The Evolution of Wealth Inequality, 1668 to 2012: The North Atlantic Anglo-Sphere
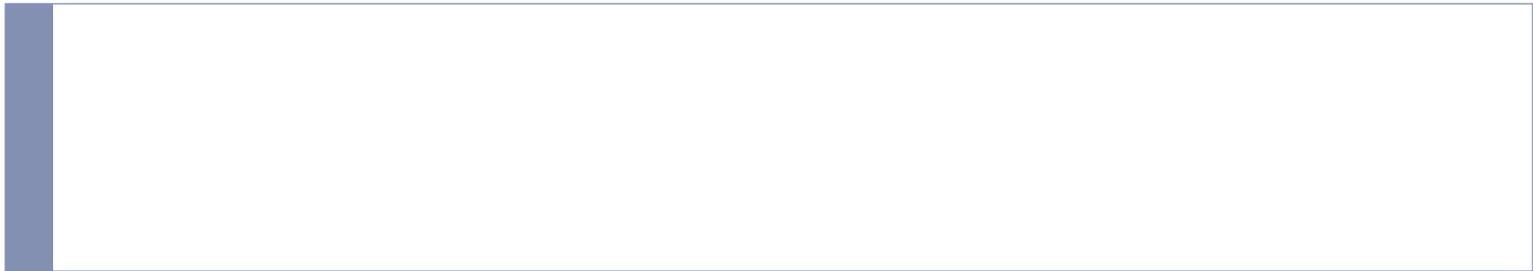
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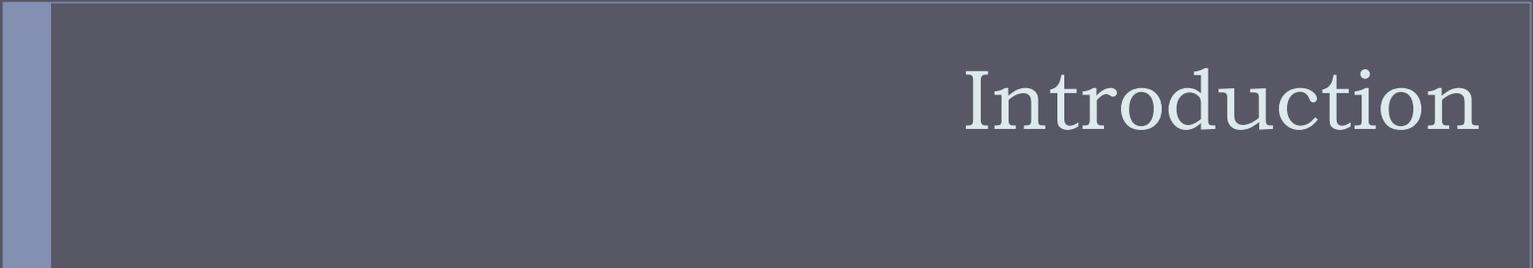
Introduction

Inequality, Industrialization & Growth

▸ Debate over whether over long-term economic development and industrialization reduced or increased inequality.

▸ Williamson and Lindert have argued that industrialization brought about increased inequality; Soltow felt that the industrial revolution had the opposite long term effect because the factory revolution offered greater employment opportunities than previously existed.

▸ An examination of wealth inequality focusing on Canada and extending to the North Atlantic Anglo-sphere countries of the United Kingdom and the United States over the period stretching from 1668 to 2012

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Overview of Results

▸ A combination of measures, data sources and estimates is used including own-estimates from original micro-data as well as results from previously published estimates.

▸ Results show high wealth inequality in all three countries in the nineteenth century with a decline during the twentieth century.

▸ Evidence for Canada, the United States and the UK in this paper show rising wealth inequality after the 1970s, which coincides with changes in estate and death tax regimes in all three countries suggesting that these taxes may have indeed played a key role in affecting the distribution of wealth.

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Data Sources & Methodological Issues

Wealth Inequality

▸ abundance of regional and national studies of economic inequality at points in time but integrative long-term views of wealth inequality across countries are rarer.

▸ wealth is generally more unequally distributed than income and that there has been a downward trend in wealth inequality since the end of the nineteenth century followed by some reversal in the second half of the twentieth century

▸ wealth is considered a better measure of economic and ultimately political power in a society while income better reflects current standards of living and human capital

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A Sample of the Literature

- Williamson and Lindert (1980)
  - wealth in the United States was less concentrated during the colonial period while nineteenth century industrialization brought great inequality bringing it on par with that of Western Europe
- Woolff and Marley (1989)
  - USA: estimate a decline in wealth concentration in the United States from the late 1920s to the late 1940s, a slight increase in the 1960s, a sharp drop in the 1970s, and then a minor increase to 1981
- Roine and Waldenstrom (2014)
  - wealth inequality (ten developed countries) was high in the nineteenth century but decreased during the first 80 years of the twentieth century
- Lindert (1986, 2000)
  - UK: high and increasing wealth inequality in the second half of the eighteenth century with the nineteenth century also seeing increasing concentration at the top of the distribution
- Atkinson and Harrison (1978)
  - UK: a steep drop in wealth inequality until the 1980s and then the start of an increase
- Di Matteo (2016)
  - Canada: wealth inequality decline to 1980s and increase since

Data Issues

▶ Large number of methodological issues when it comes to examining wealth inequality that are compounded if international comparisons are to be made:

  ▶ definition of what wealth is, the unit of observation,

  ▶ assorted biases of the data source being made use of,

  ▶ asset coverage,

  ▶ sampling differences

  ▶ institutional differences when data from different countries is compared

Roine & Waldenstrom (2014)

- They note that even when a common unit of comparison is available across countries (for example, households) the definition is not identical across countries and can even vary over time within a country.

- As they write (2014: 5): "Finally, one should remember that it is not always a matter of choosing the right inequality measure for the question at hand. In fact, when it comes to the study of long run inequality the availability of any data at all is often the binding constraint."

Canada

▶ The wealth inequality estimates for Canada are for the period 1851 to 2012 and come from four main sources:

　▶ 1) historical wealth micro-data collected from probate records

　▶ 2) published scholarly estimates,

　▶ 3) Statistics Canada Survey data and

　▶ 4) Federal Government tax data. Department of National Revenue, Taxation

Historical Wealth Micro-Data

▸ Four regional data sets. The primary data source is the probate records of Ontario and Manitoba surrogate Courts with probate being an institutional process that transferred property from the dead to the living and as part of the process did a detailed market based evaluation of assets.

  ▸ Wentworth County, Ontario (1872-1927),
  ▸ Thunder Bay District, Ontario (1885-1927),
  ▸ Ontario (1892, 1902)
  ▸ Manitoba (1875-1927).

▸ These data sets vary in size with Ontario 1892 and 1902 consisting of 3,515 and 3,641 individuals;

▸ Wentworth County at 2,516;

▸ Thunder Bay District at 2,338 and Manitoba at 826.

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Published Scholarly Estimates

- Siddiq (1988) and Siddiq and Gwyn (1992) looked at the distribution of wealth in Nova Scotia using probate records and provide estimates of Gini Coefficients and wealth shares for 1851 and 1871.

- Darroch (1983) uses municipal property assessment rolls and analyzes inequality of real estate holdings for Toronto for the period 1861 to 1899.

Statistics Canada Survey Data

▸ Public use micro-data is available from Statistics Canada with the Survey of Consumer Finances and the Survey of Financial Security.

▸ For 1970 and 1977, estimates of wealth inequality are taken from Oja (1987) while Gini Coefficients and wealth shares were calculated from micro-data files for 1984, 1999, 2005 and 2012.

▸ The Statistics Canada micro data includes estimates of family net worth along with numerous individual and family characteristics as well as detail on specific assets.

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Canadian Federal Estate Tax Data

▸ The Federal government imposed estate taxes – a duty imposed on the value of property passing at the time of death – in 1941, under the Succession Duty Act that was then replaced by the Estate Tax Act in 1959.

▸ In terms of reporting, prior to 1959 the Taxation Statistics report estate income on which taxation was levied while after 1959 estate size and tax on taxable value is reported.

▸ The Estate Tax was repealed in 1972 as part of a process of tax reform.

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USA & UK

▸ The wealth inequality estimates for the United States come from an assortment of secondary sources and research and span the period 1680 to 2011. Moreover, they include wealth inequality estimates calculated for the entire country as well as for separate states, regions as well as some historical urban areas, which results in considerable geographic diversity across these point estimates.

▸ The wealth inequality estimates for the United Kingdom come from primary and secondary sources that span the period 1668 to 2010. They are essentially national estimates though the definition of nation varies somewhat with United Kingdom and England and Wales both being used and in this paper are used interchangeably.

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# Measures Used

▸ Gini Coefficient

▸ Wealth share of top 10%

Gini Coefficients of Wealth Inequality, Canada 1851-2012

Local polynomial smooth

kernel = epanechnikov, degree = 3, bandwidth = 69.5, pwidth = 104.25
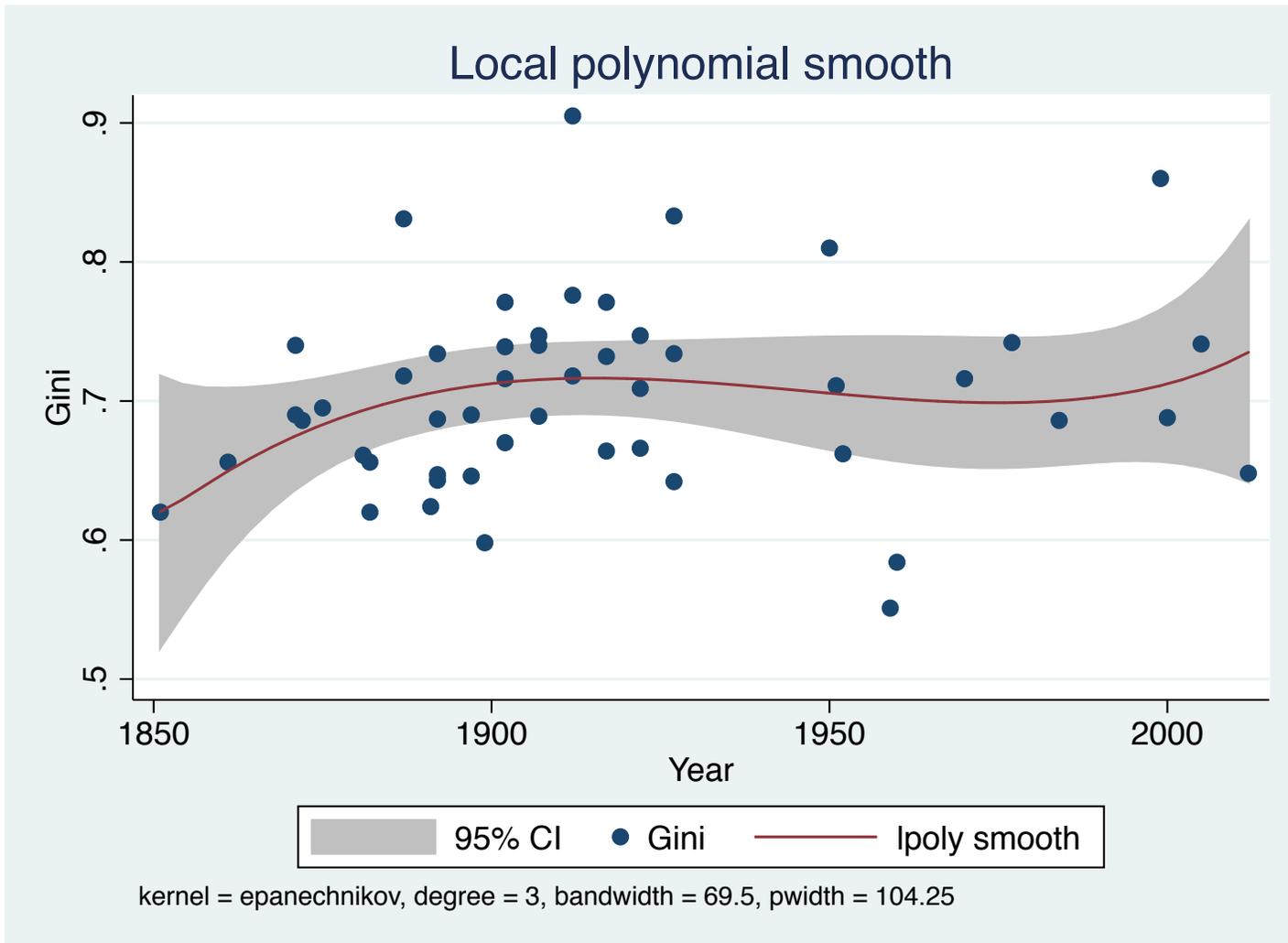
Gini Coefficients of Wealth Inequality, USA, 1680-2011

Local polynomial smooth

kernel = epanechnikov, degree = 3, bandwidth = 50.39, pwidth = 75.59
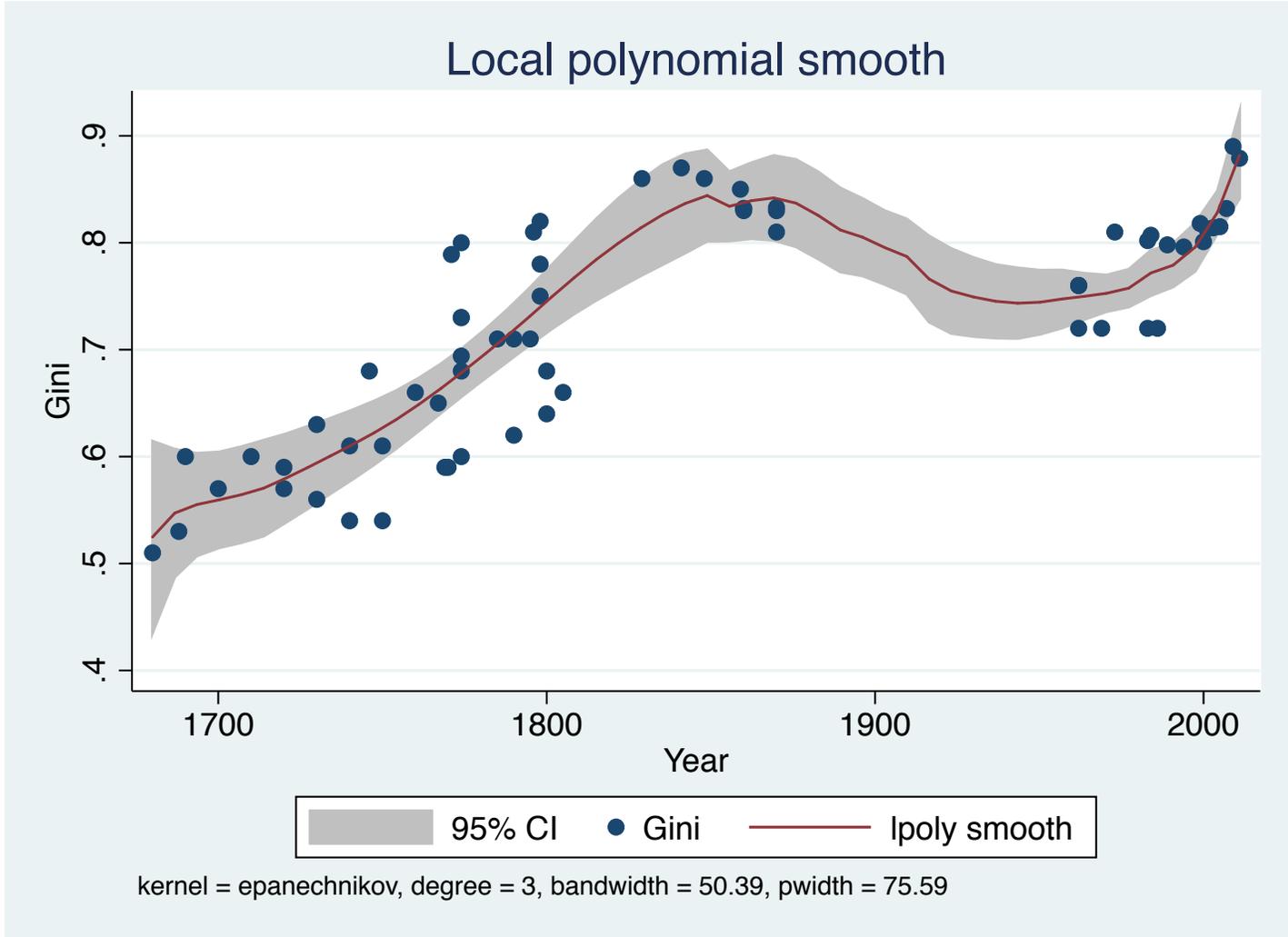
Gini Coefficients if Wealth Inequality, UK, 1688-2010

Local polynomial smooth

kernel = epanechnikov, degree = 3, bandwidth = 74.65, pwidth = 111.97
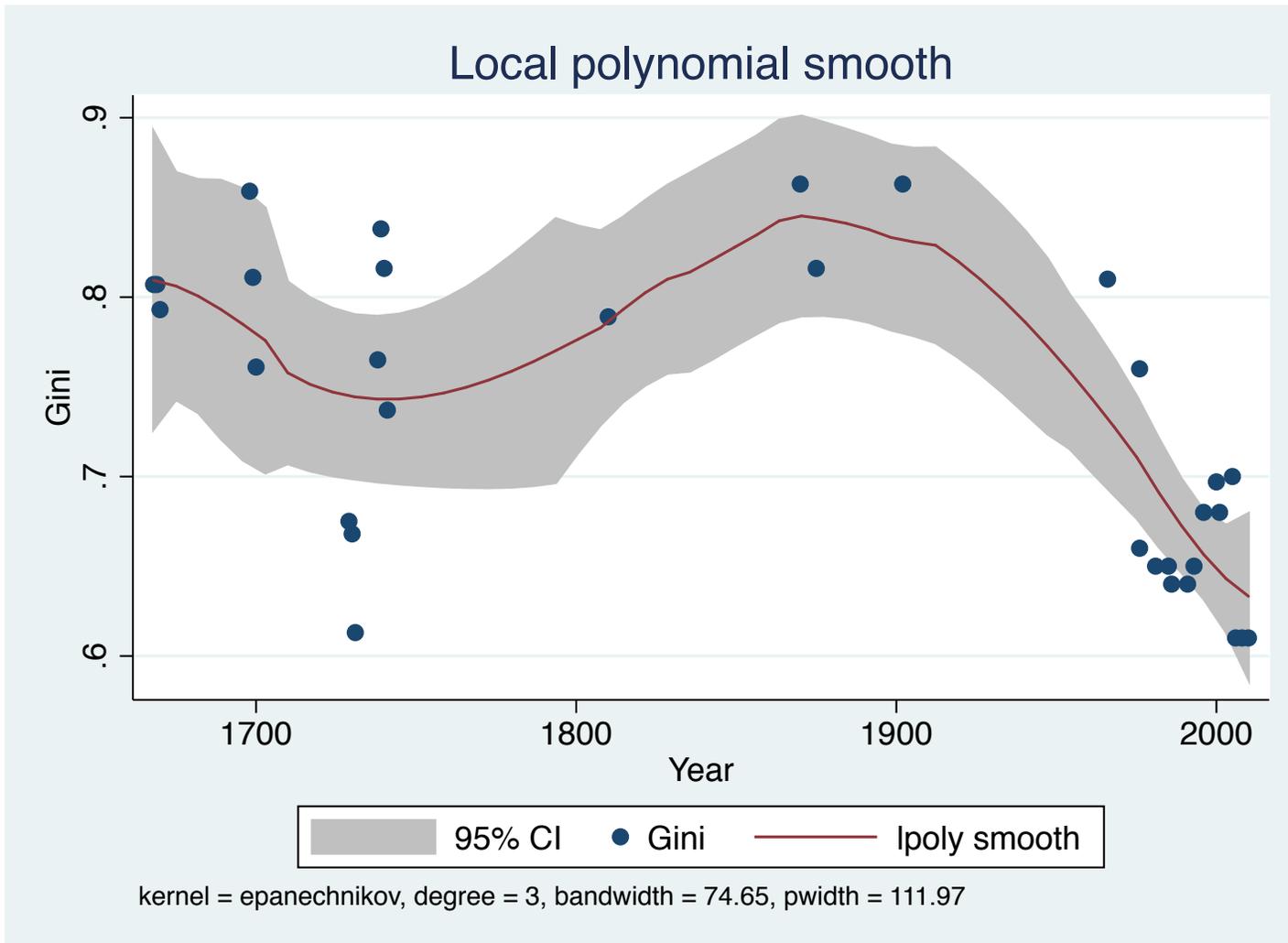
Canada, USA, UK, Gini Coefficients with Smooth: 1680-2012

Local polynomial smooth

95% CI   • Gini   — lpoly smooth

kernel = epanechnikov, degree = 3, bandwidth = 58.39, pwidth = 87.59
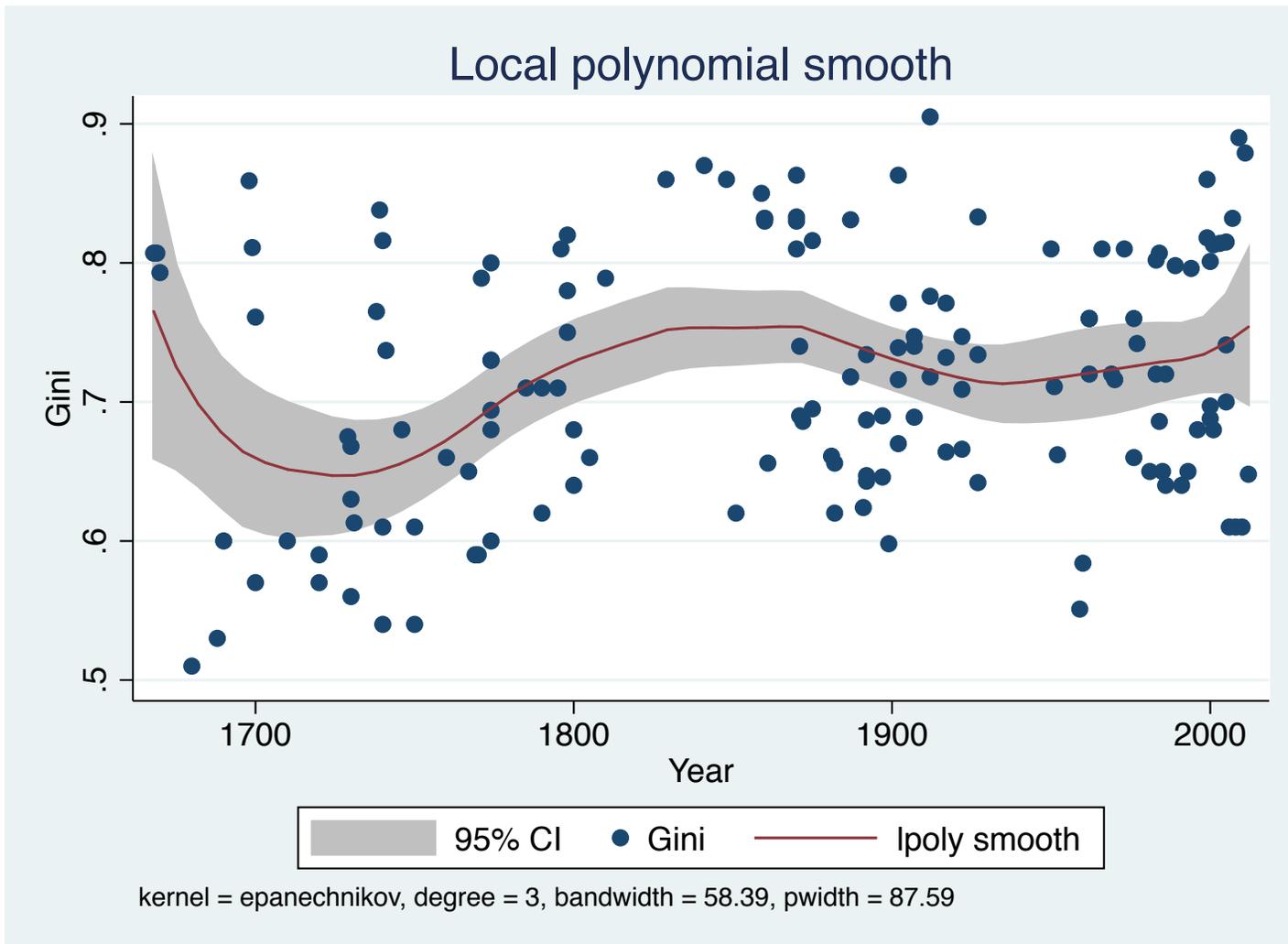
Pooled Gini Coefficients: Canada, USA, UK, 1680-2012
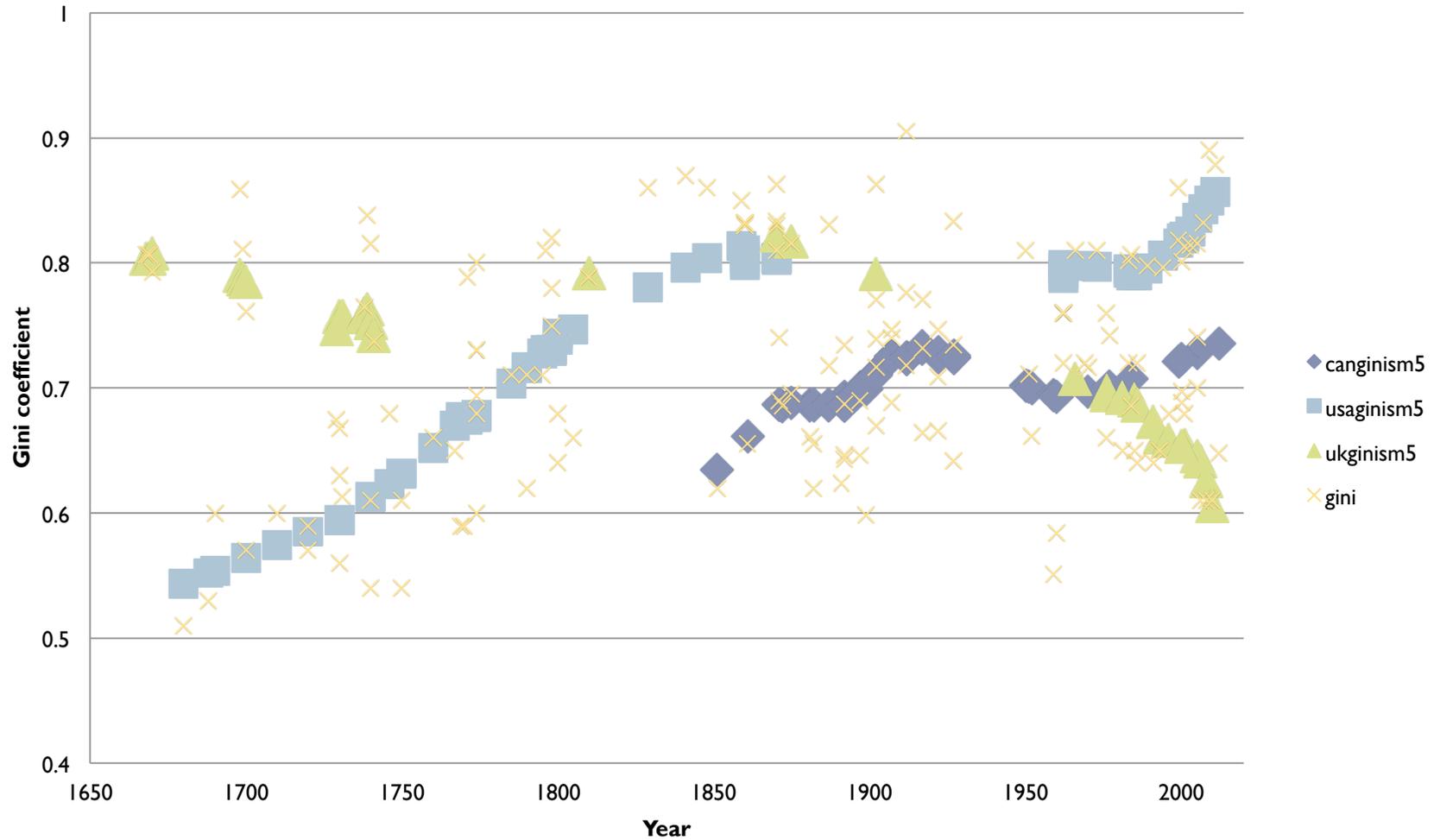
Regression Analysis

Determinants of Inequality

- ▶ Kuznets curve relationship
- ▶ Public policy, skills, institutions, education, resource endowments and age structure
- ▶ Systems of inheritance
- ▶ Tax policy

Tax Policy

- Canada, the United States and the United Kingdom all bring in wealth taxes on the property of the deceased by the middle of the twentieth century, these taxes are all either eliminated or reduced substantially after the 1970s.
- For Canada, the federal estate taxes are in effect from 1941 to 1973.
- For the United States, the modern system is in effect from 1916 to 1977 with reductions in wealth taxation take effect after 1977.
- In the UK, the modern estate tax system with a jump in rates starts in 1894 and a period of declines in the rate begin in 1981.
- Thus, for all three countries, we have a period of relatively higher or effective estate taxation that can be used as a determinant variable for wealth inequality.

Regressions: Natural Log of Gini Coefficient Dependent Variable

	Unweighted Regression		Weighted Regression**	
	Coefficient	t-statistic	Coefficient	t-statistic
Year	-0.48133440	-3.14	-0.53339540	-4.40
Year Squared	0.00026530	3.19	0.00029080	4.40
Year Cubed	-0.00000005	-3.24	-0.00000005	-4.40
United States	0.12942120	4.32	0.14319160	3.69
United Kingdom	0.13978450	4.16	0.15932030	3.62
Higher Estate Tax Regime	-0.06576220	-1.86	-0.09846840	-3.13
Constant	289.66280000	3.08	324.86660000	4.39
Adjusted R-squared	0.1631		0.1686	
F-statistic(6,141)	5.77		5.97	
**(wght=population share)				

Regression Results

▸ The results confirm a "cubic" pattern to inequality over time with decline, increase and then decline though the magnitude of the coefficients show that overall, inequality has declined over time.

▸ Inequality in the United States and the United Kingdom is significantly higher than in Canada – given the log-linear specification, the Gini coefficients from the OLS regression are 12.9 percent higher for the United States and 14 percent higher for the United Kingdom.

▸ As well, the higher estate tax regime variable was negative; significant at the 10% level in unweighted and at 5% level in population share weighted

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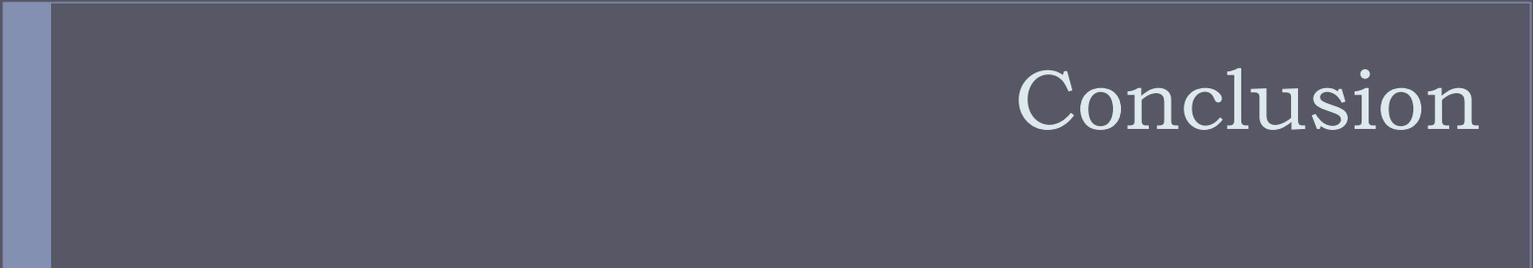
Conclusion

High Inequality

▶ high wealth inequality in all three countries in the nineteenth century with mitigation during the twentieth century.

▶ Prior to 1750, wealth inequality was higher in the United Kingdom than the United States but inequality grew rapidly in the United States to the point where it matched United Kingdom inequality by the mid-nineteenth century.

▶ Industrialization does appear to have been characterized in all three countries by rising inequality in wealth.

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20ᵗʰ Century Decline and Reversal

▸ Evidence for Canada, the United States and the UK in this paper all show falling wealth inequality during the first three quarters of the twentieth century.

▸ This decline in wealth inequality is correlated with the onset of more significant estate tax regimes in all three countries. However, wealth inequality begins to rise after the 1970s but only in Canada and the USA.

▸ This rising inequality can indeed be attributed to an assortment of factors such as changes in factor market incomes, globalization, skills differentials, institutions, education, resource endowments and age structure.

▸ However it also coincides with changes in estate and death tax regimes in all three countries suggesting that these taxes may have played a key role in affecting the distribution of wealth.

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