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A file for supplementary results

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A Supplementary File to
A Dynamic Panel Analysis of Suicide in Japanese Municipalities

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Abstract

This file collects the estimation results accompanied to the paper as displayed in the title. Table 1, Table 2-a,b,c, Table 5-a,b,c, Table 8 and Table 9-a,b,c in this file are identical to Table 1, Table 2-a,b,c, Table 3-a,b,c, Table 4, and Table 5-a,b,c in the main text. Table 3-a,b,c and Table 6-a,b,c collect estimates using the age-adjusted version of suicide rates (with logarithmic transformation) in the outcome variables, whereas Table 4-a,b,c and Table 7-a,b,c collect estimates using the standardized suicide-mortality ratios (with logarithmic transformation) in the outcome variables. Table 8 summarizes the excerpt of estimates in the model separating the number of unemployed and the size of labor force for each gender as the explanatory variables. Table 9-a,b,c collects the estimates when the immediate lags of economic variables are avoided as their own instruments, inspired by some evidence of serial correlation in the disturbance indicated by significance of AR_2-test statistics in Table 5 to Table 7 for females. Table 10 collects additional robustness checks in terms of the cross-sectionally computed first order autocorrelations, and the values of Hausman and overidentifying tests of whether the included regressors are exogenous or not.

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Table 1: Descriptive Statistics of Variables.

variables	mean	stdev	skew	kurt	min	max
mSR1	3.499	0.294	-0.157	2.769	2.398	4.637
mSR2	3.446	0.224	-0.261	2.645	2.674	4.251
mSR3	4.620	0.202	0.291	3.237	3.791	5.442
fSR1	2.666	0.235	0.384	3.916	1.629	3.664
fSR2	2.539	0.176	0.295	3.602	1.988	3.336
fSR3	4.601	0.191	0.415	4.045	3.777	5.474
income	8.795	0.226	-0.294	3.490	7.795	9.801
saving	9.328	0.480	-0.555	3.345	7.231	10.776
lifeins	7.936	0.548	-0.644	3.220	5.094	9.530
debt	8.183	0.647	-0.555	4.146	4.500	10.574
hloan	7.962	0.749	-0.872	5.156	3.091	10.573
hown	4.388	0.234	-2.919	21.477	1.099	4.605
mue	1.550	0.460	-0.076	2.779	-0.249	3.323
fue	1.214	0.467	-0.515	3.094	-0.712	2.734
mmid	-1.602	0.154	-0.836	4.082	-2.376	-1.116
mold	-3.762	0.559	-0.129	2.759	-5.507	-1.946
fmid	-1.613	0.140	-1.097	4.925	-2.376	-1.194
fold	-3.193	0.545	-0.185	2.707	-4.865	-1.628
infant	-2.299	0.210	-0.113	3.166	-3.333	-1.502
single	-1.422	0.188	0.041	2.772	-2.034	-0.831
mar	-0.721	0.143	-0.473	2.971	-1.537	-0.381
wid	-4.078	0.298	0.167	2.732	-5.052	-3.164
div	-3.660	0.371	-0.197	2.711	-4.969	-2.338
dense	6.451	1.598	0.231	2.203	1.805	9.971
mUE	6.968	1.061	0.045	2.873	3.135	10.019
fUE	6.274	1.139	0.032	2.831	2.079	9.500
mLF	10.023	0.961	0.153	2.906	6.773	12.834
fLF	9.665	0.925	0.154	3.063	6.229	12.435

Notes. This table reports the summary statistics of all variables in this study. mean, stdev, skew, kurt, min and max columns show the sample means, standard deviations, skewnesses, kurtoses, minimum and maximum numbers over the entire sample in the matched unbalanced panel data. mSRa and fSRa are male and female crude suicide rates ($a = 1$), age-adjusted suicide rates ($a = 2$), and standardized suicidal-mortality ratios ($a = 3$). mUE and mLF are the number of the unemployed males and the size of the male labor force; similarly for fUE and fLF. Their ratios define mue and fue. All variables are in the natural logarithm scale.

Table 2a: Male Suicide Rates vs. Economic Variables.

	OLS	FE	D.GMM	D.GMMe	S.GMM	S.GMMe
income	0.035	0.018	**0.050**^{c}	0.099	**0.051**^{c}	**0.243**^{b}
	(0.022)	(0.021)	(0.028)	(0.106)	(0.030)	(0.099)
L.income	0.030	0.015	0.022	-0.013	0.038	0.055
	(0.024)	(0.020)	(0.027)	(0.079)	(0.029)	(0.036)
saving	**-0.065**^{a}	0.012	0.010	-0.028	**-0.057**^{a}	**-0.179**^{a}
	(0.012)	(0.012)	(0.016)	(0.068)	(0.016)	(0.055)
L.saving	**-0.102**^{a}	-0.019	-0.010	-0.009	**-0.086**^{a}	-0.029
	(0.012)	(0.012)	(0.017)	(0.018)	(0.014)	(0.018)
hown	0.014	0.002	0.018	-0.014	0.031	0.063
	(0.015)	(0.015)	(0.018)	(0.078)	(0.024)	(0.077)
L.hown	0.019	0.006	0.013	0.010	0.034	-0.005
	(0.015)	(0.016)	(0.022)	(0.023)	(0.023)	(0.024)
lifeins	**0.019**^{c}	-0.007	-0.015	-0.044	0.016	0.036
	(0.010)	(0.010)	(0.014)	(0.064)	(0.010)	(0.054)
L.lifeins	**0.028**^{b}	0.003	-0.005	-0.001	**0.023**^{b}	0.007
	(0.011)	(0.010)	(0.013)	(0.015)	(0.011)	(0.014)
debt	0.009	-0.008	-0.019	-0.005	0.004	-0.040
	(0.014)	(0.012)	(0.016)	(0.069)	(0.012)	(0.067)
L.debt	**0.047**^{a}	0.017	0.021	0.015	**0.039**^{a}	**0.026**^{c}
	(0.013)	(0.012)	(0.018)	(0.017)	(0.013)	(0.016)
hloan	-0.011	0.013	**0.025**^{c}	0.002	-0.007	0.012
	(0.012)	(0.011)	(0.015)	(0.060)	(0.011)	(0.058)
L.hloan	**-0.036**^{a}	-0.004	-0.010	-0.010	**-0.030**^{b}	-0.015
	(0.012)	(0.011)	(0.016)	(0.017)	(0.012)	(0.015)
mue	0.032	**0.052**^{c}	0.022	**0.176**^{c}	**0.104**^{c}	**0.205**^{b}
	(0.030)	(0.028)	(0.042)	(0.093)	(0.059)	(0.084)
L.mue	**-0.054**^{c}	-0.033	**-0.086**^{c}	**-0.105**^{c}	-0.037	**-0.106**^{c}
	(0.028)	(0.032)	(0.047)	(0.055)	(0.029)	(0.057)
fue	0.046	**0.056**^{c}	**0.157**^{a}	0.034	-0.008	-0.149
	(0.031)	(0.030)	(0.056)	(0.113)	(0.052)	(0.104)
L.fue	-0.041	-0.024	-0.005	-0.051	**-0.079**^{c}	-0.006
	(0.028)	(0.029)	(0.041)	(0.062)	(0.042)	(0.059)

Notes: The table shows the estimates based on ordinary least squares (OLS), fixed-effect static panel (FE), difference-GMM (Arellano and Bond, 1991) treating the economic variables as exogenous (D.GMM) and endogenous (D.GMMe), and system-GMM (Blundell and Bond, 1998) treating the economic variables as exogenous (S.GMM) and endogenous (S.GMMe). a, b, c indicate their significance at 1,5,10% levels, respectively, according to two-sided t-tests based on parenthesized HAC standard errors for OLS and FE and two-step HAC standard errors with Windmeijer's small-sample corrections for GMMs. Estimates in bold font are significant at 10% levels. The underlined "S.GMM" indicates its passage of diagnostic tests in Table 2c.

Table 2b: Male Suicide Rates vs. Demographic Variables (1).

	OLS	FE	D.GMM	D.GMMe	S.GMM	S.GMMe
dense	**-0.178**^{b}	0.041	-0.221	-0.070	**-0.305**^{c}	**-0.218**^{b}
	(0.079)	(0.114)	(0.170)	(0.120)	(0.164)	(0.106)
L.dense	**0.146**^{c}	0.134	-0.025	0.088	**0.268**^{c}	**0.190**^{c}
	(0.079)	(0.101)	(0.159)	(0.120)	(0.158)	(0.105)
mmid	**0.765**^{a}	-0.055	-0.260	**-0.278**^{c}	**0.552**^{a}	0.237
	(0.131)	(0.130)	(0.177)	(0.162)	(0.173)	(0.168)
L.mmid	**-0.343**^{b}	-0.035	-0.022	0.084	-0.090	0.058
	(0.135)	(0.130)	(0.180)	(0.165)	(0.174)	(0.167)
mold	-0.033	0.072	-0.058	0.021	0.281	-0.011
	(0.051)	(0.053)	(0.282)	(0.132)	(0.303)	(0.112)
L.mold	**-0.124**^{b}	-0.031	**0.885**^{b}	**0.322**^{b}	0.306	**0.387**^{a}
	(0.052)	(0.053)	(0.348)	(0.139)	(0.467)	(0.124)
fmid	**-1.031**^{a}	0.061	0.114	0.209	**-0.734**^{a}	**-0.631**^{a}
	(0.141)	(0.147)	(0.233)	(0.171)	(0.200)	(0.192)
L.fmid	**0.767**^{a}	0.116	0.345	0.050	0.271	**0.260**^{c}
	(0.132)	(0.140)	(0.287)	(0.182)	(0.235)	(0.147)
fold	**0.236**^{a}	-0.008	0.419	0.087	-0.533	0.319
	(0.067)	(0.066)	(0.790)	(0.337)	(0.846)	(0.279)
L.fold	0.018	-0.006	**-1.923**^{b}	**-0.687**^{b}	-0.139	**-0.715**^{a}
	(0.054)	(0.057)	(0.783)	(0.267)	(0.661)	(0.217)
infant	-0.066	**-0.190**^{b}	0.002	-0.136	-0.108	-0.049
	(0.076)	(0.085)	(0.185)	(0.108)	(0.139)	(0.093)
L.infant	0.055	0.012	-0.200	-0.029	0.102	0.098
	(0.082)	(0.092)	(0.152)	(0.106)	(0.104)	(0.095)

Notes. income for the annual income; saving, lifeins, debt, and hloan for the current balances of saving, payment for life insurance premia, non-real-estate and real-estate liabilities, respectively; and hown for the fraction of home-owning households. mue and fue are male and female unemployment rates. dense is the size of population per square kilometer of municipal area. mmid, mold, fmid, fold are the fractions of middle-age males and middle-age females (50-64), old-age males and old-age females (80-89). infant, single, wid, and div are the fractions of population of infant (<10), never-married, widowed, and divorced states to the total population in municipality. Y's are the wave dummies. All variables with "L." indicate their first-wave lags. Therefore, L.SR represents the lagged suicide rate (in natural log).

Table 2c: Male Suicide Rates vs. Demographic Variables (2).

	OLS	FE	D.GMM	D.GMMe	S.GMM	S.GMMe
single	-0.173	**-0.410**^{a}	**-0.402**^{b}	**-0.417**^{a}	**-0.259**^{c}	-0.194
	(0.110)	(0.124)	(0.183)	(0.145)	(0.146)	(0.129)
L.single	**0.294**^{a}	0.069	0.097	0.083	**0.412**^{a}	**0.362**^{a}
	(0.106)	(0.112)	(0.193)	(0.137)	(0.138)	(0.134)
wid	**0.163**^{b}	0.105	0.140	0.076	**0.144**^{b}	**0.152**^{b}
	(0.065)	(0.066)	(0.086)	(0.079)	(0.064)	(0.076)
L.wid	**0.157**^{b}	0.022	0.142	0.110	**0.290**^{c}	**0.253**^{a}
	(0.065)	(0.067)	(0.099)	(0.073)	(0.152)	(0.073)
div	0.091	**-0.085**^{c}	**-0.160**^{b}	-0.112	0.095	0.074
	(0.058)	(0.050)	(0.077)	(0.068)	(0.067)	(0.070)
L.div	0.055	0.004	0.110	0.077	0.046	0.094
	(0.052)	(0.049)	(0.073)	(0.058)	(0.060)	(0.058)
Y95	0.023	0.016	**0.224**^{a}	**0.102**^{b}	0.120	**0.109**^{b}
	(0.019)	(0.024)	(0.079)	(0.051)	(0.094)	(0.047)
Y00	**0.432**^{a}	**0.420**^{a}	**0.899**^{a}	**0.647**^{a}	**0.602**^{a}	**0.609**^{a}
	(0.025)	(0.042)	(0.171)	(0.073)	(0.175)	(0.052)
Y05	**0.414**^{a}	**0.431**^{a}	**1.032**^{a}	**0.692**^{a}	**0.652**^{b}	**0.618**^{a}
	(0.035)	(0.061)	(0.249)	(0.110)	(0.258)	(0.082)
Y10	**0.361**^{a}	**0.364**^{a}	**1.135**^{a}	**0.689**^{a}	**0.615**^{b}	**0.600**^{a}
	(0.042)	(0.082)	(0.312)	(0.136)	(0.297)	(0.101)
L.SR			0.111	0.058	0.050	**0.118**^{a}
			(0.108)	(0.040)	(0.036)	(0.032)
N	4079	4079	3107	3107	4079	4079
$Adj.R^2/J$	0.733	0.790	b	a	†	a
(AR_1,AR_2)			(a,†)	(a,†)	(a,†)	(a,†)
(J_{demo}, C_{eco})				(a,a)		(a,b)
(J_{dif}, C_{sys})					(†,†)	(a,†)

Notes: N is the sum of the numbers of municipalities over waves. a, b, c in the last three rows suggest the significant rejection of the corresponding null hypothesis at 1,5,10% levels, whereas † means non-rejection at 10% level. $Adj.R^2/J$ shows the adjusted R^2 for OLS and FE, and significance of the J-statistics for GMMs under the null of all model assumptions including instruments' validity. (AR_1,AR_2) reports the pair of significance of the first- and second-order autocorrelations of differenced residuals. J_{demo} shows significance of J-statistics for the model excluding economic variables to validate the demographic variables, and C_{eco} is the difference between J and J_{demo} to validate the economic instruments. J_{dif} shows significance of J-statistics for the model excluding instruments for the level equation, and C_{sys} is the difference between J and J_{diff} to validate instruments for the level equation specific to S.GMM's. The ideal diagnoses are (a,†) for (AR_1,AR_2), † for J, and (†,†) for (J,C).

Table 3a: Male Age-Adjusted Suicide Rates vs. Economic Variables.

	OLS	FE	D.GMM	D.GMMe	S.GMM	S.GMMe
income	0.024	0.012	**0.034**^{c}	0.042	0.033	**0.145**^{b}
	(0.016)	(0.016)	(0.020)	(0.076)	(0.022)	(0.069)
L.income	0.021	0.006	0.010	-0.021	0.022	0.023
	(0.017)	(0.015)	(0.019)	(0.053)	(0.021)	(0.026)
saving	**-0.050**^{a}	0.005	0.002	-0.030	**-0.043**^{a}	**-0.110**^{a}
	(0.009)	(0.009)	(0.011)	(0.050)	(0.012)	(0.038)
L.saving	**-0.075**^{a}	-0.014	-0.009	-0.007	**-0.061**^{a}	**-0.023**^{c}
	(0.009)	(0.009)	(0.012)	(0.013)	(0.010)	(0.013)
hown	0.017	0.003	0.013	-0.015	0.025	0.032
	(0.011)	(0.011)	(0.013)	(0.058)	(0.017)	(0.055)
L.hown	**0.016**^{c}	0.002	0.007	0.000	0.024	-0.009
	(0.010)	(0.010)	(0.015)	(0.016)	(0.017)	(0.016)
lifeins	**0.016**^{b}	-0.003	-0.007	-0.025	**0.013**^{c}	0.035
	(0.008)	(0.007)	(0.010)	(0.049)	(0.007)	(0.038)
L.lifeins	**0.023**^{a}	0.003	-0.003	-0.005	**0.018**^{b}	0.008
	(0.008)	(0.007)	(0.010)	(0.012)	(0.008)	(0.010)
debt	0.003	-0.007	-0.014	-0.015	0.000	-0.010
	(0.010)	(0.009)	(0.011)	(0.053)	(0.009)	(0.049)
L.debt	**0.028**^{a}	0.011	0.015	0.014	**0.023**^{b}	0.018
	(0.009)	(0.009)	(0.012)	(0.013)	(0.009)	(0.011)
hloan	-0.007	0.009	0.016	0.007	-0.004	-0.005
	(0.009)	(0.008)	(0.010)	(0.046)	(0.008)	(0.042)
L.hloan	**-0.021**^{a}	-0.002	-0.006	-0.008	**-0.017**^{b}	-0.009
	(0.008)	(0.008)	(0.011)	(0.012)	(0.009)	(0.010)
mue	0.025	**0.044**^{b}	0.022	**0.130**^{c}	0.070	**0.107**^{c}
	(0.021)	(0.021)	(0.029)	(0.068)	(0.044)	(0.060)
L.mue	**-0.033**^{c}	-0.016	-0.050	**-0.071**^{c}	-0.022	**-0.077**^{c}
	(0.019)	(0.021)	(0.033)	(0.042)	(0.020)	(0.041)
fue	**0.048**^{b}	**0.045**^{b}	**0.112**^{a}	0.029	0.011	-0.042
	(0.021)	(0.022)	(0.040)	(0.083)	(0.038)	(0.075)
L.fue	**-0.034**^{c}	-0.020	-0.010	-0.027	**-0.055**^{c}	0.006
	(0.019)	(0.020)	(0.029)	(0.045)	(0.030)	(0.043)

Notes: The table shows the estimates based on ordinary least squares (OLS), fixed-effect static panel (FE), difference-GMM (Arellano and Bond, 1991) treating the economic variables as exogenous (D.GMM) and endogenous (D.GMMe), and system-GMM (Blundell and Bond, 1998) treating the economic variables as exogenous (S.GMM) and endogenous (S.GMMe). a, b, c indicate their significance at 1,5,10% levels, respectively, according to two-sided t-tests based on parenthesized HAC standard errors for OLS and FE and two-step HAC standard errors with Windmeijer's small-sample corrections for GMMs. Estimates in bold font are significant at 10% levels. The underlined "S.GMM" indicates its passage of diagnostic tests in Table 3c.

Table 3b: Male Age-Adjusted Suicide Rates vs. Demographic Variables (1).

	OLS	FE	D.GMM	D.GMMe	S.GMM	S.GMMe
dense	-0.092	-0.009	-0.178	-0.098	-0.183	**-0.137**^{c}
	(0.058)	(0.087)	(0.125)	(0.093)	(0.123)	(0.079)
L.dense	0.066	0.061	-0.026	0.021	0.154	0.112
	(0.058)	(0.078)	(0.119)	(0.098)	(0.119)	(0.078)
mmid	**0.453**^{a}	-0.146	**-0.288**^{b}	**-0.311**^{a}	**0.301**^{b}	0.113
	(0.092)	(0.091)	(0.123)	(0.118)	(0.121)	(0.118)
L.mmid	**-0.267**^{a}	-0.133	-0.118	-0.063	-0.116	0.023
	(0.096)	(0.093)	(0.124)	(0.122)	(0.121)	(0.117)
mold	-0.028	0.025	-0.096	-0.064	0.169	-0.079
	(0.036)	(0.038)	(0.199)	(0.099)	(0.216)	(0.081)
L.mold	**-0.096**^{a}	-0.014	**0.561**^{b}	**0.290**^{a}	0.151	**0.298**^{a}
	(0.036)	(0.038)	(0.262)	(0.106)	(0.336)	(0.087)
fmid	**-0.661**^{a}	0.130	0.154	0.206	**-0.449**^{a}	**-0.465**^{a}
	(0.100)	(0.105)	(0.158)	(0.126)	(0.136)	(0.136)
L.fmid	**0.473**^{a}	0.102	0.265	0.107	0.158	**0.195**^{c}
	(0.093)	(0.100)	(0.198)	(0.131)	(0.169)	(0.102)
fold	**0.164**^{a}	-0.012	0.371	0.208	-0.346	**0.416**^{b}
	(0.047)	(0.047)	(0.557)	(0.251)	(0.591)	(0.204)
L.fold	0.021	-0.015	**-1.285**^{b}	**-0.677**^{a}	-0.027	**-0.634**^{a}
	(0.038)	(0.041)	(0.571)	(0.197)	(0.426)	(0.155)

Notes. income for the annual income; saving, lifeins, debt, and hloan for the current balances of saving, payment for life insurance premia, non-real-estate and real-estate liabilities, respectively; and hown for the fraction of home-owning households. mue and fue are male and female unemployment rates. dense is the size of population per square kilometer of municipal area. mmid, mold, fmid, fold are the fractions of middle-age males and middle-age females (50-64), old-age males and old-age females (80-89). infant, single, wid, and div are the fractions of population of infant (<10), never-married, widowed, and divorced states to the total population in municipality. Y's are the wave dummies. All variables with "L." indicate their first-wave lags. Therefore, L.SR represents the lagged suicide rate (in natural log).

Table 3c: Male Age-Adjusted Suicide Rates vs. Demographic Variables (2).

	OLS	FE	D.GMM	D.GMMe	S.GMM	S.GMMe
single	-0.009	**-0.251**^{a}	**-0.245**^{c}	**-0.233**^{b}	-0.098	-0.023
	(0.077)	(0.087)	(0.130)	(0.105)	(0.096)	(0.087)
L.single	**0.145**^{b}	0.022	0.039	0.006	**0.234**^{b}	**0.182**^{b}
	(0.074)	(0.081)	(0.136)	(0.101)	(0.095)	(0.091)
wid	**0.149**^{a}	**0.092**^{c}	**0.109**^{c}	0.076	**0.135**^{a}	**0.144**^{a}
	(0.045)	(0.048)	(0.060)	(0.057)	(0.044)	(0.052)
L.wid	**0.100**^{b}	-0.025	0.047	0.042	0.175	**0.158**^{a}
	(0.045)	(0.048)	(0.073)	(0.056)	(0.113)	(0.052)
div	**0.072**^{c}	**-0.070**^{c}	**-0.121**^{b}	**-0.095**^{c}	0.066	0.034
	(0.041)	(0.037)	(0.055)	(0.050)	(0.049)	(0.049)
L.div	0.027	0.013	0.086	0.069	0.030	0.062
	(0.036)	(0.035)	(0.053)	(0.044)	(0.042)	(0.041)
Y95	0.000	-0.003	**0.152**^{b}	**0.082**^{b}	0.068	**0.059**^{c}
	(0.014)	(0.018)	(0.061)	(0.039)	(0.070)	(0.034)
Y00	**0.388**^{a}	**0.376**^{a}	**0.705**^{a}	**0.578**^{a}	**0.496**^{a}	**0.513**^{a}
	(0.018)	(0.032)	(0.128)	(0.056)	(0.130)	(0.038)
Y05	**0.395**^{a}	**0.401**^{a}	**0.774**^{a}	**0.626**^{a}	**0.537**^{a}	**0.516**^{a}
	(0.025)	(0.046)	(0.188)	(0.085)	(0.191)	(0.059)
Y10	**0.359**^{a}	**0.351**^{a}	**0.830**^{a}	**0.628**^{a}	**0.507**^{b}	**0.503**^{a}
	(0.030)	(0.062)	(0.235)	(0.105)	(0.219)	(0.072)
L.SR			0.157	0.057	**0.056**^{c}	**0.127**^{a}
			(0.115)	(0.045)	(0.032)	(0.030)
N	4079	4079	3107	3107	4079	4079
$Adj.R^2/J$	0.764	0.83	b	†	†	a
(AR_1,AR_2)			(a,†)	(a,†)	(a,†)	(a,†)
(J_{demo}, C_{eco})				(a,b)		(a,c)
(J_{dif}, C_{sys})					(†,†)	(a,†)

Notes: N is the sum of the numbers of municipalities over waves. a, b, c in the last three rows suggest the significant rejection of the corresponding null hypothesis at 1,5,10% levels, whereas † means non-rejection at 10% level. $Adj.R^2/J$ shows the adjusted R^2 for OLS and FE, and significance of the J-statistics for GMMs under the null of all model assumptions including instruments' validity. (AR_1,AR_2) reports the pair of significance of the first- and second-order autocorrelations of differenced residuals. J_{demo} shows significance of J-statistics for the model excluding economic variables to validate the demographic variables, and C_{eco} is the difference between J and J_{demo} to validate the economic instruments. J_{dif} shows significance of J-statistics for the model excluding instruments for the level equation, and C_{sys} is the difference between J and J_{diff} to validate instruments for the level equation specific to S.GMM's. The ideal diagnoses are (a,†) for (AR_1,AR_2), † for J, and (†,†) for (J,C).

Table 4a: Male Standardized Suicide Rates vs. Economic Variables.

	OLS	FE	D.GMM	D.GMMe	S.GMM	S.GMMe
income	0.030	0.015	0.042	0.061	**0.053**^{c}	**0.199**^{b}
	(0.021)	(0.020)	(0.026)	(0.101)	(0.031)	(0.093)
L.income	0.029	0.013	0.019	-0.064	0.043	0.048
	(0.022)	(0.019)	(0.025)	(0.072)	(0.030)	(0.034)
saving	**-0.063**^{a}	0.011	0.009	-0.049	**-0.058**^{a}	**-0.162**^{a}
	(0.012)	(0.012)	(0.014)	(0.065)	(0.017)	(0.052)
L.saving	**-0.098**^{a}	-0.017	-0.010	-0.005	**-0.083**^{a}	-0.028
	(0.012)	(0.011)	(0.015)	(0.017)	(0.014)	(0.017)
hown	0.015	0.001	0.014	-0.035	0.036	0.053
	(0.014)	(0.014)	(0.017)	(0.076)	(0.025)	(0.073)
L.hown	0.017	0.004	0.010	0.000	0.037	-0.013
	(0.014)	(0.015)	(0.020)	(0.021)	(0.024)	(0.022)
lifeins	**0.019**^{c}	-0.006	-0.012	-0.011	0.017	0.040
	(0.010)	(0.009)	(0.013)	(0.062)	(0.010)	(0.052)
L.lifeins	**0.027**^{b}	0.002	-0.004	-0.003	**0.021**^{c}	0.007
	(0.011)	(0.009)	(0.013)	(0.015)	(0.011)	(0.013)
debt	0.009	-0.008	-0.018	0.002	0.003	-0.020
	(0.013)	(0.012)	(0.015)	(0.067)	(0.012)	(0.064)
L.debt	**0.045**^{a}	0.016	0.019	0.012	**0.036**^{a}	**0.025**^{c}
	(0.012)	(0.012)	(0.016)	(0.016)	(0.013)	(0.015)
hloan	-0.011	0.013	**0.023**^{c}	-0.005	-0.008	-0.005
	(0.012)	(0.010)	(0.013)	(0.058)	(0.011)	(0.055)
L.hloan	**-0.034**^{a}	-0.003	-0.008	-0.006	**-0.029**^{b}	-0.013
	(0.011)	(0.011)	(0.015)	(0.016)	(0.012)	(0.014)
mue	0.035	**0.053**^{c}	0.024	**0.170**^{c}	**0.119**^{c}	**0.150**^{c}
	(0.028)	(0.027)	(0.038)	(0.090)	(0.063)	(0.080)
L.mue	**-0.052**^{b}	-0.032	-0.074	**-0.114**^{b}	-0.035	**-0.119**^{b}
	(0.026)	(0.030)	(0.045)	(0.053)	(0.028)	(0.054)
fue	0.048	**0.055**^{c}	**0.144**^{a}	0.047	-0.016	-0.062
	(0.029)	(0.029)	(0.053)	(0.109)	(0.053)	(0.099)
L.fue	-0.038	-0.018	-0.004	-0.045	**-0.083**^{c}	0.005
	(0.027)	(0.028)	(0.039)	(0.059)	(0.044)	(0.056)

Notes: The table shows the estimates based on ordinary least squares (OLS), fixed-effect static panel (FE), difference-GMM (Arellano and Bond, 1991) treating the economic variables as exogenous (D.GMM) and endogenous (D.GMMe), and system-GMM (Blundell and Bond, 1998) treating the economic variables as exogenous (S.GMM) and endogenous (S.GMMe). a, b, c indicate their significance at 1,5,10% levels, respectively, according to two-sided t-tests based on parenthesized HAC standard errors for OLS and FE and two-step HAC standard errors with Windmeijer's small-sample corrections for GMMs. Estimates in bold font are significant at 10% levels. The underlined "S.GMM" indicates its passage of diagnostic tests in Table 4c.

Table 4b: Male Standardized Suicide Rates vs. Demographic Variables (1).

	OLS	FE	D.GMM	D.GMMe	S.GMM	S.GMMe
dense	**-0.157**^{b}	-0.006	-0.222	-0.083	**-0.329**^{c}	**-0.202**^{b}
	(0.075)	(0.111)	(0.167)	(0.118)	(0.176)	(0.100)
L.dense	**0.123**^{c}	0.066	-0.063	0.027	**0.287**^{c}	**0.171**^{c}
	(0.074)	(0.098)	(0.152)	(0.119)	(0.170)	(0.099)
mmid	**0.593**^{a}	-0.156	**-0.332**^{b}	**-0.348**^{b}	**0.411**^{b}	0.141
	(0.124)	(0.123)	(0.165)	(0.155)	(0.171)	(0.157)
L.mmid	**-0.368**^{a}	-0.091	-0.078	0.031	-0.108	0.041
	(0.129)	(0.124)	(0.167)	(0.157)	(0.184)	(0.159)
mold	-0.051	0.043	-0.108	-0.061	0.313	-0.047
	(0.048)	(0.050)	(0.274)	(0.127)	(0.298)	(0.107)
L.mold	**-0.144**^{a}	-0.041	**0.721**^{b}	**0.258**^{c}	0.414	**0.327**^{a}
	(0.049)	(0.050)	(0.353)	(0.137)	(0.508)	(0.117)
fmid	**-0.885**^{a}	0.115	0.139	0.186	**-0.624**^{a}	**-0.578**^{a}
	(0.132)	(0.139)	(0.216)	(0.164)	(0.192)	(0.179)
L.fmid	**0.618**^{a}	0.078	0.301	0.051	0.093	0.194
	(0.126)	(0.133)	(0.268)	(0.173)	(0.239)	(0.138)
fold	**0.222**^{a}	-0.013	0.468	0.221	-0.685	0.352
	(0.064)	(0.063)	(0.765)	(0.323)	(0.824)	(0.264)
L.fold	0.035	0.002	**-1.670**^{b}	**-0.645**^{b}	-0.210	**-0.654**^{a}
	(0.051)	(0.054)	(0.759)	(0.258)	(0.685)	(0.202)
infant	-0.062	**-0.186**^{b}	0.000	-0.129	-0.097	-0.042
	(0.072)	(0.080)	(0.178)	(0.102)	(0.138)	(0.085)
L.infant	0.034	0.032	-0.159	-0.027	0.073	0.081
	(0.078)	(0.088)	(0.142)	(0.100)	(0.103)	(0.088)

Notes. income for the annual income; saving, lifeins, debt, and hloan for the current balances of saving, payment for life insurance premia, non-real-estate and real-estate liabilities, respectively; and hown for the fraction of home-owning households. mue and fue are male and female unemployment rates. dense is the size of population per square kilometer of municipal area. mmid, mold, fmid, fold are the fractions of middle-age males and middle-age females (50-64), old-age males and old-age females (80-89). infant, single, wid, and div are the fractions of population of infant (<10), never-married, widowed, and divorced states to the total population in municipality. Y's are the wave dummies. All variables with "L." indicate their first-wave lags. Therefore, L.SR represents the lagged suicide rate (in natural log).

Table 4c: Male Standardized Suicide Rates vs. Demographic Variables (2).

	OLS	FE	D.GMM	D.GMMe	S.GMM	S.GMMe
single	-0.088	**-0.302**^{a}	**-0.285**^{c}	**-0.291**^{b}	-0.158	-0.109
	(0.102)	(0.113)	(0.172)	(0.135)	(0.139)	(0.116)
L.single	**0.222**^{b}	0.055	0.055	0.030	**0.348**^{a}	**0.275**^{b}
	(0.098)	(0.106)	(0.181)	(0.129)	(0.131)	(0.122)
wid	**0.173**^{a}	0.096	0.126	0.082	**0.160**^{b}	**0.164**^{b}
	(0.061)	(0.063)	(0.079)	(0.075)	(0.063)	(0.072)
L.wid	**0.144**^{b}	-0.003	0.095	0.073	**0.316**^{b}	**0.231**^{a}
	(0.061)	(0.064)	(0.095)	(0.070)	(0.158)	(0.070)
div	**0.092**^{c}	-0.073	**-0.141**^{c}	**-0.107**^{c}	0.102	0.053
	(0.055)	(0.048)	(0.072)	(0.065)	(0.066)	(0.066)
L.div	0.044	0.016	0.110	**0.098**^{c}	0.030	0.086
	(0.049)	(0.046)	(0.068)	(0.055)	(0.058)	(0.054)
Y95	-0.021	-0.033	0.115	0.019	0.089	0.008
	(0.018)	(0.023)	(0.080)	(0.050)	(0.093)	(0.043)
Y00	0.011	-0.012	**0.370**^{b}	**0.175**^{b}	0.221	**0.128**^{a}
	(0.024)	(0.040)	(0.176)	(0.073)	(0.184)	(0.049)
Y05	-0.003	-0.007	**0.508**^{b}	**0.214**^{b}	0.320	**0.173**^{b}
	(0.034)	(0.059)	(0.249)	(0.108)	(0.272)	(0.078)
Y10	0.025	-0.002	**0.658**^{b}	**0.271**^{b}	0.376	**0.231**^{b}
	(0.041)	(0.078)	(0.311)	(0.134)	(0.312)	(0.096)
L.SR			0.106	0.007	0.058	**0.117**^{a}
			(0.125)	(0.047)	(0.036)	(0.031)
N	4079	4079	3107	3107	4079	4079
$Adj.R^2/J$	0.443	0.027	†	a	†	a
(AR_1,AR_2)			(a,†)	(a,†)	(a,†)	(a,†)
(J_{demo}, C_{eco})				(a,a)		(a,†)
(J_{dif}, C_{sys})					(†,†)	(a,†)

Notes: N is the sum of the numbers of municipalities over waves. a, b, c in the last three rows suggest the significant rejection of the corresponding null hypothesis at 1,5,10% levels, whereas † means non-rejection at 10% level. $Adj.R^2/J$ shows the adjusted R^2 for OLS and FE, and significance of the J-statistics for GMMs under the null of all model assumptions including instruments' validity. (AR_1,AR_2) reports the pair of significance of the first- and second-order autocorrelations of differenced residuals. J_{demo} shows significance of J-statistics for the model excluding economic variables to validate the demographic variables, and C_{eco} is the difference between J and J_{demo} to validate the economic instruments. J_{dif} shows significance of J-statistics for the model excluding instruments for the level equation, and C_{sys} is the difference between J and J_{diff} to validate instruments for the level equation specific to S.GMM's. The ideal diagnoses are (a,†) for (AR_1,AR_2), † for J, and (†,†) for (J,C).

Table 5a: Female Suicide Rates vs. Economic Variables.

	OLS	FE	D.GMM	D.GMMe	S.GMM	S.GMMe
income	0.007	-0.007	0.007	0.156	-0.022	**0.211**^{c}
	(0.027)	(0.026)	(0.031)	(0.133)	(0.043)	(0.124)
L.income	0.006	-0.008	0.002	0.061	-0.021	-0.033
	(0.027)	(0.026)	(0.028)	(0.096)	(0.036)	(0.041)
saving	-0.019	0.007	0.007	0.121	-0.006	0.083
	(0.015)	(0.015)	(0.016)	(0.086)	(0.021)	(0.069)
L.saving	-0.011	**0.024**^{c}	0.025	0.034	0.000	0.005
	(0.014)	(0.014)	(0.016)	(0.023)	(0.016)	(0.021)
hown	0.018	0.007	0.012	0.000	-0.003	**0.151**^{c}
	(0.015)	(0.015)	(0.017)	(0.100)	(0.032)	(0.082)
L.hown	-0.009	-0.023	-0.025	-0.003	-0.033	0.013
	(0.017)	(0.017)	(0.019)	(0.026)	(0.034)	(0.023)
lifeins	-0.013	-0.022	**-0.028**^{c}	**-0.150**^{c}	-0.015	**-0.158**^{b}
	(0.013)	(0.014)	(0.015)	(0.088)	(0.013)	(0.064)
L.lifeins	-0.021	**-0.033**^{a}	**-0.033**^{b}	-0.025	-0.017	**-0.036**^{b}
	(0.013)	(0.012)	(0.014)	(0.020)	(0.013)	(0.015)
debt	-0.009	**-0.028**^{c}	**-0.030**^{c}	-0.099	-0.011	-0.086
	(0.017)	(0.016)	(0.017)	(0.091)	(0.017)	(0.081)
L.debt	-0.001	-0.011	-0.007	-0.023	-0.006	-0.001
	(0.017)	(0.018)	(0.019)	(0.026)	(0.018)	(0.022)
hloan	0.007	**0.032**^{b}	**0.037**^{b}	0.055	0.014	0.060
	(0.015)	(0.013)	(0.015)	(0.077)	(0.015)	(0.069)
L.hloan	-0.005	0.014	0.009	0.018	0.007	-0.002
	(0.015)	(0.016)	(0.016)	(0.022)	(0.017)	(0.019)
mue	-0.027	0.002	-0.007	0.034	-0.059	0.053
	(0.037)	(0.037)	(0.041)	(0.123)	(0.083)	(0.100)
L.mue	**-0.102**^{a}	-0.022	-0.047	-0.063	**-0.082**^{b}	-0.037
	(0.034)	(0.036)	(0.047)	(0.065)	(0.035)	(0.063)
fue	-0.001	**-0.078**^{b}	-0.044	**-0.261**^{c}	-0.015	**-0.307**^{a}
	(0.036)	(0.038)	(0.061)	(0.149)	(0.063)	(0.115)
L.fue	0.016	-0.025	0.004	0.049	0.053	0.029
	(0.032)	(0.034)	(0.038)	(0.076)	(0.065)	(0.070)

Notes: The table shows the estimates based on ordinary least squares (OLS), fixed-effect static panel (FE), difference-GMM (Arellano and Bond, 1991) treating the economic variables as exogenous (D.GMM) and endogenous (D.GMMe), and system-GMM (Blundell and Bond, 1998) treating the economic variables as exogenous (S.GMM) and endogenous (S.GMMe). a, b, c indicate their significance at 1,5,10% levels, respectively, according to two-sided t-tests based on parenthesized HAC standard errors for OLS and FE and two-step HAC standard errors with Windmeijer's small-sample corrections for GMMs. Estimates in bold font are significant at 10% levels. The underlined "D.GMMe" indicates its passage of diagnostic tests in Table 5c.

Table 5b: Female Suicide Rates vs. Demographic Variables (1).

	OLS	FE	D.GMM	D.GMMe	S.GMM	S.GMMe
dense	-0.092	0.070	-0.078	-0.045	0.042	-0.078
	(0.072)	(0.107)	(0.156)	(0.125)	(0.214)	(0.098)
L.dense	0.069	0.126	0.078	0.103	-0.055	0.065
	(0.072)	(0.101)	(0.135)	(0.119)	(0.204)	(0.096)
mmid	**0.846**^{a}	**0.316**^{b}	0.250	0.210	**0.719**^{a}	**0.467**^{b}
	(0.156)	(0.157)	(0.184)	(0.204)	(0.192)	(0.191)
L.mmid	**-0.407**^{a}	0.093	0.083	0.248	-0.312	-0.055
	(0.149)	(0.155)	(0.172)	(0.202)	(0.226)	(0.161)
mold	**-0.129**^{b}	0.005	-0.067	-0.073	-0.090	-0.159
	(0.058)	(0.061)	(0.251)	(0.162)	(0.330)	(0.126)
L.mold	-0.021	0.043	0.383	0.143	-0.605	0.134
	(0.057)	(0.060)	(0.426)	(0.175)	(0.809)	(0.146)
fmid	**-1.190**^{a}	**-0.572**^{a}	**-0.543**^{a}	**-0.506**^{b}	**-0.904**^{a}	**-0.814**^{a}
	(0.155)	(0.171)	(0.202)	(0.208)	(0.208)	(0.184)
L.fmid	**1.124**^{a}	**0.424**^{a}	**0.504**^{b}	0.267	**0.949**^{a}	**0.568**^{a}
	(0.150)	(0.161)	(0.255)	(0.227)	(0.278)	(0.170)
fold	**0.366**^{a}	0.038	0.221	0.243	0.112	0.486
	(0.079)	(0.083)	(0.715)	(0.417)	(0.927)	(0.329)
L.fold	**-0.241**^{a}	-0.065	-0.797	-0.369	0.692	**-0.554**^{b}
	(0.061)	(0.066)	(0.879)	(0.349)	(1.169)	(0.267)
infant	0.125	-0.091	-0.032	0.009	-0.081	0.046
	(0.086)	(0.093)	(0.182)	(0.137)	(0.213)	(0.114)
L.infant	**-0.316**^{a}	**-0.221**^{c}	**-0.277**^{c}	-0.151	-0.153	-0.190
	(0.093)	(0.113)	(0.162)	(0.142)	(0.150)	(0.116)

Notes. income for the annual income; saving, lifeins, debt, and hloan for the current balances of saving, payment for life insurance premia, non-real-estate and real-estate liabilities, respectively; and hown for the fraction of home-owning households. mue and fue are male and female unemployment rates. dense is the size of population per square kilometer of municipal area. mmid, mold, fmid, fold are the fractions of middle-age males and middle-age females (50-64), old-age males and old-age females (80-89). infant, single, wid, and div are the fractions of population of infant (<10), never-married, widowed, and divorced states to the total population in municipality. Y's are the wave dummies. All variables with "L." indicate their first-wave lags. Therefore, L.SR represents the lagged suicide rate (in natural log).

Table 5c: Female Suicide Rates vs. Demographic Variables (2).

	OLS	FE	D.GMM	D.GMMe	S.GMM	S.GMMe
single	0.050	**-0.268**^{c}	-0.272	-0.245	-0.213	-0.179
	(0.130)	(0.142)	(0.175)	(0.184)	(0.212)	(0.158)
L.single	0.049	0.159	0.168	0.273	0.170	**0.328**^{b}
	(0.125)	(0.133)	(0.173)	(0.177)	(0.156)	(0.158)
wid	0.086	0.047	0.070	0.088	0.055	0.095
	(0.072)	(0.079)	(0.086)	(0.103)	(0.072)	(0.088)
L.wid	**0.147**^{b}	0.025	0.036	0.046	-0.012	0.134
	(0.072)	(0.085)	(0.115)	(0.101)	(0.218)	(0.087)
div	-0.012	**-0.130**^{b}	**-0.151**^{c}	-0.019	-0.028	**0.174**^{b}
	(0.065)	(0.064)	(0.080)	(0.089)	(0.078)	(0.081)
L.div	-0.042	**-0.146**^{b}	-0.089	**-0.163**^{b}	-0.015	-0.028
	(0.059)	(0.062)	(0.079)	(0.083)	(0.068)	(0.071)
Y95	**-0.105**^{a}	**-0.110**^{a}	-0.022	-0.012	-0.165	0.031
	(0.023)	(0.031)	(0.089)	(0.071)	(0.122)	(0.053)
Y00	**0.116**^{a}	**0.096**^{c}	0.297	**0.243**^{b}	-0.070	**0.293**^{a}
	(0.029)	(0.051)	(0.206)	(0.099)	(0.272)	(0.061)
Y05	**0.081**^{b}	0.077	0.307	**0.253**^{c}	-0.187	**0.268**^{a}
	(0.041)	(0.076)	(0.295)	(0.147)	(0.389)	(0.097)
Y10	**0.126**^{b}	0.083	0.382	**0.314**^{c}	-0.209	**0.312**^{a}
	(0.049)	(0.101)	(0.370)	(0.180)	(0.451)	(0.118)
L.SR			**0.179**^{a}	**0.148**^{a}	**0.082**^{b}	**0.176**^{a}
			(0.058)	(0.037)	(0.039)	(0.029)
N	4079	4079	3107	3107	4079	4079
$Adj.R^2/J$	0.306	0.248	†	†	a	a
(AR_1,AR_2)			(a,b)	(a,b)	(a,†)	(a,b)
(J_{demo}, C_{eco})				(†,†)		(a,b)
(J_{dif}, C_{sys})					(†,a)	(c,a)

Notes: N is the sum of the numbers of municipalities over waves. a, b, c in the last three rows suggest the significant rejection of the corresponding null hypothesis at 1,5,10% levels, whereas † means non-rejection at 10% level. $Adj.R^2/J$ shows the adjusted R^2 for OLS and FE, and significance of the J-statistics for GMMs under the null of all model assumptions including instruments' validity. (AR_1,AR_2) reports the pair of significance of the first- and second-order autocorrelations of differenced residuals. J_{demo} shows significance of J-statistics for the model excluding economic variables to validate the demographic variables, and C_{eco} is the difference between J and J_{demo} to validate the economic instruments. J_{dif} shows significance of J-statistics for the model excluding instruments for the level equation, and C_{sys} is the difference between J and J_{diff} to validate instruments for the level equation specific to S.GMM's. The ideal diagnoses are (a,†) for (AR_1,AR_2), † for J, and (†,†) for (J,C).

Table 6a: Female Age-Adjusted Suicide Rates vs. Economic Variables.

	OLS	FE	D.GMM	D.GMMe	S.GMM	S.GMMe
income	-0.010	-0.012	-0.007	0.044	-0.018	0.046
	(0.018)	(0.020)	(0.023)	(0.099)	(0.033)	(0.088)
L.income	0.006	0.010	0.016	-0.011	-0.005	-0.028
	(0.019)	(0.020)	(0.021)	(0.068)	(0.030)	(0.031)
saving	-0.007	0.006	0.007	0.067	-0.002	0.074
	(0.010)	(0.011)	(0.012)	(0.065)	(0.016)	(0.049)
L.saving	-0.007	0.010	0.007	0.022	-0.003	-0.003
	(0.010)	(0.010)	(0.012)	(0.017)	(0.012)	(0.015)
hown	0.011	0.008	0.006	-0.004	0.008	0.082
	(0.011)	(0.011)	(0.013)	(0.072)	(0.024)	(0.060)
L.hown	-0.005	-0.013	-0.016	-0.002	-0.011	0.012
	(0.012)	(0.012)	(0.013)	(0.019)	(0.025)	(0.017)
lifeins	**-0.015**^{c}	**-0.020**^{c}	**-0.021**^{c}	**-0.113**^{c}	**-0.017**^{c}	**-0.125**^{a}
	(0.009)	(0.010)	(0.011)	(0.066)	(0.009)	(0.044)
L.lifeins	**-0.017**^{c}	**-0.020**^{b}	-0.016	-0.018	**-0.015**^{c}	**-0.022**^{b}
	(0.009)	(0.009)	(0.010)	(0.015)	(0.008)	(0.011)
debt	-0.004	-0.019	-0.017	**-0.126**^{c}	-0.009	**-0.102**^{c}
	(0.011)	(0.011)	(0.013)	(0.068)	(0.011)	(0.059)
L.debt	0.005	-0.002	0.001	-0.007	0.003	0.007
	(0.012)	(0.014)	(0.014)	(0.019)	(0.012)	(0.016)
hloan	0.005	**0.023**^{b}	**0.023**^{b}	0.085	0.012	0.076
	(0.010)	(0.009)	(0.011)	(0.058)	(0.010)	(0.051)
L.hloan	-0.007	0.005	0.001	0.007	-0.002	-0.006
	(0.011)	(0.012)	(0.012)	(0.016)	(0.012)	(0.013)
mue	-0.005	0.024	0.021	0.050	-0.011	0.008
	(0.025)	(0.027)	(0.029)	(0.091)	(0.068)	(0.072)
L.mue	**-0.050**^{b}	-0.001	-0.002	-0.064	-0.033	-0.032
	(0.022)	(0.026)	(0.034)	(0.050)	(0.023)	(0.046)
fue	-0.003	**-0.076**^{a}	-0.067	**-0.206**^{c}	-0.014	**-0.174**^{b}
	(0.024)	(0.027)	(0.043)	(0.114)	(0.052)	(0.085)
L.fue	0.010	-0.035	-0.019	0.041	0.013	0.006
	(0.021)	(0.024)	(0.026)	(0.057)	(0.046)	(0.051)

Notes: The table shows the estimates based on ordinary least squares (OLS), fixed-effect static panel (FE), difference-GMM (Arellano and Bond, 1991) treating the economic variables as exogenous (D.GMM) and endogenous (D.GMMe), and system-GMM (Blundell and Bond, 1998) treating the economic variables as exogenous (S.GMM) and endogenous (S.GMMe). a, b, c indicate their significance at 1,5,10% levels, respectively, according to two-sided t-tests based on parenthesized HAC standard errors for OLS and FE and two-step HAC standard errors with Windmeijer's small-sample corrections for GMMs. Estimates in bold font are significant at 10% levels. The underlined "D.GMMe" indicates its passage of diagnostic tests in Table 6c.

Table 6b: Female Age-Adjusted Suicide Rates vs. Demographic Variables (1).

	OLS	FE	D.GMM	D.GMMe	S.GMM	S.GMMe
dense	-0.002	0.000	-0.032	-0.042	0.040	0.024
	(0.053)	(0.082)	(0.116)	(0.099)	(0.176)	(0.074)
L.dense	-0.012	-0.010	0.018	0.009	-0.050	-0.026
	(0.053)	(0.076)	(0.102)	(0.093)	(0.168)	(0.073)
mmid	**0.570**^{a}	**0.234**^{b}	**0.234**^{c}	0.184	**0.450**^{a}	**0.333**^{b}
	(0.107)	(0.112)	(0.130)	(0.149)	(0.134)	(0.133)
L.mmid	**-0.246**^{b}	0.054	0.021	0.179	-0.119	0.008
	(0.102)	(0.115)	(0.125)	(0.148)	(0.148)	(0.114)
mold	**-0.118**^{a}	-0.032	-0.120	-0.191	-0.173	**-0.196**^{b}
	(0.040)	(0.045)	(0.188)	(0.122)	(0.287)	(0.092)
L.mold	0.004	0.024	0.004	0.025	-0.098	0.078
	(0.039)	(0.045)	(0.334)	(0.134)	(0.587)	(0.107)
fmid	**-0.878**^{a}	**-0.434**^{a}	**-0.459**^{a}	**-0.472**^{a}	**-0.780**^{a}	**-0.665**^{a}
	(0.107)	(0.125)	(0.147)	(0.150)	(0.129)	(0.129)
L.fmid	**0.678**^{a}	**0.233**^{c}	0.299	0.160	**0.576**^{b}	**0.340**^{a}
	(0.104)	(0.119)	(0.183)	(0.166)	(0.239)	(0.118)
fold	**0.198**^{a}	0.019	0.266	0.460	0.337	**0.449**^{c}
	(0.054)	(0.060)	(0.531)	(0.316)	(0.759)	(0.243)
L.fold	**-0.159**^{a}	-0.051	-0.166	-0.297	-0.090	**-0.411**^{b}
	(0.043)	(0.050)	(0.638)	(0.266)	(0.692)	(0.193)
infant	0.034	-0.067	-0.023	0.060	-0.003	0.000
	(0.060)	(0.070)	(0.131)	(0.106)	(0.125)	(0.082)
L.infant	**-0.231**^{a}	**-0.138**^{c}	-0.137	-0.133	**-0.192**^{b}	**-0.163**^{b}
	(0.066)	(0.082)	(0.116)	(0.108)	(0.091)	(0.082)

Notes. income for the annual income; saving, lifeins, debt, and hloan for the current balances of saving, payment for life insurance premia, non-real-estate and real-estate liabilities, respectively; and hown for the fraction of home-owning households. mue and fue are male and female unemployment rates. dense is the size of population per square kilometer of municipal area. mmid, mold, fmid, fold are the fractions of middle-age males and middle-age females (50-64), old-age males and old-age females (80-89). infant, single, wid, and div are the fractions of population of infant (<10), never-married, widowed, and divorced states to the total population in municipality. Y's are the wave dummies. All variables with "L." indicate their first-wave lags. Therefore, L.SR represents the lagged suicide rate (in natural log).

Table 6c: Female Age-Adjusted Suicide Rates vs. Demographic Variables (2).

	OLS	FE	D.GMM	D.GMMe	S.GMM	S.GMMe
single	0.024	**-0.192**^{c}	-0.167	-0.133	-0.066	-0.108
	(0.089)	(0.101)	(0.129)	(0.136)	(0.127)	(0.109)
L.single	0.045	0.093	0.072	0.112	0.093	**0.221**^{b}
	(0.085)	(0.094)	(0.126)	(0.130)	(0.112)	(0.108)
wid	**0.090**^{c}	0.063	0.064	0.087	0.073	**0.109**^{c}
	(0.050)	(0.059)	(0.064)	(0.076)	(0.048)	(0.061)
L.wid	0.043	-0.037	-0.065	-0.024	-0.013	0.034
	(0.050)	(0.062)	(0.084)	(0.072)	(0.178)	(0.062)
div	-0.023	**-0.098**^{b}	**-0.098**^{c}	-0.011	-0.040	**0.107**^{c}
	(0.044)	(0.047)	(0.058)	(0.066)	(0.057)	(0.057)
L.div	0.002	**-0.125**^{a}	**-0.098**^{c}	**-0.123**^{b}	0.019	0.000
	(0.040)	(0.045)	(0.056)	(0.060)	(0.051)	(0.050)
Y95	**-0.148**^{a}	**-0.135**^{a}	-0.115	-0.060	-0.166	-0.045
	(0.015)	(0.024)	(0.070)	(0.054)	(0.104)	(0.039)
Y00	**0.041**^{b}	0.063	0.102	**0.172**^{b}	0.002	**0.194**^{a}
	(0.020)	(0.039)	(0.158)	(0.076)	(0.212)	(0.045)
Y05	0.043	0.090	0.082	0.179	-0.032	**0.187**^{a}
	(0.028)	(0.059)	(0.232)	(0.113)	(0.313)	(0.071)
Y10	**0.096**^{a}	**0.139**^{c}	0.127	**0.242**^{c}	-0.003	**0.241**^{a}
	(0.034)	(0.078)	(0.291)	(0.138)	(0.360)	(0.085)
L.SR			**0.186**^{a}	**0.129**^{a}	0.048	**0.154**^{a}
			(0.058)	(0.037)	(0.031)	(0.027)
N	4079	4079	3107	3107	4079	4079
$Adj.R^2/J$	0.256	0.323	†	†	c	b
(AR_1,AR_2)			(a,b)	(a,c)	(a,†)	(a,c)
(J_{demo}, C_{eco})				(†,†)		(†,a)
(J_{dif}, C_{sys})					(†,c)	(†,a)

Notes: N is the sum of the numbers of municipalities over waves. a, b, c in the last three rows suggest the significant rejection of the corresponding null hypothesis at 1,5,10% levels, whereas † means non-rejection at 10% level. $Adj.R^2/J$ shows the adjusted R^2 for OLS and FE, and significance of the J-statistics for GMMs under the null of all model assumptions including instruments' validity. (AR_1,AR_2) reports the pair of significance of the first- and second-order autocorrelations of differenced residuals. J_{demo} shows significance of J-statistics for the model excluding economic variables to validate the demographic variables, and C_{eco} is the difference between J and J_{demo} to validate the economic instruments. J_{dif} shows significance of J-statistics for the model excluding instruments for the level equation, and C_{sys} is the difference between J and J_{diff} to validate instruments for the level equation specific to S.GMM's. The ideal diagnoses are (a,†) for (AR_1,AR_2), † for J, and (†,†) for (J,C).

Table 7a: Female Standardized Suicide Rates vs. Economic Variables.

	OLS	FE	D.GMM	D.GMMe	S.GMM	S.GMMe
income	0.005	-0.008	0.001	0.121	0.008	0.163
	(0.025)	(0.024)	(0.029)	(0.123)	(0.041)	(0.113)
L.income	0.007	-0.010	-0.003	0.012	0.002	-0.032
	(0.025)	(0.025)	(0.026)	(0.087)	(0.036)	(0.037)
saving	-0.016	0.006	0.007	0.080	-0.016	0.074
	(0.014)	(0.014)	(0.014)	(0.079)	(0.021)	(0.062)
L.saving	-0.008	**0.023**^{c}	0.021	**0.035**^{c}	-0.003	0.008
	(0.013)	(0.013)	(0.015)	(0.021)	(0.015)	(0.019)
hown	0.017	0.005	0.006	-0.032	0.020	**0.142**^{c}
	(0.014)	(0.014)	(0.016)	(0.091)	(0.030)	(0.076)
L.hown	-0.010	-0.024	-0.026	-0.011	-0.008	0.002
	(0.015)	(0.016)	(0.017)	(0.024)	(0.032)	(0.021)
lifeins	-0.012	-0.020	-0.023	-0.099	-0.012	**-0.132**^{b}
	(0.012)	(0.013)	(0.014)	(0.082)	(0.012)	(0.058)
L.lifeins	**-0.021**^{c}	**-0.031**^{a}	**-0.029**^{b}	-0.023	**-0.021**^{c}	**-0.036**^{b}
	(0.012)	(0.011)	(0.013)	(0.018)	(0.011)	(0.014)
debt	-0.008	**-0.026**^{c}	-0.026	-0.081	-0.015	-0.070
	(0.016)	(0.014)	(0.016)	(0.084)	(0.015)	(0.074)
L.debt	-0.001	-0.011	-0.008	-0.022	-0.004	-0.001
	(0.016)	(0.017)	(0.017)	(0.024)	(0.015)	(0.019)
hloan	0.005	**0.030**^{b}	**0.032**^{b}	0.035	0.014	0.043
	(0.014)	(0.012)	(0.014)	(0.072)	(0.013)	(0.064)
L.hloan	-0.005	0.014	0.010	0.019	0.000	-0.001
	(0.014)	(0.015)	(0.015)	(0.020)	(0.015)	(0.017)
mue	-0.022	0.006	-0.002	0.033	-0.003	0.003
	(0.033)	(0.034)	(0.037)	(0.114)	(0.083)	(0.092)
L.mue	**-0.100**^{a}	-0.022	-0.030	-0.079	**-0.070**^{b}	-0.063
	(0.030)	(0.033)	(0.045)	(0.060)	(0.030)	(0.058)
fue	0.013	**-0.067**^{c}	-0.048	-0.222	-0.025	**-0.190**^{c}
	(0.033)	(0.035)	(0.057)	(0.138)	(0.062)	(0.107)
L.fue	0.017	-0.016	0.004	0.059	0.005	0.060
	(0.029)	(0.031)	(0.035)	(0.070)	(0.057)	(0.065)

Notes: The table shows the estimates based on ordinary least squares (OLS), fixed-effect static panel (FE), difference-GMM (Arellano and Bond, 1991) treating the economic variables as exogenous (D.GMM) and endogenous (D.GMMe), and system-GMM (Blundell and Bond, 1998) treating the economic variables as exogenous (S.GMM) and endogenous (S.GMMe). a, b, c indicate their significance at 1,5,10% levels, respectively, according to two-sided t-tests based on parenthesized HAC standard errors for OLS and FE and two-step HAC standard errors with Windmeijer's small-sample corrections for GMMs. Estimates in bold font are significant at 10% levels. The underlined "D.GMMe" indicates its passage of diagnostic tests in Table 7c.

Table 7b: Female Standardized Suicide Rates vs. Demographic Variables (1).

	OLS	FE	D.GMM	D.GMMe	S.GMM	S.GMMe
dense	-0.057	-0.001	-0.075	-0.070	-0.086	-0.046
	(0.066)	(0.102)	(0.152)	(0.117)	(0.217)	(0.090)
L.dense	0.033	0.003	0.013	0.005	0.061	0.028
	(0.065)	(0.095)	(0.131)	(0.113)	(0.207)	(0.089)
mmid	**0.747**^{a}	**0.259**^{c}	0.242	0.165	**0.595**^{a}	**0.433**^{b}
	(0.142)	(0.143)	(0.168)	(0.184)	(0.173)	(0.173)
L.mmid	**-0.359**^{a}	0.065	0.043	0.207	-0.144	-0.038
	(0.136)	(0.143)	(0.159)	(0.184)	(0.193)	(0.148)
mold	**-0.147**^{a}	-0.043	-0.160	-0.200	-0.077	**-0.219**^{c}
	(0.053)	(0.056)	(0.256)	(0.152)	(0.347)	(0.118)
L.mold	-0.038	0.027	0.137	0.078	0.111	0.069
	(0.052)	(0.055)	(0.425)	(0.161)	(0.724)	(0.131)
fmid	**-1.052**^{a}	**-0.484**^{a}	**-0.526**^{a}	**-0.514**^{a}	**-0.911**^{a}	**-0.803**^{a}
	(0.142)	(0.156)	(0.191)	(0.187)	(0.169)	(0.165)
L.fmid	**0.813**^{a}	**0.250**^{c}	0.358	0.179	**0.528**^{c}	**0.434**^{a}
	(0.138)	(0.147)	(0.242)	(0.207)	(0.286)	(0.154)
fold	**0.278**^{a}	-0.002	0.324	0.434	0.086	**0.532**^{c}
	(0.072)	(0.076)	(0.725)	(0.390)	(0.932)	(0.307)
L.fold	**-0.220**^{a}	-0.055	-0.453	-0.378	-0.287	**-0.513**^{b}
	(0.056)	(0.060)	(0.846)	(0.318)	(0.914)	(0.243)
infant	0.092	-0.080	-0.014	0.042	0.045	0.049
	(0.078)	(0.086)	(0.176)	(0.126)	(0.167)	(0.102)
L.infant	**-0.341**^{a}	**-0.198**^{c}	-0.227	-0.160	**-0.290**^{b}	**-0.245**^{b}
	(0.085)	(0.103)	(0.150)	(0.130)	(0.122)	(0.106)

Notes. income for the annual income; saving, lifeins, debt, and hloan for the current balances of saving, payment for life insurance premia, non-real-estate and real-estate liabilities, respectively; and hown for the fraction of home-owning households. mue and fue are male and female unemployment rates. dense is the size of population per square kilometer of municipal area. mmid, mold, fmid, fold are the fractions of middle-age males and middle-age females (50-64), old-age males and old-age females (80-89). infant, single, wid, and div are the fractions of population of infant (<10), never-married, widowed, and divorced states to the total population in municipality. Y's are the wave dummies. All variables with "L." indicate their first-wave lags. Therefore, L.SR represents the lagged suicide rate (in natural log).

Table 7c: Female Standardized Suicide Rates vs. Demographic Variables (2).

	OLS	FE	D.GMM	D.GMMe	S.GMM	S.GMMe
single	0.065	-0.206	-0.195	-0.170	-0.041	-0.127
	(0.117)	(0.127)	(0.167)	(0.165)	(0.166)	(0.138)
L.single	-0.006	0.150	0.118	0.214	0.102	0.207
	(0.113)	(0.121)	(0.167)	(0.160)	(0.142)	(0.140)
wid	0.105	0.043	0.056	0.093	0.101	0.108
	(0.066)	(0.073)	(0.079)	(0.094)	(0.062)	(0.080)
L.wid	**0.110**^{c}	-0.020	-0.036	-0.005	0.129	0.081
	(0.066)	(0.079)	(0.108)	(0.092)	(0.213)	(0.080)
div	-0.002	**-0.099**^{c}	-0.114	-0.015	-0.017	**0.130**^{c}
	(0.059)	(0.059)	(0.074)	(0.081)	(0.073)	(0.074)
L.div	-0.051	**-0.119**^{b}	-0.081	**-0.125**^{c}	-0.036	-0.032
	(0.054)	(0.057)	(0.074)	(0.076)	(0.065)	(0.064)
Y95	**0.037**^{c}	0.031	0.045	0.080	0.063	**0.106**^{b}
	(0.021)	(0.029)	(0.092)	(0.065)	(0.124)	(0.050)
Y00	**0.103**^{a}	0.073	0.117	0.150	0.144	**0.173**^{a}
	(0.027)	(0.047)	(0.209)	(0.092)	(0.260)	(0.057)
Y05	**0.135**^{a}	0.106	0.157	0.209	0.199	**0.215**^{b}
	(0.038)	(0.071)	(0.296)	(0.135)	(0.378)	(0.089)
Y10	**0.208**^{a}	0.131	0.204	0.272	0.263	**0.267**^{b}
	(0.045)	(0.093)	(0.370)	(0.166)	(0.434)	(0.108)
L.SR			**0.182**^{b}	**0.130**^{a}	0.046	**0.156**^{a}
			(0.075)	(0.046)	(0.032)	(0.028)
N	4079	4079	3107	3107	4079	4079
$Adj.R^2/J$	0.131	0.052	†	†	b	c
(AR_1,AR_2)			(a,b)	(a,b)	(a,†)	(a,b)
(J_{demo}, C_{eco})				(†,†)		(c,a)
(J_{dif}, C_{sys})					(†,b)	(†,a)

Notes: N is the sum of the numbers of municipalities over waves. a, b, c in the last three rows suggest the significant rejection of the corresponding null hypothesis at 1,5,10% levels, whereas † means non-rejection at 10% level. $Adj.R^2/J$ shows the adjusted R^2 for OLS and FE, and significance of the J-statistics for GMMs under the null of all model assumptions including instruments' validity. (AR_1,AR_2) reports the pair of significance of the first- and second-order autocorrelations of differenced residuals. J_{demo} shows significance of J-statistics for the model excluding economic variables to validate the demographic variables, and C_{eco} is the difference between J and J_{demo} to validate the economic instruments. J_{dif} shows significance of J-statistics for the model excluding instruments for the level equation, and C_{sys} is the difference between J and J_{diff} to validate instruments for the level equation specific to S.GMM's. The ideal diagnoses are (a,†) for (AR_1,AR_2), † for J, and (†,†) for (J,C).

Table 8. Unemployed and Work-Force Population on Female Suicide Risk.

	D.GMM		D.GMMe		S.GMM		S.GMMe	
	UE	LF	UE	LF	UE	LF	UE	LF
FSR1								
mue	-0.028	-0.227	0.003	0.554	-0.110	-0.488	0.027	0.306
	(0.052)	(0.212)	(0.113)	(0.488)	(0.087)	(0.387)	(0.093)	(0.464)
L.mue	-0.041	-0.156	-0.058	**-1.018**^{b}	**-0.077**^{b}	0.255	-0.003	**-0.691**^{c}
	(0.039)	(0.167)	(0.059)	(0.448)	(0.037)	(0.355)	(0.057)	(0.420)
fue	-0.052	**0.358**^{c}	-0.114	-0.474	0.075	0.552	-0.135	-0.182
	(0.069)	(0.195)	(0.151)	(0.479)	(0.088)	(0.405)	(0.119)	(0.449)
L.fue	0.030	0.174	**0.127**^{c}	**0.954**^{b}	0.091	-0.271	0.037	**0.714**^{c}
	(0.043)	(0.159)	(0.071)	(0.438)	(0.058)	(0.392)	(0.062)	(0.408)
FSR2								
mue	-0.021	-0.190	0.037	0.045	-0.069	-0.431	0.009	-0.066
	(0.038)	(0.158)	(0.084)	(0.374)	(0.072)	(0.324)	(0.067)	(0.344)
L.mue	-0.021	-0.085	-0.050	-0.470	-0.037	0.247	-0.027	-0.138
	(0.029)	(0.118)	(0.046)	(0.338)	(0.025)	(0.290)	(0.043)	(0.311)
fue	-0.041	**0.278**^{c}	-0.118	-0.103	0.064	0.451	-0.072	0.120
	(0.049)	(0.145)	(0.116)	(0.367)	(0.073)	(0.337)	(0.087)	(0.333)
L.fue	0.011	0.099	**0.101**^{c}	0.435	0.048	-0.263	0.032	0.176
	(0.031)	(0.113)	(0.053)	(0.331)	(0.041)	(0.321)	(0.045)	(0.303)
FSR3								
mue	-0.048	-0.077	0.019	0.478	-0.041	-0.115	-0.010	0.443
	(0.048)	(0.194)	(0.104)	(0.453)	(0.079)	(0.349)	(0.084)	(0.423)
L.mue	-0.043	-0.113	-0.070	**-0.813**^{c}	**-0.068**^{b}	-0.013	-0.035	-0.529
	(0.036)	(0.152)	(0.055)	(0.415)	(0.029)	(0.316)	(0.053)	(0.380)
fue	-0.031	0.193	-0.133	-0.445	0.028	0.128	-0.076	-0.351
	(0.062)	(0.177)	(0.140)	(0.447)	(0.078)	(0.365)	(0.109)	(0.412)
L.fue	0.031	0.130	**0.131**^{b}	**0.752**^{c}	0.041	0.049	0.042	0.581
	(0.039)	(0.145)	(0.065)	(0.406)	(0.045)	(0.349)	(0.057)	(0.370)

Notes. This table shows estimates on the number of unemployed people (UE) and on the size of labor force (LF) for an appropriate gender indicated by mue or fue. FSRa represents the results for female crude suicide rates (a=1), female age-adjusted suicide rates (a=2), and female standardized suicidal-mortality ratios (a=3). Note that the D.GMMe-based estimates on "fue" in Table 5 to Table 7 are negative. If an estimate on LF is negative for females, then LF in the denominator of "fue" has a positive impact on the suicide rate through its reciprocal. They are compatible with each other only if an estimate on UE for females is strongly negative, and we indeed observe such patterns of estimates.

Table 9a: Female Suicide Rates with 2+ lags of economic variables as instruments.

	FSR1		FSR2		FSR3	
	D.GMMm	S.GMMm	D.GMMm	S.GMMm	D.GMMm	S.GMMm
income	0.059	**0.328**^{c}	-0.099	0.146	-0.003	**0.277**^{c}
	(0.234)	(0.184)	(0.169)	(0.130)	(0.208)	(0.168)
L.income	-0.030	-0.119	-0.086	-0.147	-0.132	-0.110
	(0.265)	(0.175)	(0.210)	(0.128)	(0.243)	(0.159)
saving	0.013	0.040	0.039	0.005	-0.020	-0.008
	(0.125)	(0.099)	(0.094)	(0.069)	(0.114)	(0.089)
L.saving	0.170	0.175	0.172	**0.157**^{c}	0.224	**0.207**^{b}
	(0.168)	(0.109)	(0.127)	(0.080)	(0.153)	(0.099)
hown	0.066	0.081	0.042	0.007	0.052	0.052
	(0.172)	(0.128)	(0.137)	(0.093)	(0.157)	(0.116)
L.hown	-0.183	0.110	-0.105	0.056	-0.141	0.067
	(0.180)	(0.113)	(0.138)	(0.079)	(0.172)	(0.107)
lifeins	-0.087	**-0.206**^{b}	-0.087	**-0.119**^{c}	-0.054	**-0.145**^{c}
	(0.137)	(0.086)	(0.105)	(0.061)	(0.123)	(0.078)
L.lifeins	-0.128	**-0.171**^{c}	-0.121	**-0.129**^{c}	-0.175	**-0.175**^{b}
	(0.174)	(0.096)	(0.127)	(0.069)	(0.158)	(0.088)
debt	0.018	0.051	-0.065	-0.024	-0.012	0.051
	(0.165)	(0.113)	(0.117)	(0.081)	(0.153)	(0.107)
L.debt	0.084	0.077	0.108	0.115	0.087	0.111
	(0.179)	(0.133)	(0.130)	(0.093)	(0.159)	(0.120)
hloan	-0.046	-0.063	0.021	0.000	-0.007	-0.064
	(0.132)	(0.095)	(0.093)	(0.067)	(0.121)	(0.089)
L.hloan	-0.184	-0.121	-0.163	**-0.136**^{c}	-0.160	-0.137
	(0.162)	(0.118)	(0.115)	(0.081)	(0.141)	(0.106)
mue	0.135	-0.056	0.165	0.026	0.210	0.042
	(0.237)	(0.204)	(0.188)	(0.150)	(0.234)	(0.190)
L.mue	**-0.259**^{c}	**-0.352**^{b}	-0.117	**-0.231**^{b}	**-0.245**^{c}	**-0.350**^{a}
	(0.151)	(0.138)	(0.113)	(0.100)	(0.138)	(0.128)
fue	**-0.558**^{b}	**-0.446**^{c}	**-0.430**^{b}	**-0.354**^{b}	**-0.558**^{b}	**-0.443**^{b}
	(0.261)	(0.230)	(0.206)	(0.166)	(0.259)	(0.214)
L.fue	0.258	**0.530**^{a}	0.064	**0.311**^{b}	0.253	**0.509**^{a}
	(0.255)	(0.199)	(0.184)	(0.138)	(0.231)	(0.182)

Notes. FSRa indicate the results for female suicide rates (a=1), female age-adjusted suicide rate (a=2), and female standardized suicide rates (a=3). All economic variables are assumed endogenous, and are instrumented by their second lags and onward, rather than their first lags and onward. D.GMMm and S.GMMm correspond to D.GMMe and S.GMMe in the previous tables, but modified by skipping the first order lags for instruments. Both of them pass all of the diagnostic tests, but the latter additionally passes the tests concerning the instruments in the transformed and level equations, as shown in Table 9c.

Table 9b: Female Suicide Rates (continued).

	Female SR1		Female SR2		Female SR3	
	D.GMMm	S.GMMm	D.GMMm	S.GMMm	D.GMMm	S.GMMm
dense	-0.089	-0.064	-0.075	0.050	-0.106	-0.012
	(0.177)	(0.138)	(0.134)	(0.099)	(0.162)	(0.123)
L.dense	0.197	0.050	0.069	-0.053	0.068	-0.007
	(0.162)	(0.136)	(0.124)	(0.098)	(0.150)	(0.121)
mmid	0.071	**0.453**^{c}	0.073	**0.317**^{c}	0.000	0.343
	(0.339)	(0.262)	(0.257)	(0.190)	(0.311)	(0.237)
L.mmid	0.475	0.268	0.373	0.177	0.375	0.186
	(0.331)	(0.222)	(0.254)	(0.156)	(0.311)	(0.201)
mold	-0.218	**-0.386**^{b}	-0.201	**-0.321**^{b}	-0.274	**-0.422**^{b}
	(0.247)	(0.175)	(0.179)	(0.130)	(0.224)	(0.164)
L.mold	0.200	0.337	0.003	**0.264**^{c}	0.135	0.238
	(0.251)	(0.205)	(0.190)	(0.150)	(0.225)	(0.185)
fmid	**-0.577**^{c}	**-1.095**^{a}	-0.406	**-0.799**^{a}	-0.471	**-0.955**^{a}
	(0.347)	(0.252)	(0.267)	(0.175)	(0.324)	(0.224)
L.fmid	0.082	**0.652**^{a}	-0.121	**0.351**^{b}	-0.007	**0.473**^{b}
	(0.394)	(0.231)	(0.301)	(0.166)	(0.373)	(0.213)
fold	0.695	**1.346**^{a}	0.491	**0.879**^{b}	0.673	**1.239**^{a}
	(0.652)	(0.473)	(0.471)	(0.351)	(0.592)	(0.445)
L.fold	-0.685	**-1.286**^{a}	-0.253	**-0.887**^{a}	-0.604	**-1.123**^{a}
	(0.579)	(0.391)	(0.395)	(0.281)	(0.494)	(0.356)
infant	0.039	0.157	0.031	0.048	0.058	0.134
	(0.194)	(0.152)	(0.144)	(0.107)	(0.176)	(0.138)
L.infant	-0.123	-0.198	0.010	-0.141	-0.153	**-0.253**^{c}
	(0.245)	(0.166)	(0.184)	(0.116)	(0.228)	(0.152)

Table 9c: Female Suicide Rates (continued).

	Female SR1		Female SR2		Female SR3	
	D.GMMm	S.GMMm	D.GMMm	S.GMMm	D.GMMm	S.GMMm
single	-0.122	0.035	-0.056	0.080	-0.006	0.113
	(0.266)	(0.207)	(0.187)	(0.142)	(0.241)	(0.184)
L.single	0.153	0.155	0.119	0.089	0.067	0.000
	(0.277)	(0.212)	(0.200)	(0.146)	(0.254)	(0.193)
wid	0.150	0.160	0.094	**0.144**^{c}	0.095	0.145
	(0.165)	(0.116)	(0.124)	(0.080)	(0.154)	(0.106)
L.wid	0.031	0.171	-0.025	0.076	-0.010	0.129
	(0.153)	(0.119)	(0.110)	(0.085)	(0.138)	(0.108)
div	0.061	**0.251**^{b}	0.081	**0.156**^{b}	0.062	**0.182**^{c}
	(0.139)	(0.108)	(0.106)	(0.076)	(0.130)	(0.099)
L.div	-0.127	-0.087	-0.124	-0.043	-0.102	-0.077
	(0.111)	(0.086)	(0.081)	(0.060)	(0.100)	(0.078)
Y95	0.109	0.109	0.030	0.029	**0.221**^{c}	**0.191**^{a}
	(0.121)	(0.078)	(0.092)	(0.055)	(0.115)	(0.073)
Y00	**0.436**^{b}	**0.390**^{a}	**0.314**^{b}	**0.305**^{a}	**0.353**^{c}	**0.276**^{a}
	(0.193)	(0.107)	(0.144)	(0.075)	(0.184)	(0.099)
Y05	**0.463**^{c}	**0.399**^{a}	0.318	**0.342**^{a}	**0.415**^{c}	**0.346**^{b}
	(0.258)	(0.153)	(0.200)	(0.107)	(0.242)	(0.140)
Y10	**0.536**^{c}	**0.459**^{b}	0.366	**0.417**^{a}	0.467	**0.418**^{b}
	(0.313)	(0.188)	(0.245)	(0.132)	(0.293)	(0.173)
L.SR	**0.148**^{b}	**0.138**^{a}	**0.133**^{c}	**0.121**^{a}	0.095	**0.134**^{a}
	(0.073)	(0.038)	(0.076)	(0.035)	(0.102)	(0.037)
N	3107	4079	3107	4079	3107	4079
J	†	†	†	†	†	†
(AR_1,AR_2)	(a,†)	(a,†)	(a,†)	(a,†)	(a,†)	(a,†)
(J_{demo}, C_{eco})	(†,†)	(†,†)	(†,†)	(†,†)	(†,†)	(†,†)
(J_{dif}, C_{sys})		(†,†)		(†,†)		(†,†)

Notes: N is the sum of the numbers of municipalities over waves. a in the third to the last row suggests the significant rejection of the corresponding null hypothesis at 1% level, whereas † in the last four rows means non-rejection at 10% level. J shows significance of the J-statistics under the null of all model assumptions including instruments' validity. (AR_1,AR_2) reports the pair of significance of the first- and second-order autocorrelations of differenced residuals. J_{demo} shows significance of J-statistics for the model excluding economic variables to validate the demographic variables, and C_{eco} is the difference between J and J_{demo} to validate the economic instruments. J_{dif} shows significance of J-statistics for the model excluding instruments for the level equation, and C_{sys} is the difference between J and J_{diff} to validate instruments for the level equation specific to S.GMM's. The ideal diagnoses are (a,†) for (AR_1,AR_2), † for J, and (†,†) for (J,C).

Table 10: Cross-sectional first-order autocorrelations and Hausman test statistics.

	Male			Female		
	SR1	SR2	SR3	SR1	SR2	SR3
	(A) Cross-sectional ACF(1)					
1983-1987 vs 1988-1992	0.605	0.604	0.553	0.517	0.428	0.422
1988-1992 vs 1993-1997	0.573	0.574	0.529	0.509	0.404	0.439
1993-1997 vs 1998-2002	0.584	0.595	0.555	0.421	0.290	0.363
1998-2002 vs 2003-2007	0.658	0.675	0.639	0.418	0.313	0.375
2003-2007 vs 2008-2012	0.594	0.592	0.574	0.371	0.274	0.342
Average	0.603	0.608	0.570	0.447	0.342	0.388
	(B) Hausman tests					
hausman	200.34	-164.24	218.50	-45.17	206.50	82.16
xtoverid	244.56	223.14	213.85	177.51	159.05	134.41

Notes. SR1, SR2 and SR3 indicate the crude suicide rate, age-adjusted suicide rate and standardized mortality ratio, respectively. The displayed numbers in "(A) Cross-sectional ACF(1)" section are cross-sectionally calculated first-order autocorrelation function at the first displacement, i.e.,

$$\rho_t(1) = \widehat{Cov}_N(y_{it}, y_{i,t-1}) / \sqrt{\widehat{Var}_N(y_{it})\widehat{Var}_N(y_{i,t-1})} \quad (t \geq 2)$$

in which $t = 1, \ldots, 6$ corresponding to waves for 1983-1987, 1988-1992, ..., 2008-2012, $N = 1818$ is the number of municipalities in the original suicide dataset, $y_{it} = \ln SR_{it}$ for one of three suicide rate measures, and $\widehat{Var}_N$ and $\widehat{Cov}_N$ are the sample variance and covariance using N cross-sectional observations (Arellano, 2003, p.58). For instance, $\widehat{Cov}_N(y_{it}, y_{i,t-1}) = \sum_{i=1}^N y_{it}y_{i,t-1}/N - (\sum_{i=1}^N y_{it}/N)(\sum_{i=1}^N y_{i,t-1}/N)$. If no covariates x_{it} nor time effect δ_t exist, our model (1) in the main text implies $corr(y_{it}, y_{i,t-1}) = \gamma + (1-\gamma)/[1+\nu(1-\gamma)/(1+\gamma)]$ in which γ is the autoregressive parameter in our model and ν is the variance ratio of α_i and ϵ_{it}. If $\nu = 1$, then this formula implies $\gamma = 0.20 < corr(y_{it}, y_{i,t-1}) = 0.68$ and $\gamma = 0.05 < corr(y_{it}, y_{i,t-1}) \approx 0.55$. The values of $corr(y_{it}, y_{i,t-1})$ for wave-$t = 2, \ldots, 6$ seem consistent with $\hat{\gamma} \in [0.05, 0.179]$, as observed in Tables 2a-3c in the main text. The numbers displayed in "(B) Hausman tests" are the test statistics for the null hypothesis that the random effect model is a correct specification, against the fixed effect alternative hypothesis. "hausman" row show standard Hausman test statistics, which can go negative. "xtoverid" is based on the overidentifying test and assured to produce a positive value. Both statistics asymptotically follow the χ^2-distribution with 38 degree-of-freedom. The p-values of the statistics of positive signs are 0.0000, so that they reject the null hypothesis. These results are included here just as casual benchmarks. Because the estimates in part-(A) may suffer from the omitted variable bias, and the statistics in part-(B) may incur the pre-test bias for the post-selection inference, we should not rely on them.