The Role of National Culture in Advertising's Sensitivity to Business Cycles: An Investigation across All Continents

Barbara Deleersnyder, Marnik G. Dekimpe, Jan-Benedict E.M. Steenkamp and Peter S.H. Leeflang

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Email address corresponding author	bdeleersnyder@rsm.nl
Address	Erasmus Research Institute of Management (ERIM) RSM Erasmus University / Erasmus School of Economics Erasmus Universiteit Rotterdam P.O.Box 1738 3000 DR Rotterdam, The Netherlands Phone: + 31 10 408 1182 Fax: + 31 10 408 9640 Email: info@erim.eur.nl Internet: www.erim.eur.nl

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ABSTRACT AND KEYWORDS	
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Barbara Deleersnyder

Marnik G. Dekimpe

Jan-Benedict E.M. Steenkamp

Peter S.H. Leeflang

Barbara Deleersnyder is Assistant Professor of Marketing, RSM Erasmus University (E-mail: BDeleersnyder@rsm.nl). Marnik G. Dekimpe is Research Professor of Marketing & CentER Fellow at Tilburg University, and Professor of Marketing at the Catholic University Leuven (E-Mail: m.g.dekimpe@uvt.nl). Jan-Benedict E.M. Steenkamp is C. Knox Massey Distinguished Professor of Marketing and Marketing Area Chair, Kenan-Flagler Business School, University of North Carolina at Chapel Hill (E-mail: JBS@unc.edu). Peter S.H. Leeflang is The Frank M. Bass Professor of Marketing, University of Groningen (E-mail: p.s.h.leeflang@rug.nl).

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Abstract

Cutting advertising budgets has traditionally been a popular reaction by companies around the globe when faced with a slacking economy. Still, anecdotal evidence suggests the presence of considerable cross-country variability in the cyclical sensitivity of advertising expenditures. We conduct a systematic investigation into the cyclical sensitivity of advertising expenditures in 37 countries across all continents, covering up to 25 years and four key media: magazines, newspapers, radio and television.

While our findings confirm that advertising moves in the same direction as the general economic activity, we also show that advertising is considerably more sensitive to business-cycle fluctuations than the economy as a whole, with an average co-movement elasticity of 1.4. Interestingly, advertising's cyclical dependence is systematically related to the cultural context in which companies operate. Advertising behaves less cyclically in countries high on long-term orientation and power distance, while advertising is more cyclical in countries high on uncertainty avoidance. Further, advertising is more sensitive to the business cycle in countries characterized by significant stock-market pressure and few foreign-owned multinationals. These results have important strategic implications for both global advertisers and their ad agencies.

Key words: Advertising, business cycle, time-series econometrics, cross-country comparison, national culture.

Advertising is arguably the most visible and one of the most important marketing instruments. While there exists an impressive body of research on advertising at the micro (company) level (Vakratsas and Ambler 1999; Tellis 2004), much less is known about advertising at the macro (country) level. However, conventional wisdom holds that advertising is among the marketing instruments most affected by general economic conditions. Every time the economy enters a downturn, advertising budgets seem to be among the first to be cut (Dobbs, Karakolev, and Malige 2002). A widespread reduction in advertising activity by many companies during a recession translates into a considerable drop in a country's aggregate advertising spending. In the recession year 2001, for instance, U.S. ad spending fell by 9.4%, the biggest decline since 1938. On the other hand, when the economy goes up, advertising expenditure is thought to accelerate. To illustrate, in the expansion year 2004, growth in advertising spending in the U.K. was close to 5% (World Advertising Research Center 2005).

Although much of the received wisdom is anecdotal, some academic studies have appeared that examine the impact of macro-economic fluctuations (typically captured through changes in a country's real GDP) on aggregate advertising spending. A first stream of research has linked the growth rate in advertising with the growth rate of the economy by first differencing the time series (Ashley, Granger, and Schmalensee 1980; Didow and Franke 1984; Jacobson and Nicosia 1981). However, the first-difference operator emphasizes *short-run* fluctuations in economic series (Baxter 1994). Other studies have looked for a *long-run* equilibrium relationship between aggregate advertising and the economy through cointegration testing (Chowdhury 1994; Jung and Seldon 1995; Seldon and Jung 1995). Cointegration models test for common stochastic trends in the series, and are especially relevant to quantify a long-term equilibrium relationship among the variables (Powers et al. 1991).

These studies have provided valuable insights into advertising's sensitivity to macro-economic factors. However, they suffer from several limitations that constitute the impetus for the present study. First, since business cycles typically last between 1.5 and 8 years (Christiano and Fitzgerald 1998), neither first-differencing studies nor cointegration studies are well suited to study the *business-cycle* relationship of advertising, where fluctuations occur at a pace somewhere in between that of the short and the long run. This concern is exacerbated by recent work showing that the extent of association between time series may differ depending on the periodicity of the data one focuses on (Bronnenberg, Mela, and Boulding 2006; Lemmens, Croux, and Dekimpe 2007).

A second limitation is the length of the time series in prior marketing research with a business-cycle lens. Given the length of business cycles, data are needed that span several decennia to avoid drawing inferences driven by the idiosyncrasies of a specific expansion or recession period. For example, Lamey et al. (2007) illustrate the cyclical sensitivity of advertising spending by comparing, for 10 top brands in the U.K., the yearly average growth in the expansion period 1997-1998 with the contraction period 2001-2002. It is not clear whether the observed patterns are idiosyncratic to that period and/or country.

Third, previous research is limited in its geographical scope, having typically focused on either the U.S. (Didow and Franke 1984; Jung and Seldon 1995) or the U.K. (Chowdhury 1994; Turner 2000). Although these are important advertising markets, it is not obvious that results obtained for these economies are universally applicable, given growing evidence that managerial decision making processes are often affected by the cultural context in which managers operate (Hofstede 2001; Schneider and Barsoux 2002; Trompenaars and Hampden-Turner 1998). As stated succinctly by Hofstede (1994, p. 4): "... the culture of the human environment in which an organization operates affects the management processes." This

raises the question whether particular cultural settings encourage companies to react more or less strongly to changes in the economy.

Insight into the extent of cyclical sensitivity of advertising in a given country would allow companies to benchmark their own spending fluctuations. Many firms aim to maintain their share-of-voice (Danaher and Rust 1994), yet feel the urge to cut advertising in difficult times. Knowing the overall reduction to be expected in different countries can help to balance both objectives. When deciding on the allocation of one's advertising budget, global players (as the ones listed in Table 1) will benefit from knowing the overall spending evolution in a given country.

--- Insert Table 1 about here ---

A fourth limitation is that most prior macro-advertising studies only examined total advertising (see e.g., Chowdhury 1994; Quarles and Jeffres 1983). As discussed in Blank (1962) and Didow and Franke (1984), not all media may be equally affected by economic expansions and contractions, calling for a more disaggregate analysis. Other studies, in contrast, considered only one or two medium; for example, television and press in Turner (2000), newspapers in Roark and Stone (1994), and magazines in Ostheimer (1980).

Our study addresses these limitations by studying advertising's sensitivity to business cycles (i) using filtering techniques specifically developed to study business-cycle fluctuations, as distinct from short-run associations and long-run equilibria, (ii) over a time span of about two decades, allowing for multiple business cycles to occur, (iii) across 37 countries, from all continents, accounting for about 5 out of every 6 advertising dollars spent worldwide (World Advertising Research Center 2005), and (iv) for four key media separately - magazines, newspapers, radio, and television. The broad sample of country and media combinations across multiple expansion and contraction periods allows us to derive empirical generalizations on the cyclical sensitivity of advertising, and to test various hypotheses on

drivers of the cross-country variability. This enables a better understanding of the phenomenon.

FRAMEWORK AND HYPOTHESES

Cyclical Sensitivity of Advertising Expenditures

Informal observation of firm behavior suggests that in times of economic adversity, many firms cut back on their advertising expenditures. At the macro level, aggregated across all firms active in a country, this is reflected in pro-cyclical advertising expenditures, moving in the same direction as the aggregate business cycle. When sales are declining, managers feel a strong need to produce results fast. After all, they tend to be compensated for meeting (short-run) sales targets (Abraham and Lodish 1993). Due to the lower instantaneous return from advertising versus promotions, managers often *reallocate* their budgets towards promotions (Mela, Jedidi, and Bowman 1998). Moreover, the number of firms that advertise goes down during contraction periods due to an increased number of bankruptcies and reorganizations (Picard and Rimmer 1999). The reverse holds in economic expansions. Managers can then "afford" a longer-term view as sales are expanding, and more new firms enter the marketplace.

While there seems to be a general consensus on the *direction* of advertising changes in relation to business cycle ups and downs, there is much more ambiguity about the *magnitude* of these changes. At first sight, one might argue that advertising expenditures are elastic, since they are more easily ramped up or cut than other company outlays (e.g., R&D or labor). Especially when both the average advertising spending level per firm and the number of firms that advertise is shrinking, we expect an even larger reduction in aggregate advertising expenditures to follow. However, there are indications that inelastic – or even counter-cyclical – advertising is associated with superior firm performance, especially in recessions (Dhalla 1980; Frankenberger and Graham 2003; O'Toole 1991). Further, inelastic

advertising can be used to reduce the volatility of the company's cash flow, which is valued by the financial markets (Srivastava, Shervani, and Fahey 1998). If more firms become guided by these insights, aggregate advertising expenditure should become relatively less (or even in-) elastic with respect to business-cycle fluctuations. Thus far, no study has quantified the actual extent of advertising's cyclical sensitivity.

National Culture and Advertising Decisions

We propose that national culture influences advertising decisions through: (i) managers' view on the role of advertising per se in company strategy, and (ii) the process through which the advertising budget is set.

Advertising as an expense versus advertising as a strategic investment. Two views on advertising are "advertising as expense" and "advertising as investment" (Danaher and Rust 1994; White and Miles 1996). When advertising is treated as an *expense*, it is intended to generate returns in the short run. In this view, advertising is considered a component of a single period's business cost, incurred to lift short-term sales. Hence, when deteriorating demand conditions and unfavorable income prospects make consumers less inclined to buy (especially advertised) brands (Lamey et al. 2007), cutting down on advertising is considered a rational strategy. Viewing advertising as a business expense makes it a discretionary outlay that can be reduced easily during harsh economic times. Companies can easily postpone advertising activities during an economic contraction, while advertising is increased again when the economy improves.

The alternative view is to treat advertising as an *investment*, to be built up and amortized over the long run. The multi-period effect derived from ad campaigns and the general objective of increasing the stock of an organization's intangible assets are congruent with a treatment of advertising as an investment in solid future performance (White and Miles 1996). To build advertising goodwill, advertising effort must be continued for a protracted period of time in

order to change consumers' brand attitude and behavior (Aaker and Biel 1993). The outlook of positive future cash flows makes advertising decisions less dependent on the temporary uncertainty surrounding a recession. Consequently, we expect less cyclical dependence when advertising is viewed as investment than when it is viewed as an expense.

The advertising decision process. Despite the increasing trend towards sophisticated advertising models and the growing realism of quantitative techniques for setting and allocating advertising budgets (e.g. Bass et al. 2007; Vakratsas and Naik 2007), firms' advertising decisions remain subject to social influences (Low and Mohr 1999). "Information Cascades" theory builds on the notion of social processes to explain why managers often mimic the opinion and behavior of others (even if they are mistaken), rather than conducting de facto a careful, independent evaluation of alternatives when making decisions (Bikhchandani, Hirshleifer, and Welch 1992). This theory shows that *herding behavior*, where individuals rely on signals and information conveyed by the behavior of others, can be rational when gathering information is costly. Herding behavior and strong social influences could lead managers to imitate the advertising behavior they observe from or expect of (due to over-time experience) their competitors during contraction and expansion periods (Saunders et al. 2000). However, the limited amount of original information underlying cascades makes them fragile, and advertising adjustments triggered by herding behavior is expected to be more volatile than adjustments based on managers' own thoughtful evaluation.

In contrast, under conditions of weak social influence, people may dare to challenge the majority position, and raise issues that contradict majority thinking (Tan et al. 1998). Such an environment promotes more strategic advertising decisions that go against the dominant response of adjusting advertising activities in the same direction as the aggregate economy. Note that such a divergent advertising response has been found to result in superior benefits and

performance that extend beyond the recession period (Frankenberger and Graham 2003; Srinivasan, Rangaswamy, and Lilien 2005).

The Effects of National Culture on the Cyclical Sensitivity of Advertising Expenditures

We use the aforementioned two mechanisms to understand how the national culture of a country can systematically moderate advertising's sensitivity to the business cycle. We adopt Hofstede's (2001) well-known framework to operationalize culture. Hofstede identified five cultural dimensions that constitute the fundamental value orientations underlying differences in managerial practices, organizational patterns, and decision making. Four of these dimensions appear to be especially pertinent to understand cross-national variation in advertising sensitivity to business cycles: long-term orientation, power distance, uncertainty avoidance, and individualism/collectivism.[1] Specifically, we expect a basic congruence between long-term orientation and power distance and the strategic view on advertising as a long-term investment, as well as a fundamental congruence between uncertainty avoidance and collectivism and a herding mentality, as summarized in Table 2.

--- Insert Table 2 about here ---

Long-term orientation. Managers in cultures high on *long-term orientation* are relatively more focused on building strong positions in their markets than on short-term profitability. "Persistence" is a key word describing the long-term cultural orientation - persistence in achieving one's goals, more or less irrespective of fluctuations in the environment (Hofstede 2001, p. 360). Advertising is a strategic instrument, much more suited to strengthen long-term brand equity and profits than short-term sales (Danaher and Rust 1994). Managers in long-term-oriented cultures will value advertising's long-term brand building potential relatively more than managers in short-term-oriented cultures. They will be more prone to

[1] For the fifth Hofstede dimension, masculinity/femininity, we have no theoretical arguments to expect any influence. To examine whether this assumption holds true, we also estimated our model including the masculinity/femininity dimension. As expected, no significant effect was found on advertising's cyclical dependence ($p > .10$), while none of the other findings was affected.

regard advertising outlays as an investment in future profits, rather than an expense to be recouped in the short term. Managers in these cultures should therefore be less inclined to let advertising decisions be dictated by fluctuations in the economic environment.

Managers in cultures with a short-term orientation tend to have a rather different view. Economic fluctuations that affect the bottom line demand immediate action that generates quick results. As observed by Hofstede (2001, p. 361): "In short-term-oriented cultures, the "bottom line" (the results of the past month, quarter, year) is a major concern; control systems are focused on it and managers are constantly judged by it." In such cultures, advertising outlays are more likely to be seen as an expense that should be modified as dictated by short-run considerations. We therefore hypothesize:

H1: Advertising expenditure is less sensitive to business-cycle fluctuations in countries with a cultural long-term orientation.

Power distance. Power distance refers to the "extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally" (Hofstede 2001, p. 98). Cultures characterized by high power distance tend to emphasize social class. Social consciousness is high, and consumers are motivated by the need to signal the class to which they belong or to which they aspire (Roth 1995). In our hypersignified society, brands have become major conduits with which to express class differences and social aspirations (Aaker, Benet-Martinez, and Garolera 2001). Advertising is a key instrument to build brand image. Excessive promotional activity, in contrast, causes diluted brand equity due to consumers' higher price consciousness and a lower perceived brand differentiation (Lodish and Mela 2007). In high power distance societies, advertising will be regarded more often as a long-term strategic investment in enduring brand equity, regardless of economic conditions. We therefore hypothesize:

H2: Advertising expenditure is less sensitive to business-cycle fluctuations in countries high on cultural power distance.

Uncertainty avoidance. Uncertainty avoidance refers to the degree to which societies feel threatened by uncertain, risky, ambiguous or undefined situations, and the extent to which they try to avoid such situations by adopting strict codes of behavior. Managers in high uncertainty-avoidance cultures will be more focused on risk avoidance and risk reduction than managers living in countries that are low on uncertainty avoidance (Hofstede 2001). Herding behavior is a well-known strategy to manage uncertain situations (Keil, Reibstein, and Wittink 2001). Just as "one cannot be fired for purchasing IBM," regardless of performance, managers can hardly be blamed if they react in the same way to changing environmental circumstances as others do (Steenkamp et al. 2005). This creates herding behavior, referred to by Saunders et al. (2000) as "Lemmus Lemmus," which exacerbates cyclical swings in advertising during up- and downturns. As such, we postulate:

H3: Advertising expenditure is more sensitive to business-cycle fluctuations in countries high on cultural uncertainty avoidance.

Individualism/collectivism. This dimension pertains to the degree to which people in a country prefer to act as individuals rather than as members of a group. Collectivistic societies are other-focused, emphasizing harmony, group decision making, solidarity, communal sharing, and conformity (Kagitcibasi 1997). Cooperative effort and group consensus are highly valued (Kim et al. 1996). Given the greater concern for the feelings of group members, herding mentality *to avoid conflicts* is expected to be more important in managerial decision making in collectivistic countries than in individualistic countries. These managers may even draw solace from recent insights on "the wisdom of the crowds" (Surowiecki 2004). We speculate that such herding behavior causes advertising to follow business cycles more closely. This results in the following hypothesis:

H4: Advertising expenditure is more sensitive to business-cycle fluctuations in countries high on cultural collectivism.

Control variables

Although our primary focus is on the influence of national-cultural factors on managers' advertising response to business cycles' ups and downs, we control for several key factors related to a country's economic structure. Listed firms experience strong pressure to fulfill the short-term (quarterly) expectations of the *stock markets*. Consequently, they suffer from short-sightedness ('investment myopia') and (over)emphasize short-term profits (Jacobson and Aaker 1993). During contractions, their managers are more likely to favor promotional activities to maintain their bottom line, while discouraging investments in long-term brand building activities (Mizik and Jacobson 2007). Moreover, the stock market exacerbates firm bankruptcy risk (Jensen and Meckling 1976). All these factors should contribute to making advertising more cyclically dependent in countries where the stock market plays a larger role in economic life.

Part of the total advertising in a country is done by *foreign firms*, which are less dependent on local economic conditions (Hess and Shin 1997). Moreover, our treatment implicitly assumes that advertising decisions are made by managers of the country in question. This makes sense for local companies, but in case of foreign companies, decisions on local advertising budgets may be influenced, if not directed, by foreign headquarters (Carlin, Charlton, and Mayer 2007). Hence, advertising's cyclical dependence may well differ when more foreign-owned multinationals are present.

We also control for the *economic wealth* of a country's citizens. It is customary to control for this variable in country-level analyses as it is an indicator of various economic-institutional factors. It also has a direct impact on the extent to which the population is able to

purchase advertised brands - both during prosperous and adverse economic times - and the extent to which they have access to advertising media.

METHODOLOGY

To test our hypotheses, we proceed in three steps. First, we extract the cyclical component in each series using a business-cycle filter. Next, we quantify the extent to which advertising changes with the state of the economy. In a third step, we examine the cross-country variation in advertising's cyclical dependence, and determine the role of cultural and economic factors in shaping these differences.

Extracting the Business-Cycle Component

We use the well-known Hodrick and Prescott (1997) filter to extract the business-cycle component from each advertising and economic activity series. The HP filter decomposes a time series in (i) a gradually evolving trend component, and (ii) cyclical fluctuations around it. It has been used in several studies documenting various stylized facts on business cycles (e.g. Backus and Kehoe 1992; Holly and Stannett 1995).

To obtain the cyclical component (y_t^c), one first models the trend (y_t^{trend}), which is subsequently removed from the observed series, (y_t):

$$y_t^c = y_t - y_{t,}^{trend} \quad (1)$$

with y_t is the log-transformed advertising or economic activity series at time *t*. The log-transformation ensures that the units of y_t^c, when multiplied by 100, represent percentage deviations from the series' growth path (Stock and Watson 1999). This facilitates the comparison across series. y_t^{trend} in Equation (1) is obtained by minimizing (Holly and Stannett 1995):

$$\sum_{t=1}^{T}(y_t - y_t^{trend})^2 + \lambda\sum_{t=2}^{T-1}((y_{t+1}^{trend} - y_t^{trend}) - (y_t^{trend} - y_{t-1}^{trend}))^2 \quad (2)$$

The first quadratic term in (2) provides a measure of "goodness of fit" for the de-trended component, while the second quadratic term determines the smoothness of the derived trend (Cook and Speight 2005). The solution to (2) implies a trade-off between fit and smoothness, as determined by the parameter λ. The larger the value of λ, the smoother the trend series becomes (Hodrick and Prescott 1997). As extreme cases, one obtains a linear trend ($\lambda = \infty$) or a perfect interpolation (λ =0) (Speight and McMillan 1998). Current empirical practice is to set λ =10 for annual data (Baxter and King 1999).

Even though the HP-filter has been used frequently in prior research, it cannot easily accommodate sudden interventions or structural breaks in the series. Their effect tends to be smoothed along with the traditional HP-trend, and is therefore spread forward and backward (Funke 1998). As a consequence, the standard HP-filter becomes less appropriate when a structural break is likely to be present in the series. This is particularly relevant in our setting, as the introduction of commercial television in several of the countries in our sample during the time period considered may have caused a level and/or trend shift in the series (Kornelis, Dekimpe, and Leeflang 2005). Fortunately, the HP-filter is a special case of a (local linear trend) structural time-series model, whose state-space representation can easily be extended to account for potential structural breaks (Harvey 1989).

Specifically, the standard HP-trend is obtained from the following state-space formulation:

(3a) $$y_t^{trend} = y_{t-1}^{trend} + \delta_{t-1} + \eta_t$$

(3b) $$\delta_t = \delta_{t-1} + \zeta_t$$

where δ_t represents the slope. The normal white-noise disturbances η_t and ζ_t are independent of each other, with σ_η^2 and σ_ζ^2 restricted to, respectively, 0 and 0.10 for annual data series (following Harvey and Jaeger 1993; Speight and McMillan 1998). To correct for a potential break in the underlying trend due to the introduction of commercial television, we augment

(3a) and (3b) with intervention dummy variables (Harvey 2006). Specifically, a pulse dummy w_t (with w_t=1 if t = intervention date, and 0 otherwise) is added to (3a) to allow for a shift in the level of the series, and to (3b) for a change in the growth rate or slope, resulting in:

(4a) $$y_t^{trend} = y_{t-1}^{trend} + \delta_{t-1} + \lambda_1 w_t + \eta_t$$

(4b) $$\delta_t = \delta_{t-1} + \lambda_2 w_t + \zeta_t .$$

The trend component estimated from (4a) and (4b) is then again subtracted from the observed series to arrive at the business-cycle component y_t^c.

Quantifying the Extent of Cyclical Sensitivity: The Co-Movement Elasticity

To quantify the sensitivity of advertising spending to the state of the economy, we derive the *cyclical co-movement*, which measures the extent to which business-cycle fluctuations in the economy as a whole translate into cyclical fluctuations in advertising spending. In line with Deleersnyder et al. (2004) and Lamey et al. (2007), we regress the cyclical component of the advertising series (ADV^c) on the cyclical component in real GDP.[2]

(5) $$ADV_t^c = \beta\ GDP_t^c + \varepsilon_t \qquad \text{with } t = 1,\ldots,T.$$

As both ADV_t^c and GDP_t^c represent percentage deviations, β can be interpreted as an elasticity. Since both series are zero-reverting after filtering, it is not necessary to include an intercept in Equation (5). As the business-cycle filter may induce serial correlation in the data (Engle 1974), we allow for an autoregressive error term when needed (based on the BIC criterion).

The sign of the co-movement elasticity β in Equation (5) indicates whether advertising moves in the same or opposite direction as the economic activity. Its magnitude reflects the

[2] No simultaneous-equation model was estimated. Not only are adequate instruments hard to find, earlier studies (see e.g. Ashley, Granger, and Schmalensee 1980; Quarles and Jeffres 1983) established that the economy drives advertising spending, rather than the other way around.

extent to which fluctuations in the economy get attenuated or amplified in advertising expenditure.

Explaining Cross-Country Differences

A key objective of this study is to explore the cross-country variation in the extent of cyclical sensitivity in advertising expenditures. In the final stage, we pool the estimated co-movement elasticities across all countries (i) and media (j), and regress them on the proposed cultural variables: long-term orientation (LTO_i), power distance (PDI_i), uncertainty avoidance (UAI_i), and collectivism (COL_i).

We control for a country's economic context through the following variables: the importance of the stock market ($STOCKM_i$), the importance of foreign-owned multinational subsidiaries (FOS_i) and economic wealth ($WEALTH_i$). To account for possible differences across media, three dummy variables MD_j^m are included (with MD_j^m =1 if j=m; m=1,2,3 for, respectively, magazines, newspapers, and radio, with television as reference group). To control for unobserved differences between geographical regions, we include five continent-dummy variables CD_i^k with CD_i^k =1 if country i belongs to continent k (k=1,...,5), for distinguishing between countries across each continent in our sample, North America being the reference continent. While these covariates are not the focus of our study, controlling for their effects provides a stronger test of our substantive hypotheses (Greene 2000). This results in the following regression specification:

$$\beta_{ij} = a + \begin{bmatrix} b_1 & b_2 & b_3 & b_4 & b_5 & b_6 & b_7 \end{bmatrix} \begin{bmatrix} LTO_i \\ PDI_i \\ UAI_i \\ COL_i \\ STOCKM_i \\ FOS_i \\ WEALTH_i \end{bmatrix} + \sum_{m=1}^{3} c_m . MD_j^m + \sum_{k=1}^{5} d_k . CD_i^k + \mu_{ij}, \quad (6)$$

As the error terms μ_{ij} may be correlated across media from the same country, the independence assumption of our error terms may be violated. We account for the non-independence between observations obtained from the same country by estimating Equation (6) using Generalized Least Squares (GLS). We tested for heteroskedasticity using the White test, and found it was not an issue (p>0.10).

DATA

Annual advertising data were obtained through the World Advertising Research Center (WARC) and ZenithOptimedia. The data cover over two decades of advertising spending on 4 media (magazines, newspapers, radio and television) in 37 countries. They are obtained through surveys with national agencies, and encompass all paid-for regional and national advertising. The sample includes 16 European countries (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the U.K.), three North-American countries (Canada, Costa Rica, and the U.S.), three South American countries (Argentina, Brazil, and Chile), 12 Asian countries (Hong Kong, India, Japan, Kuwait, Philippines, Saudi Arabia, Singapore, South Korea, Taiwan, Thailand, Turkey, and United Arab Emirates), two countries from Oceania (Australia and New Zealand), and South Africa on the African continent. Collectively, these countries account for 84% of the worldwide ad spending (2004 figures).

For 85 country-media combinations, 25 years of data (i.e., the period 1980-2004) is available, which is considerably longer than in most previous studies on aggregate advertising spending (e.g. Ashley, Granger, and Schmalensee 1980; Didow and Franke 1984). For 33 combinations, we have data for at least 17 years, a time period that is still

sufficiently long to capture multiple economic cycles (Deleersnyder et al. 2004).[3] Finally, for the remaining country-media combinations, no data are available or a particular medium is hardly used in a country (operationalized as a share in national advertising in Table 3 below 5%). Thus, we have 118 country-media combinations for further analysis.

To assess the cyclical sensitivity of the economy as a whole, we use the respective countries' GDP (Source: United Nations' Statistics Division). Fluctuations in aggregate output have been found to be at the core of the business cycle (Stock and Watson 1999). We inflation-adjust both the advertising and GDP series, using each country's Consumer Price Index (Source: United Nations' Statistics Division).

Information on the countries' cultural characteristics is obtained from Hofstede (2001, 2004).[4] The importance of the stock market is measured as the ratio of the stock market capitalization to national GDP, averaged over the years 1990 and 1998 (source: World Development Report 1999/2000 at www.worldbank.org). Data on the relative importance of foreign-owned multinationals in each country were taken from Carlin, Charlton, and Mayer (2007, Table II , Column 5). The data express the percentage of all listed firms in a country that are foreign-owned subsidiaries. Foreign-owned subsidiaries are defined as all firms that have a parent in another country which owns more than 50% of the subsidiary's equity. Economic wealth of the people in a country is measured by the countries' per capita GDP (in thousands of US dollars), averaged over the time span studied (Source: United Nations' Statistics Division).

Information was also collected on the introduction date of commercial television in each country. For 21 countries, the introduction date fell within our sample period. In the

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[3] The length of the data series did not influence any of our findings. This conclusion was reached after extending our model in Equation 6 with an additional control variable capturing for the number of years used to derive the corresponding co-movement measure.

[4] For five countries, information on Long-Term Orientation was missing. To derive estimates for the missing observations, we used the 'Expected Maximization Maximum Likelihood' imputation technique advocated by Schafer and Graham (2002), which we applied to the complete country list published in Hofstede (2001, 2004).

remaining countries, commercial television was introduced before the time span studied. The main sources used to identify these exogenous break points are: the Museum of Broadcast Communications Encyclopedia of Television (Newcomb 2004), the website of the European Journalism Centre (www.ejc.nl), and a variety of websites of commercial television stations and national broadcasting institutions.

RESULTS

First, we discuss some descriptive findings on advertising spending in the different countries, based on their 2004 figures. This sets the stage for our main findings concerning the extent of the cyclical sensitivity of their advertising, and the moderating role of the national cultural environment.

Overall Descriptive Statistics

There is considerable variability between the countries, both in terms of the total amount of advertising, and in the percentage of their GDP spent on advertising (Table 3). The smallest absolute advertising spender in our sample (based on 2004 figures) is Costa Rica (slightly less than one quarter of a billion dollars), while the biggest absolute spender is the U.S., with over $145 billion. These differences can be attributed in part to differences in the size of the countries' economy. However, we also observe considerable variability in the percentages of their GDP that is spent on advertising, ranging from a low of .31% in Saudi Arabia to a high of 3.07% in Hong Kong. Interestingly, considerable differences are also observed between various large, developed, economies, most notably between the U.S. (1.24%) and Germany (.75%), Italy (.64%), France (.60%), and Japan (.76%). On the other hand, advertising pressure in the U.S. is similar to the U.K. (1.17%), i.e., the other country frequently studied in previous research. These differences in relative and absolute advertising pressure suggest considerable cross-national differences in the advertising environment. This

further underlines the importance of moving beyond the U.S. and the U.K in studying advertising's sensitivity to the business cycle.

Across all 37 countries, the largest proportion of advertising is typically spent on newspapers and television, followed by magazines, with radio accounting for the smallest part of total ad spending. However, also along this dimension, considerable variation is observed. For instance, in 17 countries, television advertising rather than newspaper advertising is most popular, while radio advertising turned out more important than advertising in magazines in 10 countries.

--- Insert Table 3 about here ---

The Extent of Cyclical Sensitivity

Co-movement elasticities were estimated using the models described in Equations (1) – (5). Figure 1 describes the distribution of the estimated 118 elasticities, both overall and per medium. The *direction* of the estimate (positive versus negative) informs on whether advertising's movements in relation to the economy are pro-cyclical or counter-cyclical. The *magnitude* of the estimate reveals whether fluctuations in advertising expenditure are inelastic (< |1|) or elastic (> |1|) with respect to changes in the general economic conditions.

As is evident in Figure 1, the majority of country-medium co-movement elasticities are pro-cyclical -- 88% (104 out of 118) of the co-movement elasticities being positive. This confirms earlier anecdotal observations (Dobbs, Karakolev, and Malige 2002). Also, even though advertising strategists have long suggested that anti-cyclical advertising yields important benefits (see e.g. Frankenberger and Graham 2003 for a recent review), most companies do not implement this advice.

More interestingly, a clear majority (62%) of the co-movement elasticities is greater than one, and also the average co-movement elasticity significantly exceeds one (meta-analytic $Z=6.88$; $p < .01$). This documents that aggregated across a large set of countries on

all continents, advertising is elastic with respect to business cycle fluctuations. As such, general business-cycle swings get *amplified* in advertising expenditure. The average (median) value is 1.39 (1.40), implying that every percentage deviation from GDP's long-term growth translates into a corresponding deviation of 1.4% in the advertising series. This result is driven by three media. Advertising expenditures on magazines (mean co-movement elasticity = 1.70, Z=5.72; $p < .01$), newspapers (mean = 1.54, Z=6.52; $p < .01$), and television (mean = 1.27, Z=1.68; $p < .05$) are elastic.[5] Only advertising expenditures on the smallest medium, radio, have a cyclical co-movement elasticity not significantly greater than one. Table 4 presents a summary of all meta-analytic results.

Of particular interest are the co-movement elasticities in the U.S. After all, it is the largest advertising market by far. The average co-movement elasticity across all media in the U.S. is 1.91, while the elasticities for the individual media are 2.07 (magazines), 2.32 (newspapers), 1.69 (radio), and 1.57 (television). Thus, compared to the total sample, U.S. advertisers are more responsive to business cycle ups and downs.

--- Insert Figure 1 and Table 4 about here ---

Explaining the Cross-Country Variability in Cyclical Sensitivity

The distribution of the elasticities in Figure 1 reveals considerable cross-national differences in co-movement elasticities. Equation 6 is estimated to test our hypotheses concerning the role of national culture in cross-national variation in advertising's sensitivity to the business cycle. The largest Variance Inflation Factor was 4.64, well below the cutoff of 10 advocated by Neter, Wasserman, and Kutner (1989). Hence, multicollinearity is not a major issue.

[5] Significance values refer to the null hypothesis that the co-movement elasticity = 1 versus the alternative hypothesis that the co-movement elasticity exceeds 1.

Table 5 gives the GLS estimates. Note that the coefficients are unstandardized regression coefficients. H1 posits that advertising is less sensitive to business-cycle fluctuations in long-term oriented cultures. This hypothesis is supported: b_1= -.02 ($p < .05$). In line with H2, advertising expenditure is less sensitive to business-cycle fluctuations in countries high on power distance (b_2 = -.02; $p < .01$). We also find support for our expectation (H3) that advertising expenditure is more elastic in countries high on uncertainty avoidance: b_3= .02 ($p < .01$). However, unlike our expectation in H4, there is no effect of cultural collectivism on advertising's co-movement elasticity (b_4= -.01; $p > .10$).

The effects of the control variables are also reported in Table 5. We find that in countries where the stock market plays a larger role in economic life, advertising reacts more strongly to business-cycle fluctuations than in countries where the role of the stock market is less prominent (b_5= .85; $p < .01$). Further, in countries where more foreign multinationals are operative, advertising is less dependent on national (local) economic conditions (b_6= -.08; $p < .05$).

Cyclical fluctuations in spending patterns across different media are also remarkable. Magazine (c_1 = .44; $p < .01$) and newspaper (c_2 =.26; $p < .05$) spending are more affected by economic contractions and expansions than television spending. Radio spending, in contrast, is less cyclically sensitive than television (c_3 =-.47, $p < .01$). Blank (1962) and Picard (2001) also found that print advertising is more cyclically sensitive than television and radio advertising. This result could be attributed to institutional differences such as greater contractual flexibility for print advertising (Silk, Klein, and Berndt 1999), and to the synergistic interaction between advertising and circulation revenues in print media (Abbring and Van Ours 1994). Finally, after controlling for the aforementioned factors, advertising

expenditures in Asia, Europe, and South America are more elastic with respect to the state of the economy than North America, Oceania, and Africa.[6]

-- Insert Table 5 about here --

DISCUSSION

In this paper, we examined the cyclical sensitivity of advertising over multiple decades, for four media, in 37 countries. We obtained the empirical generalization that *on average*, advertising expenditure is elastic with respect to business-cycle fluctuations, the average co-movement elasticity being 1.4. Hence, a 1% cyclical drop (expansion) in real GDP translates (on average) into a 1.4% cyclical reduction (increase) in real advertising spending. But there are differences across media. Print advertising (newspapers, magazines) is considerably more sensitive to the business cycle than radio and television advertising.

Prior studies recently revealed that culture matters in advertising communication, as social roles, use of language and intrinsic consumer preferences embedded in a certain cultural context can affect consumers' appreciation and response to advertising messages (Douglas and Craig 2007). This study augments these findings by showing that the cultural context also affects managerial advertising decisions. In fact, we found that the cyclical sensitivity of advertising is systematically related to the cultural context in which companies operate. Advertising behaves less cyclically in countries high on long-term orientation and power distance, while it behaves more cyclically in countries high on uncertainty avoidance. We further document that advertising responds more strongly to fluctuations in general economic conditions in countries where stock markets are important, and where there are few foreign-owned multinationals.

Our contextual analysis allows us to better understand why companies respond the way they do. The cultural and economic context in which firms operate, and to which priorities

[6] Adding a country's advertising intensity (Advertising/GDP) did not alter our substantive insights. The associated parameter was not significant ($p > .10$), and was therefore not withheld as additional control variable.

they respond (Hofstede 2001; North 1990), does affect advertising expenditure, aggregated across numerous individual firms. Consider the U.S. We found that advertising expenditure in the U.S. behaves considerably more pro-cyclical (co-movement elasticity of 1.91) than the global average (1.39). Compared to most other countries (Hofstede 2001), the U.S. is low on long-term orientation and power distance, there is considerable stock market pressure, and the importance of foreign-owned multinationals in the economy is modest. All these factors encourage companies to behave pro-cyclically.

To further illustrate the relevance of the cultural effects, let us contrast the U.S. with another highly developed economy, viz., Singapore. Why is the co-movement-elasticity in Singapore so much smaller (.65 versus 1.91)? Our analysis shows this is not just a fluke, but rather can be started to be understood by considering the vastly different cultural and economic constellation of the two countries. Compared to the U.S., Singapore is higher on long-term orientation and power distance, and much lower on uncertainty avoidance. In addition, the importance of foreign multinationals is much higher in Singapore. All these factors tend to dampen the country's advertising's sensitivity to the business cycle (Table 5).

In sum, our results are a step toward beginning to understand why and how the marketing behavior of companies is systematically related to the cultural and economic context in which they operate.

Managerial Implications

Advertising executives have repeatedly noted that counter-cyclical or at least, inelastic advertising may be more effective than pro-cyclical, elastic advertising (Frankenberger and Graham 2003; O'Toole 1991). Our findings suggest that by and large managers do not heed this advice. On average, advertising expenditure is elastic with respect to the business cycle. Apparently, most managers still perceive advertising as a (short-term) expense rather than as a strategic, long-term investment in the company's future and the equity of its brands.

Shareholder value tends to benefit from a long-term view and consistency over time (Frankenberger and Graham 2003; Srivastava, Shervani, and Fahey 1998). This long-term view is certainly not universally implemented by managers with respect to the advertising weapon.

Such a myopic point of view may have implications well beyond the current business cycle. Increasingly, private labels have emerged as a fierce competitor to national brands in a variety of industries, ranging from packaged goods, apparel, and books to do-it-yourself, electronics, and home furnishings (Kumar and Steenkamp 2007). Cyclical reductions in advertising spending contribute to the long-run success of private labels, in that part of the customers lost to private labels during a recession will not switch back to national brands when the economy recovers (Lamey et al. 2007). These permanent scars on national brands' performance will cause a reduction in the long-run demand for advertising, especially in light of national brands' frequent use of percentage-of-sales budgeting rules and the lower advertising support levels commanded by private-label brands. Moreover, once managers discover the short-run sales boost generated by promotions, returning to less accountable advertising expenditures may be hard to sell (Lodish and Mela 2007; Low and Mohr 1999; 2000), even when the economy picks up again. Hence, some of the cyclical cuts may become a permanent restructuring rather than a temporary inconvenience (Jones 1992).

Courageous companies can also go against the prevailing trend and increase advertising spending in recessions. By going against the trend, the company gets "more bang for the buck." Provided the company has the financial resources to implement such a pro-active advertising strategy, it is associated with superior firm performance (Frankenberger and Graham 2003; Srinivasan, Rangaswamy, and Lilien 2005). An example of a company that has pursued such a strategy with great success is Reckitt-Benckiser, a leading U.K.-based global packaged goods company. Despite difficult economic times at the onset of the 21st

century, it has managed real top-line growth (and more than doubled profits) through a powerful combination of hefty product innovations and higher advertising investments than most of its competitors (Financial Times 2005). It raised its real global ad budget in 2001 by 10%, moving it from rank 38 to rank 30 on total worldwide ad spending. By comparison, total real advertising expenditure by the other companies in the top-50 of global advertisers decreased by 5% (Advertising Age 2002). Reckitt-Benckiser's twin-strategy of heavy advertising and innovation was especially powerful as advertising for new products is on average six times more effective than on-going advertising (Lodish et al. 1995). Its strategy has been rewarded by the financial markets. Its share price gained 8.5% in 2001, and 20.5% in the post recession year 2002. By comparison, the London Stock Exchange benchmark FTSE100 (FTSE 250) declined 16.2% (10.7%) in 2001, and posted a further decline of 24.5% (26.2%) in 2002.

Our results also reveal considerable cross-national differences in advertising's cyclical sensitivity. Moreover, we found some media (e.g., magazines) to be more affected by cyclical fluctuations than others (e.g., television). To advertisers, our results provide a benchmark on the amount of advertising needed to maintain their share-of-voice in different markets. Given the substantial differences between countries, this may well lead to worldwide reallocation of advertising money.

Advertising agencies may also benefit from a better understanding of advertising's cyclical sensitivity across countries. Many ad agencies are active in multiple countries, across the different continents. In our study, we have documented that not all countries are equally sensitive to business-cycle fluctuations. Considering the size of their advertising market, the U.S. and the U.K. are countries that few advertising agencies can afford to ignore (Table 3) – and in fact are the home market for many of the world's largest ad agencies. These markets also exhibit above-average co-movement elasticities. International diversification to also

include markets with lower cyclical sensitivity allows these ad agencies to reduce their overall economic risk (Kwok and Reeb 2000). Our results can be helpful in selecting those markets. Since the co-movement elasticities are systematically related to cultural and economic drivers, ad agencies can use this information to assess the extent of cyclical sensitivity of countries not yet in our sample.

At a more abstract level, our research highlights the impact of general economic conditions and cultural and economic structures on managers' decisions with respect to one of their key competitive weapons. As such, our study adds to the rational, context-free perspective taken in micro-economic models of advertising expenditures (Koutsoyiannis 1982, pp. 51-147; Lipczynski and Wilson 2001, p. 188-218). It reminds us that even though both managers and researchers like to see advertising budgets as the outcome of a rational decision-making process (see e.g., Danaher and Rust 1994), this rationality actually rests, to a large extent, on what Hofstede (2001, p. 361) calls "prerational" cultural considerations.

Limitations and Future Research

Our results showed that the advertising sector is more sensitive to the business cycle than the economy as a whole. However, within a given country, some industries may reduce their demand for advertising more than others. Future research could investigate the extent and the drivers of cross-industry differences in advertising sensitivity. Is herding behavior more pronounced in concentrated industries, is re-allocation from advertising to promotion stronger in impulse-categories, do advertisers of durable goods react differently to economic swings than advertisers of non-durables and/or services?

We developed our cultural hypotheses using two mechanisms, viz., managers' view on the role of advertising per se and the process through which the advertising budget is set, but we did not directly test these mechanisms. Future research could attempt to investigate these mechanisms in detail.

Future research might also benefit from extending our study to other regions such as Eastern Europe for which currently time series of sufficient length are not available. Moreover, we limited the analysis to four key media. While we are confident that our results are generalizable across countries, this puts some restrictions on the generalizability to other (new) advertising media, most notably the Internet. The lack of time series of sufficient length precludes its inclusion in the current analyses. Yet, further research should assess whether or not online advertising is better able to resist severe economic downswings than the established media.

In sum, our paper shows that the use of one of marketing's most important instruments is systematically related to wider economic conditions, and that the way how managers adjust their use of this instrument over economic contractions and expansions is systematically related to the cultural context in which they live. However, we have only begun to scratch the surface. Hopefully, researchers will take our lead and make business cycles the substantive focus of some of their work.

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Table 1: Top 10 global advertisers[a]

Advertiser	2004 Worldwide ad spending	%media spending in U.S.	%media spending in Europe	%media spending in Asia
Procter and Gamble	7 922[b]	45	32	17
General Motors	3 918	71	20	3
Unilever	3 464	17	50	25
Ford Motor	2 798	59	33	4
L'Oréal	2 646	29	61	5
Toyota Motor	2 608	42	19	35
Time Warner	2 495	78	16	5
DaimlerChrysler	2 371	76	19	2
Johnson and Johnson	1 922	72	18	5
Nestlé	1 899	26	53	14

[a] Source: Advertising Age 2005
[b] In millions of U.S. dollars.

Table 2: Framework on the impact of culture on advertising sensitivity

	Position of advertising as an expense or as an investment	**Advertising decision process and herding mentality**	**Expected effect on advertising's cyclical dependence**
Long-term orientation	Advertising as an investment in long-run profitability		-
Power distance	Advertising as an investment in brand image		-
Uncertainty avoidance		Herding behavior to avoid risk	+
Collectivism		Herding behavior to avoid conflict	+

Table 3: Descriptive advertising statistics for 2004[a]

	Total advertising spend[b]	% of GDP spent on advertising	% of advertising spent on[c]			
			magazines	newspapers	radio	television
Argentina	2 836	2.03	6.4	25.8	4.7	63.1
Australia	6 489	1.05	7.5	41.3	9.6	37.1
Austria	2 652	0.91	18.4	43.8	7.7	22.3
Belgium	3 230	0.95	12.4	31.8	9.7	38.6
Brazil	4 576	1.60	8.7	17.4	4.5	64.3
Canada	7 419	0.75	7.9	37.0	13.0	35.3
Chile	592	0.63	4.0	27.9	9.0	51.1
Costa Rica	244	1.48	6.5	25.9	17.4	43.4
Denmark	1 572	0.66	12.6	53.7	2.4	21.2
Finland	1 551	0.83	16.1	54.3	4.3	20.1
France	12 178	0.60	22.3	23.9	8.0	32.2
Germany	20 277	0.75	18.5	43.5	4.0	26.2
Greece	2 012	0.98	35.7	21.5	3.9	38.9
Hong Kong	5 056	3.07	12.1	38.8	3.8	38.2
India	2 627	0.39	na[d]	na	1.8	41.2
Ireland	1 517	0.84	2.0	63.0	7.4	18.6
Italy	10 433	0.64	15.7	20.5	4.8	54.2
Japan	35 988	0.76	9.4	25.1	4.2	45.7
Kuwait	382	0.85	12.8	70.9	1.6	7.0
Netherlands	4 276	0.74	22.7	42.7	7.1	21.6
New Zealand	1 316	1.38	11.3	39.9	12.5	32.4
Norway	1 357	0.54	14.1	50.8	4.6	26.2
Philippines	2 021	2.34	na	na	17.2	72.6
Portugal	2 566	1.53	10.7	22.5	5.2	54.8
Saudi Arabia	699	0.31	7.9	70.8	2.9	10.6
Singapore	1 203	1.13	4.6	36.4	9.3	43.7
South Africa	2 194	1.09	11.9	28.0	13.6	39.4
South Korea	6 415	0.94	3.6	43.7	2.9	34.1
Spain	7 483	0.75	11.0	28.1	9.0	43.4
Sweden	2 403	0.69	11.5	51.5	2.8	21.5
Switzerland	2 906	0.81	18.5	45.9	3.6	15.1
Taiwan	2 033	0.63	11.9	24.3	4.8	50.1
Thailand	2 045	1.25	6.8	21.0	8.3	57.0
Turkey	1 307	0.43	5.2	33.2	4.0	51.3
United Arab Emirates	634	0.80	17.9	54.4	1.7	19.4
U.K.	24 285	1.17	14.3	38.8	4.0	30.4
U.S.	145 585	1.24	10.3	30.7	12.4	38.9
Median		*0.84*	*11.5*	*37.0*	*4.8*	*38.2*

[a] Sources: WARC/ZenithOptimedia
[b] In millions of U.S. dollars
[c] The proportion spent on cinema, outdoor, and internet is not included, which explains why the percentages do not sum to 100
[d] na=not available

Table 4: Meta-analysis on co-movement elasticity

			Rosenthal's weighted *Z*'s[a]		
			Co-movement > 1		
	#Series	Mean	#β>1	Meta *Z*	*p*-value
Overall	118	1.39	73	6.88	< .01
Magazines	30	1.70	20	5.72	< .01
Newspapers	35	1.54	24	6.52	< .01
Radio	17	.79	8	-1.34	.91
Television	36	1.27	21	1.68	.05

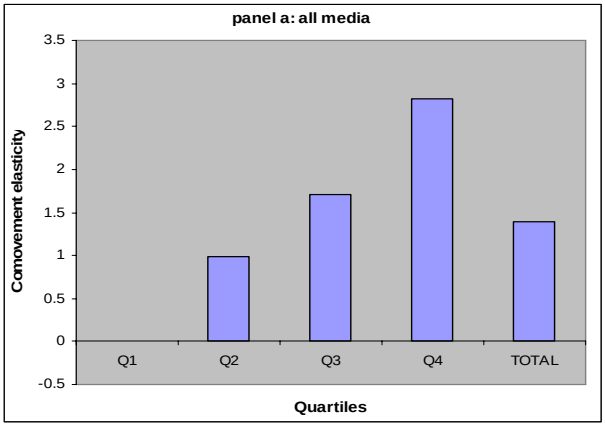
[a] The meta-analysis reports *Z*-values obtained by the Method of Adding Weighted *Z*'s (Rosenthal 1991).

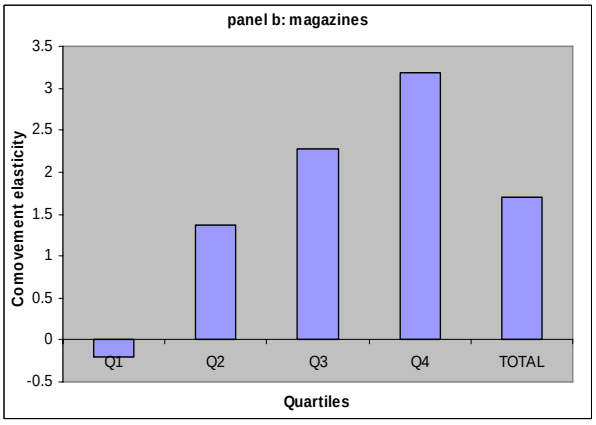
Table 5: GLS results on cross-country variability

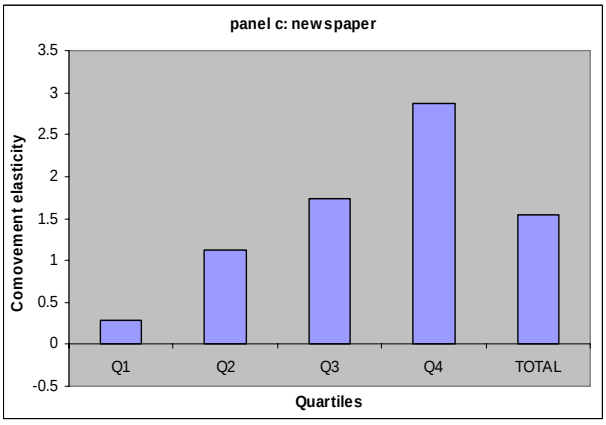
	Predictor	Expected	Unstandardized coefficient	*t*-value
	Constant		.55 *	.69
Cultural factors				
H1	Long-term orientation	-	-.02 [b]	-1.92
H2	Power distance	-	-.02 [a]	-2.37
H3	Uncertainty avoidance	+	.02 [a]	3.11
H4	Collectivism	+	-.01	-1.25
Control variables				
	Stock market pressure		.85 [a]	2.61
	Importance of foreign-owned multinationals		-.08 [b]	-2.34
	Wealth		-.00	-.09
	Magazines		.44 [a]	3.72
	Newspapers		.26 [b]	2.42
	Radio		-.47 [a]	-3.08
	Africa		-1.36	-1.55
	Asia		1.99 [a]	3.22
	Europe		.88 [b]	2.37
	Oceania		.02	.03
	South America		1.93 [a]	3.24
	N		118	
	R^2		34%	

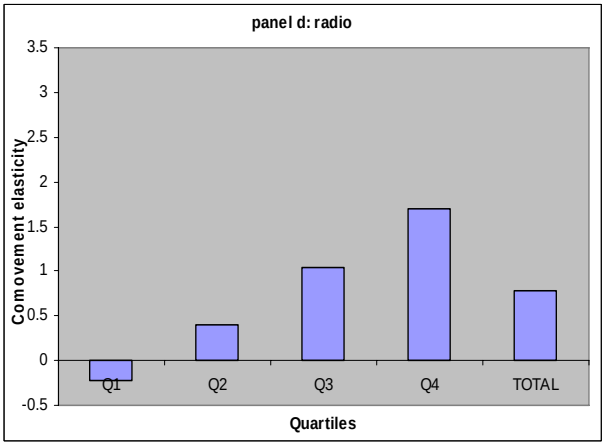
[a] $p < .01$
[b] $p < .05$
[c] $p < .10$
* *p*-values are one-sided for directional hypotheses, two-sided otherwise.

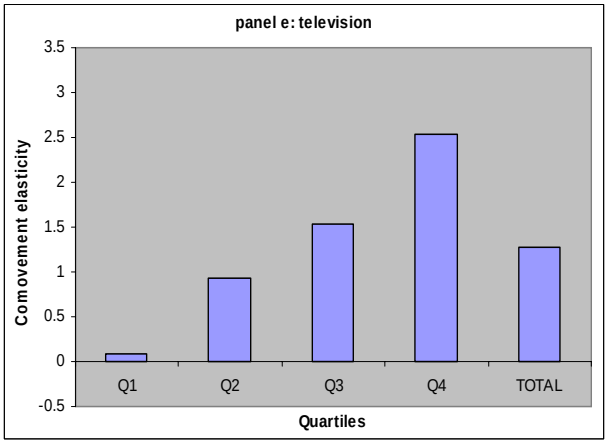
Figure 1: Cyclical sensitivity of advertising spending per quartile











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