Chinese Head Tax Project: Updates

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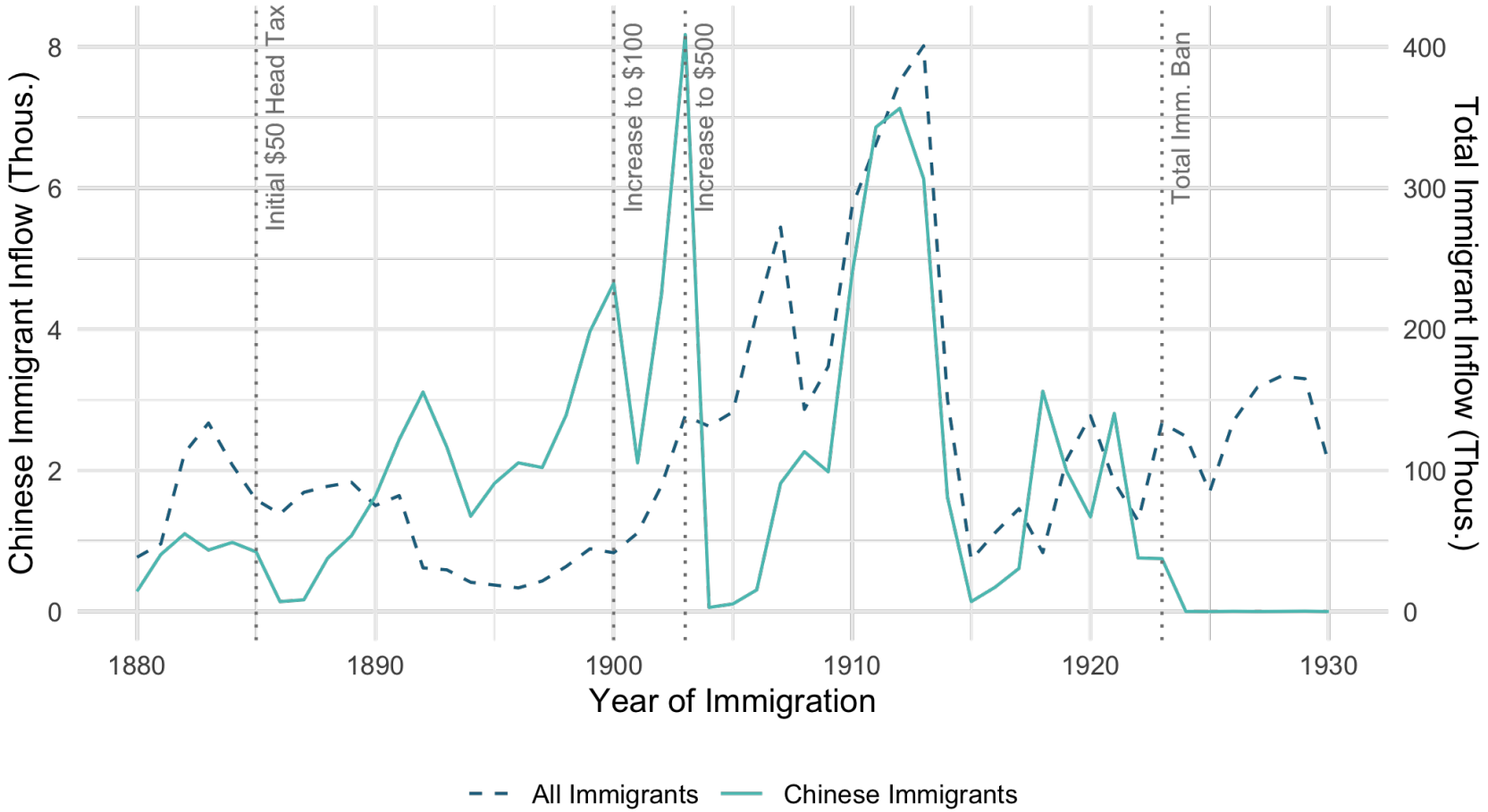
July 21, 2023

Research Question

How does an increase in fixed migration costs (in the form of a nationality-specific flat 'head tax' at the time of entry) affect selection into immigration?

Immigration Inflow: Updated Figure



Previous Version

Immigration Inflow: Regression Specification

$$\text{CHIFLOW}_t = \alpha + x_t'\beta + \delta_1 t + \delta_2 t^2 + \sum_{\tau \in \mathcal{T}} \gamma_\tau \mathbf{1}[TAX_t = \tau]$$

- TAX_t is tax paid in year t (\$50 tax is omitted for Register; \$0 tax is omitted for Census)
- x_t includes total immigration inflow + economic condition (GNP growth)
- (quadratic) time trend seems necessary Normalized Chinese Inflow but complicates coeff interpretation – exclude constant?
- Count years of change as lower head tax (e.g. categorize 1885 as \$0 head tax since established in July 1885)
- Dissipation of effect within a few years?
- Standardize variables?

Immigration Inflow: Sig. Effects on Japanese Immigration?

	Dependent variable:				
	$CHIFLOW^R$ (Register)	$CHIFLOW^C$ (Census)	$JAPANFLOW^C$ (Census)	$CHIFLOW^C$ (Pre-1908)	$JAPANFLOW^C$ (Pre-1908)
	(1)	(2)	(3)	(4)	(5)
\$50 Tax		−453.700	−383.200	−96.840	−56.450
		(399.800)	(242.300)	(294.200)	(187.600)
\$100 Tax	−695.100	−599.000	−867.000**	−283.200	−1,089.000***
	(834.500)	(604.800)	(366.500)	(353.100)	(225.100)
\$500 Tax	−6,989.000***	−1,607.000**	−810.100*	−1,188.000**	−1,620.000***
	(1,006.000)	(669.300)	(405.600)	(471.200)	(300.500)
Observations	38	41	41	28	28
Adjusted R^2	0.747	0.675	0.430	0.730	0.833

Note: *p<0.1; **p<0.05; ***p<0.01

Census Inflow w/ Japanese Imm.

Immigrant Composition: Initial Specification

- **Full Sample Info:** 4-5% samples from 1901, 1911, 1921 censuses which include year of arrival to Canada
- **Initial Specification:** for arrival year t, only keep observations from closest census year (e.g. only keep 1901 census observations for 1900 arrivals; only keep 1911 census observations for 1901 & 1902 arrivals, etc.)

$$y_{it} = \delta_t + \alpha CHI_i + \sum_{\tau \in \{100,500\}} \gamma_\tau CHI_i \times \mathbf{1}[TAX_t = \tau] + \varepsilon_{it}$$

- δ_t absorbs both arrival year and census year fixed effects
- No controls for age (but just age ctrl doesn't change much)
- Limit sample to adult men; arrival year 1890 and after

Results

Immigrant Composition: Modifications

- Col (1) is original regression for labor [(4) Japanese Only]
- Col (2) expands sample to all years of arrival [(5) Japanese Only]
- **New Specification:** col (3) [(6) Japanese Only] keeps all census year c x arrival year t observations (e.g. for 1900 arrivals, have observations from 1901, 1911, and 1921 censuses)

$$y_{itc} = \beta_c + \delta_t + \alpha CHI_i + \sum_{\tau \in \{100,500\}} \gamma_\tau CHI_i \times \mathbf{1}[TAX_t = \tau] + \varepsilon_{it}$$

- Now β_c absorbs census year FE separately from arrival year FE δ_t
- Col (3) also controls for age **and** age at arrival [(6) Japanese Only]

Outcome Regressions: LABORER

	All (1890-1920)	All (1870-1920)	All (All Census Yrs)	Japan. (1890-1908)	Japan. (1870-1908)	Japan. (All Census Yrs)
	(1)	(2)	(3)	(4)	(5)	(6)
BORNCHI	0.146***	0.128***	0.201***	−0.026	0.042	−0.039
	(0.022)	(0.035)	(0.024)	(0.041)	(0.270)	(0.209)
BORNCHI × $50 Tax		0.019	−0.035		−0.063	0.077
		(0.040)	(0.027)		(0.273)	(0.211)
BORNCHI × $100 Tax	0.050	0.068	0.032	0.005	−0.063	0.110
	(0.037)	(0.046)	(0.031)	(0.088)	(0.281)	(0.218)
BORNCHI × $500 Tax	−0.050**	−0.031	−0.100***	−0.106*	−0.174	−0.038
	(0.025)	(0.037)	(0.026)	(0.064)	(0.275)	(0.213)
Observations	42,058	47,802	85,139	1,383	1,619	3,121
Adjusted R^2	0.025	0.029	0.052	0.006	0.008	0.016

Outcome Regressions: CANREAD

	All (1890-1920)	All (1870-1920)	All (All Census Yrs)	Japan. (1890-1908)	Japan. (1870-1908)	Japan. (All Census Yrs)
	(1)	(2)	(3)	(4)	(5)	(6)
BORNCHI	−0.305***	−0.313***	−0.344***	−0.147***	−0.445*	−0.292
	(0.018)	(0.027)	(0.018)	(0.052)	(0.266)	(0.208)
BORNCHI × $50 Tax		0.016	0.128***		0.323	0.308
		(0.032)	(0.020)		(0.271)	(0.210)
BORNCHI × $100 Tax	0.146***	0.154***	0.134***	0.384***	0.682**	0.365*
	(0.026)	(0.033)	(0.022)	(0.095)	(0.278)	(0.217)
BORNCHI × $500 Tax	0.030	0.037	0.081***	0.076	0.374	0.201
	(0.020)	(0.029)	(0.019)	(0.072)	(0.271)	(0.211)
Observations	41,212	46,767	83,910	1,051	1,201	2,657
Adjusted R^2	0.043	0.047	0.053	0.026	0.033	0.014

Outcome Regressions: EARN

	All (1890-1920)	All (1870-1920)	All (All Census Yrs)	Japan. (1890-1908)	Japan. (1870-1908)	Japan. (All Census Yrs)
	(1)	(2)	(3)	(4)	(5)	(6)
BORNCHI	−250.800***	−263.800***	−509.200***	−29.790**	−76.010	−151.000
	(37.760)	(63.520)	(96.770)	(12.760)	(82.580)	(130.500)
BORNCHI × \$50 Tax		11.080	150.100		48.140	106.000
		(71.880)	(107.800)		(83.580)	(131.900)
BORNCHI × \$100 Tax	−59.340	−46.260	59.300	78.100***	124.300	−53.420
	(65.340)	(81.980)	(124.500)	(27.520)	(86.370)	(137.400)
BORNCHI × \$500 Tax	−152.100***	−139.000**	70.950	47.490**	93.700	28.800
	(43.710)	(67.030)	(104.100)	(20.770)	(84.310)	(133.100)
Observations	27,635	30,981	51,461	1,125	1,296	2,381
Adjusted R^2	0.121	0.128	0.047	0.293	0.260	0.231

Outcome Regressions: HOUSEOWN

	All (1890-1920)	All (1870-1920)	All (All Census Yrs)	Japan. (1890-1908)	Japan. (1870-1908)	Japan. (All Census Yrs)
	(1)	(2)	(3)	(4)	(5)	(6)
BORNCHI	−0.260***	−0.405***	−0.469***	0.024	−0.048	−0.131
	(0.024)	(0.039)	(0.028)	(0.031)	(0.217)	(0.171)
BORNCHI × $50 Tax		0.135***	0.114***		0.063	0.009
		(0.045)	(0.031)		(0.220)	(0.172)
BORNCHI × $100 Tax	−0.156***	−0.012	0.079**	−0.240***	−0.168	−0.017
	(0.041)	(0.051)	(0.036)	(0.068)	(0.226)	(0.177)
BORNCHI × $500 Tax	−0.053*	0.092**	0.182***	−0.099**	−0.027	0.013
	(0.028)	(0.042)	(0.030)	(0.049)	(0.221)	(0.173)
Observations	42,058	47,802	85,139	1,383	1,619	3,121
Adjusted R^2	0.078	0.103	0.170	0.039	0.041	0.051

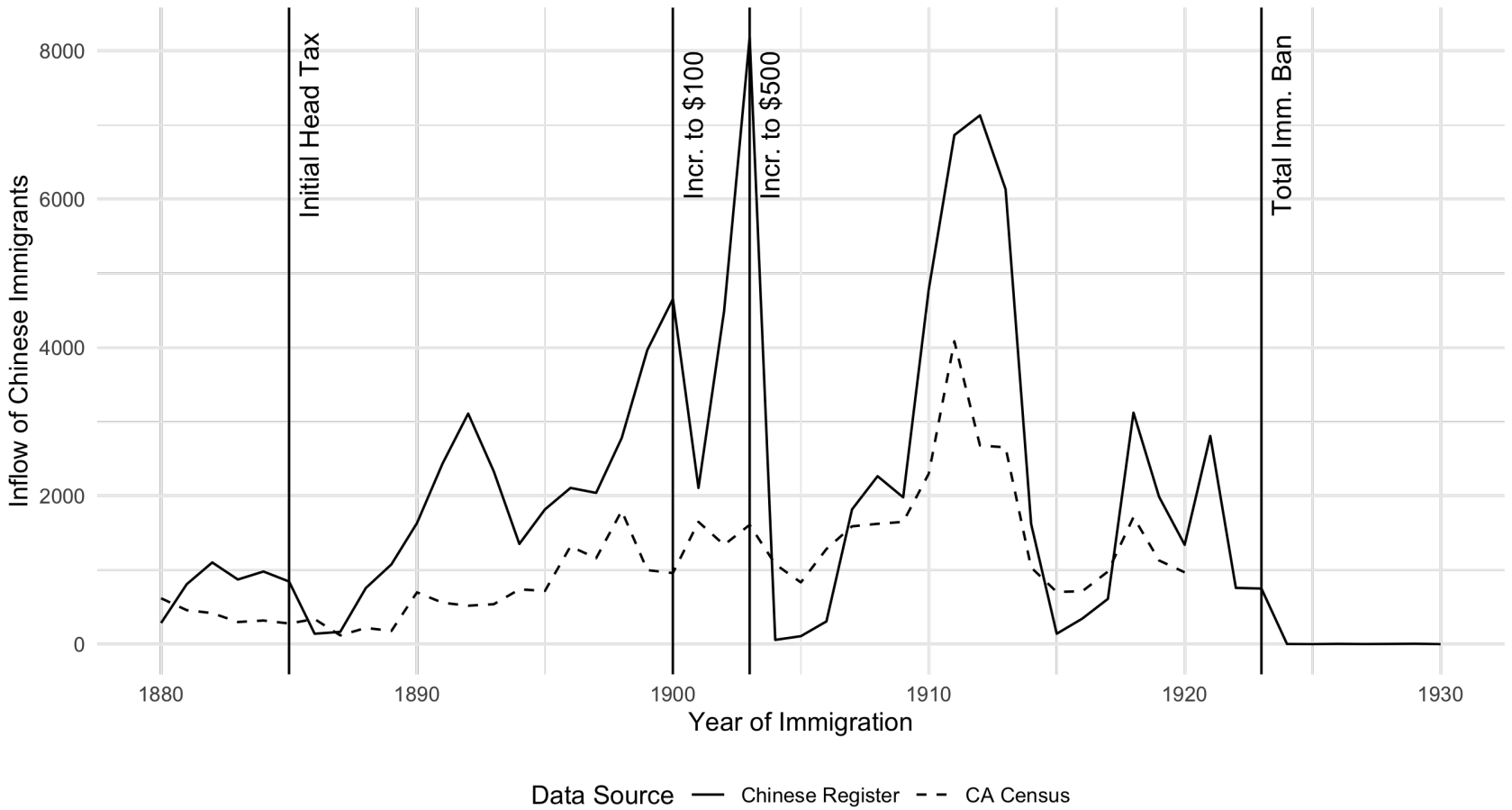
Outcome Regressions: Key Takeaways

- Not sure if Japanese are good comparison group (very small sample, also had some immigration restrictions)
- Changing the year of arrival span (col 2) doesn't change much for all immigrant sample – likely because pre-1890 Chinese immigrant pop is relatively small anyways
- For all immigrant comparison sample – mostly results are the same (suggestive of some positive selection on literacy/likelihood of being a laborer) although there is no longer evidence of effects on earnings
- *BORNCHI* $\times$ \$500 Tax coefficient for HOUSEOWN flips with new specification – now **positive**, suggesting positive selection outweighs wealth effects of the tax

Next Steps

- Figuring out correct comparison group (matched sample?)
- Finalizing regression specifications
- Visualization of outcome regressions – maybe plotting DiD coeffs?
- Repeating for US data

Immigration Inflow: Old Figure



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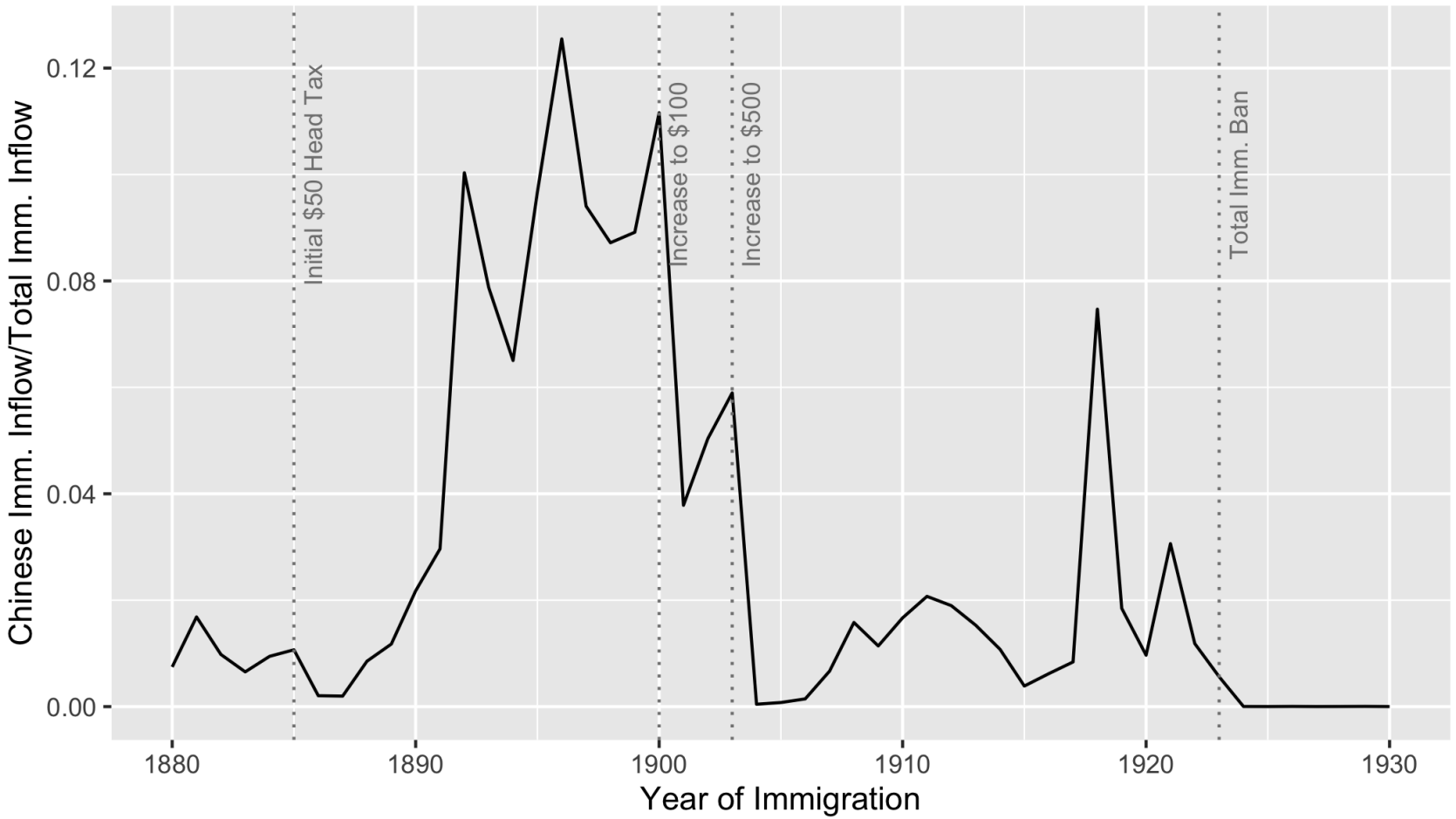
Chinese Immigration Inflow as Fraction of Total



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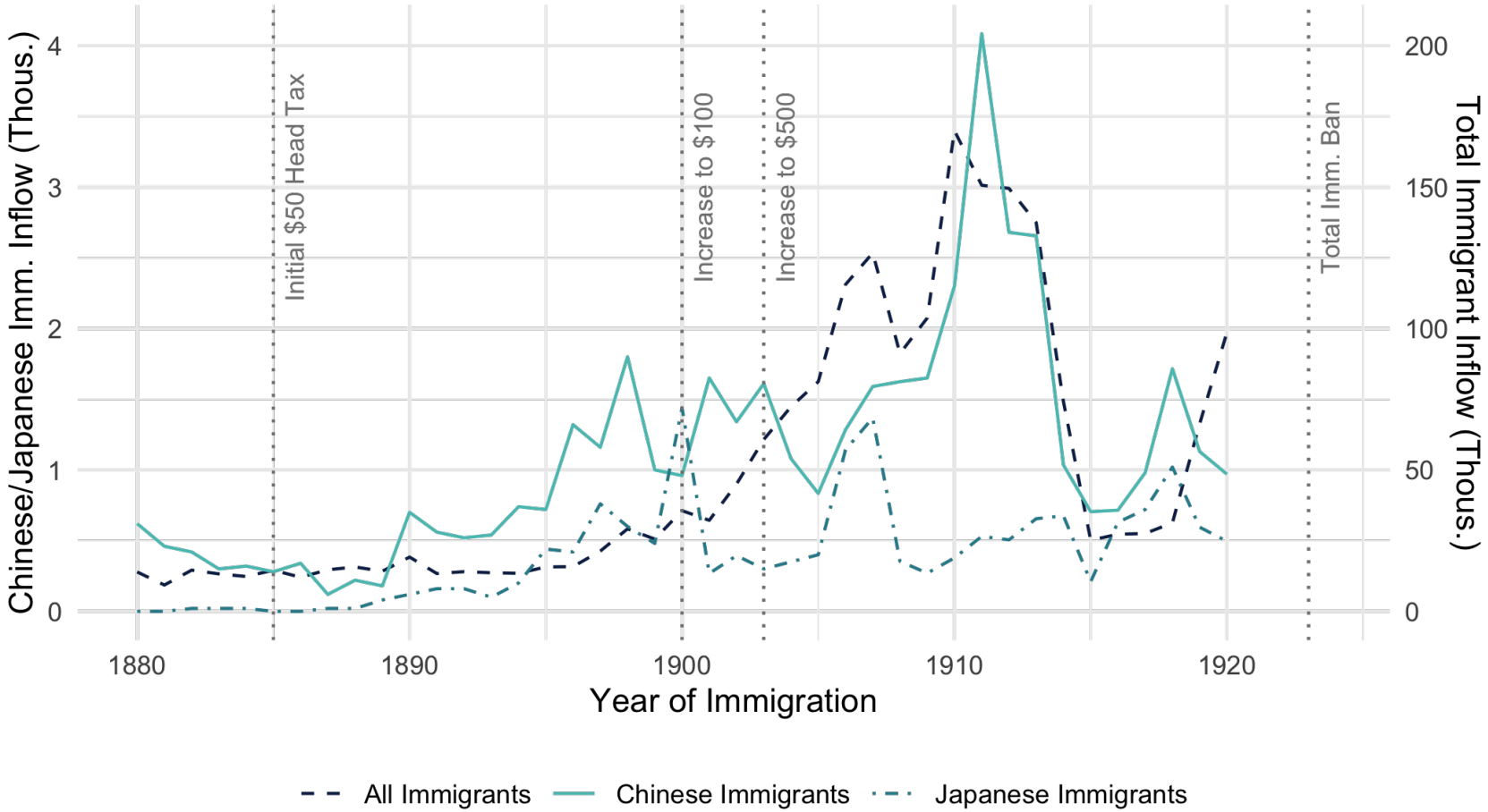
Immigration Inflow with Census Data



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Outcome Regressions w/ Old Specification

	All Immigrants (1890-1920)				Chinese/Japanese Immigrants (1890-1908)			
	Dependent variable:							
	LABORER	*LITERATE*	*EARNINGS*	*HOMEOWN*	*LABORER*	*LITERATE*	*EARNINGS*	*HOMEOWN*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
BORNCHI	0.146^{***}	-0.305^{***}	-250.800^{***}	-0.260^{***}	-0.026	-0.147^{***}	-29.790^{**}	0.024
	(0.022)	(0.018)	(37.760)	(0.024)	(0.041)	(0.052)	(12.760)	(0.031)
BORNCHI × \$100 Tax	0.050	0.146^{***}	-59.340	-0.156^{***}	0.005	0.384^{***}	78.100^{***}	-0.240^{***}
	(0.037)	(0.026)	(65.340)	(0.041)	(0.088)	(0.095)	(27.520)	(0.068)
BORNCHI × \$500 Tax	-0.050^{**}	0.030	-152.100^{***}	-0.053^{*}	-0.106^{*}	0.076	47.490^{**}	-0.099^{**}
	(0.025)	(0.020)	(43.710)	(0.028)	(0.064)	(0.072)	(20.770)	(0.049)
Includes Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	42,058	41,212	27,635	42,058	1,383	1,051	1,125	1,383
Adjusted R^2	0.025	0.043	0.121	0.078	0.006	0.026	0.293	0.039

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