Growth Spurts and Marketing Spending

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"Events, dear chap, events." Harold Macmillan, UK PM

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- **Powder Days**
- **Just in time for the snow, select Park Station vacation rental properties are 20% off. Park City is in the midst of a heavy storm cycle and now is the time to be here! The mountains received 10 to 12 inches of new snow and future storms are looking promising.**

Value Proposition

- Brands want to grow, and do so profitably
  - Managers' "quest for more" (Hunt 2000)
- Fueling growth is expensive: ever increasing marketing budgets + risk of not meeting growth objectives
  - Marketing budgeting is ahead of the facts (e.g. function of anticipated sales)
- Is there a way to grow cheaply ?
  - The Gorbachev / Gorbatschow vodka story
  - The China Syndrome story
  - What these have in common is the presence of a marketing hysteresis effect

A multifaceted research problem

- Modeling:
  - There is much research on modeling cross-sectional heterogeneity in market response. But how about time heterogeneity ?
- Strategic:
  - Can opportunistic timing of marketing actions (“seizing the moment”) create strategic advantage for a brand ?
- Business Processes:
  - What are the limitations of marketing budget setting (e.g. quarterly, annual) ? In an age of rapid response feedback, should firms still employ marketing budgets ?

What is known already ?

- Optimal marketing spending (M*) critically depends on the size of the market opportunity

  M* = f(baseline, lift, margin)

- This market opportunity is often time-varying:
  - The more recent past is more influential than the more distant past
    - E.g. AR(1) models
  - Cyclical patterns can occur
    - E.g. models of seasonality
  - Such patterns are predictable, generally well understood
    - Unlike Wall Street, Main Street is typically NOT a random walk

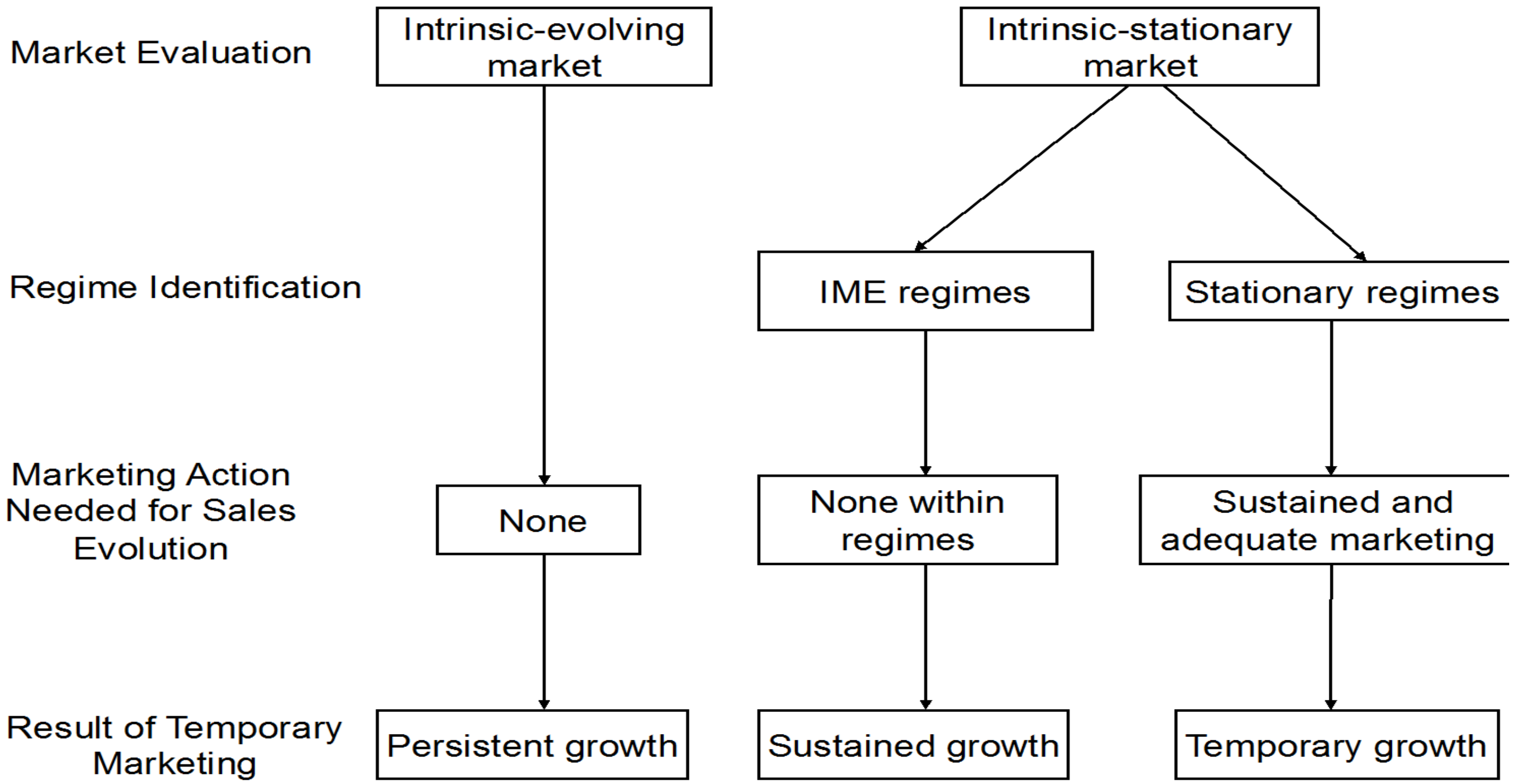
How about “opportunistic” time periods ?

- Main difference: not predictable from their own past
- Pauwels & Hanssens (2007)
  - Two thirds of the time, observe “business as usual”
  - One third of the time: either growth or decline in brand performance, presenting opportunity of threat
  - This pattern found in CPG and in automotive markets
  - Reversing the threat of decline requires marketing intervention !
- Evidence of hysteresis effects in marketing (Dekimpe & Hanssens 2001): long-run consequences of temporary marketing efforts → sales evolution in spurts.
- Needed focus on business evolution and the role of marketing

Marketing Budgets and Business Evolution

- Wang & Zhang (2008): intrinsic market evolution (IME) vs. marketing induced evolution =intrinsic stationarity
- Marketing Induced Evolution requires sustained investment to achieve growth, which is costly
- Intrinsic Evolution occurs without marketing effort, and is usually short-lived. Examples:
  - Unexpected media attention increases brand sales
  - Rapid social media diffusion of customer feedback
- A vigilant brand can capitalize on these opportunities by additional, temporary marketing investments that sustain and expand its sales evolution. A less vigilant brand forsakes such opportunities and must therefore rely on its (expensive) sustained spending in order to foster growth.

Schematically



Online buzz monitoring allows for real-time tracking of changing environments

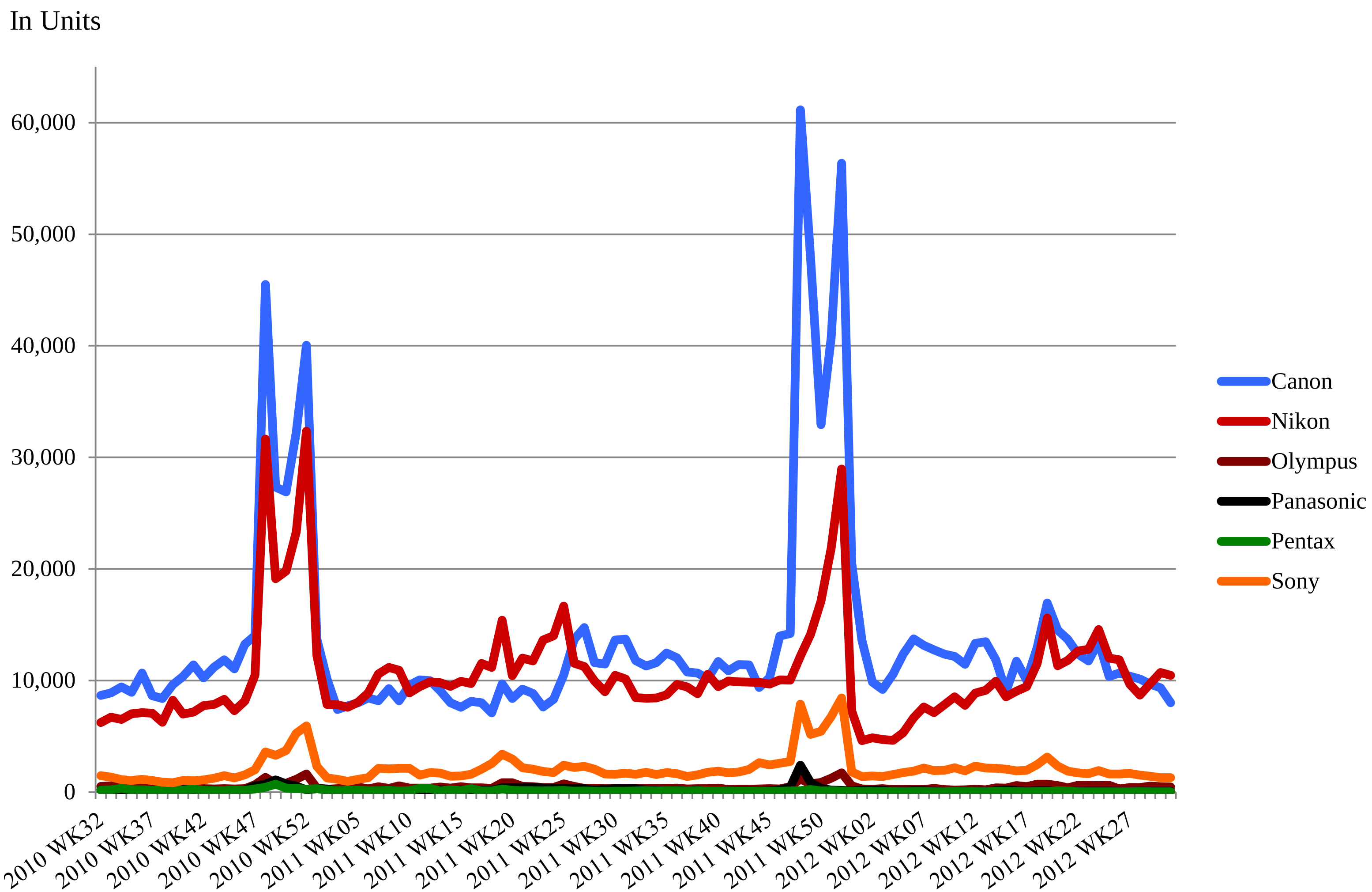
- Literature suggest strong influence of product review quantity and valence on consumer behavior (e.g. Chevalier & Mayzlin 2006; Ho-Dac, Carson & Moore 2013)

- Key hypothesis: the "review" environment provides temporary opportunity. In particular, a sudden wave of positive comments about a brand can induce sales growth without marketing effort.

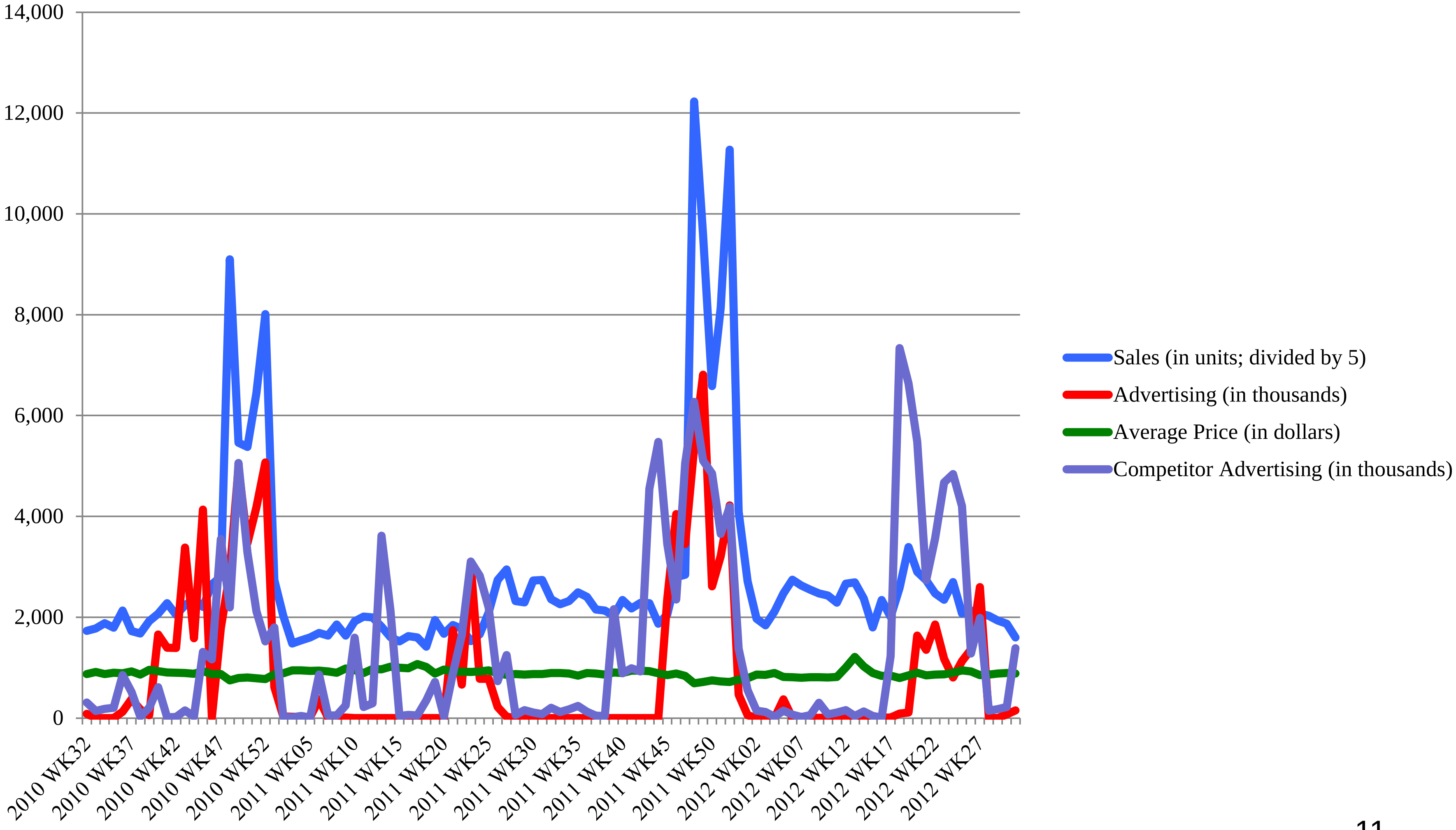
- IME tests conditional on buzz volume and valence can detect such regime shifts in sales, and diagnose which brands (if any) took advantage of the opportunity.

- The strategic implication is that vigilant marketing ("seizing the moment") can produce long-term benefits for the brand. Budgetary practices need to take this into account.

Market for DSLR cameras



Canon Data Review



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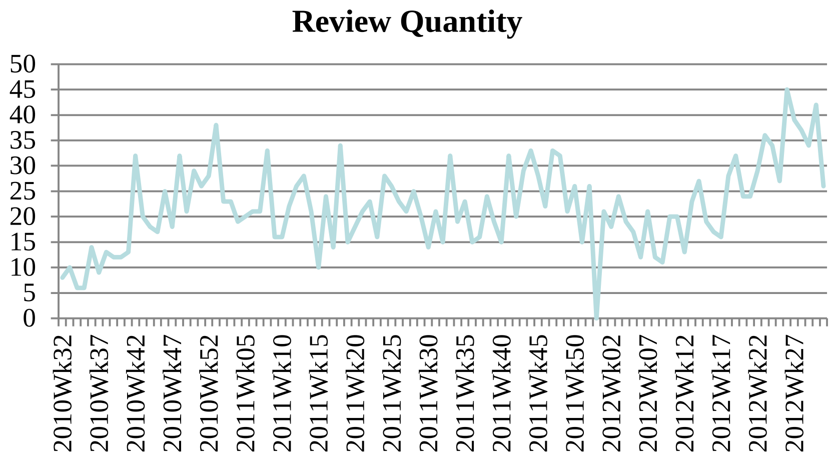
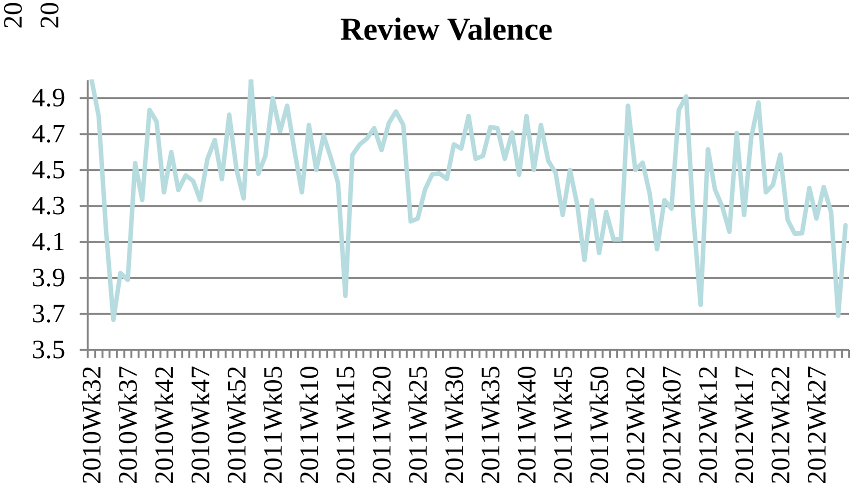
Variability of Review Data: Nikon





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IME testing

- Evolution test

$$Sales_t = C + \alpha Sales_{t-1} + \varepsilon_t$$

- IME test with marketing

$$Sales_t = C + \alpha Sales_{t-1} + \beta_{adv} LN(Adv_t) + \beta_{price} LN(Price_t) \\ + \beta_{cp} LN(CompetitiveAdv_t) + \beta_{NP} NP_t + \beta_{season} Seasonality_t + \varepsilon_t$$

- IME test with marketing and online reviews

$$Sales_t = C + \alpha Sales_{t-1} + \beta_{adv} LN(Adv_t) + \beta_{price} LN(Price_t) \\ + \beta_{cp} LN(CompetitiveAdv_t) + \beta_{NP} NP_t + \beta_{season} Seasonality_t \\ + \gamma_{activity} ReviewActivity_t + \gamma_{valence} ReviewValence_t + \varepsilon_t$$

- A comparison of test results in ***rolling windows*** reveals the role of the market environment in inducing sales evolution

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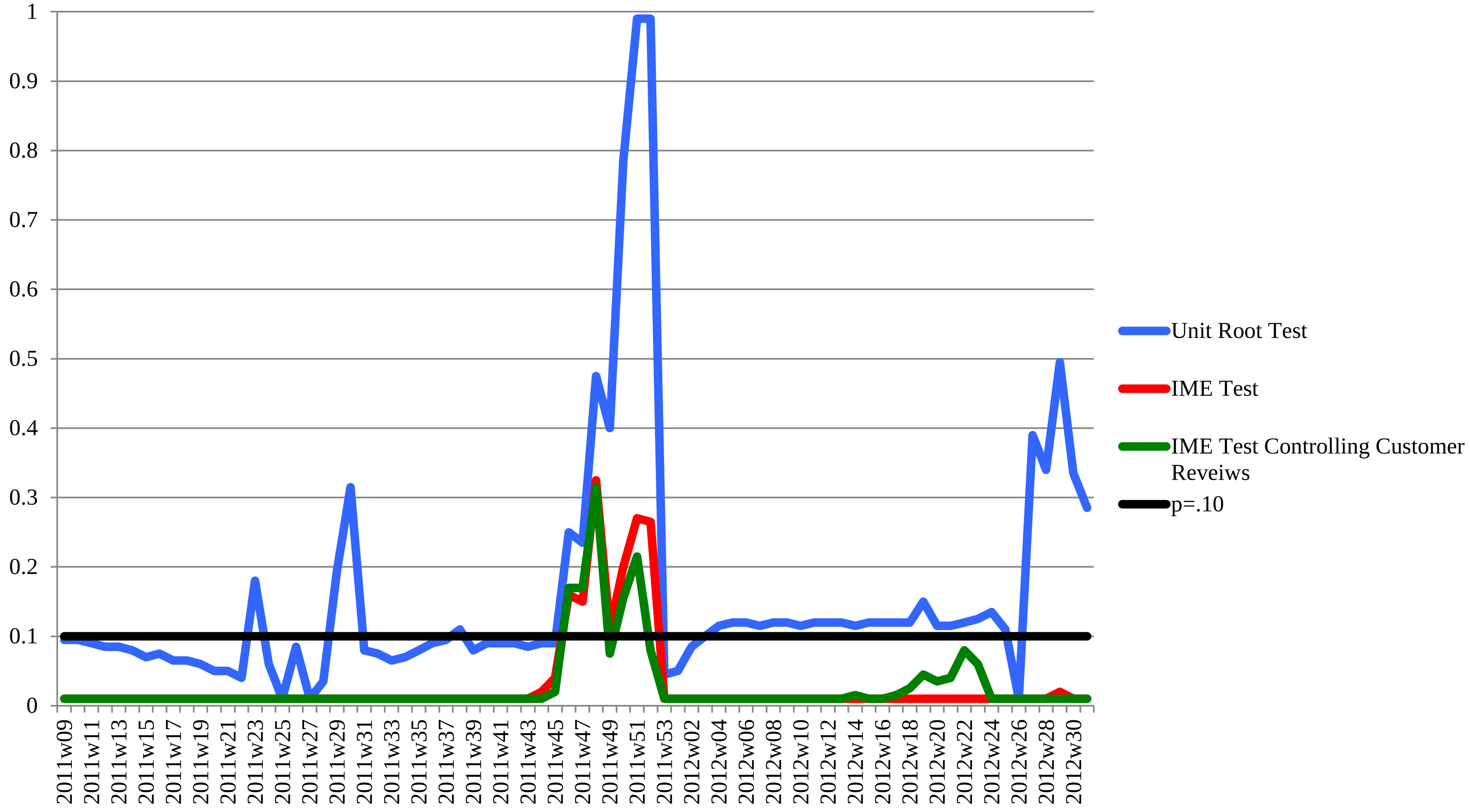
Sample Result: Nikon



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Interpretation

- Marketing-induced sales evolution is the norm
- Some periods of IME exist, different for different brands
- Smaller brands (Panasonic and Sony) have more IME periods

Brand	IME weeks	# of IME weeks / # of sales evolution weeks
Canon	40, 76	2 / 65
Nikon	38-44	7 / 38
Olympus	38	1 / 35
Panasonic	31-40, 73,74	12 / 38
Pentax	36, 37, 41	3 / 20
Sony	23-25, 28-30, 32, 33, 36	9 / 54

Interpretation (cont'd)

- Several of these IME weeks correspond to periods with unusually positive review metrics

Brand	Review induced IME weeks	# and % of review induced IME weeks
Canon		0 / 0%
Nikon	41, 44	2 / 29%
Olympus		0 / 0%
Panasonic	32	1 / 8%
Pentax	36, 37	2 / 66%
Sony	28-30, 66	4 / 44%

Normative Behavior

- Depends critically on the brand's ability to predict opportunity windows OR to react to them
- Marketing managers are often restricted with their sales target due to the diminishing return of advertising, i.e. for

$$S_t = c + \alpha S_{t-1} + \beta LNA_t$$

optimal advertising and sales target are:

$$A_{t,optimal} = \frac{\beta}{1-\alpha}$$

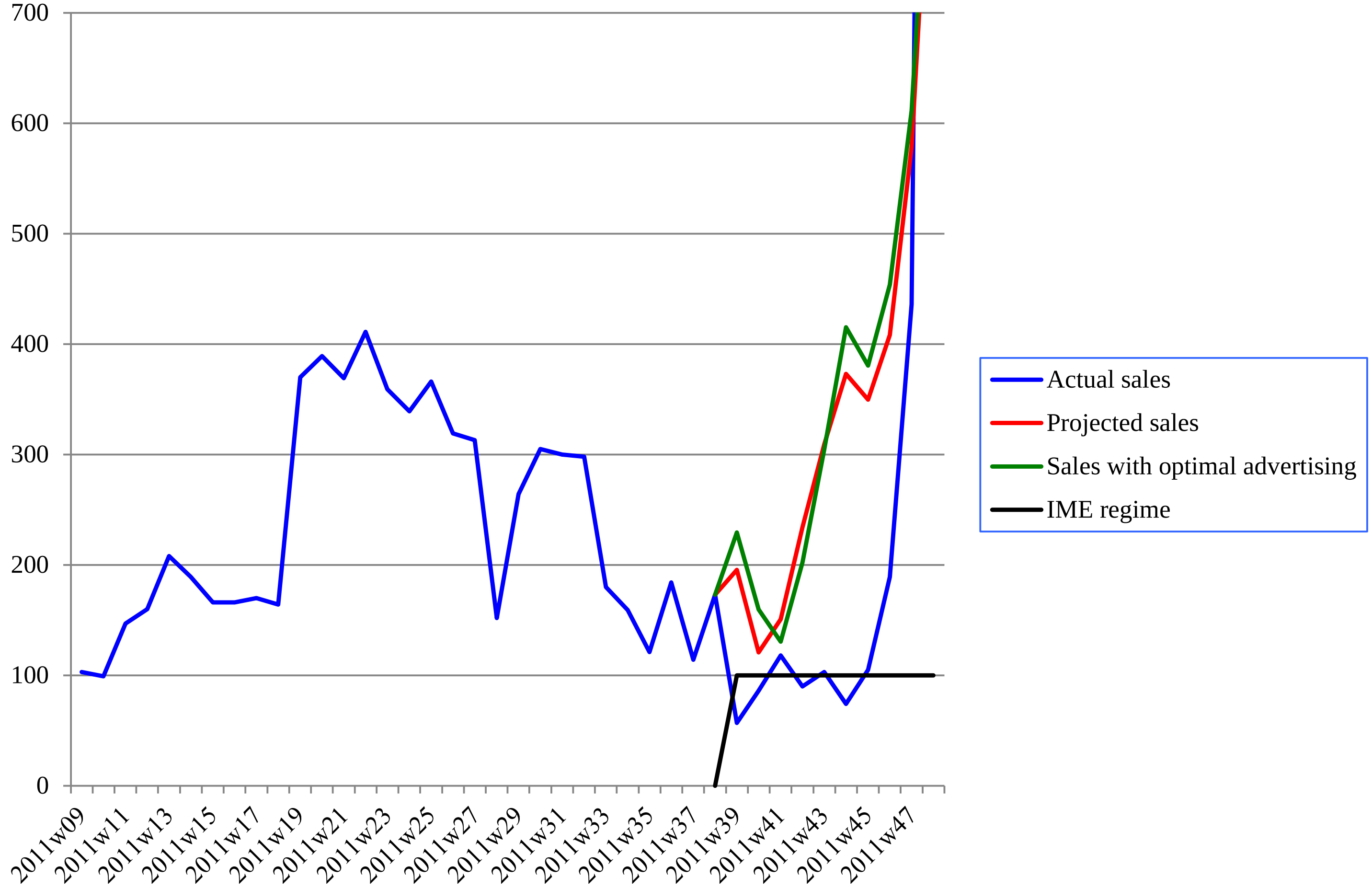
$$S_{t,optimal} = \frac{c + \beta LN\left({}^{\beta}/_{1-\alpha}\right)}{1-\alpha}$$

- IME regimes provide opportunities to achieve higher sales and profitability.

$$A_{IME,t} = W_t\beta + \frac{\beta}{1-\alpha}$$

Illustration: Panasonic

(Achieve higher sales with lower advertising)



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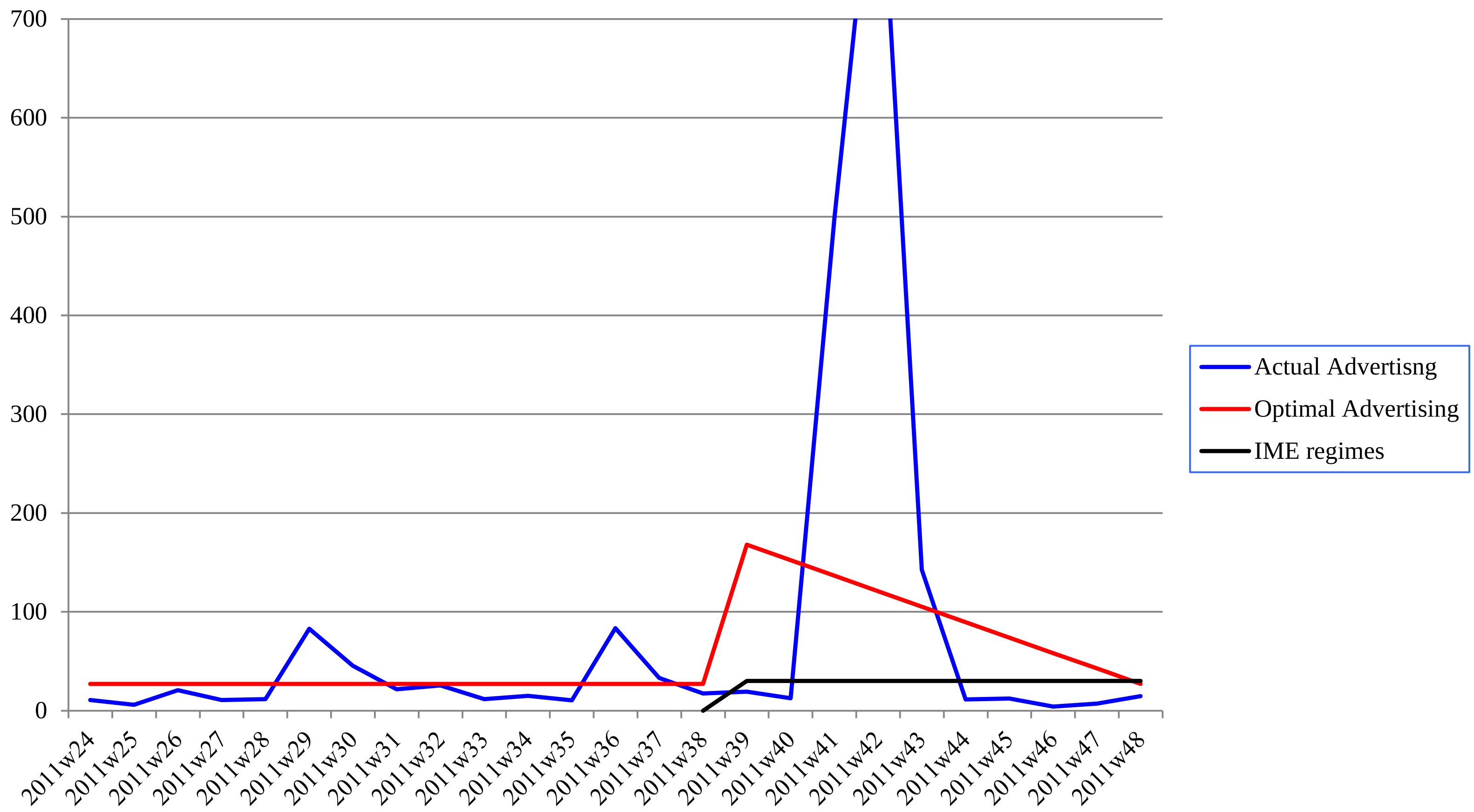

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Conclusions

- In modern markets, brand environments are in a continuous state of flux
- The *timing* of marketing efforts can have an noticeable impact on brand performance evolution
- Tests exist to diagnose growth spurts that can be sustained by vigilant marketing
- Exogenous drivers of such growth spurts can be identified, e.g. valence and quantity of product reviews
- Most brands do not recognize these opportunities ; budgeting practices may stand in the way
- Vigilant marketing can produce business growth more effectively than rising budgets