

Supplementary material

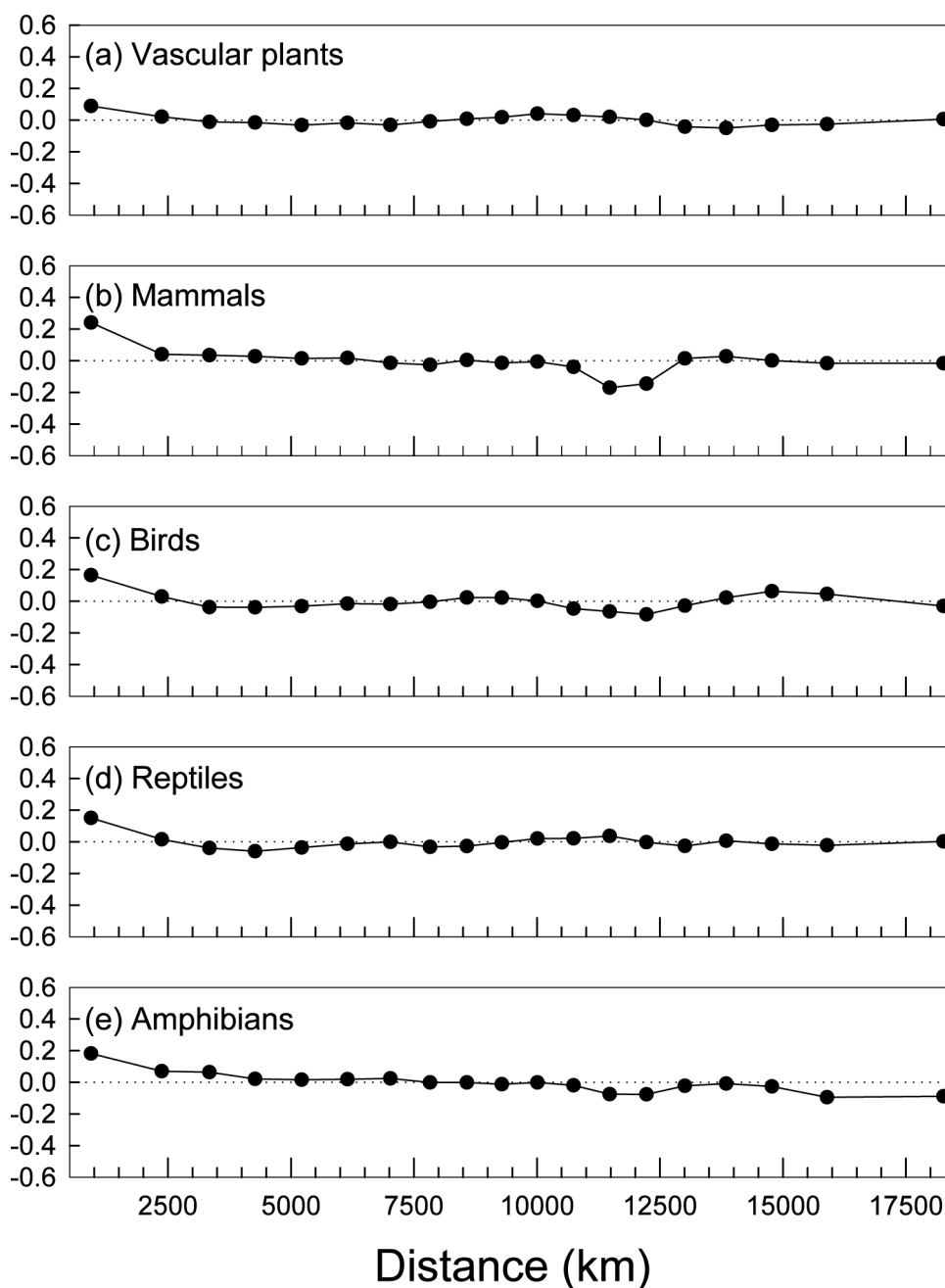


Figure S1. Correlograms for residuals from the global ordinary least squares (OLS) regression models reported in Table 1.

Table S1. t-tests results (p-values) for comparisons of mean values of residuals of global SAR regressions between pairs of biogeographic realms (as in Fig. S1). Explanatory variables included in each regression are the same as in its OLS counterpart regression presented in Table 1. Total explained variation by explanatory variables and space was 55.8% for vascular plants (P), 44.3% for mammals (M), 56.5% for birds (B), 73.3% for reptiles (R), and 62.7% for amphibians (A).

Biogeographic realm	Taxon	Biogeographic realm					
		NA	PAe	PAw	NT	AA	IM
PAe	P	0.105					
	M	0.802					
	B	<0.001					
	R	0.142					
	A	0.024					
PAw	P	0.167	0.013				
	M	0.506	0.715				
	B	0.170	<0.001				
	R	0.116	0.864				
	A	0.018	0.960				
NT	P	0.970	0.208	0.305			
	M	0.609	0.513	0.302			
	B	0.112	<0.001	0.845			
	R	0.396	0.584	0.632			
	A	0.053	0.001	<0.001			
AA	P	0.031	0.554	0.005	0.097		
	M	<0.001	<0.001	<0.001	<0.001		
	B	0.004	<0.001	<0.001	<0.001		
	R	0.001	0.019	0.002	0.010		
	A	0.107	0.997	0.975	0.007		
IM	P	0.058	0.747	0.007	0.120	0.783	
	M	0.733	0.953	0.736	0.454	<0.001	
	B	0.303	<0.001	0.701	0.567	<0.001	
	R	0.235	0.019	0.009	0.061	<0.001	
	A	<0.001	0.001	<0.001	<0.001	0.010	
AT	P	0.014	0.347	0.002	0.032	0.749	0.529
	M	0.001	0.005	0.021	0.002	<0.001	0.003
	B	0.004	0.004	0.125	0.165	<0.001	0.054
	R	0.863	0.152	0.116	0.482	<0.001	0.169
	A	0.148	0.688	0.643	0.005	0.759	0.001

1) Bold: differences in mean residuals between two biogeographic realms under comparison are significant at $\alpha = 0.05$.

2) Biogeographic realms: NA = Nearctic, PAe = eastern Palaearctic, PAw = western Palaearctic, NT = Neotropics, AA = Australasia, IM = Indo-Malaya, AT = Afrotropics.

3) Taxa: P = vascular plants, M = mammals, B = birds, R = reptiles, A = amphibians.

Table S2. A summary of the results presented in Table 5. Values are the numbers of pairwise comparisons according to four categories (A through D, see below for description), and the sum of the four categories in each pair of taxa is 18 (i.e. all possible pairs of the seven biogeographic realms, see Table 5 for details).

Taxon	Plant	Mammal	Bird	Reptile
Mammal	A = 8 B = 7 C = 2 D = 1			
Bird	A = 6 B = 7 C = 5 D = 0	A = 11 B = 2 C = 5 D = 0		
Reptile	A = 9 B = 2 C = 7 D = 0	A = 3 B = 9 C = 5 D = 1	A = 4 B = 7 C = 6 D = 1	
Amphibian	A = 11 B = 3 C = 3 D = 1	A = 8 B = 6 C = 3 D = 1	A = 5 B = 7 C = 6 D = 0	A = 8 B = 3 C = 6 D = 1

Note: A = significant effect in the same directions (i.e. both over- or under-predicted), B = significant effect in opposite directions (i.e. one over-predicted and the other under-predicted), C = effect significant in one case and not significant in the other case, and D = effect not significant in both cases.

Table S3. Mean, standard deviation (SD), and t-test results (p-values) for residuals of a multiple regression ($R^2 = 0.666$) for vascular plants using a set of ecoregions ($n = 292$) whose plant richness data are in good and moderate quality. The p-values resulted from t-tests comparing the mean residuals of biogeographic realms with the mean of all the residuals of the regression. Explanatory variables included in the regression were shown in Table 1 for plants.

	Biogeographic realm						
	NA	PAe	PAw	NT	AA	IM	AT
No. of samples	104	26	41	55	19	19	28
Mean residual	-0.021	0.061	0.073	-0.055	-0.004	-0.017	0.035
SD of residuals	0.139	0.222	0.194	0.238	0.238	0.200	0.244
p-value	0.135	0.172	0.021	0.093	0.942	0.717	0.459