

Retirement Funds Early Access During a Pandemic

Impact on Financial Markets

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Preliminary Results - Please do not cite

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Roadmap

- Introduction
- Pension funds and Financial Markets
- Initial Impact
- Liquidation Process
- Final Remarks

Motivation

- The COVID 19 pandemic has proved to be a significant challenge in terms of supporting household's purchasing power
- Several Governments have boosted fiscal efforts to support firms and individuals
- However, in many cases policy makers have turned to proposing the use of pension savings to sustain consumption
- In Latam, 7 countries are discussing the possibility or using between 10 and up to 100% of pension savings
- Currently, Chile and Peru have passed implemented such legislations
- In this work, we focus on the impact of such developments on financial markets implemented such legislations

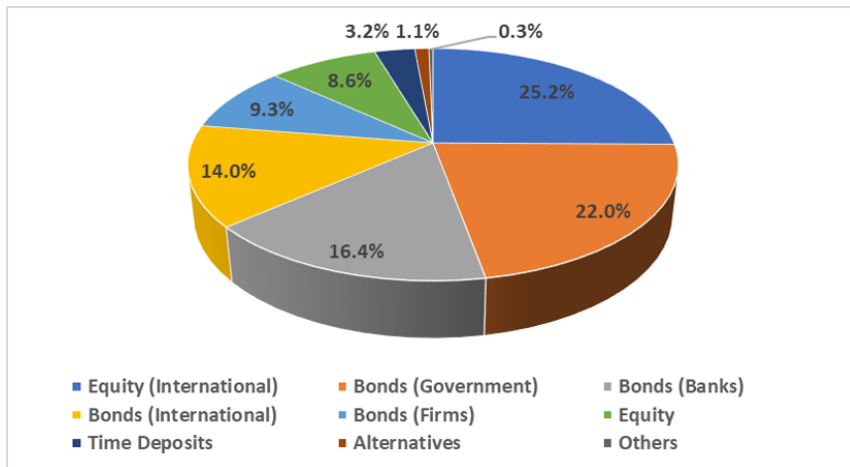
Introduction

- Since 1981 Chile has a DC scheme as its main pillar, with mandatory contributions (10% of monthly wages, capped at around USD 3,200)
- The system has wide coverage (75% of working-age population)
- Problems: low frequency & level of contributions; obsolete retirement age
- By the end of 2019, AUM reached USD 237 billion ($\approx 80.1\%$ of GDP)
 - Very detailed and explicit investment limits (almost 70 in existence)
 - There are five types of funds (A, B, C, D and E), varying according to maximum equity exposure (80, 60, 40, 20, and 5%, respectively)
- Withdrawals only at retirement: Some judicial attempts to gain early fund access during the last years were unsuccessful

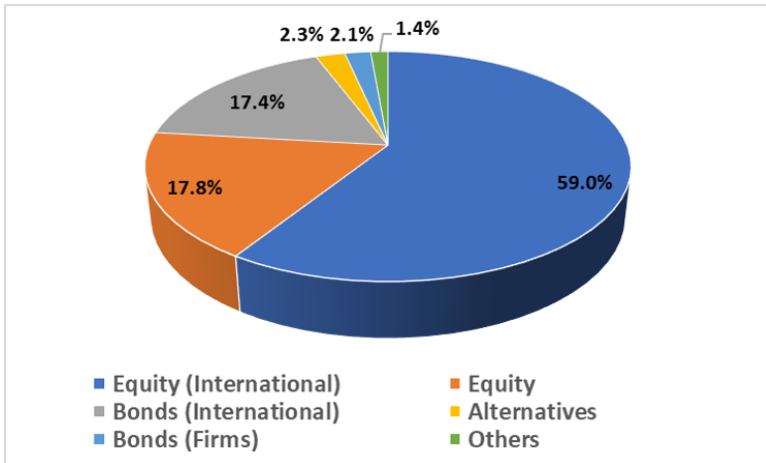
Main results

- We find evidence of price effects on local Equity associated to the Early Access Law (EAL)
- CAAR results are very noisy and negatively influenced by pension fund investment selling decisions
- We also find significant evidence of impacts on the nominal USD/CLP exchange rate
- Overall, these effects have tilted towards appreciating the Chilean peso
- The liquidation process has been eased by the Central Bank
- Challenges remain ahead in terms of hypothetical future withdrawals and the rolling out of temporary measures

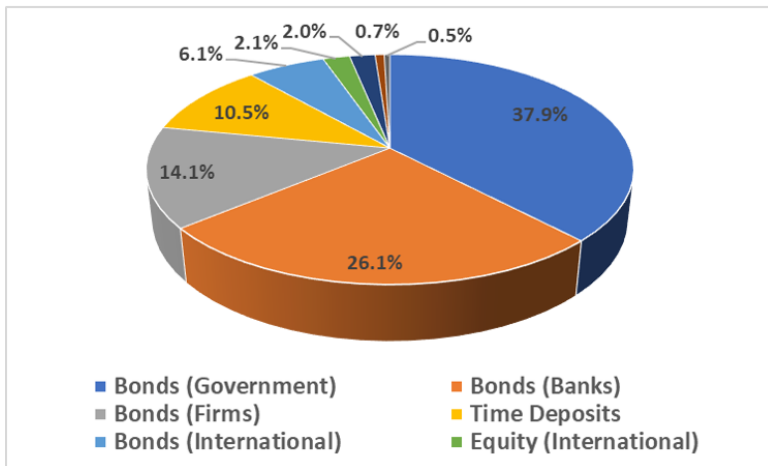
Total Funds' Investments: May 2020 (USD 198 billion)



Fund A's Investments: May 2020 (USD 21.4 billion)



Fund E's Investments: May 2020 (USD 40.3 billion)



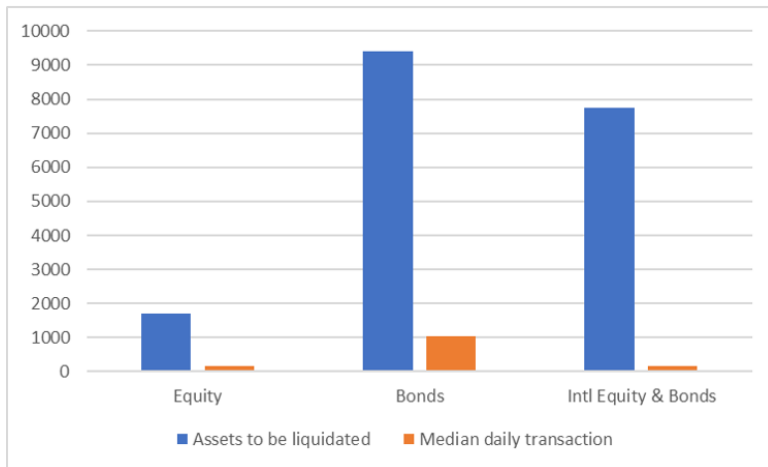
The Early Access Law (EAL): Key events

- June 15th: legislators unsuccessfully ask the President to submit a draft law allowing up to 10% withdrawal from pension funds
- **June 24th**: legislators approve discussion of an alternative draft law allowing early access
- **July 8th**: draft law passes 2nd step in discussion and is sent to higher chamber for discussion
- **July 23rd**: higher chamber approves fund withdrawal law; Central Bank announces willingness to implement special measures
- **July 24th**: President enacts EAL
- **July 27th**: Pension regulator announces flexibilization of investment limits
- **July 30th**: Fund withdrawal process starts

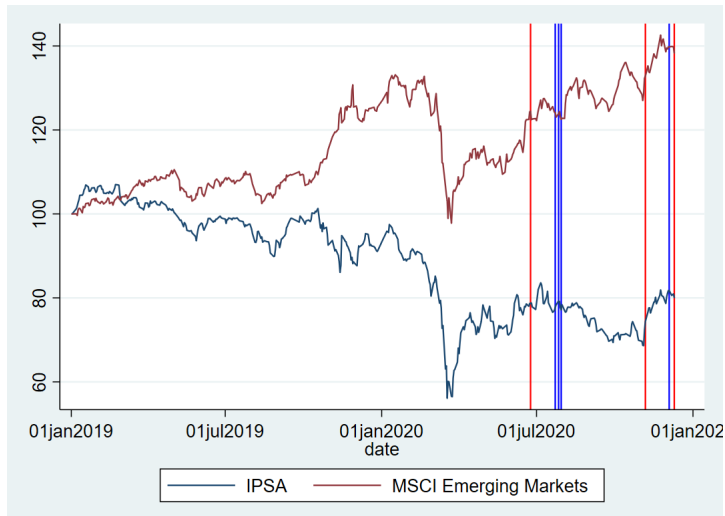
Initial Uncertainty regarding the EAL

- The EAL allows individuals to retire up to 10% of their pension savings accounts
 - Upper cap: USD 6,000
 - Lower cap: USD 1,400 (zero balance afterwards)
- No previous experience of this type of process since creation of the individual accounts
- Empirical evidence of price effects in equity markets (Larrañán et al. 2016, Da et al. 2018)
- Uncertainty in early stages of the process:
 - Enforcement of investment limits?
 - Involvement of Central Bank?
 - Presidential veto?

Potential Asset Liquidations (USD Million)



Evolution of Equity Markets



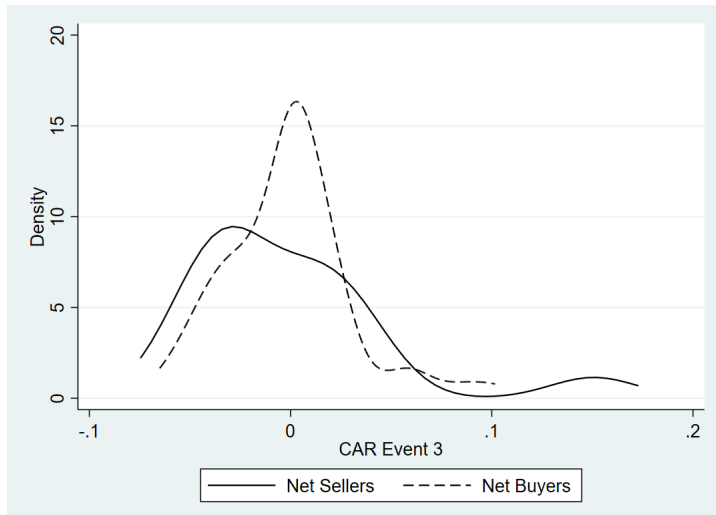
Impact on Equity market: CAAR

- Considerable (statistically significant) AR heterogeneity for local equity
- This is true for all event dates
- Traditional cross-section CAAR analysis lacks power
- Therefore, we attempt to tease out CAAR drivers:
 - Stocks characteristics:
 - Bid-ask spread
 - Free float
 - Retail sector
 - Pension funds portfolio:
 - PF stock investment (limited to July data for now)
 - Price pressure (asset sales literature)

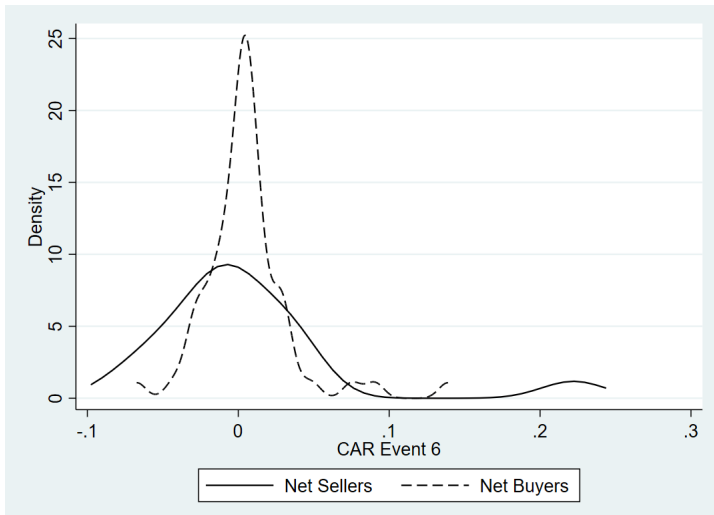
CAAR Drivers

	Event 3	Event 6
Bid-Ask	-0.0115 (0.0160)	0.00291 (0.0197)
Float	5.51e-05 (0.000178)	-0.000173 (0.000190)
Retail	0.0327** (0.0136)	-0.0123 (0.0178)
Price pressure	-0.0110*** (0.00305)	-0.0161* (0.00809)
Constant	0.00606 (0.00885)	0.0123 (0.00915)
R^2 (%)	30.6	21.5
N	76	76

CAAR Density: EAL sent to higher chamber (July 15th)



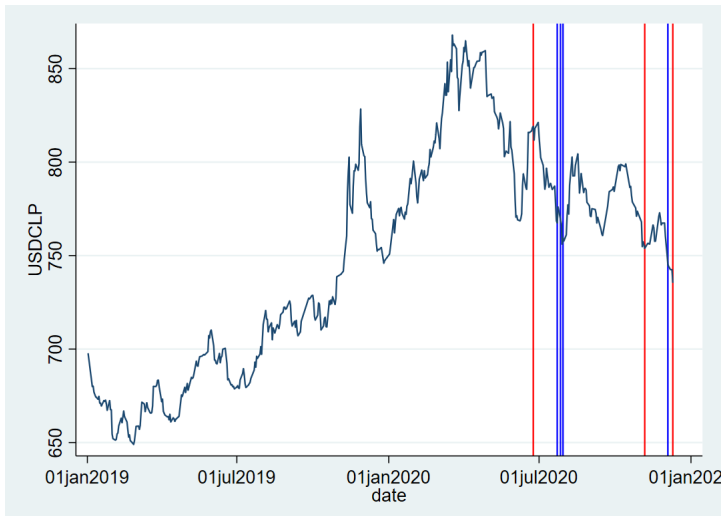
CAAR Density: Flexibilization of investment limits (July 27th)



Effects on Nominal Exchange Rate

- Until late 2019 a standard model was able to reasonably account for the USD/CLP exchange rate
- Independent variables:
 - US Dollar index (DXY)
 - Copper price
 - Interest rate differential ($r_{CLP} - r_{USD}$)
 - CDS for 5-year Chilean Government bond
- In order to estimate the EAL effects on exchange rate we also include monthly dummies for the October 2019 to December 2020 period

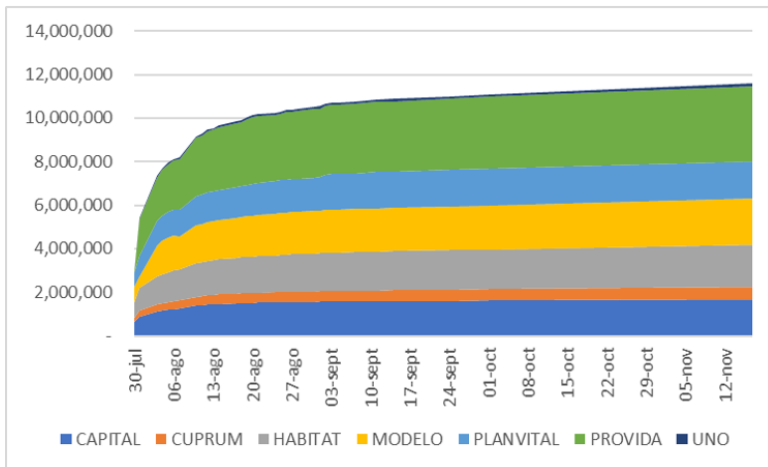
Evolution of Nominal Exchange Rate



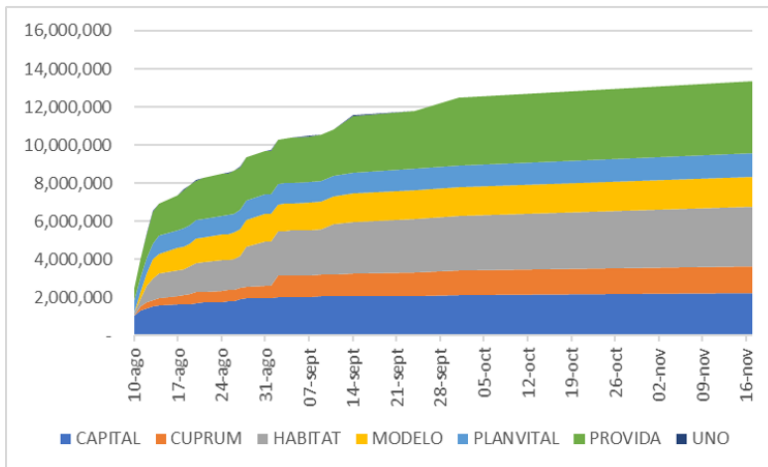
Effects on Nominal Exchange Rate

	$\log(USDCLP)$
$\log(dxy)$	0.650***
$\log(cob)$	-0.417***
δ_r	-0.0541***
cds	0.000641***
ev_1	0.0393***
ev_2	-0.0143***
ev_3	0.0126***
ev_5	0.00525**
ev_7	-0.00569**
ev_9	-0.0150***
ev_{10}	0.0263***
ev_{13}	-0.0158***
R^2	0.889
N	1,344

Withdrawal Requests (10.3 MM = 83% of members)



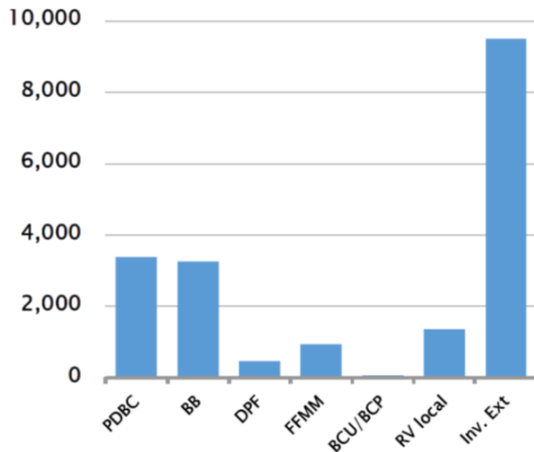
Payments (USD 18,236 MM = 9.2% of AUM)



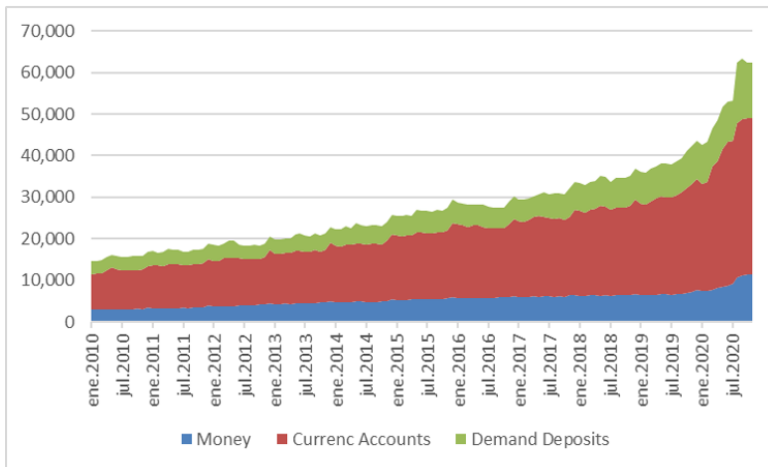
Liquidation Strategy

- Negligible impact measured as equity and bond transactions in public markets (Santiago stock exchange)
- Regarding fx transactions, between July and August, pension funds have sold USD 6,452 MM
- Central Bank has eased the process through liquidity injections (November 2019 through November 2020)
 - Repos (USD 28,957 MM)
 - Bank bonds purchases (USD 9,452 MM)
 - Central bank bonds buybacks (USD 6,939 MM)
- The Central bank now owns 14% of all bank bonds issued in Chile
- Between December 2019 and August 2020, the Central Bank balanced increased by 83%

Liquidation Strategy - USD MM(Pension Supervisor data)



Liquidity: Evolution of M1 (CLP MM thousands)



Main results

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Work in progress

- Robustness checks for identified effects on equity and fx markets
- Estimation of impacts on yield curve
- Analysis of changes in pension fund portfolio during August
- Formal analysis of effects on volatility (current focus has been on levels)
- Heterogeneity by pension fund manager may allow us to find additional identification strategies

Thank you!