

# Bank Integration and Transmission of Financial Shocks: Evidence from Japan

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Web Appendix

*Not for Publication*

**Appendix B: Replicate Tables 1-7, using city bank deposit share as a measure of bank integration**

**Table B1: Replicate Table 1, using city bank deposit share as a measure of bank integration**

Columns 1-4 report the results of OLS. Panels A and B of columns 5-6 report the results of the first stage and second stage of IV regressions.  $\Delta LOAN$  and  $\Delta GDP$  represent growth of local loan and output, respectively.  $\Delta Local Land Price$  is growth of local land price index and  $\Delta City Land Price$  is growth of land price index for six major cities. *City Bank Share* is a ratio of city banks' deposit total deposit in a given prefecture. Standard errors are adjusted for clustering within each prefecture. First stage F-statistics is Kleibergen-Paap rk Wald F statistic (weak identification test).

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A						
Variables	$\Delta GDP$	OLS		$\Delta LOAN$	IV (1 <sup>st</sup> stage)	
		$\Delta GDP$	$\Delta GDP$		$\Delta LOAN$	$\Delta LOAN$
City Bank Share* $\Delta$ City Land Price		0.216*** (0.0487)	0.187*** (0.0435)		0.613*** (0.221)	0.494*** (0.182)
City Bank Share		0.0775** (0.0355)	0.0739** (0.0342)		0.144 (0.0919)	0.129 (0.0850)
$\Delta$ Local Land Price	0.0222*** (0.00648)		0.0129** (0.00607)	0.0781*** (0.0167)		0.0534*** (0.0134)
Observations	920	916	916	920	916	916
Number of prefectures	40	40	40	40	40	40
R-squared	0.712	0.716	0.717	0.894	0.897	0.899
First Stage F Statistic					7.691	7.336
Panel B						
Variables					IV(2 <sup>nd</sup> stage)	
					$\Delta GDP$	$\Delta GDP$
$\Delta LOAN$					0.352*** (0.0544)	0.379*** (0.0676)
$\Delta$ Local Land Price						-0.00735 (0.00761)
City Bank Share					0.0269 (0.0359)	0.0251 (0.0374)
R-squared					0.645	0.631

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Standard errors in parentheses

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**Table B2: Replicate Table 2, using city bank deposit share as a measure of bank integration**

Columns 1-4, 5-8, and 9-12 report the results based on 2-year frequency, 3-year frequency, and 4-year frequency, respectively. Panels A and B in columns 5 and 6 report the results of the first stage and second stage of an IV regression.  $\Delta LOAN$  and  $\Delta GDP$  represent growth of local loan and output, respectively.  $\Delta Local Land Price$  is growth of local land price index and  $\Delta City Land Price$  is growth of land price index for six major cities. *City Bank Share* is a ratio of city banks' deposit total deposit in a given prefecture. Standard errors are adjusted for clustering within each prefecture. First stage F-statistics is Kleibergen-Paap rk Wald F statistic (weak identification test).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Panel A											
	2-Year Frequency				3-Year Frequency				4-Year Frequency			
Variables	$\Delta GDP$	$\Delta GDP$	$\Delta LOAN$	$\Delta LOAN$	$\Delta GDP$	$\Delta GDP$	$\Delta LOAN$	$\Delta LOAN$	$\Delta GDP$	$\Delta GDP$	$\Delta LOAN$	$\Delta LOAN$
$\Delta Local Land Price$	0.0399*** (0.00844)	0.0276*** (0.00866)	0.120*** (0.0203)	0.0862*** (0.0173)	0.0448*** (0.0104)	0.0259** (0.0109)	0.147*** (0.0316)	0.0982*** (0.0303)	0.0566*** (0.00965)	0.0400*** (0.0119)	0.147*** (0.0171)	0.103*** (0.0164)
City Bank Share* $\Delta City$ Land Price		0.175*** (0.0314)		0.478*** (0.159)		0.190*** (0.0369)		0.511*** (0.183)		0.147*** (0.0313)		0.386*** (0.128)
City Bank Share		0.0608 (0.0433)		0.162 (0.106)		0.403 (0.358)		1.090** (0.414)		0.0117 (0.0564)		0.0204 (0.130)
Observations	440	438	440	438	280	278	280	278	200	199	200	199
Number of prefectures	40	40	40	40	40	40	40	40	40	40	40	40
R-squared	0.811	0.816	0.904	0.910	0.859	0.868	0.843	0.869	0.854	0.860	0.844	0.865
First Stage F Statistic				9.082				7.833				9.046
	Panel B (IV, 2 <sup>nd</sup> stage)											
				$\Delta GDP$				$\Delta GDP$				$\Delta GDP$
$\Delta LOAN$				0.366*** (0.0859)				0.372*** (0.111)				0.380*** (0.143)
$\Delta Local Land Price$				-0.00390 (0.0135)				-0.0106 (0.0205)				0.000949 (0.0248)
City Bank Share				0.00152 (0.0300)				-0.00278 (0.279)				0.00392 (0.0452)
R-squared				0.751				0.844				0.835

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Standard errors in parentheses

**Not for Publication**

**Table B3: Replicate Table 3, using city bank deposit share as a measure of bank integration**

The reported results are based upon the value of city bank share prevailing as of 1979, which is kept constant for the entire sample period.  $\Delta LOAN$  and  $\Delta GDP$  represent growth of local loan and output, respectively.  $\Delta Local Land Price$  is growth of local land price index and  $\Delta City Land Price$  is growth of land price index for six major cities. *City Bank Share* is a ratio of city banks' deposit total deposit in a given prefecture. Standard errors are adjusted for clustering within each prefecture. First stage F-statistics is Kleibergen-Paap rk Wald F statistic (weak identification test).

	(1)	(2)
	Panel A	
	OLS	IV(1 <sup>st</sup> stage)
	$\Delta GDP$	$\Delta LOAN$
$\Delta Local Land Price$	0.0123* (0.00629)	0.0547*** (0.0140)
City Bank Share* $\Delta City Land Price$ (1979)	0.186*** (0.0421)	0.486** (0.189)
Observations	897	897
Number of prefectures	39	39
R-squared	0.719	0.915 6.588
	Panel B	
	IV (2 <sup>nd</sup> stage)	
	$\Delta GDP$	
$\Delta LOAN$	0.383*** (0.0793)	
$\Delta Local Land Price$	-0.00861 (0.00849)	
R-squared	0.618	

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Standard errors in parentheses

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**Table B4: Replicate Table 4, using city bank deposit share as a measure of bank integration**

The table reports the results of the specification that separately estimate the effects of city land price growth on non-city bank lending (columns 1 and 2) and city bank lending (columns 3 and 4). Panels A and B in column 4 report the results of the first stage and second stage of an IV regression, respectively.  $\Delta LOAN$  and  $\Delta GDP$  represent growth of local loan and output, respectively.  $\Delta Local Land Price$  is growth of local land price index and  $\Delta City Land Price$  is growth of land price index for six major cities. *City Bank Share* is a ratio of city banks' deposit total deposit in a given prefecture. Standard errors are adjusted for clustering within each prefecture. First stage F-statistics is Kleibergen-Paap rk Wald F statistic (weak identification test).

	(1)	(2)	(3)	(4)
	Panel A			
	$\Delta LOAN$ (Non-City Bank)	$\Delta LOAN$ (City Bank)		
$\Delta Local Land Price$	0.0766*** (0.0162)	0.0630*** (0.0158)	0.0148*** (0.00518)	-0.00170 (0.00266)
City Bank Share* $\Delta City Land Price$		0.276 (0.180)		0.336*** (0.0260)
City Bank Share		0.155 (0.119)		0.0131 (0.0326)
Observations	916	916	916	916
Number of prefectures	40	40	40	40
R-squared	0.889	0.890	0.287	0.519
First Stage F Statistic				166.6
				Panel B (IV, 2 <sup>nd</sup> stage)
				$\Delta GDP$
$\Delta LOAN$ (City Banks)				0.557*** (0.0905)
$\Delta Local Land Price$				0.0138** (0.00628)
City Bank Share				0.0666** (0.0329)
R-squared				0.708

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Standard errors in parentheses

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**Table B5: Replicate Table 5, using city bank deposit share as a measure of bank integration**

The table shows the results of specifications that control for differential correlation between local economies and cities. We compute the difference in income per capita (in absolute value) between each prefecture and cities (*Income Diff*) and then interact it to city land price growth and to city bank deposit share (columns 1-3). We interact the average distance to the cities (*Distance*) to city land price growth and to city bank deposit share (columns 4-6). We also compute *industry mix control* (columns 7-9), which is constructed as:  $\eta_{it} = \gamma_{ijt-1}\eta_{jt}$  where  $\eta_{it}$  denotes the predicted output growth of prefecture  $i$  in year  $t$ ,  $\gamma_{ijt-1}$  denote the (lagged) share of output in industry  $j$  in prefecture  $i$  in year  $t-1$ , and  $\eta_{jt}$  denote the output growth of industry  $j$  in city prefectures in year  $t$ . Standard errors are adjusted for clustering within each prefecture.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Reduced- form $\Delta$ GDP	IV (2nd stage) $\Delta$ GDP	IV (1st stage) $\Delta$ LOAN	Reduced- form $\Delta$ GDP	IV (2nd stage) $\Delta$ GDP	IV (1st stage) $\Delta$ LOAN	Reduced- form $\Delta$ GDP	IV (2nd stage) $\Delta$ GDP	IV (1st stage) $\Delta$ LOAN
City Bank Share* $\Delta$ City Land Price	0.133*** (0.0280)		0.619*** (0.193)	0.110*** (0.0290)		0.596*** (0.196)	0.0995*** (0.0292)		0.595*** (0.197)
$\Delta$ LOAN		0.215*** (0.0761)			0.184*** (0.0698)			0.167** (0.0663)	
$\Delta$ Local Land Price	0.00790 (0.00577)	-0.00135 (0.00693)	0.0430*** (0.0125)	0.00881 (0.00576)	0.000765 (0.00678)	0.0438*** (0.0126)	0.00943* (0.00559)	0.00210 (0.00655)	0.0438*** (0.0126)
City Bank Share	0.173** (0.0648)	0.171*** (0.0593)	0.0100 (0.0652)	0.516** (0.231)	0.469** (0.204)	0.253 (0.298)	0.470** (0.223)	0.429** (0.197)	0.250 (0.298)
Income Diff* $\Delta$ City Land Price	-0.0329*** (0.00639)	-0.0183** (0.00806)	-0.0677*** (0.0175)	-0.0274*** (0.00890)	-0.0161* (0.00912)	-0.0615*** (0.0218)	-0.0237*** (0.00868)	-0.0134 (0.00880)	-0.0612*** (0.0217)
Income Diff*City Bank Share	-0.104* (0.0520)	-0.122** (0.0485)	0.0845** (0.0370)	-0.120** (0.0575)	-0.133** (0.0531)	0.0744* (0.0422)	-0.117** (0.0579)	-0.130** (0.0536)	0.0746* (0.0422)
Distance* $\Delta$ City Land Price				-0.00912 (0.0144)	-0.00670 (0.0131)	-0.0131 (0.0441)	-0.00991 (0.0135)	-0.00770 (0.0128)	-0.0132 (0.0441)
Distance*City Bank Share				-1.016 (0.632)	-0.883 (0.575)	-0.724 (0.774)	-0.902 (0.609)	-0.783 (0.554)	-0.714 (0.774)
Industry Mix Control ( $\eta_{it}$ )							0.566** (0.232)	0.558** (0.226)	0.0461 (0.217)
Observations	916	916	916	916	916	916	916	916	916
R-squared	0.723	0.703	0.902	0.725	0.712	0.902	0.728	0.718	0.902
Number of prefectures	40	40	40	40	40	40	40	40	40
First Stage F Statistic		10.26			9.236			9.152	

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Standard errors in parentheses

**Not for Publication**

**Table B6: Replicate Table 6, using city bank deposit share as a measure of bank**

Columns 1-2, 3-4, and 5-6 show the results based on a subset of prefectures whose distance to the cities is more than 50, 100, and 150 kilometers, respectively. Columns 7-8, 9-10, and 11-12 show the results based on prefectures whose income per capita differ from income per capita in the cities by more than 0.6, 0.8, and one million yen, respectively. The reported correlation coefficient at the bottom of the table is the average correlation coefficient between city land price growth and local land price growth in the excluded and included prefectures. Standard errors are adjusted for clustering within each prefecture. First stage F-statistics is Kleibergen-Paap rk Wald F statistic (weak identification test).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Dist>50 km		Dist>100 km		Dist>150 km		Income Diff> 0.6 million yen		Income Diff> 0.8 million yen		Income Diff> one million yen	
	ΔGDP	ΔLOAN	ΔGDP	ΔLOAN	ΔGDP	ΔLOAN	ΔGDP	ΔLOAN	ΔGDP	ΔLOAN	ΔGDP	ΔLOAN
ΔLocal Land Price	0.00979 (0.00770)	0.0279** (0.0124)	0.0158* (0.00812)	0.0267* (0.0143)	0.0127* (0.00710)	0.0275* (0.0146)	0.0109 (0.00659)	0.0499*** (0.0135)	0.0136* (0.00707)	0.0516*** (0.0149)	0.0128** (0.00592)	0.0538*** (0.0167)
City Bank Share*ΔCity Land Price	0.367** (0.170)	1.773*** (0.316)	0.303* (0.176)	1.502*** (0.338)	0.348** (0.152)	1.276*** (0.420)	0.197*** (0.0456)	0.497*** (0.173)	0.200*** (0.0450)	0.505*** (0.180)	0.203*** (0.0364)	0.501*** (0.149)
City Bank Share	0.121** (0.0452)	0.231*** (0.0479)	0.0780* (0.0391)	0.167*** (0.0463)	-0.0980 (0.289)	0.343 (0.329)	0.0759** (0.0361)	0.102 (0.0753)	0.0935 (0.132)	0.305* (0.179)	0.0140 (0.0528)	0.0371 (0.161)
Observations	801	801	663	663	525	525	801	801	663	663	479	479
Number of prefectures	35	35	29	29	23	23	35	35	29	29	21	21
R-squared	0.698	0.913	0.725	0.912	0.738	0.912	0.708	0.896	0.711	0.887	0.728	0.867
		IV 2 <sup>nd</sup> stage GDP		IV 2 <sup>nd</sup> stage GDP		IV 2 <sup>nd</sup> stage GDP		IV 2 <sup>nd</sup> stage GDP		IV 2 <sup>nd</sup> stage GDP		IV 2 <sup>nd</sup> stage GDP
ΔLOAN		0.207*** (0.0801)		0.202** (0.0953)		0.273** (0.137)		0.397*** (0.0648)		0.396*** (0.0721)		0.405*** (0.0671)
ΔLocal Land Price		0.00400 (0.00844)		0.0104 (0.00856)		0.00516 (0.00802)		-0.00892 (0.00851)		-0.00681 (0.00946)		-0.00896 (0.00982)
City Bank Share		0.0727** (0.0327)		0.0443** (0.0198)		-0.192 (0.294)		0.0356 (0.0335)		-0.0274 (0.105)		-0.00104 (0.0835)
R-squared		0.683		0.706		0.693		0.599		0.580		0.543
First Stage F Statistic		31.51		19.72		9.214		8.265		7.855		11.33
Corr. Coef. (Excluded Prefectures)		.82		.69		.66		.77		.67		.63
Corr. Coef. (Included Prefectures)		.55		.54		.53		.55		.55		.54

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Standard errors in parentheses

*Not for Publication*

**Table B7: Replicate Table 7, using city bank deposit share as a measure of bank**

Columns 1-2 report the results of panel corrected standard errors (Beck and Katz, 1995). Columns 3-4 report the results of Driscoll-Kraay standard errors (Driscoll and Kraay, 1998). Columns 5-6 report the results of two-way clustering (Petersen, 2009; Cameron, Gelbach, and Miller, 2006).

	(1)	(2)	(3)	(4)	(5)	(6)
	Panel-Corrected Standard Errors		Driscoll-Kraay Standard Errors		Petersen-Cameron-Gelbach-Miller Two-way Clustering	
	$\Delta$ LOAN	$\Delta$ GDP	$\Delta$ LOAN	$\Delta$ GDP	$\Delta$ LOAN	$\Delta$ GDP
City Bank Share* $\Delta$ City Land Price	0.595*** (0.216)	0.0995** (0.0497)	0.595*** (0.170)	0.0995** (0.0462)	0.595*** (0.201)	0.0995*** (0.0298)
$\Delta$ Local Land Price	0.0438** (0.0174)	0.00943 (0.00693)	0.0438*** (0.0121)	0.00943* (0.00539)	0.0438*** (0.0129)	0.00943 (0.00571)
City Bank Share	0.250 (0.582)	0.470** (0.190)	0.250 (0.283)	0.470** (0.205)	0.250 (0.305)	0.470** (0.228)
Income Diff* $\Delta$ City Land Price	-0.0612*** (0.0204)	-0.0237** (0.0119)	-0.0612*** (0.0147)	-0.0237* (0.0120)	-0.0612*** (0.0222)	-0.0237** (0.00888)
Income Diff*City Bank Share	0.0746 (0.161)	-0.117*** (0.0317)	0.0746 (0.0613)	-0.117** (0.0440)	0.0746* (0.0431)	-0.117* (0.0592)
Distance* $\Delta$ City GDP	-0.0132 (0.0264)	-0.00991 (0.0196)	-0.0132 (0.0140)	-0.00991 (0.0138)	-0.0132 (0.0451)	-0.00991 (0.0138)
Distance*City Bank Share	-0.714 (1.451)	-0.902* (0.536)	-0.714 (0.690)	-0.902 (0.580)	-0.714 (0.792)	-0.902 (0.623)
Industry Mix Control ( $\eta_{it}$ )	0.0461 (0.474)	0.566** (0.253)	0.0461 (0.441)	0.566 (0.425)	0.0461 (0.222)	0.566** (0.237)
Observations	916	916	916	916	916	916
Number of prefectures	40	40	40	40	40	40
R-squared	0.903	0.732	0.903	0.732	0.903	0.732

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Standard errors in parentheses

*Not for Publication*

**Appendix C: Replicate Tables 1-7, using all prefectures (including the six city prefectures and Hokkaido)**

**Table C1: Replicate Table 1, using all prefectures (including the six city prefectures and Hokkaido)**

Columns 1-4 report the results of OLS. Panels A and B of columns 5-6 report the results of the first stage and second stage of IV regressions.  $\Delta LOAN$  and  $\Delta GDP$  represent growth of local loan and output, respectively.  $\Delta Local Land Price$  is growth of local land price index and  $\Delta City Land Price$  is growth of land price index for six major cities. *City Bank Share* is a ratio of the number of city bank branches to the total number of bank branches in a given prefecture. Standard errors are adjusted for clustering within each prefecture. First stage F-statistics is Kleibergen-Paap rk Wald F statistic (weak identification test).

	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A					
	OLS			IV (1 <sup>st</sup> stage)		
Variables	$\Delta GDP$	$\Delta GDP$	$\Delta GDP$	$\Delta LOAN$	$\Delta LOAN$	$\Delta LOAN$
City Bank Share* $\Delta$ City Land Price		0.113*** (0.0120)	0.102*** (0.0117)		0.315*** (0.0494)	0.269*** (0.0556)
City Bank Share		0.0165 (0.0240)	0.0186 (0.0239)		0.0152 (0.0761)	0.0237 (0.0768)
$\Delta$ Local Land Price	0.0142** (0.00606)		0.00818** (0.00387)	0.0492** (0.0222)		0.0333* (0.0175)
Observations	1081	1081	1081	1081	1081	1081
Number of prefectures	47	47	47	47	47	47
R-squared	0.716	0.723	0.724	0.869	0.873	0.875
First Stage F Statistic					40.71	23.47
	Panel B					
	IV(2 <sup>nd</sup> stage)					
Variables					$\Delta GDP$	$\Delta GDP$
$\Delta LOAN$					0.359*** (0.0487)	0.378*** (0.0655)
$\Delta$ Local Land Price						-0.00440 (0.00550)
City Bank Share					0.0111 (0.0185)	0.00967 (0.0193)
R-squared					0.636	0.625

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Standard errors in parentheses



**Not for Publication**

**Table C2: Replicate Table 2, using all prefectures (including the six city prefectures and Hokkaido)**

Columns 1-4, 5-8, and 9-12 report the results based on 2-year frequency, 3-year frequency, and 4-year frequency, respectively. Panels A and B in columns 5 and 6 report the results of the first stage and second stage of an IV regression.  $\Delta LOAN$  and  $\Delta GDP$  represent growth of local loan and output, respectively.  $\Delta Local Land Price$  is growth of local land price index and  $\Delta City Land Price$  is growth of land price index for six major cities. *City Bank Share* is a ratio of the number of city bank branches to the total number of bank branches in a given prefecture. Standard errors are adjusted for clustering within each prefecture. First stage F-statistics is Kleibergen-Paap rk Wald F statistic (weak identification test).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Panel A											
	2-Year Frequency				3-Year Frequency				4-Year Frequency			
Variables	$\Delta GDP$	$\Delta GDP$	$\Delta LOAN$	$\Delta LOAN$	$\Delta GDP$	$\Delta GDP$	$\Delta LOAN$	$\Delta LOAN$	$\Delta GDP$	$\Delta GDP$	$\Delta LOAN$	$\Delta LOAN$
$\Delta Local Land Price$	0.0304*** (0.00816)	0.0186** (0.00768)	0.110*** (0.0200)	0.0825*** (0.0197)	0.0390*** (0.00783)	0.0225** (0.00926)	0.155*** (0.0201)	0.113*** (0.0201)	0.0524*** (0.00746)	0.0382*** (0.0105)	0.152*** (0.0122)	0.112*** (0.0127)
City Bank Share* $\Delta City$ Land Price		0.0953*** (0.0144)		0.224*** (0.0468)		0.0852*** (0.0176)		0.218*** (0.0416)		0.0625*** (0.0205)		0.177*** (0.0363)
City Bank Share		0.0393 (0.0775)		0.0973 (0.147)		0.141 (0.196)		0.491 (0.344)		0.198 (0.293)		0.805 (0.554)
Observations	517	517	517	517	329	329	329	329	235	235	235	235
Number of prefectures	47	47	47	47	47	47	47	47	47	47	47	47
R-squared	0.810	0.818	0.888	0.894	0.859	0.867	0.862	0.880	0.862	0.867	0.866	0.882
First Stage F Statistic				23.49				26.88				24.17
	Panel B (IV, 2 <sup>nd</sup> stage)											
$\Delta LOAN$				$\Delta GDP$ 0.425*** (0.0713)				$\Delta GDP$ 0.391*** (0.0970)				$\Delta GDP$ 0.354*** (0.135)
$\Delta Local Land Price$				-0.0166* (0.00999)				-0.0215 (0.0181)				-0.00154 (0.0238)
City Bank Share				-0.00209 (0.0589)				-0.0509 (0.165)				-0.0868 (0.302)
R-squared				0.728				0.846				0.849

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1  
Standard errors in parentheses

*Not for Publication*

**Table C3: Replicate Table 3, using all prefectures (including the six city prefectures and Hokkaido)**

The reported results are based upon the value of city bank share prevailing as of 1979, which is kept constant for the entire sample period.  $\Delta LOAN$  and  $\Delta GDP$  represent growth of local loan and output, respectively.  $\Delta Local Land Price$  is growth of local land price index and  $\Delta City Land Price$  is growth of land price index for six major cities. *City Bank Share* is a ratio of the number of city bank branches to the total number of bank branches in a given prefecture. Standard errors are adjusted for clustering within each prefecture. First stage F-statistics is Kleibergen-Paap rk Wald F statistic (weak identification test).

	(1)	(2)
	Panel A	
	OLS $\Delta GDP$	IV(1 <sup>st</sup> stage) $\Delta LOAN$
$\Delta Local Land Price$	0.00771** (0.00374)	0.0321* (0.0169)
City Bank Share* $\Delta City Land Price$ (1979)	0.105*** (0.0126)	0.279*** (0.0563)
Observations	1081	1081
Number of prefectures	47	47
R-squared	0.724	0.876 24.58
	Panel B	
		IV (2 <sup>nd</sup> stage) $\Delta GDP$
$\Delta LOAN$		0.378*** (0.0641)
$\Delta Local Land Price$		-0.00442 (0.00528)
R-squared		0.625

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Standard errors in parentheses

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**Table C4: Replicate Table 4, using all prefectures (including the six city prefectures and Hokkaido)**

The table reports the results of the specification that separately estimate the effects of city land price growth on non-city bank lending (columns 1 and 2) and city bank lending (columns 3 and 4). Panels A and B in column 4 report the results of the first stage and second stage of an IV regression, respectively.  $\Delta LOAN$  and  $\Delta GDP$  represent growth of local loan and output, respectively.  $\Delta Local Land Price$  is growth of local land price index and  $\Delta City Land Price$  is growth of land price index for six major cities. *City Bank Share* is a ratio of the number of city bank branches to the total number of bank branches in a given prefecture. Standard errors are adjusted for clustering within each prefecture. First stage F-statistics is Kleibergen-Paap rk Wald F statistic (weak identification test).

	(1)	(2)	(3)	(4)
Panel A				
	$\Delta LOAN$ (Non-City Bank)	$\Delta LOAN$ (City Bank)		
$\Delta Local Land Price$	0.0377* (0.0195)	0.0331* (0.0194)	0.0201** (0.00759)	0.00501** (0.00209)
City Bank Share* $\Delta City Land Price$		0.0781 (0.0515)		0.254*** (0.0216)
City Bank Share		0.0386 (0.0668)		0.00701 (0.0257)
Observations	1077	1077	1077	1077
Number of prefectures	47	47	47	47
R-squared	0.860	0.860	0.277	0.485
First Stage F Statistic				138.5
Panel B (IV, 2 <sup>nd</sup> stage)				
				$\Delta GDP$
$\Delta LOAN$ (City Banks)				0.402*** (0.0468)
$\Delta Local Land Price$				0.00609* (0.00340)
City Bank Share				0.0182 (0.0193)
R-squared				0.703

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Standard errors in parentheses

**Not for Publication**

**Table C5: Replicate Table 5, using all prefectures (including the six city prefectures and Hokkaido)**

The table shows the results of specifications that control for differential correlation between local economies and cities. We compute the difference in income per capita (in absolute value) between each prefecture and cities (*Income Diff*) and then interact it to city land price growth and to city bank branch (columns 1-3). We interact the average distance to the cities (*Distance*) to city land price growth and to city bank branch share (columns 4-6). We also compute *industry mix control* (columns 7-9), which is constructed as:  $\eta_{it} = \gamma_{ijt-1}\eta_{jt}$  where  $\eta_{it}$  denotes the predicted output growth of prefecture  $i$  in year  $t$ ,  $\gamma_{ijt-1}$  denote the (lagged) share of output in industry  $j$  in prefecture  $i$  in year  $t-1$ , and  $\eta_{jt}$  denote the output growth of industry  $j$  in city prefectures in year  $t$ . Standard errors are adjusted for clustering within each prefecture.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Reduced- form $\Delta$ GDP	IV (2nd stage) $\Delta$ GDP	IV (1st stage) $\Delta$ LOAN	Reduced- form $\Delta$ GDP	IV (2nd stage) $\Delta$ GDP	IV (1st stage) $\Delta$ LOAN	Reduced- form $\Delta$ GDP	IV (2nd stage) $\Delta$ GDP	IV (1st stage) $\Delta$ LOAN
City Bank Share* $\Delta$ City Land Price	0.0866*** (0.0177)		0.241*** (0.0463)	0.0702*** (0.0169)		0.207*** (0.0519)	0.0626*** (0.0153)		0.206*** (0.0530)
$\Delta$ LOAN		0.360*** (0.100)			0.339*** (0.110)			0.304*** (0.0919)	
$\Delta$ Local Land Price	0.00556* (0.00283)	-0.00419 (0.00565)	0.0271* (0.0145)	0.00583* (0.00293)	-0.00364 (0.00572)	0.0279* (0.0147)	0.00574* (0.00293)	-0.00275 (0.00497)	0.0279* (0.0147)
City Bank Share	0.0517* (0.0294)	0.0212 (0.0324)	0.0847 (0.0771)	0.137* (0.0806)	0.0116 (0.0999)	0.369** (0.147)	0.131* (0.0766)	0.0188 (0.0919)	0.368** (0.147)
Income Diff* $\Delta$ City Land Price	-0.0217*** (0.00545)	-0.00279 (0.00837)	-0.0527*** (0.0167)	-0.0136** (0.00608)	-0.000878 (0.00781)	-0.0375* (0.0190)	-0.0117* (0.00600)	-0.000386 (0.00687)	-0.0372* (0.0190)
Income Diff*City Bank Share	-0.0279** (0.0111)	-0.00756 (0.0192)	-0.0566*** (0.0172)	-0.0295*** (0.0103)	-0.00774 (0.0203)	-0.0641*** (0.0223)	-0.0300*** (0.00986)	-0.0105 (0.0181)	-0.0642*** (0.0224)
Distance* $\Delta$ City Land Price				-0.0270* (0.0154)	-0.0126 (0.0125)	-0.0423 (0.0436)	-0.0252* (0.0142)	-0.0124 (0.0117)	-0.0420 (0.0432)
Distance*City Bank Share				-0.105 (0.0781)	0.0161 (0.0901)	-0.356** (0.140)	-0.0969 (0.0741)	0.0109 (0.0838)	-0.355** (0.140)
Industry Mix Control ( $\eta_{it}$ )							0.525* (0.274)	0.501* (0.267)	0.0789 (0.216)
Observations	1081	1081	1081	1081	1081	1081	1081	1081	1081
R-squared	0.728	0.636	0.878	0.729	0.648	0.879	0.733	0.670	0.879
Number of prefectures	47	47	47	47	47	47	47	47	47
First Stage F Statistic		27.07			15.91			15.10	

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Standard errors in parentheses

*Not for Publication*

**Table C7: Replicate Table 10, using all prefectures (including the six city prefectures and Hokkaido)**

Columns 1-2 report the results of panel corrected standard errors (Beck and Katz, 1995). Columns 3-4 report the results of Driscoll-Kraay standard errors (Driscoll and Kraay, 1998). Columns 5-6 report the results of two-way clustering (Petersen, 2009; Cameron, Gelbach, and Miller, 2006).

	(1)	(2)	(3)	(4)	(5)	(6)
	Panel-Corrected Standard Errors		Driscoll-Kraay Standard Errors		Petersen-Cameron-Gelbach-Miller Two-way Clustering	
	$\Delta$ LOAN	$\Delta$ GDP	$\Delta$ LOAN	$\Delta$ GDP	$\Delta$ LOAN	$\Delta$ GDP
City Bank Share* $\Delta$ City Land Price	0.206** (0.103)	0.0626*** (0.0230)	0.206** (0.0835)	0.0626*** (0.0198)	0.206*** (0.0542)	0.0626*** (0.0157)
$\Delta$ Local Land Price	0.0279** (0.0118)	0.00574 (0.00394)	0.0279* (0.0143)	0.00574* (0.00338)	0.0279* (0.0150)	0.00574* (0.00299)
City Bank Share	0.368 (0.309)	0.131 (0.0974)	0.368*** (0.119)	0.131 (0.0827)	0.368** (0.150)	0.131 (0.0784)
Income Diff* $\Delta$ City Land Price	-0.0372*** (0.0111)	-0.0117 (0.00950)	-0.0372*** (0.00983)	-0.0117 (0.0100)	-0.0372* (0.0194)	-0.0117* (0.00613)
Income Diff*City Bank Share	-0.0642 (0.0536)	-0.0300*** (0.00962)	-0.0642*** (0.0170)	-0.0300*** (0.00844)	-0.0642*** (0.0229)	-0.0300*** (0.0101)
Distance* $\Delta$ City GDP	-0.0420 (0.0287)	-0.0252 (0.0177)	-0.0420* (0.0217)	-0.0252** (0.00973)	-0.0420 (0.0442)	-0.0252* (0.0146)
Distance*City Bank Share	-0.355 (0.330)	-0.0969 (0.104)	-0.355*** (0.107)	-0.0969 (0.0890)	-0.355** (0.144)	-0.0969 (0.0758)
Industry Mix Control ( $\eta_{it}$ )	0.0789 (0.525)	0.525** (0.206)	0.0789 (0.378)	0.525 (0.363)	0.0789 (0.221)	0.525* (0.280)
Observations	1081	1081	1081	1081	1081	1081
Number of prefectures	47	47	47	47	47	47
R-squared	0.880	0.736	0.880	0.736	0.880	0.736

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Standard errors in parentheses