



The Case for Active Corporate FX Risk Management

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The Case for Active FX Risk Management

1. The world is too competitive not to actively manage FX risk
2. Like it or not, treasurers are paid to make judgments about FX risk
3. FAS 133 is quite supportive of active management
4. FX risks do not even out over time
5. Tools exist to measure and manage FX risk, and the necessary controls are well-known



What is Active Risk Management? – 1

Speculation involves assuming risk, while active risk management is:

- Any hedge of a *business-generated* financial exposure that satisfies FAS 133's prospective and retrospective effectiveness tests
 - A pragmatic, performance-based standard
- But ignoring FAS 133's economic nonsense
 - Not allowing foreign currency acquisitions hedging
 - Not measuring own equity hedging or weather hedging



What is Active Risk Management? – 2

The critical issue is where on the risk continuum of expected effectiveness one defines active hedging from speculation:

- 0-50% effectiveness is considered by most as speculative
- 80-120% effectiveness is considered by FAS 133 as effective
- 50-80% is the grey area of “economic hedging”



What is Active FX Risk Management? – 3

- The FAS 133 effectiveness standard measures the reduction in volatility
 - Not whether the hedges made money
- It's consistent with the economic definition of risk:
 - The standard deviation of expected returns
- Measuring whether the hedging made money only makes sense if one is speculating
 - Not hedging



Globalization is the Major Trend Affecting Treasury

Globalization is better stated as:

Unrelenting
Global
Competition



Unrelenting Global Competition – G31 in 1998

Amoco	ENI	Merck	Sara Lee
BP	Fiat	Mobil	Shell
Chrysler	Ford	NEC	Siemens
Daimler-Benz	GM	Nestlé	Texaco
Dow Chemical	HP	Novartis	Toyota
Du Pont	IBM	P&G	Unilever
Elf Aquitaine	Lucent	Philips	Volvo



The G31 Four Years Later

	ENI	Merck	Sara Lee
BP	Fiat		Shell
	Ford	NEC	Siemens
DaimlerChrysler	GM	Nestlé	
Dow Chemical	HP	Novartis	Toyota
Du Pont	IBM	P&G	Unilever
	Lucent	Philips	



Globalization is Driving these Changes



Increasing Global Fair Value Accounting

- FAS 133 and IAS 39 are only the beginning
- By 2007, pension obligations will be fully reflected on the balance sheet and P&L/OCI
- By 2010, all financial instruments, including corporate debt, will be marked-to-market on the balance sheet and P&L/OCI
- Bifurcation of complex financial instruments will continue to increase
 - Bifurcated derivatives MTM to P&L



Implications for Treasurers

- The days of passively hiding behind historic cost accounting are over
- Pension investment management and Interest rate risk management will be radically changed when risks are fair valued
- Financial engineering to achieve book objectives will become more difficult
 - And risky
- Any treasurer who does not fully understand financial fair value accounting will not remain treasurer for long



Expanding Corporate Systems Integration

With expanding corporate system integration, Treasurers now have the data to safely and accurately manage and measure their company's FX risks:

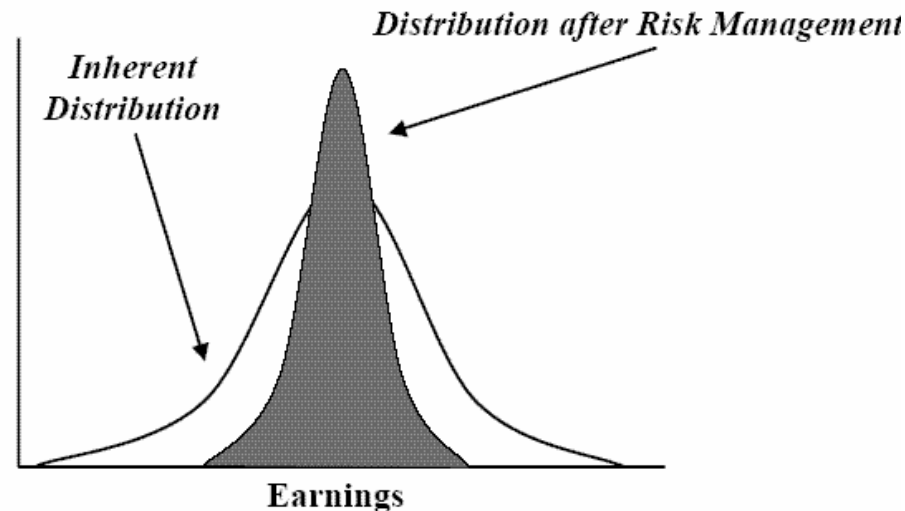
- ERP systems are the default G/L
- Internet treasury systems
- STP for FX trading with Currenex and FXall
- Risk analytics are affordable and common



Importance of Active Risk Management – 1

Active risk management creates shareholder value through better stock price performance by:

- Stabilizing earnings and dividends
- Communicating clear expectations and risk profile to the stock market



Credit: Zanders



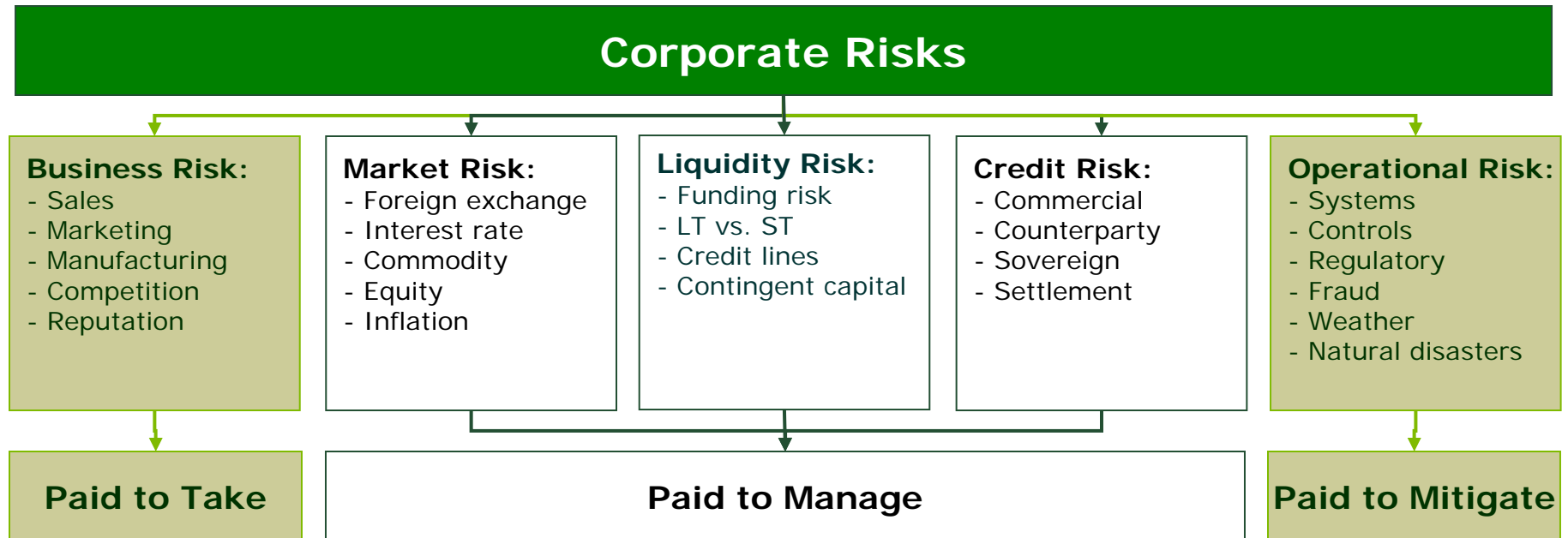
Importance of Active Risk Management – 2

Active risk management can improve actual results by using Welch's insight for GE:

- Improving product value by minimizing customer financial risk
 - Long-term fixed rate contracts
 - Providing customer funding
 - Customized financial tailoring of the business contract to meet specific customer needs
- GE has treasury consultants assigned to support the divisions for Europe, Americas and Asia



Modern Corporate Risk Management



Credit: Zanders



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FAS 133's Flexibility

1. Overall corporate risk does not have to be reduced as long as one has a valid hedging relationship
2. Hedges can be taken on or off or redesignated with no adverse consequences
3. Except for some option exceptions, FAS 133 has no prohibitions against specific derivatives
4. G20 allows 100% effective option hedging and a mechanism for imperfect option hedges
5. Shortcut treatment for FV swaps is a gift
6. Statistical testing allows complex hedging that would fail the 80-125% dollar offset ratio



Statistical Testing under FAS 133

- For regression analysis, regress on 90 days of past changes rather than 30 historic months
 - Much better results
 - However, $R^2 > .80$ may not be enough to satisfy the auditors
 - t-tests and hedge ratios = β are becoming more common
- A useful alternative to regression analysis, is the “Volatility Reduction Method”
 - See paper at www.kalotay.com



FX Changes Do Not Even Out Over Time

- In actuality, PPP, purchasing power parity, merely states that FX rates are mean reverting
- The idea that FX changes even out over time implicitly assumes:
 - FX rate vary around an equilibrium rate due to a static worldwide economy
 - FX rate changes are normally distributed changes
 - The underlying business is static as well



Dealing with the True Believers

Nevertheless, the true believers in FX changes evening out over time will continue to insist that the FX changes do, so ask them:

- Over what time horizon? 5 or 10 or 15 or 20 years?
- For what period of changes? Quarterly or yearly?
- How are the changes measured?
 - Sum of actual changes?
 - Sum of changes adjusted for inflation?
 - On some sort of NPV basis?
- And, this would be true for all companies for the same time horizon and change period?

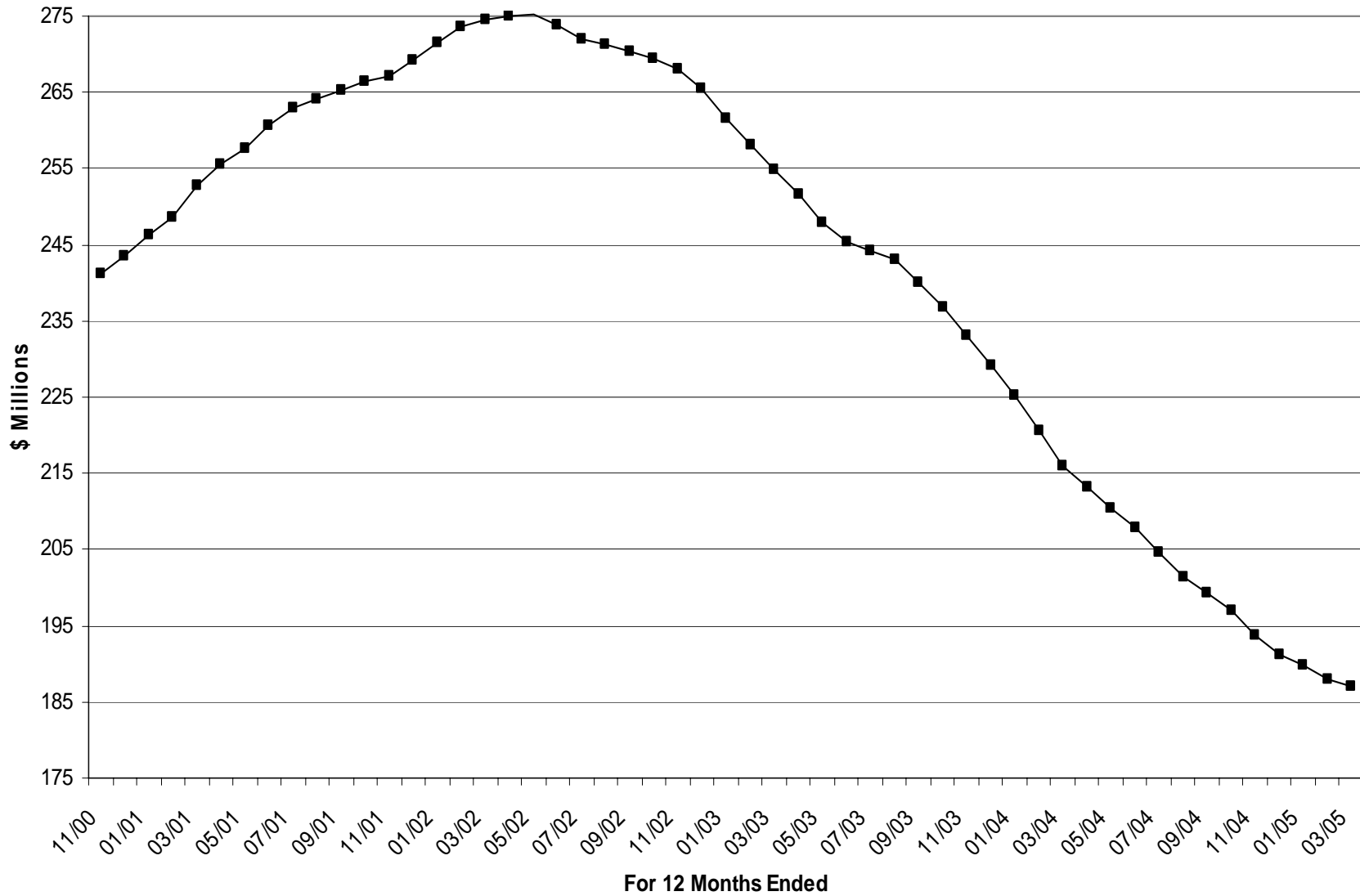


Historic FX Rate Simulation Charts

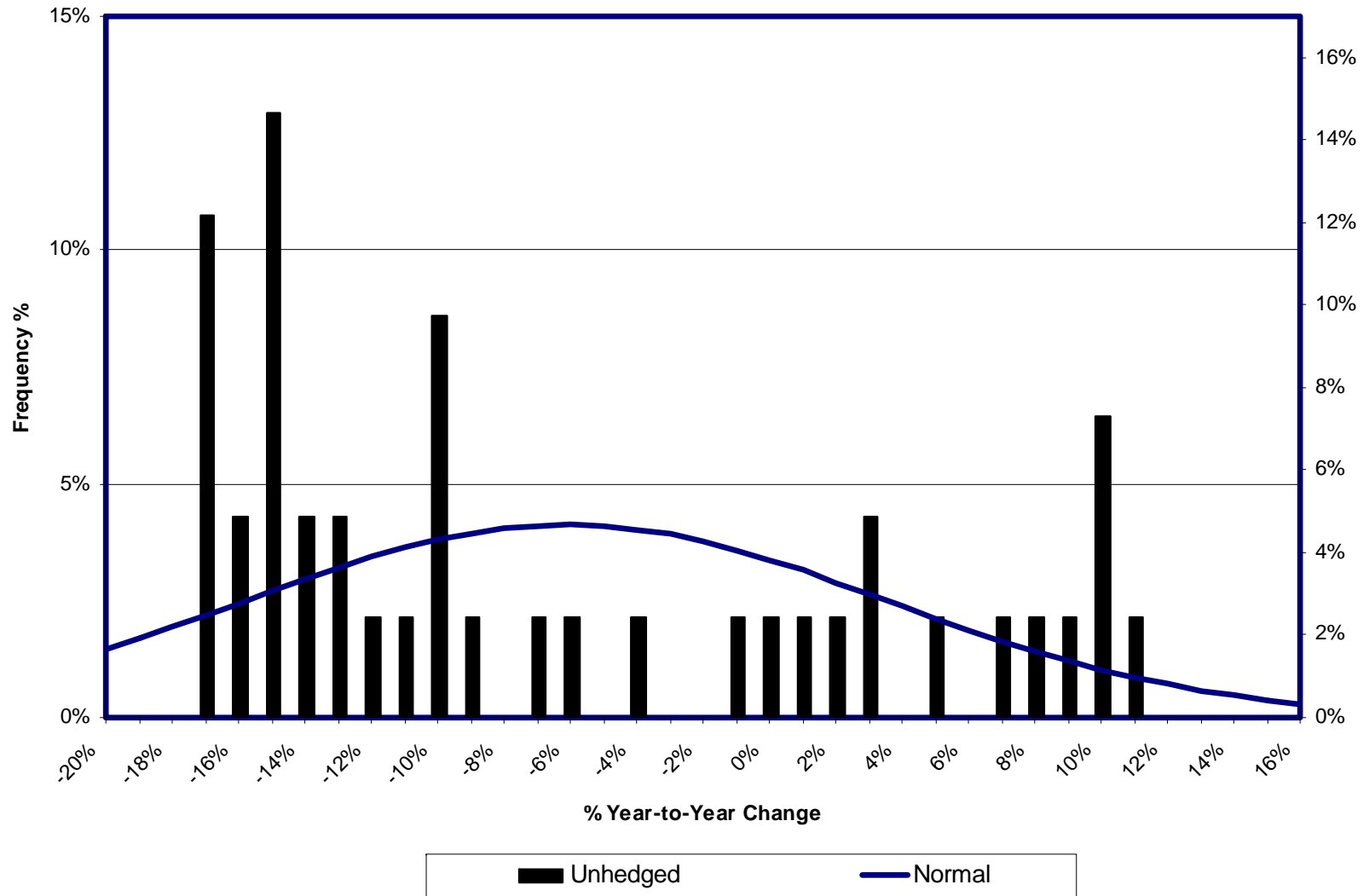
- The charts that follow show the impact of historic FX rates on a stable business that is:
 - Long dollars and short all other currencies
- USD P&L results assume even monthly P&L's currency flows @ historical FX rates:
 - April 2002's \$275 = Σ March 2001 to April 2002 FX rates times the same monthly currency flows
- Normal curves shown are based upon means and standard deviations of actual changes



**Simulation of the Normalized Annual P&L
Using Historic FX Rates from 11/2000 to 03/2005**



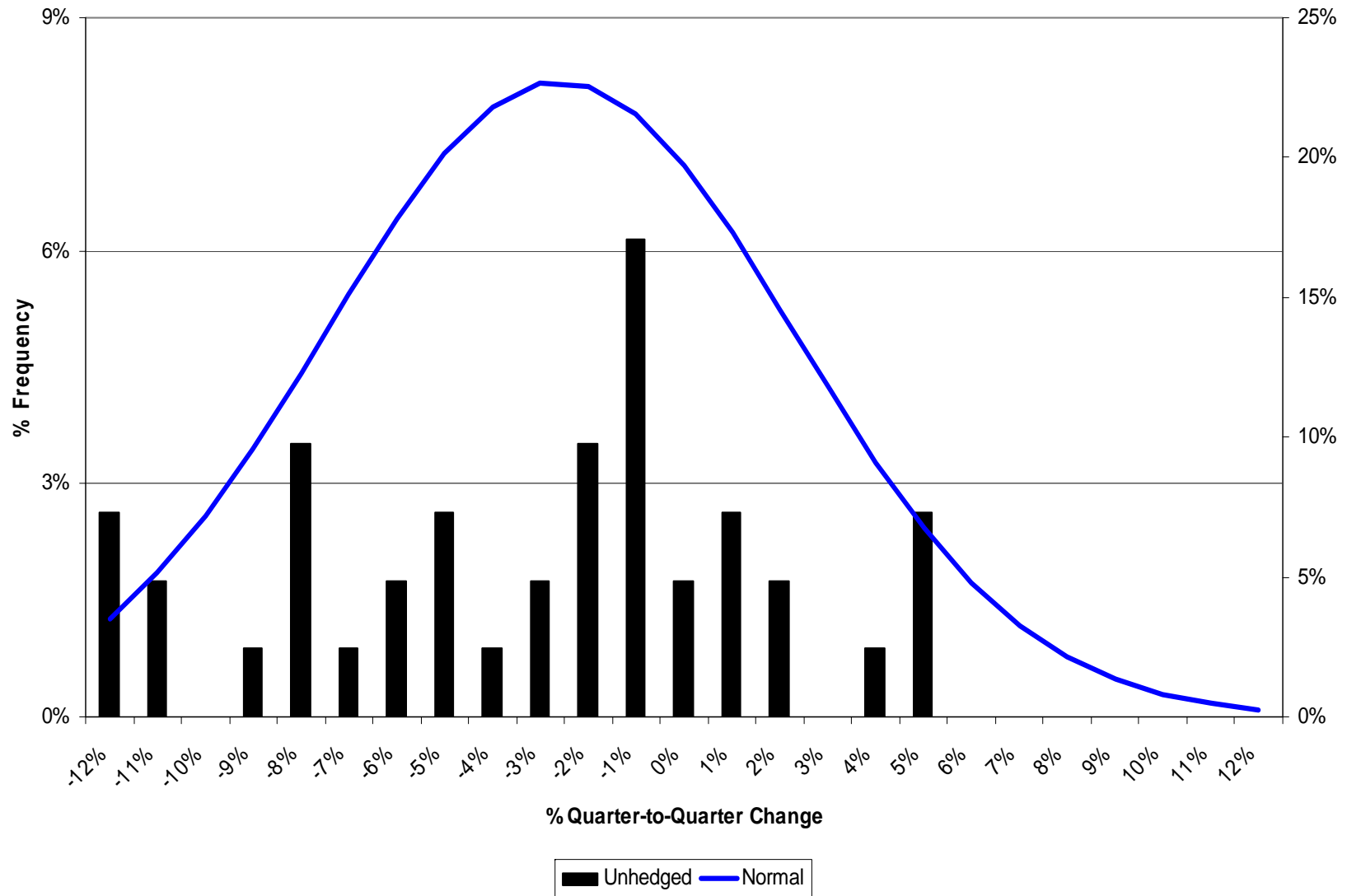
Frequency Histogram of Normalized 2004
PnL's Year-to-Year Changes from 05/2000 to 03/2005



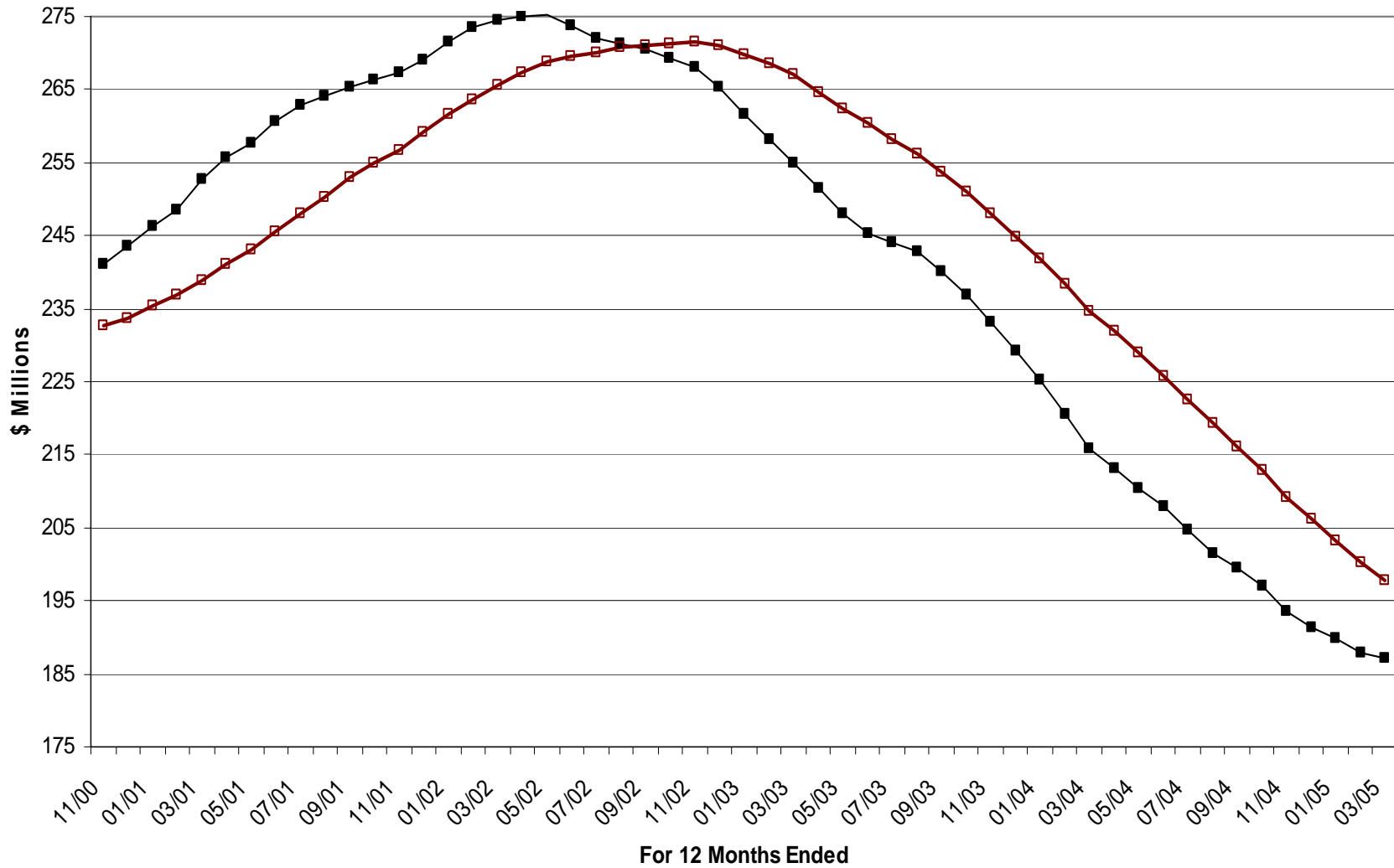
**Simulation of a Normalized Quarterly P&L
Using Historic FX Rates from 11/1998 to 03/2005**



**Frequency Histogram of Quarter-to-Quarter % Changes of Normalized Annual P&L
between 11/1998 and 03/2005**



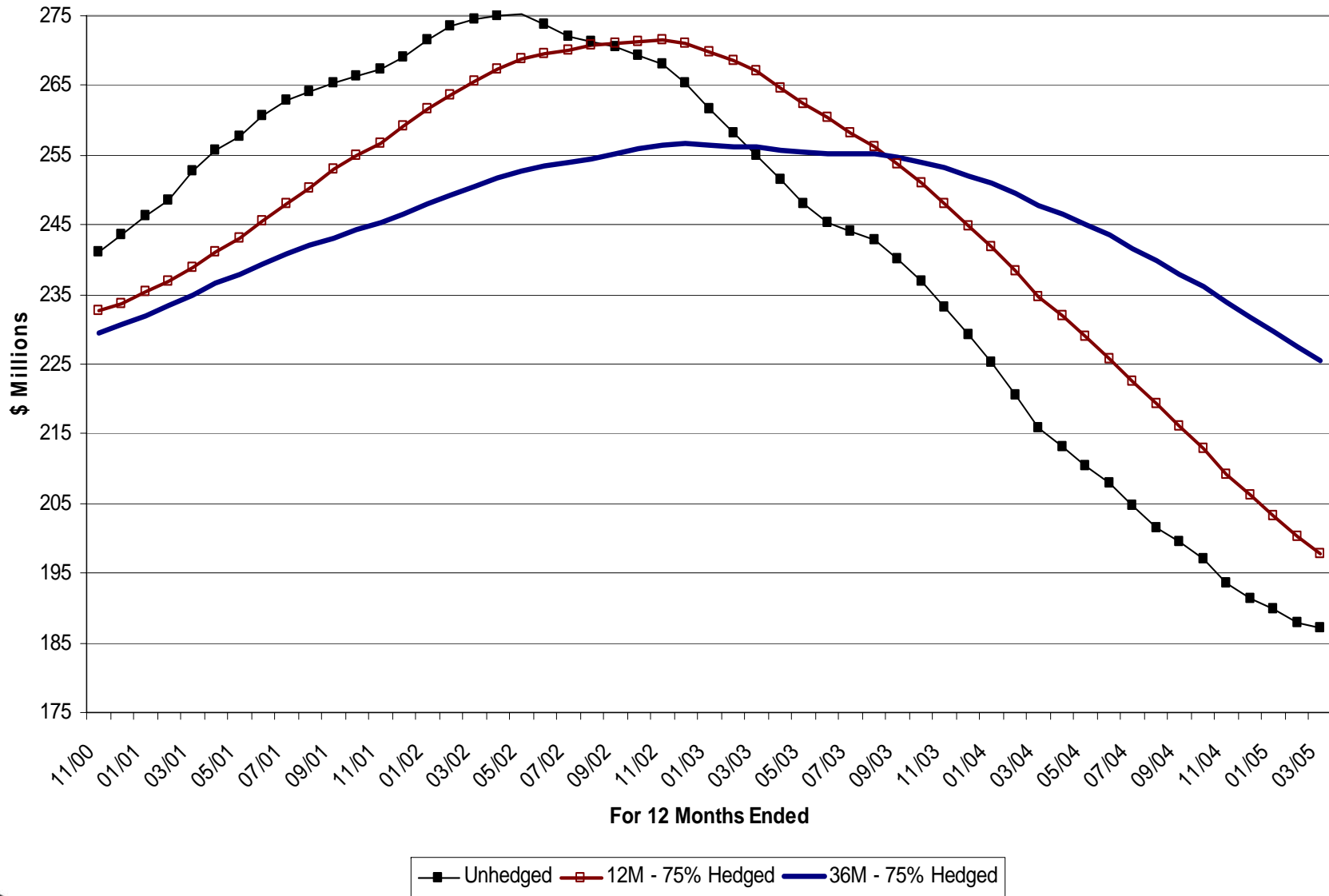
Simulation of the Normalized Annual P&L Using Historic FX Rates from 11/2000 to 03/2005



Unhedged
 12M - 75% Hedged



**Simulation of the Normalized Annual P&L
Using Historic FX Rates from 11/2000 to 03/2005**



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Hedging Tools & Performance Measures

- FX risk is multifaceted and different tools are needed to best measure it:
 - Probabilistic measures
 - Stress tests
 - Marginal analysis
- FX performance measures
 - No consensus
 - Must be tied to hedging objectives



Hedging Tools – Probabilistic Approaches

- Value-at-Risk vs. Earnings-at-Risk and Cash Flow-at-Risk
- Variance/covariance vs. Monte Carlo simulations
- Variance/covariance estimation issues
- Stability of volatilities and cross-currency correlations over time
- Best advantage: takes into account current market volatility



Hedging Tools – Stress Testing & Marginal Analysis

- Historic scenario testing
 - October 1987 stock market crash
 - Russian ruble crisis
 - Asian flu crisis
- Numeric scenario testing
 - 3 standard deviation moves of major currencies
 - Hypothetical euro break-up
- Marginal analysis
 - 1% change against the USD
 - 10% change



Marking-to-Earnings™ - 1

Future value (Marking-to-Earnings™ or MTE™) is a better corporate metric than present value (marking-to-market or MTM):

- MTM generally involves only the derivative position
- Corporate hedging using FAS 133 deferral accounting is focused on managing future period results – the value of the AOCI reclass plus the hedged underlying
 - MTE™ measures the complete FAS 133 value of the future period: underlying + hedges, assuming 100% forwards



Marking-to-Earnings™ - 2

Example: Hedging forecast 4Q02 revenue of EUR 100, as of 2QE02 the market rate for the 4Q02 is 1.08, with

- EUR 40 of forwards at .95, MTM = \$5.1 loss
- EUR 25 in options, MTM = \$0.1 vs. cost of \$0.5
- EUR 35 is unhedged

Hedged EUR 40 @ .95	\$38.0
Actual option premium*	(0.5)
Hypothetical sale of EUR 25 option*	0.1
Replace option with EUR 25 forward at @1.08	27.0
Lock-in unhedged EUR 35 at 1.08	\$37.8
Total Marking-to-Future Value	\$102.4
*Actual 4Q04 AOCI reclass for this option would be a \$0.4 loss	



Marking-to-Earnings™ - 3

- At 1Q02, a similar MTE™ calculation was \$99.3, and a similar MTM calculation at the 1Q02 was a MTM loss of \$2.5
- Which performance could cost one a job and which could earn a bonus?

Forecast 4Q0X Hedging Performance			
	As of		2Q02 Change
	1Q02	2Q02	
MTM	<\$2.5>	<\$5.5>	<\$3.0>
MTE™	\$99.3	\$102.4	\$3.1
Benchmark	?	?	?



Metrics for Managing FX Risk

The benchmarks for these kinds of metrics are generally per the FX hedging policy

- FX Exposure or position limits
- Minimum hedge ratios
- Min/max or range hedge ratios
- Limits for what is “at-Risk”, either VaR or EaR
- Aggregating currencies based on correlations
- Numeric or statistical stress testing
- Scenario stress testing



Metrics for FX Hedging Results

- MTM
- MTE™ on hedged forecast position only
- MTE™ on total hedged and unhedged forecast
- Average transaction rate
- FAS 133 ineffectiveness
- P&L FX related to balance sheet FX exposures
- Calculation of forward premium/discount
- Forecast to actual variance analysis of
 - Hedge gain/loss only
 - Hedge plus underlying gain/loss



Benchmarks for FX Hedging Results

- Common but unfair benchmarks are the budget rate and last year's rate
- A fair benchmark is the achievable rate based upon market rates when budget is finalized
- Daily average spot rate or P&L rate
- Actual FX results vs. model portfolio
 - 0% or 100% forward cover
 - 50% forward cover or 50% option cover
 - Combinations of option and forward cover
 - Perfectly hedged based upon actuals



Concluding Remarks

- Active FX risk management does involve job risk, because of hindsight bias
 - “Everyone knew in 2000 NASDAQ was overvalued”
- The operating units must be responsible for managing FX risk, because they are the ones creating it
 - Within the limits of an FX policy with performance measures
 - With Treasury’s advice
 - Executed only by Treasury



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About Greenwich Treasury – 1

Since 1992, Greenwich Treasury Advisors has been delivering integrated treasury solutions for over 300 global businesses:

- Risk
 - FX/IR/commodity risk assessment and policies
 - FAS 133/IAS 39 hedging and documentation
 - Performance measurement
 - Best practices
- Cash
 - Global liquidity management
 - Cross-border cash consolidation
 - Bank reviews and RFP development



About Greenwich Treasury – 2

- Structures
 - Diagnostic treasury reviews
 - Implementing spin-offs and merger treasuries
 - In-house banking and outsourcing
- Technology
 - Treasury system RFP's, review and selection
 - Treasury intranet and web application design
- For more info, visit www.greenwichtreasury.com
 - Free articles on risk management, FAS 133, treasury systems and treasury maxims at [/articles.cfm](#)



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NZ Dairy Board

Procter & Gamble

Saint-Gobain

Siemens



Jeff Wallace

- Founded Greenwich Treasury Advisors in 1992, and author of:
 - *The Group of 31 Report: Core Principles for Managing MNC FX Risk* (AFP, 1999)
 - *A Risk Metric Approach to Hedging* (GTA, 2002)
 - FAS 133 chapter of *The Handbook of International Finance & Accounting* (John Wiley, 2004)
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Why Clients Choose Greenwich Treasury

- Corporate Treasury Expertise
 - Each consultant brings over 25 years of corporate treasury experience
- Proven methodologies
 - Data gathering and analysis
- Collaborative approach
 - We work as part of your team
- Independent with no conflicts of interest
- 100% guarantee of your satisfaction
 - Or we will return your fee

