Same-Sex Immigrant Couples

Analyses

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Contents

1 Aggregate data by year of immigration (focus on origin effects)

This analysis focuses on origin effects: how does the proportion of immigrants from country x in year y vary by origin-country LGBT policy? For this analysis we pool all available years of ACS data, so we are unable to use survey weights. The proportion is multiplied by 100 to be interpretable as percentage points. Standard errors are clustered at the country level.

Table 1: 100*Proportion same-sex in a country-year of immigration

	Dependent variable:					
	prop_same_sex					
	(1)	(2)	(3)	(4)	(5)	(6)
origin_score	0.079***	0.081***	0.081***	0.047***	0.039***	0.041***
	(0.0002)	(0.0002)	(0.0002)	(0.001)	(0.001)	(0.001)
yrimmig		−0.002***	−3.200**		−3.400*	
		(0.00001)	(1.500)		(1.900)	
I(yrimmigˆ2)			0.001***		0.001***	
			(0.00000)		(0.00000)	
Country FEs?	no	no	no	yes	yes	yes
Year of immigration FEs?	no	no	no	no	no	yes
Country clustered SEs?	yes	yes	yes	yes	yes	yes
Observations	3,811	3,811	3,811	3,811	3,811	3,811
R^2	0.031	0.031	0.033	0.110	0.110	0.120
Note:						*p<0.1; **p<0.05; ***p<0.01

Table 2: Multilevel models: 100*Proportion same-sex in a country-year of immigration

	Dependent variable:			
	prop_same_sex			
	(1)	(2)	(3)	(4)
origin_score	0.070***	0.071***	0.071***	0.070***
	(0.009)	(0.010)	(0.010)	(0.010)
yrimmig		−0.001	−3.300**	
		(0.003)	(1.300)	
I(yrimmig^2)			0.001**	
			(0.0003)	
Country REs?	yes	yes	yes	yes
Year of immigration REs?	no	no	no	yes
Observations	3,811	3,811	3,811	3,811
Akaike Inf. Crit.	12,787.000	12,799.000	12,809.000	12,785.000
Bayesian Inf. Crit.	12,812.000	12,830.000	12,846.000	12,816.000
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 1 shows that countries with more pro-LGBT policies tend to send more immigrants who end up in same-sex couples. A one-point increase in the sending country policy scale is associated with a 0.04 to 0.08 percentage-point increase in proportion immigrants in same-sex couples who immigrated in that year. Table 2 shows estimates for multilevel models.

Table 3 incorporates origin country-level variables from a classical gravity model. From CEPII's GeoDist dataset, it includes measures of a (population-weighted) distance, contiguous border, a common official language, a common ethnic language, and whether the country was a former US colony. We include a measure of difference in wages (in 1000s of 2011 US dollars) from the Penn World Table, and the difference in unemployment rate using World Bank data. Finally, we use Polity5 measures of democratization of the country of origin. All variables are matched to year of immigration and country of origin.

2 Dyadic data: by survey year (focus on state effects)

We reshape the data so that is yearly dyads: each observation is the proportion of immigrants that is in same-sex couples out of all those from country x in state y in survey year z (using survey weights). We multiply this proportion by 100 for interpretability as percentage points. We merge in the sending-country policy index for the average year of immigration for these immigrants.

In Table 5, the coefficient for state policy is insignificant in most models, although it is generally positive, implying that states with more LGBT-friendly policies have a somewhat higher proportion of immigrants in same-sex couples. We further investigate state policy effects below. Table 5 also shows a significant, positive effect for LGBT policy score of the host country, implying that an increase in policy friendliness by 1 point in an origin country is associated with a 0.04 to 0.06 percentage point increase in proportion of immigrants from that country in same-sex couples. Since the proportion of immigrants in same-sex couples is only 0.23 percent, this constitutes a substantive effect. LGB immigrants tend to come from countries with more queer-friendly policies.

As a comparison, Table 6 fits the same models, but with proportion immigrants in different-sex couples as an outcome. Interestingly, here origin score is in the opposite direction, and state policy is now significant,

Table 3: Gravity models: 100*Proportion same-sex in a country-year of immigration

	Dependent variable:					
	prop_same_sex					
	OLS				*linear mixed-effects*	
	(1)	(2)	(3)	(4)	(5)	(6)
distw	0.00004***	0.00004***	−0.0001***	−0.00005***	0.00003	0.00003
	(0.000)	(0.000)	(0.000)	(0.000)	(0.00003)	(0.00003)
contig	0.260***	0.140	−0.610***	−0.610***	0.220	0.110
	(0.089)	(0.091)	(0.007)	(0.009)	(0.390)	(0.390)
comlang_off	−0.230***	−0.180***	0.160***	−0.059	−0.200	−0.150
	(0.021)	(0.035)	(0.007)	(0.140)	(0.230)	(0.230)
comlang_ethno	−0.100***	−0.080***	−0.059***	0.160	−0.120	−0.089
	(0.019)	(0.020)	(0.008)	(0.170)	(0.180)	(0.180)
colony						
wage_dif	0.00000	−0.00001***	0.00001***	−0.00000***	0.00000	−0.00001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.00002)	(0.00002)
unemp_dif	0.009***	0.006***	0.007***	0.005***	0.008	0.005
	(0.0001)	(0.0002)	(0.0001)	(0.0001)	(0.012)	(0.012)
polity5	0.044	0.036***	−0.002***	0.0001*	0.037***	0.030***
	(0.0002)	(0.0004)	(0.0001)	(0.00004)	(0.011)	(0.011)
origin_score		0.041***		0.027***		0.043*
		(0.002)		(0.003)		(0.024)
Country REs?	no	no	no	no	yes	yes
Country FEs?	no	no	yes	yes	no	no
Observations	1,366	1,366	1,366	1,366	1,366	1,366
R^2	0.025	0.028	0.096	0.097		
Akaike Inf. Crit.					5,290.000	5,294.000
Bayesian Inf. Crit.					5,342.000	5,352.000
Note:						*p<0.1; **p<0.05; ***p<0.01

Table 4: 100*Proportion different-sex in a country-year of immigration

	Dependent variable:					
	prop_dif_sex					
	(1)	(2)	(3)	(4)	(5)	(6)
origin_score	0.710***	1.400***	1.400***	−2.100***	−0.061	−0.039
	(0.077)	(0.071)	(0.070)	(0.110)	(0.120)	(0.120)
yrimmig		−0.820***	104.000***		104.000***	
		(0.025)	(13.000)		(9.500)	
I(yrimmig^2)			−0.026***		−0.026***	
			(0.003)		(0.002)	
Country FEs?	no	no	no	yes	yes	yes
Year of immigration FEs?	no	no	no	no	no	yes
Observations	3,811	3,811	3,811	3,811	3,811	3,811
R^2	0.022	0.240	0.250	0.490	0.610	0.610
Note:						*p<0.1; **p<0.05; ***p<0.01

Table 5: 100*Proportion same-sex in a country-state-year

	Dependent variable:					
	same_prop					
	(1)	(2)	(3)	(4)	(5)	(6)
origin_score	0.057***		0.053***	0.049***	0.041***	0.042***
	(0.012)		(0.011)	(0.011)	(0.011)	(0.011)
state_policy		0.027	0.033*	0.048*	−0.003	−0.004
		(0.017)	(0.017)	(0.026)	(0.027)	(0.027)
state_stock_year						−0.00000
						(0.00000)
State FEs?	no	no	no	yes	yes	yes
Year FEs?	no	no	no	no	yes	yes
Observations	45,810	44,431	44,431	44,431	44,431	44,431
R^2	0.001	0.0001	0.001	0.003	0.004	0.004
Note:						*p<0.1; **p<0.05; ***p<0.01

Table 6: 100*Proportion different-sex in a country-state-year

	Dependent variable:					
	dif_prop					
	(1)	(2)	(3)	(4)	(5)	(6)
origin_score	−0.320***		−0.320***	−0.640***	−0.620***	−0.610***
	(0.070)		(0.070)	(0.068)	(0.069)	(0.068)
state_policy		−0.180*	−0.220**	0.770***	0.890***	0.870***
		(0.110)	(0.110)	(0.160)	(0.170)	(0.170)
state_stock_year						−0.00001***
						(0.00000)
State FEs?	no	no	no	yes	yes	yes
Year FEs?	no	no	no	no	yes	yes
Observations	45,810	44,431	44,431	44,431	44,431	44,431
R^2	0.0005	0.0001	0.001	0.083	0.084	0.085
Note:						*p<0.1; **p<0.05; ***p<0.01

and highly positive when fixed effects are included. This implies that immigrants in different-sex couples are more likely to come from countries with more oppressive LGBT laws and tend to live in more accepting areas in the U.S. This may be due to family-friendly policies, since this outcome variable mostly captures coupled immigrants as a proportion of all immigrants from a given country.

3 Individual analysis

For the individual analysis, we focus on U.S. state policies: conditional on migrating to the U.S., do immigrants in same-sex couples live in areas with more LGBT-friendly policies, compared to those in different-sex couples? The outcome variable is state policy, which is treated as continuous in OLS models and as three binned, ordered categories for ordered logit models.

Table **??** contains OLS estimates. Model 1, the simplest, shows that immigrants in same-sex couples live in states with on average 0.44 higher policy score (about half of one LGBT-friendly policy). This effect is basically unchanged in Model 2, which includes individual controls. Although including origin score in Model 3 renders the coefficient for state score to insignificant, including controls makes the effect significant and highly positive.

The interaction in Model 4 between same-sex couples and origin score is also positive: same-sex couples live in more LGBT-friendly states. The effect is difficult to interpret due to the interactions, so we plot the marginal effects in Figure **??**. We see that individuals in same-sex couples tend to live in more LGBT-friendly states regardless of origin score. But those who come from more LGBT-friendly countries tend to live in increasingly LGBT-friendly states. Immigrants in different-sex couples show the opposite relationship.

Models 5 and 6 include state and year fixed effects. Here the coefficient for same-sex couples is insigificant (or nearly so).

Table **??** conducts the same analysis as ordered logit models and reveals substantively the same results. (When I tried to include fixed effects for year the ordered logit models did not converge.) For interpretability, Model 4 (fully interacted) is used to predict probabilities in residing in each of the three LGBT policy categories (Figure **??**). The results support the conclusions from the OLS models: same-sex couples are

Table 7: Individual OLS analysis of continuous state policy score

	Dependent variable:					
	state_policy					
	(1)	(2)	(3)	(4)	(5)	(6)
same_sex	0.440***	0.460***	0.011	15.000*	0.011	−0.120**
	(0.022)	(0.022)	(0.008)	(7.700)	(0.008)	(0.058)
sexMale		−0.120***		−0.130***		−0.0003
		(0.004)		(0.004)		(0.001)
age		0.024***		0.024***		−0.00002
		(0.0002)		(0.0002)		(0.00004)
educcollege		0.100***		0.071***		−0.001
		(0.006)		(0.006)		(0.001)
educHS		0.005		−0.009		−0.002
		(0.005)		(0.006)		(0.001)
educsome col		0.016**		0.002		−0.002
		(0.006)		(0.007)		(0.002)
nchild		0.069***		0.071***		−0.003***
		(0.002)		(0.002)		(0.0004)
log_income		0.150***		0.150***		−0.0002
		(0.002)		(0.002)		(0.0005)
no_income		1.300***		1.300***		−0.003
		(0.019)		(0.020)		(0.005)
yrimmig		0.027***		0.031***		
		(0.0003)		(0.0003)		
origin_score			−0.0002	−0.032***	−0.0002	−0.0002
			(0.0002)	(0.001)	(0.0002)	(0.0003)
same_sexTRUE:origin_score			−0.002	0.044***	−0.002	−0.001
			(0.002)	(0.010)	(0.002)	(0.002)
same_sexTRUE:sexMale				0.170***		−0.014
				(0.047)		(0.012)
same_sexTRUE:age				−0.008***		0.0003
				(0.002)		(0.0004)
same_sexTRUE:educcollege				0.200***		−0.009
				(0.076)		(0.019)
same_sexTRUE:educHS				0.062		0.018
				(0.078)		(0.020)
same_sexTRUE:educsome col				0.130		0.005
				(0.085)		(0.021)
same_sexTRUE:nchild				−0.110***		0.001
				(0.024)		(0.006)
same_sexTRUE:log_income				0.015		0.011**
				(0.021)		(0.005)
same_sexTRUE:no_income				0.140		0.120**
				(0.220)		(0.055)
same_sexTRUE:yrimmig				−0.007*		
				(0.004)		
State FEs?	no	no	no	no	yes	yes
Year FEs?	no	no	no	no	yes	yes
Observations	1,632,727	1,632,727	1,563,225	1,563,225	1,563,225	1,563,225
R^2	0.0002	0.015	0.940	0.016	0.940	0.940

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

more likely to live in LGBT-friendly states regardless of origin score, but this effect increases with origin score, and the opposite effect is found for different-sex couples.