Risk Management in Lebanese SMEs: A Study of Monetary Shock Mitigation Strategies

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Abstract

This article investigates the proactive management of exchange-rate risk in Lebanese SMEs within a multiple-rate environment. Based on an original survey of 100 financial managers, it employs PLS-SEM analysis. Further, key findings reveal that persistent market depreciation significantly influences proactive behavior, with diversification of exchange-rate references as another factor. Together, these conditions diminish the explanatory power of official devaluation. The model accounts for a considerable variance in management practices and emphasizes the importance of disciplined commercial policy and careful balance-sheet strategies over complex financial instruments. However, the study's cross-sectional approach limits causal inference and generalization, suggesting future research should involve longitudinal studies across different sectors and regions.

Keywords: Exchange-rate risk management, market depreciation, multiple-rate regime, SMEs, Lebanon.

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إدارة المخاطر في المؤسسات الصغيرة والمتوسطة اللبنانية: دراسة في سياق الصدمات النقدية

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المُلخّص

تتناول هذه الدّراسة تحليل أثر الاضطراب النقديّ على الإدارة التحوّطية لمخاطر سعر الصّرف في الشّركات اللبنانيّة الصغيرة والمتوسّطة. ترتكز الدّراسة على فكرة أنّ الإدارة التحوّطية تجسّد سياسة متكاملة تربط بين قرارات التسعير والتمويل والاستثمار، بهدف حماية التدفقات النقديّة واستقرار الهوامش. ولتحقيق ذلك، اعتمدت الدّراسة على مسح ميدانيّ إلكترونيّ، جمعت بياناته من عيّنة تضم مئة مسؤول مالي خلال الفترة من تشرين الأوّل 2024 إلى كانون الثّاني 2025. وعليه، حُلّلت البيانات باستخدام نمذجة المعادلات البنائية بطريقة المربعات الصغرى الجزئيّة. (PLS–SEM)

توضّح النتائج أنّ هبوط العملة المستمر هو الدّافع الأقوى الذي يدفع الشّركات إلى اتّخاذ إجراءات تحوطيّة. على الرّغم من أنّ تعدّد أسعار الصّرف يُعد محفّزاً إضافيّاً، إلا أنّ التخفيضات الرسميّة لا تؤثّر بشكل كبير على هذا السّلوك عند وجود العاملين السابقين. تُظهر النّتائج أيضًا أن استمراريّة الشّركات في الأزمات تعتمد على السّياسات التجاريّة والميزانيّة المنضبطة، وليس على الأدوات الماليّة المعقّدة. لكن هذه الخلاصة تبقى محدودة بسبب حصرها على بيانات بلد واحد. لذا، توصي الدّراسة المستقبليّة بتوسيع النّطاق ليشمل بيانات زمنيّة وقطاعات وبلدان متعدّدة لتعميم النّتائج.

الكلمات المفتاحيّة: مخاطر سعر الصّرف، المؤسّسات الصغيرة والمتوسّطة، لبنان، سياسة تسعير بالعملة الأجنبيّة، الانضباط الماليّ، بيئة تعدّد أسعار الصّرف.

Introduction

Economies subject to monetary shocks require continuous vigilance and adaptation from firm leaders. Smart and Vertinsky (1984) show that environmental turbulence shapes strategic choices and performance. Lesca (2008) and Kotler et al. (2014) argue that attentiveness to contextual signals and their integration into decision processes support survival and development. Brouard (2007) finds that managerial responsiveness can convert threats into opportunities. This observation does not concern only large corporations. Small and medium-sized enterprises face similar exposure, as noted by Crutzen and Van Caillie (2010).

A long tradition depicts the dual nature of small firms. On one hand, organizational flexibility and fast decision cycles enable opportunity capture, as discussed by Julien (1997), Julien and Carrier (2002) and Torrès (2012). On the other hand, thinner financial buffers make survival more vulnerable when uncertainty intensifies, a point documented by Raymond and St-Pierre (2005). Earlier analyses thus remain pertinent, since the fate of the small firm is closely tied to an uncertain environment, as underlined by Saporta (1986).

The Lebanese setting offers a particularly acute illustration at both macro and micro levels. A plurality of exchange-rate regimes has fragmented price anchors and rewritten the operating rules for pricing, financing and investment (IMF, 2023; EBRD, 2024). The management and entrepreneurship literature on Lebanon highlights a resilient and inventive fabric of small and medium-sized enterprises, yet one constrained by limited resource access, volatile reference prices and persistent institutional uncertainty, as shown by Corm (2004), Couland (2005), and Desquilbet (2007).

Evidence from firm studies indicates that this instability forces leaders to reconsider managerial routines and allocation priorities, as reported by Abi-Samra (2010), El-Khoury (2011), Hamdan (2003) and Levratto and Ramadan (2009).

In economies where currency parities are unstable, the continuity of small and medium-sized enterprises hinges on their ability to translate monetary shocks into coherent and auditable managerial responses. In Lebanon, the durable coexistence of multiple price references for the same currency and depreciation on the free market have shifted the center of gravity of managerial choices. The literature richly documents exchange-rate

effects on firm performance but still sheds insufficient light on how shocks steer proactive exchange-rate risk management in small and medium-sized enterprises (Gopinath & Itskhoki, 2021). The present study addresses this gap by asking whether such shocks trigger the adoption and intensification of proactive management and by assessing their relative magnitudes on a firm-level construct of proactive management.

Proactive exchange-rate risk management is treated here as a unified policy whose manifestations are jointly observable in leaders' decisions. The policy materializes in pricing adjustments in foreign currency to attenuate exposure (Gopinath, 2015; Gopinath & Itskhoki, 2021), in limiting recourse to foreign currency financing when repayment risk rises, and in reducing or deferring strategic investments when uncertainty dominates. The contribution of the article is to establish empirically the link that runs from shocks to this unified construct and to identify which shock exerts the strongest influence on its intensity.

The article proceeds as follows. It first situates the context and reviews the relevant literature on proactive exchange-rate risk management under multiple rate regimes. It then presents the analytical framework and the hypotheses linking shocks to the proactive management construct. Next, it describes the data and empirical approach, reports the results and discusses their implications for managers and policy makers. It concludes by outlining limitations and avenues for further research.

Theoretical framework

Monetary instability exposes firms to exchange-rate movements that disrupt price anchors, cost structures, and access to finance. In such settings, vigilance and rapid adjustment matter to translate dispersed signals into coherent, auditable decisions. Exchange-rate exposure theory formalizes this microeconomic challenge by defining exposure as the sensitivity of cash flows and value to currency movements, which motivates dedicated risk-management policies (Adler and Dumas, 1984). Recent evidence on invoicing choices and the dominant-currency paradigm further shows that currency of pricing is central to pass-through and margin stability (Boz et al., 2022; Gopinath et al., 2020; Gopinath & Itskhoki, 2022).

Empirical work shows heterogeneous and sometimes asymmetric sensitivities across size, international intensity and sectors, underscoring the need for targeted, resource-efficient responses in small and medium-sized enterprises (Bartov and Bodnar, 1994; Dominguez and Tesar, 2006; He and Ng, 1998; Koutmos and Martin, 2003).

On the real side, depreciation shocks reach firms through complementary mechanisms. The trade / pricing mechanism operates via relative prices and external competitiveness; evidence on invoicing currency and incomplete pass-through suggests that pricing in foreign currency can stabilize margins and reduce transactional exposure when the domestic reference is unstable (Boz et al., 2022; Campa & Goldberg, 2005; Gopinath et al., 2010, 2020; Gopinath & Itskhoki, 2022). The investment mechanism links depreciation to expected profitability and the cost of capital; depending on production structure and reliance on imported equipment, depreciation can stimulate accumulation or restrain it through cost increases and higher risk premia (Aghion et al., 2001; Bresser-Pereira, 2008; Frenkel & Ros, 2006).

The redistribution mechanism highlights real-wage erosion during depreciation and its effects on demand and planning visibility (Alexander, 1952). The financial mechanism operates through balance-sheet effects and higher risk premia. The revaluation of foreign-currency liabilities and tighter financing conditions reduce private investment and encourage a retreat from foreign-currency borrowing in financially vulnerable open economies (Bernanke et al., 1999; Bruno & Shin, 2018; Caballero, 2020; Céspedes et al., 2004; Chang & Velasco, 2000; Doidge et al., 2006; Kiyotaki & Moore, 1997; Krugman, 1999). Recent studies confirm stronger investment declines when FX mismatches are material and document the credit-risk implications of foreign-currency lending (Demirkılıç, 2021; Niepmann & Schmidt-Eisenlohr, 2022), while policy surveillance links sharp depreciations to financial-stability vulnerabilities in emerging markets (IMF, 2024; Hardy et al., 2018).

These mechanisms map directly into the three observable responses that constitute proactive exchange-rate risk management in SMEs. First, pricing in foreign currency aims to attenuate exposure and restore a credible transactional anchor when parities are volatile or fragmented, consistent with evidence on invoicing and pass-through. Second, limiting for-

eign-currency borrowing arises when debt-service risk increases and balance-sheet effects dominate, as documented by studies of financial fragility and concentrated losses among firms with dollar liabilities (Céspedes et al., 2004; Echeverry et al., 2003). Third, reducing or deferring strategic investment follows from higher risk premia, diminished visibility and more expensive funding, in line with research linking currency shocks, the cost of capital and investment dynamics in liberalized economies (Aghion et al., 2001; Doidge et al., 2006) .

In this perspective, observed monetary shocks are explicitly linked to managerial choices. We examine three directed relationships between monetary shocks and proactive exchange-rate risk management at the firm level.

When exchange-rate references diversify and price anchors fragment, firms are expected to intensify foreign-currency pricing to stabilize markups and reduce transactional exposure, consistent with evidence on invoicing currency and incomplete pass-through (Campa & Goldberg, 2005; Gopinath et al., 2010). When market depreciation increases the expected burden of servicing foreign-currency liabilities, proactive management should strengthen through withdrawal from foreign-currency borrowing and the adoption of shorter debt maturities, reflecting balance-sheet effects in emerging markets (Bruno & Shin, 2018; Demirkılıç, 2021; Niepmann & Schmidt-Eisenlohr, 2022; Hardy et al., 2018). When official parity adjustments and volatility raise risk premia and the cost of capital, the option value of waiting increases and long-term investment is deferred (Aghion et al., 2001; Doidge et al., 2006 ; IMF, 2024).

Together, these statements define our mapping from shocks to a unified proactive management construct that aggregates pricing, financing and investment responses.

H1. Greater diversification of exchange-rate references is positively associated with proactive exchange-rate risk management.

H2. Stronger market depreciation is positively associated with proactive exchange-rate risk management.

H3. Official devaluation events are positively associated with proactive exchange-rate risk

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management.

Survey

We designed and administered an original online questionnaire to Lebanese non-financial SMEs between October 2024 and January 2025, and analyzed the resulting data. We retained 100 complete responses out of 250 invitations after data-quality screening. Eligibility required firms to operate in Lebanon and respondent to hold formal responsibility for financial management. The outreach followed a sector-stratified plan with soft quotas by firm size and region, including one follow-up reminder to non-respondents (Dillman et al., 2014). The instrument was expert-reviewed by five chartered accountants and used seven-point Likert-scale items. Responses were anonymous and collected via Google Forms under the author's account.

The achieved sectoral distribution closely aligns with national SME benchmarks. PLS-SEM adequacy at N = 100 is supported by power analysis and widely accepted guidance for variance-based SEM (Barclay et al., 1995; Chin, 1998; Cohen, 1988; Faul et al., 2009; Hair et al., 2017; Kock and Hadaya, 2018; Ringle et al., 2024).

Methodology

This study adopts a cross-sectional quantitative design and estimates a variance-based structural model in PLS-SEM using SmartPLS 4. The approach aligns with the study's predictive objective, the reflective specification of the constructs, and a sample size suitable for stable estimation (Hair et al., 2017, 2019, 2022; Ringle et al., 2024).

All constructs are modeled reflectively under the path-weighting scheme (Mode A). Measurement quality was assessed using established PLS-SEM criteria: indicator reliability, internal consistency (Cronbach's α, ρA, composite reliability), convergent validity (average variance extracted), and discriminant validity (Fornell–Larcker criterion and the heterotrait–monotrait ratio, HTMT) (Chin, 1998 ; Fornell & Larcker, 1981; Henseler et al., 2015; Hair et al., 2022; Rönkkö et al., 2022) .

Customary benchmarks are summarized in Table 1, with construct-level diagnostics in Table 2. The structural specification links the monetary conditions measured in the survey

to the firm-level construct of proactive exchange-rate risk management. Inference relies on 5,000 bootstrap resamples with two-tailed tests and bias-corrected and accelerated confidence intervals at $\alpha = 0.05$. We report standardized path coefficients, R^2, and Cohen's f^2 effect sizes.

Inner variance inflation factors (VIFs) were monitored with a conservative ceiling of 3.3 (Kock and Hadaya, 2018). The instrument captures policy and routine-level practices rather than seasonal tasks; results are therefore not expected to be confounded by timing.

The same dataset was analyzed in a prior article centered on accounting procedural complexity. The present study centers on proactive foreign exchange-rate risk management and therefore addresses a different research question with a distinct set of hypotheses.

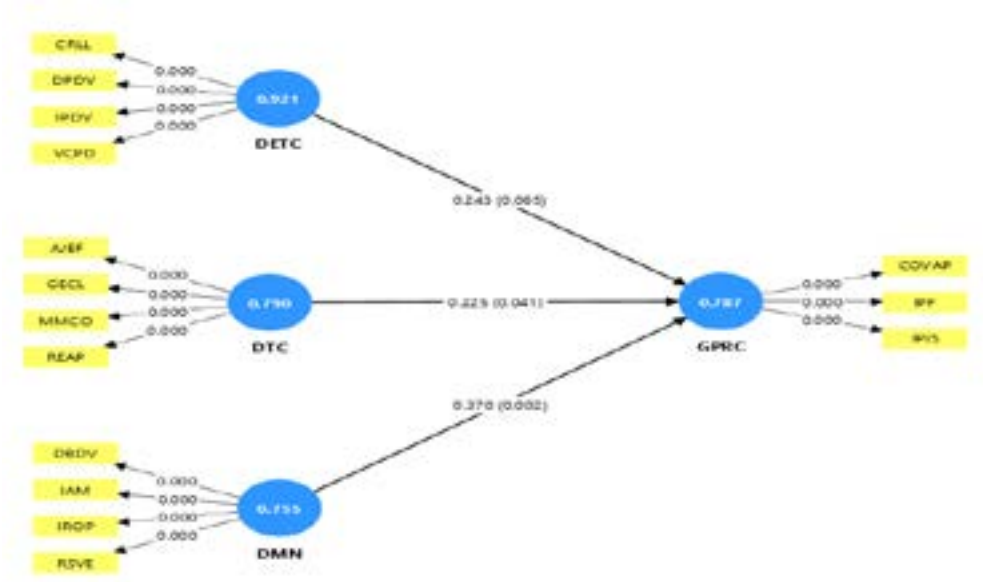
Participation was voluntary and anonymous with informed consent; de-identified data were analyzed; ethics approval was granted.

Table 1. *Measurement benchmarks (PLS-SEM)*

Aspect	Customary benchmarks
Indicator reliability	Loading ≥ 0.70 (retain 0.60–0.70 if supported)
Internal consistency	α, ρA, CR between 0.70 and 0.95
Convergent validity	AVE ≥ 0.50
Discriminant validity (FL)	Fornell–Larcker satisfied
Discriminant validity (HTMT)	HTMT < 0.85 (conservative)
Multicollinearity (inner VIF)	VIF ≤ 3.3
Bootstrap inference	5,000 resamples; two-tailed; BCa; α = 0.05

We now present the PLS-SEM results following the recommended sequence: first the quality of the measurement model, then the estimation of the structural model.

Figure 1. *Initial path diagram*



Results and discussion

Internal consistency is satisfactory: Cronbach's α, ρA, and composite reliability, all exceed 0.70 for GPRC, DETC, DMN, and DTC (Hair et al., 2022). Convergent validity is supported, with AVE values of 0.713 for GPRC, 0.809 for DETC, 0.572 for DMN, and 0.615 for DTC, all above the 0.50 benchmark (Fornell and Larcker, 1981). The structural model explains 48.5% of the variance in proactive exchange-rate risk management, representing a moderate and meaningful level of explained variance for a compact SME model (Cohen, 1988; Hair et al., 2019). As a complementary summary metric, the model's goodness-of-fit (GoF; Tenenhaus et al., 2005) is 0.573, exceeding the 0.36 benchmark for a large fit proposed by Wetzels et al. (2009).

Table 2. *Construct reliability and validity*

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	R-square
GPRC	0.787	0.829	0.879	0.485
DETC	0.921	0.925	0.944	
DMN	0.755	0.848	0.841	
DTC	0.79	0.827	0.863	

Latent variable correlations are reported in Table 3 and range from 0.472 to 0.612. The highest correlation is between market depreciation and proactive management (r = 0.612).

Table 3. *Latent variables - correlations*

	DETC	DMN	DTC	GPRC
DETC	1	0.557	0.546	0.572
DMN	0.557	1	0.472	0.612
DTC	0.546	0.472	1	0.532
GPRC	0.572	0.612	0.532	1

Table 4 reports the HTMT estimates. All inter-construct ratios fall below 0.85 (range 0.552–0.740), supporting discriminant validity among DETC, DMN, DTC and GPRC. Fornell–Larcker results corroborate this conclusion.

Table 4. *Discriminant Validity Among Latent Constructs*

	DETC	DMN	DTC	GPRC
DETC				
DMN	0.634			
DTC	0.62	0.552		
GPRC	0.656	0.74	0.665	

Inner variance inflation factors (VIFs) remained below 3.3 for all predictors of the endogenous construct, indicating the absence of problematic multicollinearity and supporting stable path estimation (Kock, 2015; Kock and Hadaya, 2018). We report the detailed results in table 5:

Table 5. *Collinearity diagnostics*

DETC -> GPRC	1.706
DMN -> GPRC	1.54
DTC -> GPRC	1.513

Cohen's f² was used to assess each predictor's incremental contribution to proactive exchange-rate risk management. Market depreciation exhibited the largest incremental effect.

Table 6 reports Cohen's f² for each path.

Table 6. *Incremental effect sizes*

f-square	
DETC -> GPRC	0.067
DMN -> GPRC	0.173
DTC -> GPRC	0.065

The path from market depreciation to proactive management is positive and statistically significant. The path from diversification of exchange-rate references to proactive management is also positive and statistically significant, though smaller in magnitude. The path from official devaluation to proactive management is not statistically significant once the other monetary conditions are accounted for.

Table 7. *Summary of hypothesis testing*

	Original sample (O)	**Sample mean (M)**	**Standard deviation (STDEV)**	**T statistics (|O/STDEV|)**	**P values**
DETC -> GPRC	0.243	0.244	0.132	1.845	0.065
DMN -> GPRC	0.37	0.39	0.119	3.12	0.002
DTC -> GPRC	0.225	0.225	0.11	2.046	0.041

Note: p-value was considered significant at the 0.05 level

The structural results identify two significant drivers of proactive exchange-rate risk management. Market depreciation has the largest point estimate (β = 0.370, 95% BCa CI [0.144, 0.609], p = 0.002), supporting H2. Exchange-rate diversification is also positive and significant (β = 0.225, 95% BCa CI [0.008, 0.437], p = 0.041), supporting H1.

By contrast, the path from official devaluation (DETC) to GPRC is positive but not statistically significant at the 5% level (β = 0.243, 95% BCa CI [−0.005, 0.509], p = 0.065); thus, H3 is not supported.

The direct effect of official devaluation on proactive exchange-rate risk management is not statistically significant once market depreciation and exchange-rate diversification are included in the model.

This result is not due to multicollinearity; as inner variance inflation factors remain well below conservative thresholds. It reflects shared explanatory variance with the other monetary conditions. In bivariate terms, official devaluation is positively associated with proactive management, yet its partial contribution becomes negligible after accounting for continuous depreciation and fragmented price references. We therefore retain the devaluation path for theoretical completeness but conclude that, in this setting, persistent market pressure and diversification of benchmarks shape durable managerial routines, whereas discrete parity moves add limited incremental explanatory power.

Market depreciation is the primary driver of proactive exchange-rate risk management. Persistent losses of the domestic currency compress unit margins on imported inputs and increase the domestic burden of foreign currency liabilities. Firms respond by listing prices in US dollars to stabilize markups, scaling back borrowing in US dollars to contain balance-sheet risk, and deferring long-horizon projects when the cost of capital rises and cash-flow visibility declines.

This pattern aligns with exposure theory, which explains how exchange-rate movements transmit to cash-flows and firm value, with the invoicing-currency literature on incomplete pass-through which links the billing currency to margin stabilization, and with the balance-sheet channel, in which depreciation tightens financial conditions in emerging

markets. The effect is statistically precise and carries the largest standardized coefficient in the model, indicating substantial practical relevance.

Exchange-rate diversification is a second and distinct trigger of proactive management. When several quotation references coexist, the informational content of a single domestic anchor weakens, and contracting frictions increase. Firms coordinate on a more credible transactional benchmark by listing prices in US dollars, setting explicit limits on open currency positions, and reassessing the timing of strategic investments until planning assumptions regain clarity. This behavior is consistent with the invoicing-currency view, in which the chosen billing currency serves as a coordination device that reduces pricing frictions, and with micro-evidence that exposure rises when price signals are noisy and requires targeted, resource-efficient routines in small and medium-sized enterprises. The association remains statistically significant once other monetary conditions are held constant.

Conclusion

This article examined how monetary conditions translate into proactive exchange-rate risk management in Lebanese small and medium-sized enterprises. Proactive management was treated as a single, observable policy that integrates pricing, financing, and investment decisions. Two findings stand out. Persistent market depreciation is the primary driver of proactive responses. The coexistence of multiple exchange-rate references is a second and distinct trigger. Once these two conditions are jointly considered, official devaluation no longer contributes additional explanatory power.

The structural model accounts for approximately half of the variance in proactive management, and the measurement properties meet accepted standards of reliability and validity. These findings clarify the firm-level transmission of monetary shocks into managerial action within a multiple-rate setting.

The managerial implications are clear. When the domestic currency depreciates and price anchors fragment, listing prices and contracts in a credible foreign currency helps stabilize unit margins and reduce transactional exposure. Limiting borrowing in foreign currency and shortening maturities mitigate balance-sheet risk. Phasing or deferring irreversible capital expenditures helps preserve flexibility when funding costs rise and cash-flow visibility declines.

Our evidence is cross-sectional, self-reported, and drawn from a single country during a period of acute stress. These features limit causal inference and external validity. A residual common-method bias cannot be fully ruled out, and the PLS-SEM estimates capture associations rather than dynamics. Future research should employ panel designs or event-study settings built around exchange-rate regime shifts, expand to multi-country samples with sectoral comparisons, and link survey constructs to administrative or transaction-level data on pricing, borrowing, and capital formation.

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Annex

Table 8 summarizes the constructs, their indicators, and brief item descriptions. Items draw on prior research and were tailored to the Lebanese SME context under a multi-rate exchange-rate regime. All indicators are reflective, measured on a seven-point Likert scale (1 = strongly disagree; 7 = strongly agree). Item codes are persistent identifiers reused across the author's related studies; labels were lightly refined for clarity in this manuscript.

Table 8. *List of all variables and abbreviations*

DETC – Currency devaluation
CRLL · Higher repayment costs in LBP due to devaluation
DPDV · Losses from foreign currency operations due to official rate devaluation
IPDV · Reduced capacity to meet foreign currency obligations
VCPD · Increase in book value of foreign currency liabilities after devaluation
DMN – Currency depreciation
DBDV · Reduced real value of converted FX revenues
IAM · Decline in real value of monetary assets
IROP · Decline in operational profitability from depreciation
RSVE · Reduction in purchasing power due to depreciation
DTC – Exchange-rate diversification
AJEF · Frequent adjustments to financial statements for multiple exchange-rates
GECL · More end-of-period accounting entries due to multiple exchange-rates
MMCO · Adaptation of accounting methods to multiple rates
REAP · Revaluation of assets and liabilities according to the applicable rate
GPRC – Proactive FX risk management
COVAP · Adjustment of prices in foreign currency to mitigate risk
IPF · Internal limits on foreign-currency borrowing
IPIS · Reduction or postponement of strategic investments