Supplementary appendix for

"Can we afford to be more like Scandinavians? institutions, incentives and innovation in the global political economy"

Available at SSRN: http://dx.doi.org/10.2139/ssrn.3808057

Matt Wilder[†]

October 9, 2021

The tables and figures below supplement the primary findings conveyed in the main text of the paper "Can we afford to be more like Scandinavians?" Tables S1 and S2 report fsQCA results for text-based measures of innovation, whereby the former omits US cases from consideration and the latter considers only bi-gram and tri-gram radicality (arguably a measure of incremental innovation). Tables S3 through S6 report results for citation-based measures of innovation. Table S3 reports results with US cases omitted, Tables S4 and S5 report outcomes operationalized as Herfindahl indices of patent "originality" and "generality" devised by Trachtenberg et al (1997), Table S6 reports results using citation deflators calculated by B. Hall et al (2001). Figure S1 reports random graph results for n-gram diffusion with US cases omitted. Please see the .R scripts and .csv datasets on the project's GitHub page to replicate the analyses from scratch.

[†] Postdoctoral researcher, University of Toronto. Email: matt.wilder@mail.utoronto.ca.
Code and datasets can be found here: https://github.com/matt-wilder/patent-research
Working paper; comments very welcome. This research was conducted during a Visiting Fellowship in the Department of Government at Harvard University (2020-21) and was funded by the Social Sciences and Humanities Research Council of Canada Postdoctoral Scholarship. Acknowledgements: thanks to Andreea Musulan for coding assistance; Sam Arts, Jianan Hou and Juan Gomez for providing code and stopword dictionaries; Romain Ferrali, Natalia Lamberova, Grace Skogstad and participants at the Harvard Political Economy workshop for their comments and suggestions on earlier drafts. The author takes responsibility for errors

Table S1: fuzzy-set analysis of the effect of institutional configuration on text-based measures of radicality with US omitted

country	occ training	firm hierarchy	inter-firm relations	emp relations	corp govern-ance	1960-1990 cons	1960-1990 cov	1970-2000 cons	1970-2000 cov	1980-2010 cons	1980-2010 cov	1990-2020 cons	1990-2020 cov	full period cons	full period cov	n
USA	0.05	0	0.07	0.19	0.01	0.49	0.65	0.50	0.64	0.49	0.64	0.48	0.63	0.54	0.53	0
UK	0.05	0	0.07	0.22	0.01											2148
Canada	0.05	0	0.19	0.22	0.10	0.53	0.61	0.53	0.61	0.52	0.60	0.51	0.60	0.58	0.50	805
Australia	0.07	0	0.17	0.33	0.08											467
Ireland	0.04	0.05	0.06	0.41	0.29	0.29	0.77	0.56	0.60	0.56	0.60	0.55	0.59	0.61	0.48	208
N. Zealand	0.04	0	0.35	0.22	0.61	0.29	0.77	0.28	0.71	0.31	0.69	0.32	0.67	0.36	0.58	39
Spain	0.13	0.20	0.63	0.17	0.45	0.40	0.75	0.39	0.73	0.39	0.70	0.39	0.68	0.49	0.42	336
France	0.38	0.60	0.40	0.38	0.40	0.49	0.54	0.48	0.53	0.47	0.53	0.47	0.54	0.33	0.64	2343
Portugal	0.02	0.05	0.83	0.57	0.77	0.28	0.79	0.28	0.76	0.28	0.73	0.28	0.73	0.43	0.56	14
Greece	0.16	0.05	0.75	0.83	0.85											4
Italy	0.72	0.20	0.49	0.86	0.79	0.42	0.73	0.39	0.69	0.38	0.66	0.38	0.67	0.43	0.57	779
Japan	0.11	0	0.61	0.70	0.11	0.41	0.70	0.40	0.71	0.40	0.67	0.40	0.66	0.45	0.57	2790
S. Korea	0.28	0	0.71	0.22	0.40	0.43	0.69	0.42	0.69	0.43	0.66	0.43	0.64	0.48	0.54	402
Finland	0.19	0.73	0.14	0.36	0.40	0.34	0.67	0.34	0.64	0.33	0.63	0.33	0.63	0.36	0.52	48
Switzerland	0.74	0.27	0.28	0.57	0.18	0.55	0.65	0.51	0.63	0.50	0.61	0.50	0.61	0.55	0.50	1221
Denmark	0.17	0.73	0.36	0.30	0.61	0.28	0.75	0.28	0.71	0.27	0.69	0.27	0.69	0.31	0.59	526
Sweden	0.41	0.73	0.22	0.60	0.30	0.43	0.62	0.41	0.60	0.40	0.60	0.40	0.61	0.43	0.49	528
Netherlands	0.26	0.80	0.28	0.70	0.40											518
Norway	0.13	0.73	0.44	0.59	0.79	0.27	0.76	0.27	0.72	0.26	0.70	0.25	0.70	0.29	0.60	89
Belgium	0.70	0.40	0.45	0.86	0.83	0.42	0.73	0.39	0.69	0.38	0.66	0.38	0.67	0.43	0.57	918
Germany	0.83	0.95	0.63	0.74	0.36	0.42	0.73	0.37	0.65	0.35	0.64	0.35	0.65	0.39	0.54	2831
Austria	0.90	0.95	0.63	0.74	0.90	0.32	0.73	0.30	0.71	0.29	0.69	0.28	0.69	0.33	0.60	191

Source: USPTO patents classified A61P37/02, 37/08, 31/12, 25/24 (USPTO 2021). Scores based on necessity tests using R package QCA (Duşa & et al 2013).
Outcome is the sum of radicality scores for unigrams, bigram and trigrams. Patents in top 10% = fully in radicality set; radicality score of zero = fully out; 50th percentile value = crossover point. Institutional configurations: < 0.20 = absence of condition, 20-50 = neither absence nor presence of condition, > 50 = presence of condition. Institutional country scores adapted from Witt and Jackson (2016: 791): *occ training* = min(*upper/post-secondary graduates/graduation age pop, tertiary graduates/graduation age pop*); *firm hierarchy* = min(*board-level co-determination, works council rights*); *inter-firm relations* = min(*mergers and acquisitions/GDP, proportion complete takeover M&A transactions*); *emp relations* = min(*wage coordination, short-term employment, employment protection*); *corp governance* = min(*shareholder protection, dispersion of control, stock market size*). 18 configurations identified: {UK, Canada, Australia}, {Portugal, Greece}, {Sweden, Netherlands} and 15 unique national configurations. Coverage only meaningful if consistency ≥ 0.75. Based on assignee country. Nearly identical results obtain using country of first listed inventor (see scripts at https://github.com/matt-wilder/patent-research).

Table S2: fuzzy-set analysis of the effect of institutional configuration on text-based measures of bi-gram and tri-gram radicality

country	occ training	firm hierarchy	inter-firm relations	emp relations	corp govern-ance	1960-1990 cons	1960-1990 cov	1970-2000 cons	1970-2000 cov	1980-2010 cons	1980-2010 cov	1990-2020 cons	1990-2020 cov	full period cons	full period cov	n
USA	0.05	0	0.07	0.19	0.01	0.65	0.52	0.74	0.52	0.74	0.49	0.75	0.47	0.74	0.47	23877
UK	0.05	0	0.07	0.22	0.01											2148
Canada	0.05	0	0.19	0.22	0.10	0.70	0.49	0.78	0.48	0.78	0.45	0.79	0.45	0.78	0.44	805
Australia	0.07	0	0.17	0.33	0.08											467
Ireland	0.04	0.05	0.06	0.41	0.29	0.71	0.49	0.80	0.48	0.80	0.45	0.81	0.44	0.80	0.44	208
N. Zealand	0.04	0	0.35	0.22	0.61	0.18	0.67	0.16	0.68	0.15	0.65	0.15	0.65	0.15	0.65	39
Spain	0.13	0.20	0.63	0.17	0.45	0.18	0.67	0.26	0.73	0.26	0.70	0.26	0.70	0.26	0.70	336
France	0.38	0.60	0.40	0.38	0.40	0.30	0.46	0.22	0.48	0.21	0.48	0.20	0.49	0.20	0.49	2343
Portugal	0.02	0.05	0.83	0.57	0.77	0.18	0.69	0.14	0.72	0.13	0.70	0.13	0.70	0.14	0.70	14
Greece	0.16	0.05	0.75	0.83	0.85											4
Italy	0.72	0.20	0.49	0.86	0.79	0.26	0.63	0.20	0.64	0.18	0.63	0.18	0.63	0.18	0.63	779
Japan	0.11	0	0.61	0.70	0.11	0.31	0.65	0.27	0.72	0.26	0.69	0.26	0.70	0.26	0.70	2790
S. Korea	0.28	0	0.71	0.22	0.40	0.32	0.64	0.28	0.70	0.27	0.67	0.27	0.67	0.28	0.67	402
Finland	0.19	0.73	0.14	0.36	0.40	0.21	0.57	0.16	0.59	0.15	0.58	0.14	0.58	0.14	0.58	48
Switzerland	0.74	0.27	0.28	0.57	0.18	0.38	0.60	0.30	0.63	0.29	0.63	0.29	0.64	0.29	0.64	1221
Denmark	0.17	0.73	0.36	0.30	0.61	0.17	0.62	0.13	0.65	0.12	0.62	0.11	0.63	0.12	0.63	526
Sweden	0.41	0.73	0.22	0.60	0.30	0.26	0.53	0.19	0.55	0.18	0.55	0.17	0.56	0.17	0.56	528
Netherlands	0.26	0.80	0.28	0.70	0.40											518
Norway	0.13	0.73	0.44	0.59	0.79	0.16	0.63	0.12	0.66	0.11	0.64	0.11	0.64	0.11	0.64	89
Belgium	0.70	0.40	0.45	0.86	0.83	0.26	0.63	0.20	0.64	0.18	0.63	0.18	0.63	0.18	0.63	918
Germany	0.83	0.95	0.63	0.74	0.36	0.24	0.57	0.17	0.59	0.16	0.59	0.15	0.60	0.15	0.60	2831
Austria	0.90	0.95	0.63	0.74	0.90	0.19	0.61	0.14	0.64	0.13	0.63	0.12	0.63	0.12	0.64	191

Source: USPTO patents classified A61P37/02, 37/08, 31/12, 25/24 (USPTO 2021). Scores based on necessity tests using R package QCA (Duşa & et al 2013).
Outcome is the sum of radicality scores for bigram and trigrams. Patents in top 10% = fully in radicality set; radicality score of zero = fully out; 50th percentile value = crossover point. Institutional configurations: < 0.20 = absence of condition, 20-50 = neither absence nor presence of condition, > 50 = presence of condition. Institutional country scores adapted from Witt and Jackson (2016: 791): *occ training* = min(*upper/post-secondary graduates/graduation age pop, tertiary graduates/graduation age pop*); *firm hierarchy* = min(*board-level co-determination, works council rights*); *inter-firm relations* = min(*mergers and acquisitions/GDP, proportion complete takeover M&A transactions*); *emp relations* = min(*wage coordination, short-term employment, employment protection*); *corp governance* = min(*shareholder protection, dispersion of control, stock market size*). 18 configurations identified: {UK, Canada, Australia}, {Portugal, Greece}, {Sweden, Netherlands} and 15 unique national configurations. Coverage only meaningful if consistency ≥ 0.75. Based on assignee country. Nearly identical results obtain using country of first listed inventor (see scripts at https://github.com/matt-wilder/patent-research).

Table S3: fuzzy-set analysis of the effect of institutional configuration on citation-based measures of radicality with US omitted

country	occ training	firm hierarchy	inter-firm relations	emp relations	corp govern-ance	1960-1990 cons	1960-1990 cov	1970-2000 cons	1970-2000 cov	1980-2010 cons	1980-2010 cov	1990-2020 cons	1990-2020 cov	full period cons	full period cov	n
USA	0.05	0	0.07	0.19	0.01	0.34	0.95	0.49	0.60	0.48	0.54	0.34	0.86	0.34	0.81	0
UK	0.05	0	0.07	0.22	0.01											2148
Canada	0.05	0	0.19	0.22	0.10	0.39	0.95	0.52	0.57	0.52	0.51	0.38	0.86	0.38	0.81	805
Australia	0.07	0	0.17	0.33	0.08											467
Ireland	0.04	0.05	0.06	0.41	0.29	0.39	0.95	0.55	0.56	0.55	0.50	0.41	0.86	0.41	0.80	208
N. Zealand	0.04	0	0.35	0.22	0.61	0.17	0.98	0.29	0.64	0.30	0.56	0.21	0.88	0.21	0.83	39
Spain	0.13	0.20	0.63	0.17	0.45	0.24	0.97	0.36	0.64	0.37	0.56	0.26	0.88	0.26	0.83	336
France	0.38	0.60	0.40	0.38	0.40	0.41	0.96	0.47	0.50	0.47	0.44	0.39	0.87	0.39	0.82	2343
Portugal	0.02	0.05	0.83	0.57	0.77	0.16	0.98	0.26	0.66	0.27	0.61	0.17	0.89	0.18	0.85	14
Greece	0.16	0.05	0.75	0.83	0.85											4
Italy	0.72	0.20	0.49	0.86	0.79	0.26	0.97	0.36	0.60	0.37	0.54	0.26	0.88	0.27	0.83	779
Japan	0.11	0	0.61	0.70	0.11	0.26	0.96	0.37	0.63	0.38	0.55	0.26	0.87	0.26	0.83	2790
S. Korea	0.28	0	0.71	0.22	0.40	0.28	0.96	0.40	0.62	0.41	0.53	0.30	0.87	0.30	0.82	402
Finland	0.19	0.73	0.14	0.36	0.40	0.23	0.97	0.32	0.58	0.33	0.52	0.23	0.87	0.24	0.82	48
Switzerland	0.74	0.27	0.28	0.57	0.18	0.38	0.97	0.49	0.57	0.49	0.50	0.37	0.87	0.38	0.82	1221
Denmark	0.17	0.73	0.36	0.30	0.61	0.17	0.97	0.26	0.62	0.26	0.55	0.18	0.88	0.18	0.83	526
Sweden	0.41	0.73	0.22	0.60	0.30	0.31	0.97	0.40	0.55	0.40	0.49	0.30	0.87	0.30	0.82	528
Netherlands	0.26	0.80	0.28	0.70	0.40											518
Norway	0.13	0.73	0.44	0.59	0.79	0.16	0.97	0.24	0.63	0.25	0.57	0.17	0.88	0.17	0.84	89
Belgium	0.70	0.40	0.45	0.86	0.83	0.26	0.97	0.36	0.60	0.37	0.54	0.26	0.88	0.27	0.83	918
Germany	0.83	0.95	0.63	0.74	0.36	0.26	0.96	0.35	0.59	0.35	0.52	0.24	0.88	0.25	0.83	2831
Austria	0.90	0.95	0.63	0.74	0.90	0.20	0.97	0.28	0.62	0.28	0.55	0.19	0.88	0.19	0.84	191

Source: USPTO patents classified A61P37/02, 37/08, 31/12, 25/24 (USPTO 2021). Scores based on necessity tests using R package QCA (Duşa & et al 2013). Institutional scores adapted from Witt and Jackson (2016: 791): *occupational training* = min(*upper/post-secondary graduates/graduation age pop, tertiary graduates/graduation age pop*); *firm hierarchy* = min(*board-level co-determination, works council rights*); *inter-firm relations* = min(*mergers and acquisitions/GDP, proportion complete takeover M&A transactions*); *employment relations* = min(*wage coordination, short-term employment, employment protection*); *corporate governance* = min(*shareholder protection, dispersion of control, stock market size*). Outcome variable is the sum of forward citations per patent. Patents in top 10% of cited patents= fully in; patents with zero citations = fully out; 50th percentile value = crossover point. Institutional configurations: < 0.20 = absence of condition, 0.20-0.50 = neither absence nor presence of condition, > 0.50 = presence of condition. 18 configurations identified: {UK, Canada, Australia}, {Portugal, Greece}, {Sweden, Netherlands} and 15 unique national configurations. Based on country of assignee; nearly identical results obtain using country of first listed inventor (see scripts at https://github.com/matt-wilder/patent-research).

Table S4: fuzzy-set analysis of the effect of institutional configuration on citation-based measures of "originality"

country	occ training	firm hierarchy	inter-firm relations	emp relations	corp govern-ance	1960-1990 cons	1960-1990 cov	1970-2000 cons	1970-2000 cov	1980-2010 cons	1980-2010 cov	1990-2020 cons	1990-2020 cov	full period cons	full period cov	n
USA	0.05	0	0.07	0.19	0.01	0.67	0.78	0.75	0.77	0.74	0.82	0.74	0.56	0.74	0.56	23877
UK	0.05	0	0.07	0.22	0.01											2148
Canada	0.05	0	0.19	0.22	0.10	0.71	0.73	0.79	0.71	0.79	0.76	0.81	0.53	0.80	0.54	805
Australia	0.07	0	0.17	0.33	0.08											467
Ireland	0.04	0.05	0.06	0.41	0.29	0.72	0.73	0.80	0.71	0.81	0.76	0.82	0.53	0.82	0.54	208
N. Zealand	0.04	0	0.35	0.22	0.61	0.19	0.99	0.15	0.96	0.13	0.96	0.11	0.57	0.11	0.57	39
Spain	0.13	0.20	0.63	0.17	0.45	0.299	0.997	0.244	0.993	0.215	0.989	0.195	0.63	0.19	0.62	336
France	0.38	0.60	0.40	0.38	0.40	0.329	0.736	0.233	0.746	0.201	0.782	0.149	0.44	0.15	0.44	2343
Portugal	0.02	0.05	0.83	0.57	0.77	0.177	1.000	0.136	1.000	0.115	1.00	0.097	0.61	0.10	0.60	14
Greece	0.16	0.05	0.75	0.83	0.85											4
Italy	0.72	0.20	0.49	0.86	0.79	0.270	0.951	0.195	0.944	0.166	0.95	0.13	0.54	0.13	0.53	779
Japan	0.11	0	0.61	0.70	0.11	0.31	0.94	0.24	0.96	0.22	0.97	0.20	0.63	0.19	0.61	2790
S. Korea	0.28	0	0.71	0.22	0.40	0.33	0.94	0.26	0.96	0.23	0.96	0.21	0.60	0.21	0.59	402
Finland	0.19	0.73	0.14	0.36	0.40	0.22	0.89	0.16	0.90	0.14	0.92	0.10	0.50	0.10	0.48	48
Switzerland	0.74	0.27	0.28	0.57	0.18	0.38	0.88	0.28	0.87	0.25	0.89	0.22	0.58	0.22	0.57	1221
Denmark	0.17	0.73	0.36	0.30	0.61	0.18	0.99	0.14	0.99	0.11	0.99	0.08	0.53	0.08	0.51	526
Sweden	0.41	0.73	0.22	0.60	0.30	0.29	0.85	0.20	0.86	0.17	0.88	0.12	0.48	0.12	0.47	528
Netherlands	0.26	0.80	0.28	0.70	0.40											518
Norway	0.13	0.73	0.44	0.59	0.79	0.18	1.00	0.13	0.99	0.10	0.99	0.08	0.53	0.07	0.52	89
Belgium	0.70	0.40	0.45	0.86	0.83	0.270	0.95	0.20	0.94	0.17	0.95	0.13	0.54	0.13	0.53	918
Germany	0.83	0.95	0.63	0.74	0.36	0.26	0.91	0.18	0.92	0.15	0.93	0.10	0.49	0.10	0.48	2831
Austria	0.90	0.95	0.63	0.74	0.90	0.21	1.00	0.15	1.00	0.12	1.00	0.08	0.52	0.08	0.50	191

Source: USPTO patents classified A61P37/02, 37/08, 31/12, 25/24 (USPTO 2021). Scores based on necessity tests using R package QCA (Duşa & et al 2013). Institutional scores adapted from Witt and Jackson (2016: 791): *occupational training* = min(*upper/post-secondary graduates/graduation age pop, tertiary graduates/graduation age pop*); *firm hierarchy* = min(*board-level co-determination, works council rights*); *inter-firm relations* = min(*mergers and acquisitions/GDP, proportion complete takeover M&A transactions*); *employment relations* = min(*wage coordination, short-term employment, employment protection*); *corporate governance* = min(*shareholder protection, dispersion of control, stock market size*). Outcome Herfindahl index of patent originality (Equation 3 in the main document). Patents in top 10% of cited patents= fully in; patents with zero citations = fully out; 50th percentile value = crossover point. Institutional configurations: < 0.20 = absence of condition, 0.20-0.50 = neither absence nor presence of condition, > 0.50 = presence of condition. 18 configurations identified: {UK, Canada, Australia}, {Portugal, Greece}, {Sweden, Netherlands} and 15 unique national configurations. Based on country of assignee; nearly identical results obtain using country of first listed inventor (see scripts at https://github.com/matt-wilder/patent-research).

Table S5: fuzzy-set analysis of the effect of institutional configuration on citation-based measures of "generality"

country	occ training	firm hierarchy	inter-firm relations	emp relations	corp govern-ance	1960-1990 cons	1960-1990 cov	1970-2000 cons	1970-2000 cov	1980-2010 cons	1980-2010 cov	1990-2020 cons	1990-2020 cov	full period cons	full period cov	n
USA	0.05	0	0.07	0.19	0.01	0.650	0.84	0.72	0.85	0.74	0.82	0.75	0.80	0.75	0.80	23877
UK	0.05	0	0.07	0.22	0.01											2148
Canada	0.05	0	0.19	0.22	0.10	0.70	0.80	0.78	0.81	0.79	0.77	0.81	0.75	0.80	0.75	805
Australia	0.07	0	0.17	0.33	0.08											467
Ireland	0.04	0.05	0.06	0.41	0.29	0.71	0.80	0.79	0.81	0.81	0.77	0.82	0.75	0.82	0.75	208
N. Zealand	0.04	0	0.35	0.22	0.61	0.17	0.99	0.13	0.98	0.13	0.97	0.13	0.96	0.14	0.97	39
Spain	0.13	0.20	0.63	0.17	0.45	0.27	0.99	0.21	0.99	0.21	0.99	0.22	0.98	0.22	0.98	336
France	0.38	0.60	0.40	0.38	0.40	0.31	0.77	0.22	0.80	0.20	0.78	0.19	0.77	0.190	0.77	2343
Portugal	0.02	0.05	0.83	0.57	0.77	0.16	1.00	0.12	1.00	0.11	1.00	0.11	1.00	0.12	1.00	14
Greece	0.16	0.05	0.75	0.83	0.85											4
Italy	0.72	0.20	0.49	0.86	0.79	0.25	0.96	0.17	0.96	0.16	0.95	0.16	0.94	0.16	0.94	779
Japan	0.11	0	0.61	0.70	0.11	0.28	0.95	0.21	0.97	0.21	0.96	0.21	0.96	0.22	0.96	2790
S. Korea	0.28	0	0.71	0.22	0.40	0.30	0.95	0.23	0.96	0.23	0.96	0.23	0.95	0.24	0.95	402
Finland	0.19	0.73	0.14	0.36	0.40	0.21	0.92	0.15	0.92	0.14	0.91	0.13	0.91	0.13	0.910	48
Switzerland	0.74	0.27	0.28	0.57	0.18	0.35	0.87	0.25	0.90	0.24	0.89	0.24	0.89	0.24	0.89	1221
Denmark	0.17	0.73	0.36	0.30	0.61	0.17	0.99	0.12	0.99	0.11	0.98	0.11	0.98	0.11	0.98	526
Sweden	0.41	0.73	0.22	0.60	0.30	0.26	0.87	0.18	0.89	0.17	0.88	0.16	0.87	0.16	0.87	528
Netherlands	0.26	0.80	0.28	0.70	0.40											518
Norway	0.13	0.73	0.44	0.59	0.79	0.16	1.00	0.11	0.99	0.10	0.99	0.10	0.99	0.10	0.99	89
Belgium	0.70	0.40	0.45	0.86	0.83	0.25	0.96	0.17	0.97	0.16	0.95	0.16	0.94	0.16	0.94	918
Germany	0.83	0.95	0.63	0.74	0.36	0.24	0.93	0.16	0.94	0.15	0.93	0.14	0.93	0.14	0.93	2831
Austria	0.90	0.95	0.63	0.74	0.90	0.19	1.00	0.13	1.00	0.12	1.00	0.11	1.00	0.12	1.00	191

Source: USPTO patents classified A61P37/02, 37/08, 31/12, 25/24 (USPTO 2021). Scores based on necessity tests using R package QCA (Duşa & et al 2013). Institutional scores adapted from Witt and Jackson (2016: 791): *occupational training* = min(*upper/post-secondary graduates/graduation age pop, tertiary graduates/graduation age pop*); *firm hierarchy* = min(*board-level co-determination, works council rights*); *inter-firm relations* = min(*mergers and acquisitions/GDP, proportion complete takeover M&A transactions*); *employment relations* = min(*wage coordination, short-term employment, employment protection*); *corporate governance* = min(*shareholder protection, dispersion of control, stock market size*). Outcome Herfindahl index of patent generality (Equation 2 in the main document). Patents in top 10% of cited patents= fully in; patents with zero citations = fully out; 50th percentile value = crossover point. Institutional configurations: < 0.20 = absence of condition, 0.20-0.50 = neither absence nor presence of condition, > 0.50 = presence of condition. 18 configurations identified: {UK, Canada, Australia}, {Portugal, Greece}, {Sweden, Netherlands} and 15 unique national configurations. Based on country of assignee; nearly identical results obtain using country of first listed inventor (see scripts at https://github.com/matt-wilder/patent-research).

Table S6: fuzzy-set analysis of the effect of institutional configuration on deflated citation-based measures of radicality

country	occ train	firm hier	inter firm rel	emp rel	corp gov	cons 1977-2012	cov 1977-2012
USA	0.05	0	0.07	0.19	0.01	0.78	0.48
UK	0.05	0	0.07	0.22	0.01	0.83	0.44
Canada	0.05	0	0.19	0.22	0.10		
Australia	0.07	0	0.17	0.33	0.08		
Ireland	0.04	0.05	0.06	0.41	0.29	0.84	0.44
N. Zealand	0.04	0	0.35	0.22	0.61	0.14	0.56
Spain	0.13	0.20	0.63	0.17	0.45	0.25	0.62
France	0.38	0.60	0.40	0.38	0.40	0.18	0.40
Portugal	0.02	0.05	0.83	0.57	0.77	0.13	0.61
Greece	0.16	0.05	0.75	0.83	0.85		
Italy	0.72	0.20	0.49	0.86	0.79	0.17	0.53
Japan	0.11	0	0.61	0.70	0.11	0.25	0.61
S. Korea	0.28	0	0.71	0.22	0.40	0.26	0.59
Finland	0.19	0.73	0.14	0.36	0.40	0.13	0.49
Switzerland	0.74	0.27	0.28	0.57	0.18	0.28	0.54
Denmark	0.17	0.73	0.36	0.30	0.61	0.11	0.53
Sweden	0.41	0.73	0.22	0.60	0.30	0.16	0.45
Netherlands	0.26	0.80	0.28	0.70	0.40		
Norway	0.13	0.73	0.44	0.59	0.79	0.10	0.54
Belgium	0.70	0.40	0.45	0.86	0.83	0.17	0.54
Germany	0.83	0.95	0.63	0.74	0.36	0.14	0.49
Austria	0.90	0.95	0.63	0.74	0.90	0.11	0.53

Source: USPTO patents classified A61P37/02, 37/08, 31/12, 25/24 (USPTO 2021). Scores based on necessity tests using R package QCA (Duşa & et al 2013). Outcome represents deflated patent measures (see B. Hall et al 2001). Patents in top 10% of cited patents = fully in; patents with zero citations = fully out; 50th percentile value = crossover point. Institutional configurations: < 0.20 = absence of condition, 0.20-0.50 = neither absence nor presence of condition, > 0.50 = presence of condition. 18 configurations identified: {UK, Canada, Australia}, {Portugal, Greece}, {Sweden, Netherlands} and 15 unique national configurations. Based on country of assignee; nearly identical results obtain using country of first listed inventor (see scripts at https://github.com/matt-wilder/patent-research).

Figure S1: observed and random graph distributions of n-gram diffusion with US cases omitted