GDP ... Profits ... Equities
All That Matters is Growth
And Policies That Promote Growth

❖ Three Invariant Rules.

❖ What Happened? Why?

❖ Recessions: The Happen. They End.

❖ Big Positives. Big Risks.

❖ A Map of Possible Outcomes.
Three Invariant Rules

1. Real GDP Growth = P + N

P = productivity growth
N = working population growth

2. Equity returns = Δ EPS + ΔPE + dividends

3. Never fight the Fed, ECB, or a liquidity flood
When Earnings Grow and PEs Expand

<table>
<thead>
<tr>
<th>Dec. 31, 1990 to Dec. 31, 2000</th>
<th>R1000</th>
<th>R1000 Value</th>
<th>R1000 Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual Return, Annualized</td>
<td>17.4%</td>
<td>17.4%</td>
<td>17.3%</td>
</tr>
<tr>
<td>Earnings Growth</td>
<td>9.5%</td>
<td>9.6%</td>
<td>6.9%</td>
</tr>
<tr>
<td>Multiple Change Annualized</td>
<td>5.1%</td>
<td>4.0%</td>
<td>8.2%</td>
</tr>
<tr>
<td>Dividend</td>
<td>2.2%</td>
<td>2.9%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Estimated Annualized Return</td>
<td>17.6%</td>
<td>17.2%</td>
<td>17.1%</td>
</tr>
</tbody>
</table>

| P/E (Year 1) at Dec. 1990     |       |             |               |
| P/E (Year 1) at Dec. 2000     | 14.1   | 12.3        | 16.3          |

1990 to 2000: 17.4% per year
Some Perspective: The Remarkable US

Productivity growth = 2.0% since 1890
Trend GDP growth = 3.0% since 1890
Productivity growth = 2.1% since 1950
Trend GDP growth = 3.2% since 1950

What Happened? How Bad?
2008 - 2012

Imbalances
- US housing
- US savings
- Global savings (current account imbalances)
- Eurozone productivity, wage disparities

Events
- US housing bubble bursts
- Lehman/Reserve fund failures
- US non-bank bank run, 11% of GDP
- A sudden stop worldwide, then recession
- The Fed and FDIC save the day
- US federal fiscal stimulus; state & local austerity
- Austerity in the UK
- China and other EM stimulus
- Central Banks absorb exploding government debt
- Greece debt problems and bailout, and no growth

- US QEs
- Eurozone: LTRO, ESM, ESFS, ECB
- Growing fiscal deficits
- Sovereign debt no longer risk free
- Eurozone, austerity dominates
- Greece: bank runs, default and euro future
- Contagion: Spain & Italy
- Southern Europe in recession
- Eurozone at stall speed; PMIs below 50
- UK at recession speed
- US growing, below trend
- EM growing, but slower pace--China slowing

Eurozone 1945
- 100mm people < 1,500 calories/day
- Communism on the rise: 40% in Italy
- Life Expectancy (1950); circa 66 years

US 1929
- Inflation: 0.0%
- Long-term bond yield: 3.6%
- GDP per capita (2005$): $8,106
- Life expectancy: 57 years

US 1980
- Inflation: 13.5%
- 10-year bond yield: 13.6% (February)
- GDP per capita (2005$): $25,640
- Life expectancy: 74 years

US 2010
- Inflation: 1.6%
- 10-year bond yield: 3.3%
- GDP per capita (2005$): $42,832
- Life expectancy (2008): 78 years

Stephen Sexauer
Georgia State University
Economic Forecasting Center
August, 2012
Here is the Challenge

**US GDP per person employed**

- **Slope:** 1.83% per year 1990-2010
- **2010 base USD**

**Slope:** 1.39% per year 2000 to 2010

**Slope:** 2.0% per year 1990 to 2000

**US Employment**

source: Conference Board Total Economy Data Base (TEDI). Stephen Sexauer
Recessions and Growth

• Recessions happen. Recessions clear imbalances.

• Growth comes from change (productivity), not from the Fed.

• Stopping change stops growth—and keeps the imbalances.

• Productivity from:
  o Human capital
  o Physical capital = investment = profits (a good thing)
  o Improvements in technology and innovation

• Growth uses lots of energy.
Big Positives

• **Profits**
  - At all-time high as a % of GDP
  - Near the long-term trend; innovation continues
  - Corporate balance sheets: rebuilt/strong

• **Imbalances**
  - $1 trillion in bad assets written off—limited Zombie banks
  - Housing trend demand is 1 million units; supply of starts is running at 480-760k; some inventory shortages
  - US Savings rate: household and corporate

• **Energy and Manufacturing**
  - Energy supply: global growth constraint lessened
  - Balance of payments gains
  - Global political rebalancing
  - US manufacturing boom
US Profits
Since Q4.2006: before tax, 3.4% p.a.; after tax, 4.1% p.a.
Energy: Global Growth Uses a Lot of It

Real GDP Growth = P + N  (P = productivity.  N= employment)

8 barrels of Oil = One life's work
Output per life per person:
11.2 billion gram-calories.  44 million BTUs
(think farmers in Western China, emerging markets)

60 barrels of oil = One year's work
Output per year per person:
84 billion gram-calories.  333 Billion BTUs
(think you and me, developed markets with technology)

When 2 billion-plus people in third-world economies are pursuing a better life, they will need energy to succeed.  A life's work of labor for them is about 8 barrels of oil of output (BTUs).  People in the developed world have working for them about of 60 barrels of oil of energy every year--from making iPhone chips to surgical scalpels to building our roads.  An energy supply curve that is upward sloping and shifting to the right (driven by incentives, innovation, and technology) makes all the difference.
Energy and Tail Risk

North Dakota's Bakken Field:
- 2003: 10,000 b/d produced
- 2/2012: 558,000 b/d produced--55-fold increase
- Forecast: 1,200,000 by 2020

Note: OPEC "swing" capacity is 4 million b/d
Big Risks

• Japan/Southern Europe-like policies:
  o Lower productivity growth
  o Disincentives to work, save, invest
  o Limited change; slow growth; Zombie banks

• US fiscal policy:
  o The bond markets suddenly close
  o The US becomes Japan—the bond markets stay open, but the US never puts its fiscal house in order

• Eurozone Contagion

• EM slowdown: China growth collapses
# Possible Equity Outcomes: A map

Long-term policy dominates all: Elections have consequences

## Past

### 2008 -

- **Imbalances**
  - US housing
  - US savings
  - Global savings (current account imbalances)
  - Eurozone productivity, wage disparities

- **Events**
  - US housing bubble bursts
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  - Austerity in the UK
  - China and other EM stimulus
  - Central Banks absorb exploding government debt
  - Greece debt problems and bailout, and no growth

## Present

### -2012

- **US QE**
- **Eurozone LTRO**
- **Growing fiscal deficits**
- **Sovereign debt no longer risk free**
- **In the eurozone, austerity dominates**
- **Greece, bank runs, and euro future**
- **Contagion fears: Spain & Italy**
- **Southern Europe in recession**
- **Eurozone at stall speed**
- **UK at recession speed**
- **US growing, below trend**
- **EM growing, but slower pace**

## Future

### 2012 - forward

- **Growth + Deleveraging**
  - EM up 10-15%
  - US up 5-10%
  - Eurozone up 10-50%

- **Slow Growth**
  - Flat from here is good

- **Debt-Deflation or Stagflation**
  - Don't ask
## Outcomes and Possible Returns

<table>
<thead>
<tr>
<th></th>
<th>Emerging Markets</th>
<th>Developed Markets</th>
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<tbody>
<tr>
<td></td>
<td>All</td>
<td>United States</td>
</tr>
<tr>
<td><strong>Policy Environment</strong></td>
<td></td>
<td></td>
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<tr>
<td>Liquidity/Easing On?</td>
<td>spring floods</td>
<td>tsunami</td>
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<td>Fiscal Policy Favorable?</td>
<td>yes</td>
<td>federal: yes</td>
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<tr>
<td>Debt-to-GDP Under Control?</td>
<td>for the most part</td>
<td>no</td>
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<tr>
<td>Productivity and Investment</td>
<td>yes</td>
<td>unclear</td>
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<tr>
<td>Incentives to Hire</td>
<td>yes</td>
<td>limited to no</td>
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<tr>
<td><strong>Earnings Growth</strong></td>
<td>5-10%</td>
<td>5%</td>
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<tr>
<td><strong>Equity Valuations</strong></td>
<td>lower end</td>
<td>fair</td>
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<td><strong>Possible Equity Outcomes</strong></td>
<td>up 10%-15%</td>
<td>5%-10%</td>
</tr>
<tr>
<td></td>
<td>down 15%-20%</td>
<td>10%-20%</td>
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Appendix
### US

<table>
<thead>
<tr>
<th></th>
<th>SPX index</th>
<th>-17%</th>
<th>0</th>
<th>13%</th>
<th>25%</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>12</td>
<td>13.5</td>
<td>15</td>
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<tr>
<td>Δ</td>
<td>EPS</td>
<td>-57%</td>
<td>-40%</td>
<td>-28%</td>
<td>-15%</td>
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<tr>
<td>typical recent decline</td>
<td>-40%</td>
<td>59.4</td>
<td></td>
<td></td>
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<tr>
<td>end F11</td>
<td>0%</td>
<td>99</td>
<td>-17%</td>
<td>0%</td>
<td>13%</td>
</tr>
<tr>
<td>e(2012) at Mar2012</td>
<td>5%</td>
<td>104</td>
<td>-12%</td>
<td>5%</td>
<td>18%</td>
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<td>e(2013) Mar2012</td>
<td>19%</td>
<td>118</td>
<td>3%</td>
<td>19%</td>
<td>32%</td>
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GDP growth: 2.5% + 2.6 inflation =~5%

Dividend yield: 2.3

source: Bloomberg
<table>
<thead>
<tr>
<th>SX5E index</th>
<th>-20%</th>
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<th>40%</th>
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<td>Δ EPS</td>
<td>8</td>
<td>10</td>
<td>12</td>
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<td>Typical recent decline</td>
<td>-23%</td>
<td>195</td>
<td>-43%</td>
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<tr>
<td>End F11 0%</td>
<td>253</td>
<td>-20%</td>
<td>0%</td>
<td>20%</td>
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<td>F12 2%</td>
<td>257</td>
<td>-18%</td>
<td>2%</td>
<td>22%</td>
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<td>E(2012) at Mar2012 13%</td>
<td>285</td>
<td>-7%</td>
<td>13%</td>
<td>33%</td>
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<tr>
<td>E(2013) at Mar2012 30%</td>
<td>329</td>
<td>10%</td>
<td>30%</td>
<td>50%</td>
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GDP growth: -0.5% +~2.5% inflation =~2%
Dividend yield: 4.9
<table>
<thead>
<tr>
<th></th>
<th>MXEF index</th>
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<th>11</th>
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<td>fwd P/E</td>
<td>-10%</td>
<td>0</td>
<td>10%</td>
<td>20%</td>
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<tr>
<td>low 2010</td>
<td>-18%</td>
<td>74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>end F11</td>
<td>0%</td>
<td>90</td>
<td></td>
<td></td>
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<tr>
<td>e(2012) at Mar2012</td>
<td>9%</td>
<td>98</td>
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</tr>
<tr>
<td>e(2013) at Mar2012</td>
<td>23%</td>
<td>111</td>
<td></td>
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</tbody>
</table>

GDP growth: 6% +5% inflation =11%
Dividend yield: 2.91
The Results of Bad Incentives (and Zombie Banks)

Japan GDP per person employed
slope 1990-2010: 1.08%
2010 base USD, PPP

2000 to 2010: Slope at 1.14% per year

1990 to 2000: Slope at 1.01% per year

Japan Employment

source: Conference Board Total Economy Data Base (TEDI). Stephen Sexauer

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August, 2012
More Questionable Incentives

Italy GDP per person employed

Slope 1990-2010: 0.48%
2010 base USD, PPP

Italy Employment

1990 to 2000: Slope at 1.62% per year
2000 to 2010: Slope at -0.49% per year

source: The Conference Board Total Economy Database™ and Stephen Sexauer calculations

(A good description of terrible incentives: [http://online.wsj.com/article/SB10001424052702303740704577522412881267278.html])
US Productivity, 1880 to 2010: just under 2.0% per

The Becker Optimism
The Lucas Concern

Stephen Sexauer


Stephen Sexauer has been Chief Investment Officer of AGI Solutions since inception in June, 2008, and has been a Managing Director of Allianz Global Investors of America LLC or one of its affiliates since May, 2003.


Mr. Sexauer holds an MBA from the University of Chicago with concentrations in economics and statistics and a BS from the University of Illinois in economics.

Economic data in this presentation are derived from internal research publicly available statistics published by Bloomberg, the U.S. Federal Reserve, the U.S. Department of Commerce and the International Monetary Fund.

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