Class 1: Financial Markets Amidst Covid-19
Financial Markets, Fall 2020, SAIF

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During the current Covid-19 crisis, the price discovery function of financial markets becomes all the more important. Financial market should remain open for:
- Timely aggregation and processing of otherwise diverse information.
- Efficient allocation and distribution of capital and resources.

Comparisons to past crises:
- 2020: ?

The politics of financial markets:
- Central banks and governments: their respective responses and responsibilities.
Capital Markets in the US and China Economy

End-2019 | US | CN
---|---|---
GDP | $21T | $14T
Equity | $38T | $13T
Bond | $44T | $14T
Mutual Fund | $18T | $2T*

* Includes money market funds
Equity Markets’ Reactions to Covid-19: US and China

1/23: Wuhan lockdown.
2/04: Covid19 test approved by FDA.
2/12: CDC: Faulty virus tests.
2/24: Virus widely spread outside China.
2/25: Trump: USA under control.
2/26: Trump: Pence leads virus response.
2/27: CDC: test criteria revised.
3/03: Fed: rate cut by 50 bps.
3/10: President Xi visits Wuhan.
3/11: Trump: TV address.
3/12: Fed: injects $1.5T via term repo.
3/15: Fed: rate to zero and $700B QE.
3/25: Senate: $2T relief bill passed 96-0.
## Top 10 Worst One-Day SPX Returns

<table>
<thead>
<tr>
<th>Rank</th>
<th>Date</th>
<th>SPX Ret (%)</th>
<th>VIX (%)</th>
<th>SSE Ret (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10/19/1987</td>
<td>-20.47</td>
<td>150.19</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3/16/2020</td>
<td>-11.98</td>
<td>82.69</td>
<td>-3.40</td>
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<tr>
<td>3</td>
<td>3/12/2020</td>
<td>-9.51</td>
<td>75.47</td>
<td>-1.52</td>
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<tr>
<td>4</td>
<td>10/15/2008</td>
<td>-9.03</td>
<td>69.25</td>
<td>-1.12</td>
</tr>
<tr>
<td>5</td>
<td>12/1/2008</td>
<td>-8.93</td>
<td>68.51</td>
<td>1.25</td>
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<td>6</td>
<td>9/29/2008</td>
<td>-8.79</td>
<td>46.72</td>
<td>0.00</td>
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<tr>
<td>7</td>
<td>10/26/1987</td>
<td>-8.28</td>
<td>113.33</td>
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<tr>
<td>8</td>
<td>10/9/2008</td>
<td>-7.62</td>
<td>63.92</td>
<td>-0.84</td>
</tr>
<tr>
<td>9</td>
<td>3/9/2020</td>
<td>-7.60</td>
<td>54.46</td>
<td>-3.01</td>
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<tr>
<td>10</td>
<td>10/27/1997</td>
<td>-6.87</td>
<td>31.12</td>
<td>4.88</td>
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</tbody>
</table>

**Diagram:**

Daily SPX Returns (%)

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Past Crises: SPX vs. SSE

1997 Asian Crisis

1998 LTCM Crisis

2001/9/11 Terrorist Attack

2008 Crisis
The US and China Correlation in Equity Markets

EWMA Correlation using 5-Day Returns

<table>
<thead>
<tr>
<th>year</th>
<th>corr (%)</th>
<th>t-stat</th>
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</thead>
<tbody>
<tr>
<td>2010</td>
<td>43</td>
<td>5.25</td>
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<tr>
<td>2011</td>
<td>37</td>
<td>3.35</td>
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<tr>
<td>2012</td>
<td>28</td>
<td>3.20</td>
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<tr>
<td>2013</td>
<td>39</td>
<td>2.75</td>
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<tr>
<td>2014</td>
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<td>-0.84</td>
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<td>2015</td>
<td>35</td>
<td>1.51</td>
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<td>2016</td>
<td>26</td>
<td>1.73</td>
</tr>
<tr>
<td>2017</td>
<td>-7</td>
<td>-0.51</td>
</tr>
<tr>
<td>2018</td>
<td>44</td>
<td>4.83</td>
</tr>
<tr>
<td>2019</td>
<td>40</td>
<td>3.28</td>
</tr>
<tr>
<td>2020</td>
<td>44</td>
<td>4.54</td>
</tr>
</tbody>
</table>

*Rolling windows of 5-day returns; t-stats corrected for serial correlations.*
Traditional Safe Havens and Fear Gauges in 2020

10-Year US Treasury (%)

Gold ($)}

YEN (Yen/$)

COBE VIX (%)

US Treasury Yield VIX (%)

Investment Grade CDX Index
March: the ultimate safe haven.

Since June: steady decline

- Uncertain path to recovery.
- Recovery elsewhere (e.g., China).
- Monetary policy:
  - zero short rate.
  - sub 1% 10-yr rate.
  - infinite QE injecting trillions of USD.
- Declining reserve holdings by foreign central banks?
For decades:
- RMB was fixed or very tightly managed by PBoC.
- played only a minor part in global markets.

Since 2015:
- allowed to trade more freely.
- enabled the RMB to become a prime indicator of USD’s strength, as Yen did in the 1990s.
Financial markets are the most efficient aggregators of information.

The maturation of China’s markets and their integration into the global markets:
- The increasing correlation between the US and Chinese equity markets.
- The Chinese yuan becoming a prime indicator of dollar’s strength.
- China’s bond market (to be discussed later).

Questions to be answered by Wednesday’s student presentations:
- What is the value of China’s equity market to global investors?
- What are the risk and return?
- For a global investor, what should be his/her optimal portfolio weight on China according to financial theory?