

# Online Appendix: Japan's Prefectural-level KLEMS: Productivity Comparison and Service Price Differences<sup>a</sup>

<sup>a</sup> The main article is available at <http://www.csls.ca/ipm/36/Tokui.pdf>.

**Table A1: Relative Price Levels by Prefecture in the Construction Industry, Tokyo = 1, Comparisons in Years 1970, 1990, and 2010**

	prefecture	1970		1990		2010	
		Relative Price	Std.Err.	Relative Price	Std.Err.	Relative Price	Std.Err.
1	Hokkaido	0.961	0.035	1.035	0.036	0.973	0.031
2	Aomori	0.925	0.033	0.901	0.032	1.005	0.032
3	Iwate	0.888	0.031	0.848	0.030	0.992	0.032
4	Miyagi	0.930	0.033	0.917	0.032	0.944	0.030
5	Akita	0.981	0.035	0.871	0.031	0.932	0.030
6	Yamagata	1.053	0.037	0.822	0.029	0.971	0.031
7	Fukushima	0.934	0.033	0.880	0.031	1.001	0.032
8	Ibaraki	0.900	0.032	0.907	0.032	0.973	0.031
9	Tochigi	0.917	0.033	0.829	0.029	0.979	0.031
10	Gunma	0.929	0.033	0.904	0.032	0.926	0.030
11	Saitama	0.970	0.034	0.885	0.031	0.942	0.030
12	Chiba	0.965	0.034	0.889	0.031	0.955	0.031
13	Tokyo	1	.	1	.	1	.
14	Kanagawa	1.009	0.036	1.046	0.037	1.105	0.035
15	Niigata	0.955	0.034	0.907	0.032	1.001	0.032
16	Toyama	0.926	0.033	0.870	0.031	0.949	0.030
17	Ishikawa	0.957	0.034	0.954	0.033	0.983	0.032
18	Fukui	0.888	0.032	0.939	0.033	1.023	0.033
19	Yamanashi	0.900	0.032	0.917	0.032	0.940	0.030
20	Nagano	0.996	0.035	0.908	0.032	0.934	0.030
21	Gifu	0.928	0.033	0.949	0.033	0.935	0.030
22	Shizuoka	0.959	0.034	0.890	0.031	0.988	0.032
23	Aichi	1.089	0.038	1.063	0.037	0.990	0.032
24	Mie	0.886	0.031	0.890	0.031	0.990	0.032
25	Shiga	0.908	0.032	0.923	0.032	1.022	0.033
26	Kyoto	1.015	0.036	0.995	0.035	0.957	0.031
27	Osaka	0.920	0.032	0.967	0.034	1.027	0.033
28	Hyogo	0.967	0.034	0.980	0.034	0.983	0.032
29	Nara	0.981	0.035	0.893	0.031	0.948	0.030
30	Wakayama	0.986	0.035	0.941	0.033	1.058	0.034
31	Tottori	0.922	0.033	0.863	0.030	0.976	0.031
32	Shimane	0.978	0.035	0.887	0.031	0.981	0.031
33	Okayama	0.914	0.032	0.869	0.031	0.960	0.031
34	Hiroshima	0.981	0.034	0.951	0.033	0.932	0.030
35	Yamaguchi	0.962	0.034	0.873	0.031	1.018	0.033
36	Tokushima	0.936	0.033	0.897	0.031	0.941	0.030
37	Kagawa	0.900	0.032	0.783	0.027	0.876	0.028
38	Ehime	0.934	0.033	0.876	0.031	0.854	0.027
39	Kochi	0.956	0.034	0.854	0.030	0.954	0.031
40	Fukuoka	0.903	0.032	0.880	0.031	0.955	0.031
41	Saga	0.895	0.032	0.782	0.027	0.980	0.031
42	Nagasaki	0.879	0.031	0.957	0.034	1.010	0.032
43	Kumamoto	0.951	0.034	0.877	0.031	1.046	0.034
44	Oita	0.924	0.033	0.768	0.027	1.009	0.032
45	Miyazaki	0.861	0.031	0.781	0.027	0.887	0.028
46	Kagoshima	0.899	0.032	0.779	0.027	0.935	0.030
47	Okinawa	.	.	0.778	0.027	0.884	0.028

Source: Authors calculations based on Statistical Bureaus Retail Price Survey.

**Table A2: Relative Price Levels by Prefecture in the Electricity, Gas and Water Industry, Tokyo = 1, Comparisons in Years 1970, 1990, and 2010**

prefecture		1970		1990		2010	
		Relative Price	Std.Err.	Relative Price	Std.Err.	Relative Price	Std.Err.
1	Hokkaido	1.274	0.077	0.899	0.031	1.201	0.053
2	Aomori	1.752	0.104	0.808	0.028	1.141	0.050
3	Iwate	0.922	0.056	0.763	0.027	1.128	0.049
4	Miyagi	1.092	0.065	0.679	0.024	1.080	0.048
5	Akita	1.023	0.061	0.847	0.030	1.181	0.053
6	Yamagata	0.975	0.058	0.932	0.033	1.167	0.052
7	Fukushima	0.991	0.059	0.861	0.030	1.211	0.054
8	Ibaraki	0.970	0.059	0.809	0.028	1.131	0.050
9	Tochigi	0.914	0.054	0.906	0.032	1.100	0.049
10	Gunma	1.104	0.065	0.774	0.027	1.056	0.048
11	Saitama	1.073	0.064	0.851	0.030	1.114	0.050
12	Chiba	1.114	0.067	0.815	0.029	0.960	0.042
13	Tokyo	1	.	1	.	1	.
14	Kanagawa	1.035	0.063	0.936	0.033	0.990	0.043
15	Niigata	0.969	0.059	0.781	0.027	1.055	0.047
16	Toyama	1.051	0.062	0.742	0.026	1.093	0.048
17	Ishikawa	0.931	0.055	0.824	0.029	1.064	0.047
18	Fukui	0.938	0.056	0.724	0.026	1.014	0.044
19	Yamanashi	0.948	0.056	0.855	0.031	0.987	0.044
20	Nagano	0.995	0.059	0.917	0.033	1.093	0.048
21	Gifu	0.932	0.055	0.888	0.031	1.022	0.046
22	Shizuoka	0.931	0.055	0.808	0.028	1	0.044
23	Aichi	0.901	0.054	0.919	0.033	1.159	0.051
24	Mie	0.973	0.059	0.673	0.024	0.885	0.039
25	Shiga	0.996	0.060	0.920	0.033	1.135	0.051
26	Kyoto	0.999	0.060	0.921	0.033	1.161	0.052
27	Osaka	0.936	0.057	0.766	0.027	0.977	0.043
28	Hyogo	1.025	0.062	0.952	0.034	1.097	0.049
29	Nara	1.121	0.068	0.934	0.034	1.125	0.052
30	Wakayama	1.006	0.060	0.831	0.029	1.043	0.046
31	Tottori	0.968	0.057	0.789	0.028	1.035	0.045
32	Shimane	1.016	0.060	0.972	0.034	1.212	0.053
33	Okayama	0.924	0.055	0.807	0.028	1.102	0.048
34	Hiroshima	0.955	0.057	0.793	0.028	1.054	0.045
35	Yamaguchi	0.940	0.056	0.937	0.033	1.172	0.051
36	Tokushima	0.964	0.057	0.740	0.026	1.066	0.047
37	Kagawa	0.972	0.058	0.843	0.030	1.145	0.050
38	Ehime	0.999	0.059	0.843	0.030	1.057	0.046
39	Kochi	0.953	0.058	0.817	0.029	0.904	0.039
40	Fukuoka	1.016	0.061	0.958	0.034	1.005	0.044
41	Saga	1.069	0.064	0.955	0.034	1.293	0.058
42	Nagasaki	1.088	0.066	0.996	0.035	1.125	0.051
43	Kumamoto	1.001	0.060	0.742	0.026	1.110	0.049
44	Oita	0.977	0.059	0.831	0.029	1.200	0.054
45	Miyazaki	0.966	0.058	0.863	0.031	1.140	0.052
46	Kagoshima	0.843	0.052	0.757	0.027	0.980	0.043
47	Okinawa	.	.	0.865	0.031	1.215	0.053

Source: Authors calculations based on Statistical Bureaus Retail Price Survey.

**Table A3: Relative Price Levels by Prefecture in the Real Estate Industry, Tokyo = 1, Comparisons in Years 1970, 1990, and 2010**

	prefecture	1970		1990		2010	
		Relative Price	Std.Err.	Relative Price	Std.Err.	Relative Price	Std.Err.
1	Hokkaido	0.652	0.051	0.571	0.035	0.503	0.022
2	Aomori	0.422	0.033	0.489	0.032	0.430	0.022
3	Iwate	0.443	0.034	0.503	0.034	0.435	0.022
4	Miyagi	0.648	0.050	0.682	0.043	0.494	0.022
5	Akita	0.433	0.034	0.502	0.033	0.506	0.024
6	Yamagata	0.482	0.037	0.494	0.033	0.476	0.024
7	Fukushima	0.363	0.028	0.399	0.026	0.437	0.021
8	Ibaraki	0.535	0.042	0.556	0.036	0.488	0.023
9	Tochigi	0.469	0.036	0.527	0.034	0.569	0.027
10	Gunma	0.384	0.030	0.384	0.024	0.482	0.023
11	Saitama	0.972	0.075	0.667	0.043	0.731	0.033
12	Chiba	0.820	0.064	0.634	0.041	0.674	0.030
13	Tokyo	1	.	1	.	1	.
14	Kanagawa	0.948	0.074	0.737	0.046	0.835	0.037
15	Niigata	0.540	0.042	0.575	0.038	0.556	0.025
16	Toyama	0.425	0.033	0.517	0.035	0.466	0.023
17	Ishikawa	0.428	0.033	0.550	0.034	0.487	0.022
18	Fukui	0.519	0.040	0.440	0.028	0.426	0.020
19	Yamanashi	0.455	0.035	0.547	0.035	0.481	0.023
20	Nagano	0.335	0.026	0.494	0.032	0.499	0.023
21	Gifu	0.508	0.039	0.527	0.034	0.414	0.019
22	Shizuoka	0.576	0.045	0.592	0.037	0.573	0.027
23	Aichi	0.664	0.051	0.657	0.042	0.666	0.029
24	Mie	0.341	0.026	0.466	0.030	0.437	0.020
25	Shiga	0.392	0.030	0.519	0.034	0.557	0.026
26	Kyoto	0.484	0.038	0.740	0.046	0.614	0.027
27	Osaka	0.620	0.048	0.710	0.044	0.745	0.032
28	Hyogo	0.759	0.059	0.716	0.044	0.657	0.028
29	Nara	0.463	0.036	0.499	0.033	0.567	0.027
30	Wakayama	0.524	0.041	0.421	0.027	0.509	0.024
31	Tottori	0.376	0.029	0.455	0.029	0.378	0.018
32	Shimane	0.379	0.029	0.536	0.034	0.435	0.020
33	Okayama	0.550	0.043	0.388	0.024	0.407	0.019
34	Hiroshima	0.611	0.047	0.590	0.037	0.471	0.021
35	Yamaguchi	0.412	0.032	0.372	0.024	0.453	0.021
36	Tokushima	0.486	0.038	0.481	0.031	0.413	0.019
37	Kagawa	0.512	0.040	0.485	0.031	0.473	0.022
38	Ehime	0.474	0.037	0.430	0.028	0.370	0.019
39	Kochi	0.483	0.037	0.519	0.034	0.442	0.021
40	Fukuoka	0.737	0.057	0.526	0.033	0.565	0.025
41	Saga	0.395	0.031	0.410	0.027	0.452	0.023
42	Nagasaki	0.518	0.040	0.548	0.036	0.514	0.024
43	Kumamoto	0.434	0.034	0.541	0.035	0.512	0.023
44	Oita	0.435	0.034	0.410	0.027	0.424	0.020
45	Miyazaki	0.448	0.035	0.484	0.031	0.422	0.019
46	Kagoshima	0.593	0.046	0.538	0.033	0.462	0.020
47	Okinawa	.	.	0.574	0.037	0.502	0.024

Source: Authors calculations based on Statistical Bureaus Retail Price Survey.

**Table A4: Relative Price Levels by Prefecture in the Transportation and Communication Industry, Tokyo = 1, Comparisons in Years 1970, 1990, and 2010**

prefecture	1970		1990		2010	
	Relative Price	Std.Err.	Relative Price	Std.Err.	Relative Price	Std.Err.
1 Hokkaido	1.032	0.061	0.952	0.030	1.026	0.019
2 Aomori	1.061	0.067	0.934	0.030	0.926	0.017
3 Iwate	1.100	0.070	0.923	0.030	0.955	0.018
4 Miyagi	1.149	0.070	0.976	0.032	0.940	0.017
5 Akita	1.063	0.067	0.913	0.030	0.954	0.018
6 Yamagata	1.070	0.068	0.912	0.029	0.946	0.018
7 Fukushima	1.247	0.075	0.947	0.028	0.900	0.016
8 Ibaraki	0.977	0.059	0.975	0.032	0.970	0.018
9 Tochigi	0.969	0.059	0.931	0.027	0.934	0.017
10 Gunma	1.016	0.061	0.966	0.028	0.931	0.017
11 Saitama	1.142	0.072	1.001	0.033	0.944	0.017
12 Chiba	0.982	0.059	0.827	0.024	0.900	0.016
13 Tokyo	1	.	1	.	1	.
14 Kanagawa	1.269	0.074	0.918	0.027	0.985	0.018
15 Niigata	1.011	0.059	1.010	0.029	0.928	0.017
16 Toyama	1.002	0.059	1.018	0.029	0.969	0.018
17 Ishikawa	1.213	0.072	1.067	0.031	0.978	0.018
18 Fukui	1.201	0.070	1.081	0.031	0.968	0.018
19 Yamanashi	1.081	0.068	0.954	0.031	0.933	0.017
20 Nagano	0.980	0.059	0.933	0.028	0.959	0.018
21 Gifu	1.150	0.067	0.962	0.027	0.927	0.017
22 Shizuoka	0.977	0.059	0.907	0.027	0.932	0.017
23 Aichi	1.234	0.072	1.020	0.030	0.950	0.017
24 Mie	1.180	0.071	0.940	0.027	0.943	0.017
25 Shiga	1.040	0.063	0.934	0.029	0.907	0.017
26 Kyoto	1.247	0.073	0.927	0.026	0.961	0.018
27 Osaka	1.289	0.076	0.947	0.027	0.984	0.018
28 Hyogo	1.273	0.074	0.964	0.028	0.936	0.017
29 Nara	1.156	0.070	0.926	0.027	0.956	0.017
30 Wakayama	1.257	0.076	0.968	0.028	0.929	0.017
31 Tottori	0.997	0.063	0.881	0.029	0.924	0.017
32 Shimane	0.958	0.058	0.956	0.028	0.938	0.017
33 Okayama	0.852	0.050	0.855	0.026	0.873	0.016
34 Hiroshima	1.142	0.067	0.837	0.024	0.955	0.017
35 Yamaguchi	0.971	0.061	0.904	0.029	0.906	0.017
36 Tokushima	1.061	0.067	0.909	0.029	0.921	0.017
37 Kagawa	1.195	0.072	0.906	0.027	0.982	0.018
38 Ehime	0.988	0.058	0.956	0.027	0.951	0.017
39 Kochi	1.022	0.060	0.947	0.029	0.954	0.017
40 Fukuoka	1.185	0.069	0.990	0.029	0.875	0.016
41 Saga	0.980	0.062	0.931	0.030	0.896	0.017
42 Nagasaki	0.988	0.060	0.887	0.028	0.878	0.016
43 Kumamoto	0.942	0.055	0.911	0.027	0.891	0.016
44 Oita	0.991	0.063	0.934	0.030	0.896	0.017
45 Miyazaki	0.985	0.062	0.947	0.031	0.918	0.017
46 Kagoshima	1.013	0.061	0.957	0.030	0.905	0.017
47 Okinawa	.	.	0.945	0.031	0.922	0.018

Source: Authors calculations based on Statistical Bureaus Retail Price Survey.

**Table A5: Relative Price Levels by Prefecture in Other Private Service Industries  
(including Non-profit Private Services), Tokyo = 1, Comparisons in Years  
1970, 1990, and 2010**

prefecture		1970		1990		2010	
		Relative Price	Std.Err.	Relative Price	Std.Err.	Relative Price	Std.Err.
1	Hokkaido	0.925	0.034	0.853	0.017	0.784	0.020
2	Aomori	0.903	0.034	0.765	0.015	0.762	0.020
3	Iwate	0.913	0.034	0.802	0.016	0.855	0.022
4	Miyagi	0.944	0.034	0.864	0.017	0.863	0.022
5	Akita	0.987	0.036	0.826	0.016	0.843	0.022
6	Yamagata	0.946	0.035	0.864	0.017	0.893	0.023
7	Fukushima	0.974	0.036	0.877	0.017	0.857	0.022
8	Ibaraki	0.836	0.031	0.866	0.017	0.845	0.022
9	Tochigi	0.995	0.037	0.887	0.017	0.881	0.022
10	Gunma	0.940	0.035	0.875	0.017	0.896	0.023
11	Saitama	1.005	0.037	0.939	0.018	0.928	0.024
12	Chiba	0.927	0.034	0.917	0.018	0.876	0.022
13	Tokyo	1	.	1	.	1	.
14	Kanagawa	1.023	0.038	0.925	0.018	1.013	0.026
15	Niigata	0.958	0.035	0.867	0.017	0.893	0.023
16	Toyama	0.986	0.036	0.865	0.017	0.810	0.021
17	Ishikawa	0.995	0.036	0.874	0.017	0.800	0.020
18	Fukui	0.952	0.035	0.874	0.017	0.785	0.020
19	Yamanashi	0.995	0.037	0.846	0.016	0.828	0.021
20	Nagano	0.919	0.034	0.853	0.017	0.919	0.023
21	Gifu	0.828	0.031	0.839	0.016	0.900	0.023
22	Shizuoka	0.987	0.036	0.941	0.018	0.905	0.023
23	Aichi	0.897	0.033	0.850	0.017	0.927	0.024
24	Mie	0.917	0.034	0.870	0.017	0.793	0.020
25	Shiga	0.931	0.034	0.918	0.018	0.898	0.023
26	Kyoto	1.002	0.037	0.895	0.018	0.947	0.024
27	Osaka	0.931	0.034	0.908	0.018	0.899	0.023
28	Hyogo	0.967	0.036	0.874	0.017	0.877	0.023
29	Nara	0.981	0.036	0.886	0.017	0.901	0.023
30	Wakayama	0.969	0.036	0.903	0.018	0.896	0.023
31	Tottori	0.905	0.034	0.857	0.017	0.788	0.020
32	Shimane	0.923	0.034	0.833	0.016	0.872	0.022
33	Okayama	0.989	0.037	0.891	0.017	0.887	0.023
34	Hiroshima	0.978	0.036	0.819	0.016	0.878	0.022
35	Yamaguchi	0.913	0.034	0.817	0.016	0.856	0.022
36	Tokushima	0.904	0.033	0.840	0.016	0.826	0.021
37	Kagawa	0.940	0.034	0.839	0.016	0.843	0.021
38	Ehime	0.855	0.032	0.817	0.016	0.841	0.021
39	Kochi	0.873	0.032	0.830	0.016	0.848	0.022
40	Fukuoka	0.940	0.034	0.869	0.017	0.882	0.023
41	Saga	0.942	0.035	0.831	0.016	0.803	0.021
42	Nagasaki	0.897	0.033	0.843	0.016	0.883	0.023
43	Kumamoto	0.858	0.032	0.828	0.016	0.839	0.021
44	Oita	0.894	0.033	0.844	0.016	0.834	0.021
45	Miyazaki	0.917	0.034	0.816	0.016	0.833	0.021
46	Kagoshima	0.853	0.031	0.828	0.016	0.787	0.020
47	Okinawa	.	.	0.755	0.015	0.819	0.021

Source: Authors calculations based on Statistical Bureaus Retail Price Survey.