The effect of fiscal consolidation on economic growth: Evidence from quantitative case studies

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Motivation

- **Ongoing 'austerity' debate in Europe on timing and strength of fiscal consolidation**

- **Discrepancy in public discussion**
  - Budgetary problems point towards need for consolidation
  - Economic recession fosters implementation of economic growth enhancing (or preserving) policies

- **Research questions**
  - How does fiscal consolidation affect long term growth?
  - Which way of consolidation should be preferred?
    - Expenditure cuts vs. revenue increases
    - Cuts in different types of expenditure

Motivation

- **Econometric challenges loom large**
  - Unclear definition of fiscal consolidation
  - Endogeneity problems in standard regressions
    - Timing of consolidation → reverse causality
    - Unclear counterfactual situation

- **Contribution to the literature**
  - Application of new dataset on fiscal consolidation periods
    - Only 'real' consolidations are included
    - Investigation of policymakers' intentions to consolidate
  - Application of new method
    - Synthetic control method (SCM)
    - Link between qualitative and quantitative case studies

Synthetic control method

- **Links qualitative and quantitative case studies**

- **Comparison of economic growth after treatment in a**
  - treated country (i.e., consolidating country) with the
  - counterfactual situation, i.e., same country without treatment

- **Synthetic control unit as a weighted combination of**
  - Countries from a donor pool
  - Predictor variables

  → Weights are chosen to match the pre-treatment behavior of the synthetic unit to the treated unit as good as possible

Definition of fiscal consolidations

- **Literature distinguishes between**
  - Quantitative approach
  - Qualitative approach

- **Quantitative approach**
  - Arbitrary definitions based on improvements of cyclically adjusted primary balance (CAPB)
  - For instance defined
    - "as a year in which the CAPB improves by at least 1.5% of GDP" (Alesina & Ardagna 2010, p.8)
    - "a two year period in which the cyclically adjusted primary balance/GDP improves in each year and the cumulative improvement is at least two points of the balance/GDP ratio" (Alesina & Ardagna 2013, p. 5f)

Definition of fiscal consolidations

- **Qualitative (narrative) approach**
  - Historical approach
  - Investigation of policymakers' intentions and actions to identify measures motivated primarily by deficit reduction
  - Examination of policy documents
    - Budget reports
    - Budget speeches
    - IMF reports
    - Stability programs

- **New data by Devries et al. 2011**
  - Information on 173 consolidation episodes
  - 17 OECD countries
  - 1978–2009 period

Definition of fiscal consolidations

- **All policy actions aimed at deficit reduction are recorded**
  - Policy measures must be implemented!
  - Inclusion of periods if policy was implemented but offset by cyclical fluctuation
  - Exclusion of periods if
    - Consolidation policy is offset by other policy measures not primarily aimed at deficit reduction (e.g., measures to reduce risk of overheating of the economy)
    - Policy actions were announced but not implemented

Comparison of consolidation episodes

Selection of case studies

- **We need**
  - Treated country with sufficient pre- and post-treatment period
  - Adequate donor pool (countries without consolidation)

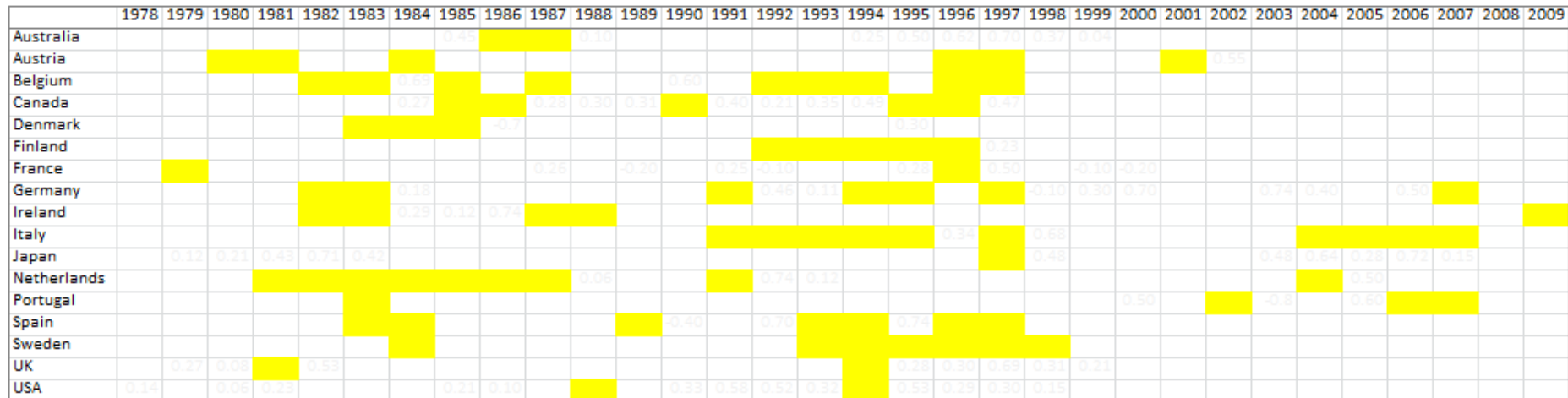|	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Australia								0.45	1.02	0.90	0.10							0.25	0.50	0.62	0.70	0.37	0.04									
Austria			0.80	1.56		2.04														2.41	1.56				1.02	0.55						
Belgium					1.66	1.79	0.69	1.61		2.80			0.60		1.79	0.92	1.15			1.00	0.91											
Canada							0.27	1.03	0.99	0.28	0.30	0.31	0.86	0.40	0.21	0.35	0.49	0.99	0.97	0.47												
Denmark						2.77	2.38	1.54	-0.7									0.30														
Finland															0.91	3.71	3.46	1.65	1.47	0.23												
France		0.85								0.26			-0.20	0.25	-0.10		0.28	1.33	0.50			-0.10	-0.20									
Germany					1.18	0.87	0.18							1.11	0.46	0.11	0.91	1.08		1.60	-0.10	0.30	0.70				0.74	0.40		0.50	0.90	
Ireland					2.80	2.50	0.29	0.12	0.74	1.65	1.95																					4.74
Italy														2.77	3.50	4.49	1.43	4.20	0.34	1.82	0.68						1.30	1.00	1.39	1.03		
Japan		0.12	0.21	0.43	0.71	0.42														1.43	0.48					0.48	0.64	0.28	0.72	0.15		
Netherlands				1.75	1.71	3.24	1.76	1.24	1.74	1.48	0.06			0.87	0.74	0.12											1.70	0.50				
Portugal					2.30																		0.50		1.60	-0.8		0.60	1.65	1.40		
Spain					1.90	1.12						1.22	-0.40		0.70	1.10	1.60	0.74	1.30	1.20												
Sweden						0.90									1.81	0.78	3.50	2.00	1.50	1.00												
UK			0.27	0.08	1.58	0.53												0.83	0.28	0.30	0.69	0.31	0.21									
USA	0.14		0.06	0.23				0.21	0.10		0.85		0.33	0.58	0.52	0.32	0.90	0.53	0.29	0.30	0.15											

Selection of case studies

- **Adjustment of consolidation information necessary**
  - Exclusion of rather "small" consolidation periods
  - Drop bottom 50% of the distribution (median = 0.74% GDP)

Selection of case studies

- **Adjusted consolidation episodes**

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
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Austria																									0.55							
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Finland																			0.23													
France		0.10								0.26		-0.20		0.25	-0.10			0.28		0.50		-0.10	-0.20									
Germany						0.18								0.46	0.11						-0.10	0.30	0.70			0.74	0.40		0.50			
Ireland						0.29	0.12	0.74																								
Italy																		0.34		0.68											
Japan		0.12	0.21	0.43	0.71	0.42													0.48					0.46	0.64	0.28	0.72	0.15				
Netherlands										0.06					0.74	0.12											0.50					
Portugal															0.70						0.50			-0.2		0.60						
Spain												0.40					0.74															
Sweden																																
UK		0.27	0.08		0.53										0.28	0.30	0.69	0.31	0.21													
USA	0.14		0.06	0.23				0.21	0.10				0.33	0.58	0.52	0.32		0.53	0.29	0.30	0.15											

- **Selected case studies**
  - Japan 1997
  - Portugal 1983
  - Spain 1989/1983
  - USA 1988

Selection of case studies

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Stylized facts

- **Portugal 1983**
  - Following 1979 oil shock "made it necessary to revert a more restrictive stance"
  - Economic program assisted by IMF
  - Fiscal consolidation totaled 2.3% GDP
    - Spending cuts 0.95% GDP (current spending 0.63%)
    - Tax hikes 1.35% GDP

- **Spain 1989**
  - Followed medium-term strategy to eliminate overall deficit
  - Fiscal consolidation totaled 1.22% GDP
   - Spending cuts 0.24% GDP
    - Tax hikes 0.98% GDP (VAT 0.2%, income/property tax 0.5%)

Procedure

- **Construction of synthetic control unit as weighted combination of**
  - Donor pool countries and
  - Predictor variables
    - Inflation (%)
    - Unemployment (% of civilian labor force)
    - Employment in industry (% of civilian labor force)
    - Life experience (years)
    - School enrollment in primary school
    - Working age fraction (% of total labor force)

- **Explanatory variables**
  - Three year rolling mean of real GDP growth per capita
  - Accumulated real GDP growth per capita

Case study: Portugal 1983

- Donor pool: Finland, France, Italy, Japan, USA

- Time period: 1978-1988

Case study: Portugal 1983

- **Three year rolling mean of real GDP growth per capita**
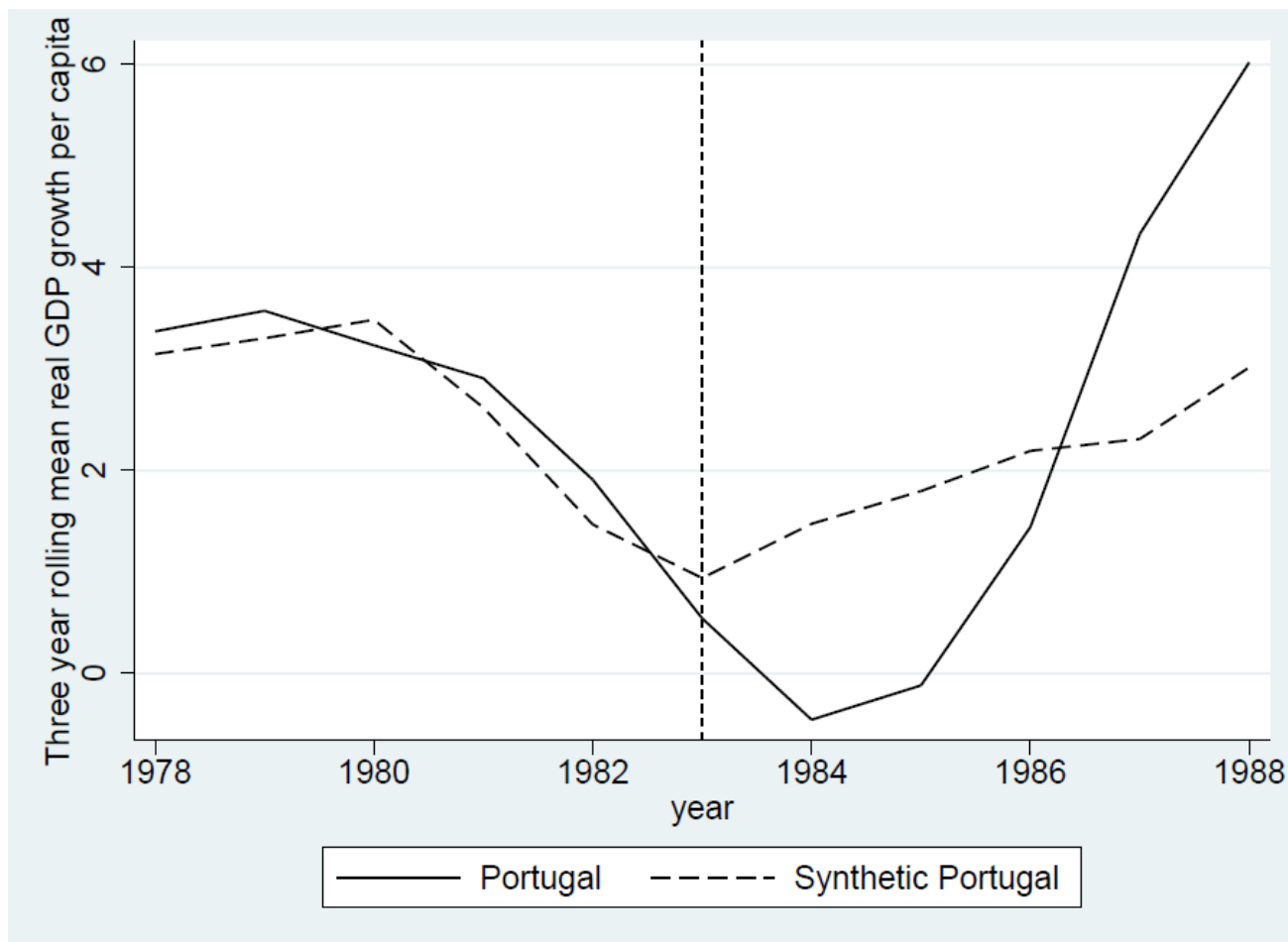
Case study: Portugal 1983

- Accumulated real GDP growth per capita
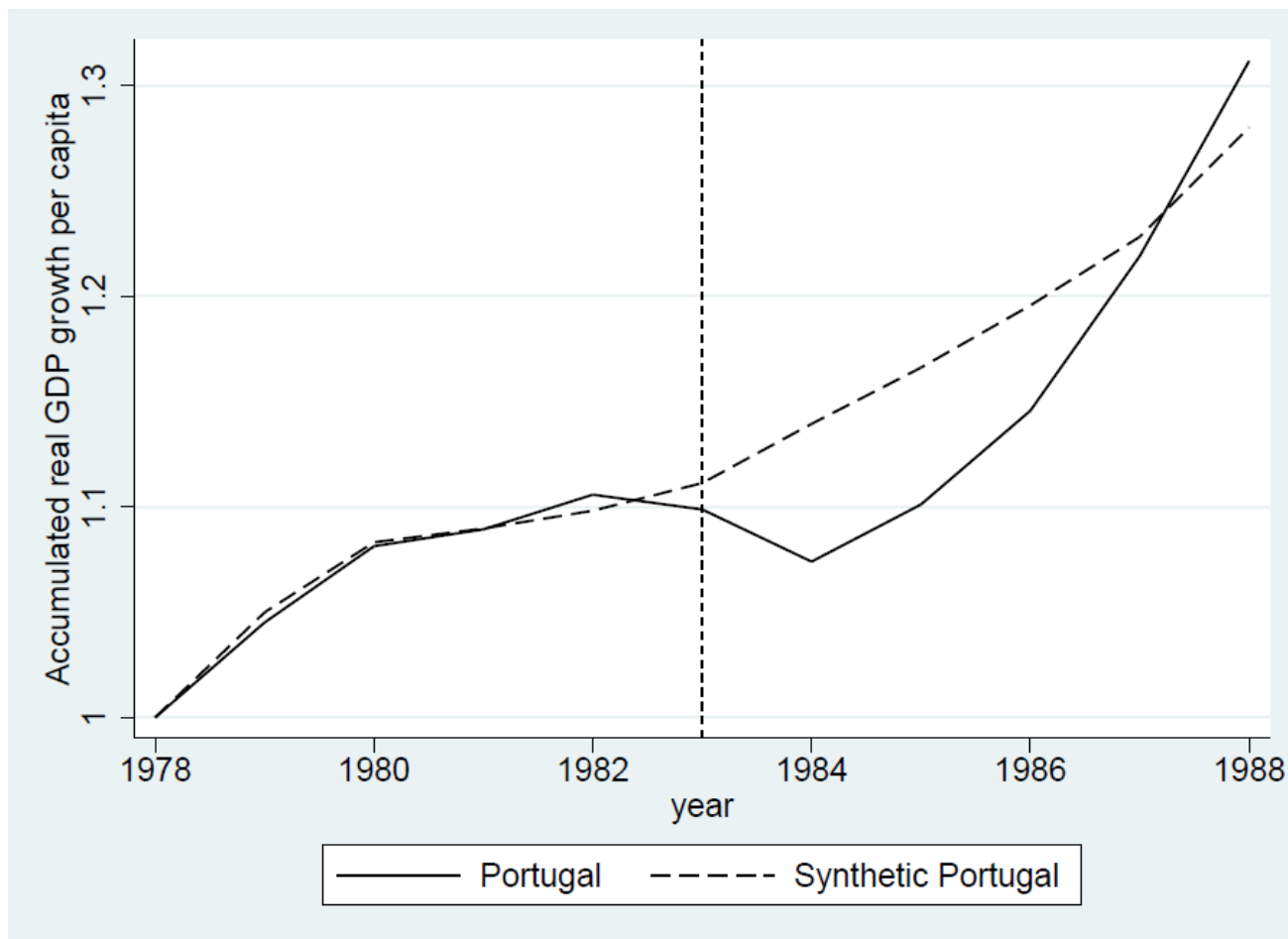
Case study: Spain 1989

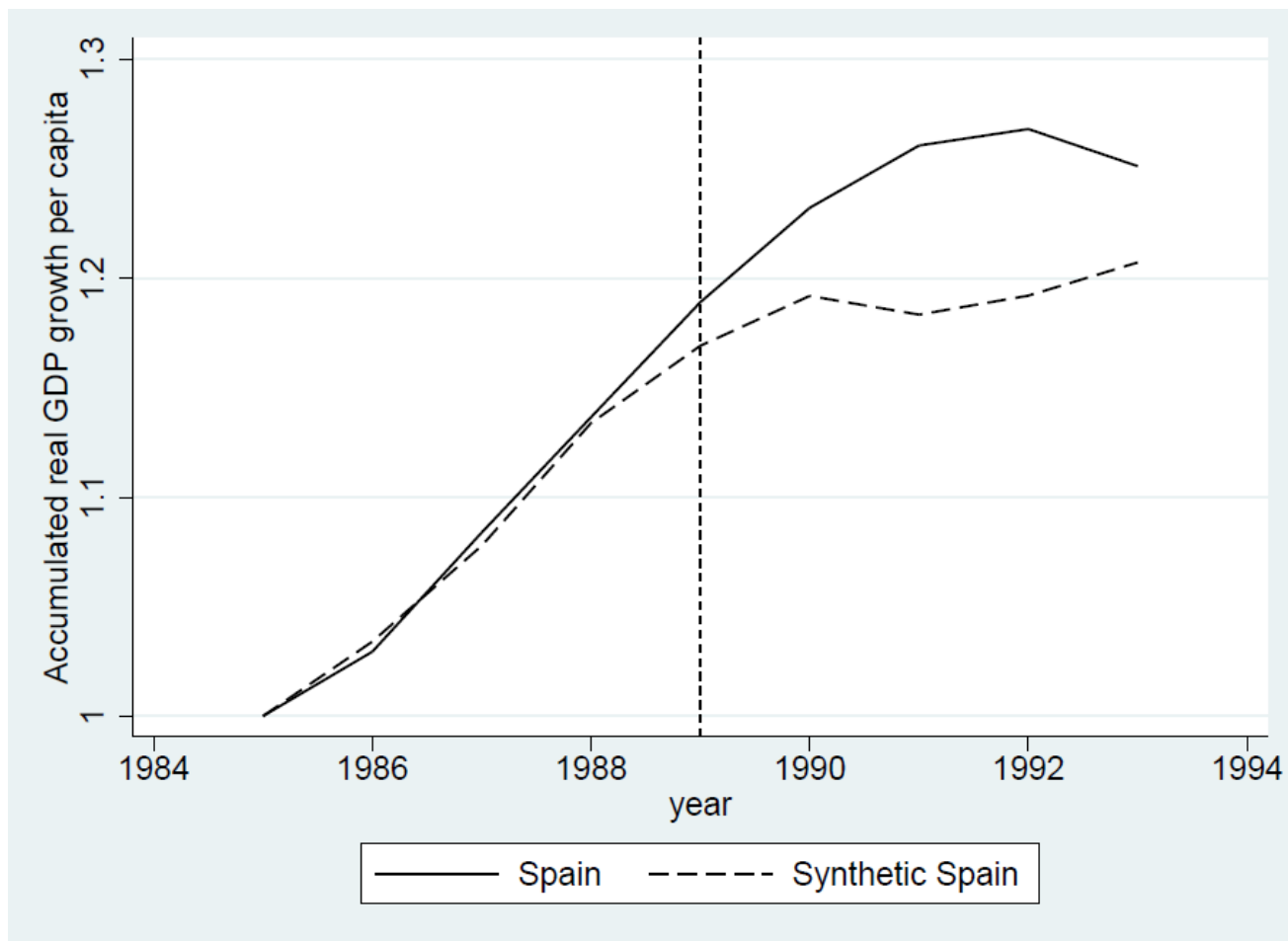- Donor pool: Austria, France, Portugal, Sweden, UK

- Time period: 1985-1993

Case study: Spain 1989

- **Three year rolling mean of real GDP growth per capita**
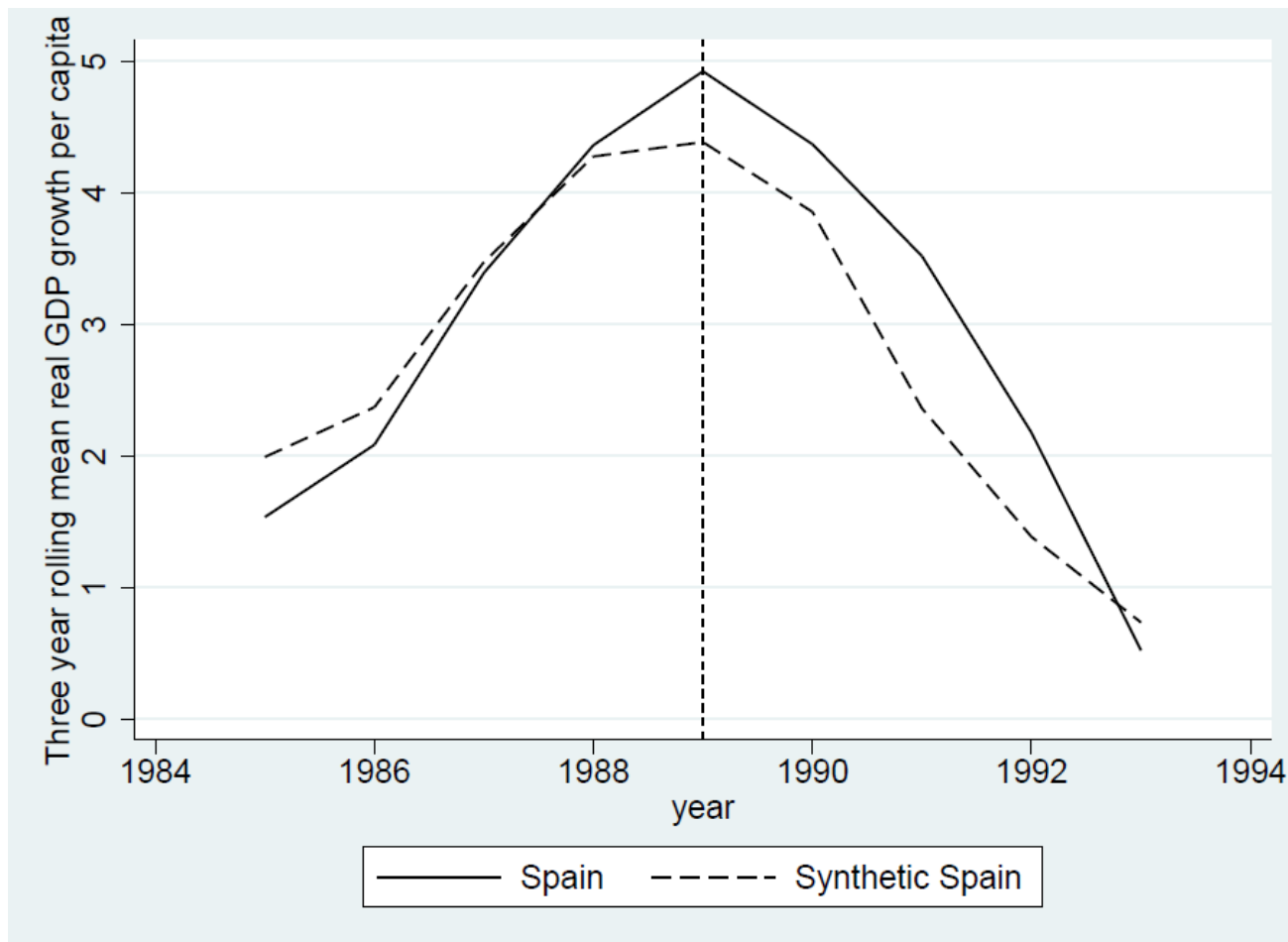
Case study: Spain 1989

- Accumulated real GDP growth per capita

Conclusion and outlook

- **Very preliminary result: Mixed evidence for the effect of consolidations on economic growth**

- **Caveats**
  - Only few countries in the donor pool
  - Only limited number of pre-treatment periods

- **Outlook**
  - Apply method to further case study countries
  - Use only top 25% of consolidations

Appendix

Case study: Portugal 1983

- **Country weights**

Finland	0.174
France	0.392
Italy	0.434

- **Variable weights**

Mean growth (1982)	0.426
Inflation	0.139
Unemployment rate	0.334
Life experience	0.003
School enrollment primary	0.087
Working age fraction	0.006

Case study: Spain 1989

- ## Country weights

Austria	0.228
France	0.098
Portugal	0.230
United Kingdom	0.443

- ## Variable weights

Mean growth (1987)	0.672
Inflation	0.133
Employment in industry	0.007
Life experience	0.004
School enrollment primary	0.142
Working age fraction	0.040