



Ministry of Finance



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2ND PUBLIC DEBT MANAGEMENT CONFERENCE

What is the Role of Inflation- Linked Bonds for Sovereigns?

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Rome, Italy



AGENDA

- Evolution and characteristics of ILBs
- Should an EM DMO issue ILBs
- Implementation issues
- The Case of Israel

AGENDA

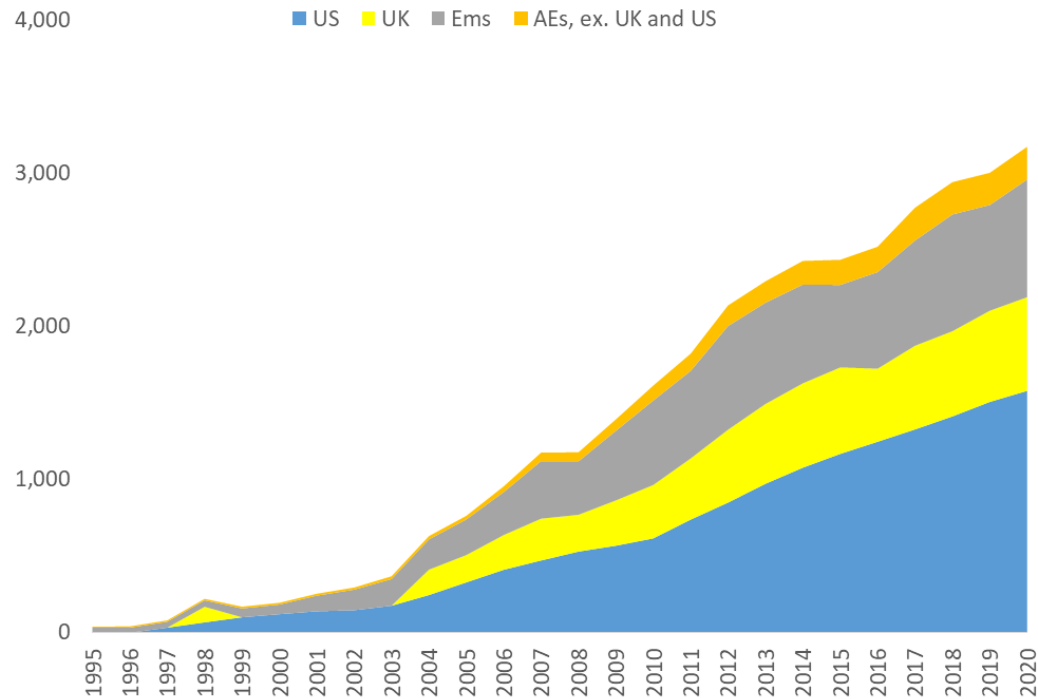
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ILBS WERE LAUNCHED FIRST IN EMERGING MARKETS

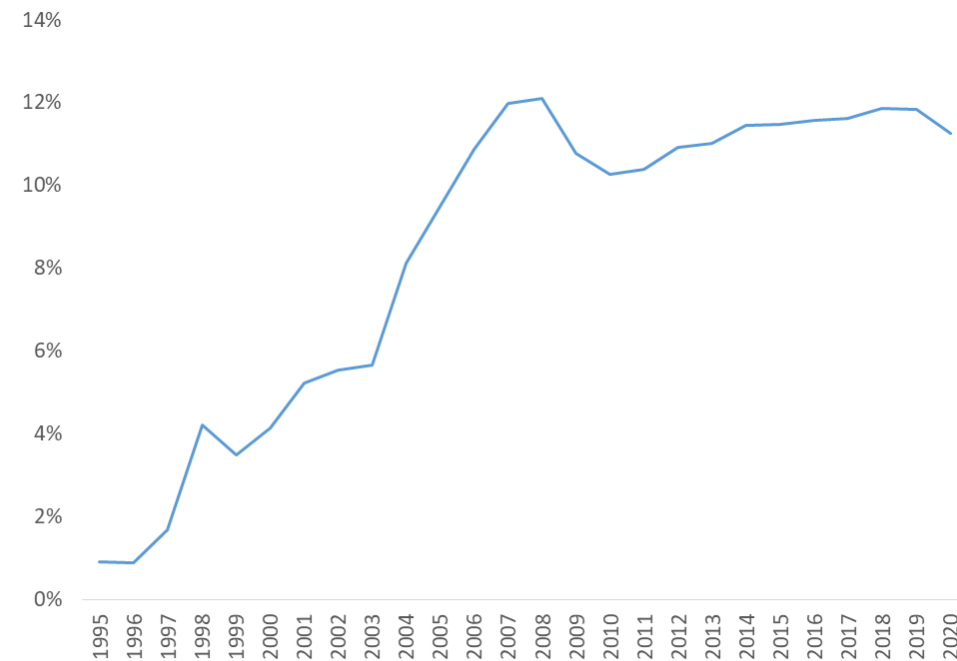


ILBS HAVE GROWN BUT REMAIN CONCENTRATED

Tradable ILBs outstanding in USD Billions

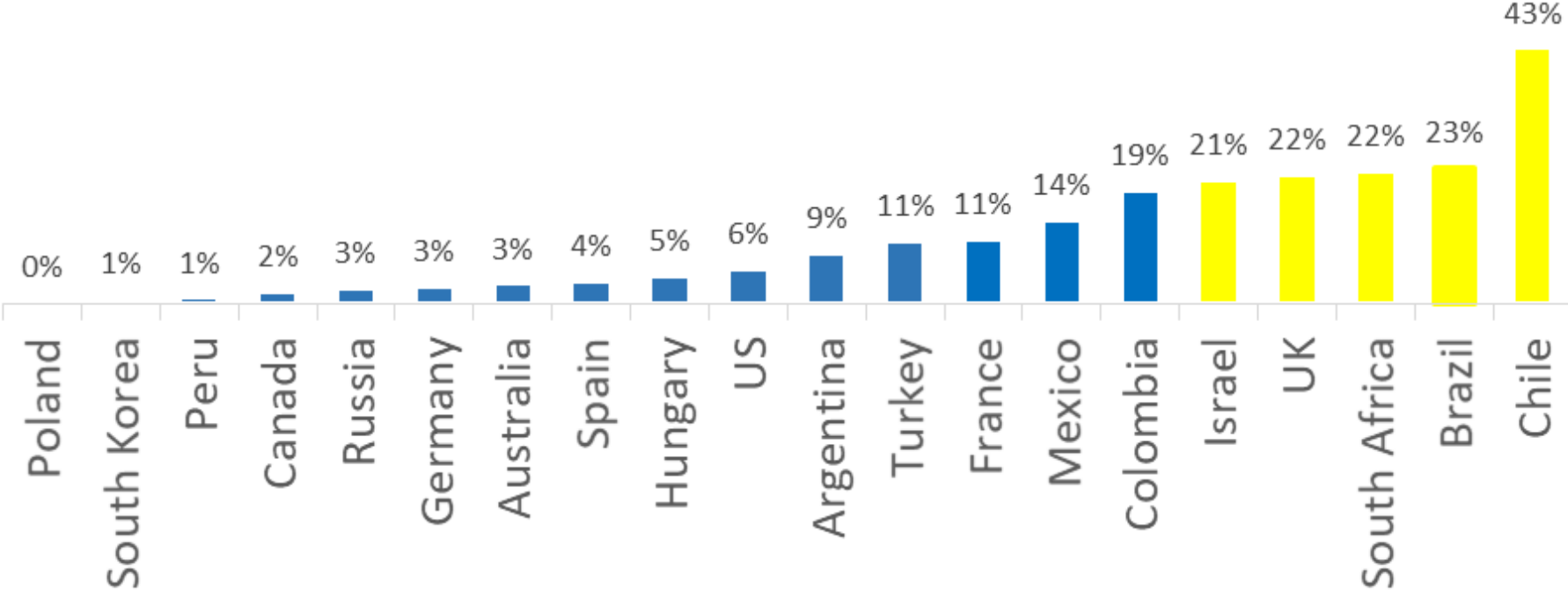


Tradable ILBs outstanding as a percentage of Tradable Debt



AND ARE SMALL RELATIVE TO TOTAL TRADABLE DEBT

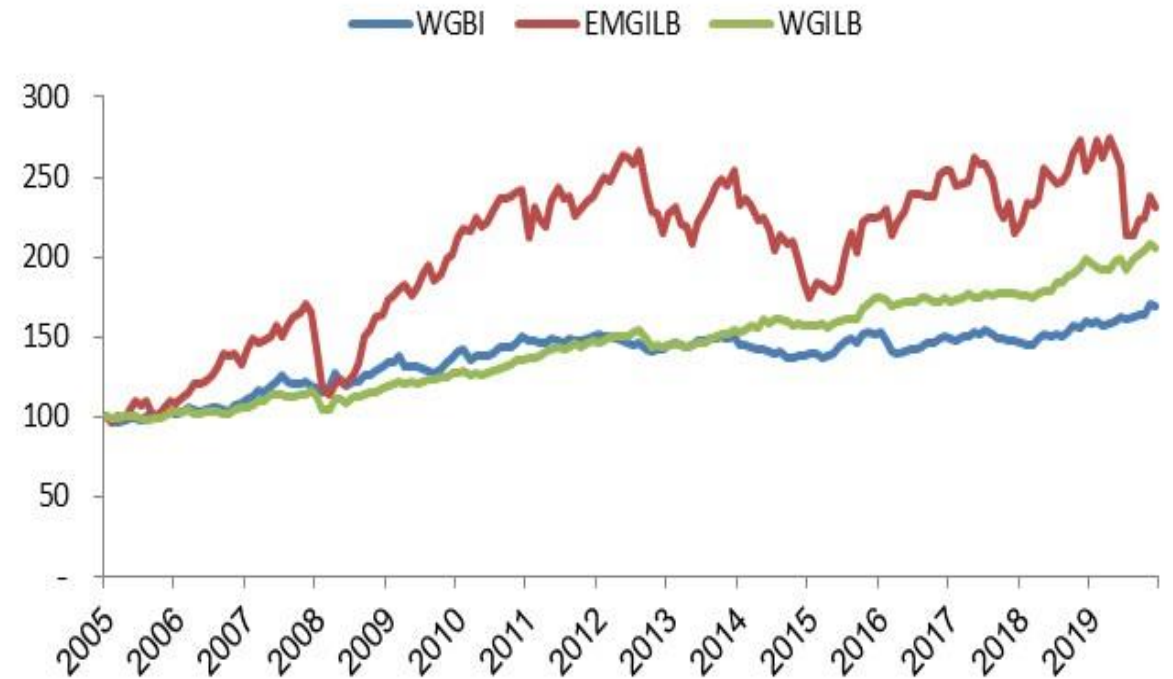
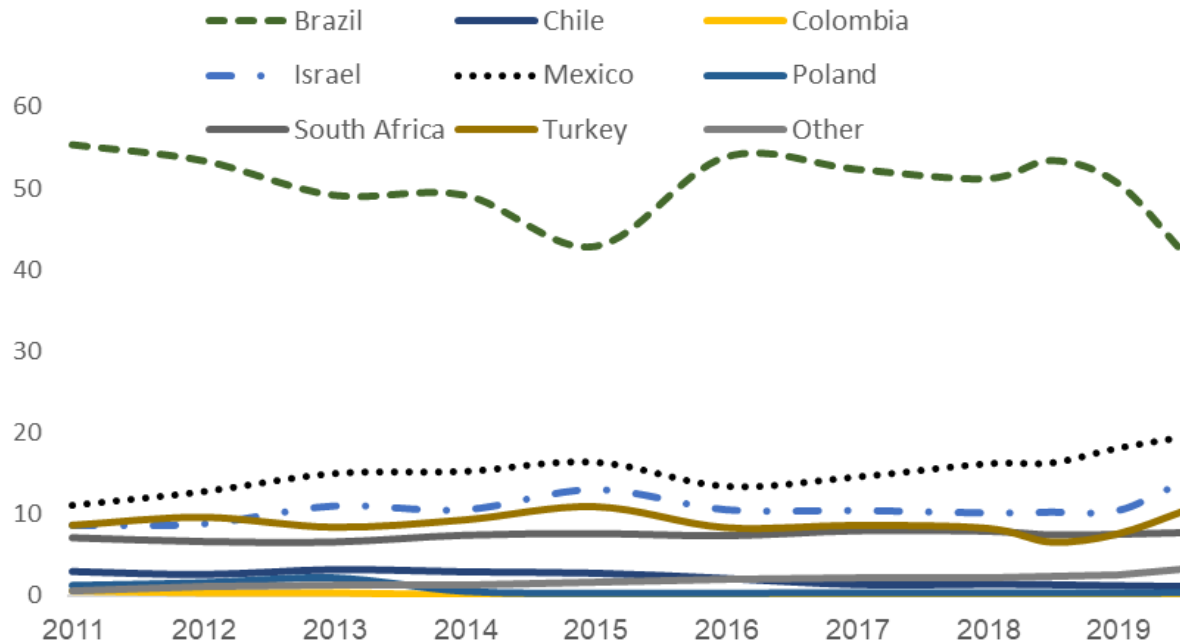
Tradable ILBs as share of total debt at end-2020



Sources: BIS Debt securities statistics, table C2; IMF Fiscal monitor October 2020, World Bank; Brazilian National Treasury; Agence France Tresor; Israel DMO; Chile DMO, December 2020

ILBS INVESTMENT INDICES

Emerging Markets Government Inflation-Linked Bond Index (EMGILB)



Source: Bloomberg, as of December 2020.

ILBS CAN HAVE DIFFERENT CASH FLOW STRUCTURES

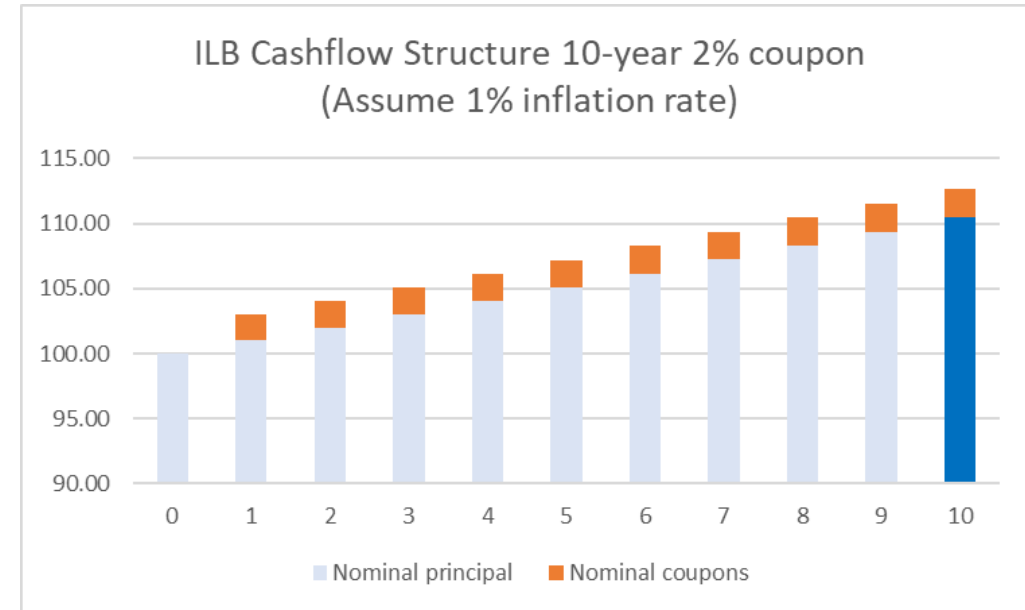
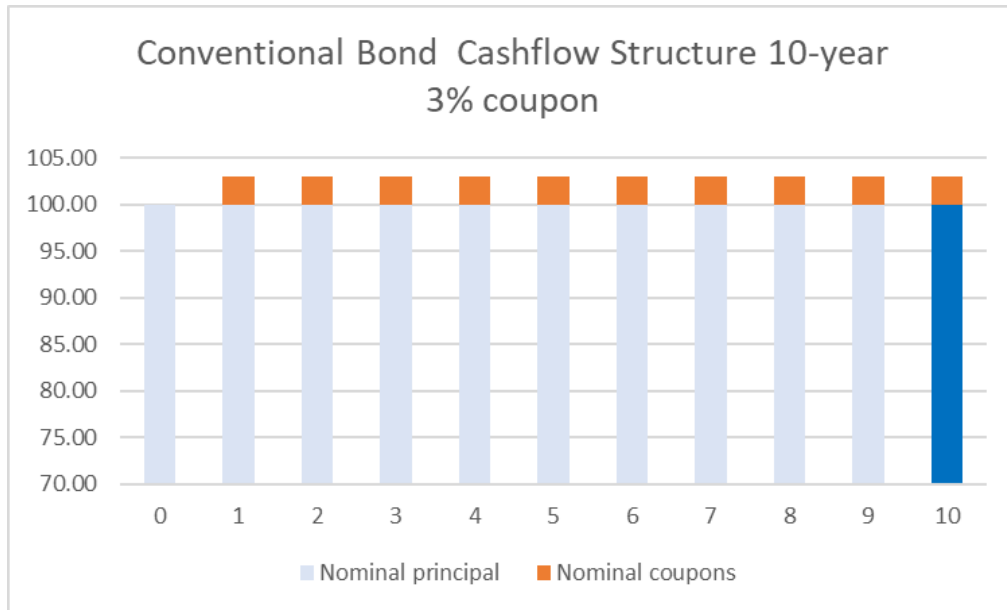
Type of indexed bond	Interest payment	Final payment
Capital indexed bond	$r \cdot \frac{P_t}{P_0}$	$100 \cdot \frac{P_{mat}}{P_0} + r \cdot \frac{P_{mat}}{P_0}$
Interest indexed bond	$r + 100 \cdot \left(\frac{P_t}{P_{t-1}} - 1 \right)$	$100 \cdot \frac{P_{mat}}{P_{mat-1}} + r$

- In a highly inflationary environment IIB accelerates cash flows through higher coupons. CIB's main adjustment is through the principal.
- CIBs have longer duration; preferred for pension funds and issuers
- In South Africa only the principal is indexed

COMPARED TO CONVENTIONAL BONDS

ILB CASH FLOW IS BACK LOADED

The cash flow structure could be attractive for DMOs



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ILB VS CONVENTIONAL: COST-RISK PERSPECTIVE

Cost: expected debt servicing flow

- Conventional bonds demand a premium for the protection against inflation
- ILBs demand a premium because linkers are typically less liquid
- Which premium weighs more?

Risk: uncertainty of debt servicing flows (market risk) but LBs could be attractive

- Substitute riskier debt instruments (FX bonds) and increasing the share of LX bonds
- Lengthen the debt redemption profile
- Lower the volatility of the government budget by allowing better asset and liability management of economies facing demand shocks

COST-RISK TRADEOFFS SHOULD BE QUANTIFIED

- How would ILBs perform in scenario analysis - baseline and risk scenarios?
- ILBs work as the foreign currency securities, to bring them to nominal value you multiply by the inflation index which works like an exchange rate
- Indexing debt to inflation poses significantly less risk than indexing debt to a foreign currency.
- Make sure the paths for inflation and exchange rates are consistent
- Tradeoff for first-time issuers, e.g., Israel or Chile

ILBS MAY SUPPORT MONETARY POLICY

- ILBs' contribution to the credibility of monetary policy
 - Little support to the theory from two groups of issuers AEs and EMs
- DMO's issuance policy in an inflationary environment
 - EMs launched ILBs when inflation was high and volatile . ILBs were the only instruments DMOs could issue in local currency at fixed rates and medium tenors
- ILBs' contribution to the tools available for the central bank to measure inflation expectations
 - A conventional and an ILB, with the same maturity date, should yield the same total return to the investor

ILBS CAN HELP MARKET DEVELOPMENT

- Complete the financial market providing full hedge against unanticipated inflation, fundamental for pension funds and life insurance companies
- Specialization of market participants in two segments—conventional and ILBs—diversify investor base, improve price discovery, reduce funding costs
- Mobilize savings that would otherwise go into real assets as the closest safe-haven alternative against inflation

BUT CAN ALSO BRING DANGER

- Countries with small debt markets might that ILB programs risk fragmenting the domestic market and losing the gains achieved in the market for conventional bonds
- If the liquidity premium is significant, the potential for market participants to hedge from unanticipated inflation will be limited.
- Issuance of ILBs may not be useful benchmarks for the corporate sector

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PRACTICAL DECISIONS IN THE IMPLEMENTATION #1

Instrument design

- Capital Indexed Bonds vs Interest Indexed Bonds
- Protection against deflation (US vs AEs)

Selection of the inflation index

- Non-adjusted general CPI produced monthly and use a three-month lag

Placement of ILBs

- Benchmarks mitigate the “natural” illiquidity of ILBs. No need to issue all along the yield curve
- Organization of the maturities to avoid the risk of cannibalization

PRACTICAL DECISIONS IN THE IMPLEMENTATION #2

Issuance mechanism

- Auction type: multiple vs single price
- Syndications vs auctions

Liability management operations

- Buybacks and switches to accelerate the buildup of benchmark bonds and mitigate their illiquidity

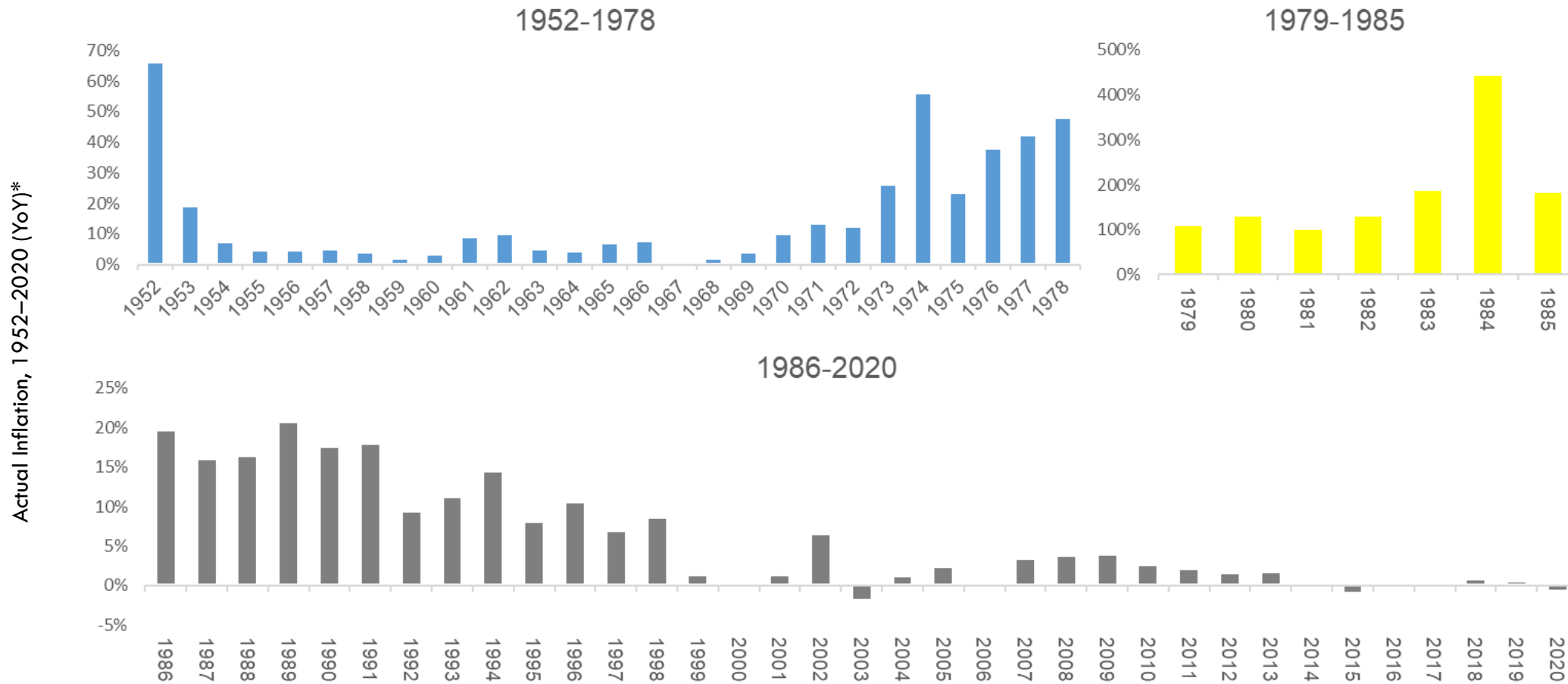
Other issues

- Inflation uplift: Accounting and long-term impact
- Taxation vs conventional securities

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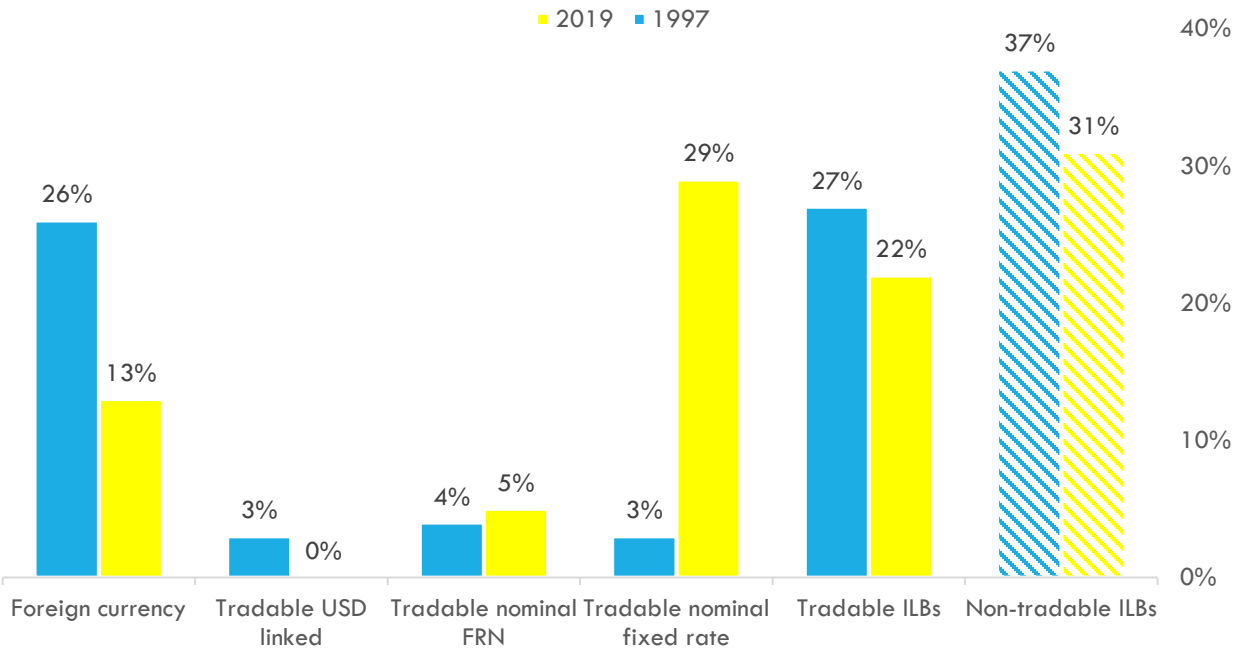
HISTORY OF INFLATION AND DEMAND OF THE PENSION SYSTEM



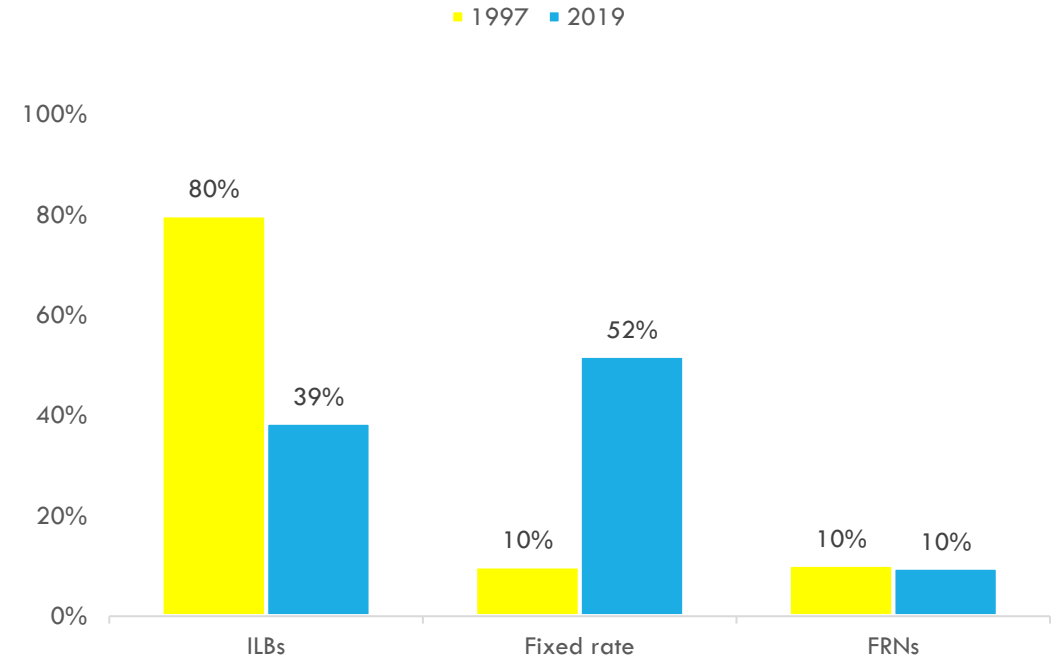
*Source: Data from the Central Bureau of Statistics of Israel, December 2020

THE ROLE OF ILBS IN DEBT MANAGEMENT

Government Debt by Instrument (Share of Total Debt)



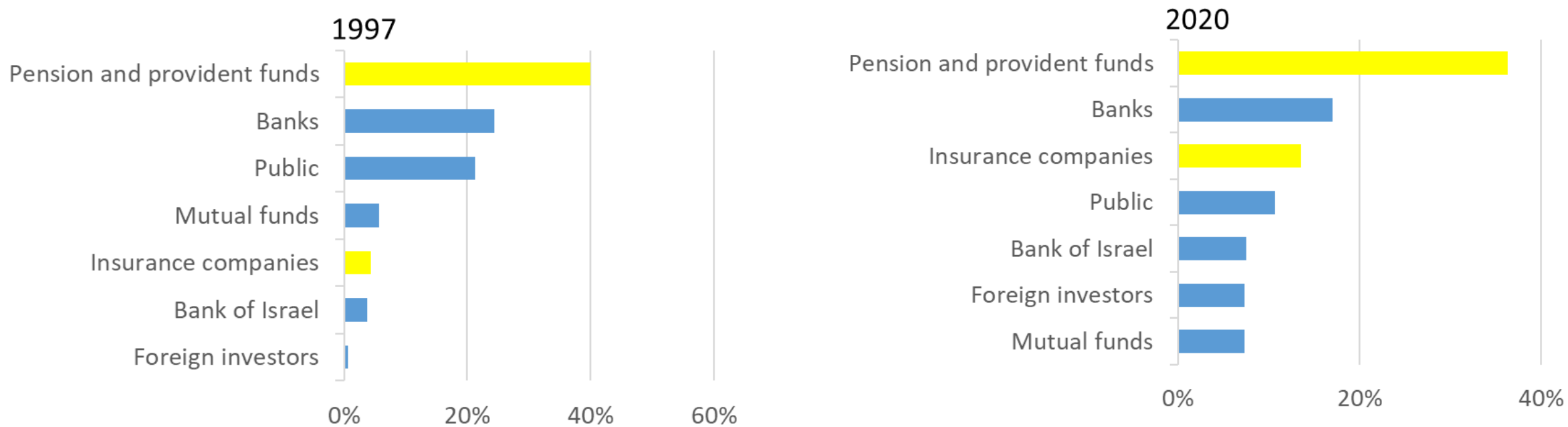
Tradable Local Debt Breakdown, by Instrument



*Source: Data from the Ministry of Finance, Israel.

DEMAND FOR ILBS

Tradable Local Debt Breakdown, by Investor (Share of Total Tradable Debt)*



*Source: Data from the Bank of Israel. Note: The provident fund is a long-term savings vehicle for retirement that enjoys tax benefits.

CONCLUDING REMARKS

- DMOs issue ILBs because they must or because they choose to
- Cost of ILBs vs conventional depends on the comparison of inflation premium vs liquidity premium; risk seems favorable to ILBs
- Macro: breakeven inflation as a measure of expectation is a plus for ILBs; correlation of debt service with primary balance could go either way
- Market development: ILB hedge against unanticipated inflation crucial for pension funds, but market size and fragmentation are a concern
- Implementation: ILB design, organization of maturities, placement mechanism, number/size of lines, PD programs, ILBs indices (standards of liquidity, transparency, and availability to foreign investors)