



Organic growth and shareholder value: A case study of the insurance industry

Gerhard Kling^{a,*}, Abby Ghobadian^b, Nicholas O'Regan^a

^a Bristol Business School, University of the West of England, Bristol BS16 1QY, UK

^b Henley Business School, University of Reading, Henley-on-Thames RG9 3AU, UK

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ABSTRACT

This paper examines organic growth and its impact on shareholder value creation. At a conceptual level, organic and external growth are readily defined; yet, at a practical level, decomposing revenue growth into its constituent elements presents methodological challenges. We develop a method to decompose revenue growth into organic growth, external growth, exchange rate effects, and under- or outperformance. Using extensive data from three insurance companies, AXA, Generali and ING, we analyzed the period from 1995 to 2005. Exchange rate effects were of minor importance, unless companies entered markets at inopportune times. Primarily, the findings indicate that only organic revenue growth enhanced shareholder value. Therefore, managers should focus on marketing as a key driver of organic growth to create value.

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1. Introduction

The realization of superior growth is of paramount importance to managers and shareholders (Srivastava, Shervani, & Fahey, 1999; Stremersch & Tellis, 2004). Growth strategies fall into two broad categories: organic, or core, growth and non-organic, or external, growth (Dalton & Dalton, 2006; Pecotich, Lacznik, & Inderrieden, 1985). Effective marketing can contribute to a firm's organic growth through better anticipation of market opportunities and calibration of risks, a tighter linkage of technological possibilities with market concepts, faster adjustments to shifting market needs and competitive moves, and winning and retaining customers (Day, 2003; Day & Fahey, 1988). Defining and decomposing revenue growth is the first critical step in assessing marketing's contribution to growth and value creation. At a conceptual level, it is possible to clearly define organic and external growth; however, at present there is no widely accepted method of delineating between the medium- and long-term impacts of organic and external growth strategies or a methodology to decompose revenue growth (Hess, 2006).

This paper fills a gap in the literature by developing a method to decompose revenue growth into three components: organic revenue growth, external revenue growth (due to mergers, acquisitions and divestitures), and exchange rate effects. After identifying the components of revenue growth, the impact on shareholder value can be assessed. As marketing is one of the main drivers of organic revenue

growth, determining organic revenue growth and its impact on shareholder value is an indirect approach to measuring the relevance of marketing. The study focuses on the insurance industry due to the good access to market- and firm-specific data on revenue growth. The method of decomposing revenue growth can be applied to any industry, and the persistence modeling could be extended by inserting marketing-related variables to obtain a direct measure of the impact of marketing on organic growth and value creation.¹ We analyzed the revenue growth of three leading European insurance companies, namely AXA, ING and Generali, and addressed two research questions: (1) Do insurance companies rely primarily on organic or external revenue growth? (2) Does organic or external revenue growth enhance shareholder value?

The paper is structured as follows. First, following Srinivasan and Hanssens (2009) and Srivastava et al. (1999), who analyzed the relation between marketing and shareholder value creation, the conceptual framework is established. Second, a methodological discussion follows, highlighting the sample selection and the approach to defining and decomposing revenue growth. Third, the empirical analysis shows the importance of organic revenue growth in the insurance industry and assesses the impact of revenue growth on value creation. The concluding remarks stress the main contributions and limitations of this research and identify directions for future research.

* Corresponding author. Tel.: +44 11732 83418; fax: +44 1491 571635.

E-mail addresses: gerhard.kling@uwe.ac.uk (G. Kling),
abby.ghobadian@henley.reading.ac.uk (A. Ghobadian), nicholas.o'regan@uwe.ac.uk
(N. O'Regan).

¹ Using marketing-related variables is not feasible in the insurance industry due to reporting issues (see Section 2.3).

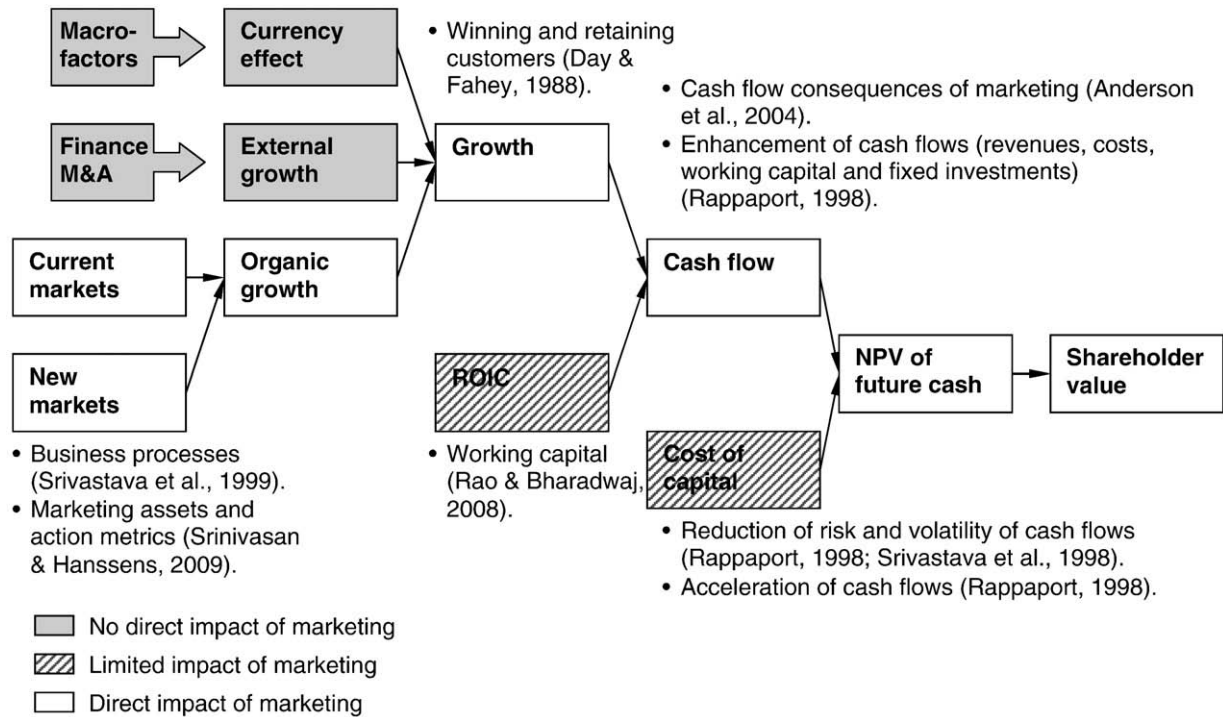


Fig. 1. Conceptual framework.

2. The conceptual framework

2.1. Value drivers, marketing and value creation

Srinivasan and Hanssens (2009) highlighted the marketing assets and action metrics that could affect shareholder value, and Srivastava et al. (1999) focused on a business process perspective of marketing. These studies established the relationship between marketing and value creation. A number of marketing scholars have focused on the cash flow implications of marketing (Anderson, Fornell, & Mazvan-cheryl, 2004) and the ability of marketing to enhance cash flows by increasing revenues, reducing costs, and reducing working capital and fixed assets (Rappaport, 1998). In addition, Rappaport (1998) stated that marketing could reduce the volatility of cash flows, which in turn would lower risk and thus reduce the cost of capital. Furthermore, Rappaport (1998) argued that marketing increases the speed of cash flows.

Despite a stream of research focusing on the impact of marketing on cash flows and the cost of capital, questions regarding its efficacy persist due to the influence of other firm- and industry-specific factors, which lead to endogeneity and causality issues. In particular, the impact of marketing on the cost of capital seems to be rather small, where capital structure, interest coverage, and risk premiums predominate as discussed in the finance literature. While marketing can influence cash flows, its effect on costs and fixed assets (e.g., property, plant and equipment) – as suggested by Rappaport (1998) – does not seem to be of major importance. Although Rao and Bharadwaj (2008) argued that marketing might reduce working capital and thus limit invested capital, which in turn would increase profitability (ROIC),² the magnitude of this impact is likely to be small due to other drivers of ROIC (e.g., asset utilization, industry-specific effects). According to Day and Fahey (1988), who stressed that the main function of marketing is winning and retaining customers, revenue growth seems to be the main lever for the marketing-shareholder value relationship.

External macroeconomic shocks (e.g., inflation, interest rates) cause exchange rate changes and affect reported revenue growth, meaning that growth due to currency effects does not reflect marketing practice. Companies can deliver revenue growth through mergers and acquisitions (M&A) or retrench business through divestitures. These external means of revenue growth depend on financial considerations (e.g., valuation levels, synergies, costs, and sources of finance), with marketing playing a subordinate role in these transactions (e.g., assessment of revenue synergies through cross-selling). Contrarily, organic revenue growth is influenced mainly by marketing (e.g., distribution channels); thus, we need to isolate organic revenue growth to determine the role of marketing in value creation. Fig. 1 illustrates the theoretical underpinning of the relationship between marketing and shareholder value creation.

2.2. Organic and external revenue growth

Interestingly, the most frequently used growth strategy in the past two decades has been M&A (McNamara, Haleblain, & Johnson, 2008), although mergers often fail to deliver the expected increase in shareholder value (Andre, Kooli, & L'Her, 2004; Dunis & Klein, 2005). Meer (2005) suggested that organic revenue growth is the most important driver of shareholder value. These empirical findings and past experience seem to affect decision-makers. For instance, Wulf Bernotat (CEO of E.ON) stressed that “Following years of mainly growing through acquisitions, E.ON will focus on organic growth going forward” (13th May 2009).

Organic revenue growth is defined as an organization's growth rate, excluding any scale increases from M&A (Dalton & Dalton, 2006). This is sometimes referred to as core growth and is derived internally by harnessing an organization's competencies and capabilities. Core growth is often manifested in improving customer relationships, building new relationships, and enhancing innovation capacity. Pursuing an organic growth strategy requires the organization to focus on its core competencies and capabilities and leverage them with a focus on customer needs (Beijerse, 2000; Kautz & Thaysen, 2001).

² ROIC refers to the return on invested capital.

Achieving high organic revenue growth is more of a challenge in mature product markets, and thus many organizations in these markets rely on international expansion (Lynch, 2006). Moreover, organic revenue growth presents unique problems in the case of firms offering services because of intangibility, cross-border barriers to transfer services, limited economies of scale, and the importance of reputation. These limitations are especially relevant in the insurance industry.

2.3. Peculiarities of the insurance industry

As the study focuses on the insurance industry, we need to consider industry-specific peculiarities, which could influence the role of marketing and value creation. At a first glance, it could be argued that marketing does not play an important role in the growth process since the insurance industry has traditionally low advertising to sales ratios of 0.03% in the life insurance business and 1.09% in the non-life segment.³ From a business processes perspective, Srivastava et al. (1999) stressed three main processes affected by marketing: new customer solutions and product development, enhancement of the acquisition of inputs and transformation to desirable output, and creation and leveraging of linkages to external marketplaces. Only the third business process, namely distribution channels and networks, is a key success factor in the insurance industry.

A major concern of insurance companies is to secure and maintain an efficient distribution network, which traditionally relied on sales representatives selling insurance products and receiving commissions in exchange. Interestingly, commissions paid to sales representatives are not reported as marketing expenses, but as acquisition commissions. Apart from distribution networks, direct marketing is essential, as shown by substantial data on consumer behavior and claims (Keet & Mercer, 1998). Some insurance companies report direct marketing activities and provide country-specific details.⁴ For instance, in 1998 AXA reported that 13.9% of its revenues were generated by general agents, 37.0% by brokers, 38.3% by specialized networks and 10.8% by other networks. Direct marketing and alliances with banks were less relevant for AXA. In contrast, Generali only reported acquisition commissions, but no breakdown of distribution networks. In 1998, Generali spent 11% of gross written premiums (GWP) on commissions. As commissions relative to GWP are rather similar in our sample, the observed differences in revenue growth do not seem to be related to marketing expenses, but might be due to distribution networks. Marketing-related figures are not consistently reported; hence, we cannot measure marketing assets and action metrics like in other industries (e.g., R&D expenditures).

From a customer perspective, trust seems to be the key aspect for choosing a life insurance company as customers have to rely on the survival of insurance companies due to long-term contracts (Bejou, Ennew, & Palmer, 1998; Crosby & Stephens, 1987). Yet in non-life businesses, customers seem to be willing to shop for the best deal and are far more price sensitive. Firm size seems to be essential for insurance companies to signal survival prospects and trust to their customers.

This study focused on revenue growth measured in gross written premiums (GWP). Using profits is not feasible in the insurance industry as it does not directly depend on revenues (GWP); instead, it is a result of investment activities, which are not country-specific and depend on bond and stock market conditions, and insurance claims. In addition, profits are influenced by the management of reserves; hence, reported profits do not reflect actual profits, and – even after

adjusting profits for reserve management – determining the segment or geographic split of profits is impossible.

3. Methodology

3.1. Sample selection

We chose three cases to illustrate revenue growth and value creation in the insurance industry. Decomposing revenue growth by business segments (life and non-life) and countries requires detailed information on revenues and the impact of M&A and divestitures on revenue growth. This information is not readily available from financial statements, and hence additional sources such as analysts' reports need to be examined. We selected three major European insurance companies that pursued three different growth strategies in the period from 1995 to 2005. Due to the deregulation of the European insurance market, companies had easier access to foreign markets, which initiated a period of high growth. All three were strong in their domestic markets, and in terms of market capitalization, ING was the largest insurance group in Europe, followed by AXA, Allianz and Generali. Their business mix were rather different, as ING had strong banking activities accounting for 50% of revenues, whereas Generali focused on life insurance, with banking services representing only 7% of its revenues. In contrast, AXA ceased providing any banking services after the divestiture of Donaldson, Lufkin and Jenrette in 2000.

The methodology followed Glaser and Strauss (1967) and Eisenhardt (1989). First, we examined various sources of published data for each firm to ensure that we had a detailed overview of the firm and its activities. Secondary sources of information including annual reports, company presentations, analysts' conference presentations and market research data were collected. We were particularly interested in the geographic split of the insurance business to determine premiums earned in different countries and services offered in different segments (life and non-life business, banking activities). This information is essential to identify market growth rates in the respective market segment provided by SwissRe Sigma studies (1995–2007). To measure external growth, we evaluated mergers, acquisitions and divestitures and their impact on revenues and the business mix. In addition, we accounted for exchange rate effects and adjusted reported revenue figures for unit-linked products as explained in the Appendix.

3.2. Decomposition of revenue growth

Defining and measuring organic growth seems to be straightforward as only the scale effect of M&A has to be excluded from reported growth rates (Dalton & Dalton, 2006). Yet, Hess (2006) noted that there is no consensus on defining organic growth. Prior research tended to identify organic growth by labeling firms that had only one minor acquisition, for instance, less than 5% of market value, as organic growth firms (Cools & Van de Laar, 2006; Meer, 2005). A precise decomposition of growth into organic and external growth has not been developed. We define organic growth as follows:

Organic growth refers to growth over a certain period arising from a firm's existing business at the beginning of the period. Organic growth does not include: (1) growth from M&A and divestitures or (2) currency effects. Organic growth is driven by market growth rates and changes in market share. External growth consists of the initial acquisition or disposition of revenues and the subsequent growth due to market growth rates and changes in market share. The growth of business in line with market growth rates is called momentum, whereas deviating from market growth rates indicates out- or underperformance.

There are two views on the definition of organic growth. Our view is that the whole period from 1995 to 2005 has to be considered; thus, only the businesses existing in 1995 can generate organic growth.

³ These figures refer to the UK market in 2005 and were provided by the World Advertising Research Center.

⁴ However, reporting is not consistent over time, and direct marketing was usually not reported before 1998.

Businesses subsequently acquired or sold represent external growth. This also applies to the subsequent growth (momentum) of acquired or sold businesses. The alternative view is that after the initial acquisition or divestiture takes place, subsequent growth (momentum) could be regarded as organic growth. Hence, we report both in our tables.

$$\hat{G}_t^d \equiv \hat{O}_t^d + \hat{E}_t^d \Leftrightarrow \ln\left(\frac{G_t^d}{G_{t-1}^d}\right) \equiv \ln\left(\frac{O_t^d}{O_{t-1}^d}\right) + \ln\left(\frac{E_t^d}{E_{t-1}^d}\right) \quad (1)$$

Eq. (1) illustrates the decomposition of revenue growth $\hat{G}_t^d$ reported in the domestic currency (d) into organic revenue growth $\hat{O}_t^d$ and external revenue growth $\hat{E}_t^d$. To account for the currency effect C_t , we measured market growth rates and revenues in fixed exchange rates.

$$\hat{O}_t^d \equiv \underbrace{O_0^f \cdot S_0^{d/f}}_{\text{Revenue of initial business}} \cdot \underbrace{\prod_{j=0}^t ((1 + \eta_j^f) \cdot (1 + \hat{S}_j^{d/f}))}_{\text{Momentum of initial business = subsequent growth of business in line with market growth rates}} \quad (2)$$

Eq. (2) defines organic revenue as the revenue of the initial business O_0^d and the subsequent growth of the initial business from time 0 to t with the market growth rate η_j^f in the local currency (f). Organic revenue in domestic currency depends on the revenue of the original business in the respective market at the beginning of the period times the subsequent market growth, which is also influenced by changes in exchange rates $S_t^{d/f}$. The revenue growth of the initial portfolio due to market growth is called momentum.

$$\hat{E}_t^d \equiv \sum_{k=0}^t \left[\underbrace{D_k A_k^f S_k^{d/f}}_{\text{Revenue of acquired/sold business}} \cdot \underbrace{\prod_{j=0}^t ((1 + \eta_j^f) \cdot (1 + \hat{S}_j^{d/f}))}_{\text{Momentum of acquired/sold business = subsequent growth in line with market growth rates}} \right] \quad (3)$$

External revenue E_t^d refers to acquiring or selling business units A_t^f . The dummy variable D_t indicates whether an event (e.g., M&A) occurs. Similar to organic revenues, acquired revenues grow with the respective market growth rate η_j^f . Currency fluctuations influence the value of the acquired business and subsequent growth. Accordingly, Eq. (3) defines external revenue as the value of an acquired or sold business and its subsequent growth (momentum).

Based on Eqs. (2) and (3), we decompose revenue growth into organic revenue growth and external revenue growth, assuming fixed exchange rates. The difference in growth rates between fixed and variable exchange rates defines the currency effect C_t . As we used market growth rates η_j^f to determine the momentum of growth, comparing the reported revenue with the potential revenue based on Eqs. (2) and (3) reveals outperformance if the company grew faster than the market or underperformance if the company grew below market growth rates.

Table 1
Decomposition of revenue growth, 1995–2005.

	GWP in EUR millions		
	AXA	Generali	ING
<i>Panel A: Decomposition of revenue</i>			
Initial business in 1995	20,262	16,358	10,309
Momentum of the initial business	17,966	21,505	10,843
M&A and divestitures	22,666	14,874	22,928
Momentum of M&A/divestitures	13,538	5021	6214
Exchange rate effect	−391	371	−8063
Out- or underperformance	−2689	3366	3648
Current business in 2005	71,743	61,495	45,880
<i>Panel B: Organic growth rates — including the momentum of M&A and divestitures</i>			
Organic growth	7.5%	9.4%	9.4%
External growth	5.9%	4.7%	10.4%
Exchange rate effect	0.0%	0.1%	−3.6%
<i>Panel C: Organic growth rates — excluding the momentum of M&A and divestitures</i>			
Organic growth	4.0%	7.8%	6.6%
External growth	9.5%	6.2%	13.2%
Exchange rate effect	0.0%	0.1%	−3.6%
Total growth rates	13.5%	14.2%	16.1%

4. Empirical findings

4.1. Decomposition of revenue growth: descriptive findings

Panel A of Table 1 shows the revenues in GWP of the initial business in 1995, combining the life and non-life segments, and reports the components of revenues based on the growth decomposition. As discussed in Section 3.2, there are two views on organic growth. Hence, Table 1 reports organic revenue growth, which includes the momentum of acquired businesses and divestitures (see Panel B). One year after the acquisition, subsequent growth of an acquired business would be regarded as organic growth. In contrast, our more conservative view is that subsequent growth of acquired entities reflects external growth since this growth would not have been achieved without acquiring the business in the first place (see Panel C).

ING experienced the highest annualized revenue growth rate of 16.1%, followed by Generali (14.2%) and AXA (13.5%), mainly as a result of its aggressive external growth strategy. ING's M&A activities increased its initial business by 222% compared to the less aggressive growth patterns pursued by AXA (112%) and Generali (91%). The momentum of external revenue growth contributed 67% to the growth of the initial business in the case of AXA, followed by ING (60%) and Generali (31%).

Based on the more liberal definition, organic revenue growth including the momentum of acquired or sold businesses reached 9.4% in the case of Generali and ING (see Panel B), whereas AXA only exhibited 7.5%. If one follows the stricter definition of organic growth, excluding the momentum of M&A and divestitures (see Panel C), organic growth rates are lower. Generali managed to achieve organic growth rates of 7.8%, whereas ING grew by 6.6% and AXA by only 4.0%. External growth is a substantial component of overall growth, but the question is which type of growth can enhance shareholder value.

In the short run, controlling for exchange rate effects is essential, but in the long run, exchange rate changes seem to offset previous changes and thus have little impact on growth. ING suffered considerably from exchange rate changes, which lowered growth rates by 3.6% per year. This result highlights the importance of timing, as ING expanded their US business in 2000 at the peak of the market. Due to the pronounced depreciation of the US dollar, subsequent growth rates were affected negatively. AXA also had a considerable stake in the US market, but exchange rate effects hardly influenced its revenue growth, which is attributable to AXA growing its US business organically. They only acquired one small US life insurance firm (MONY) in 2005. Accordingly,

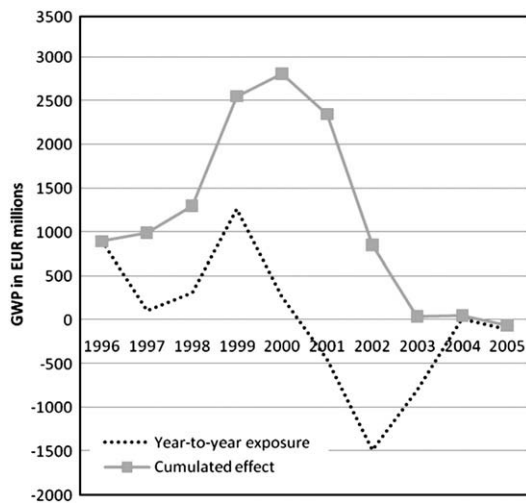


Fig. 2. Cumulated and annual exposure of AXA's US business to exchange rate effects.

the exchange rate effect that hampered ING's US expansion had only a mild effect on AXA's growth trajectory. To illustrate this finding, Fig. 2 depicts the exposure to exchange rate changes of AXA in EUR millions. In spite of severe fluctuations, the cumulated exchange rate effect is only €67 m. Accordingly, timing seems to be an important determinant for successful growth.

The decomposition of growth allows identification of the reasons for revenue growth. AXA exhibited the lowest annual growth rate, which is partly explained by its underperformance, which indicates a decline in market share and points to poor attainment of growth potential. Underperformance lowered AXA's annual growth by 0.5%, and outperformance increased Generali's growth by 0.7% and ING's growth by 1.0%. Apart from underperformance, the disappointing growth of AXA's business was due to operating in low growth markets and entering markets at inopportune times.

4.2. Change of growth before and after acquisitions: a micro-level analysis

To assess how firms managed their acquired businesses, Table 2 reports growth rates of the acquired entity before and after the transaction. Table 2 also shows the size of the acquired businesses in terms of revenues in different countries and segments and stock performance measured by total returns to shareholders (R). Total returns to shareholders combine the change in share prices and dividend payments. The acquisition strategies differed in that ING focused on less frequent but larger acquisitions compared to Generali and AXA. Concerning the change in growth after acquisitions, we observed a general decline of growth rates by 0.4%. Generali's external growth strategy led to 1.5% less growth after business was acquired, whereas AXA managed to enhance growth rate on average by 0.5%.

The correlation between stock performance and the change of growth is significant and positive only in the case of ING. Assessing the implications for shareholder value creation based on individual transactions has proven to be challenging as companies conduct several transactions at the same time.

4.3. Growth and shareholder value creation

After identifying the components of growth, we focus on the interrelation between organic growth and shareholder value creation. The change in share prices and dividend payments determines the total return to shareholders (R_{it}), which measures shareholder value creation. Following Srinivasan and Hanssens (2009), the first step is to

separate expected and unexpected components of stock returns as various firm-specific and macroeconomic factors could influence stock returns, which would bias any analysis on the impact of growth on value creation. For a large sample of firms and different industries, Fama and French's (1996) three-factor model or the extended four-factor model by Carhart (1997) are widely accepted methods to decompose stock returns into expected and unexpected components. The three-factor model explains stock returns by market excess returns (stock market returns minus risk-free rate), differences in firm size and valuation levels measured by market-to-book ratios. Accordingly, the three- and four-factor models account for cross-sectional differences in stock returns. In our study, cross-sectional differences are not essential as we focused on three companies in the same industry that were of similar size and had similar valuation levels.⁵

Nevertheless, macroeconomic factors might affect stock returns; therefore, the arbitrage pricing model (APM) that controls for unexpected macroeconomic shocks provides the theoretical basis of our approach. In particular, Chen, Roll, and Ross (1986) used unexpected changes in oil prices, industry production (IP_t), term structure (TS_t),⁶ inflation rates (IR_t), and risk premium (RP_t)⁷ to control for macroeconomic shocks. In addition, Chen et al. (1986) incorporated the stock market return (R_t^M) to capture the systematic market risk. Consequently, we used the same set of variables as Chen et al. (1986) – except oil price shocks, which do not seem to affect the insurance industry. To identify unexpected changes in macroeconomic variables, we specified autoregressive integrated moving average (ARIMA) models for each time series and forecasted the respective macroeconomic variables. The residuals of the ARIMA models reflect the unexpected macroeconomic shock. Based on our panel dataset covering eleven years, we ran regressions that link a company's value creation R_{it} to the performance of the European stock market index R_t^M (EuroStoxx) and unexpected changes in the macroeconomic environment X_{jt} (IP_t , TS_t , IR_t , RP_t). Besides unexpected inflation, Chen et al. (1986) also included expected inflation to control for the so-called Fisher effect, which describes the impact of expected inflation on asset prices. Regression Eq. (4) defines the APM for our sample, based on which abnormal returns (AR_{it}) can be defined as observed return minus expected stock returns given the information available at time t labeled Ω_t .⁸

$$R_{it} = \alpha + \beta \cdot R_t^M + \sum_{j=1}^4 \chi_j (X_{jt} - E(X_{jt} | X_{jt-1}, \dots, X_{j0})) + \chi_5 E(IR_t | IR_{t-1}, \dots, IR_0) + \varepsilon_{it} \quad (4)$$

$$AR_{it} = R_{it} - E(R_{it} | \Omega_t) \quad (5)$$

We estimated this regression model using panel OLS and ran Ramsey RESET tests to detect omitted variables or non-linearities. The Ramsey

⁵ We also estimated three- and four-factor models – but due to the low number of firms, market-to-book, size and the stock market momentum are insignificant. Results are available from the authors on request.

⁶ The term structure is defined as spread, namely the difference between the yield of ten-year government bonds and the three-month Treasury bill rate.

⁷ The risk premium refers to the difference between the average yield of Aaa ranked (rated by Moody's) corporate bonds and Baa ranked corporate bonds.

⁸ An alternative approach would be to use a Buy and Hold Abnormal Return (BHAR), which refers to aggregating our annual abnormal returns to cumulated abnormal returns. As our study is limited to three companies, aggregating abnormal returns would reduce our observations to three BHARs, and thus we would lose a considerable amount of information (Barber & Lyon, 1997).

Table 2
Growth before and after acquisitions.

Year	Target	Country	Segment	Size	Growth		Change	R
					Before	After		
Panel A: AXA								
1995	National Mutual Life Association of Australasia	Australia	Life	151	21%	16%	−5%	37%
1995	National Mutual Life Association of Australasia	New Zealand	Life	14	5%	1%	−3%	37%
1995	National Mutual Life Association of Australasia	Hong Kong	Life	34	17%	11%	−6%	37%
1996	National Mutual Life Association of Australasia	Australia	Life	1814	16%	9%	−7%	7%
1996	National Mutual Life Association of Australasia	New Zealand	Life	172	1%	0%	−2%	7%
1996	National Mutual Life Association of Australasia	Hong Kong	Life	404	11%	14%	2%	7%
1997	UAP	France	Life	6179	15%	18%	3%	45%
1997	UAP	UK	Life	2347	22%	30%	7%	45%
1997	UAP	Germany	Life	2331	12%	4%	−8%	45%
1997	UAP	Belgium	Life	626	21%	29%	8%	45%
1997	UAP	Other	Life	1618	22%	15%	−7%	45%
1999	Guardian Royal Exchange	UK	Life	1046	−14%	1%	15%	13%
2000	Nippon Dantai Life	Japan	Life	3132	−3%	−3%	1%	17%
1997	UAP	France	Non-life	2569	2%	4%	2%	45%
1997	UAP	Germany	Non-life	2904	1%	2%	1%	45%
1997	UAP	Other	Non-life	2254	5%	11%	6%	45%
1997	UAP	Transnational	Non-life	1414	3%	2%	−1%	45%
1998	Royale Belge	Belgium	Non-life	927	6%	10%	4%	77%
1999	Guardian Royal Exchange	UK	Non-life	1311	14%	13%	−2%	13%
Panel B: Generali								
1997	Leumi Insurance Holding (Migal group), Israel	Rest of world	Life	336	12%	7%	−5%	53%
1998	Aachener und Münchner Beteiligung	Germany	Life	5038	4%	2%	−2%	71%
1998	Aachener und Münchner Beteiligung	France	Life	874	18%	−6%	−24%	71%
1999	Caja de Ahorro y Seguro	Rest of world	Life	260	−5%	7%	11%	−12%
1999	Secura Allgemeine/Secura Leben	Switzerland	Life	165	5%	5%	−1%	−12%
2000	INA	Italy	Life	1496	19%	14%	−6%	37%
1997	Leumi Insurance Holding (Migal group), Israel	Rest of world	Non-life	336	3%	2%	−1%	53%
1998	Aachener und Münchner Beteiligung	Germany	Non-life	3310	2%	4%	2%	71%
1998	Aachener und Münchner Beteiligung	France	Non-life	262	4%	7%	3%	71%
1999	Caja de Ahorro y Seguro	Rest of world	Non-life	260	5%	12%	8%	−12%
1999	Secura Allgemeine/Secura Leben	Switzerland	Non-life	165	4%	4%	0%	−12%
2000	INA	Italy	Non-life	2043	8%	5%	−3%	37%
Panel C: ING								
1997	Iowa	USA	Life	3331	3%	4%	1%	41%
2000	Reliastar	USA	Life	12137	9%	13%	3%	44%
2000	Reliastar	Asia/Pacific	Life	1506	12%	13%	2%	44%
2000	Reliastar	S. America	Life	3015	11%	15%	4%	44%
2001	Tiel Utrecht to De Goudse	Netherlands	Life	135	3%	3%	−1%	−31%
2000	Reliastar	Asia/Pacific	Non-life	167	12%	13%	2%	44%
2001	Tiel Utrecht to De Goudse	Netherlands	Non-life	135	12%	6%	−6%	−31%
2001	Acquisition of Seguros Comercial America	Mexico	Non-life	2262	20%	8%	−11%	−31%
Panel D: Correlations								
		All	AXA			Generali		ING
Stock performance — change in growth rate		−4.7%	7.8%			−50.6%		82.9%
Average change of growth rates		−0.4%	0.5%			−1.5%		−0.8%
Average size of acquired business		1756	1645			1212		2836

Note: The total return to shareholders labeled *R* refers to the annual change in share prices and dividend payments. AXA's acquisition of MONY in 2005 was excluded as the acquisition occurred at the end of the investigation period. Generali's acquisition of Le Continent Group in 2004 was excluded due to the lack of appropriate data. Size refers to the acquired revenue in EUR millions.

RESET test did not indicate any omitted variable bias or hidden non-linear relationships. In addition, the Breusch–Pagan heteroscedasticity test did not reject the null hypothesis of homoscedasticity, and thus our model fulfils the assumptions of OLS regressions.

Dekimpe and Hanssens (2000) and Pauwels, Silva-Risso, Srinivasan, and Hanssens (2004) contended that using a single-equation approach does not model the marketing–value creation relationship adequately as it only captures a one-directional causal relation. In particular, the impact of shareholder value (the dependent variable) on management decisions, including marketing-related decisions, is not considered in a single-equation approach. Persistence modeling based on vector autoregressive (VAR) models captures the complex interrelation between abnormal stock returns (AR_{it}), organic $\hat{O}_{it}$ and external revenue growth $\hat{E}_{it}$. In particular, companies with strong

share price performance tend to conduct more M&A as they can use their own overvalued stock as acquisition currency (Shleifer & Vishny, 2003). In addition, there could be an impact of past performance on organic revenue growth through reputation effects. Consequently, we specified the following panel VAR model and tested for Granger causality. As our investigation period spans eleven years, specifying more than one time lag ($t-1$) would limit our sample size considerably; hence, we used the following VAR specification with one lag.

$$\begin{pmatrix} AR_{it} \\ \hat{O}_{it} \\ \hat{E}_{it} \end{pmatrix} = \alpha + \Gamma \begin{pmatrix} AR_{it-1} \\ \hat{O}_{it-1} \\ \hat{E}_{it-1} \end{pmatrix} + \varepsilon \quad (6)$$

Table 3
Persistence modeling using a vector autoregression.

	Equations of VAR — dependent variables		
	AR_{it}	O_{it}	E_{it}
AR_{it-1}	−0.0987 (0.543)	0.0296 (0.377)	−0.7055 (0.406)
O_{it-1}	1.7792** (0.047)	0.2269 (0.220)	5.8479 (0.212)
E_{it-1}	0.0155 (0.282)	−0.0015 (0.616)	0.3341*** (0.000)
Constant	−0.1306 (0.115)	0.0571*** (0.001)	−0.3066 (0.479)
Adjusted R^2	0.19	0.37	0.00
Observations	30	30	30

p -values in parentheses.

** $p < .05$, *** $p < .01$.

Table 3 shows that organic revenue growth influences performance (p -value 0.047), but past performance does not affect organic revenue growth (p -value 0.377) or external revenue growth (p -value 0.406).

Apparently, organic growth is more predictable (higher adjusted R -squared) and follows a long-term trend. Interestingly, companies with prior acquisitions tend to acquire more in the future. Past stock performance does not affect organic or external growth, which has interesting implications. Firms with bad past stock performance could achieve organic growth, which would in turn boost future stock performance. Besides testing for causality, the VAR detects dynamic relationships. The impulse response functions (Fig. 3) indicate whether the impact on the unexpected total return to shareholders (AR_{it}) is driven by higher organic or external revenue growth.

Based on the impulse response functions (see Fig. 3), 1% additional organic revenue growth triggers an increase in shareholder value of 1.8% one year later.⁹ The effect declines to 0.3% two years after the increase in organic revenue growth, but the cumulated impact over a five-year period reaches 2.3%. Additional organic revenue growth had a pronounced and long-lasting impact on shareholder value, whereas external revenue growth did not contribute to value creation. Therefore, our findings support Meer's (2005) contention that organic revenue growth is the main value driver.

From a theoretical perspective, our findings can be supported. With regard to the theoretical link between revenue growth rates and shareholder value, we argue that shareholder value reflects the net present value of future cash flows. *Ceteris paribus*, higher revenue growth rates enhance cash flows and contribute directly to shareholder value creation. Moreover, our findings support the 'Merger Paradox' literature (Andrade, Mitchell, & Stafford, 2001), which showed that acquiring firms exhibit negative or at best insignificant abnormal returns after acquisitions. These findings were based on event studies that captured the abnormal market response triggered by merger announcements. Our methodology differs from event studies in that we measure the impact of M&A on revenue growth rates, which in turn drives shareholder value. From a theoretical perspective, several studies explain the 'Merger Paradox' with the principal agent theory. Managers may conduct mergers to fulfill their own aims, for instance, building their empire or maximizing their short-term bonus, even if shareholders suffer losses (Shleifer & Vishny, 1988).

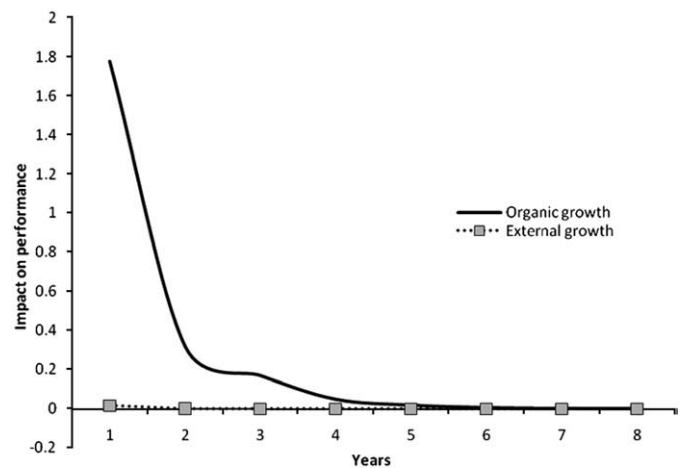


Fig. 3. Impulse response functions.

5. Conclusions

Our main contributions are a definition of organic growth and developing a method to decompose revenues. The revenue decomposition can isolate organic revenue growth, which is of particular interest because of the central role of marketing in fostering organic growth. Based on the decomposed revenues, persistence modeling uncovers the impact of external and organic revenue growth on shareholder value. The model could be extended by adding one additional equation that relates marketing assets and metrics to the components of growth and stock performance. Consequently, the study provides a framework that could be applied to other industries and time periods.

Referring to the three insurance companies analyzed, the findings indicate that external growth accounted for 82% of the total growth of ING and 70% of AXA's growth, yet only 44% for Generali. Apart from isolating organic and external revenue growth, we detected that exchange rate effects played a minor role in the long term as currency fluctuations offset previous movements. Nevertheless, market timing is crucial, as ING suffered from entering the US market in 2000 at the peak of the market.

Finally, the persistence model quantifies the impact of organic and external revenue growth on shareholder value creation. Interestingly, only organic revenue growth has a significant and pronounced effect on shareholder value. Adding 1% more organic revenue growth increases shareholder value by 2.3% in the long run. In contrast, external revenue growth fails to contribute to value creation. This finding underlines the importance of organic growth and marketing for shareholder value creation.

Restricting our analysis to three companies in the insurance industry is an important limitation. Apart from providing findings for the insurance industry, which stresses the dominance of external growth but also the positive impact of organic growth on shareholder value creation, our method could be applied to other industries. Hopefully, future research will use the growth decomposition technique described here over a broad sample of firms and economic conditions to isolate external and organic growth and their impacts on value creation.

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⁹ Using a three-factor model, the impact of organic growth on shareholder value would be 2.4%, compared to 1.8% based on our APM model. The difference is not significant.

Appendix A

Definitions of variables and data sources.

Variable	Definition	Data source
G_t^d	Reported revenues GWP (gross written premiums) in domestic currency. We adjust GWPs for unit-linked products (see below).	Annual reports, segment reports (country level and segment level)
$\hat{G}_t^d, \hat{O}_t^d, \hat{E}_t^d$	Annual growth rate of revenues (gross written premiums) in domestic currency are defined as the log ratio of current and past revenues; hence, we use log returns to determine growth rates.	See components of Eq. (1)
O_t^d	Revenues from the initial business portfolio are regarded as organic revenues. Based on Eq. (2), organic revenues in domestic currency grow over time with market growth rates and are influenced by exchange rate changes.	See components of Eq. (2)
E_t^d	We define revenues from external sources (M&A, divestitures) as the revenue initially acquired or sold and the subsequent growth of acquired or sold business units based on market growth rates.	See components of Eq. (3)
$S_t^{d/f}$	Exchange rate (spot market) in domestic currency (d) for one unit of the respective foreign currency (f). We used the average exchange rate based on monthly data for the given year.	Datastream
η_t^f	Market growth rate in the respective local currency (f).	SwissRe Sigma reports on the world insurance market (1995–2007)
D_t	Dummy variable that indicates whether the company conducted M&A or a divestiture in period t.	Mergermarket, annual reports
A_t^f	Acquired or sold revenues in the respective local currency (f). We allocated bought (sold) revenues according to business segments (life and non-life insurance) and countries affected.	Annual reports, company presentations, analysts' reports, reports of target firm
R_{it}	The total return to shareholder combines the annual change in share price (capital gain) and dividend payments.	Datastream
R_t^M	Return of the EuroStoxx performance index, which includes dividend payments. The EuroStoxx serves as a benchmark for assessing systematic risk based on the capital asset pricing model (CAPM).	Datastream
IP_t	Annual growth of industrial production in the respective home market.	Datastream
TS_t	The term structure of interest rates (spread) is defined as long-term yield based on 10-year government bonds minus short-term yield based on three-month treasury bills.	Datastream
IR_t	Inflation is based on the annual change of the consumer price index in the respective home market.	Datastream
RP_t	The risk premium is defined as the difference in yields of Baa and Aaa rated corporate bonds (Moody's).	Datastream

Adjustments for unit-linked products

Unit-linked products combine an insurance policy with an associated asset and can be regarded as a life insurance policy based on mutual funds. The contract is expressed in units and unit prices, which depend on the market value of the underlying assets. These rather new life insurance products are usually not included in revenue measures like gross written premiums (GWP), but companies report unit-linked products in the notes of annual reports and adjust GWP accordingly. For instance, AXA reported 157 billion FF in GWPs in 1995 and corrected their reported GWP by 9.7 billion FF because of unit-linked products. Accordingly, we use adjusted GWP to measure revenue growth of insurance companies. The main difference between a standard life insurance policy (with-profits policy) and a unit-linked product is that the insurance company can invest the premium in any product in the case of a with-profits policy. A unit-linked product implies that premiums are invested in a specific asset (e.g., a mutual fund selected by the customer).

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