Wars, Taxation and Representation
Evidence from Five Centuries of German History

Sascha O. Becker
U Warwick & Monash U

Andreas Ferrara
University of Pittsburgh

Eric Melander
University of Birmingham

Luigi Pascali
LUISS Guido Carli & UPF

May 2025 – Teaching Materials
Click here for the paper

Motivation and Research Question

From C13: **political divergence between Europe + other world civilisations**

- Rise of **"medieval constitutionalism"** in (central) Europe
- Representative assemblies, rule of law + substantial fiscal and spending capacity
- This institutional framework: administrative **blueprint for modern states**

What explains the rise of medieval constitutionalism in Europe?

- Weak European rulers + continuous wars
- Rulers needed representative institutions and rule of law to solve commitment problem when raising: i) an army, ii) tax revenues, iii) credit

This project

- Test whether wars had an impact on development of medieval constitutionalism using German history from 1290-1710 as our "laboratory"

Historical Background – The Hypothesis

Weak rulers and continuous wars Borders

Carolingian Partition Hypothesis:

- Treaty of Verdun (843) divided Carolingian Empire into three parts
- Lotharingia and East Francia: geographical obstacles + no primogeniture
  - Result: collapse into myriad states under weak rule by Holy Roman Emperor
  - And a "vortex of near permanent war" (Hoffman and Norberg, 1994)

Representative assemblies: commitment devices in times of war

- Rulers needed armies, tax revenues and credit to finance war
- They got these in exchange for promises
- Kept commitments by granting political rights (some control over future policy)

Historical Background – The Hypothesis

Taxes (Strayer, 1970; North, 1981; Hoffman and Norberg, 1994)

- Towns agreed to pay fixed sums in return for privileges
- Monitoring and sanctioning in tax collection was costly
- Rule of law and autonomous city councils fundamental to facilitate tax collection ensure rulers' promises kept

Army: knights and town militias (Downing, 1993)

- Knights fought for land and administrative immunities
- Town dwellers fought for immunity from feudal ties
- Safeguarded by assemblies of knights (roots of modern parliaments)

Credit (Stasavage, 2011 and 2016)

- Merchants financed wars through credit
- Representation a commitment technology: lenders had some control over policy

Historical Background – The Cities

The rise of cities as centres of power

- Towns built own governments (separate from web of kings, nobles and bishops)
  - Not limited to Free/Imperial cities (Walker, 1971)
- 1074: Charter to city of Worms – residents called *cives*
- Political life centred in city councils (size ranged from a few men to multiple specialised committees)
- Oligarchic, particularly in early days (commercial, military, legal elites)
- *Stadtluft macht frei* ("Urban air makes you free")
  - Fundamental rights and freedoms enjoyed by city-dwellers (no feudal ties, access to legal system, sometimes could elect representatives)

Related Literature

Wars and representative institutions

Stasavage: *"the evidence suggests some causal link between warfare and representative institutions, although we do not know in which direction causality runs"*

- We provide evidence for causality from wars to representation

Downing (1993), Hoffman and Norberg (1994), Stasavage (2011, 2016), Ticchi and Vindigni (2011), Blaydes and Paik (2016), de Magalhaes and Giovannoni (2022), Cox, Dincecco and Onorato (2024)

Origins of the modern state

- We highlight roots in Europe's medieval cities

Weber (1921), Pirenne (1927), Tilly (1975, 1990), Gennaioli and Voth (2015), Schönholzer and Weese (2019), Cantoni, Mohr and Weigand (2024), Ottinger and Voigtländer (forthcoming)

Wars and urban growth in Europe

- Specifically: wars $\Longrightarrow$ medieval constitutionalism $\Longrightarrow$ growth

Dincecco and Onorato (2016), Dincecco and Prado (2012), DeLong and Shleifer (1993), Wahl (2019)

Our Setting

2,000+ German cities, decadal panel 1290-1710

- Late C13: beginning of period associated with medieval constitutionalism
- Early C18: Kingdom of Prussia (1701) and increasing centralisation

Estimate causal effect of wars on

- Representative local political institutions
- Fiscal capacity (taxation)
- Public spending

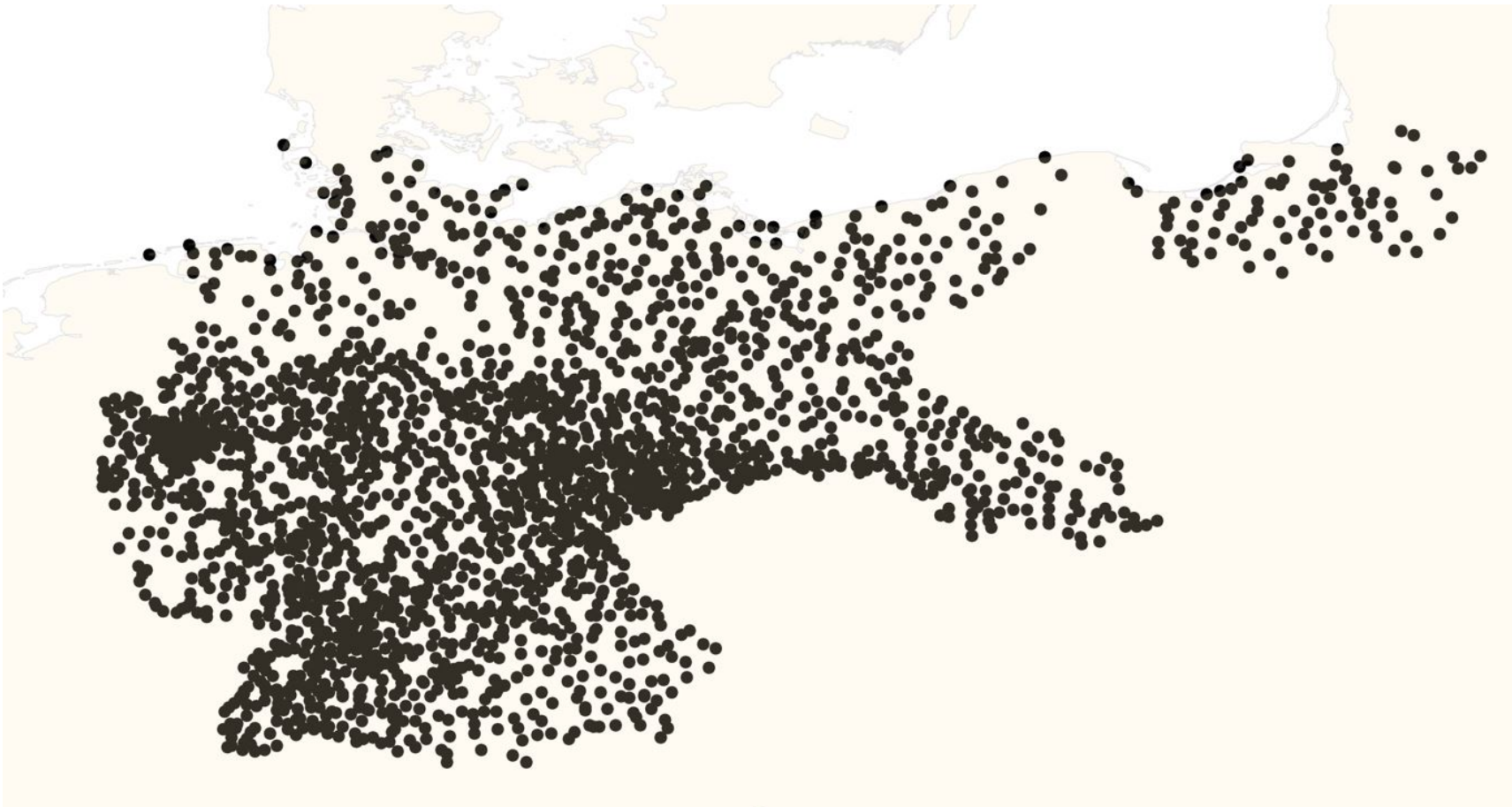
Methodologies

- Territories' first conflict as an "event"
- Panel OLS with fixed effects
- Panel IV with fixed effects
  Instrument: gender of firstborn of most prominent local noble $(t-1)$

Long shadow of medieval constitutionalism

- Importance of high-capacity paradigm for subsequent territorial consolidation

Our Setting – 2,000+ German cities, 1290-1710



Data: Deutsches Städtebuch

Encyclopaedia of incorporated cities in German Empire

- Series of 21 volumes
- Large team of city historians, led by Erich Keyser (1939–now)

2,340 cities, each entry follows similar structure

We **hand-coded information** on:

- ***Violent conflicts*** (nearby battles, sieges, sackings, occupations, destruction, involvement elsewhere)
  - Also: ***internal conflicts*** (uprisings, revolts, formal grievances)
- ***Political institutions*** (presence and size of city councils, guild representation, council elections)
- ***Taxes*** (number, type, sophistication of taxes)
- ***Construction of public buildings*** (military, religious and secular)

Example

Data: German Nobility

Combine two sources:

The Peerage (Lundy)

- Database of aristocratic families of Europe
- Information on over 680,000 European nobles
- We use: dates of births, deaths, marriages + links to parents, spouses, siblings

Europäische Stammtafeln (Schwennicke)

- Family trees of European (particularly German) nobility
- 379 family trees of major ruling families
- Link information on locations of births, deaths, marriages with Peerage data

Example

Other Data

Historical polities

- Territorial histories compiled by Cantoni, Mohr and Weigand (2020)

Political controls

- Hanseatic cities
- Imperial cities

Trade controls

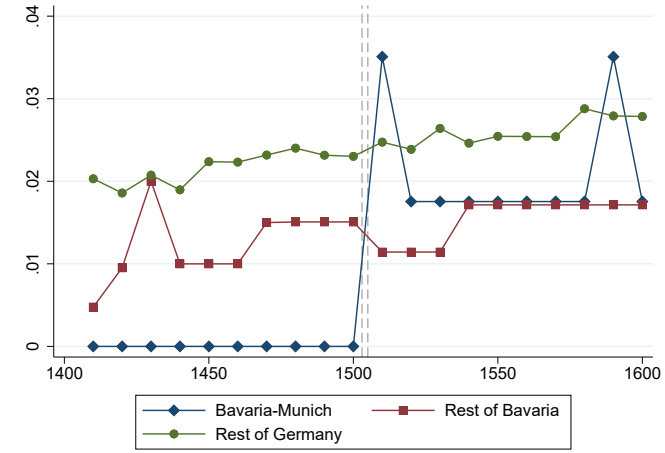
- Main trade routes in 1500 from Berthold (1976) Map
- Distance from coast
- Cities on navigable rivers
- Market in city before Reformation (Cantoni and Yuchtman, 2014)

Climate controls

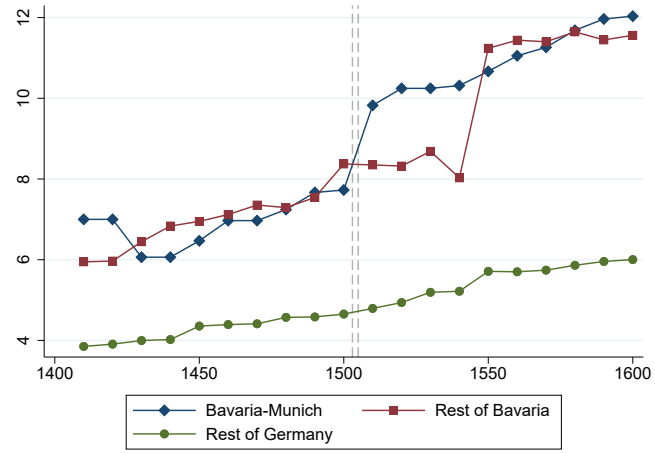
- Luterbacher et al. (2004) reconstructed winter temperatures

Summary statistics

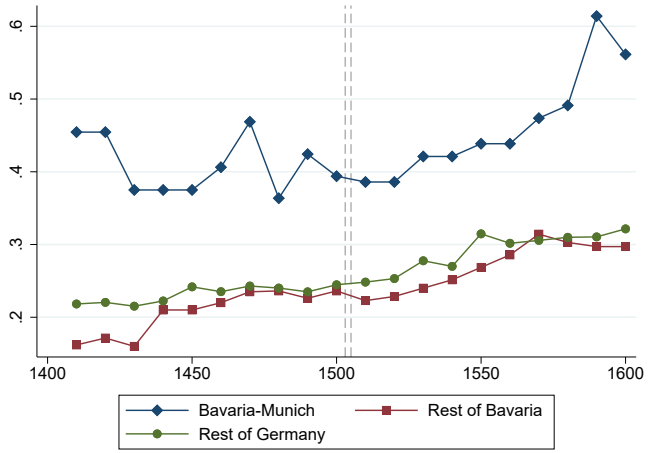
Case Study – Landshut War of Succession



Council elected by citizens

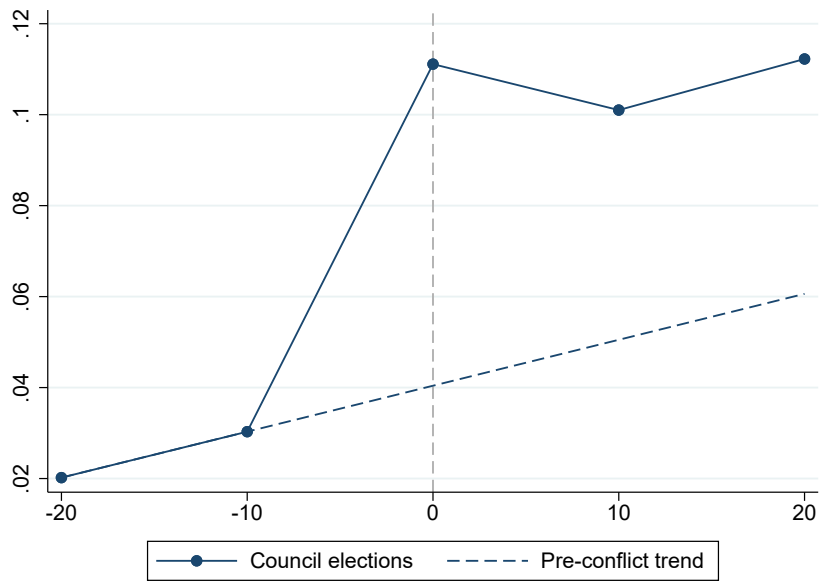


Council size

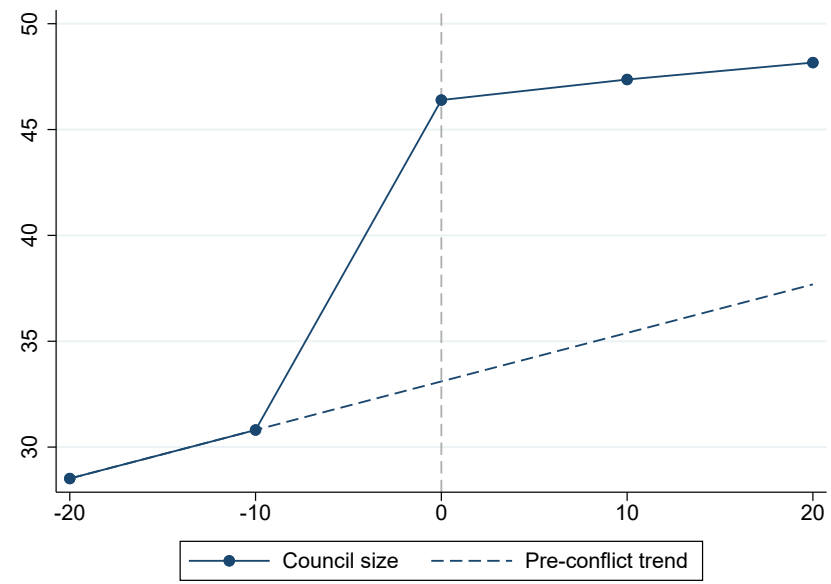


Complex taxes

Territories' First Conflict as an "Event"



Council elected by citizens



Council size

Estimation Framework

Relationship of interest

$$\mathrm{Y}_{ict} = \alpha_i + \lambda_t + \beta\,\mathrm{Conflict}_{ct} + \mathrm{X}'_{ict}\,\pi + \epsilon_{ict}$$

	i = cities, $c = 1 \times 1$ degree grid cells, t = decade
Y_{ict}	representative institutions, elections, taxes, public spending
$\mathrm{Conflict}_{ct}$	indicator for conflict in cell c
α_i	city fixed effects
λ_t	decade fixed effects, years = 1290-1710
X_{ict}	controls

Grid cell approach: state borders endogenous (change due to wars and institutions)

- Robustness assigning conflict at territory level

First stage

$$\mathrm{Conflict}_{ct} = \eta_i + \delta_t + \gamma\,\mathrm{Daughter}_{c,t-1} + \mathrm{X}'_{ict}\,\phi + \nu_{ict}$$

$\mathrm{Daughter}_{c,t-1}$	indicator = 1 if best-connected noble has daughter (cf. son) in $t-1$

Noble chosen based on degree centrality in network of European nobility

Estimation Framework – The Instrument

First stage

$$\text{Conflict}_{ct} = \eta_i + \delta_t + \gamma\, \text{Daughter}_{c,t-1} + \text{X}'_{ict}\, \phi + \nu_{ict}$$

Why should the gender of the firstborn predict conflict?

- **Female firstborn $\implies$ higher probability of succession wars**
  - Succession governed by private family rules ("House Laws")
  - Based on plethora of documents
    (testaments, family compacts, treaties with other families or with the Emperor)
  - Male succession the norm $\implies$ challenges to ruling family on birth of firstborn daughter
- **Examples** (both within and outside our sample)
  - Austrian Succession War (1740-1748)
  - Succession of Landshut (1503-1505)
  - Limburg Succession (1282-1288)

No direct impact of gender of ruler (e.g., Dube and Harish, 2020)

- Considering gender of firstborn in $t-1$, child is still a minor
- Minimum age to rule typically 18 (in some cases 20 or 25)

Estimation Framework – Benchmark Sample

For 2SLS: restricted sample of cell-decade observations with a first child (of any gender) from the most connected local noble

- Compare nobles with firstborn daughters to nobles with firstborn sons

For OLS: estimates using both full and restricted sample

Both samples are drawn from all over Germany Map

Births are evenly distributed across cells and decades Figure

Observables do not predict entry into IV sample Figure

No differences in pre-determined characteristics ...

... of cells with male vs. female firstborn Balance cells

... of nobles with male vs. female firstborn Balance nobles

First Stage – Female Firstborns and Conflict

	Pr(Conflict)=1			Pr(Internal Conflict)=1		
	(1)	(2)	(3)	(4)	(5)	(6)
Female firstborn = 1	0.228***	0.335***	0.105***	-0.104	-0.071	-0.040
	(0.064)	(0.087)	(0.037)	(0.068)	(0.086)	(0.027)
City FE	yes	yes	yes	yes	yes	yes
Decade FE	yes	yes	yes	yes	yes	yes
City linear trend		yes	yes		yes	yes
Level of conf. ass.	cell	cell	territory	cell	cell	territory
Observations	5,091	5,091	5,085	5,091	5,091	5,085
Cells	56	56	56	56	56	56
Outcome mean	0.355	0.355	0.144	0.232	0.232	0.096

Path from Female Firstborns to Conflict

	Pr(Conflict)	Pr(Conflict) $(t,\ t+10)$	Pr(No male child ever)		Pr(Conflict)	
	(1)	(2)	(3)	(4)	(5)	(6)
Female firstborn = 1 (FF)	0.335***	0.347***	0.659***	0.648***	0.183**	0.202**
	(0.087)	(0.084)	(0.079)	(0.079)	(0.088)	(0.086)
ln(Age at first child)				0.137		
				(0.151)		
ln(Lifespan)				-0.359***		
				(0.073)		
FF = 1 × no male child ever (NMC)					0.230**	0.180
					(0.104)	(0.132)
Dies within ten years						-0.011
						(0.235)
FF = 1 × dies within 10Y						-0.121
						(0.365)
FF = 1 × NMC × dies within 10Y						0.346
						(0.293)
Combined effect					0.413	0.596
F-test joint sign. (p-value)					0.0005	0.0001
City FE	yes	yes	yes	yes	yes	yes
Decade FE	yes	yes	yes	yes	yes	yes
City linear trend	yes	yes	yes	yes	yes	yes
Observations	5,091	5,091	5,091	5,091	5,091	5,091
Cells	56	56	56	56	56	56

Conflict and Council Elections

	Outcome: Pr(Citizens elect council)=1								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Conflict	0.003***	0.003	0.026*	0.016**	0.015**	0.023**	0.016**	0.020**	
	(0.001)	(0.003)	(0.014)	(0.008)	(0.007)	(0.009)	(0.008)	(0.009)	
Has council					0.018				
					(0.015)				
Conflict (territory)									0.051**
									(0.023)
City FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
Decade FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
City linear trend				yes	yes	yes	yes	yes	yes
Excl. relig. wars						yes			
Controls							yes		
Weighted								yes	
Sample	full	FC	FC	FC	FC	FC	FC	FC	FC
Estimator	OLS	OLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS
Observations	61,077	5,091	5,091	5,091	5,091	3,713	5,091	5,091	5,085
Cells	89	56	56	56	56	46	56	56	56
Outcome mean	0.022	0.022	0.022	0.022	0.022	0.021	0.022	0.022	0.022
K-P F-Stat			12.573	14.775	14.798	10.868	14.949	16.947	7.906

Century jackknife | Conflict type jackknife | Other sensitivity checks | Conley standard errors

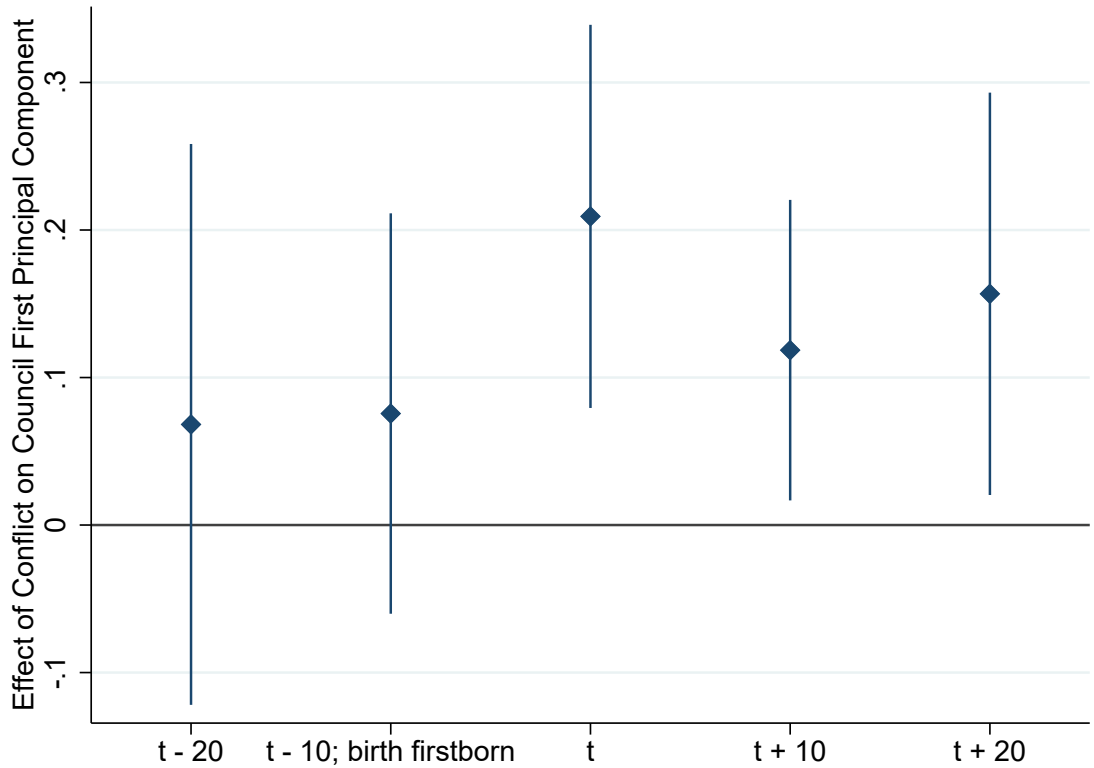
Conflict and Council Size

	Council Size								Guilds on Council	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Conflict	0.068	0.928***	2.135**	1.678*	2.177**	2.112**	1.716**		0.135*	0.135*
	(0.064)	(0.259)	(0.941)	(0.847)	(0.868)	(0.930)	(0.827)		(0.073)	(0.073)
Has council				7.553***						-0.007
				(0.548)						(0.022)
Conflict (territory)								6.790**		
								(3.183)		
City FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Decade FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
City linear trend	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Excl. relig. wars					yes					
Controls						yes				
Weighted							yes			
Sample	full	FC	FC	FC	FC	FC	FC	FC	FC	FC
Estimator	OLS	OLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS
Observations	61,077	5,091	5,091	5,091	3,713	5,091	5,091	5,085	792	792
Cells	89	56	56	56	46	56	56	56	53	53
Outcome mean	5.218	5.275	5.275	5.275	4.658	5.275	5.275	5.278	0.014	0.014
K-P F-Stat			14.775	14.798	10.868	14.949	16.947	7.906	10.036	10.167

Century jackknife | Conflict type jackknife | Other sensitivity checks | Conley standard errors

Dynamic Effects of Conflict

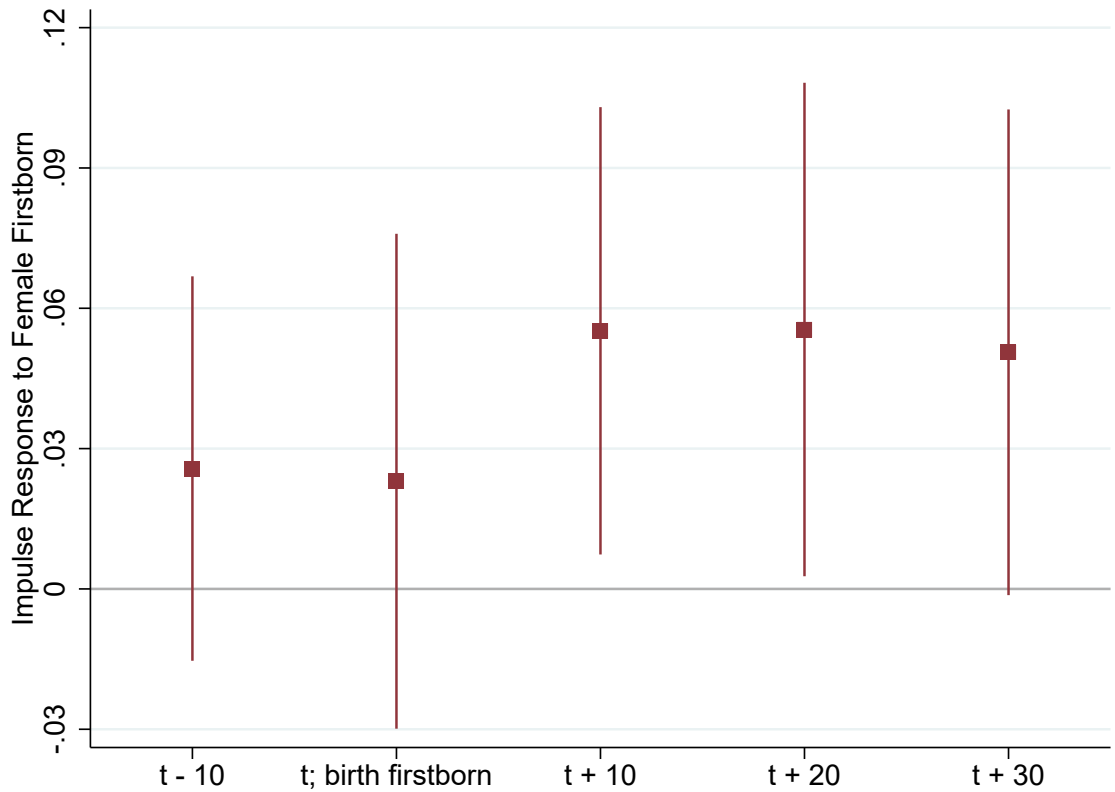
Estimate dynamic effects on first principal component of elections and council size



Reduced-Form Event Study

Estimate event study specification with all leads and lags in single regression:

$$Y_{ict} = \psi_i + \kappa_t + \sum_{\tau=t-1}^{t+3} \xi_\tau \text{Daughter}_{c,\tau} + X'_{ict}\theta + u_{ct}$$



Conflict and Public Buildings

	Outcome: Pr(Building Type Present)=1		
	Military	Secular	Religious
	(1)	(2)	(3)
Conflict	0.035*	-0.048	0.003
	(0.020)	(0.041)	(0.020)
City FE	yes	yes	yes
Decade FE	yes	yes	yes
City linear trend	yes	yes	yes
Sample	first child	first child	first child
Estimator	2SLS	2SLS	2SLS
Observations	5,091	5,091	5,091
Cells	56	56	56
Outcome mean	0.623	0.614	0.849
K-P F-Stat	14.775	14.775	14.775

Conflict and Complex Taxes

	Outcome: Number of Complex Taxes			
	t-20	t	t+10	t+20
Conflict	0.004	0.012	0.007	0.080*
	(0.030)	(0.055)	(0.036)	(0.044)
City FE	yes	yes	yes	yes
Decade FE	yes	yes	yes	yes
City linear trend	yes	yes	yes	yes
Sample	first child	first child	first child	first child
Estimator	2SLS	2SLS	2SLS	2SLS
Observations	5,065	5,091	5,091	5,091
Cells	56	56	56	56
Outcome mean	0.241	0.256	0.271	0.269
K-P F-Stat	14.900	14.775	14.775	14.775

Long Shadow of Medieval Constitutionalism

Military Revolution $\Longrightarrow$ consolidation of diffuse polities into modern states

Figure

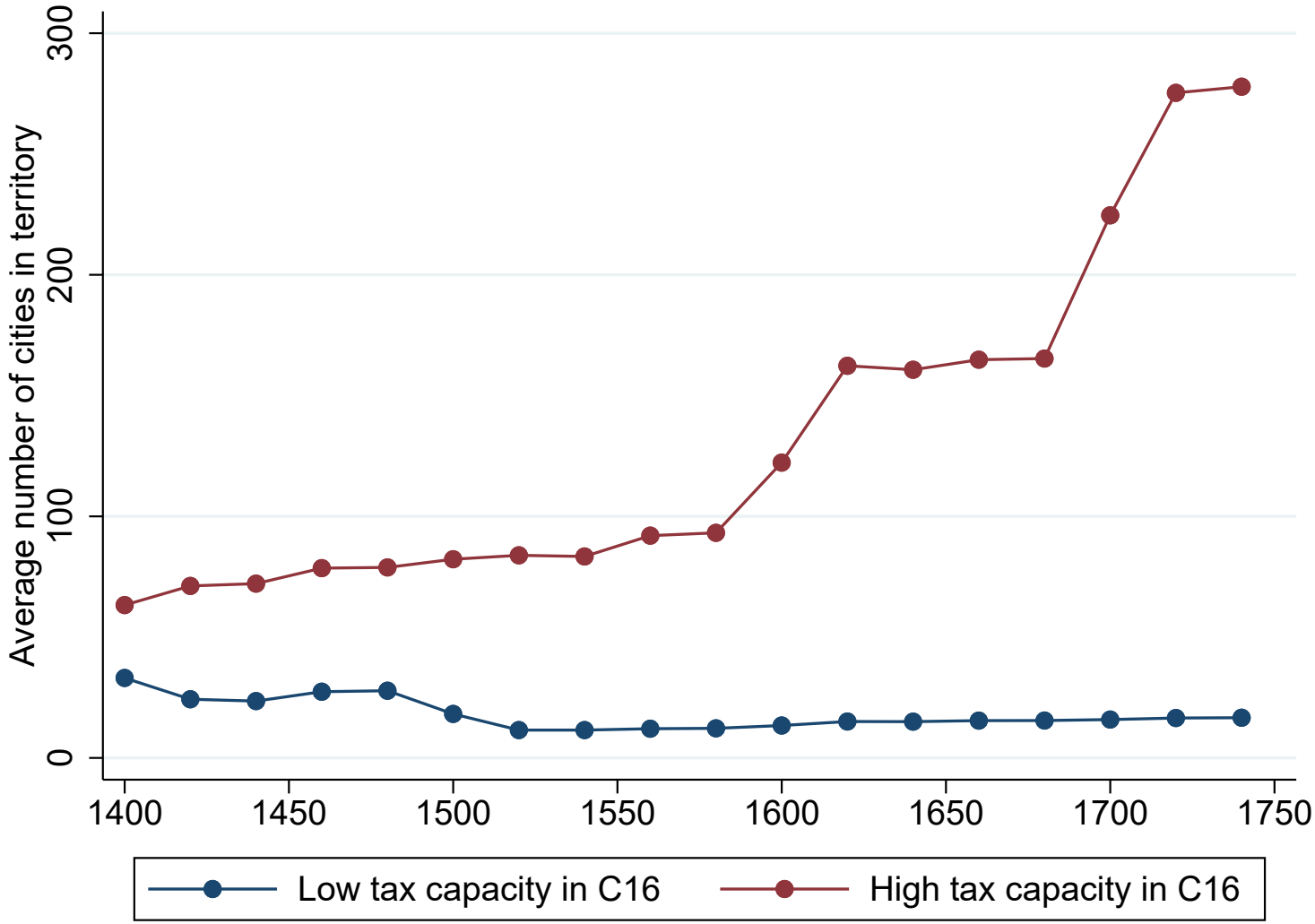
Importance of institutional package of **medieval constitutionalism**

- We find: high capacity territories grew, low capacity stagnated

What role did wars play?

- Exercise in spirit of Gennaioli and Voth (2015)
- When a city switches territory following war, who does it switch to/from?
- We find: from 1600 on, winners have tax-capacity advantage over losers

Long Shadow of Medieval Constitutionalism



Long Shadow of Medieval Constitutionalism

Table

Conclusions

Why did medieval constitutionalism arise in Europe?

- Ultimately providing administrative blueprints for modern states

We provide **evidence in favour of "war-and-representation" hypothesis**

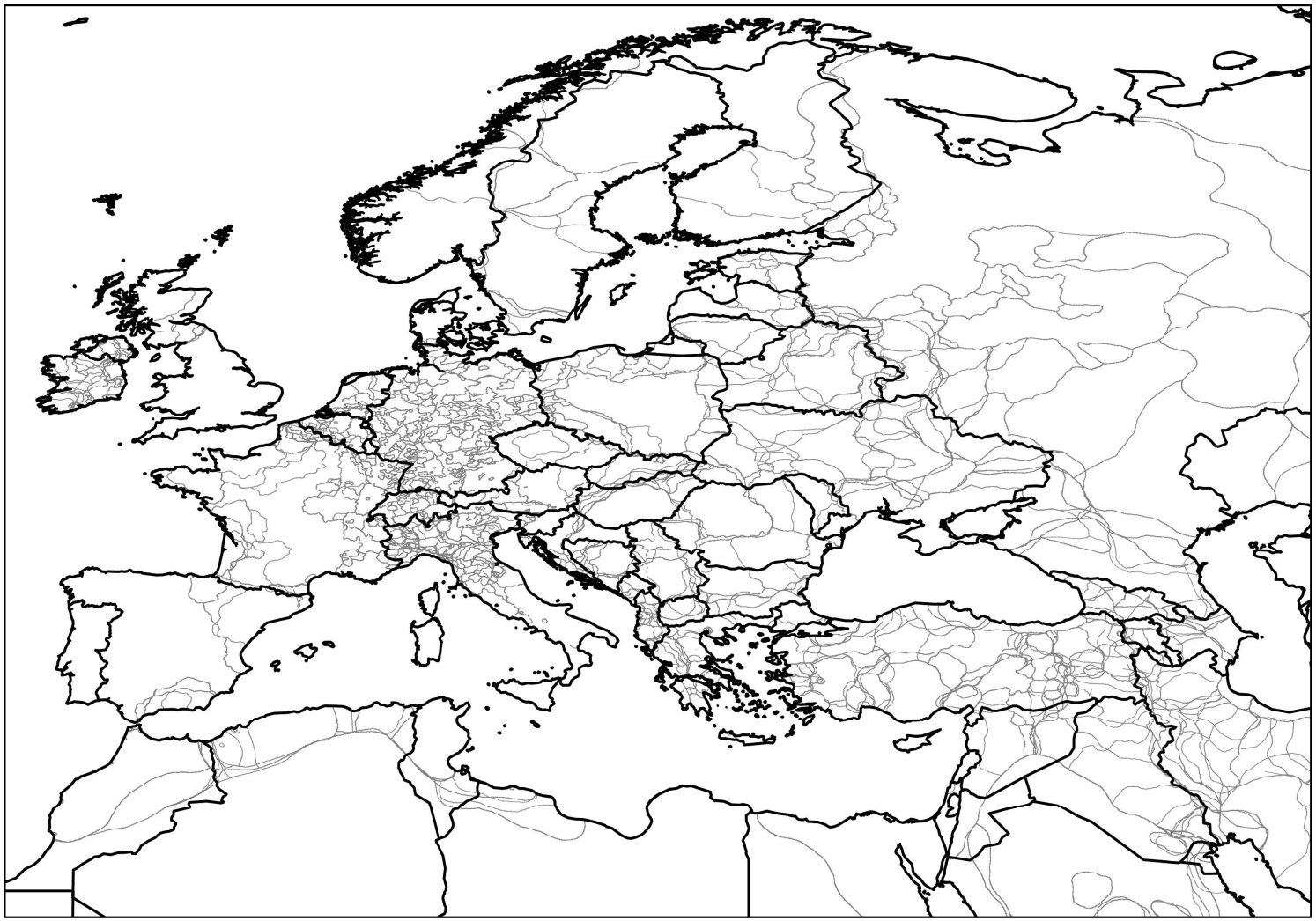
- Novel data from half a millennium of German history
- IV strategy for causal interpretation

Causal link between exogenous conflict exposure and ...

- Rise of representative political institutions
- Development of fiscal and spending capacity

Appendix

Historical Borders in Europe



Note: De facto territorial boundaries from the Centennia Historical Atlas (Clockwork Mapping, 2018) overlapped at decadal intervals for the period 1290-1710 (light grey). Modern state boundaries also shown (black).

Data: Deutsches Städtebuch

Dortmund, ca. 1390 – Conflict

burg und dem Erzbischof von Köln. Schlacht am Wulveskamp bei D.-Brechten 1254. Um 1388 bis 1389 wurde D. 20 Monate lang belagert durch Erzbischof von Köln, Grafen von der Mark, viele geistliche und weltliche Fürsten, 20 Städte, gegen 1200 Ritter usw. Es bewahrte seine Reichsfreiheit, geriet aber in große Kriegsverschuldung.

Siege in 1389, lasted 20 months; resulted in great debts

Back

Data: Deutsches Städtebuch

Dortmund, ca. 1390 – Taxes

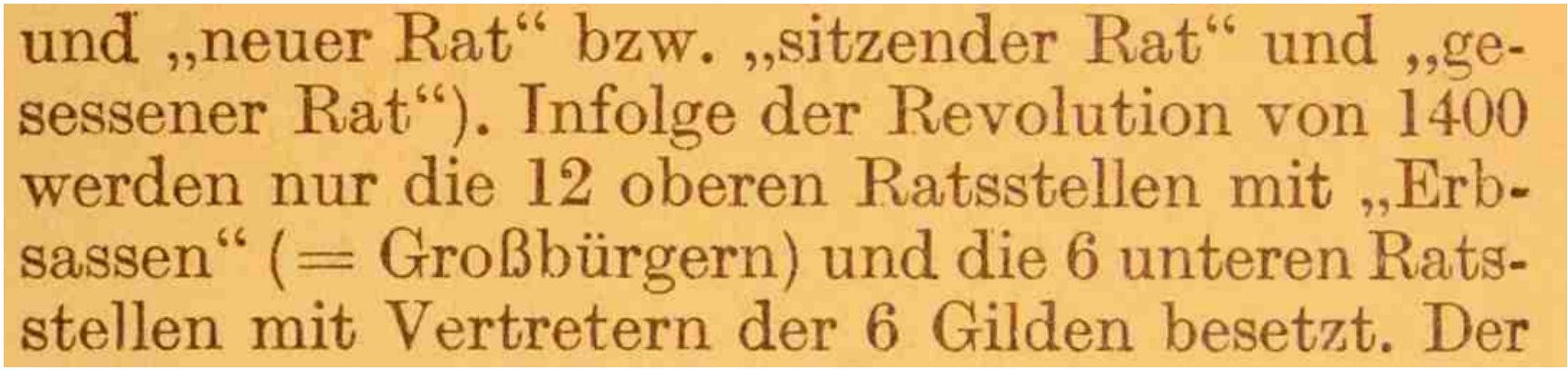
Ende 13. Jh. Kriegssteuern: die „opkome“ (1391 ff.), eine Umsatzsteuer von $^1/_{48}$ des Verkaufswertes, die „puntinge“, eine 5%ige Steuer vom Gesamtvermögen (3mal, 1393, 1395, 1396, erhoben). Reichssteuern (1241/42; gemeiner Pfennig 1499; Türkensteuer usw.), Fremdensteuern

5% wealth tax in 1393, 1395 and 1396

Back

Data: Deutsches Städtebuch

Dortmund, ca. 1390 – Institutions

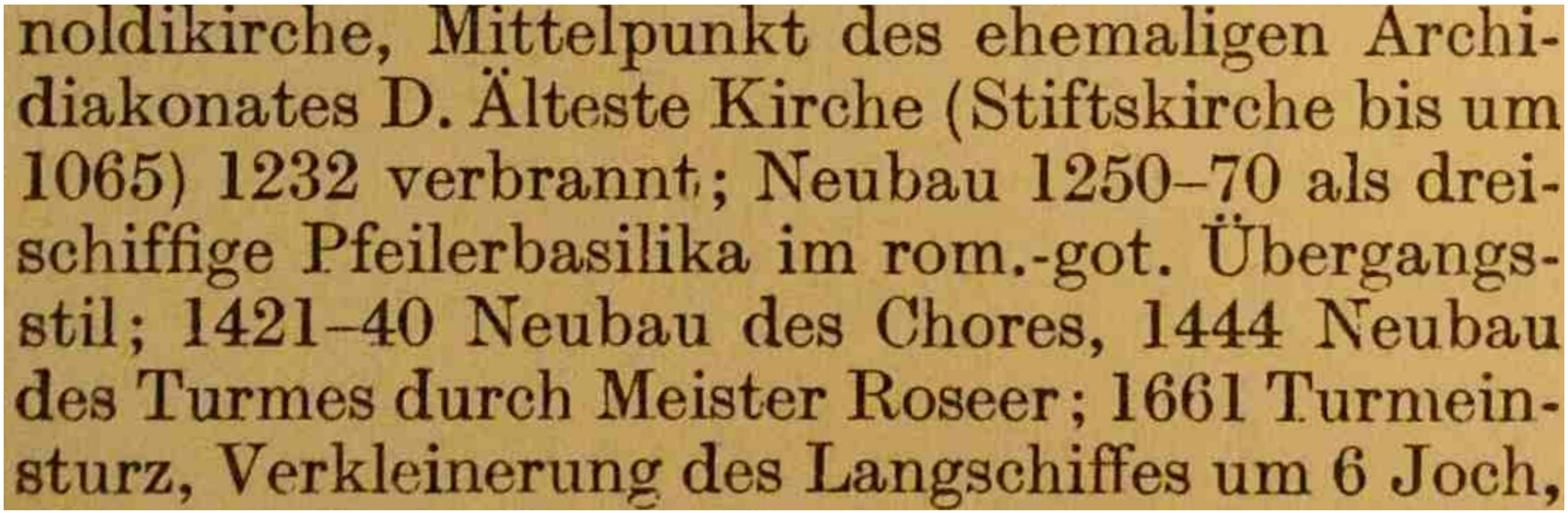

und „neuer Rat“ bzw. „sitzender Rat“ und „gesessener Rat“). Infolge der Revolution von 1400 werden nur die 12 oberen Ratsstellen mit „Erbsassen“ (= Großbürgern) und die 6 unteren Ratsstellen mit Vertretern der 6 Gilden besetzt. Der

In 1400, citizens revolt $\Longrightarrow$ increased participation on council with 6 citizen representatives

Back

Data: Deutsches Städtebuch

Dortmund, ca. 1390 – Public Spending



noldikirche, Mittelpunkt des ehemaligen Archidiakonates D. Älteste Kirche (Stiftskirche bis um 1065) 1232 verbrannt; Neubau 1250–70 als dreischiffige Pfeilerbasilika im rom.-got. Übergangsstil; 1421–40 Neubau des Chores, 1444 Neubau des Turmes durch Meister Roseer; 1661 Turmeinsturz, Verkleinerung des Langschiffes um 6 Joch,

Renovation of church choir (1421-40) and church tower (1444)
Note: no reported construction in decades before siege

Back

Data: German Nobility

An example: **Wolfgang, Duke of Braunschweig-Grubenhagen**

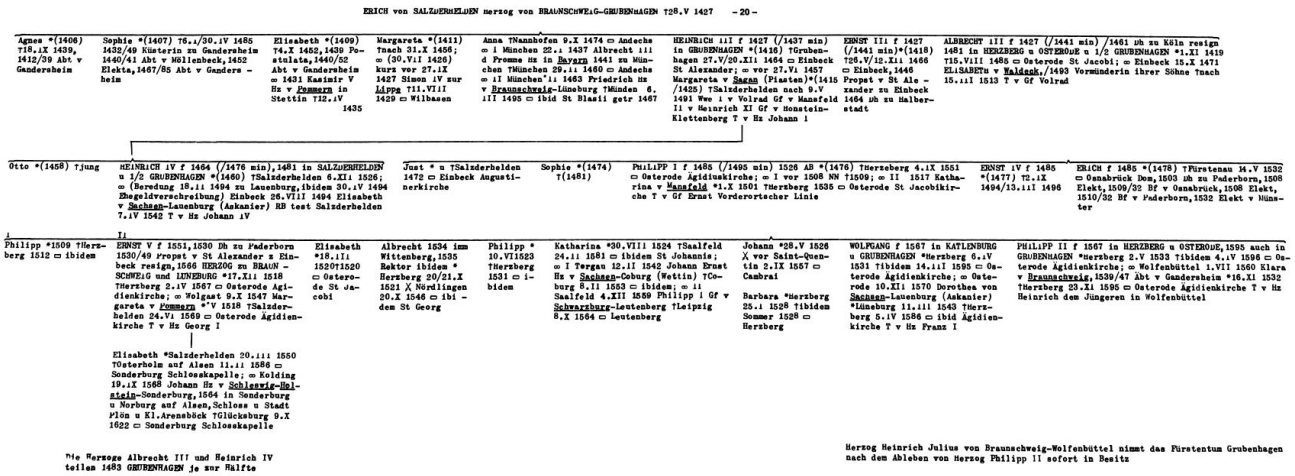
Wolfgang Herzog von Braunschweig-Grubenhagen

M, #7388, b. 6 April 1531, d. 14 March 1595

Last Edited=10 May 2003

Wolfgang Herzog **von Braunschweig-Grubenhagen** was born on 6 April 1531. He was the son of Philip Herzog **von Braunschweig-Grubenhagen** and Catherine **von Mansfeld**. He married Dorothea **von Sachsen-Lauenburg**, daughter of Franz I Herzog **von Sachsen-Lauenburg** and Sybille **von Sachsen-Freiberg**, on 10 December 1570 at Osterode, Germany[G]. He died on 14 March 1595 at age 63.

He gained the title of *Herzog von Braunschweig-Grubenhagen*.



Tafel 21 Die HERZOGE von BRAUNSCHWEIG-GRUBENHAGEN 2

ERICH von SALZDERHELDEN Herzog von BRAUNSCHWEIG-GRUBENHAGEN †28.V 1427 – 20 –

Agnes *(1406) †18.IX 1439, 1412/39 Abt v Gandersheim

Sophie *(1407) †6.1/30.IV 1485 1432/49 Küsterin zu Gandersheim 1440/41 Abt v Möllenbeck, 1452 Elekta, 1467/85 Abt v Ganders – heim

Elisabeth *(1409) †4.X 1452, 1439 Po- stulata, 1440/52 Abt v Gandersheim ∞ 1431 Kasimir V Hz v Pommern in Stettin †12.IV 1435

Margareta *(1411) †nach 31.X 1456; ∞ (30.VII 1426) kurz vor 27.IX 1427 Simon IV zur Lippe †11.VIII 1429 ⊏ Wilbasen

Anna †Nannhofen 9.X 1474 ⊏ Andechs ∞ I München 22.I 1437 Albrecht III d Fromme Hz in Bayern 1441 zu Mün- chen †München 29.II 1460 ⊏ Andechs ∞ II München 11 1463 Friedrich Hz v Braunschweig-Lüneburg †Minden 6. III 1495 ⊏ ibid St Blasii getr 1467

HEINRICH III f 1427 (/1437 min) in GRUBENHAGEN *(1416) †Gruben- hagen 27.V/20.XII 1464 ⊏ Einbeck St Alexander; ∞ vor 27.VI 1457 Margareta v Sagan (Piasten)*(1415 /1425) †Salzderhelden nach 9.V 1491 Wwe I v Volrad Gf v Mansfeld II v Heinrich XI Gf v Honstein- Klettenberg T v Hz Johann I

ERNST III f 1427 (/1441 min)*(1418) †25.V/12.XII 1466 ⊏ Einbeck, 1446 Propst v St Ale - xander zu Einbeck 1464 Abt zu Halber- stadt

ALBRECHT III f 1427 (/1441 min) /1461 Abt zu Köln resign 1481 in HERZBERG u OSTERODE u 1/2 GRUBENHAGEN *1.XI 1419 †15.VIII 1485 ⊏ Osterode St Jacobi; ∞ Einbeck 15.X 1471 ELISABETH v Waldeck,/1493 Vorsteherin ihrer Söhne †nach 15.III 1513 T v Gf Volrad

Otto *(1458) †jung

HEINRICH IV f 1464 (/1476 min),1481 in SALZDERHELDEN u 1/2 GRUBENHAGEN *(1460) †Salzderhelden 6.XI.1526; ∞ (Beredung 19.II 1494 zu Lauenburg,Ibidem 20.IV 1494 Ehegeldverschreibung) Einbeck 26.VIII 1494 Elisabeth v Sachsen-Lauenburg (Askanier) RB test Salzderhelden 7.IV 1542 T v Hz Johann IV

Just * u †Salzderhelden 1472 ⊏ Einbeck Augusti- nerkirche

Sophie *(1474) †(1481)

PHILIPP I f 1485 (/1495 min) 1526 AB *(1476) †Herzberg 4.IX 1551 ⊏ Osterode Agidiuskirche; ∞ I vor 1508 NN †1509; ∞ II 1517 Katha- rina v Mansfeld *1.X 1501 †Herzberg 1535 ⊏ Osterode St Jacobikir- che T v Gf Ernst Vorderortscher Linie

ERNST IV f 1485 *(1477) †2.IX 1494/13.III 1496

ERICH f 1485 *(1478) †Fürstenau 14.V 1532 ⊏ Osnabrück Dom, 1503 Abt zu Paderborn, 1508 Elekt, 1509/32 Bf v Osnabrück, 1508 Elekt, 1510/32 Bf v Paderborn, 1532 Elekt v Münster

Philipp *1509 †Herz- berg 1512 ⊏ ibidem

ERNST V f 1551,1530 Dh zu Paderborn 1530/49 Propst v St Alexander z Ein- beck resign,1566 HERZOG zu BRAUN - SCHWEIG und LÜNEBURG *17.XII 1518 †Herzberg 2.IV 1567 ⊏ Osterode Agi- dienkirche; ∞ Wolgast 9.X 1547 Mar- gareta v Pommern *V 1518 †Salzder- helden 24.VI 1569 ⊏ Osterode Agidien- kirche T v Hz Georg I

Elisabeth *Salzderhelden 20.III 1550 †Osterholm auf Alsen 11.II 1586 ⊏ Sonderburg Schlosskapelle; ∞ Kolding 19.IX 1568 Johann Hz v Schleswig-Hol- stein-Sonderburg,1564 in Sonderburg u Norburg auf Alsen,Schloss u Stadt Plön u Kl.Arensböck †Glücksburg 9.X 1622 ⊏ Sonderburg Schlosskapelle

Elisabeth *18.III 1520?1520 ⊏ Osterode St Ja- cobi

Albrecht 1534 im Wittenberg,1535 Rektor ibidem * Herzberg 20/21.X 1521 X Nördlingen 20.X 1546 ⊏ ibi - dem St Georg

Philipp * 10.VI1523 †Herzberg 1531 ⊏ i- bidem

Katharina *30.VIII 1524 †Saalfeld 24.II 1581 ⊏ ibidem St Johannis; ∞ I Torgau 12.II 1542 Johann Ernst Hz v Sachsen-Coburg (Wettin) †Co- burg 9.II 1553 ⊏ ibidem; ∞ II Saalfeld 4.XII 1559 Philipp I Gf v Schwarzburg-Leutenberg †Leipzig 8.X 1564 ⊏ Leutenberg

Johann *28.V 1526 X vor Saint-Quen- tin 2.IX 1557 ⊏ Cambrai

Barbara *Herzberg 25.I 1528 †ibidem Sommer 1528 ⊏ Herzberg

WOLFGANG f 1567 in KATLENBURG u GRUBENHAGEN *Herzberg 6.IV 1531 †ibidem 14.III 1595 ⊏ Os- terode Agidienkirche; ∞ Oste- rode 10.XII 1570 Dorothea von Sachsen-Lauenburg (Askanier) *Lüneburg 11.III 1543 †Herz- berg 5.IV 1586 ⊏ ibid Agidien- kirche T v Hz Franz I

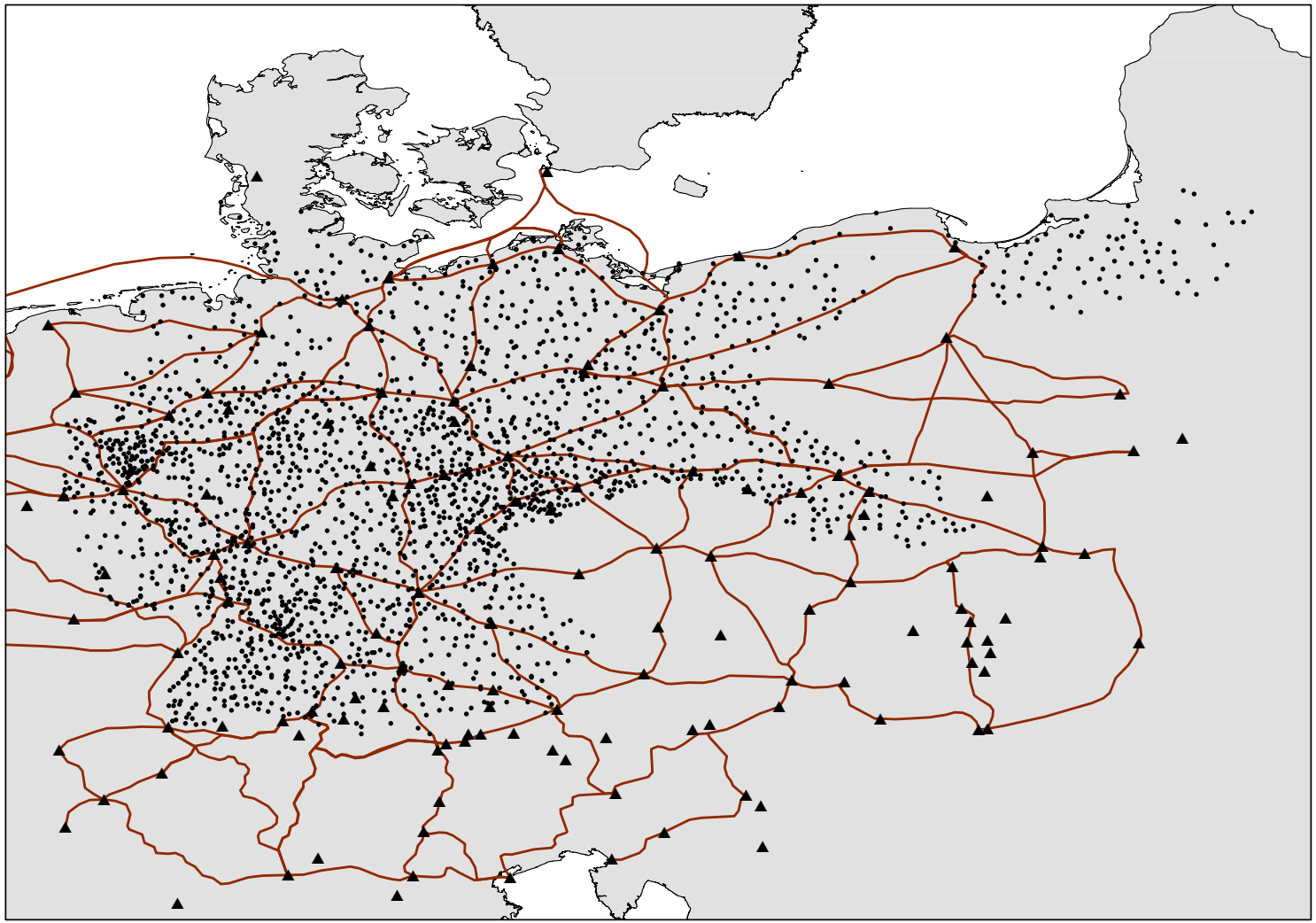
PHILIPP II f 1567 in HERZBERG u OSTERODE,1595 auch in GRUBENHAGEN *Herzberg 2.V 1533 †ibiden 4.IV 1596 ⊏ Os- terode Agidienkirche; ∞ Wolfenbüttel 1.VII 1560 Klara v Braunschweig,1539/47 Abt v Ganderheim *16.XI 1532 †Herzberg 23.XI 1595 ⊏ Osterode Agidienkirche T v Hz Heinrich dem Jüngeren in Wolfenbüttel

Die Herzoge Albrecht III und Heinrich IV teilen 1483 GRUBENHAGEN je zur Hälfte

Herzog Heinrich Julius von Braunschweig-Wolfenbüttel nimmt das Fürstentum Grubenhagen nach dem Ableben von Herzog Philipp II sofort in Besitz

Back

Trade Routes – Berthold (1976)



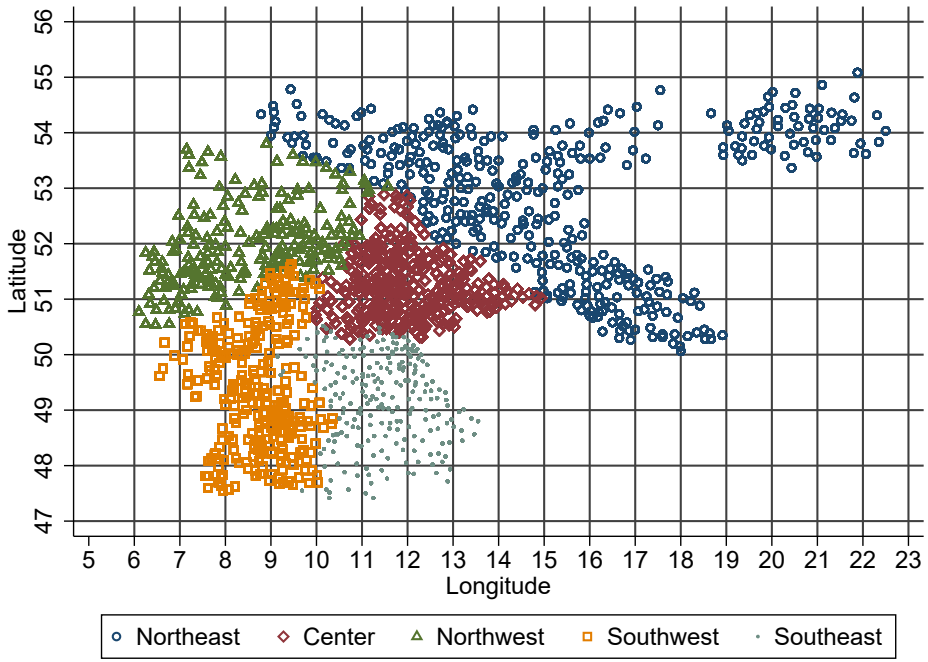
Note: Map showing trade routes in the German lands, circa 1500. Red lines indicate trade routes, black dots indicate the cites in our sample, triangles indicate main trading centres. Hand-digitised from the original, Berthold (1976).

Summary Statistics

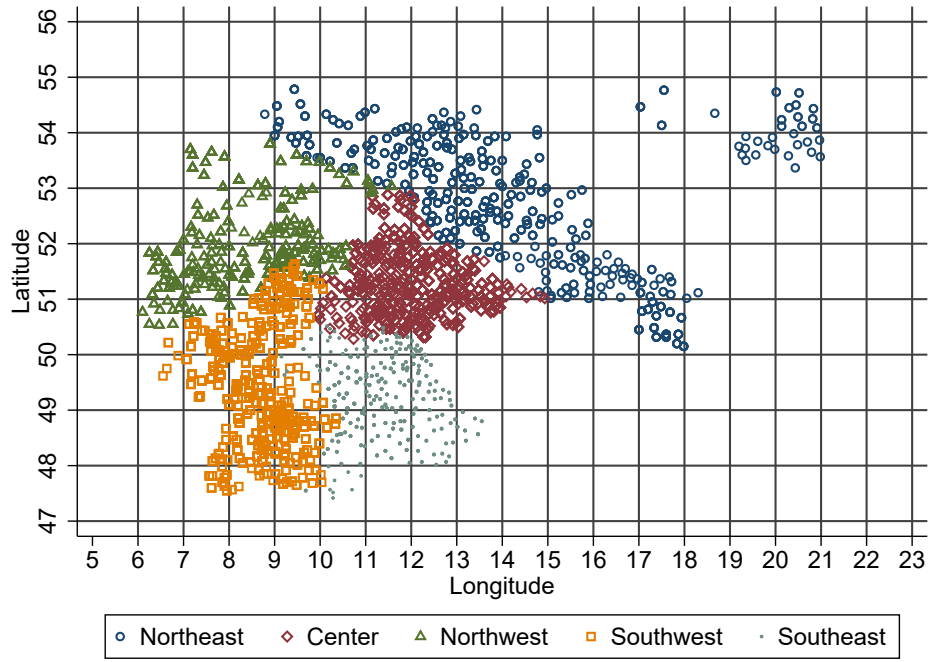
	Panel A: Full Sample				
	count	mean	sd	min	max
Conflict (1x1 degree cell-level)	61077	0.319	0.466	0	1
Internal conflict (1x1 degree cell-level)	61077	0.231	0.422	0	1
City has a council	61077	0.259	0.438	0	1
Citizens elect council	61077	0.022	0.146	0	1
Council size	61077	5.218	11.488	0	341
Guilds on council	9256	0.008	0.090	0	1
Any construction present	61077	0.931	0.253	0	1
Any military construction present	61077	0.648	0.478	0	1
Any religious construction present	61077	0.860	0.347	0	1
Any secular construction present	61077	0.630	0.483	0	1
No. of complex taxes	61077	0.268	0.830	0	16
Dist. to nearest trade route (1500)	61077	171.994	96.796	24	514
Imperial city (pre 1422)	61077	0.033	0.179	0	1
Market city (pre 1500)	61077	0.376	0.484	0	1
Hanse city	61077	0.027	0.163	0	1
University city	61077	0.008	0.090	0	1
River access	61077	0.070	0.256	0	1
Coastal access	61077	0.006	0.077	0	1
Entry length in Keyser	61077	2.693	3.718	0	51
Mean winter temperature	61077	-0.834	1.238	-6	3

Back

Full and Restricted Samples



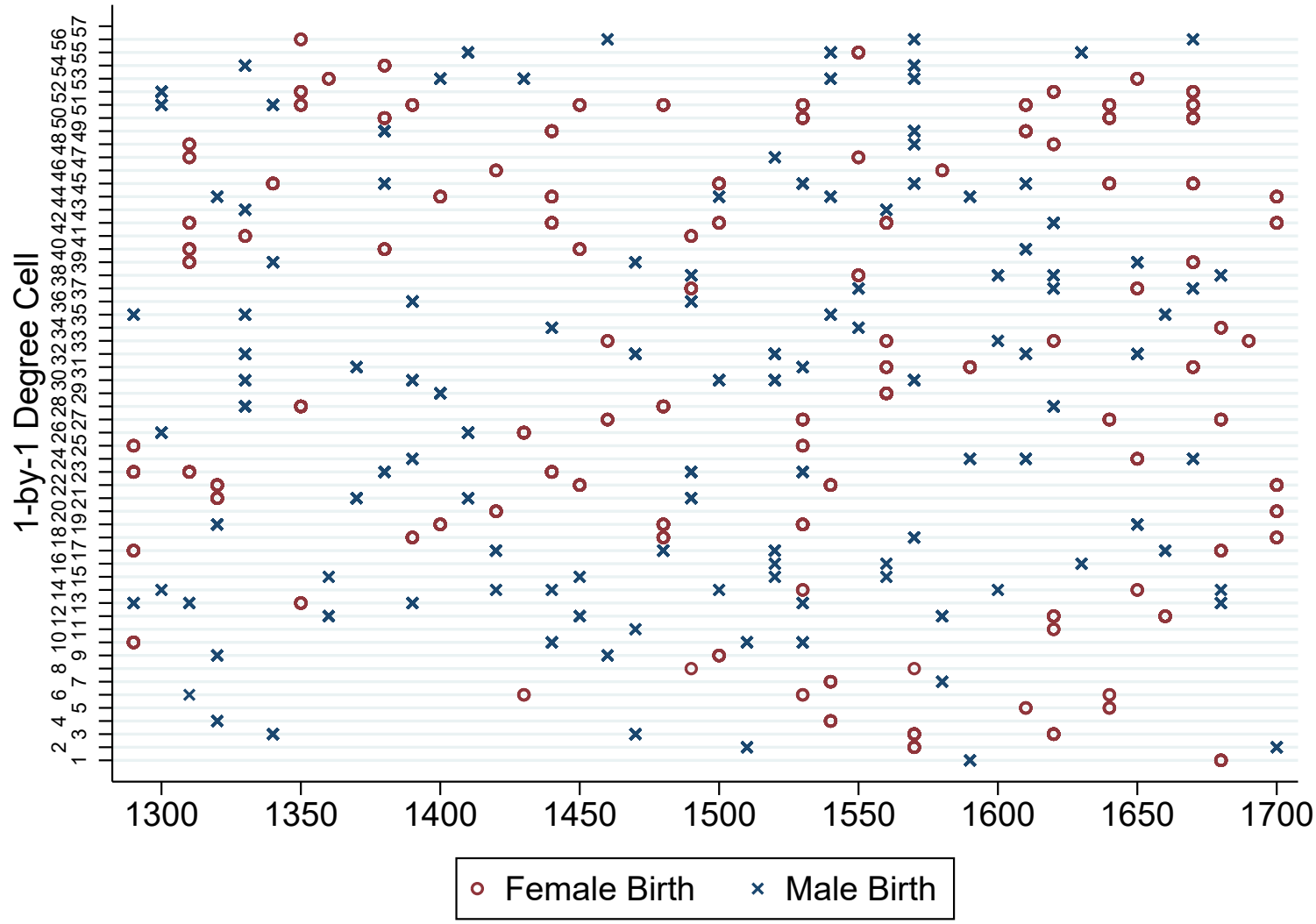
Full



Restricted

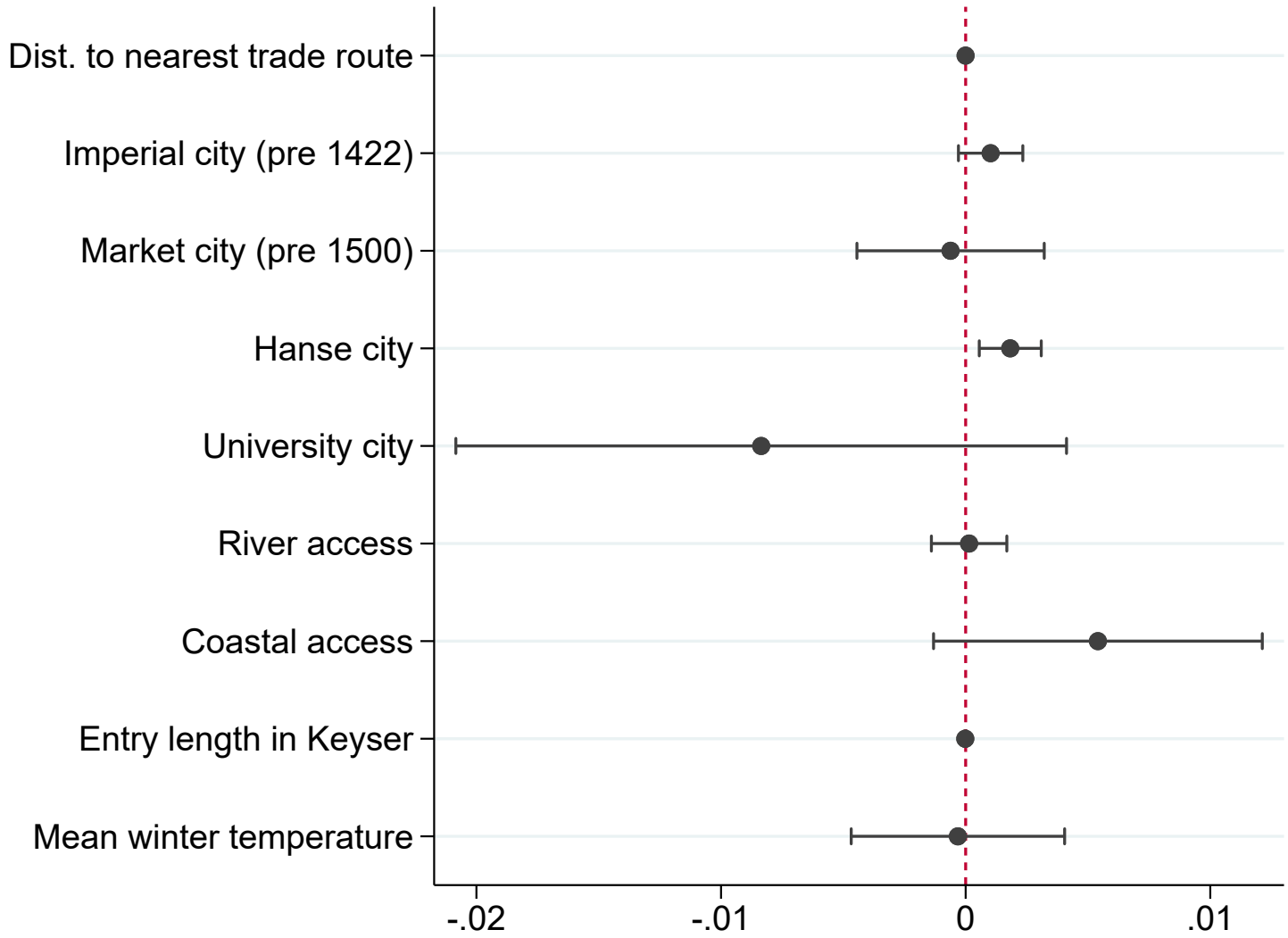
Back

IV Events



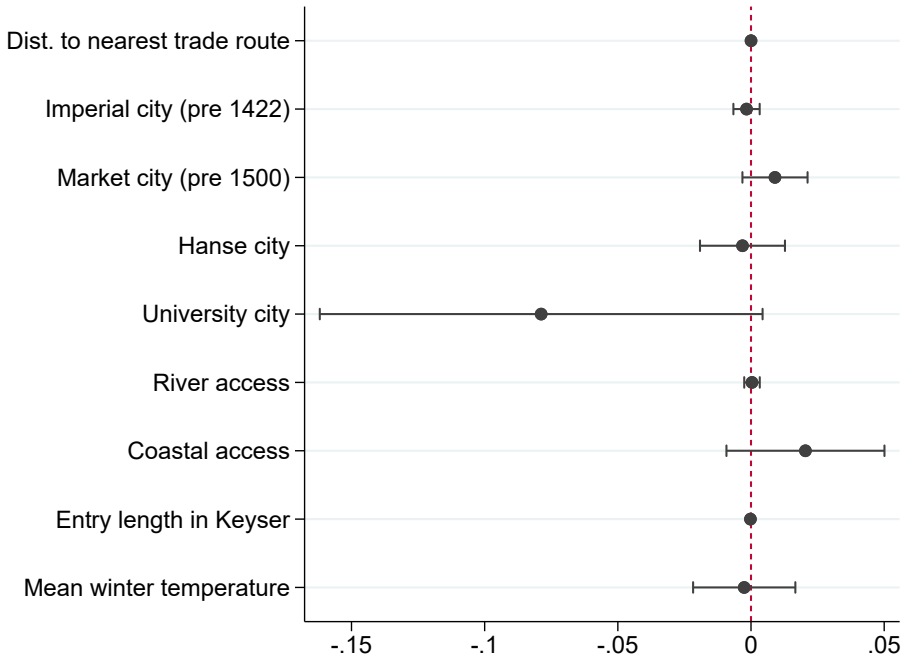
Back

Entry Into IV Sample

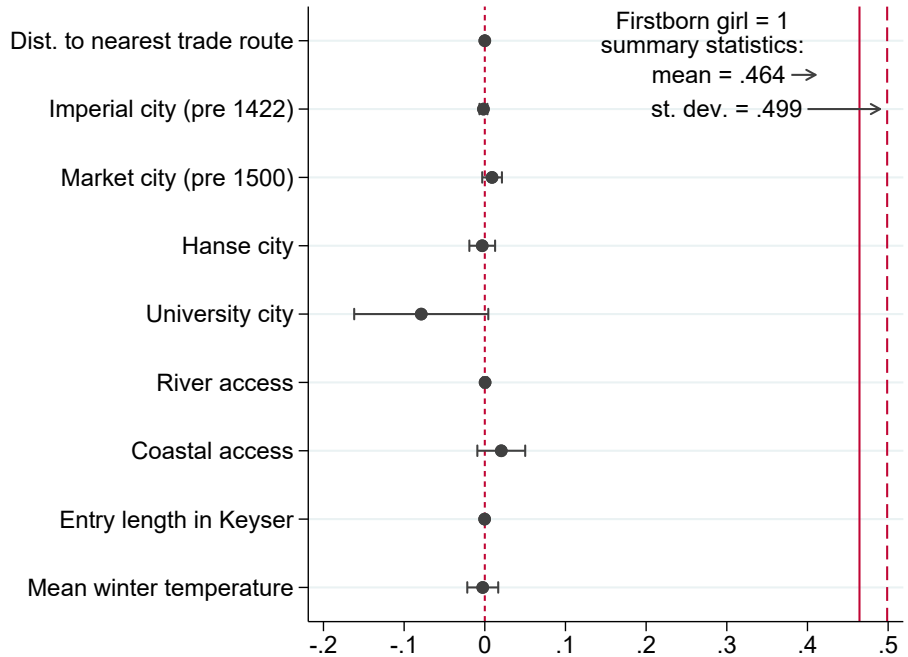


Back

IV Balance – Cells



Coefficient Plot



With Outcome Summary Statistics

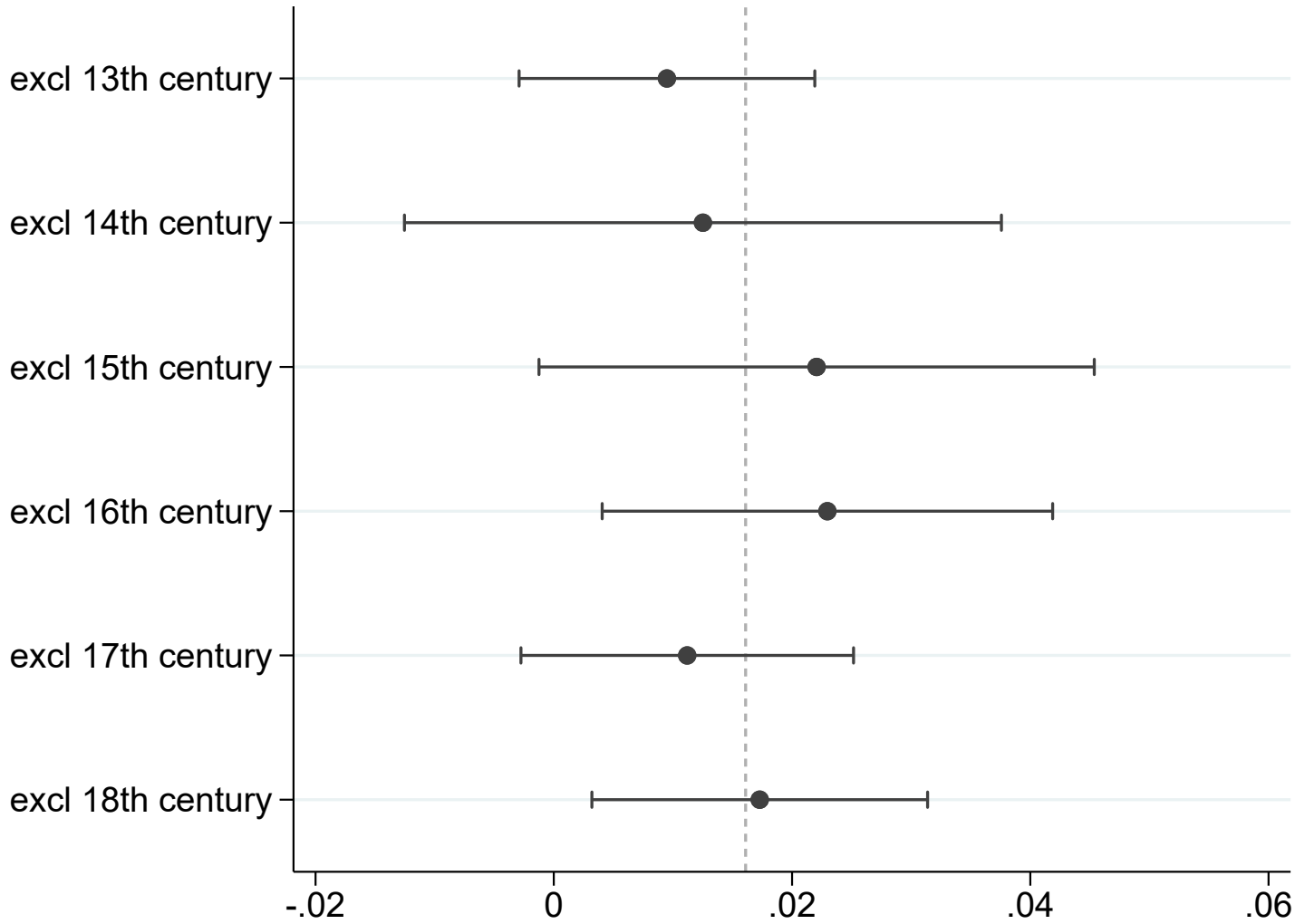
Back

IV Balance – Nobles

	Mean (male firstborn)	Mean (female firstborn)	Difference	p-value
Dummy: any child	1.000	1.000	0.000	.
Age when had first child	27.852	28.364	-0.512	0.317
Age at death	55.468	54.593	0.875	0.302
Age at first marriage	23.876	24.304	-0.428	0.353
Centrality at age 10 (number of links)	3.913	4.061	-0.148	0.434
No. characters in Peerage entry	3,560.638	3,611.476	-50.839	0.545
No. footnotes in Peerage entry	5.089	4.760	0.329	0.229
No. references in Peerage entry	1.546	1.542	0.004	0.964
No. characters in Peerage entry (Father)	4,220.099	4,340.264	-120.164	0.306
No. footnotes in Peerage entry (Father)	6.654	6.668	-0.015	0.967
No. references in Peerage entry (Father)	2.192	2.301	-0.109	0.376

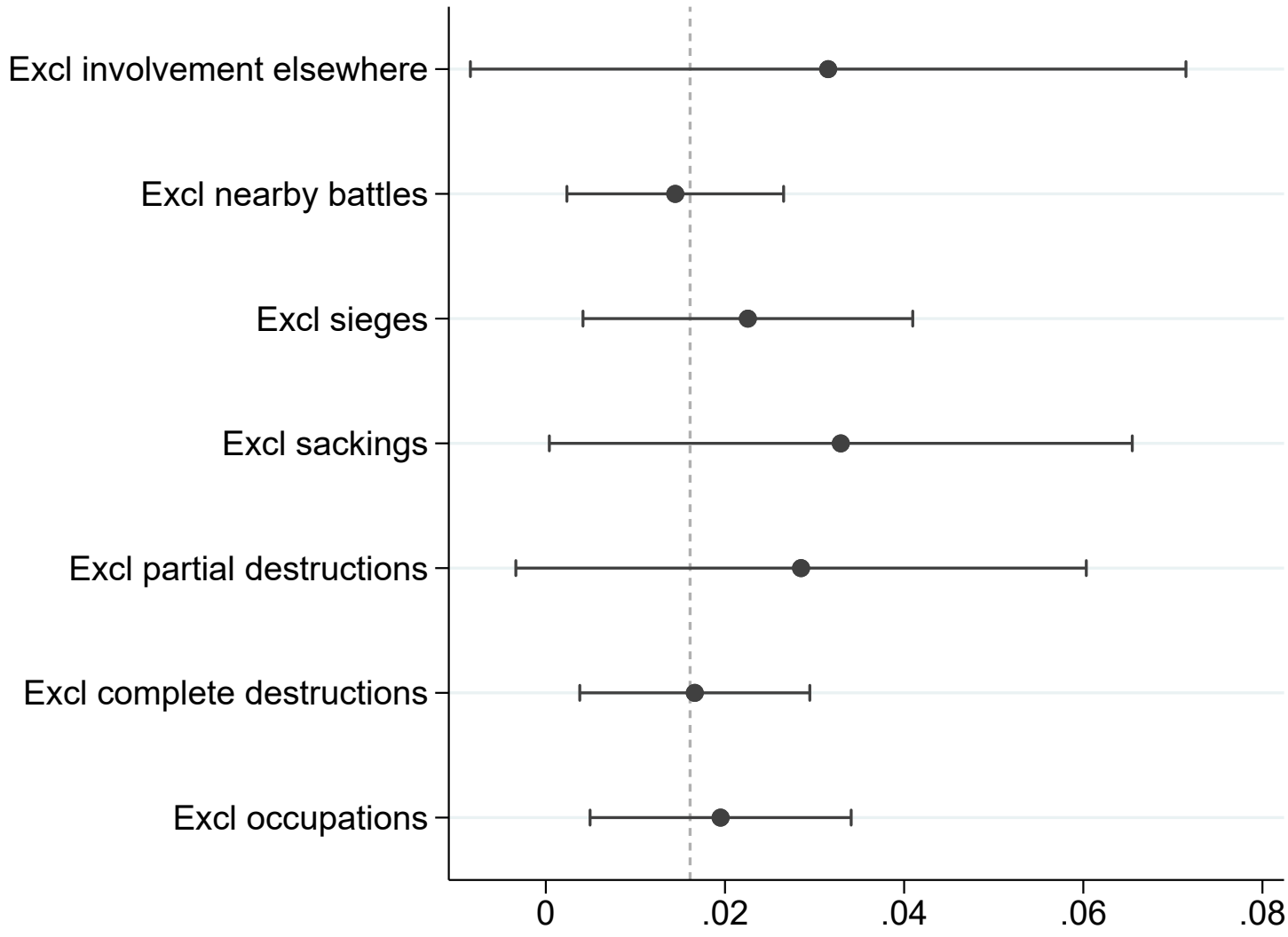
Back

Council Elections – Century Jackknife



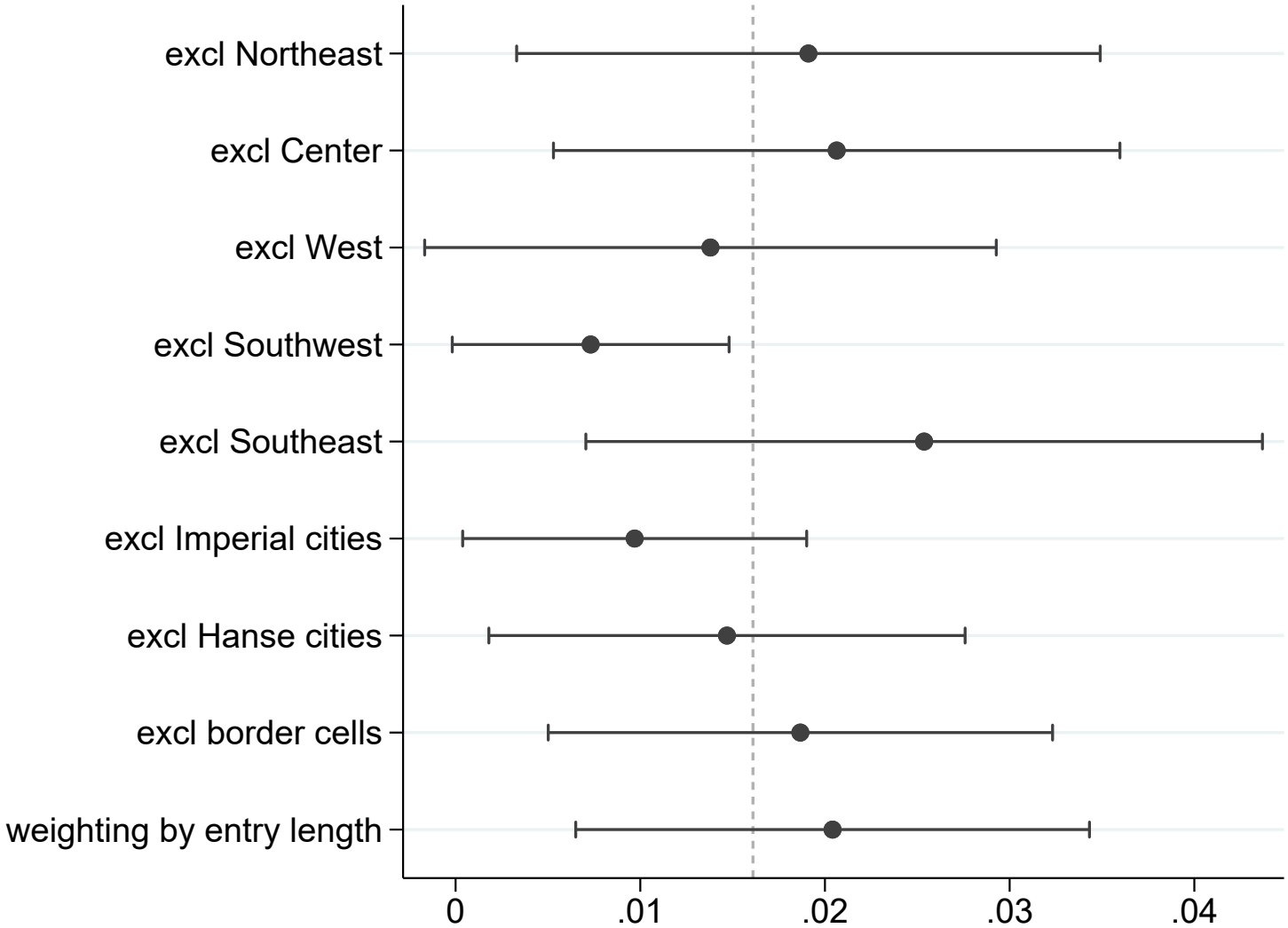
Back

Council Elections – Conflict Type Jackknife



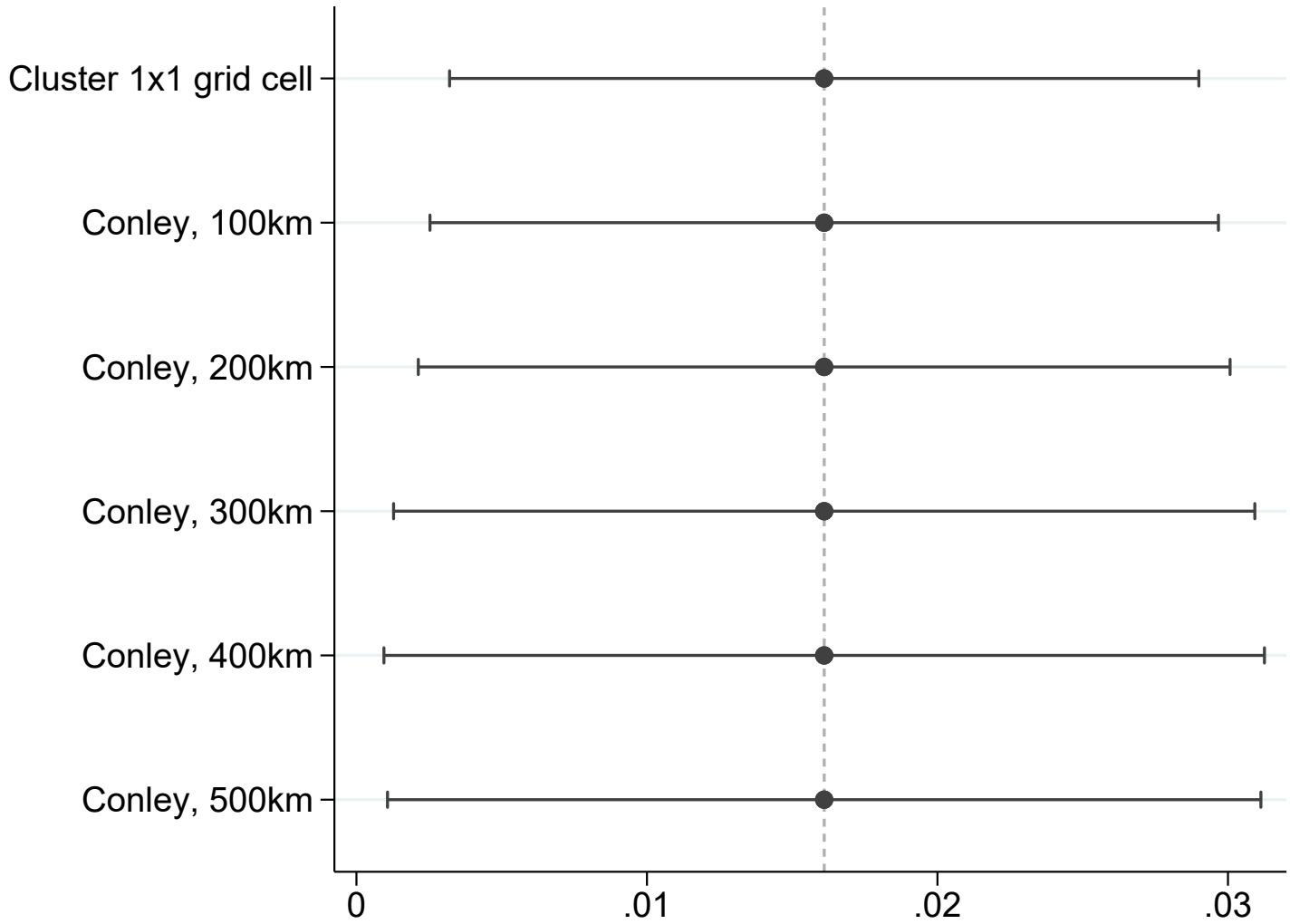
Back

Council Elections – Sensitivity Checks



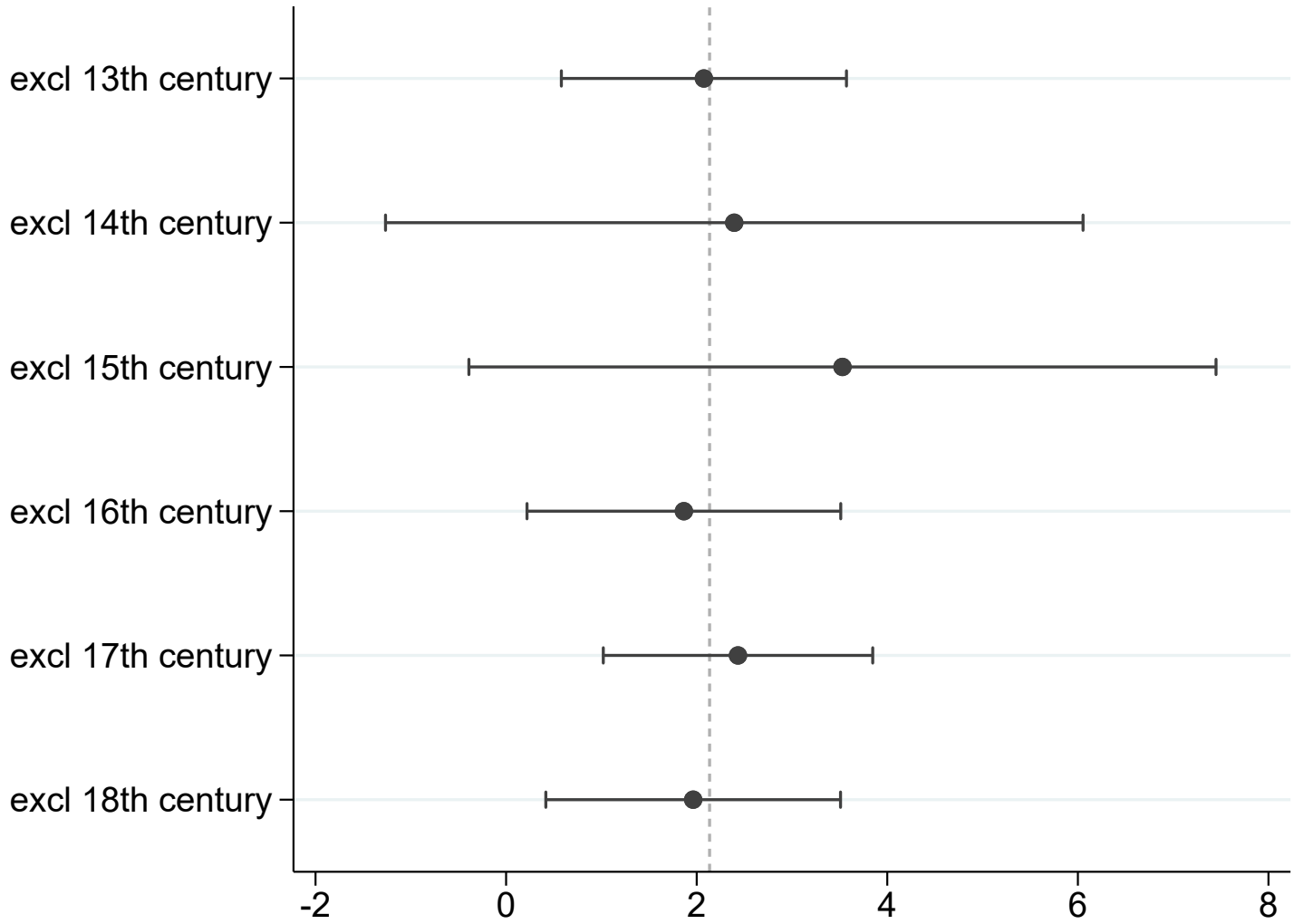
Back

Council Elections – Conley Standard Errors



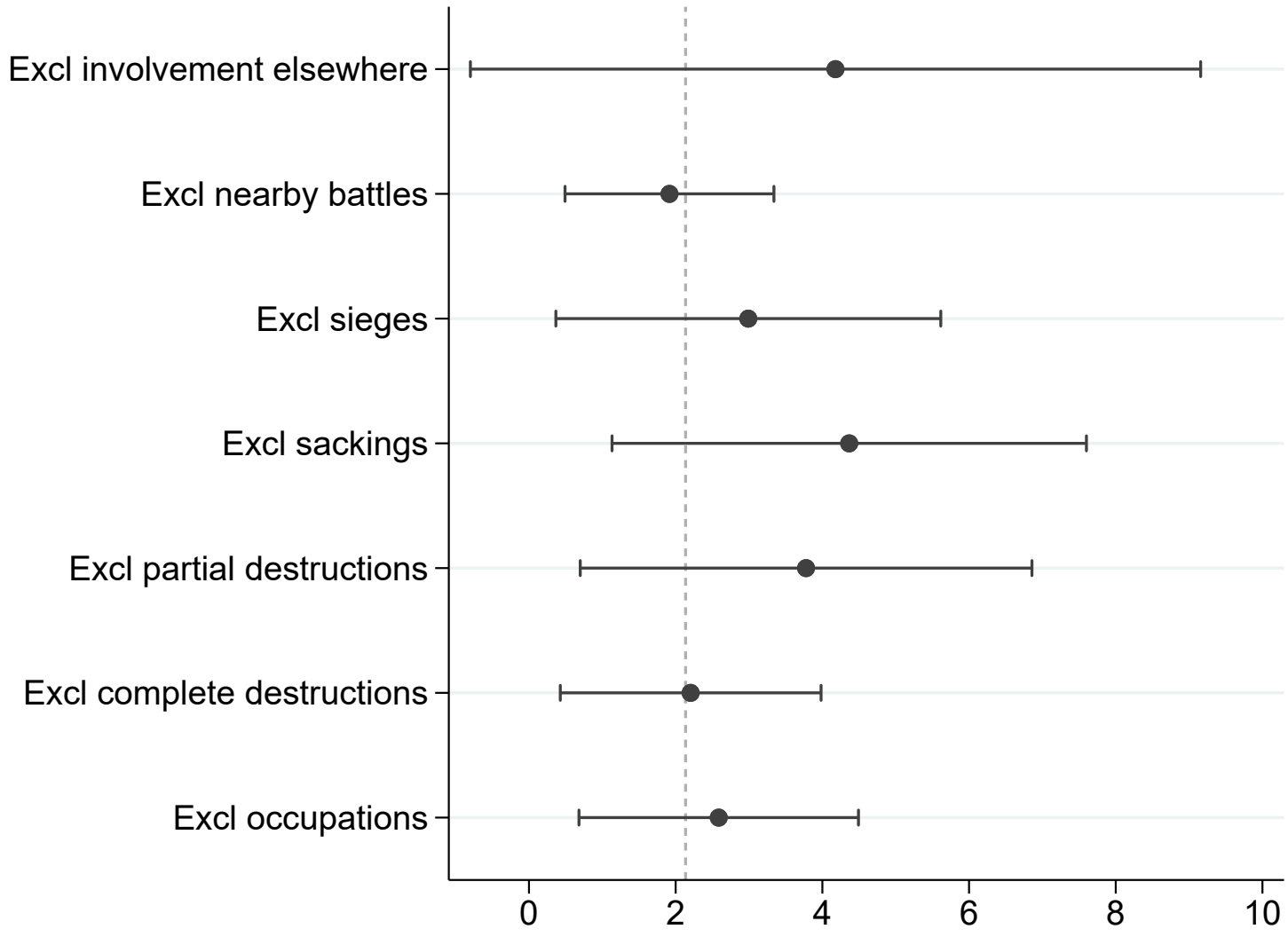
Back

Council Size – Century Jackknife



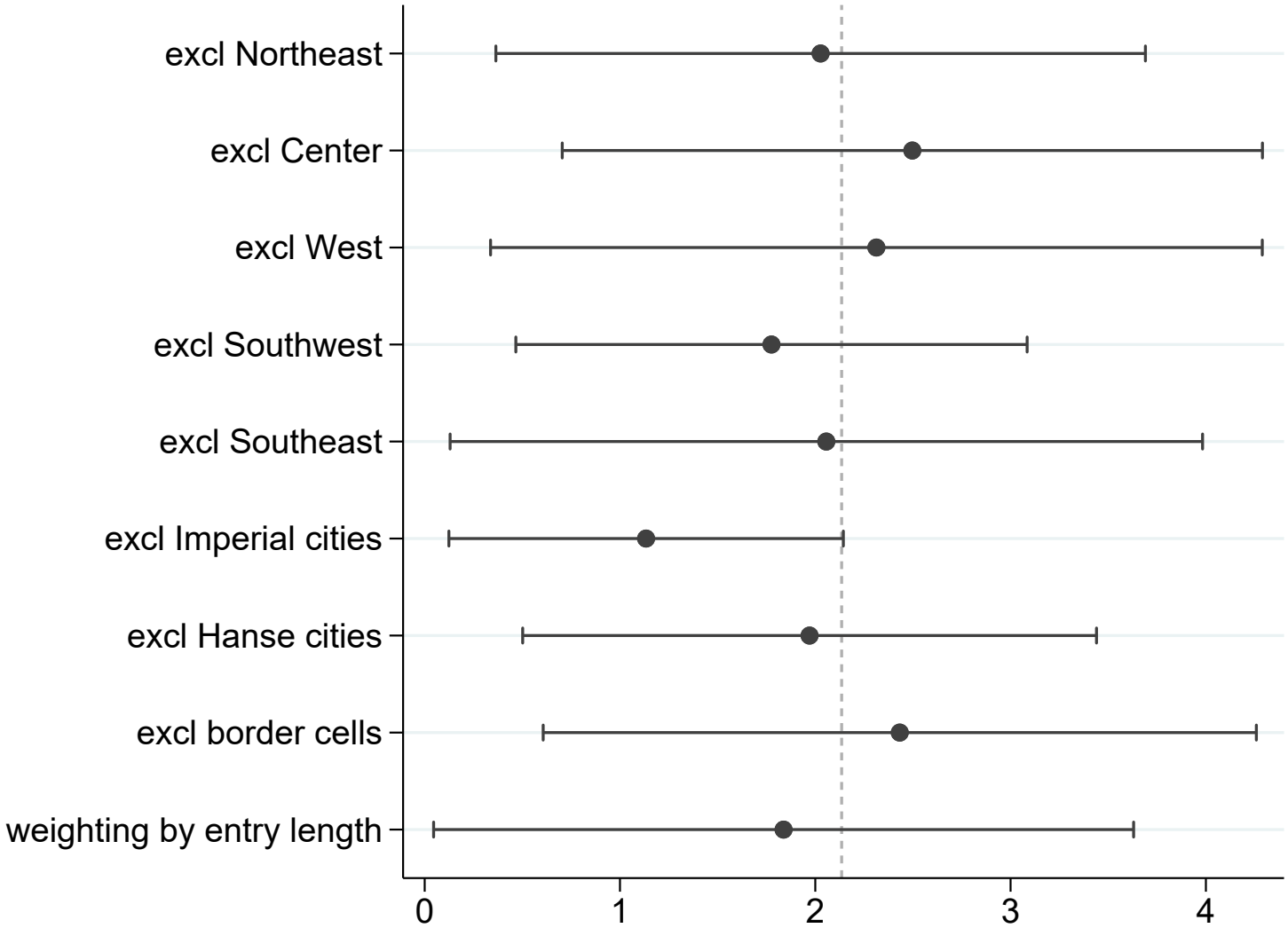
Back

Council Size – Conflict Type Jackknife



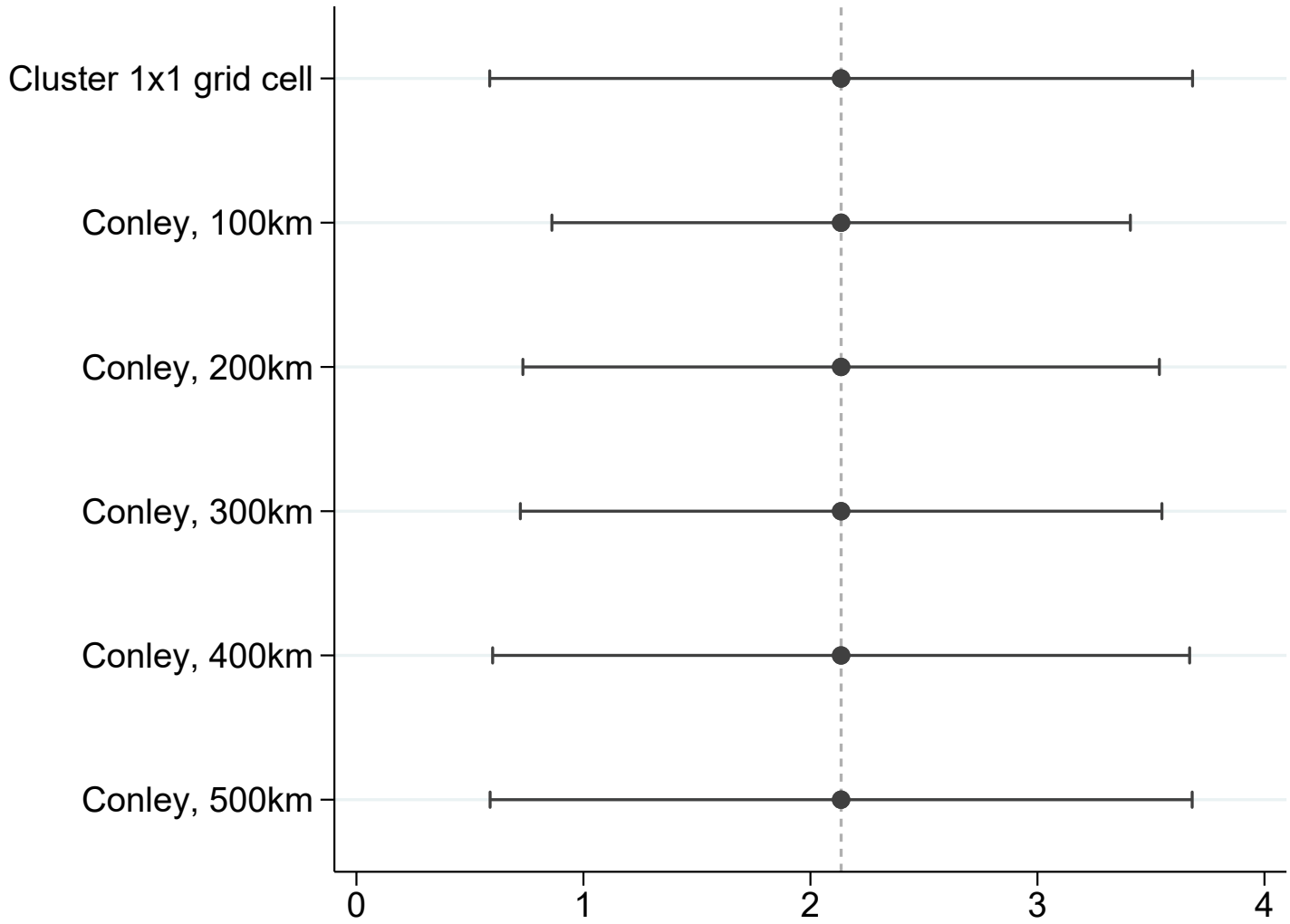
Back

Council Size – Sensitivity Checks



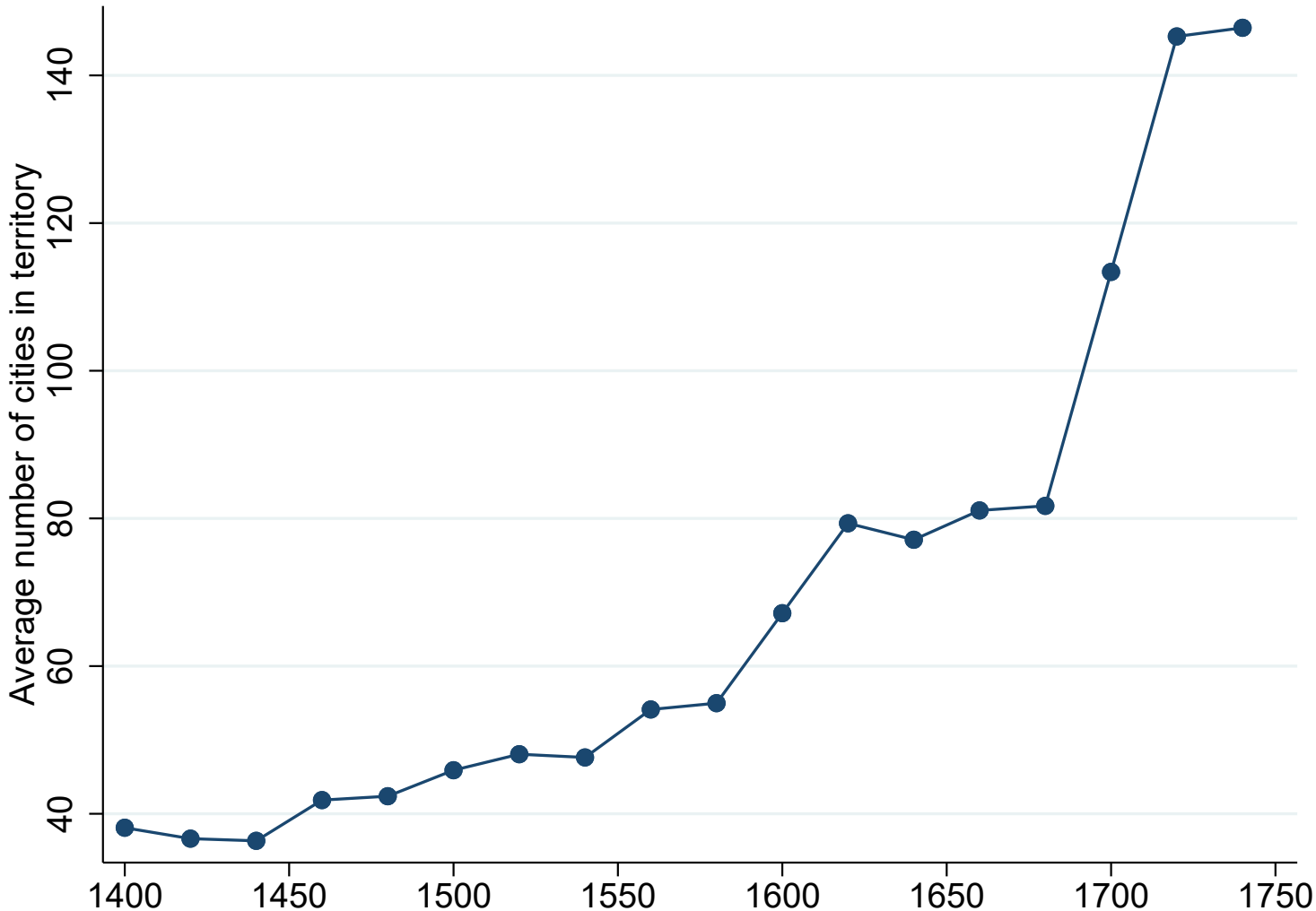
Back

Council Size – Conley Standard Errors



Back

Long Shadow of Medieval Constitutionalism



Back

	Outcome: Difference in Tax Capacity Between Winner and Loser							
	Sum of all complex taxes				No. complex taxes in most complex city			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1450-1499	1.908	1.908	5.045***	4.990***	0.104	0.104	0.017	0.036
	(2.458)	(2.460)	(1.093)	(1.050)	(0.471)	(0.471)	(0.193)	(0.189)
1500-1549	-6.257	0.056	12.249*	21.568***	-1.236	-0.236	1.299	1.710**
	(6.875)	(5.874)	(7.195)	(6.897)	(1.015)	(1.009)	(0.787)	(0.767)
1550-1599	-14.909***	-14.909***	9.231*	9.952*	-3.343***	-3.343***	0.485	0.339
	(5.320)	(5.322)	(5.279)	(5.398)	(0.796)	(0.796)	(1.129)	(1.190)
1600-1649	23.948**	36.556***	16.399**	5.898	1.514	2.639***	0.691	-1.123
	(12.124)	(1.910)	(8.093)	(10.238)	(1.179)	(0.426)	(0.830)	(1.003)
1650-1699	34.520***	34.520***	22.444***	22.039**	4.228***	4.228**	3.582***	2.896***
	(11.298)	(11.303)	(7.280)	(9.525)	(1.629)	(1.630)	(0.955)	(1.017)
1700-1749	91.507***	91.507***	73.661***	73.891***	5.686***	5.686***	3.490***	2.800***
	(3.628)	(3.629)	(7.722)	(10.192)	(0.340)	(0.341)	(0.794)	(0.940)
Excl. relig. wars		yes		yes		yes		yes
Territory FE			yes	yes			yes	yes
Observations	289	279	275	268	289	279	275	268
Outcome mean	63.170	64.953	66.927	67.552	6.163	6.319	6.531	6.571

Back