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US Economics

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# Clearing the Hurdle Rate

## Presentation to the Federal Reserve Bank of Chicago Academic Advisory Council

## November 18, 2016

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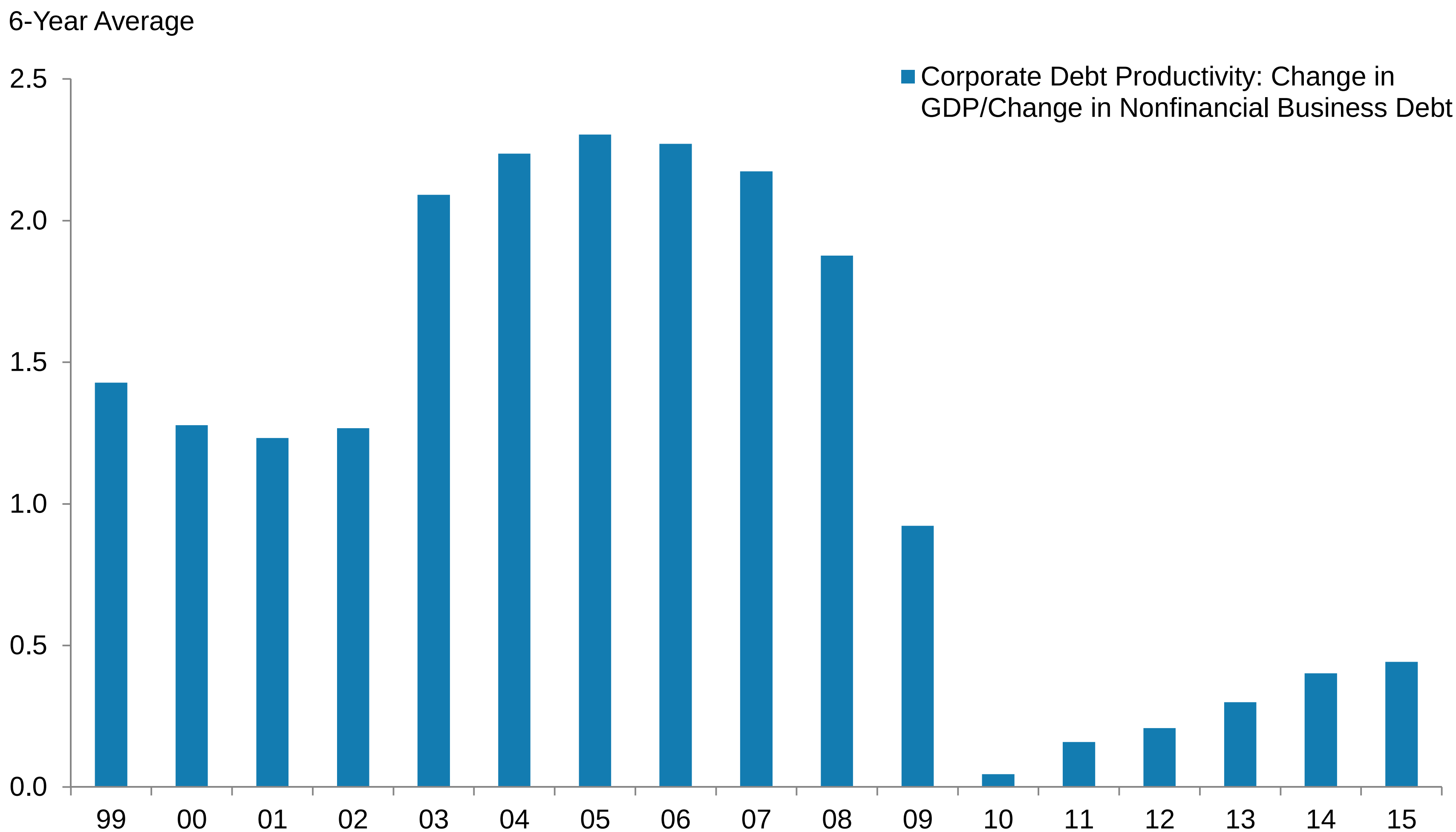
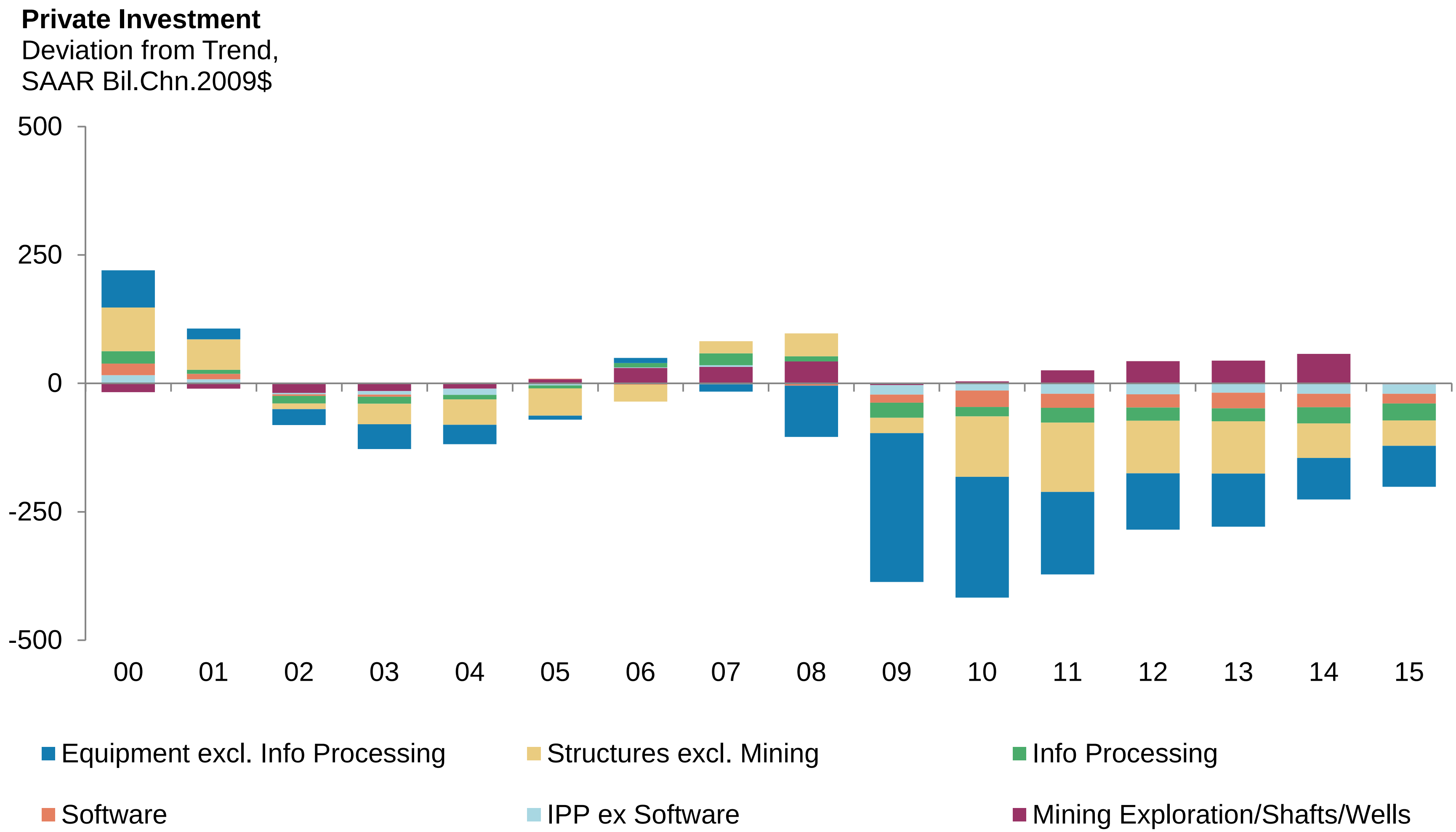
# Marginal Productivity of Corporate Debt Has Fallen to Very Low Levels




Source: Bureau of Economic Analysis, Federal Reserve Board of Governors Z.1, Morgan Stanley Research

# Contributions to the Deviation from Trend in Private Business Investment




Note: Deviation from trend calculated using 1990-2007 trend.
Source: Bureau of Economic Analysis, Morgan Stanley Research

# Explaining the Weakness in Capital Deepening: The Cost of Capital vs Labor

- **Changes in the amount of capital per unit of labor in the economy reflect the behavior of firms in a dynamic economy seeking to minimize total production costs.**

- **Looking at firms' production behavior since 2000 suggests the slowdown in the rate of growth of capital per unit of labor can largely be explained by changes in the relative prices of the two factors, and this effect appears to be even starker in the post-recession period.**

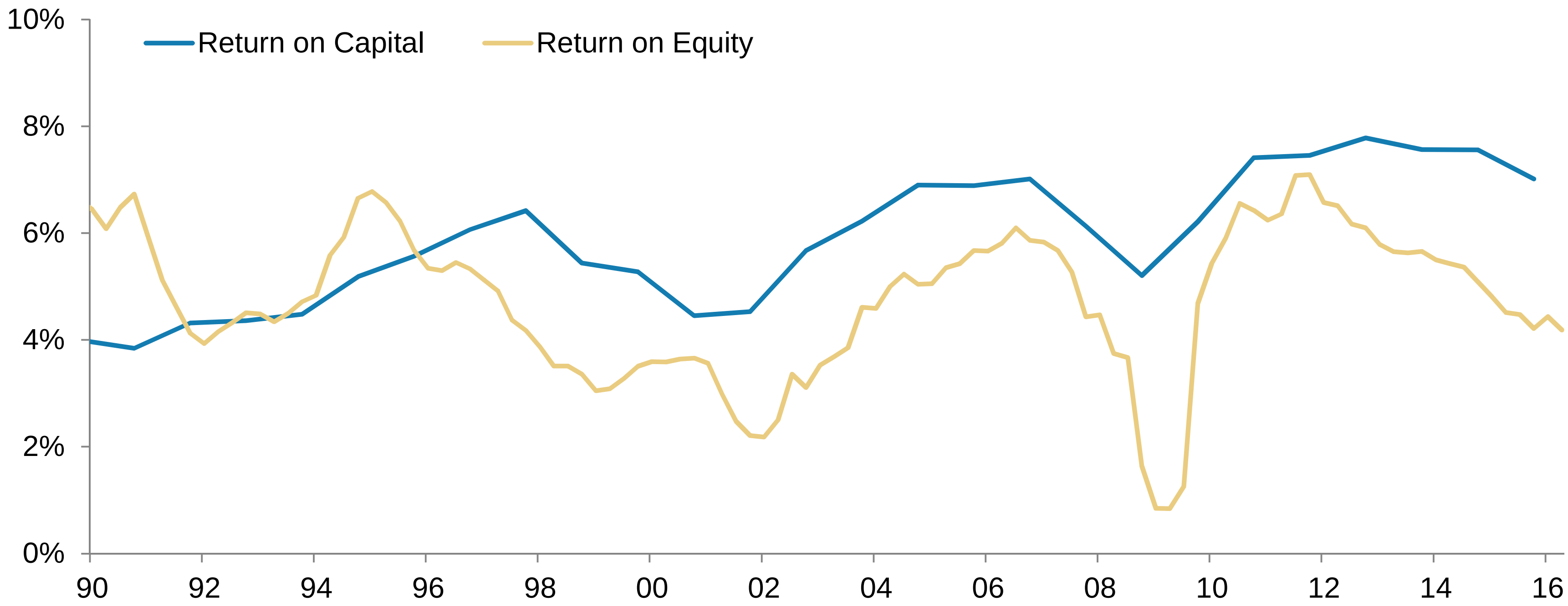
| **(Percent per year, annualized)** | **1960-1980** | **1981-1990** | **1991-2000** | **2001-2007** | **2008-2010** | **2011-2014** | **1960-2014** |
|---|---|---|---|---|---|---|---|
| **Factor Inputs** | | | | | | | |
| Capital services | 4.6 | 4.3 | 4.8 | 3.0 | 0.6 | 1.8 | 4.0 |
| Hours of all persons | 1.6 | 1.9 | 2.2 | 0.6 | -3.7 | 2.2 | 1.3 |
| *Capital per hour* | *2.9* | *2.4* | *2.5* | *2.4* | *4.5* | *-0.4* | *2.7* |
| | | | | | | | |
| **Factor Prices** | | | | | | | |
| Capital services | 3.8 | 3.1 | 0.8 | 4.9 | 1.3 | 2.3 | 2.9 |
| Labor | 7.0 | 4.9 | 4.0 | 3.6 | 1.7 | 1.9 | 5.1 |
| *Relative price of capital versus labor* | *-3.2* | *-1.8* | *-3.3* | *1.3* | *-0.5* | *0.4* | *-2.2* |
| | | | | | | | |
| Ratio: Capital per hour to relative factor prices | 0.9 | 1.3 | 0.8 | 1.9 | 9.2 | 1.0 | 1.2 |

Source: Bureau of Labor Statistics, Morgan Stanley Research

# Investment, Risk, and Uncertainty

- **As a descriptive measure, we can see firms' hesitation to form capital by looking at the difference between the return to capital and return to equity.**

- **The divergence between the two may owe to duration risk, where equities are distant claims on cash flows, and less uncertainty over a longer term horizon helps hold down risk premiums. Capital, on the other hand, lasts on average just 8 years so the recent rise in the return on capital reflects low levels of capex investment resulting from uncertainty regarding the medium term.**




Source: Bureau of Economic Analysis, Shiller CAPE, Morgan Stanley Research

# Capital Use and Its Consequences

**Efficacy of Capital Uses by Time Period: One-Year Return**
**Top vs. Bottom Tertile (T1-T3), 1969 - September 2016**

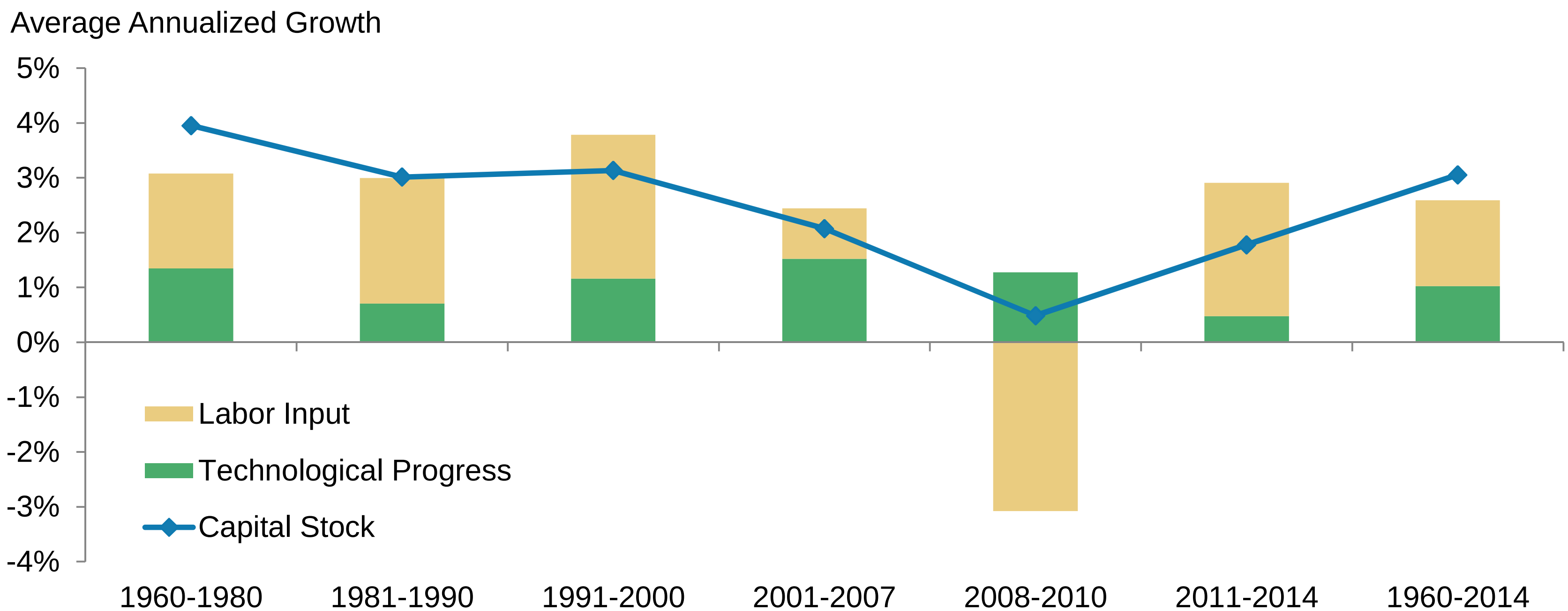
| | | 1969-1976 | 1977-1994 | 1995-2001 | 2002-2008 | 2009-2014 | 2015-YTD |
|---|---|---|---|---|---|---|---|
| **Internal Growth** | **Capital Spending** | **0.3%** | **(3.4%)** | **(6.4%)** | **1.1%** | **(5.1%)** | **(3.5%)** |
| | **R&D Expenditures** | **9.4%** | **1.2%** | **7.1%** | **(2.6%)** | **3.8%** | **3.9%** |
| **External Growth** | **M&A** | | | **(7.9%)** | **2.3%** | **(1.6%)** | **11.7%** |
| | Cash Only | | | (5.8%) | 2.8% | (1.2%) | **2.3%** |
| | Stock Only | | | (13.8%) | (1.6%) | (8.1%) | **0.0%** |
| | Blend | | | (9.0%) | 1.4% | (0.9%) | **0.0%** |
| **Reduce Leverage** | **Change in Debt-to-Assets** | **2.1%** | **(0.1%)** | **(1.1%)** | **2.3%** | **(0.4%)** | **(1.7%)** |
| **Return to Shareholders** | **Total Yield** | **(3.1%)** | **1.3%** | **2.4%** | **(1.0%)** | **4.4%** | **(0.7%)** |
| | Dividend Yield | (3.1%) | 0.6% | 0.1% | 0.6% | 2.2% | **6.1%** |
| | Share Buybacks | (0.2%) | 2.9% | 10.2% | (1.7%) | 2.3% | **(5.2%)** |

T1 defined as high capex, high R&D, high shareholder yield, low change in total debt
For M&A the figures represent median performance of acquirers vs. the market

Source: ClariFI, Thomson Reuters, Morgan Stanley Research

# A Structural Model for Longer-Term Investment Dynamics

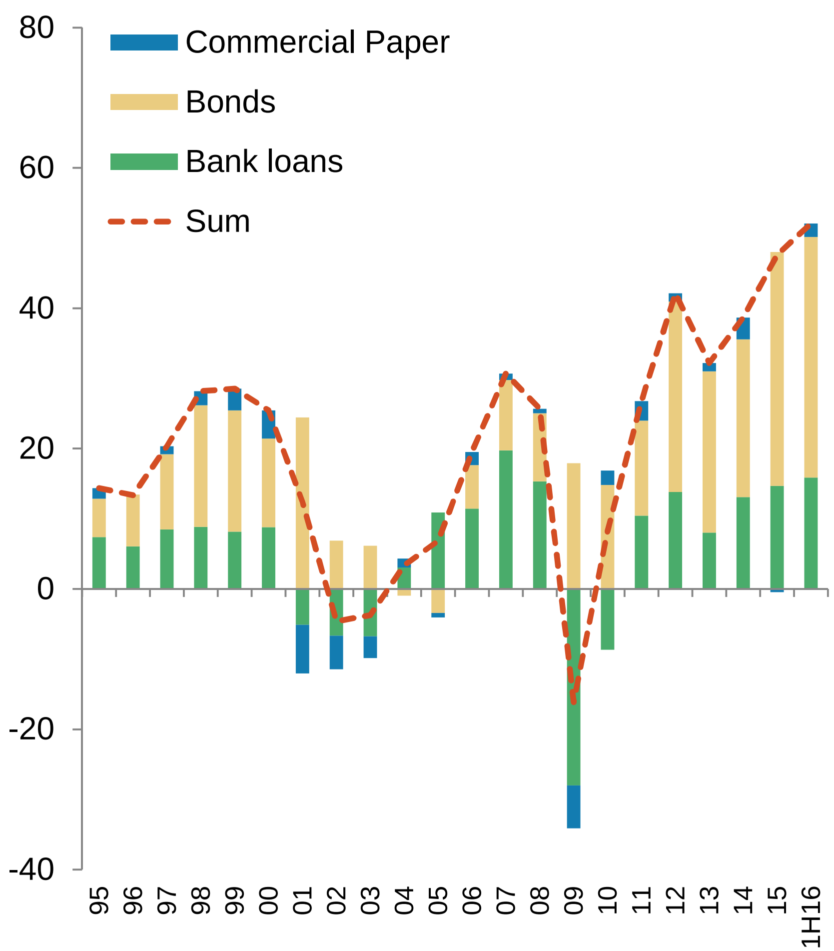
- **The steady-state growth rate for business fixed investment in a general equilibrium model provides a more general framework for thinking about the outlook for investment dynamics from a longer-term structural perspective.**
- **In the canonical Solow growth model, for example, the steady-state net investment rate is determined by the sum of the growth rate of labor input and the growth rate of technological progress.**
- **From this perspective, medium-term trend labor force growth of just 0.5% per year, coupled with roughly 0.5% annual growth in total factor productivity would be consistent with steady-state net investment growth of just around 1% per year, well below the 3.1 percent average annual rate of growth seen from 1960 through 2014**



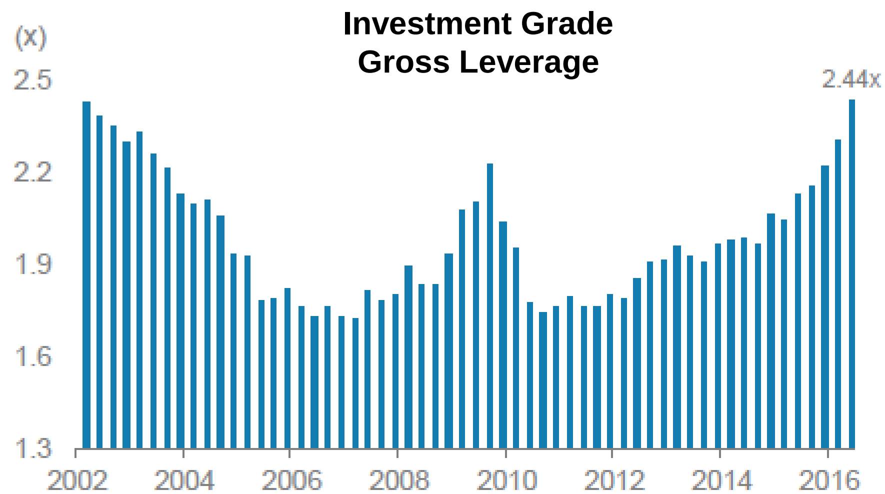

Source: Bureau of Economic Analysis, Bureau of Labor Statistics, Morgan Stanley Research

# A Corporate Credit Default Cycle Just Getting Underway Will Likely Provide Additional Weight to Already Depressed Investment

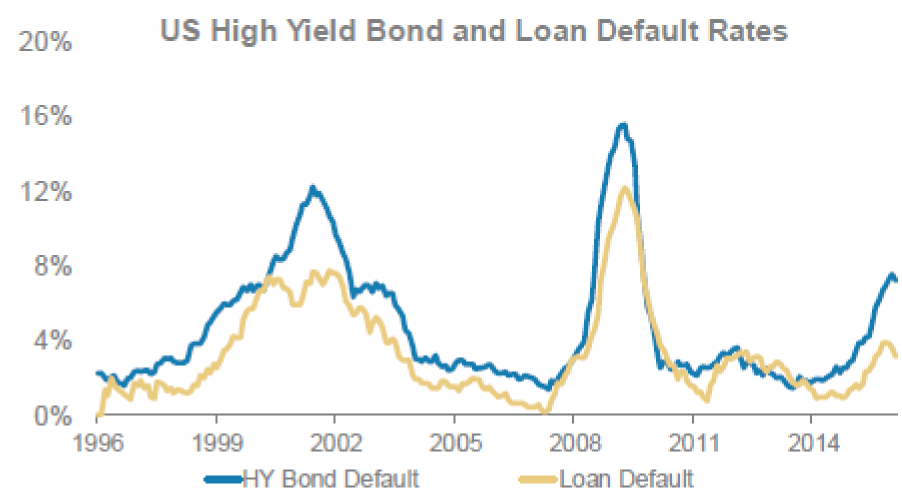
Bil. $, Monthly Rate




Source: Federal Reserve Z.1, Morgan Stanley Research

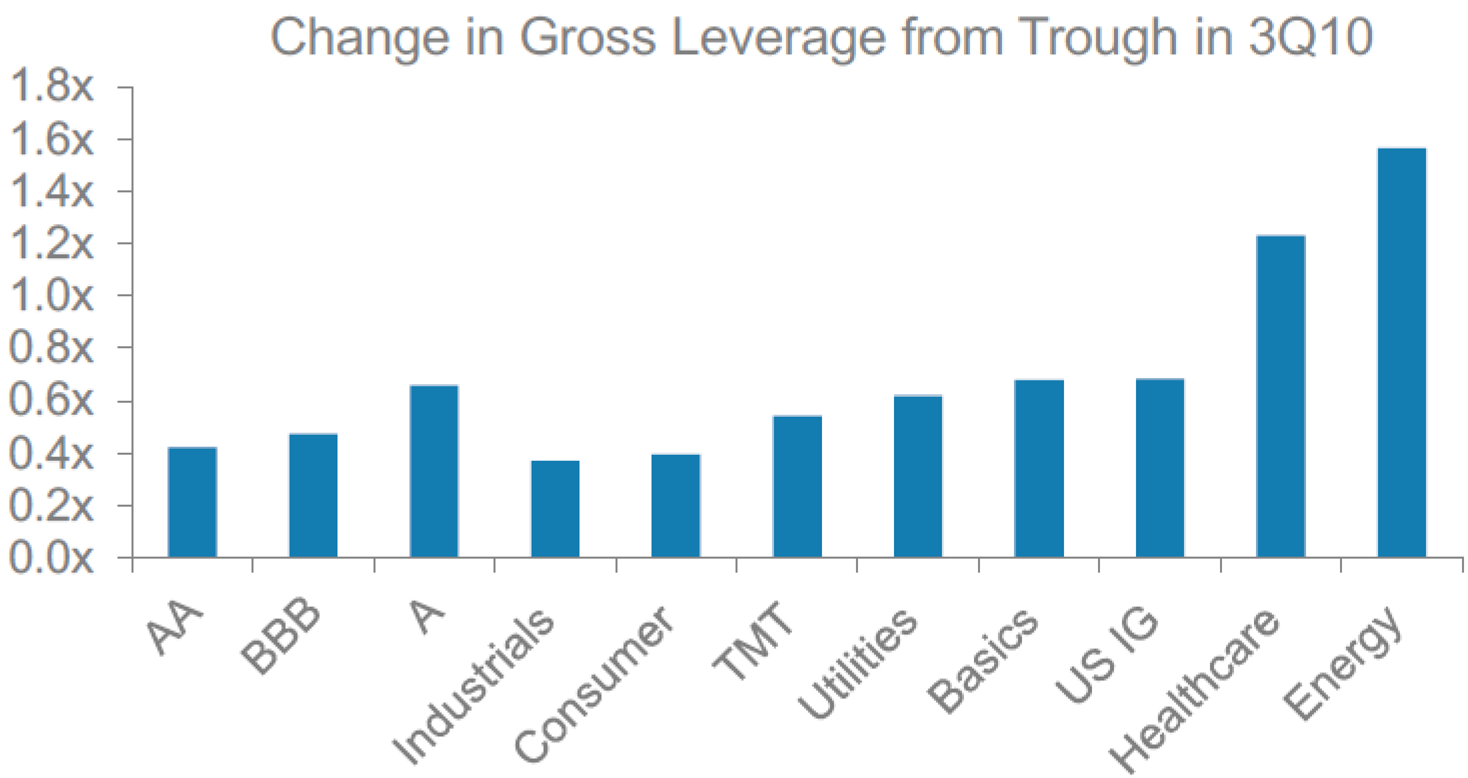



Source: Morgan Stanley, Bloomberg



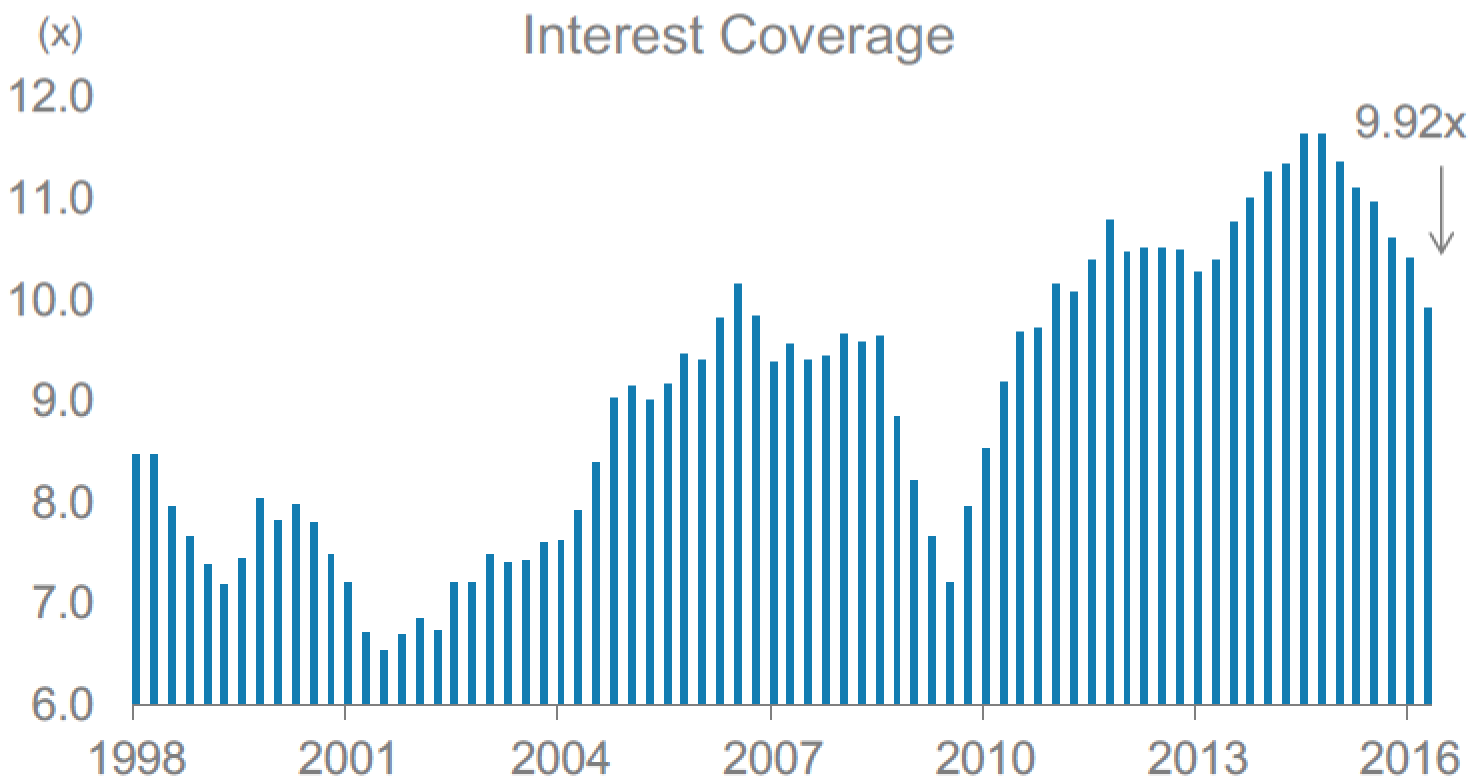

Source: Morgan Stanley, Moody's

# The Increase in Leverage in this Cycle is Broad Based Across Sectors and Ratings Buckets



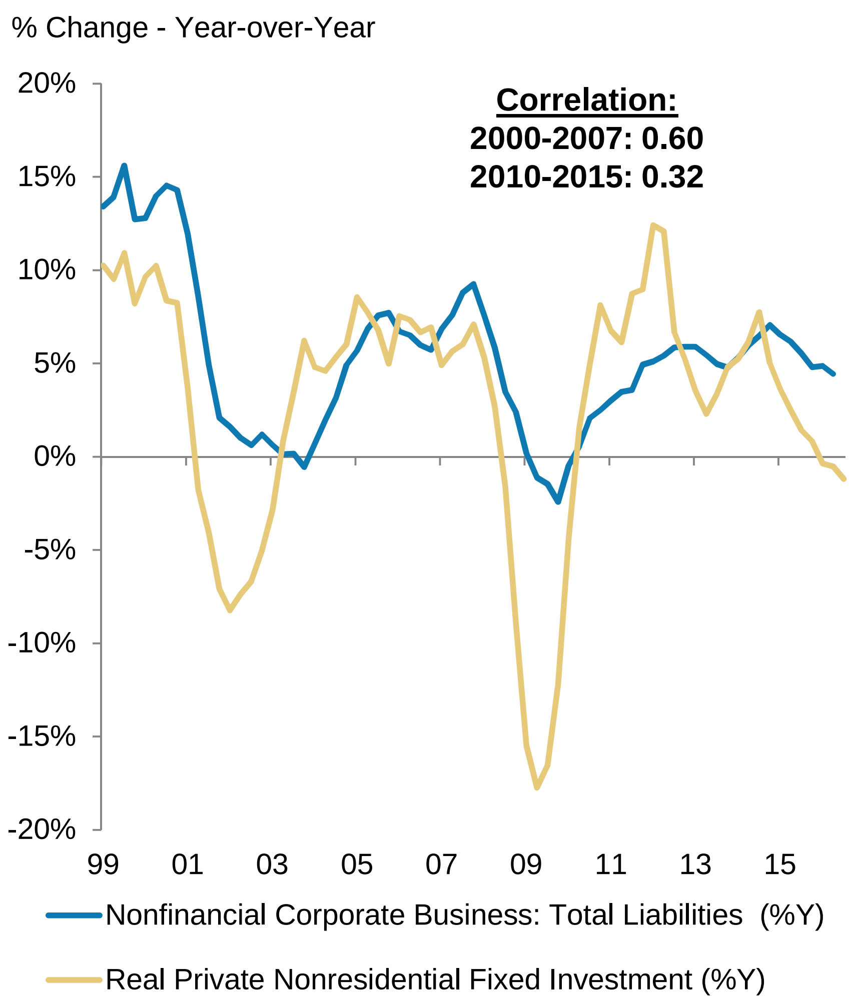

Source: Morgan Stanley Research, Bloomberg Finance LP

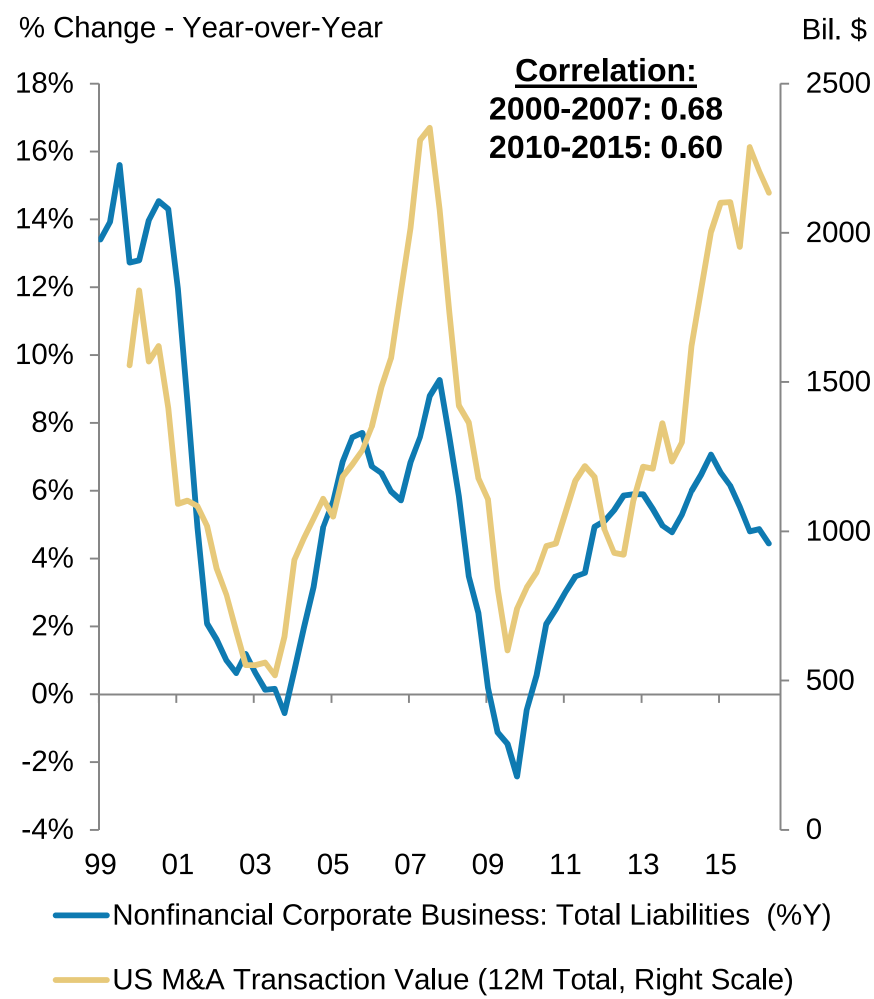
## Interest Coverage Still High, But Dropping Fairly Quickly




Source: Morgan Stanley Research, Bloomberg Finance LP

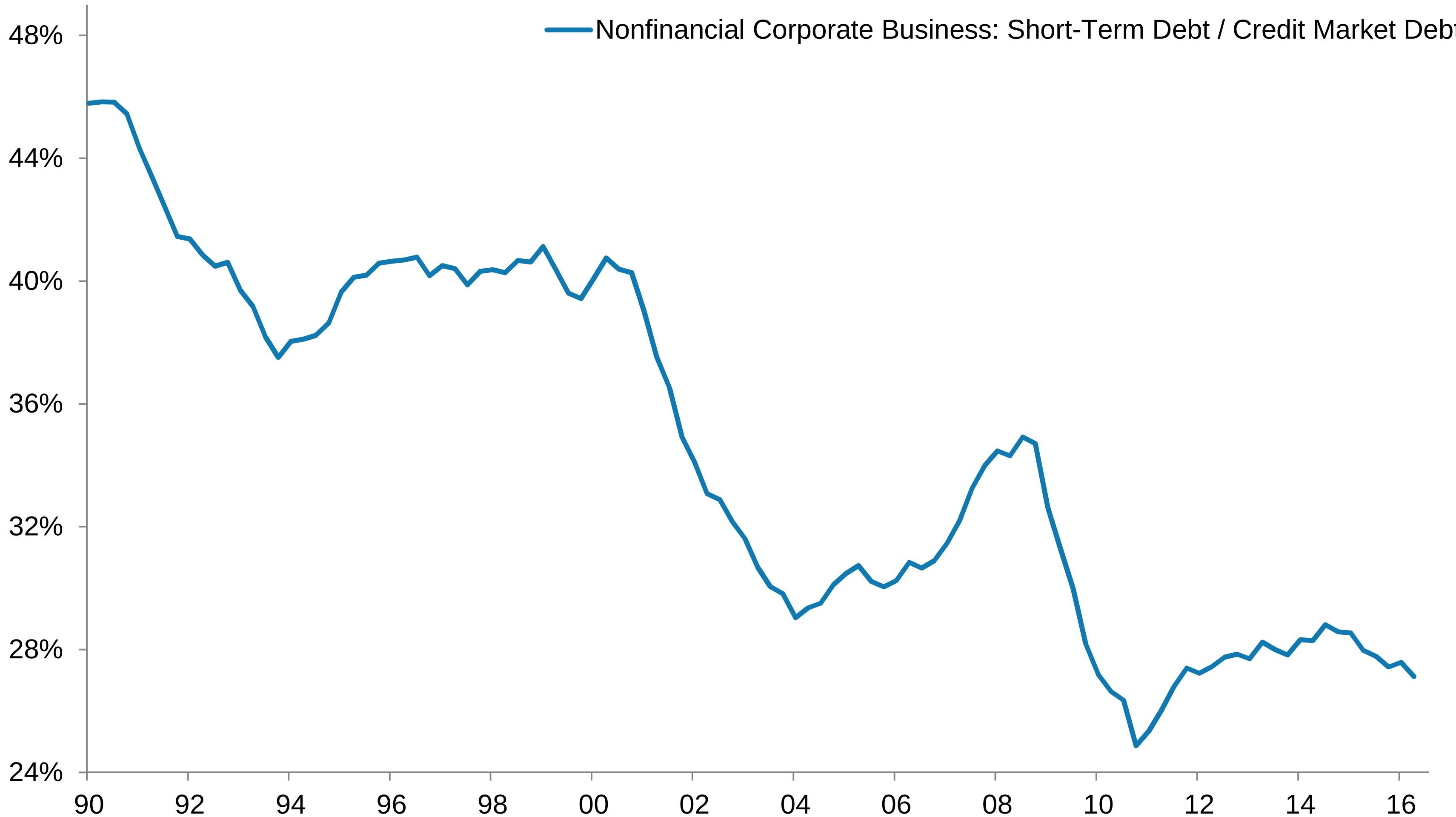
# Where's the Money Going?




Source: Bureau of Economic Analysis, Federal Reserve Z.1, Bloomberg, Morgan Stanley Research

# Where’s the Money Going?




Source: Federal Reserve Z.1, Morgan Stanley Research

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