What Matters Today: Managing Cash in a Turbulent Economy

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Agenda

- Update on Economic Trends
- Market Reactions: What We Are Hearing From Clients
- Creating a Sustainable Liquidity Management Strategy: Adopting Best Practices
- Google Case Study: Applying Best Practices
- Q&A
Bumpy Path to Sustained Recovery

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Main Points

Return to sustained, above-trend growth

- Foundation in place for a strong, global upturn lasting 4-8 quarters
- U.S. to grow near 4% over coming year
- Rebound nonetheless well short of historical experience

A return to growth does not equal a return to health

- High unemployment will drive core inflation to 0.5% by late 2010
- Deflation risk will keep Fed on hold despite growth upturn
- Persistent high budget deficits, rising debt to be a fixture
Dangerous, Synchronized Downturn

Real GDP

%oya

US
Euro area
Japan

Synchronicity of DM GDP growth

Avg correl. of q/q growth in all country pairs;
8qtr rolling period

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Policymakers Delivered Unprecedented Support

Global policy rates
percent, both scales

Fiscal stimulus for CY2009
% GDP; Excl. automatic stabilizers

Stimulus measures funded by prvt sector
Crisis Containment Laid Foundation for Recovery

### Global financial indicators

<table>
<thead>
<tr>
<th></th>
<th>4Q06</th>
<th>4Q08</th>
<th>Mar</th>
<th>Cur</th>
</tr>
</thead>
<tbody>
<tr>
<td>10Y US Treasury yield (%)</td>
<td>4.6</td>
<td>3.3</td>
<td>2.8</td>
<td>3.5</td>
</tr>
<tr>
<td>Conform FRM rate (%)</td>
<td>5.8</td>
<td>5.9</td>
<td>5.1</td>
<td>5.0</td>
</tr>
<tr>
<td>Jumbo FRM rate (%)</td>
<td>6.1</td>
<td>7.3</td>
<td>6.7</td>
<td>6.0</td>
</tr>
<tr>
<td>US inv grade yield (%)</td>
<td>5.7</td>
<td>7.9</td>
<td>7.5</td>
<td>5.3</td>
</tr>
<tr>
<td>US HY yield (%)</td>
<td>8.3</td>
<td>18.4</td>
<td>18.2</td>
<td>10.0</td>
</tr>
<tr>
<td>EM corp yield (%)</td>
<td>6.4</td>
<td>12.4</td>
<td>11.7</td>
<td>7.6</td>
</tr>
<tr>
<td>TED sprd (3 month %pt)</td>
<td>0.4</td>
<td>2.5</td>
<td>1.1</td>
<td>0.3</td>
</tr>
<tr>
<td>N America HG CDS sprd*</td>
<td>35</td>
<td>216</td>
<td>221</td>
<td>96</td>
</tr>
<tr>
<td>2Y AAA autos ABS sprd*</td>
<td>0</td>
<td>504</td>
<td>253</td>
<td>45</td>
</tr>
<tr>
<td>2Y AAA cards ABS sprd*</td>
<td>0</td>
<td>422</td>
<td>262</td>
<td>35</td>
</tr>
<tr>
<td>10Y AAA CMBS sprd*</td>
<td>24</td>
<td>810</td>
<td>1107</td>
<td>560</td>
</tr>
<tr>
<td>Global equities (index)</td>
<td>117</td>
<td>75</td>
<td>65</td>
<td>93</td>
</tr>
<tr>
<td>VIX (index)</td>
<td>11</td>
<td>59</td>
<td>45</td>
<td>22</td>
</tr>
</tbody>
</table>

*basis points

### Global consumer confidence

<table>
<thead>
<tr>
<th>Std dev from 1m00-5m09 avg (US, Euro, UK, Jap)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
</tr>
<tr>
<td>Expectations</td>
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Global Consumer Spending Turned in 1H09, Led by Autos

Retail sales volumes, Global
%3m, saar

Light motor vehicles, Global
mn units, saar

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Firms Pulled Back too Much

Global industrial production and final sales

Index, Jan00-Jul09 average = 100

U.S. real business inventories
%ch at annual rate over 1 quarter
Production Bounce Now Under Way

U.S. mfg output and housing starts

Index, sa

Mfg

Housing (Single family)

Mn units, saar

2007 2008 2009

U.S. capital goods orders & employment

Bn dollars, sa

Orders

Employment

Mn, sa

2007 2008 2009
G3 Policy Normalization to Lag

**DM unemployment rate**

- **Percent**

- **Consumer prices ex food & energy**
  - % ch over 12 months

- **Emerging**
  - **Developed**
What Matters Today: Managing Cash in a Turbulent Economy

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2009 – Clients Reevaluated Liquidity Management Strategies in Complex Times...

- Global Environment
  - Economic Uncertainty
  - Low Interest Rates
  - Changes to Government Guarantee Programs
  - Debt & Capital Market Access
  - FX & Rate Market Volatility
  - High Cost of Borrowing

- Investment Management

- Governance & Risk Management

- Balance Sheet Management

- Cash & Liquidity Management
...Reexamined Liquidity Management Priorities...

- Cash is ‘King’
- Strength is an Asset
- Improve Financial Ratios

- Investment Safety
- Investment Criteria
- Investment Transparency

- Global Environment
  - Economic Uncertainty
  - Low Interest Rates
  - Changes to Government Guarantee Programs
  - Debt & Capital Market Access
  - FX & Rate Market Volatility
  - High Cost of Borrowing

- Oversight & Control
- Counterparty Risk
- Systemic & Operating Risk

- Control & Visibility of Cash
- Optimize & Self-fund
- Consolidate & Integrate

Cash & Liquidity Management

Governance & Risk Management
...and Talked to Us About The Evolution of Liquidity Management

Client Themes
- Risk Aversion, De-leverage
- Liquidity Preservation
- Collateral Upgrades
- Active Risk Management

Client Themes
- Review Counterparties
- Review Investment Choice
- Reset Investment Guidelines
- Examine Operating Processes

Governance & Risk Management

Balance Sheet Management

- Cash is ‘King’
- Strength is an Asset
- Improve Financial Ratios

Investment Management

- Global Environment
  - Economic Uncertainty
  - High Cost of Borrowing
  - Changes to Government Guarantee Programs
  - FX & Rate Market Volatility
  - Low Interest Rates

- Capital Safety
- Investment Criteria
- Investment Transparency

- Control & Visibility of Cash
- Optimize & Self-fund
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Cash & Liquidity Management

Client Themes
- Local Market Capabilities
- Local Currency & Bal. Sheet
- Integrated Products
- Focus on Credit Providers

Client Themes
- Reduce Bank Providers
- Simplify Cash Positions
- Focus on Transparency
- Increase Daily Control
Best Practices: Creating a Sustainable Liquidity Management Strategy

Adopt a Dynamic Framework

Five Principles

- Forecast and segment liquidity needs, then determine appropriate (not necessarily minimum) liquidity requirements
- Establish appropriate investment guidelines to ensure availability and safety
- Select investment types within the guidelines that are appropriate for each cash segment
- Establish and diversify contingent funding sources
- Maximize liquidity transparency and efficiency across geographies and legal entities
Best Practices: Forecast and Segment Liquidity Needs

Forecasting

- The right amount of cash, in the right place, at the right time can only be achieved with accurate, conservative cash forecasting.
- Update forecasting needs frequently to reflect business and market changes:
  - Review for trouble spots, such as stacked debt maturities
  - Factor in possible but unexpected demand
  - Stress test often and build in worse case scenarios
- Cash balances should be segmented:
  - Operating
  - Reserve
  - Strategic
  - Restricted Cash
Best Practices: Forecast and Segment Liquidity Needs

- Intended to fund daily operating needs which may be subject to unforeseen volatility
- Local or regional investment decisions required on daily/weekly basis

- Forecasted excess balances
- Cash forecasted for a near-term purpose (e.g., business investment and stock repurchase)

- Near-term liquidity is a secondary concern
- Unsuitable for volatile cash flows/portfolio, temporary cash

Restricted Cash Pools
- Balances trapped in regulated jurisdictions
- Cash collateral
- Adverse tax consequences
Best Practices: Establish Appropriate Investment Guidelines

- During the past year, investment guidelines and practices have moved from aggressive to ultra-conservative.
- Principal protection should be the paramount goal at all times - not just at difficult times.
- Taking risky positions - duration, investment class, or investment quality - in a benign environment greatly increases the chance of “getting caught” in a downturn.
- Establish guidelines that require diversification across investment type, term, counterparty and, if necessary, currency.

Liquidity, by definition should not be put at risk!
Best Practices: Select Investments for Each Cash Segment

Liquidity Need
- Reserve Cash
- Strategic Cash
- Restricted Cash
- Total Balance Sheet Cash

Potential Solutions
- Demand deposit accounts
- Demand deposit accounts with end-of-day sweeps
- Interest bearing demand deposit accounts (non-U.S.)

Reserve Cash Solutions
- Money market deposit account
- AAA-rated domestic and international money market funds
- Certificate/Time Deposits
- Short tenor customized separately managed accounts

- Reserve Cash Solutions
- Longer tenor customized separately managed accounts
- Fixed income securities
- Bond funds

- Demand deposit accounts
- Money market deposit account
- Private placement vehicles
- Customized separately managed accounts
- Fixed income securities
- AAA-rated offshore USD and foreign currency funds
- Multi currency interest program

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Best Practices:
Establish & Diversify Contingent Funding Sources

- Establish diversified contingent funding sources:
  - Arrange excess contingent funding sources and verify availability
  - Avoid clauses and terms that restrict availability to extent possible
  - Access/tap cash reserves before needed
  - Fund in advance and in excess of needs

- Optimize cash position across geographies and legal entities:
  - Address each of the previous points for each finite pool of cash
  - Where possible, employ intra-company funding facilities to facilitate the flow of liquidity throughout the organization
  - To the extent possible, extract funds that would ordinarily be trapped and hold centrally to maximize availability for redeployment
  - Seek geographic diversification of funding sources
Centralize treasury management to improve visibility and control of cash

- Concentrating cash provides the following benefits:
  - Higher returns:
    - Reducing idle balances maximizes funds available for investment
    - Consolidating cash into fewer large investments results in a higher yield
    - Centralizing FX management reduces FX spreads and lowers the number of FX trades
  - Lower costs:
    - Self-funding accounts in a deficit position reduces overdrafts and/or external funding requirements
    - Less staff support results in lower administrative expenses
    - More efficient relationship and account administration
  - Simplified information reporting and reconciliation
What We Are Seeing: Trend Towards a Global Cash Management Model

Strategic drivers:
- Centralize the application of investment policy
- Enhance visibility and control over internal sources of liquidity
- Minimize FX risks by rationalizing non-strategic currencies

2008 Global Corporate Survey

Now
- Local Autonomy 11%
- Global Oversight/Local Autonomy 12%
- Regionally 19%
- Globally 29%

Future
- Local Autonomy 3%
- Global Oversight/Local Autonomy 7%
- Regionally 13%
- Globally 45%

Case Study: Google - Managing Liquidity Risk in a Global Environment

Google’s Treasury Challenges

- Efficiently managing investments & associated risks with constrained resources
- Minimizing the time required to oversee investment processes
  - Selecting counterparties
  - Monitoring markets
  - Executing & settling trades
  - Checking information with credit rating agencies
- Ensuring investment diversity
- Enhancing returns without increasing investment risk
- Managing documentation & confirmations from multiple providers
Case Study: Google

The Solution: An Automated Rules-Based Investment Program

- J.P. Morgan acts as placing agent for third-party time deposits
- Based on standing instructions, operating cash is automatically swept into time deposits with 40+ pre-screened counterparties
- All counterparties credit-monitored by J.P. Morgan (minimum A1/P1 Moody’s/S&P)
- J.P. Morgan manages all investing, risk monitoring, settlement & reconciliation
- Program ensures investment diversification-limits concentration of cash with the counterparties based on the established rules
- Modifications to counterparty list sent to Google for approval
- Web-based reporting on daily positions
Case Study: Google

The Benefits: Reduced Risk, Increased Efficiency

- Improves investment process efficiency
- Leverages J.P. Morgan’s credit monitoring expertise
- Reduces risk - diversifies investments and counterparties
- Mitigates operational risks associated with daily money market dealings, trade settlement & reconciliations
- Provides transparency
  - Reports counterparty exposure & product performance (daily & weighted average)
- Generates competitive returns by leveraging the power of J.P. Morgan’s trading desk, which manages >$300 Billion in assets
- Frees staff to focus on core competencies
Looking Ahead - Questions to Consider

- What is the right amount of liquidity to make sure you can meet all of your expected and unexpected funding needs?
- How accurate is your cash forecasting? Is it conservative? Do you frequently stress test it?
- Do you segment your cash position? How often do you have to tap reserve cash?
- What is your investment strategy?
- How often do you review your investment policy or guidelines?
- When evaluating approved counterparties, do you review names for removal and new counterparties with equal vigor?
- How frequently do you review the strength of your banking relationships?
- What level of visibility and control do you have on your balances globally and the associated account structures?
- What if what you never thought could happen actually did?
“The time to repair the roof is when the sun is shining.”

John F. Kennedy
Thank You

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