“What drives asset prices in 2021?”

Discussion prepared for
SNB Market Roundtable

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What drives asset prices?

- Low interest rates
- Inflation
- Bubbles
- Flows
- Central Banks and Governments

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What determines price-dividend ratios?

- The expected return $\mu_t$ of an asset with price $P_t$ that pays a dividend $D_t$ is defined:
  $$\mu_t = \frac{1}{dt} E_t \left[ \frac{D_t + dt + P_t + dt - P_t}{P_t} \right]$$

- Iterating forward implies:
  $$P_t = E_t \left[ \int_t^\infty e^{-\int_\tau^t \mu_s ds} D_\tau d\tau \right] + E_t \left[ e^{-\int_t^\infty \mu_s ds} P_\infty \right]$$

  - Fundamental
  - Bubble

- Price-dividend ratio moves because of
  - Dividend growth, and/or
  - Expected returns (discount rates), and/or
  - Bubbles.

- Classic model assumes:
  - Bubble $\rightarrow 0$:
  - Expected dividend growth is unpredictable: $\frac{dD_t}{D_t} = g dt + \sigma_D dW_t$ with $g \approx 3%$
  - Discount rate given by multi-factor risk model ($\sim$ CAPM, APT):
    $$\mu = r_f + \beta \pi$$
    with $r_f \approx 2%$ and $\pi \approx 6%$ for the market ($\beta = 1$).

  - If $r_f$ and $\pi$ are constant then $\frac{P}{D} = \frac{1}{r_f + \pi - g} = 20$ is constant!

  - Price volatility should equal dividend volatility (Shiller’s excess volatility puzzle)
Current valuation levels are high!

→ historically these levels of valuation bode poorly for future returns.

- Should we expect a **Bear market**?
  - The case for low discount rates.
  - The case for high earnings growth.
  - Bubbles.

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The low rate environment

- Interest rates are at an all time low
- with \( r_f = 0 \) the ‘benchmark’ PD \( \approx 33 \).
  - But \( r_f \) will not stay forever at 0...
  - and \( \pi \) is likely negatively correlated with \( r_f \).
- Low current risk-free rates unlikely sufficient to explain high valuation ratios (see Binsbergen (2021)), in particular
- Large cross-sectional differences across firm/sectors (e.g., PE of Tech > Financial):
  - AAPL 28 GOOG 31 MSFT 33 AMZN 60 NVDA 86 ZOOM 140 TSLA 582
  - versus UBS 8.66 GS 9 JPM 13 BAC 18 CS 21
Inflation expectations are back in the news

From the FT May 12, 2021:

*The Nasdaq Composite, which is stacked with highly valued tech companies that are seen as more sensitive to changes in monetary policy, lost 2.7 per cent to trade close to 8 per cent below its April 27 record close.*

Q? What will be the effect of an increase (temporary or permanent?) in inflation and risk-free rates on (relative) asset prices?

▶ What is the channel? Is it duration, sector rotation, leverage...?
A bubble component in asset prices?

- Many assets with no cash-dividends (or perspective thereof) have high valuations
  - Money (USD, CHF)
    → transaction services ~ convenience yield, store of value
  - Commodities (gold)
    → convenience yields, industrial usage.
  - Art ($69million for Beeple’s Non Fungible Token!).
    → utility flow, status symbol...
  - BTC
    → Transaction services? Store of value?
    → Regulatory risk, Competition from other cryptocurrencies, Technological risk
- SPACS?

Q? Do all stocks trade with a bubble component on some continuum:
(WMT, JPM, APPL, ZOOM, TSLA, SPACS, BTC...)?

- Why can deep-pocketed value-investors (Buffett, Icahn, Einhorn, ...) not ‘beat’
some sense into this market?
Slow-moving capital, Inelastic Markets, and Flows

➢ There is some evidence that flows, or trades by fairly small subset of investors can have significant and persistent impact on asset prices in ways not consistent with the ‘traditional model’ (e.g., Duffie (2010) AFA presidential address on ‘slow-moving capital’):
  ▶ Stock returns around Index inclusion and exclusions
  ▶ Price concessions around Treasury bond issuances
  ▶ Price concessions around large corporate bond issuances
  ▶ The CDS-bond basis
  ▶ Reinsurance premia around Hurricane Katrina
  ▶ …

➢ There is a lot more anecdotal evidence in 2020 and 2021:
  ▶ GME
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Slow-moving capital, Inelastic Markets, and Flows

- Archegos leveraged trade on (BIDU, VIAC, DISCA, TME...) and impact on banks (CS, NMR, JPM, GS):

- BTC last week
Slow-moving capital, Inelastic Markets, and Flows

- Treasury Bond market sell-off in March 2020:
  The Federal Reserve System had to purchase $1 trillion of Treasuries in the three-week period from March 16 in response to unusually high sales by foreign investors and very large increase in bid-ask spreads.

Figure 8. Treasury bid-offer spreads posted at Bloomberg, indexed to 100 at January 2, 2020. Figure source: Lorie Logan, Manager of the System Open Market Account and Head of the Open Market Trading Desk, Federal Reserve Bank of New York, published with her speech of April 14, 2020. The underlying data source is Bloomberg Financial LP.

Figure 7. Total weekly purchases of Treasuries by the Fed from the week of March 16, 2020. Data: Federal Reserve.
Slow-moving capital, Inelastic Markets, and Flows

Q? Has the price impact of flows become more important in recent years (→) are markets less efficient?

▶ Some possible explanations:
  ▶ Growth of indexing and ETF with fixed mandates: few investors can respond quickly to price signals, provide liquidity, and risk-capital (Duffie (2010), Koijen-Gabaix (2021))
  ▶ Less balance sheet capacity of financial intermediaries (post Dodd-Frank - unintended consequence of better capitalized banking sector?)
  ▶ High amount of leverage (low rates, high liquidity, high amount of outstanding public-debt, large CB balance sheets).
  ▶ Developments in FinTech and social networks (Reddit, Robinhood... Pedersen (2021))

Q? Should central banks act as 'traders of last resort’

Q? How to monitor flows, crowded trades, leverage, and forecast their potential price impact.

Q? Regulate retail traders risk-taking, FinTech?
Impact of CB and government policy on asset prices?

- Inflation?
- Fiscal policy in the US and Europe?
- Capital Gains and Income Tax hikes?
- CB balance sheets and QE exit strategy?

Q? What will be the impact of these policy changes on the level of asset prices?

Q? What will be their impact on the Stock-bond correlation?