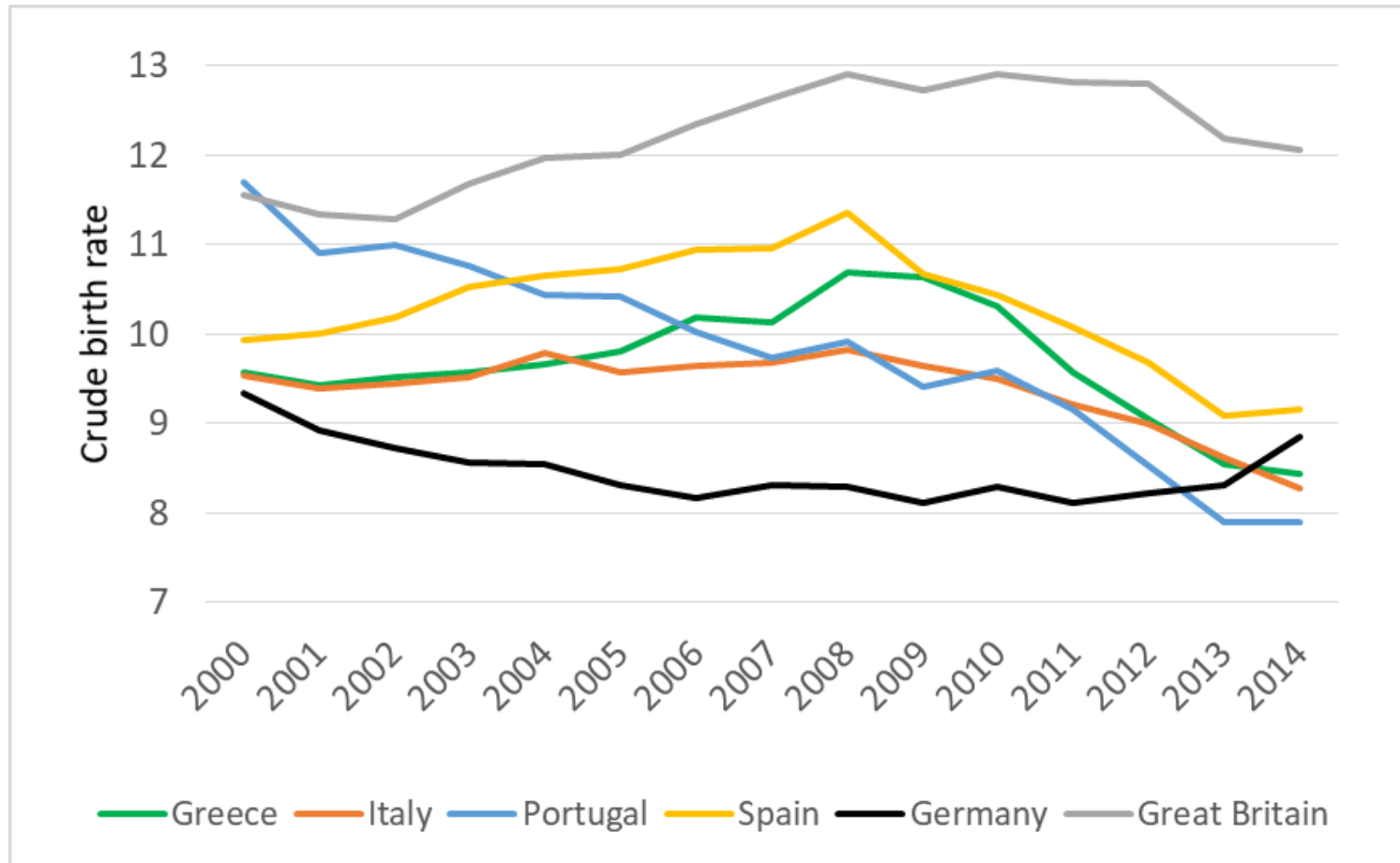


# Bitterfeld is everywhere, or: Population shrinkage and economic decline in Europe

“By 2050 Greece, Italy, Poland, Portugal and Spain <...> will be older than Germany by median age and will have shrunk substantially, according to the UN. Ageing and emigration are likely further to dampen growth in central and southern European countries, says the IMF. It calculates that by 2030 GDP per person in several countries may be 3-4% lower than it would have been without emigration.”

- **The Economist**, Fading echoes: East Germany's population is shrinking. 15 April 2017. URL: <https://www.economist.com/news/finance-and-economics/21720578-rest-country-and-large-swathes-europe-will-face-similar-problems>

# European Birth Rates in Crisis

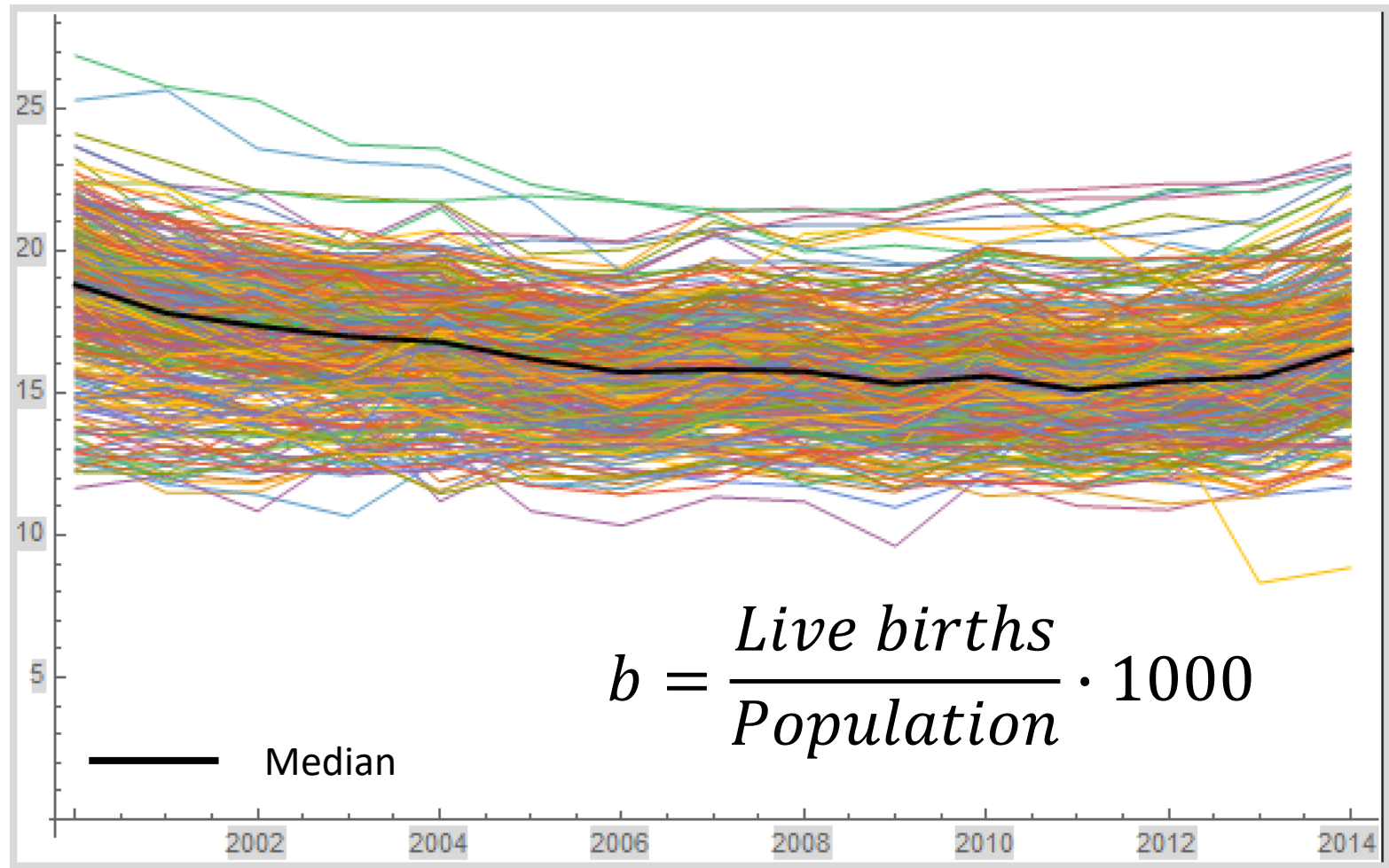


Source: Eurostat, May 2016, and own calculations.

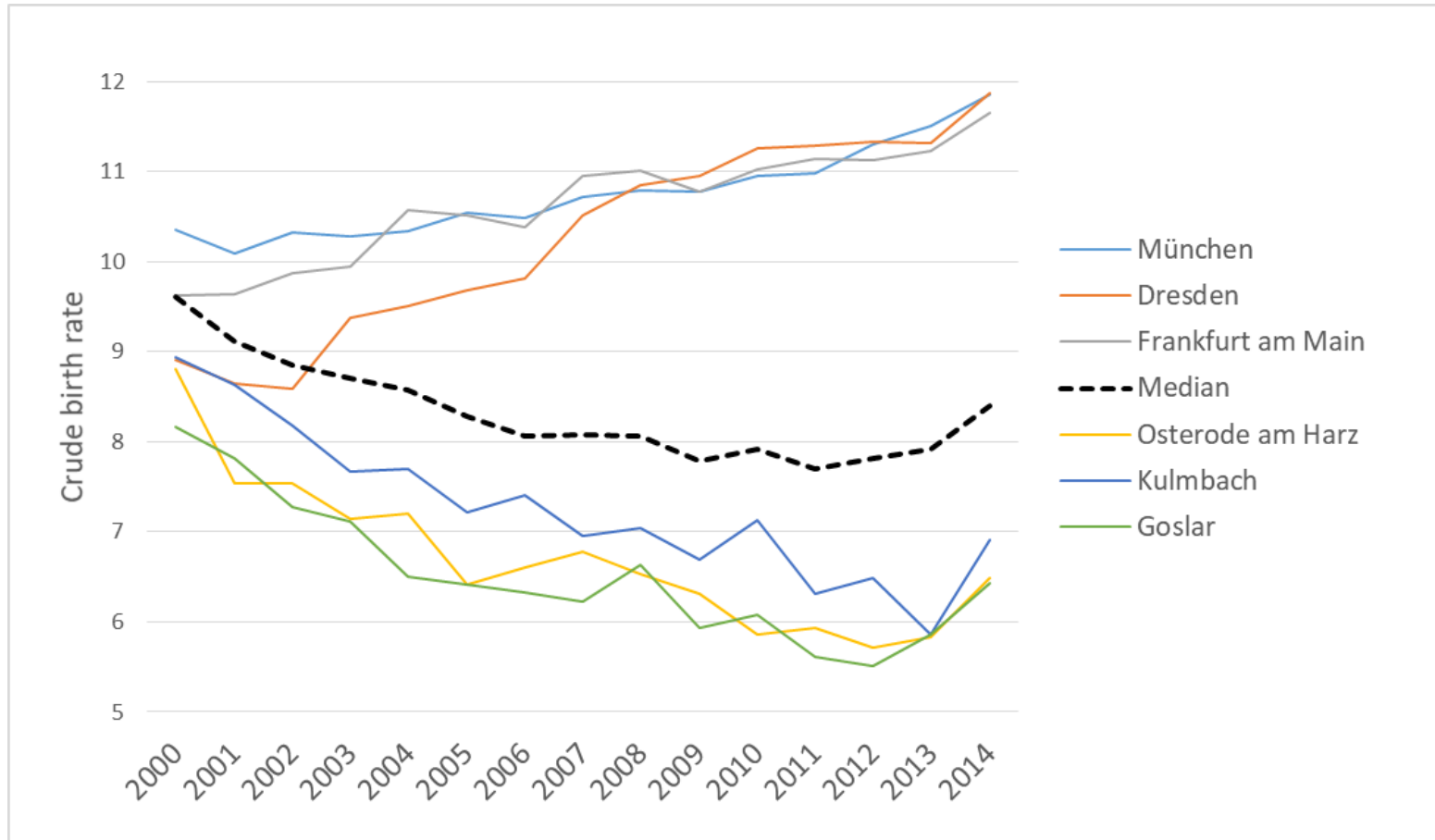
Part 2

Fertility turnaround

# German NUTS-3 Regions: Crude Birth Rate

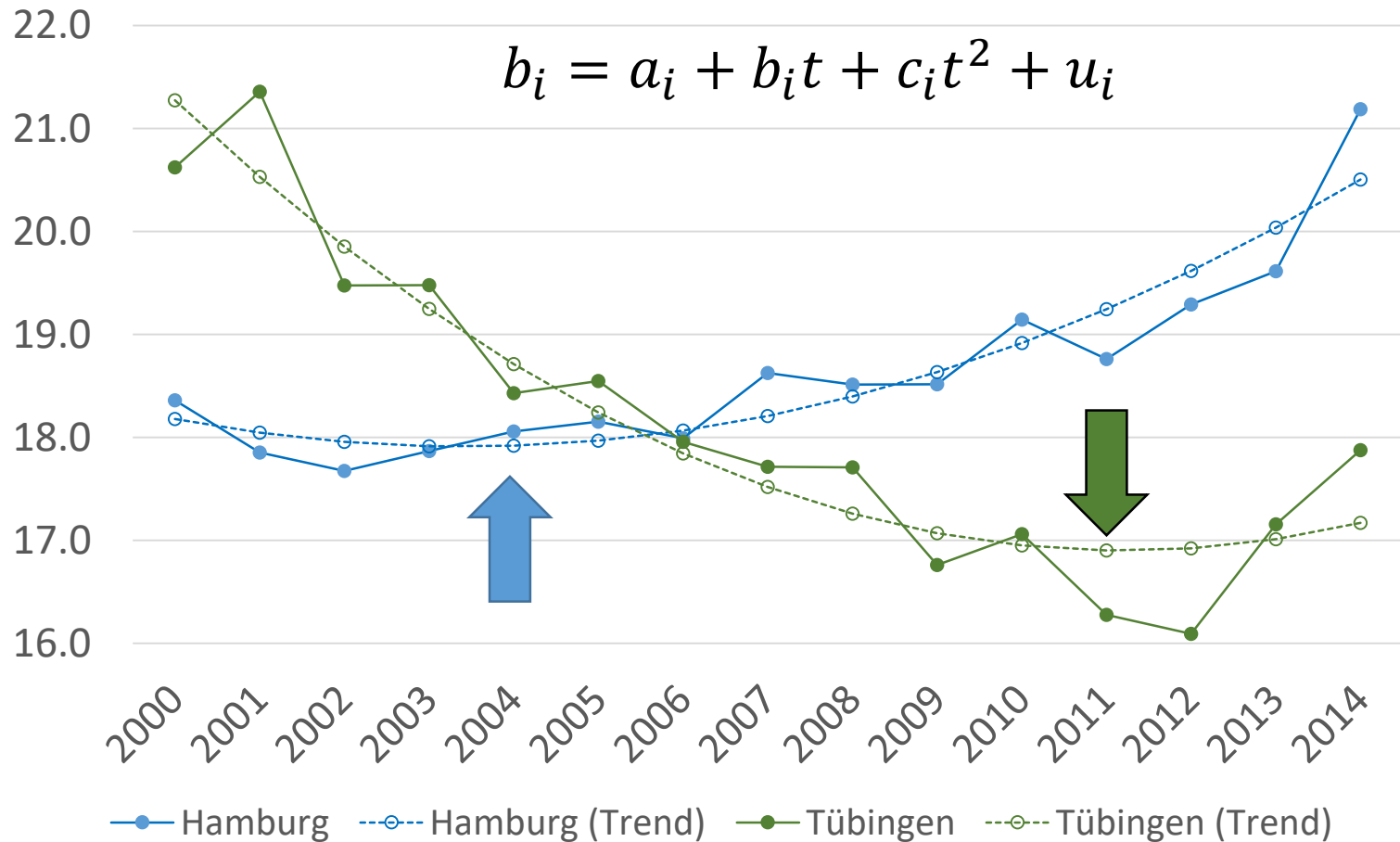


# Birth rate *Bundesliga* Top 3 vs. Bottom 3



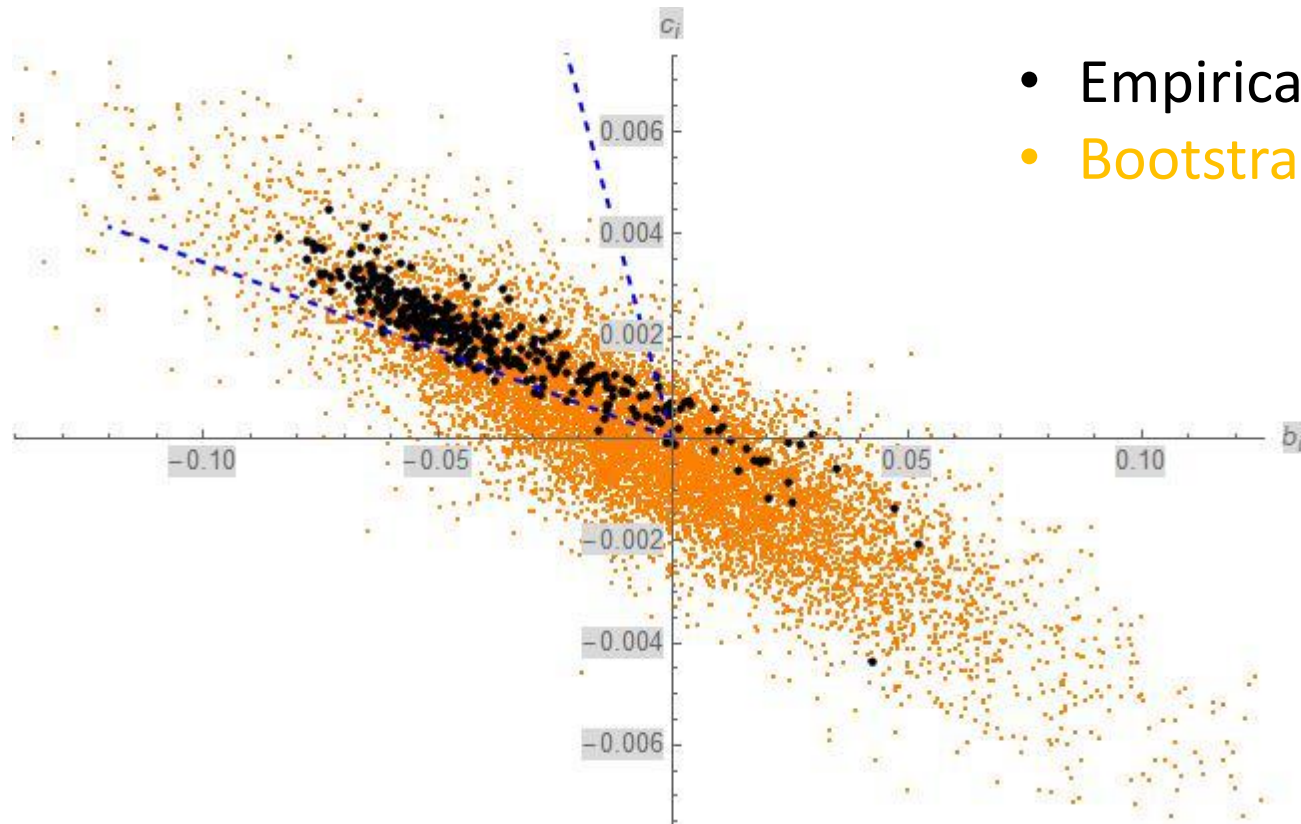
Source: Eurostat, May 2016, and own calculations.

# Birth Rates & Latent Growth Curves





# Birth Rates & Latent Growth Curves: Bootstrapping



- Empirical coefficients
- Bootstrap coefficients



# Did the reform in family policy cause the turnaround in birth rates?

- Traditionally: “*Kindergeld*” (child benefit), i.e. government subsidies per child
- Starting in 2007 (with a long debate before), German family policy underwent a paradigm change from the traditional family model to the support of working parents
- Components:
  - *Elterngeld* (parental benefit), i.e. government subsidies for parenting
  - Subsidies to regions for expanding daycare capacity
  - For each child, a legal right to a place in public daycare

# Budgetary impact of family policy

| Definition of family-related expenditure                       | Expenditure<br>in Bill. of € | Percent<br>of GDP |
|--|------------------------------|-------------------|
| All marriage and family-related expenditure (broad definition) | 200,3                        | 7,91 %            |
| of which: marriage-related expenditure (broad definition)      | 125,5                        | 4,96 %            |
| of which: family-related expenditure (broad definition)        | 74,8                         | 2,96 %            |
| Family-related expenditure w/o other social spending           | 86,3                         | 3,41 %            |
| Family-related expenditure (OECD, 2009)                        | 73,9                         | 3,07 %            |

Source: Bujard (2014), <http://www.bpb.de/politik/innenpolitik/familienpolitik/193715/familienpolitische-geldleistungen>

# Birth turn-around: Region profiles

TABLE 3. – Profiles of region group

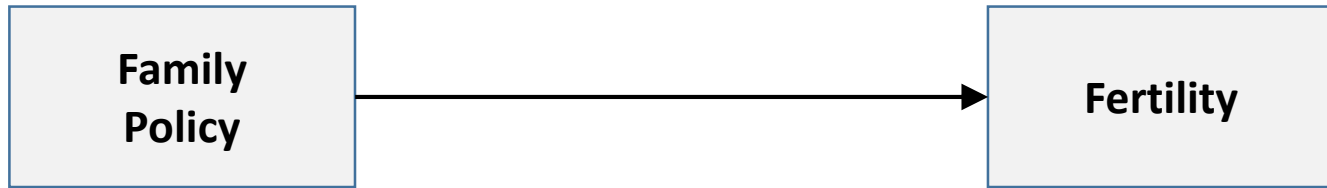
| #  | Indicator                                | All regions | Region groups characterized by: |                   |                                 |
|----|--|-------------|---------------------------------|-------------------|---------------------------------|
|    |  |             | A                               | B                 | C                               |
|    |  |             | Fertility growth                | Population growth | Women of reproductive age (ROC) |
| 1  | Fertility growth                         | 1,5%        | 2,3%                            | 1,2%              | 1,0%                            |
| 2  | Fertility (2008)                         | 1,394       | 1,368                           | 1,421             | 1,397                           |
| 3  | Population growth                        | 0,1%        | -0,3%                           | 0,6%              | 0,1%                            |
| 4  | Population density (2008)                | 529         | 269                             | 555               | 788                             |
| 5  | Women of reproductive age (2008)         | 22,8%       | 22,0%                           | 23,6%             | 22,8%                           |
| 6  | Women of reproductive age (ROC)          | -1,3%       | -1,8%                           | -1,1%             | -0,9%                           |
| 7  | Youth share (2008)                       | 15,5%       | 15,9%                           | 17,6%             | 13,5%                           |
| 8  | Youth share (ROC)                        | -13,2%      | -12,6%                          | -13,6%            | -13,4%                          |
| 9  | GDP p.c. (2008)                          | 29599       | 24732                           | 31403             | 33211                           |
| 10 | GDP p.c. (ROC)                           | 2,4%        | 2,6%                            | 2,3%              | 2,2%                            |
| 11 | Recession 2009                           | -4,4%       | -4,5%                           | -4,7%             | -3,9%                           |
| 12 | Unemployment rate (2008)                 | 7,0%        | 7,9%                            | 5,7%              | 7,4%                            |
| 13 | Unemployment rate (ROC)                  | -2,3%       | -3,3%                           | -1,8%             | -1,6%                           |
| 14 | Daycare places (2008)                    | 39,0        | 40,9                            | 40,8              | 35,3                            |
| 15 | Daycare places (ROC)                     | 1,4%        | 1,0%                            | 2,1%              | 1,2%                            |
| 16 | Mothers parental allowance (AVG)         | 662         | 644                             | 707               | 638                             |
| 17 | Working mothers parental allowance (AVG) | 846         | 809                             | 892               | 844                             |
| 18 | Opportunity cost (AVG)                   | 63,9%       | 60,6%                           | 63,9%             | 67,4%                           |
| 19 | Fathers parental leave (2008)            | 20,2%       | 20,2%                           | 22,6%             | 18,0%                           |
| 20 | Fathers parental leave (ROC)             | 9,7%        | 10,0%                           | 9,2%              | 9,9%                            |
| 21 | Working mothers parental leave (2008)    | 55,9%       | 57,2%                           | 58,9%             | 51,6%                           |
| 22 | Working mothers parental leave (ROC)     | 3,9%        | 3,9%                            | 3,5%              | 4,2%                            |
|    | Region group counts                      | 430         | 141                             | 125               | 164                             |

## Source:

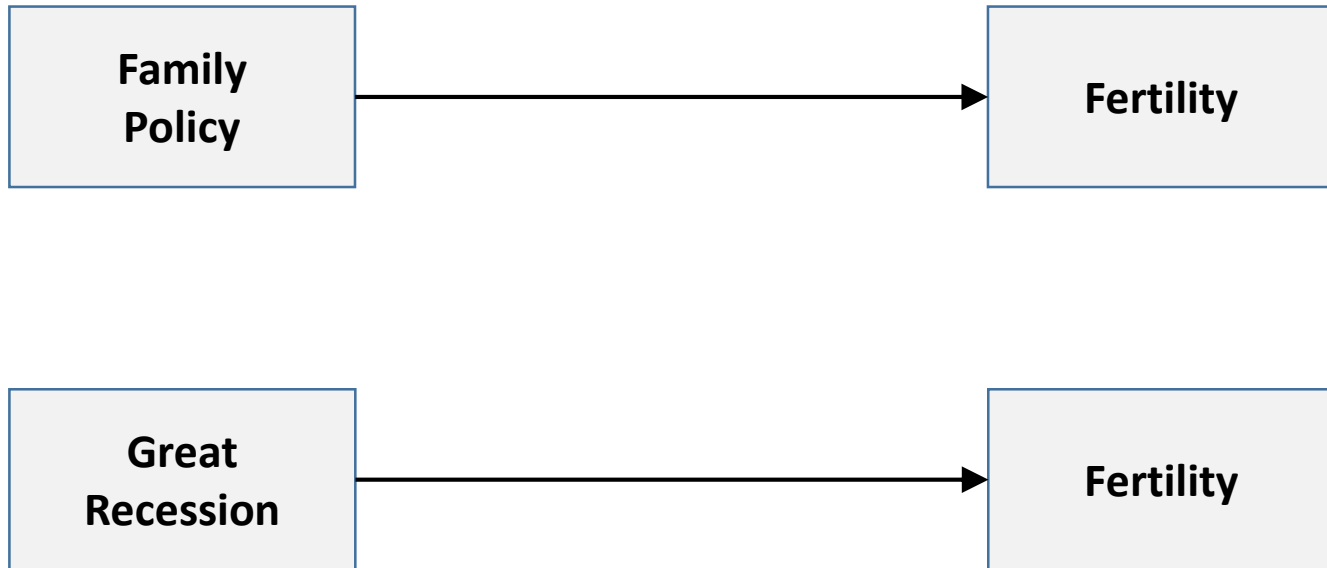
Klein e.a., Reversing Fertility  
Decline: Profiling German  
Regions, RISS 2018

Source: Destatis and own calculations. For indicator descriptions, cf. Table 1. Note that rates of change and ratios are given in percent notation.

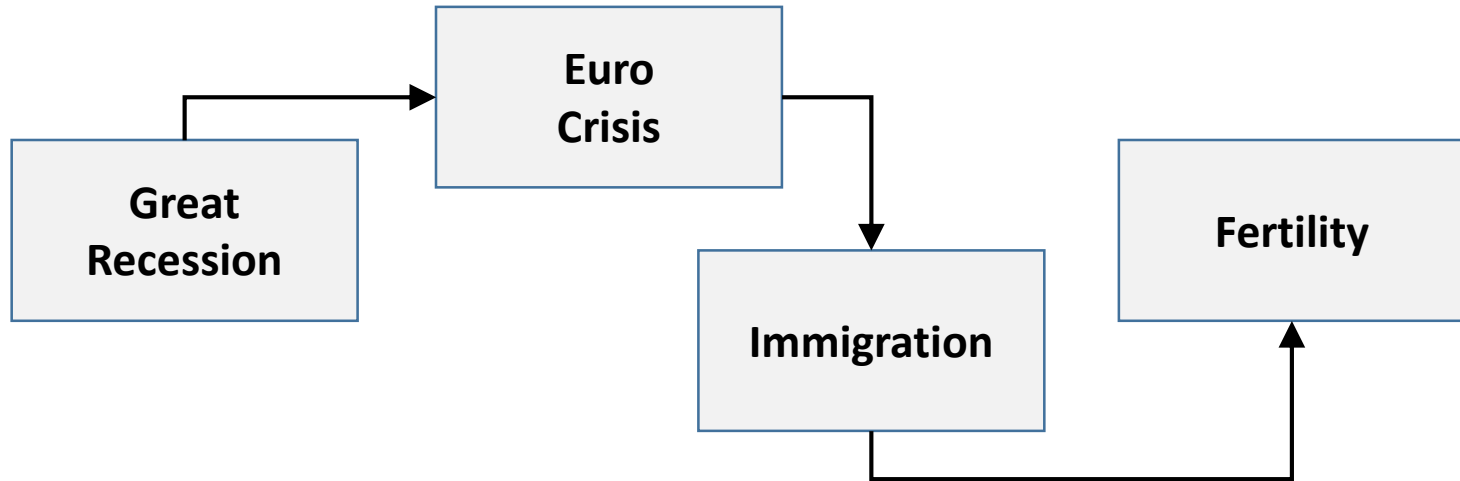
# Causality 1



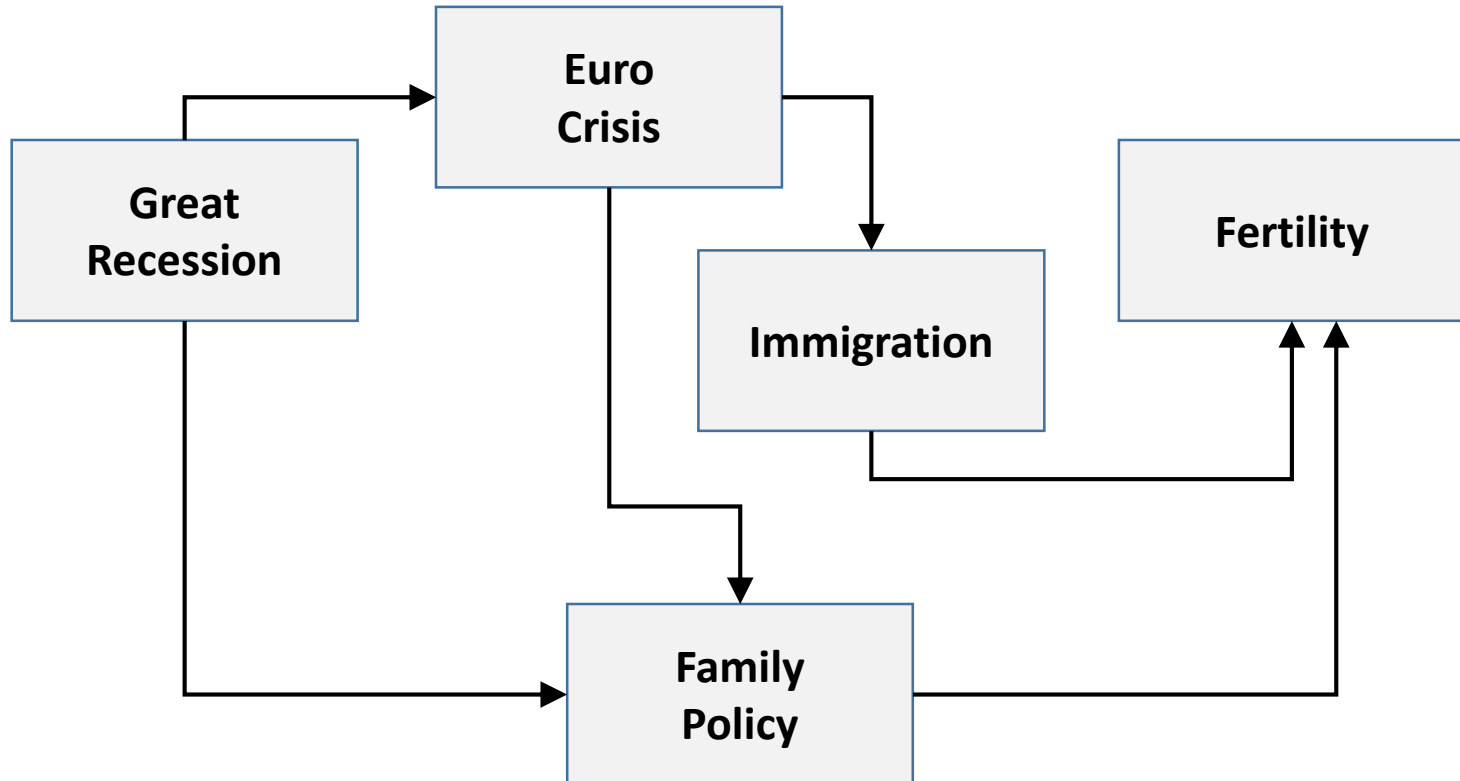
# Causality 2



# Causality 3



# Causality 4



Part 3

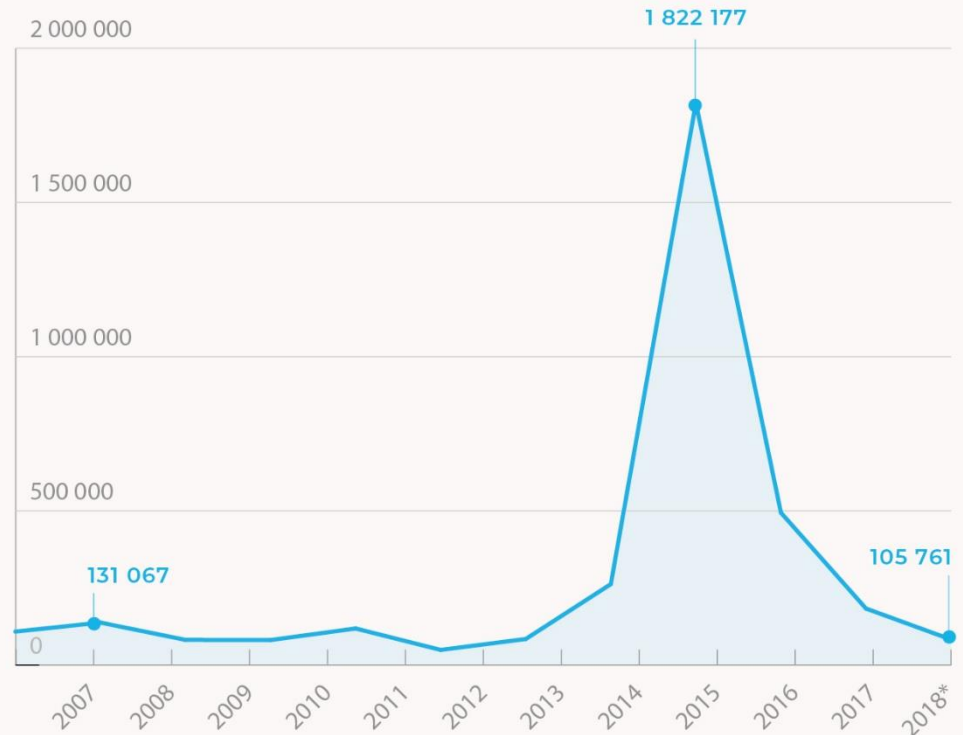
Immigration



# European Refugee crisis in 2015

## Irregular arrivals to the EU, 2007-2018

NUMBER OF ILLEGAL BORDER CROSSINGS IN THE EU



Source : Frontex  
\*Period: Jan-Sept 2018.



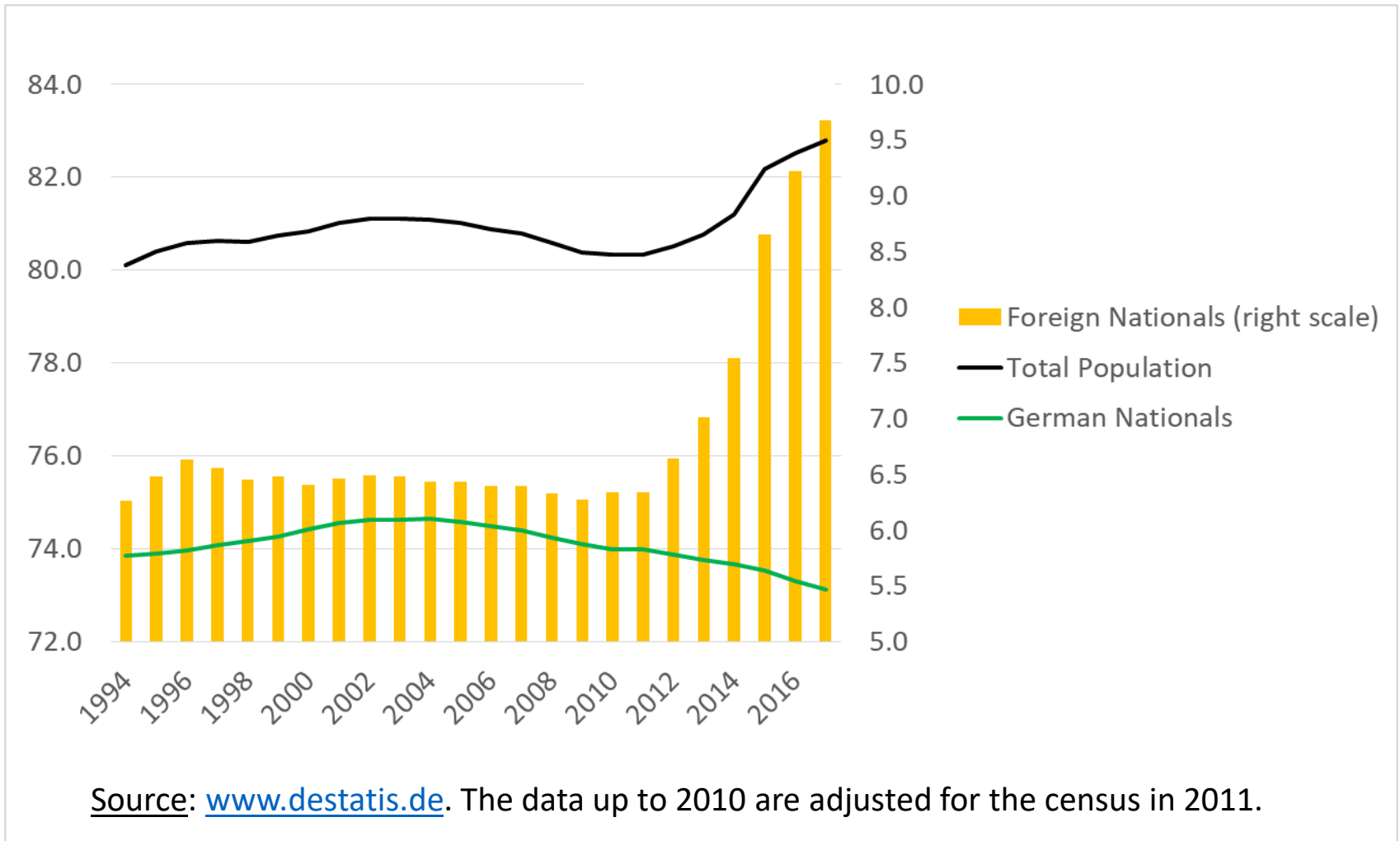
Council of the European Union  
General Secretariat

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Source: <https://www.consilium.europa.eu/en/infographics/irregular-arrivals-since-2007/>

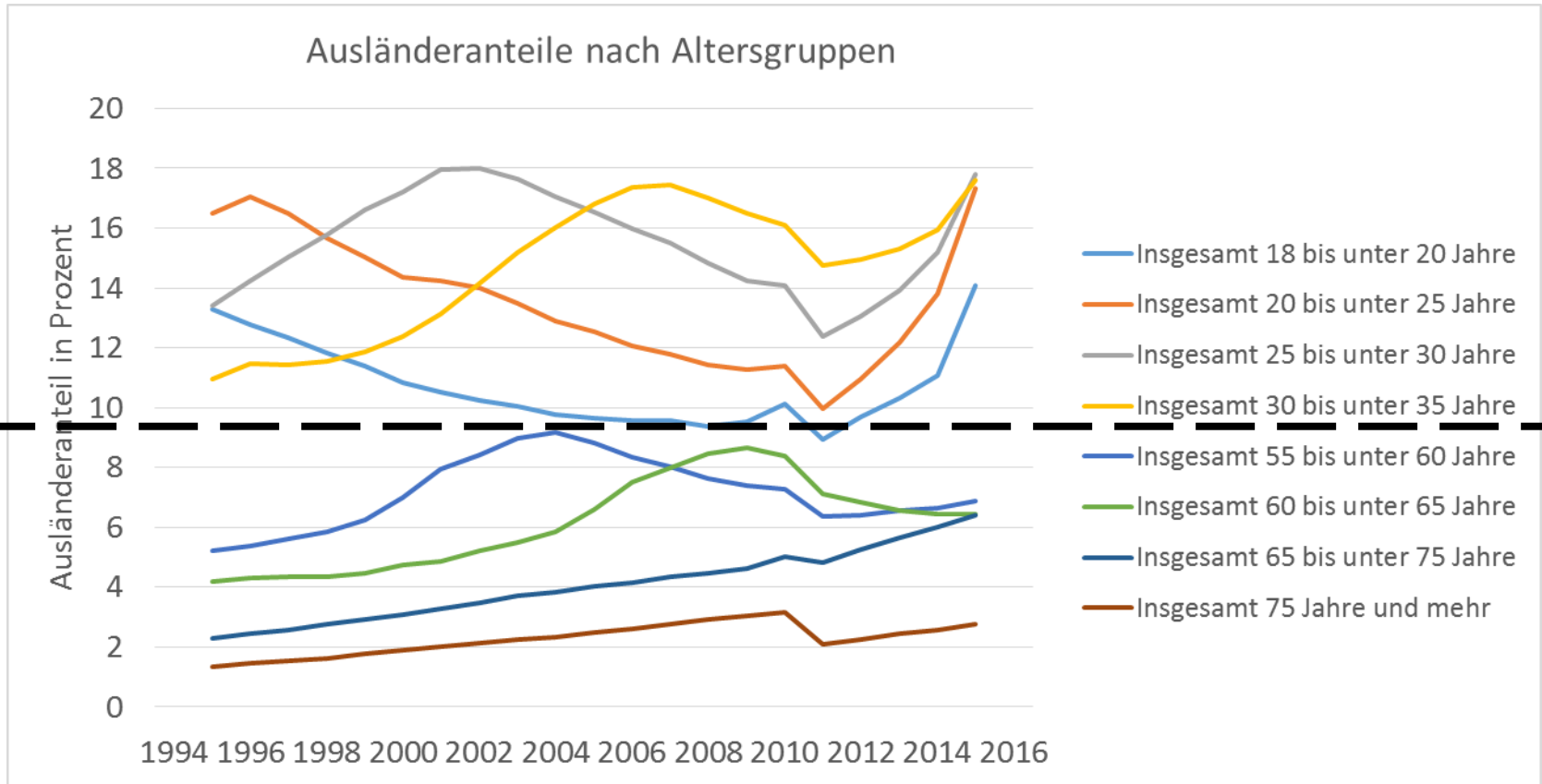
# German Population

## 1994 – 2017



# Share of Non-Germans

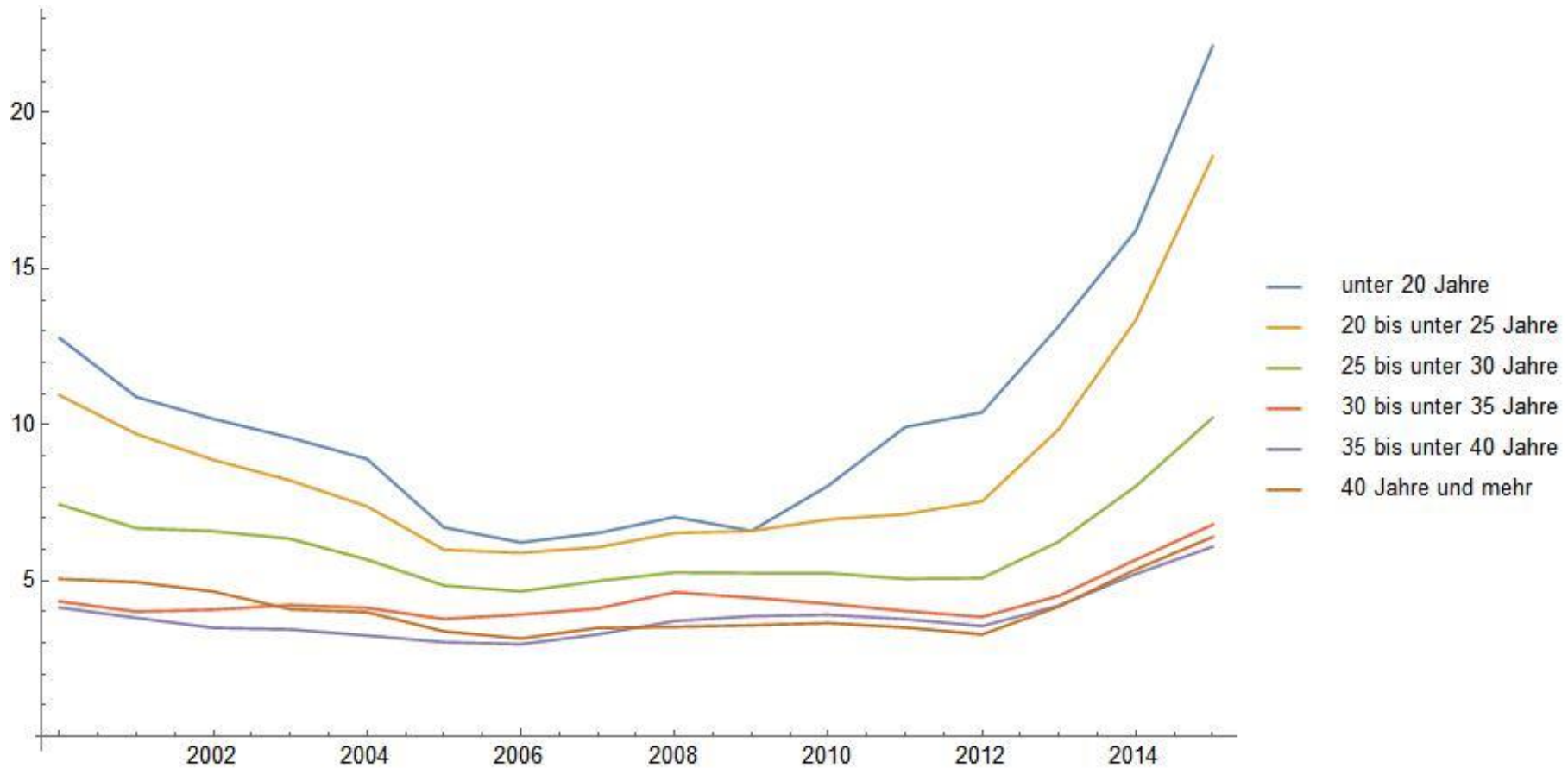
## By age groups



Source: [www.regionalstatistik.de](http://www.regionalstatistik.de)

# Births to Non-German Mothers

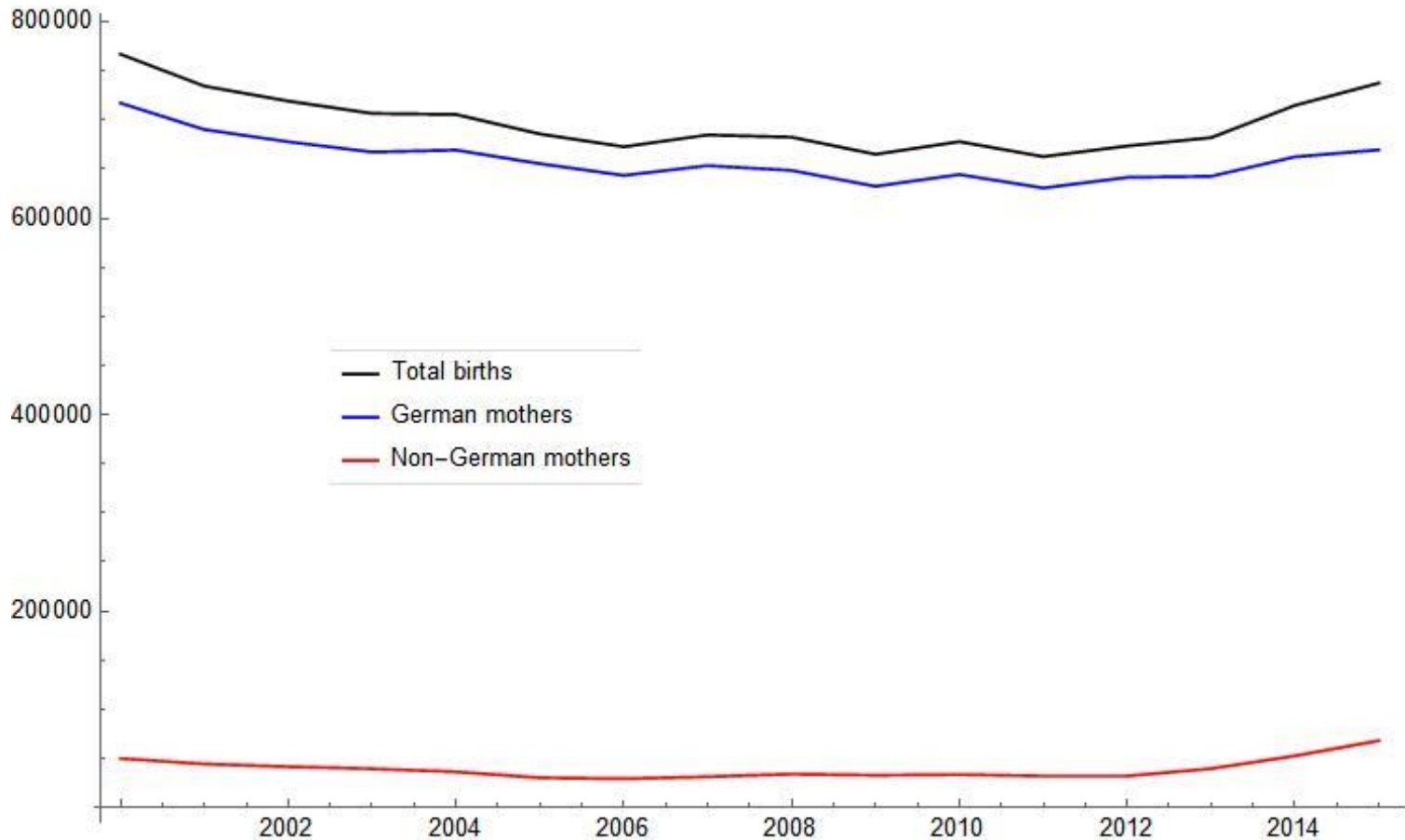
## Percent shares in total births per age group



Source: [www.regionalstatistik.de](http://www.regionalstatistik.de), and own calculations

# Live Births

## By subgroups



Source: [www.regionalstatistik.de](http://www.regionalstatistik.de)

Part 4

Resilience

# Resilience – what is it?

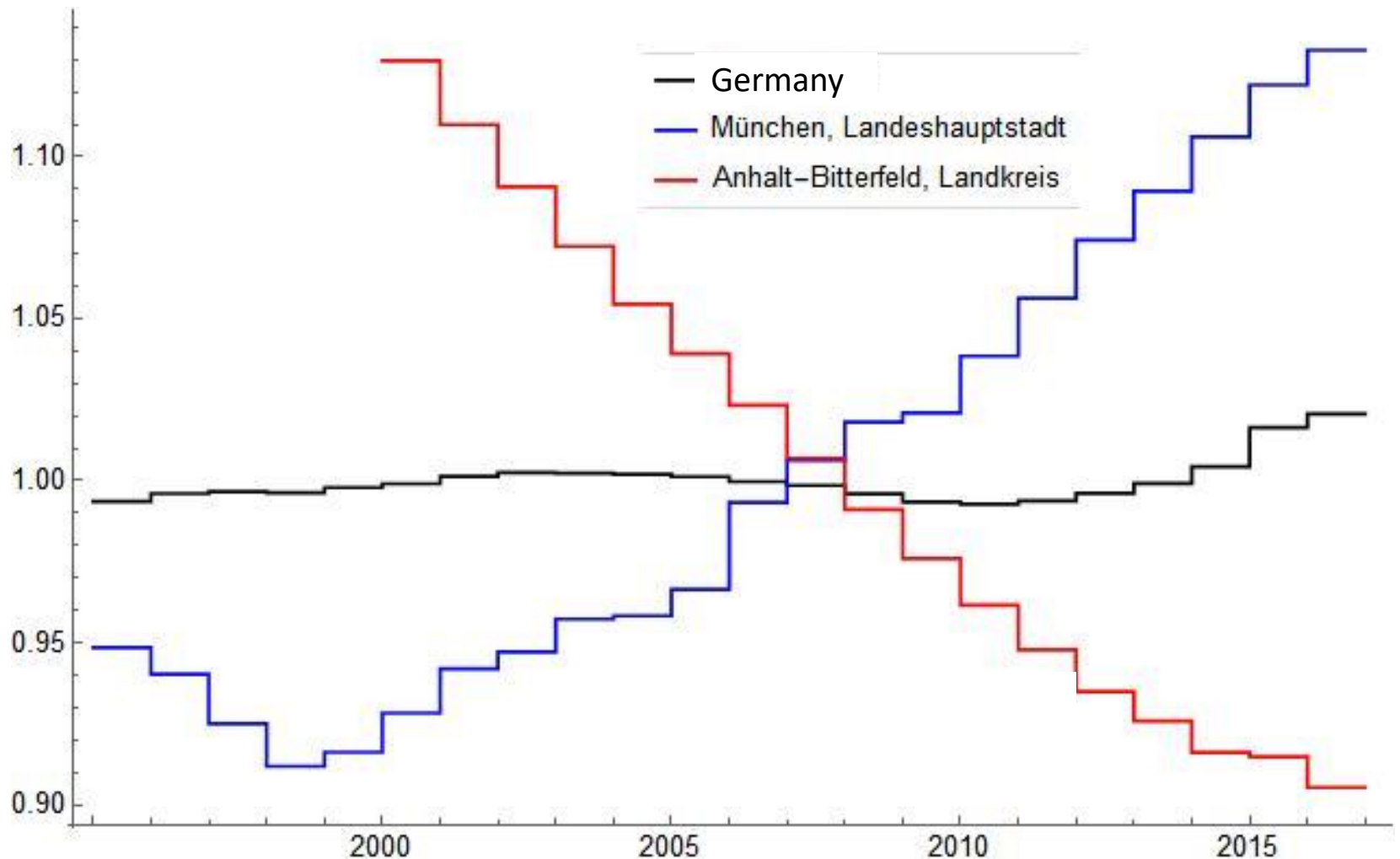
- Resilience is the ability to recover from crises or shocks
- German and European regions experienced many crises and shocks
- Example Germany since unification:
  - Unification (a negative shock for East Germany)
  - Three recessions
  - Refugee crises
  - And regional crises, e.g. collapse of photovoltaic industry in Bitterfeld, or the local impact of the refugee crisis

# Example 1: Fertility in Bitterfeld



# Population Indices

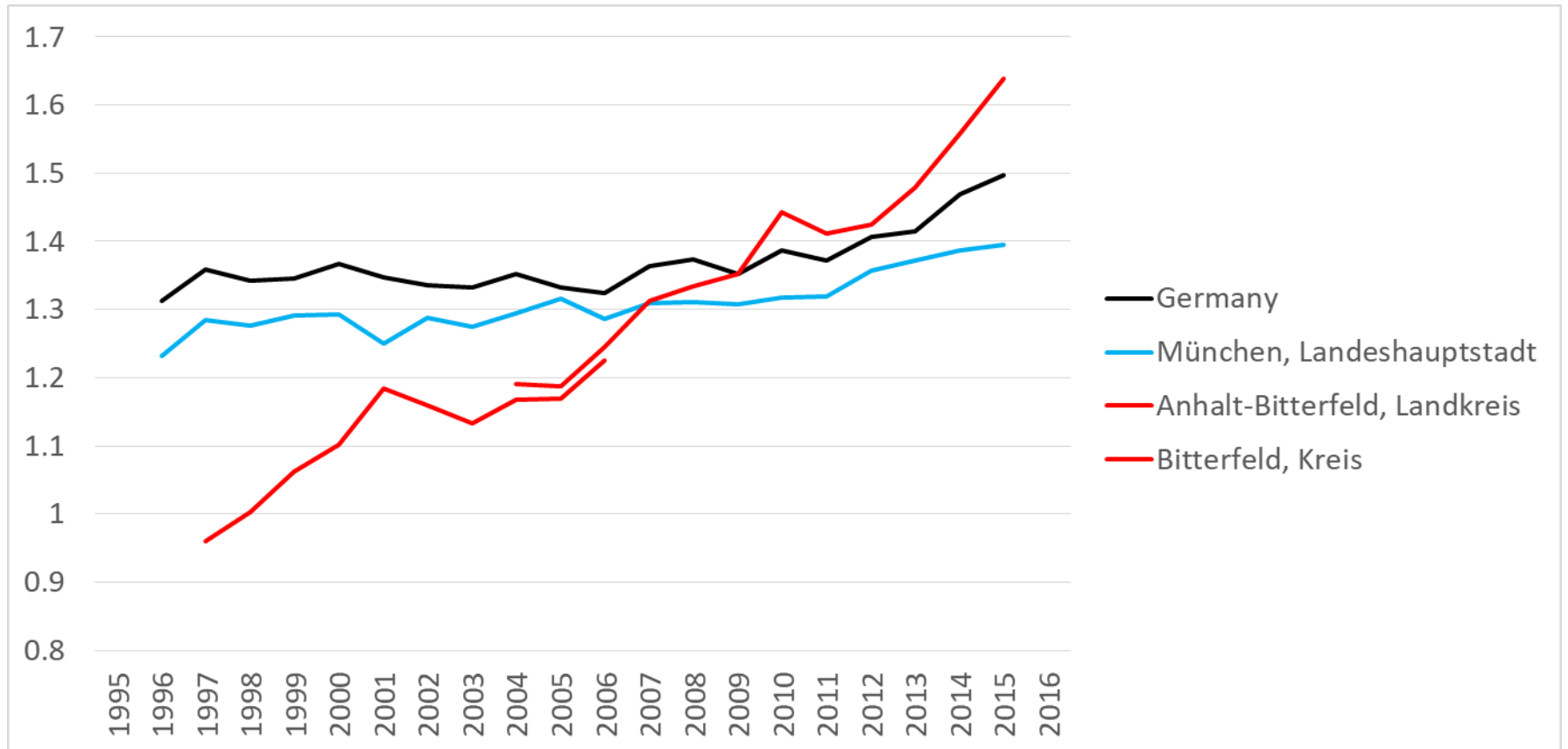
## German total and selected regions



Source: [www.regionalstatistik.de](http://www.regionalstatistik.de), and own calculations

# Resilience in Bitterfeld

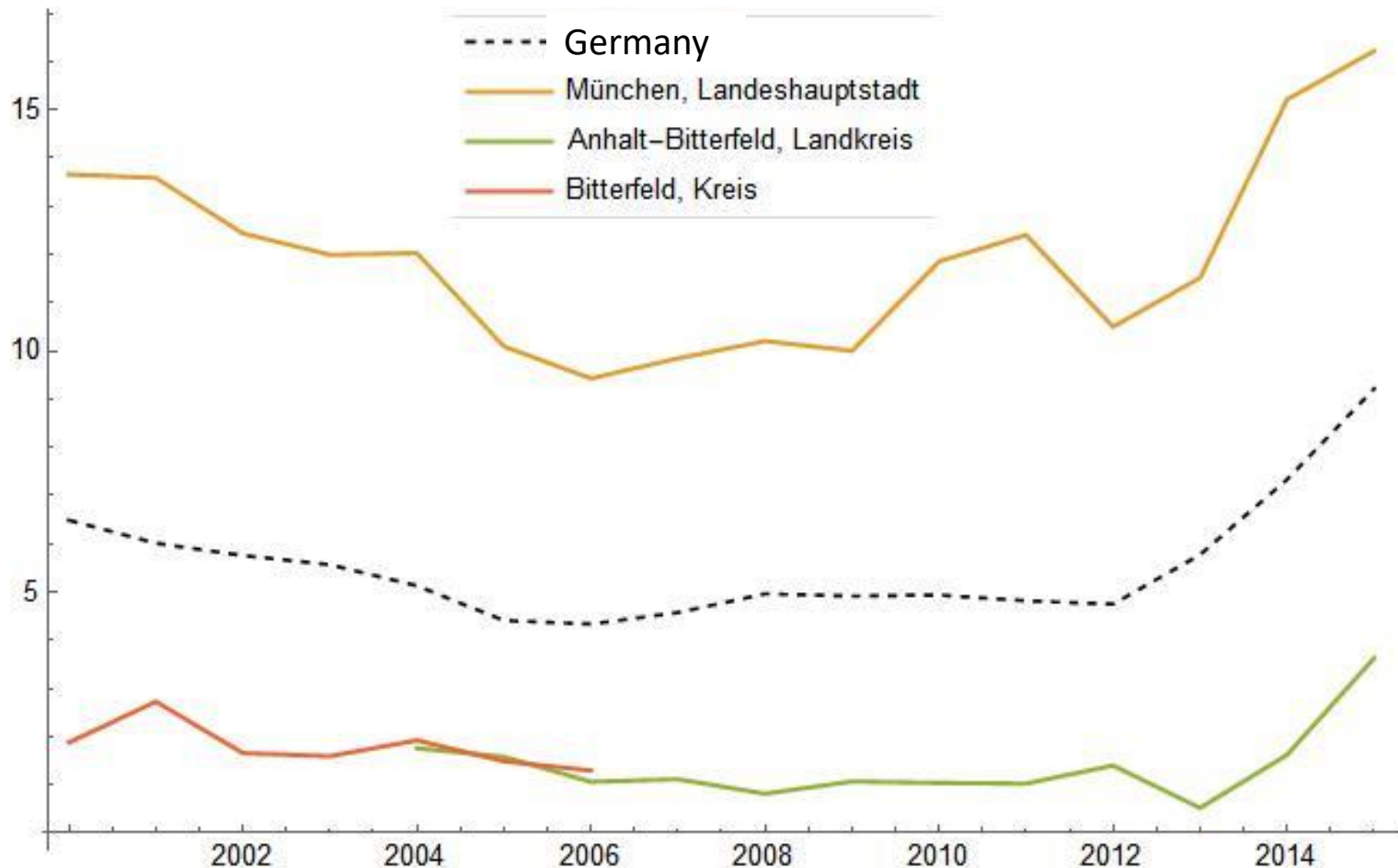
Birth rate (per woman)



Source: [www.regionalstatistik.de](http://www.regionalstatistik.de), and own calculations

# Non-German population shares

## Bitterfeld, Germany and Munich



Source: [www.regionalstatistik.de](http://www.regionalstatistik.de), and own calculations

## Example 2: Sex ratios in Chemnitz



GERMANIA, PROTESTA DI ESTREMA DESTRA A CHEMNITZ (AP PHOTO)

SLIDESHOW ▶

FOTO 1 DI 10



## A Chemnitz è caccia allo straniero, migliaia di neonazisti in piazza

Manifestanti inferociti in Sassonia dopo l'uccisione di un tedesco durante una lite con un iracheno e un siriano. E' allarme xenofobia. Merkel: "Quello che abbiamo visto a Chemnitz non ha posto in uno stato di diritto"

# The New York Times on East Germany

## *One Legacy of Merkel? Angry East German Men Fueling the Far Right*

...

“There is a gender element to the rise of the far right that is not sufficiently acknowledged and studied,” Mr. Klingholz said.

Only 16 percent of the Alternative for Germany’s registered members are women. And only 9 percent of female voters cast their ballot for the party last year, compared with 16 percent of male voters.

The far right is disproportionately male. And so is eastern Germany.

There are on average nine women for every 10 men between the ages of 20 to 40 in the former East, statistics from 2015 show. But that average disguises a surplus of women in big cities — and a much starker shortage in smaller towns and rural areas.

... **Source:** New York Times, 5 November 2018,  
<https://www.nytimes.com/2018/11/05/world/europe/merkel-east-germany-nationalists-populism.html>

# The New York Times on Chemnitz

## *Chemnitz Protests Show New Strength of Germany's Far Right*

 | How the Far Right Is Shaking Germany's Political Order  
By Cora Engelbrecht, Brian Dawson, Ben Laffin and Katrin Bennhold

  | 

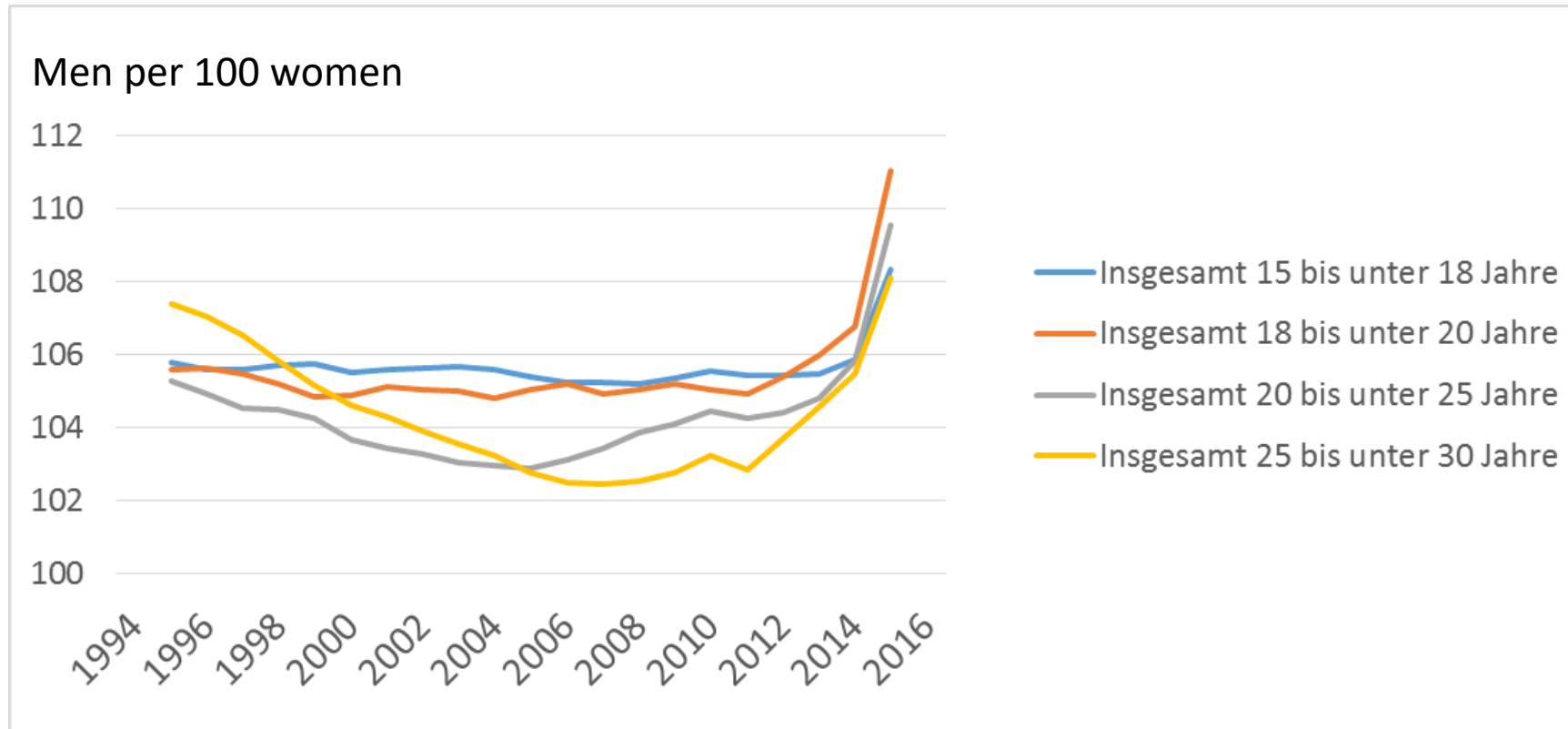
**WIR SIND DAS VOLK!**

What should we do with foreigners?

 0:00  6:50    

# Sex ratios in younger age groups

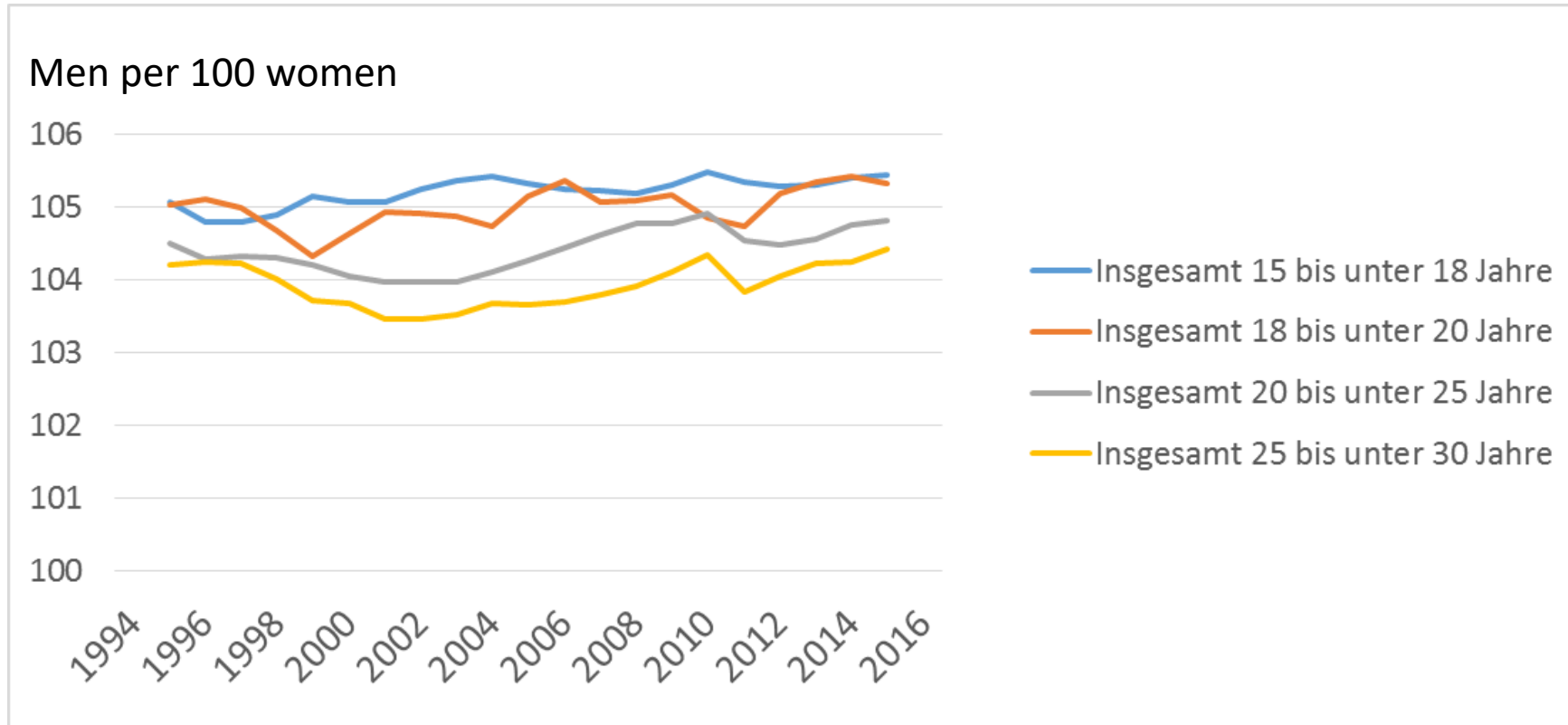
## Total population



Source: [www.regionalstatistik.de](http://www.regionalstatistik.de) and  
own calculations



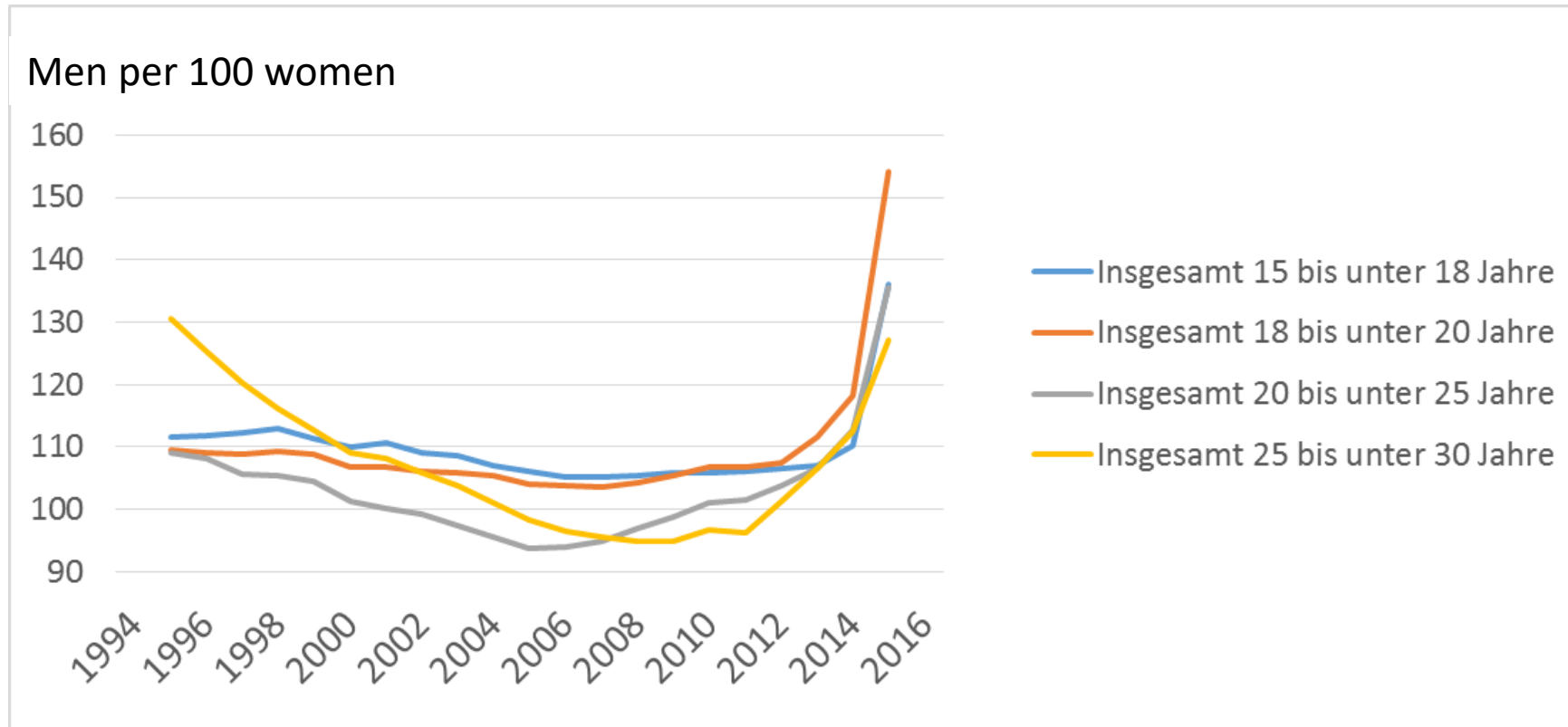
# Sex ratios in younger age groups German population



Source: [www.regionalstatistik.de](http://www.regionalstatistik.de) and  
own calculations

# Sex ratios in younger age groups

## Non-German population

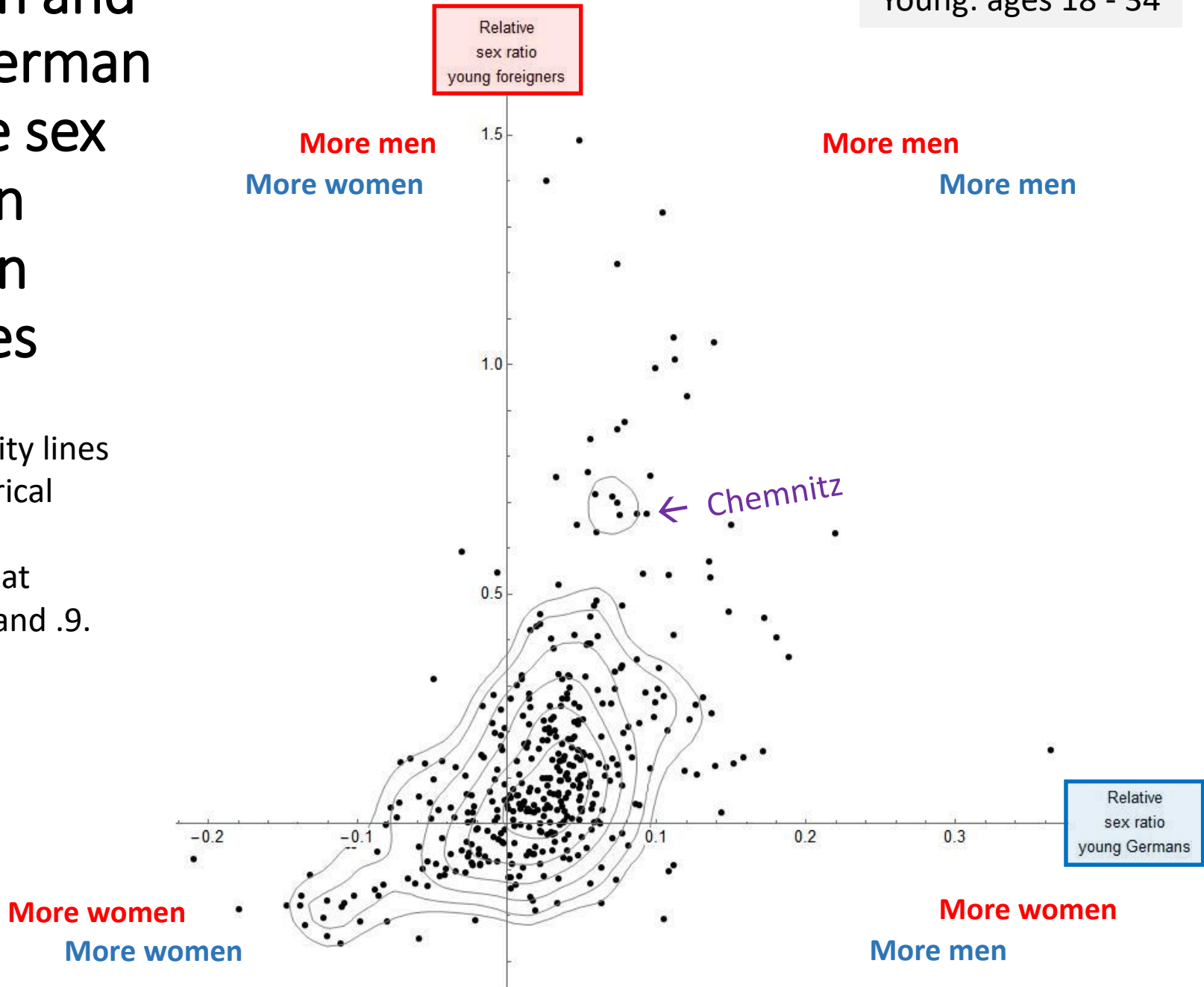


Source: [www.regionalstatistik.de](http://www.regionalstatistik.de) and  
own calculations

# German and Non-German relative sex ratios in German counties

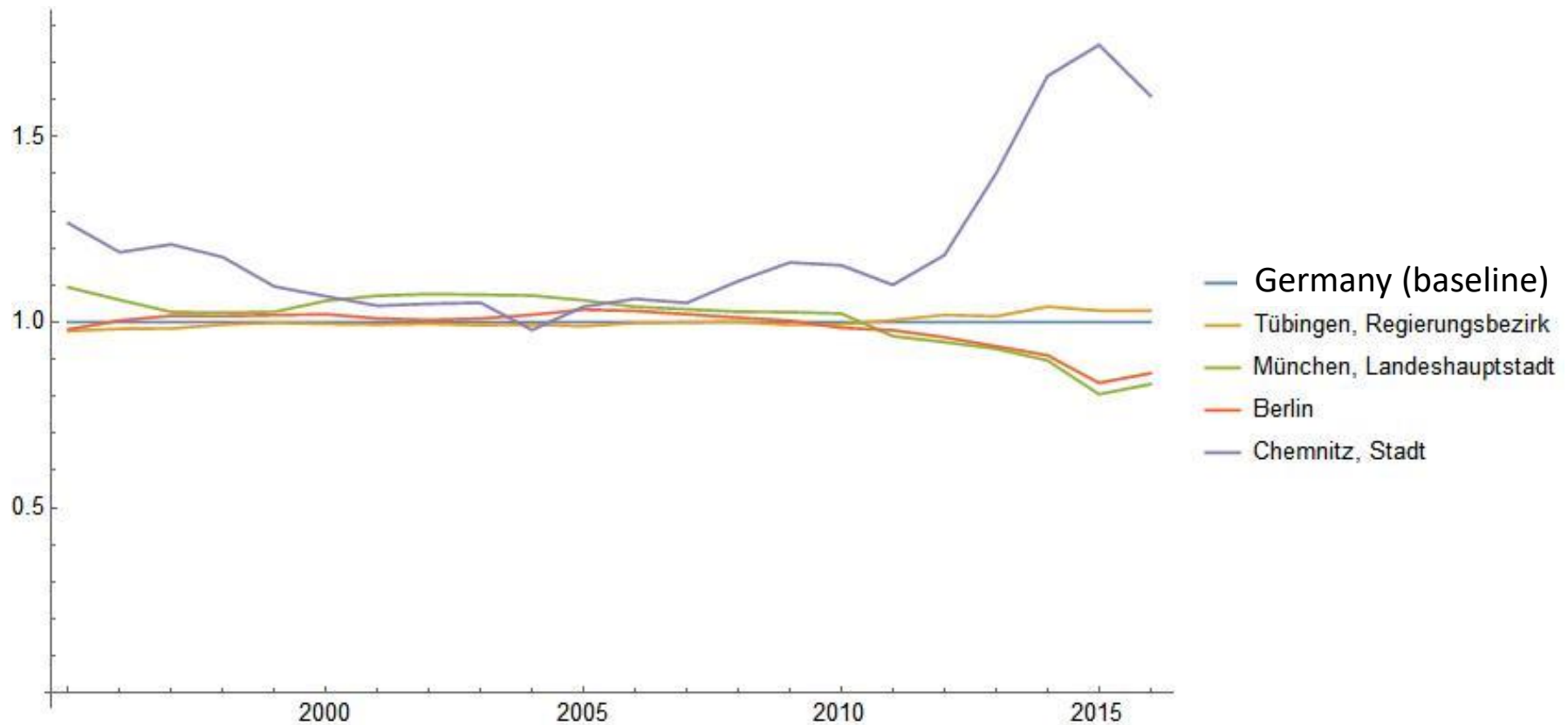
Young: ages 18 - 34

Iso-probability lines of the empirical frequency distribution at .5, .6, .7, .8 and .9.



# Relative sex ratios for young foreigners

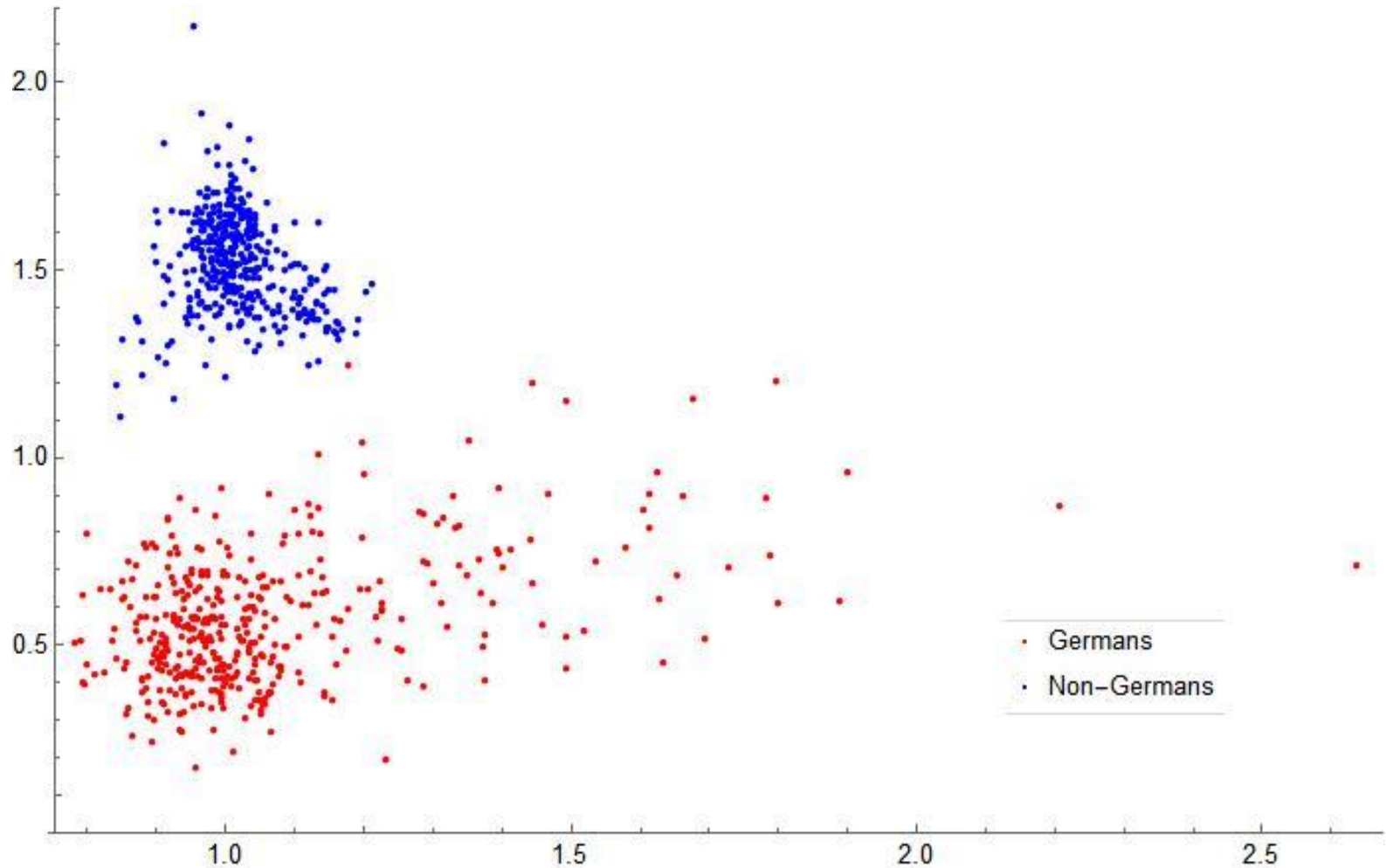
## Selected German regions



Source: [www.regionalstatistik.de](http://www.regionalstatistik.de), and own calculations

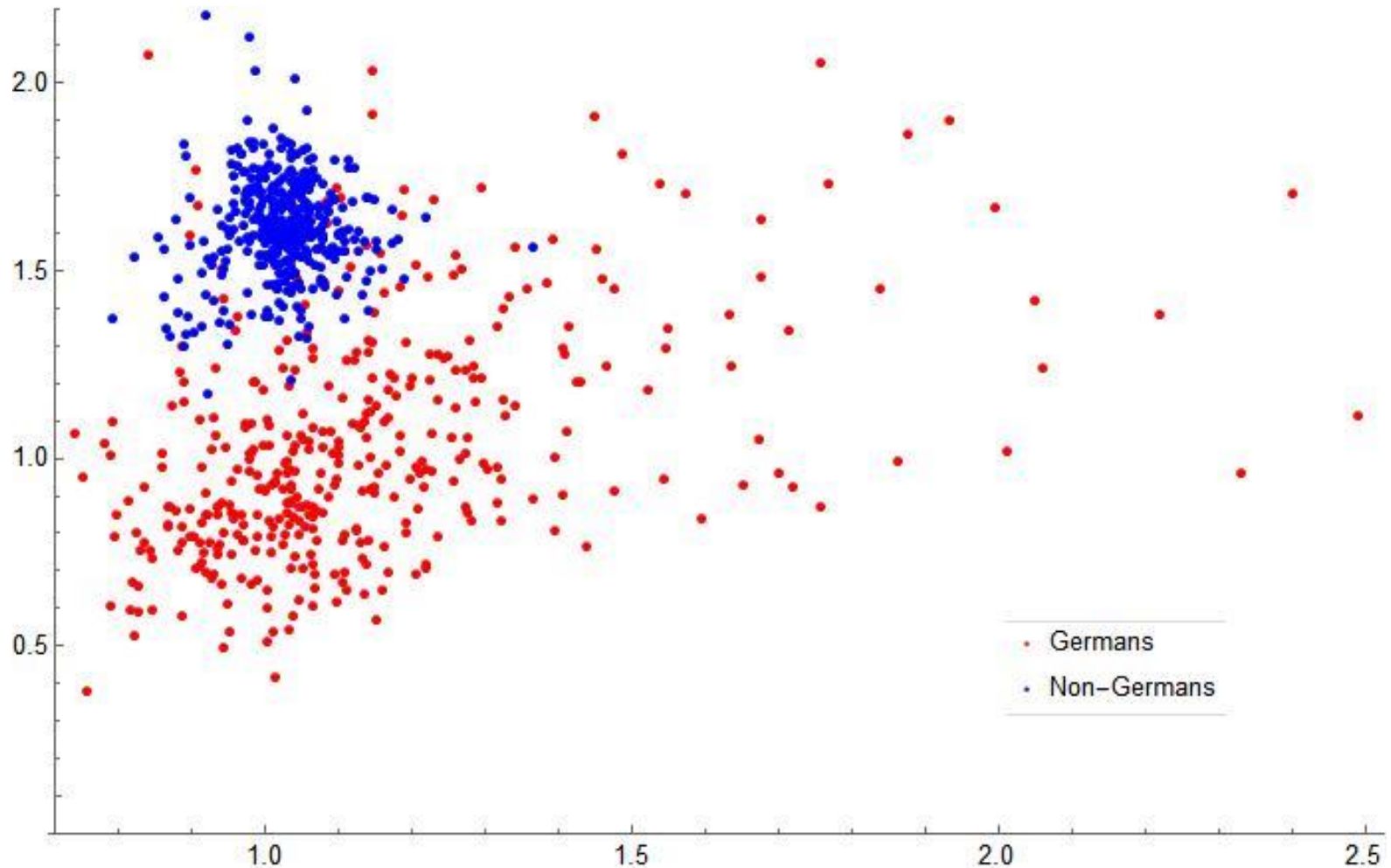
# Relative sex ratios and fertility

Pre refugee crisis: 2000 - 2013



# Relative sex ratios and fertility

Refugee crisis: 2014 onward



# The need for regional resilience

- Germany's next crisis can be termed the integration crisis. It has already begun.
- The integration crisis arises not from immigrants unwilling to integrate ...
- ... but it is driven by immigrants who are seeking a better life and therefore pushing to integrate themselves into all aspects of everyday life: starting families, having children, demanding access to daycare, schools, higher education ...
- ... resulting in increasing competition for public services
- The integration crisis will be played out in the regions ...
- ... before a background of a deteriorating economic outlook

Thank you for your attention!