Global Overview Presentation
Dr. Anthony Chan
November 2017

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J.P.Morgan
IMF World Economic GDP Projections

...what lies ahead?

**IMF WORLD ECONOMIC OUTLOOK GDP FORECASTS**

<table>
<thead>
<tr>
<th>Year</th>
<th>Real GDP</th>
<th>IMF Spring Forecast</th>
<th>IMF Fall Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>3.21%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>3.17%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>3.46%</td>
<td>3.62%</td>
<td>3.65%</td>
</tr>
<tr>
<td>2018</td>
<td>3.70%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**IMF AVERAGE GDP FORECASTING ERROR VS ACTUAL REAL GDP**

<table>
<thead>
<tr>
<th>Error</th>
<th>Spring Error</th>
<th>Fall Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.12</td>
<td>-0.17</td>
<td></td>
</tr>
</tbody>
</table>

Source: Bloomberg, IMF World Economic Outlook Fall 2017

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Global markets continue to enjoy a strong 2017...
...as non-U.S. equity markets lead the pack


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This expansion has been one of the longest on record...
...but cycles don’t die of old age

**The U.S. Economic Cycle is Aged**

Length of expansions and recessions, in months*

<table>
<thead>
<tr>
<th>Year</th>
<th>Expansion</th>
<th>Recession</th>
<th>Average Expansion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>20</td>
<td>12</td>
<td>26</td>
</tr>
<tr>
<td>1904</td>
<td>18</td>
<td>13</td>
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<td>1908</td>
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<td>1912</td>
<td>18</td>
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<tr>
<td>1914</td>
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<td>1921</td>
<td>18</td>
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<td>1933</td>
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<td>1982</td>
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<td>1991</td>
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<td>2001</td>
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<td>25</td>
</tr>
<tr>
<td>2009</td>
<td>20</td>
<td>12</td>
<td>26</td>
</tr>
</tbody>
</table>

*Current cycle*

This has already been a long cycle.
Now in its eighth year, the current expansion stands as the third longest in history.
This has prompted some to wonder how tall this tree can grow...
...after all, trees don’t grow to the sky.

**So what has ended past cycles?**
- Inflation and aggressive tightening
- Major commodity price spikes
- Bubbles or extreme valuations
- Private sector imbalances


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Can Tax Reform Help?...
Yes, if it boosts growth and US Productivity

GDP and productivity growth typically move in tandem...

- Productivity growth is typically above average (2.1% SA from previous quarter) when GDP is above trend (3.3% SA from previous quarter).

- Productivity growth is typically below average (2.1% SA from previous quarter) when GDP is below trend (3.3% SA from previous quarter).


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Can a change in the Fed Funds Rate affect the market?

Outside of the 1.50 to 2 increase bucket, there is an inverse relationship between the increase in the Fed Funds Rate and the market.

| S&P 500 Returns (in the upcoming year) based on 1 year Fed Funds spread |
|---|---|---|---|---|---|
| < 0 | 0 to 1 | 1 to 1.25 | 1.25 to 1.50 | 1.50 to 2 | 2+ |
| 9.9% | 8.2% | 4.2% | 3.4% | 7.0% | 3.0% |

| Chance of a recession (within 1 year) based on 1 year Fed Funds spread |
|---|---|---|---|---|---|
| < 0 | 0 to 1 | 1 to 1.25 | 1.25 to 1.50 | 1.50 to 2 | 2+ |
| 7% | 14% | 23% | 40% | 23% | 49% |

Source: Bloomberg

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Corporate profits have rebounded in 2017...
...as earnings headwinds continue to fade

Corporate profit growth has roared back in 2017 and is expected to be solid in 2018:

- U.S. earnings are benefitting from fading drags of weak energy prices and a stronger U.S. dollar.
- Q1 and Q2 of 2017 demonstrated solid earnings growth, and Q3 seems to be continuing the trend.

Risks to our view: Weaker energy prices, renewed U.S. dollar strength, or a cool down in global consumption could derail the earnings rebound.

Sources: Compustat, Standard & Poor's, FactSet, J.P. Morgan Asset Management - Guide to the Markets. EPS levels are based on operating earnings per share. Earnings estimates are Standard & Poor's consensus analyst expectations. Past performance is not indicative of future returns. Data is as of October 31, 2017.

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Valuations are somewhat elevated relative to historical average

Like a nice house in a great neighborhood, stocks may be worth the premium

S&P 500 INDEX VALUATION

Forward Price-to-Earnings (P/E) ratio

- July 1999 peak: 24.5x
- Current: 18.1x
- 25-yr. average: 16.0x
- 1 Std. dev.: 12.8x
- -1 Std. dev.: 9.5x
- November 2008 low:

It's no secret that stocks are not as cheap as they once were.

- But with earnings at a new record high, they are not overly expensive either.
- Importantly, higher valuations could limit future upside or exacerbate short-term pullbacks.
- However, with a favorable backdrop of slow-and-steady economic growth, well-contained inflation, and an improving global economy, stocks may be deserving of above-average valuations.

Risks to our view: A deterioration in growth expectations could cause investors to rethink the premium they are willing to pay. Meaningfully higher interest rates could make bonds more attractive to investors.


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Global growth is broadening and strengthening...
...as fundamentals in Europe and Emerging Markets continue to improve

The global economy has finally joined the party.

- The Private Bank raised its global growth forecast from 3.2% to 3.5% in 2017, led by improvements in Europe, Japan, and select emerging economies.

- For investors who are “scared of heights” in the U.S., diversification can play an important role in rounding out a portfolio.

Sources: Markit, ISM, INEGI, AIG, Bloomberg, J.P. Morgan Private Bank. *Countries include: United States, Canada, United Kingdom, Germany, France, Italy, Spain, Greece, Ireland, Australia, Japan, China, Indonesia, Korea, Taiwan, India, Brazil, Mexico. Mexico (49.2) is the only country in the sample not currently in expansion territory. Data is as of October 31, 2017.

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Global growth is showing up in earnings...
...led by improvements in Europe and Emerging Markets

**NON-U.S. EARNINGS ARE PICKING UP**

<table>
<thead>
<tr>
<th></th>
<th>'11</th>
<th>'12</th>
<th>'13</th>
<th>'14</th>
<th>'15</th>
<th>'16</th>
<th>'17</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS, U.S. dollar, NTMA, Jan. 2011=100</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>U.S.</td>
<td></td>
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<tr>
<td>Japan</td>
<td></td>
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<tr>
<td>EM</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**OUTSIZED EARNINGS GROWTH ABROAD**

**YoY % change in EPS (consensus estimates)**

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017E</th>
<th>2018E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe &amp; U.K.</td>
<td>-0.7</td>
<td>7.9</td>
<td>19.9</td>
</tr>
<tr>
<td>EM</td>
<td>2.0</td>
<td>12.5</td>
<td>25.8</td>
</tr>
<tr>
<td>Japan</td>
<td>6.2</td>
<td>11.0</td>
<td>19.1</td>
</tr>
<tr>
<td>Pac. ex-Japan</td>
<td>0.7</td>
<td>9.9</td>
<td></td>
</tr>
<tr>
<td>U.S.</td>
<td>3.3</td>
<td>9.1</td>
<td>12.1</td>
</tr>
</tbody>
</table>

**Earnings are responding.**
- After years of lagging, earnings growth outside the U.S. is finally picking up, particularly in Europe, Asia, and some emerging economies.
- While the pace of earnings growth will cool from its torrid 2017 pace, 2018 is expected to be another solid year.

**Risks to our view:** renewed pressure on commodity prices curbs the recovery in profits; China growth scare as stimulus fades.


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European fundamentals are at their best since 2011

The European recovery is on more solid footing

Mario Draghi put it best:

“In 2016, we were speaking of a fragile and uneven recovery. Now, it's solid and broad.” – April 2017

- Various measures of growth, including Purchasing Manager Indices (PMI), have consistently been in expansion territory (>50).
- An improvement in commodities/EM and the implementation of reforms has contributed to a better business environment.

Risks to our view: ECB policy error (removes stimulus too quickly); ongoing political uncertainty (Italy, Spain, Brexit).


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Emerging Market fundamentals are improving

After years of capital flight and commodity driven weakness, Emerging Markets are rebounding

**EMERGING MARKETS VS. DEVELOPED MARKETS GROWTH**

Monthly, consensus expectations for GDP growth in 12 months

- EM growth
- DM growth
- Growth differential

Emerging Market (EM) growth is starting to widen the gap over Developed Markets (DM) for the first time in years.

- The gap between EM and DM has stopped falling, suggesting a possible turning point in DM outperformance over EM.

- Historically, this has been a useful indication of capital market performance.

**Risks to our view:** higher EM debt levels; Chinese growth weakens; renewed currency and commodity destabilization.


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Investments in Emerging Markets may not be suitable for all investors. Emerging Markets involve a greater degree of risk and increased volatility. Changes in currency exchange rates and differences in accounting and taxation policies outside the United States can raise or lower returns. Some overseas markets may not be as politically and economically stable as the United States and other nations. Investments in Emerging Markets can be more volatile.
Global monetary stimulus is normalizing; Fed leads

With the patient on the mend, there is less need for monetary medicine

Policy normalization is a healthy sign, but warrants monitoring.

- Improving global growth has prompted central banks to begin removing extreme policy accommodation after years of 0% policy rates.
- Policy normalization is expected to be extremely gradual and well-telegraphed.

Risks to our view: Central bank normalization missteps (more hawkish moves than anticipated).


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Appendix

Definitions of indices and terms

Note: Indices are for illustrative purposes only, are not investment products, and may not be considered for direct investment. Indices are an inherently weak predictive or comparative tool. All indices denominated in U.S. dollars unless noted otherwise.

The Barclay's Capital Global Aggregate Index provides a broad-based measure of the global investment grade fixed-rate debt markets. The Global Aggregate Index contains three major components: the U.S. Aggregate (USD 300m), the Pan-European Aggregate (EUR 300m), and the Asian-Pacific Aggregate Index (JPY 55bn). In addition to securities from these three benchmarks (94.1% of the overall Global Aggregate market value as of December 31, 2009), the Global Aggregate Index includes Global Treasury, Eurodollar (USD 300m), Euro-Yen (JPY 25bn), Canadian (USD 300m equivalent), and Investment Grade 144A (USD 300m) index-eligible securities not already in the three regional aggregate indices. The Global Aggregate Index family includes a wide range of standard and customized subindices by liquidity constraint, sector, quality, and maturity. A component of the Multiverse Index, the Global Aggregate Index was created in 1999, with index history backfilled to January 1, 1990. All indices are denominated in U.S. dollars.

Barclays U.S. Corporate High Yield Bond Index is composed of fixed-rate, publicly issued, non-investment grade debt.

Bloomberg Commodity Index is a benchmark designed to provide liquid and diversified exposure to physical commodities via futures contracts.

Capital expenditure, or CapEx, are funds used by a company to acquire or upgrade physical assets such as property, industrial buildings or equipment. It is often used to undertake new projects or investments by the firm.

A certificate of deposit (CD) is a savings certificate usually issued by a commercial bank with a fixed maturity date and specified fixed interest rate.

Earnings per Share, EPS, The portion of a company's profit allocated to each outstanding share of common stock. Earnings per share serves as an indicator of a company's profitability.

The Emerging Market Bond Index Global (EMBI Global) was the first comprehensive EM sovereign index in the market, after the EMBI. It provides full coverage of the EM asset class with representative countries, investable instruments (sovereign and quasi-sovereign), and transparent rules. The EMBI Global includes USD-denominated emerging markets sovereign bonds and uses a traditional, market capitalization weighted method for sector allocation.

G-7 The Group of 7 (also known as the G-7) is a group of countries consisting of Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.

The IBEX 35 is the official index of the Spanish Continuous Market. The Index comprises the 35 most liquid stocks traded on the Continuous market. It is calculated, supervised and published by the Sociedad de Bolsas. The equities use free float shares in the index calculation. The Index was created with a base level of 1000 as of December 29, 1989.

The IBOXX Euro Corporates index by Markit is designed to replicate the investible investment grade European corporate bond market.

The Ibovespa Index is a gross total return index weighted by traded volume and comprises the most liquid stocks traded on the São Paulo Stock Exchange. The Bovespa Index has been divided 10 times by a factor of 10 since January 1, 1985: 12/02/85, 08/29/88, 04/14/89, 01/12/90, 05/28/91, 01/21/92, 01/26/93, 08/27/93, 02/10/94, and 03/03/97.

The JP Morgan Corporate Bond Index (CEMBI) series was launched in 2007 and was the first comprehensive USD corporate emerging markets bond index. There are two root versions of the CEMBI with a Diversified overlay for each version: the CEMBI and the CEMBI Broad. The CEMBI Broad Diversified version is the most popular among the four versions largely due to its issuer coverage and diversification weighting scheme.

The JP Morgan Domestic High Yield Index is designed to mirror the investible universe of the U.S. dollar domestic high yield corporate debt market.

The JP Morgan Investment Grade Index (JULI) provides performance comparisons and valuation metrics across a carefully defined universe of investment grade corporate bonds, tracking individual issuers, sectors and sub-sectors by their various ratings and maturities.

LIBOR: London Interbank Offered Rate is the average of interest rates estimated by each of the leading banks in London that it would be charged were it to borrow from other banks.

M2 Money Supply: M2 refers to a measure of money supply that includes cash and checking deposits (M1) as well as near money including savings deposits, money market mutual funds and other time deposits, which are less liquid and not as suitable as exchange mediums but can be quickly converted into cash or checking deposits.

The MSCI AC Asia ex Japan Index captures large and mid cap representation across two of three Developed Markets countries (excluding Japan) and eight Emerging Markets countries in Asia. With 609 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country. Developed Markets indices in the index include: Hong Kong and Singapore. Emerging Markets countries include: China, India, Indonesia, Korea, Malaysia, the Philippines, Taiwan and Thailand.

The MSCI All-Country World Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets. The index consists of 23 developed market country indices and 24 emerging market country indices.

The MSCI EAFE Index is an equity index that captures large and mid cap representation across Developed Markets countries around the world, excluding the United States and Canada. With 929 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

The MSCI Emerging Markets Index captures large and mid cap representation across 23 Emerging Markets (EM) countries. With 834 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country. EM countries include: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Peru, Philippines, Poland, Russia, Qatar, South Africa, Taiwan, Thailand, Turkey and United Arab Emirates.

The MSCI Emerging Markets (EM) Latin America Index captures large and mid cap representation across five Emerging Markets (EM) countries in Latin America. With 130 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country. EM Latin America countries include: Brazil, Chile, Colombia, Mexico, and Peru.

The MSCI Europe Index represents the performance of large and mid-cap equities across 15 developed countries in Europe.
Appendix
Definitions of indices and terms, continued

The **MSCI USA Index** is designed to measure the performance of the large and mid cap segments of the U.S. market. With 627 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in the United States.

The **MSCI World Index** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets. The index consists of 23 developed market country indices.

The **Mexican IPC Index** (Indice de Precios y Cotizaciones) is a capitalization weighted index of the leading stocks traded on the Mexican Stock Exchange. The index was developed with a base level of .78 as of October 30, 1978.

**Net Interest Margin**: The difference between interest and dividends earned on interest-bearing assets and interest paid to depositors and other creditors, expressed as a percentage of average earning assets.

**The Nikkei 225 Index** comprises 225 stocks selected from domestic common stocks in the first section of the Tokyo Stock Exchange, excluding ETFs, REITs, preferred equity contribution securities, tracking stocks (on subsidiary dividend), etc., other than common stocks.

**P/E (Price to Earnings)**: A valuation ratio of a company's current share price compared to its per share earnings. Calculated as market value per share divided by earnings per share (EPS).

**PMI (Purchasing Managers' Index)** is an indicator of the economic health of manufacturing sector.

**Purchasing power parity (PPP)** is a theory in economics that approximates the total adjustment that must be made on the currency exchange rate between countries that allows the exchange to be equal to the purchasing power of each country's currency.

**SPDR Gold Shares** is part of the SPDR family of exchange-traded funds (ETFs) managed and marketed by State Street Global Advisors.

**Standard and Poor's 500 Index** is a capitalization-weighted index of 500 stocks. The index is designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries. The index was developed with a base level of 10 for the 1941-43 base period.

**Standard and Poor's 500 Information Technology Index** comprises those companies included in the S&P 500 that are classified as members of the GICS information technology sector.

**STOXX Europe 600 Index (SXIXP Index)**: An index tracking 600 publicly traded companies based in one of 18 EU countries. The index includes small cap, medium cap, and large cap companies. The countries represented in the index are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Holland, Iceland, Ireland, Italy, Luxembourg, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

**TOPIX** also known as the Tokyo Stock Price Index, is a capitalization-weighted index of all companies listed on the First Section of the Tokyo Stock Exchange.

**U.S. Treasury Index** is a broad, comprehensive, market-value weighted index that seeks to measure the performance of the U.S. Treasury Bond market.
Appendix

Important Information about your investments and potential conflicts of interest

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Investment strategies are selected from both J.P. Morgan and third-party asset managers and are subject to a review process by our manager research teams. From this pool of strategies, our portfolio construction teams select those strategies we believe fit our asset allocation goals and forward looking views in order to meet the portfolio’s investment objective.

As a general matter, we prefer J.P. Morgan managed strategies. We expect the proportion of J.P. Morgan managed strategies will be high (in fact, up to 100 percent) in strategies such as, for example, cash and high-quality fixed income, subject to applicable law and any account-specific considerations.

While our internally managed strategies generally align well with our forward looking views, and we are familiar with the investment processes as well as the risk and compliance philosophy of the firm, it is important to note that J.P. Morgan receives more overall fees when internally managed strategies are included. We offer the option of choosing to exclude J.P. Morgan managed strategies (other than cash and liquidity products) in certain portfolios.
Appendix

Important information (continued)

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