Supporting Information

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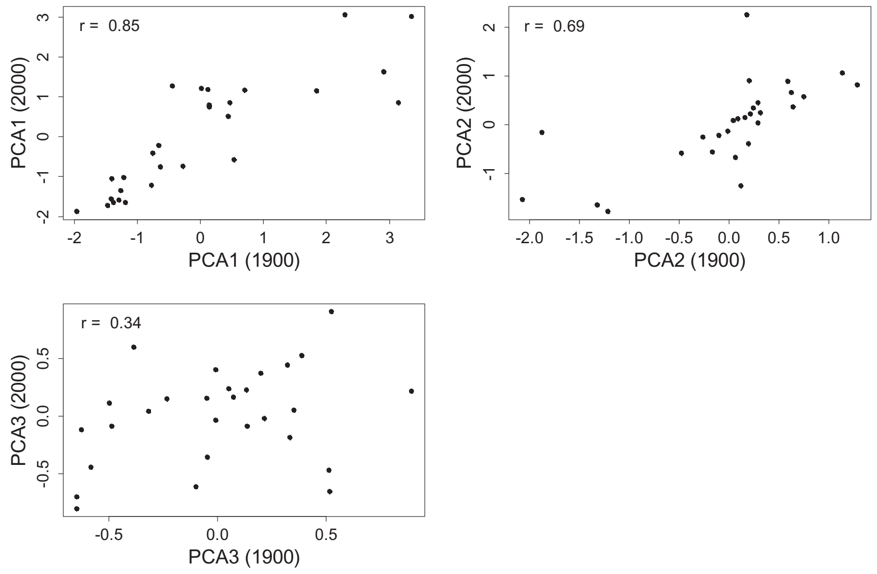

Fig. S1. Correlations between the three axes of two principal component analyses (PCA) of three socioeconomic indicators [gross domestic product (GDP), population density, and the share of exports in GDP], evaluated either for the year 1900 or the year 2000, across 28 European countries. The *r* values are Pearson's correlation coefficients between the axes scores of the individual countries in the PCAs of the 1900 and 2000 data, respectively.

Table S1. Numbers of established alien plant, fungi and animal species in the 28 European countries covered by this study

Country	Vascular plants	Bryophytes	Fungi	Mammals	Birds	Reptiles	Amphibians	Fish	Terrestrial insects	Aquatic invertebrates
Albania (AL)			2	2	1			11	237	4
Austria (AU)	276	2	37	8	8	0	0	17	265	50
Belgium (BE)	447	3	30	8	16	0	3	12	185	7
Bulgaria (BG)			20	5	3	0		19	246	
Czech Republic (CZ)	229	2	30	8	6	0		10	329	23
Denmark (DK)		4	25	5	9	0	1	12	293	13
Estonia (ES)	125		9	5	4		1	6	91	11
Finland (FI)		2	14	7	9	0		13	140	6
France (FR)		3	61	10	20	2	5	12	575	44
Germany (GE)	450	3	55	9	15	0	1	31	438	53
Greece (GR)	112	0	26	3	6	2	1	17	178	0
Hungary (HU)	145	1	34	5	4	0		19	196	17
Italy (IT)	440	2	54	7	19	3	4	36	601	57
Latvia (LA)		1	10	4	6			15	93	6
Lithuania (LT)	256	1	22	7	6	0		7	108	8
Netherlands (NL)	154	3	29	7	13	0	2	13	195	9
Norway (NO)		1	21	7	8			13	122	5
Poland (PL)	259	1	34	6	6	0		12	183	23
Portugal (Pg)	250	2	25	2	6	1		20	220	20
Republic of Ireland (IR)		6	24	6	7	1	2	15	87	41
Romania (RO)	113		27	6	3			30	158	14
Russia (European part) (RU)	149		27	12	6		1	27	111	27
Slovakia (SK)	182	0	23	7	5	0		28	126	
Spain (SP)		1	33	5	18	5	4	30	333	30
Sweden (SW)		3	23	8	13	0	2	10	189	14
Switzerland (SU)	170	1	47	5	7	1	0	16	302	27
Ukraine (UR)	297		27	8	6	1		34	99	96
United Kingdom (U.K.)	857	14	55	9	23	3	5	14	391	50

Species introduced before 1500 are not included. Empty cells indicate that the respective data are not available. Data sources (see www.europe-aliens.org for species lists): vascular plants: (1); bryophytes (2); fungi: various (3); mammals: various (4); birds, reptiles, and amphibians: various (5); fish, aquatic invertebrates (6); terrestrial insects: various (7).

1. Lambdon PW, et al. (2008) Alien flora of Europe: Species diversity, temporal trends geographical patterns and research needs. *Preslia* 80:101–149.
2. Essl F, Lambdon PW (2009) The alien bryophytes and lichens of Europe. *Handbook of Alien Species in Europe*, ed DAISIE (Springer, Berlin), pp 29–41.
3. Desprez-Loustau M-L (2009) The alien fungi of Europe. *Handbook of Alien Species in Europe*, ed DAISIE (Springer, Berlin), pp 15–28.
4. Genovesi P, Bacher S, Kobelt M, Pascal M, Scalera R (2009) Alien mammals of Europe. *Handbook of Alien Species in Europe*, ed DAISIE (Springer, Berlin), pp 119–128.
5. Kark S, Solarz W, Chiron F, Clergeau P, Shirley S (2009) Alien birds, amphibians and reptiles of Europe. *Handbook of Alien Species in Europe*, ed DAISIE (Springer, Berlin), pp 105–118.
6. Gherardi F, Gollasch S, Minchin D, Olenin O, Panov V (2009) Alien invertebrates and fish in European inland waters. *Handbook of Alien Species in Europe*, ed DAISIE (Springer, Berlin), pp 81–92.
7. Roques A, et al. (2009) Alien terrestrial invertebrates of Europe. *Handbook of Alien Species in Europe*, ed DAISIE (Springer, Berlin), pp 63–79.

Table S2. Current and historical socioeconomic variables for the 28 European countries included in this study

Country	Area	PD 2000	GDP 2000	EXP 2000	PD 1900	GDP 1900	EXP 1900
Albania (AL)	28,769.2	125.2	2,651	1.9	28	685	0.8
Austria (AU)	84,013.4	97.5	20,097	42.9	71	2,882	7.7
Belgium (BE)	30,667.7	339.7	20,742	76.5	219	3,731	18.4
Bulgaria (BG)	110,918.4	69.7	5,365	11.5	36	1,223	2.2
Czech Republic (CZ)	78,875.7	129.6	9,047	24.1	110	2,400	7.7
Denmark (DK)	45,268.8	120.0	23,010	41.9	57	3,017	11.4
Estonia (ES)	45,344.3	29.3	10,894	18.6	17	1,767	2.5
Finland (FI)	337,967.8	15.5	20,235	51.6	8	1,668	22.1
France (FR)	540,684.6	111.9	20,808	28.7	75	2,876	6.9
Germany (GE)	358,024.9	231.0	18,596	38.9	152	2,985	14.1
Greece (GR)	132,134.0	84.2	12,044	7.6	38	1,351	1.0
Hungary (HU)	93,032.3	108.5	7,138	26.9	77	1,682	7.7
Italy (IT)	251,645.2	230.9	18,740	26.1	134	1,785	4.7
Latvia (LA)	64,634.0	35.7	6,776	11.4	21	1,596	2.5
Lithuania (LT)	64,885.7	52.9	7,162	15.6	27	1,546	2.5
Netherlands (NL)	35,896.1	454.1	21,591	61.2	143	3,424	17.3
Norway (NO)	323,997.3	14.3	24,364	55.4	7	1,937	12.4
Poland (PL)	311,886.2	123.5	7,215	10.1	79	1,536	2.2
Portugal (Pg)	88,861.8	118.1	14,022	17.4	61	1,302	6.8
Republic of Ireland (IR)	70,452.5	58.9	22,015	53.9	63	2,510	6.1
Romania (RO)	237,741.9	91.3	3,002	12.2	46	1,415	2.2
Russia (European part) (RU)	2,377,419.0	59.8	5,157	10.6	30	1,344	2.5
Slovakia (SK)	48,989.9	110.2	7,837	24.4	67	1,600	5.1
Spain (SP)	493,597.9	91.3	15,269	23.5	38	1,786	6.8
Sweden (SW)	449,964.2	20.1	20,321	62.5	11	2,561	13.8
Switzerland (SU)	41,232.5	175.9	22,025	51.8	80	3,833	29.9
Ukraine (UR)	598,578.9	79.0	2,736	12.5	43	1,005	2.5
United Kingdom (U.K.)	246,252.3	242.3	19,817	25.0	167	4,492	15.9

Area, country area (km^2); PD 2000, PD 1900, human population density (people/km^2); GDP 2000, GDP 1900, standardized per capita GDP (standardized 1990 International Geary-Khamis Dollar); EXP 2000, EXP 1900, share of exports in GPD for the years 2000 or 1900, respectively.

Table S3. Loadings of socioeconomic indicator variables for the years 1900 and 2000, respectively, in a PCA across 28 European countries

Year	PCA 1	PCA 2	PCA 3
1900			
GDP	0.64	−0.05	−0.77
Population density	0.53	0.75	0.39
Exports	0.56	−0.66	0.5
2000			
GDP	0.64	−0.33	−0.69
Population density	0.42	0.91	0.048
Exports	0.65	−0.26	0.72

Table S4. Akaike Information Criterion (AIC) and Pearson's correlation coefficient *r* between model predictions and response variables for spatial autoregressive error models relating alien-species richness of 10 different taxonomic groups to current (year 2000) or historical (year 1900) socioeconomic indicators across 28 European countries

Taxon	AIC_{1900}	AIC_{2000}	r_{1900}	r_{2000}
Vascular plants	31.10	45.06	0.90	0.65
Bryophytes	59.82	74.51	0.86	0.69
Fungi	25.10	30.87	0.78	0.73
Birds	34.98	29.80	0.82	0.86
Mammals	10.29	13.97	0.71	0.66
Reptiles	88.38	81.39	0.47	0.62
Amphibians	46.50	49.82	0.66	0.57
Fish	35.57	40.04	0.52	0.38
Terrestrial insects	50.53	39.65	0.59	0.75
Aquatic invertebrates	69.45	72.17	0.42	0.29

Table S5. Spatial autocorrelation in the residuals of autoregressive error models relating alien-species richness of 10 different taxonomic groups to current (year 2000) or historical (year 1900) socioeconomic indicators, respectively, across 28 European countries

Taxon	1900	2000
Vascular plants	−0.035	−0.053
Bryophytes	0.032	−0.069
Fungi	0.050	0.043
Birds	0.001	0.022
Mammals	0.005	−0.016
Reptiles	0.005	0.004
Amphibians	0.037	0.006
Fish	−0.008	0.006
Terrestrial insects	0.011	−0.016
Aquatic invertebrates	0.004	0.004

Spatial positions of the countries were defined by the geographical coordinates of their capitals. Moran's *I* was used as a measure of spatial autocorrelation and its values were calculated for a neighborhood radius of 1,000 km. Significance was evaluated by means of 999 permutations of the vector of model residuals using the function *moran.mc* implemented in the *R*-package *spdep* (1). *P* values for all tested *I* were > 0.05.

1. Bivand L, et al. (2009) *spdep: Spatial dependence: Weighting schemes, statistics and models*, R package version 0.4–24.

Table S6. Akaike weights for the effects of three socioeconomic variables

	1900			2000		
Taxon	PD	GDP	EXP	PD	GDP	EXP
All taxa	0.43	0.43	0.14	0.37	0.37	0.26
Vascular plants	0.60	0.26	0.14	0.25	0.52	0.23
Bryophytes	0.30	0.54	0.16	0.41	0.42	0.17
Fungi	0.47	0.38	0.15	0.32	0.43	0.25
Birds	0.43	0.47	0.10	0.42	0.42	0.15
Mammals	0.31	0.52	0.17	0.28	0.18	0.54
Reptiles	0.29	0.37	0.35	0.11	0.47	0.42
Amphibians	0.56	0.19	0.25	0.48	0.31	0.21
Fish	0.45	0.4	0.15	0.46	0.3	0.25
Terrestrial insects	0.48	0.33	0.19	0.23	0.38	0.38
Aquatic invertebrates	0.43	0.35	0.22	0.33	0.38	0.28

Akaike weights for the effects of three socioeconomic variables, evaluated at two different time points (years 1900 and 2000, respectively), on the number of established alien species in 10 taxonomic groups across 28 European countries. The three variables are human population density (PD), standardized per capita GDP, and the share of exports in GDP (EXP). Akaike weights are based on spatial autoregressive error models for the single taxonomic groups and on linear mixed effects models with an exponential spatial within-group correlation structure for the combined analysis of all groups. Separately for each time point, we fitted models with all seven possible combinations of the three predictor variables and calculated the AIC and, subsequently, the Akaike weights for each of these fitted models. The Akaike weight of each predictor was then computed as the sum of the Akaike weights of all of the models which contained the respective variable (1)

1. Burnham KP, Anderson DR (2004) Multimodel inference: understanding AIC and BIC in model selection. *Sociol Method Res* 33:261–304.