



Web Appendix 2: Coding Description of Variables (1/9)

Type	Variable Category	Col. in AED	Coded Variable Levels	Variables in Meta-Regression ¹ <small>(coded variable levels are partially collapsed)</small>	Coding	Coding Description	Precedence ²	Hypothesis
Current-period/ Long-term	Elasticity type	P-AB	1. Short-term 2. Current-period 3. Long-term	[Base: Current-period] Long-term	1=true 0=not true	Indicates whether a coded elasticity is a short-term, current-period, or long-term elasticity. Elasticities are coded at the most disaggregated level, i.e., when a study reports elasticities at an aggregated, higher hierarchical level but also at a more disaggregated, lower hierarchical level nested within the former level, only the elasticities derived at the disaggregated level are included in the AED to avoid double-counting.	-	-
	Advertising Determinants	AD-AK	1. TV 2. Print 3. Direct mail 4. Aggregate advertising	[Base: TV] Print and direct mail Aggregate advertising	1=true 0=not true	Indicates whether the advertising medium the elasticity relates to is predominantly TV, print, or direct mail. When advertising data comprise more than one type of advertising on an aggregate level or no information about the type of advertising is stated, it is classified as aggregate advertising.	AFL, KBLW, STB	H _{1a} : Aggregate advertising < TV H _{1b} : Print and direct mail < TV
Product Determinants	Product type	AM-AX	1. Drugs 2. Durables 3. Entertainment media 4. Food 5. Non-food 6. n.a.	[Base: Non-food and other] Drugs Durables Entertainment media Food	1=true 0=not true	The AED captures the type of product for which the advertising elasticity is reported. Product categories are: Drugs, durables, entertainment media (e.g., movies or video games but no hardware), food, and other non-food products. When no product type is stated, it is coded as n.a.	AFL, BHP, STB, T	H _{2a} : Hedonic and experience goods > Non-food and other goods H _{2b} : Durables > Non-food and other goods
	Stage in product life cycle	AY-BA	1. New product 2. Established product	[Base: Established] New	1=true 0=not true	New products have recently been introduced to the market, i.e., they are at a very early growth stage of the product life cycle. Established products are at the maturity or saturation stage. If a product has not been clearly marked as being new, the product is by default coded as an established product.	AF, AFL, AMS, BHP, KBLW, LAKLLRS, STB, T	H ₃ : New > Established
	Region	BB-BK	1. Europe 2. USA/Canada 3. America (excl. USA/Canada) 4. Asia 5. Africa 6. Oceania 7. n.a.	[Base: USA/Canada] Rest of World	1=true 0=not true	We code a region variable that indicates on which continent the data were collected. That is, it is noted whether a study is based on data from Europe, the USA or Canada, America (excluding USA and Canada), Asia, Africa, Oceania, or whether the region is not indicated in the study.	AF, AFL, AMS, BHP, KBLW, STB, T	H ₄ : Rest of world < USA/Canada



Web Appendix 2: Coding Description of Variables (2/9)

Type	Variable Category	Col. in AED	Coded Variable Levels	Variables in Meta-Regression ¹ <small>(coded variable levels are partially collapsed)</small>	Coding	Coding Description	Precedence ²	Hypothesis
Data Determinants	Data source	BL-BN	1. Internal 2. External	-	1=true 0=not true	Captures the source of the data, i.e., by what kind of source the data were provided. We define data as being internal when it is explicitly stated that the analyzed firm provided the data or, by definition, when only one firm/brand is analyzed in a paper. In contrast, if more than one firm/brand is investigated, or when data are made available by a market research company, the data source is coded as external.	BHP, KBLW, T	-
	Reference frame	BO-BT	1. Cross-sectional 2. Longitudinal 3. Panel	[Base: Cross-sectional and panel data] Longitudinal	1=true 0=not true	Indicates whether the data used in the empirical studies are (1) cross-sectional, (2) longitudinal, or (3) both at the same time (i.e., panel). (1) Cross-sectional data are collected by observing many subjects at the same point in time, i.e., without regard to changes over time, thereby capturing level effects. In contrast, (2) longitudinal data are obtained by repeatedly observing the same subject over time, thereby capturing dynamic effects. (3) Panel data have both a longitudinal and a cross-sectional dimension, i.e., they allow for analyzing multiple subjects across time. If a firm/brand operates in several regions that are analyzed (e.g., sales areas or countries), the data are regarded as panel data. If a study employs data on more than one product category that are analyzed separately, the reference frame is coded separately for each of the categories (e.g., Metwally (1980), who analyzes eight product categories with one product each, so eight longitudinal data sets are coded).	AFL, AMS, KBLW, T	-
	Temporal aggregation	BU	Number of periods	-	No. of periods	Records the number of time periods that have been used for estimation in the empirical studies (excluding periods for lagged variables or holdout predictions if stated explicitly in the paper).	-	-



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Type	Variable Category	Col. in AED	Coded Variable Levels	Variables in Meta-Regression ¹ <small>(coded variable levels are partially collapsed)</small>	Coding	Coding Description	Precedence ²	Hypothesis
Data Determinants	Temporal aggregation	BV-CF	1. Daily 2. Weekly 3. Monthly 4. Bimonthly 5. Quarterly 6. Yearly 7. n.a.	[Base: Up to one month] Bimonthly and quarterly Yearly and other	1=true 0=not true	Captures differences in data measurement intervals, i.e., at what temporal level the analyzed data have been aggregated.	AF, AFL, AMS, BHP, STB, T	H _{5a} : Yearly > Up to 1 month H _{5b} : Bimonthly and quarterly > Up to 1 month
	Mean year of data collection	CG-CQ	1. First year of data collection period 2. Last year of data collection period	Mean-centered mean year of data collection	Mean centered variable	The AED records the first, last, and mean year of data collection (incl. periods used for lagged variables or holdout predictions). Based on our database's average difference between the mean year of data collection and year of publication, missing values for the mean year of data collection were imputed before the variable was mean centered (cf. AED columns CM-CQ).	AF, AMS, BHP, KBLW, STB	H ₆ : The more recent the analyzed data, the smaller the elasticity.
	Spatial dimension	CR-CW	1. International 2. National 3. Regional	-	1=true 0=not true	Captures whether the dependent variable is observed at the international level (e.g., sales in the US <i>and</i> Canada, Palda 1965), the national, or the regional level (e.g., Chicago area, Danahe, Bonfrer, and Dhar 2008). If the paper does not provide information about the spatial unit, it is coded as national by default.	-	-
	Dependent measure	CX-CZ	1. Absolute 2. Relative	[Base: Relative] Absolute	1=true 0=not true	The dependent measure in the empirical studies' models is given in either absolute or relative terms. The AED contains whether the dependent measure used is specified in absolute (e.g., physical or monetary units) or relative terms (e.g., market share, choice, or attraction models).	AF, AFL, AMS, BHP, KBLW, STB, T	H ₇ : Absolute > Relative
	Advertising measure	DA-DD	1. Absolute 2. GRP 3. Relative	[Base: Absolute] GRP Relative	1=true 0=not true	Captures whether advertising is measured in (1) absolute terms, (2) gross rating points (GRP), or (3) relative terms. (1) Absolute advertising data is given in monetary or "physical" (e.g., number of campaigns) units. (2) GRP are used to measure the size of an audience reached by a specific medium. One GRP is defined as being one percent of a target audience (reach) given one exposure. (3) Examples of relative advertising measures are a brand's advertising share or a firm's advertising efforts divided by the advertising efforts of all of its competitors.	AF, STB	H _{8a} : GRP > Absolute H _{8b} : Relative < Absolute



Web Appendix 2: Coding Description of Variables (4/9)

Type	Variable Category	Col. in AED	Coded Variable Levels	Variables in Meta-Regression ¹ <small>(coded variable levels are partially collapsed)</small>	Coding	Coding Description	Precedence ²	Hypothesis
Carryover Effects	Lagged dependent variable	DE-DH	1. Omitted 2. Included [Coefficient]	[Base: Included] Omitted	1=true 0=not true	Indicates whether a lagged dependent variable is used as an explanatory variable in the empirical study's model to account for dynamic effects. If it is given, the estimate of its coefficient is also noted.	AF, AFL, AMS, BHP, KBLW, STB, T	H ₉ : Lagged dependent variable omit. > Lagged dependent variable incl.
	Lagged advertising variable	DI-DK	1. Omitted 2. Included	[Base: Lagged/stock advertising included] Lagged/stock advertising omitted <i>[Lagged and stock advertising variables are collapsed to one meta-regression variable.]</i>	1=true 0=not true	Indicates whether lagged advertising variable(s) are included in the empirical study's model. If the model only includes lagged but no current-period advertising, we assume this reflects the specifics of the product or the data (Moriarty (1975: 145), for instance, uses lagged advertising because the sales volume is reported in shipments <i>to</i> rather than sales <i>of</i> retail outlets). As a result, we code the elasticity of the most recent advertising variable as the current-period advertising elasticity.	AMS, STB	H ₁₀ : Lagged/ stock advertising omit. > Lagged/ stock advertising incl.
	Advertising stock variable	DL-DO	1. Omitted 2. Included [Coefficient]		1=true 0=not true	Captures whether an advertising stock variable is employed in the model to account for carryover or delayed response effects. When reported in the empirical study, the estimate of the carryover (sometimes referred to as retention rate) is also noted.	AFL, KBLW	
Marketing Determinants	Lagged price	DR-DT	1. Omitted 2. Included	-	1=true 0=not true	Captures whether a lagged price is used as an explanatory variable in the empirical model to account for the effects of price setting in previous periods on the current response.	AMS, STB	-
	Price	DU-DW	1. Omitted 2. Included	[Base: Included] Omitted	1=true 0=not true	Captures whether price is used as an explanatory variable in the empirical model to account for the current effects of price on response.	AF, AFL, AMS, BHP, KBLW, STB, T	H ₁₁ : Price omit. < Price incl.



Web Appendix 2: Coding Description of Variables (5/9)

Type	Variable Category	Col. in AED	Coded Variable Levels	Variables in Meta-Regression ¹ <small>(coded variable levels are partially collapsed)</small>	Coding	Coding Description	Precedence ²	Hypothesis
Marketing Determinants	Quality	DX-DZ	1. Omitted 2. Included	[Base: Included] Omitted	1=true 0=not true	Captures whether quality is used as an explanatory variable in the empirical model to account for the effects of quality on response. Quality refers to product quality, not to the quality of advertising (such as advertising campaign quality, Lambin 1976: 221).	STB	H ₁₂ : Quality omit. < Quality incl.
	Promotion	EA-EC	1. Omitted 2. Included	-	1=true 0=not true	Captures whether promotion (e.g., displays) is used as an explanatory variable in the empirical model to account for the effects of promotion on response. Variables that refer to a “deal” indicate promotion activities (cf., e.g., Johansson 1973, Frank and Massy 1967).	AF, AMS, AFL, BHP, KBLW, STB, T	-
	Personal selling	ED-EF	1. Omitted 2. Included	-	1=true 0=not true	Captures whether sales force data (e.g., detailing in the pharmaceutical industry) are used as an explanatory variable in the empirical model to account for the effects of personal selling on response.	AMS	-
	Distribution	EG-EI	1. Omitted 2. Included	-	1=true 0=not true	Captures whether distribution (e.g., number of distributors or sales outlets) is used as an explanatory variable in the empirical model to account for the effects of distribution on response.	STB	-
	Additional advertising media used	EJ-ER	1. TV 2. Print 3. Direct mail 4. Aggregate advertising 5. None	-	1=true 0=not true	Indicates whether, in addition to the advertising medium the elasticity relates to (cf. row 3 “advertising medium”), any further advertising medium is considered in the empirical model. For example, if data on both TV and print advertising are included in a model via separate variables (as in the case of Hsu and Liu 2004), and TV is coded as the “advertising medium the elasticity relates to” category, then print is coded as “included” in the “additional advertising media” category (and vice versa).	-	-



Web Appendix 2: Coding Description of Variables (6/9)

Type	Variable Category	Col. in AED	Coded Variable Levels	Variables in Meta-Regression ¹ <small>(coded variable levels are partially collapsed)</small>	Coding	Coding Description	Precedence ²	Hypothesis
Market-related Determinants	Time trend	ES-EU	1.Omitted 2.Included	-	1=true 0=not true	Captures whether a trend variable is used in the empirical model (e.g., via dummies or a period-related variable). When a sequence of time intervals is investigated separately, the time trend is also coded as included.	AF, KBLW	-
	Seasonality	EV-EX	1.Omitted 2.Included	-	1=true 0=not true	Captures whether it is accounted for the effects of seasonality on response in the empirical model, e.g., via seasonal dummies or a temperature variable.	AFL	-
	Income	EY-FA	1.Omitted 2.Included	-	1=true 0=not true	Captures whether it is accounted for the effects of purchasing power on response in the empirical model.	BHP	-
	Production costs	FB-FD	1.Omitted 2.Included	-	1=true 0=not true	Captures whether it is accounted for the effects of costs (e.g., production costs of a movie) on response in the empirical model. Costs not related to the production of the good (e.g., costs of living) are not captured by this variable.	-	-
	Total industry sales	FE-FG	1.Omitted 2.Included	-	1=true 0=not true	Captures whether total industry sales are used as an explanatory variable in the empirical model, be it in absolute (e.g., Cowling and Cubbin 1971) or relative terms (e.g., Metwally 1975).	-	-
	Competition	FH-FK	1.Omitted 2.Included	[Base: Included] Omitted	1=true 0=not true	Captures whether it is accounted for the effects of competition on response in the empirical model. These effects can be modeled in various ways such as employing relative measures, data on competitors' market behavior, or the pure number of competitors.	DBD, KBLW, PG	H ₁₃ : Competition omit. > Competition incl.
	No. of further variables	FL-FM	Number of further variables	-	No. of further variables	Captures the number of all other variables that are considered in the model and do not fit into the aforementioned categories (e.g., brand loyalty, new variety activity, movie genre, performance expectations). For each study, a brief description of the additional variables is given.	-	-



Web Appendix 2: Coding Description of Variables (7/9)

Type	Variable Category	Col. in AED	Coded Variable Levels	Variables in Meta-Regression ¹ <small>(coded variable levels are partially collapsed)</small>	Coding	Coding Description	Precedence ²	Hypothesis
Interaction Effects in Empirical Studies	Advertising interaction effects	FN-FQ	1. Omitted 2. Included	[Base: Interaction effects included] Interaction effects omitted	1=true 0=not true	Captures whether interaction effects between advertising and other variables are considered in the empirical model. For the purpose of this meta-analysis, only response interaction is considered, whereas decision interaction, which is present in multiplicative models, is not.	AMS	H ₁₄ : Interaction effects omit. < Interaction effects incl.
	Other interaction effects	FR-FT	1. Omitted 2. Included	<i>[Advertising and other interaction effects are collapsed to one meta-regression variable.]</i>	1=true 0=not true	Captures whether other (i.e., excluding advertising) effects are considered in the empirical model, such as those of remaining marketing mix elements (e.g., Bridges, Briesch, and Shu 2008). For the purpose of this meta-analysis, only response interaction is considered, whereas decision interaction which is present in multiplicative models is not.	AMS	
Estimation Determinants	Intercept	FW-FX	1. Omitted 2. Included	[Base: Included] Omitted	1=true 0=not true	Indicates whether an intercept is included in the model of the empirical study.	-	-
	Functional form	FY-GH	1. Share 2. Double-log 3. Semi-log 4. Linear 5. Other	[Base: Double-log] Share Linear Semi-log and other	1=true 0=not true	With respect to the functional form of an empirical model, four alternative types are coded: share, double-log, semi-log (right-hand side logged), and linear. In case none of these types applies, the model falls into the category other. Note that when the percentage value of market share is modeled by, e.g., a double-log or linear function, it falls into the categories double-log or linear. In contrast, the category share is appropriate for fraction formulations used in, e.g., attraction models.	AFL, AMS, BHP, KBLW, STB, T	-
	Estimation method	GI-GZ	1. OLS 2. WLS 3. NLS 4. GLS 5. 2SLS 6. 3SLS 7. ML 8. 2SML 9. SimML 10. GMM 11. Bayes 12. Other 13. n.a.	[Base: OLS] LS – all except OLS ML Other		Captures whether the estimation method used is Ordinary Least Squares (OLS), Weighted Least Squares (WLS), Non Linear Least Squares (NLS), (Feasible) Generalized Least Squares (GLS), Two-Stage Least Squares (2SLS), Three-Stage Least Squares (3SLS), Maximum Likelihood (ML), Two-Step Maximum Likelihood (2SML), Simulated Maximum Likelihood (SimML), Generalized Method of Moments (GMM), Bayes, or Other. In case no information is stated, the estimation method is coded as n.a. The methods GLS, 2SLS, 3SLS, and Bayes include studies employing SUR approaches. If, except from SUR, no additional information is given, GLS is coded by default.	AF, AFL, AMS, BHP, KBLW, STB, T	-



Web Appendix 2: Coding Description of Variables (8/9)

Type	Variable Category	Col. in AED	Coded Variable Levels	Variables in Meta-Regression ¹ <small>(coded variable levels are partially collapsed)</small>	Coding	Coding Description	Precedence ²	Hypothesis
Estimation Determinants	Endogeneity	HA-HC	1. Not accounted for 2. Accounted for	[Base: Accounted for] Not accounted for	1=true 0=not true	Captures whether it is accounted for endogeneity in the empirical model, e.g., via instrumental variables or 3SLS estimation.	AMS, BHP, KBLW, STB	H ₁₅ : Endogeneity not accounted for < Endogeneity accounted for
	Heterogeneity	HD-HI	1. Not accounted for 2. Accounted for via heterogeneous constants 3. Accounted for via heterogeneous advertising coefficients	[Base: Accounted for via heterogeneous advertising coefficients] Not accounted for via heterogeneous advertising coefficients	1=true 0=not true	Captures whether it is accounted for heterogeneity in the empirical model. For the purpose of this meta-analysis, it is coded whether heterogeneity is modeled via heterogeneous constants or heterogeneous advertising coefficients (e.g., brand-, segment-, or consumer-specific). For example, heterogeneity in the intercept (advertising coefficient) is coded as included if an elasticity for more than one brand is derived based on a model with a brand-specific intercept (advertising coefficient). In contrast, whenever several product categories (with one product within each of them) are analyzed separately, heterogeneity is coded as omitted because individual elasticities are derived for each of the products while not accounting for further heterogeneity (e.g., Metwally 1980). Unobserved heterogeneity modeled via random effects is not considered.	AMS, BHP, STB	-
Publication Determinants	Publication type	HJ-HP	1. Journal 2. Book 3. Conference proceedings 4. Working paper	[Base: Published] Unpublished	1=true 0=not true	Captures whether the paper has appeared in an academic journal, in a published book, in conference proceedings, or is an unpublished working paper. For the meta-regression, journals and books are collapsed to “published” whereas proceedings and working papers are collapsed to “unpublished”.	AMS, BHP, KBLW, STB	H ₁₆ : Unpublished < Published
	Marketing-related outlet	HQ-HS	1. Yes 2. No	[Base: Marketing-related] Non-marketing related	1=true 0=not true	Captures whether the outlet of the published work is related to marketing. We define books as being related to marketing when the title indicates a marketing topic or the book is published in a marketing book series. If the work is not yet published, the affiliation of the main author is decisive.	AMS, KBLW	H ₁₇ : Non-marketing related < Marketing-related



Web Appendix 2: Coding Description of Variables (9/9)

Type	Variable Category	Col. in AED	Coded Variable Levels	Variables in Meta-Regression ¹ <small>(coded variable levels are partially collapsed)</small>	Coding	Coding Description	Precedence ²	Hypothesis
Publication Determinants	Outlet ranking	HT-HU	1. PFI ranking 2. IPI ranking	PFI ranking	Continuous variable [0.01; 1.00], [2.78; 9.00]	Captures whether the empirical study is published in an outlet that has high reputation which is operationalized by its ranking value. For the purpose of this study, the “Popularity and Familiarity Index” (PFI) and the “Importance and Prestige Index” (IPI) by Hult, Reimann, and Schilke (2009) are employed. These rank journals on the intervals [0.01; 1.00] and [2.78; 8.47], respectively, depending on their appearance among the top 10 international journals. Higher PFI (lower IPI) values indicate higher reputation. Missing values are imputed based on the Science Citation Index. Remaining outlets are assigned a PFI (IPI) value of 0.01 (9.0), which is slightly lower (higher) than the respective minimal ranking value for outlets included in this study.	-	H ₁₈ : The higher the ranking value, the lower the elasticity.
	Advertising effectiveness focus	HV-HX	1. Yes 2. No	[Base: Advertising effectiveness focus] No advertising effectiveness focus	1=true 0=not true	Captures whether the empirical study focuses on an advertising effectiveness topic. This is, by definition, the case whenever the title or abstract deals with advertising and its effects on response.	KBLW	H ₁₉ : No advertising effectiveness focus < Advertising effectiveness focus

¹ Some coded variable levels are collapsed for inclusion in the meta-regression. Variables not included in the meta-regression are indicated by “-”.

² AF = Andrews and Franke 1991, AFL = Assmus, Farley, and Lehmann 1984, AMS = Albers, Mantrala, and Sridhar 2010, BHP = Bijmolt, Van Heerde, and Pieters 2005, DBD = Danaher, Bonfrer, and Dhar 2008, KBLW = Kremer, Bijmolt, Leeflang, and Wieringa 2008, LAKLLRS = Lodish, Abraham, Kalmenson, Livelsberger, Lubetkin, Richardson, and Stevens 1995, PG = Parker and Gatignon 1996, T = Tellis 1988.