



The impact of macro policy and structural changes on the business cycle in Chile

*LSE Breakfast Presentation
London, 30 June 2017*

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Agenda

1. Conventional notions about Chile's business cycle
2. The importance of the macro policy framework
3. Functioning of the labour market
4. Real impact of exchange rate volatility
5. Resilience, macro policies and characteristics of the business cycle
6. Challenges



Conventional notions about Chile's business cycle

Business cycles in economics

- Business cycles have been part of the economic landscape for centuries
- Since its origins, economic theory has attempted to explain business cycles
 - Various approaches: savings-investment-allocation; real cycles; financial imbalances
- For developing countries, external shocks more important than domestic forces
- Macroeconomic policy: cushion or amplifier
- Cycles and turning points
 - Self-correction mechanisms
 - Interpreting and forecasting

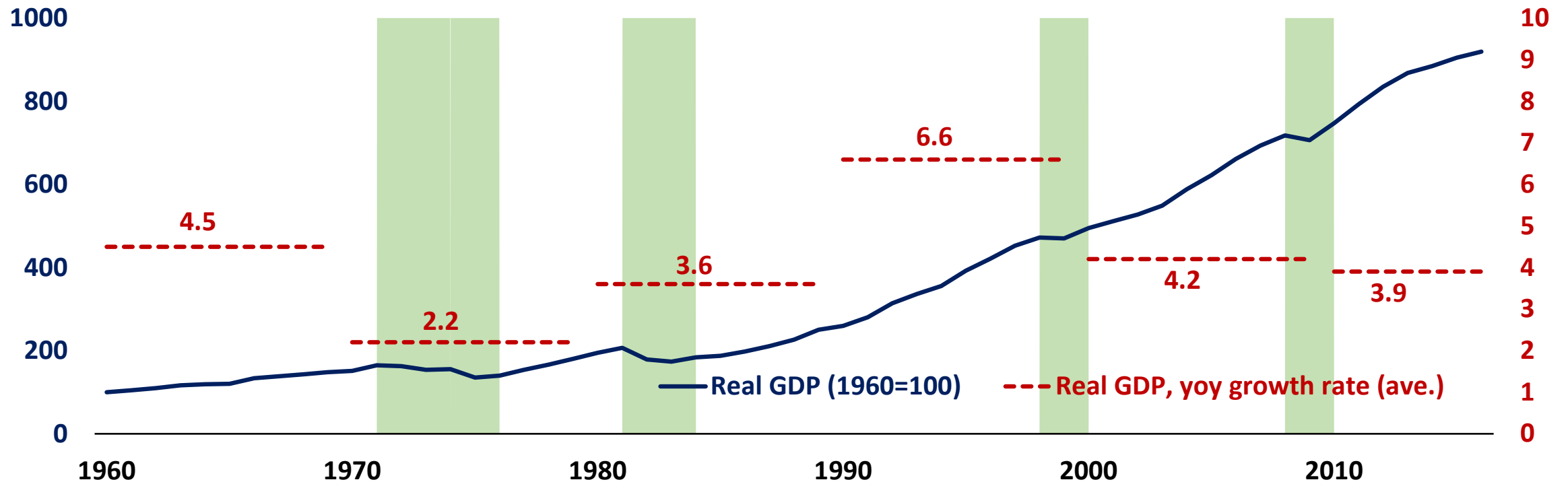
Business cycles in Chile: the conventional path

- *External shock.* Terms of trade, financial conditions
- *Domestic shock.* Financial crises, productivity shocks
- Change in relative prices, inflation and quantitative adjustments:
 - the role of the exchange rate
 - Fiscal transmission and liquidity constraints
- Monetary policy response
 - Financial response and liquidity
- Recent recessionary cycles (1973-76, 1982-83, 1999, 2009)
- Recessions characterised by massive unemployment, increased non-payment, bankruptcies

55 years of economic activity in Chile

Chile's Real GDP, Real Annual Average Growth Rate

(index, 1960=100; percentage points)



- In 55 years total GDP has multiplied eightfold
- This process has been non-linear, with slowdowns and accelerations, heavily influenced by the business cycle

(*) Sources: Díaz, Lüders, and Wagner (2016) and Central Bank of Chile.

Economic volatility has increasingly declined

Chile's growth, unemployment and inflation rate volatility
(standard deviation; percentage)

Period	Unemployment (1)		Growth (2)		Annual Inflation	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
1960 - 69	5.9	1.0	4.5		25.2	13.1
1970 - 79	10.3	5.1	2.2		181.0	194.0
1980 - 89	14.9	4.9	3.6		21.5	8.3
1990 - 99	7.8	2.5	6.0	5.7	11.8	7.3
2000 - 09	11.4	2.1	3.9	4.0	3.5	2.4
2010 - 17	7.2	1.2	3.5	3.3	3.1	2.4

- Even though the economy has faced different shocks in each decade, volatility has declined
- A mix of policy and structural changes are behind this developments

(1) Unemployment in Región Metropolitana. (2) Since 1990, annualised and seasonally adjusted quarter-to-quarter growth.
Sources: Central Bank of Chile and National Statistics Institute (INE).

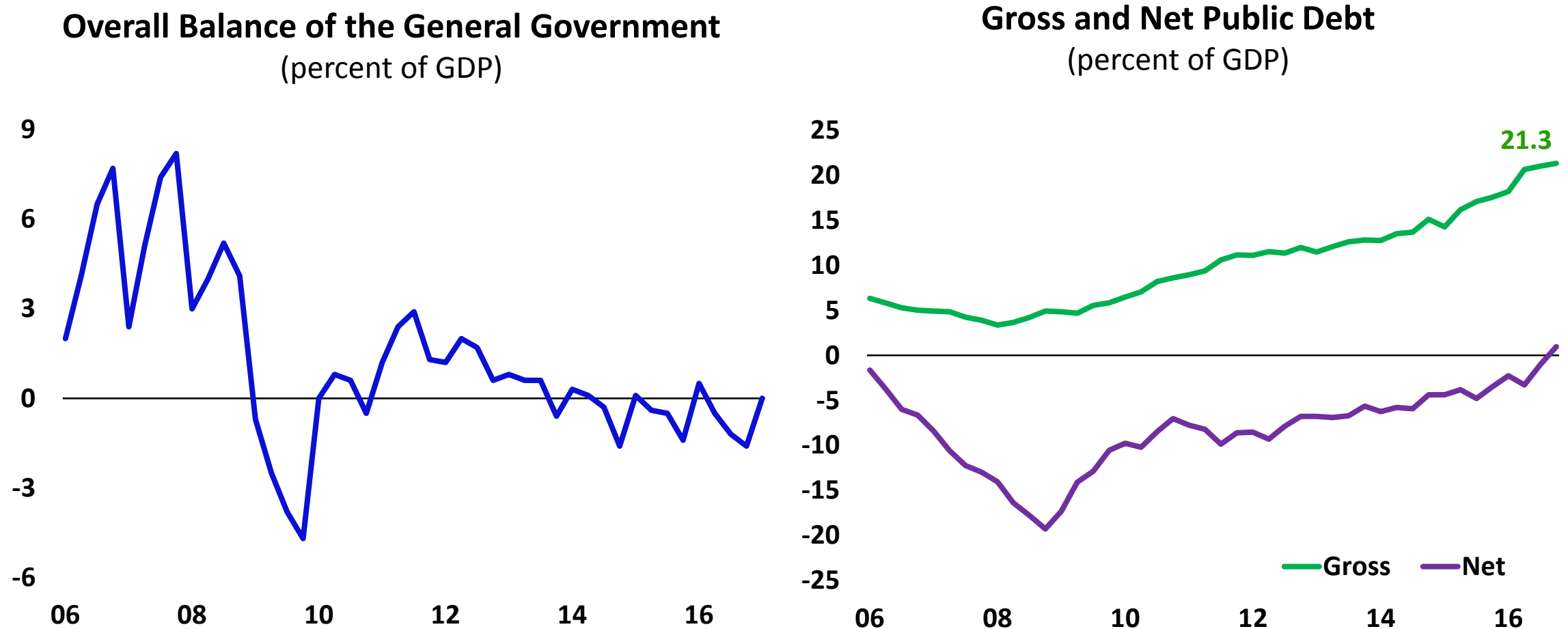


The importance of the macro policy framework

Current macro policy framework

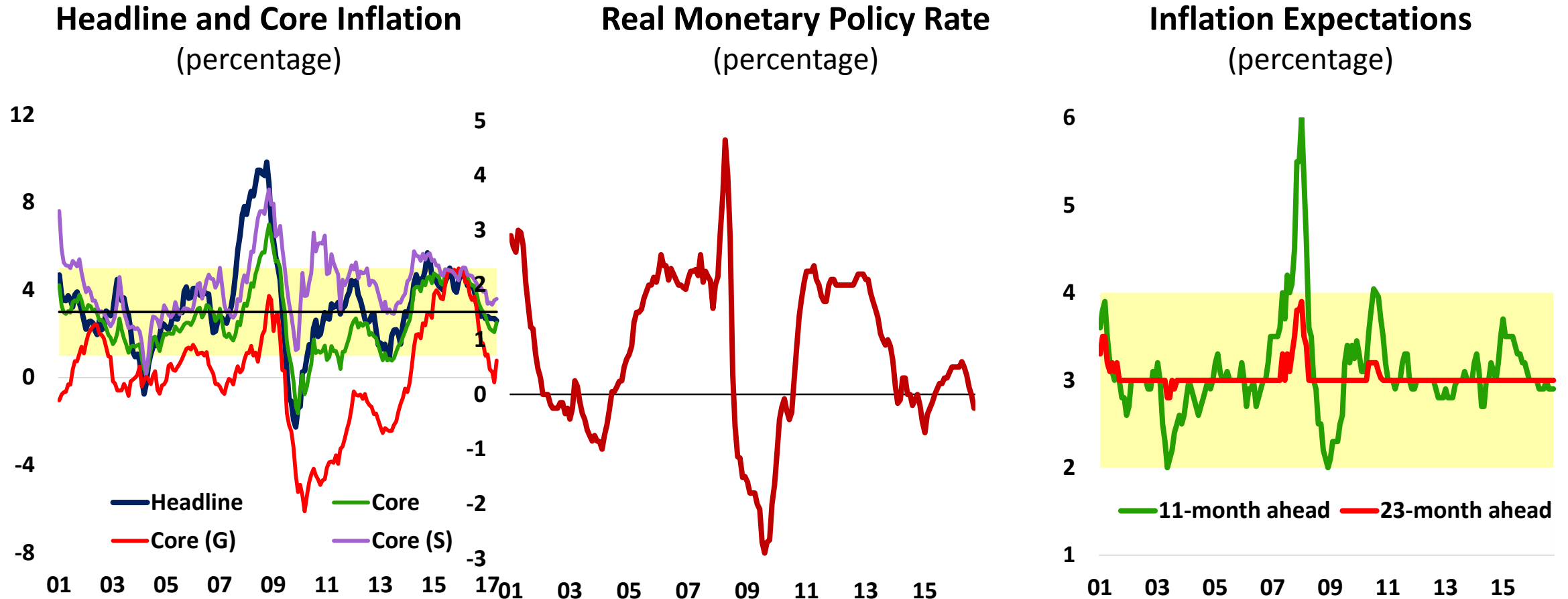
- After decades of setbacks, economic stability has increased in the last 30 years without compromising long-term development
- On the base of a more robust macroeconomic framework
 1. 1986 - sound and well-regulated financial system
 2. 1989 - independent Central Bank with two objectives: price stability and the correct functioning of the payment system
 3. 1999 - flexible inflation targeting MP framework and floating exchange rate
 4. 2001 - sound fiscal policy that where expenditures are consistent with a long-run price of copper and economic growth
- As a result, macro policy has switched from procyclical to countercyclical

The structural fiscal rule has allowed to face different shocks with little impact in fiscal expenditures



Source: Ministry of Finance.

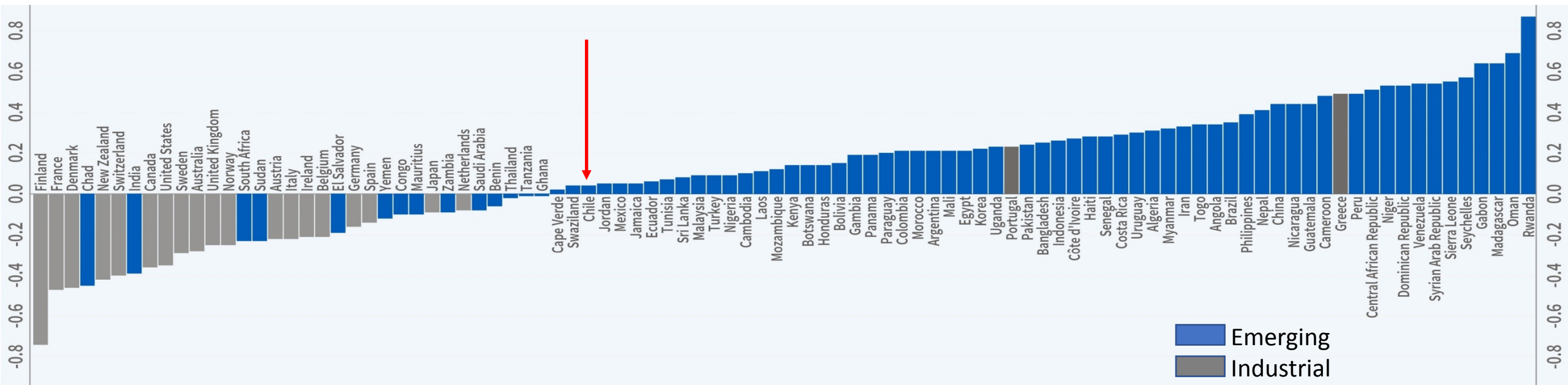
An independent central bank has been able to control inflation and anchor private expectations, while acting as the first line of defence against internal and external shocks



Source: Central Bank of Chile.

Chile's macro policies have become substantially countercyclical

Country Correlations between the Cyclical Components of Real Government Spending and Real GDP, 60-14
(correlation)



- Still, economic shocks exist
- The business cycle can be smoothed but not abolished altogether

Source: Carlos Vegh's webpage based on Kaminsky and Vegh (2004).



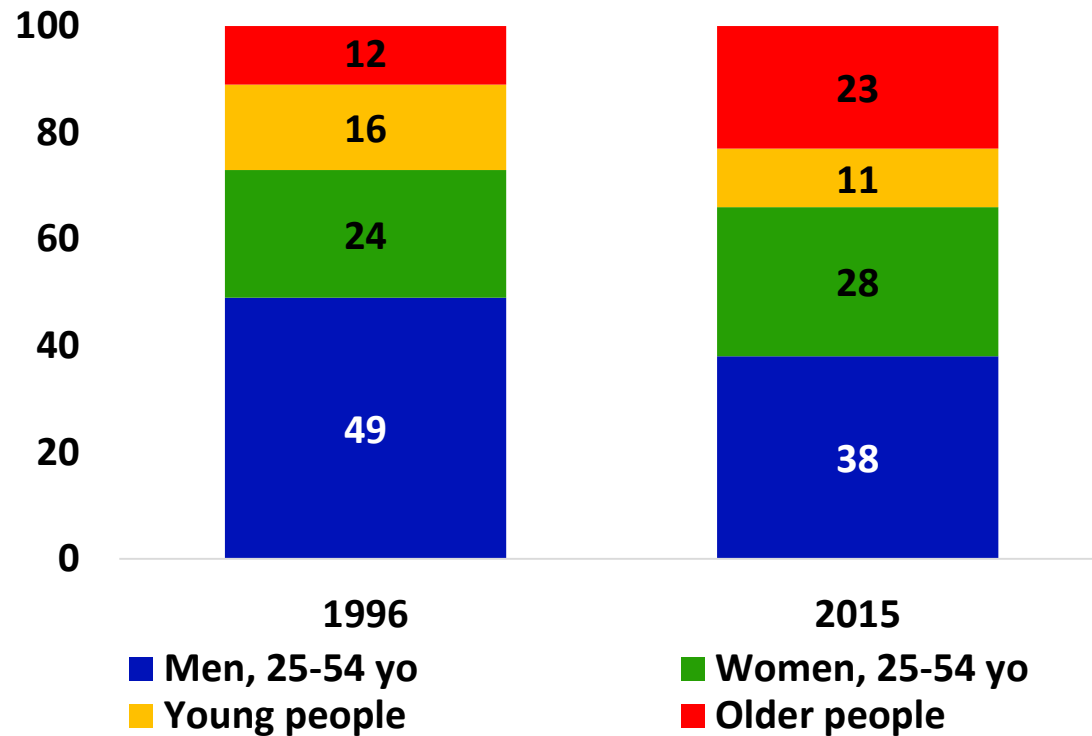
Functioning of the labour market

Structural changes in the labour market

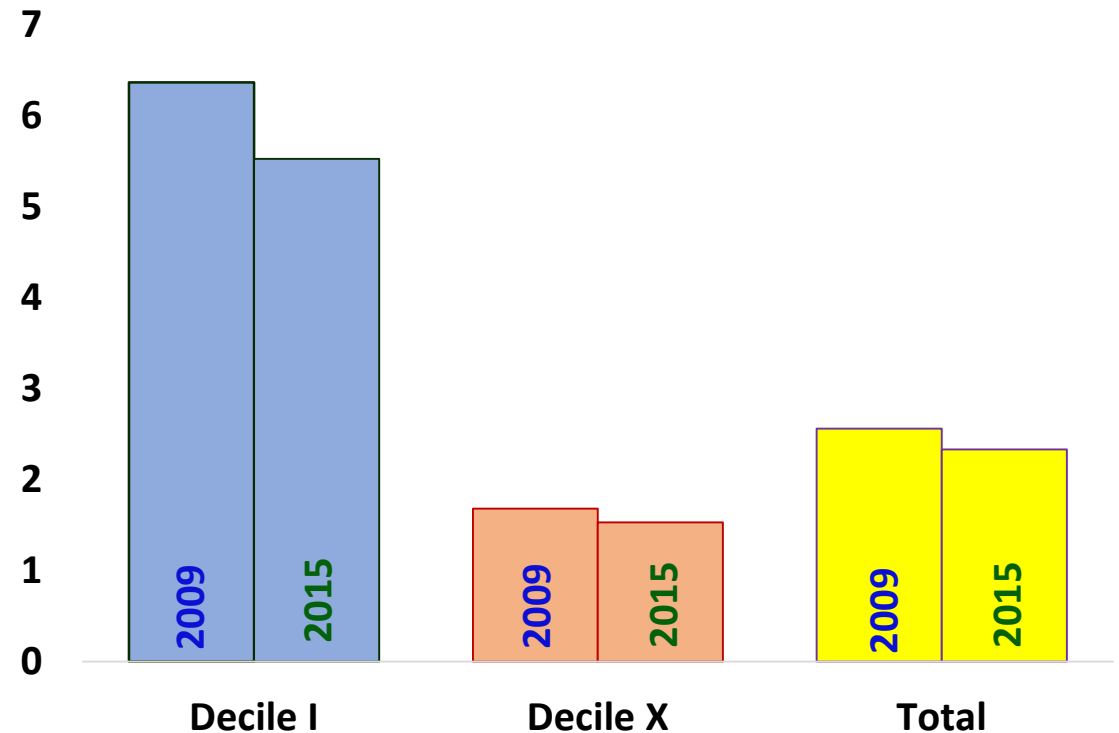
- Sociodemographic change and workforce composition
- Labour income and economic behaviour of households
- Labour mobility and adjustments in employment, wages, working hours
- Labour market and macro adjustment:
 - Unemployment, wages, and prices: the Phillips Curve
 - Employment, wages and aggregate earnings
- Nature of non-salaried employment

Structural changes in the labour market

Workforce composition, 1996-2015
(percent of the total)



Dependency rate to autonomous per capita household income
(percentage)

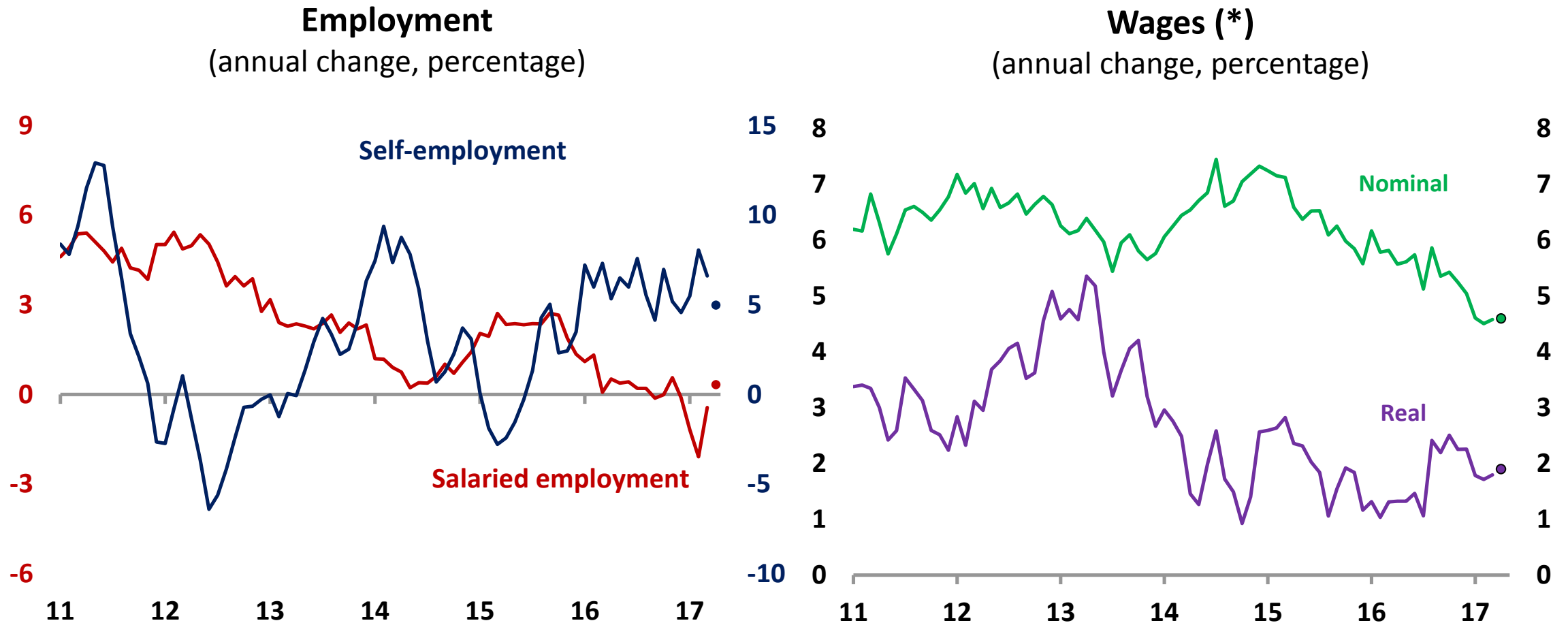


(*) Sources: Marcel and Naudon (2016) and CASEN.

Recent performance of the labour market

- In 2014-2016 Chile faced a combination of external and internal shocks. Economic activity slowed down to 1.9% p.a. from 5.3% p.a. in 2010-2013
- Yet unemployment has remained stable, at historical lows
- This has been due to the absence of massive layoffs as in previous recessions and flexibility in the adjustment of the labour market:
 - Labour mobility across sectors
 - Switch of secondary labour force from salaried jobs to self-employment and out of the job market
 - Deceleration of wages
 - Reduction in working hours, increase in part-time work
- As a result, consumption has stabilised around 2.5% growth p.a. providing support to economic activity

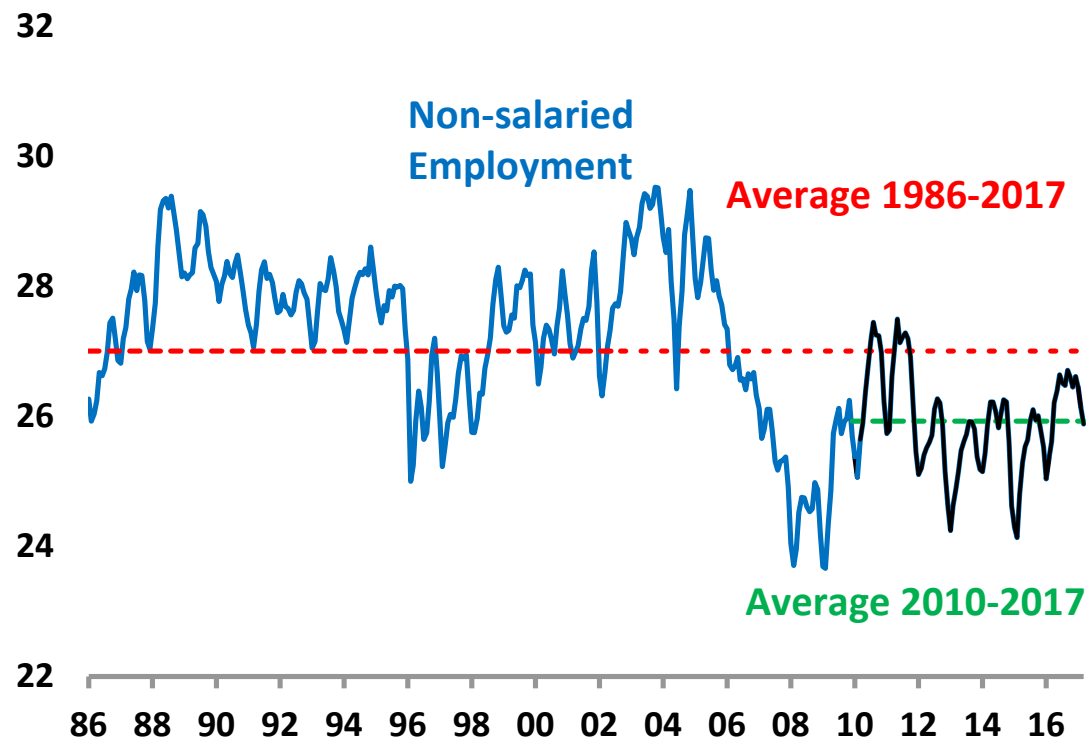
Labour market adjustment in the current cycle



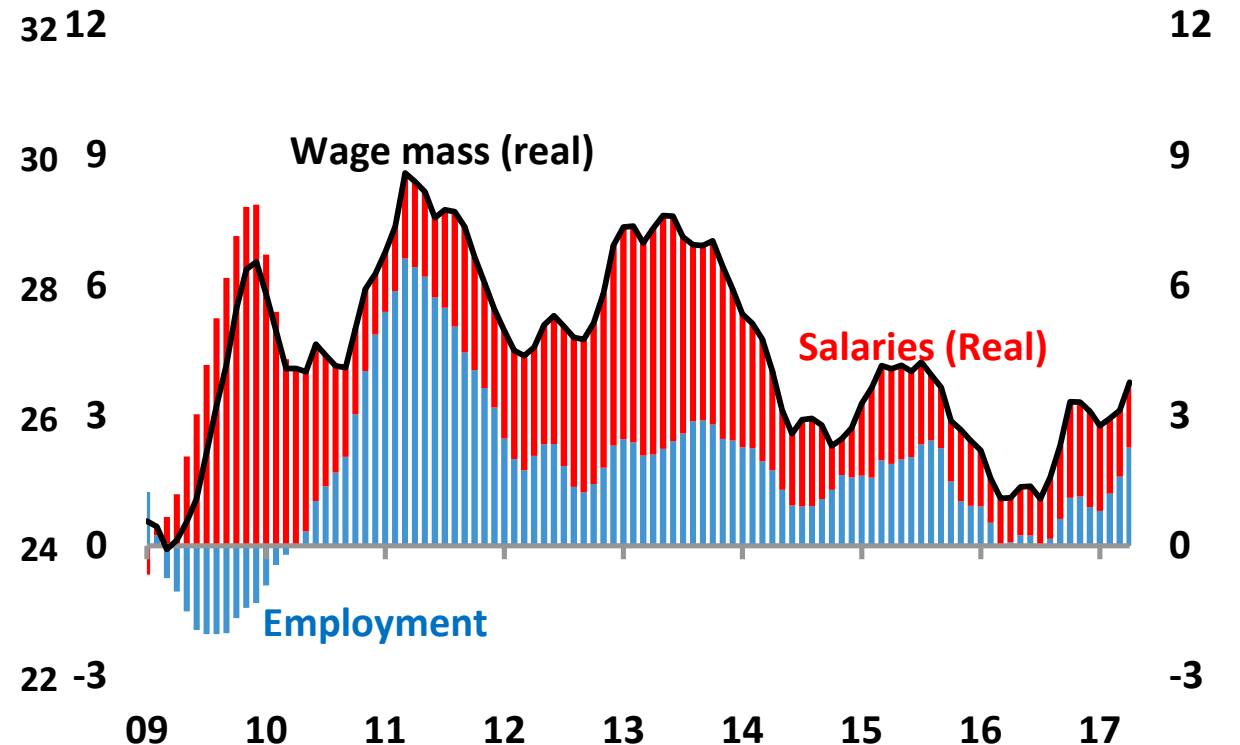
(*) Both estimated as the average yoy change in the Remunerations index (IREM) and Labour cost (CMO).
Sources: Central Bank of Chile and National Statistics Institute (INE).

Non-salaried employment and aggregate earnings

Evolution of Non-salaried Employment (1)
(percent of total employment)



Aggregate Real Earnings (2)
(contribution; percentage points)



(1) After 2010 the data is from the New National Employment Survey. (2) Moving quarterly average.
Sources: Central Bank of Chile and National Statistics Institute (INE).



Real impact of exchange rate volatility

Exchange rate adjustments, prices, and activity

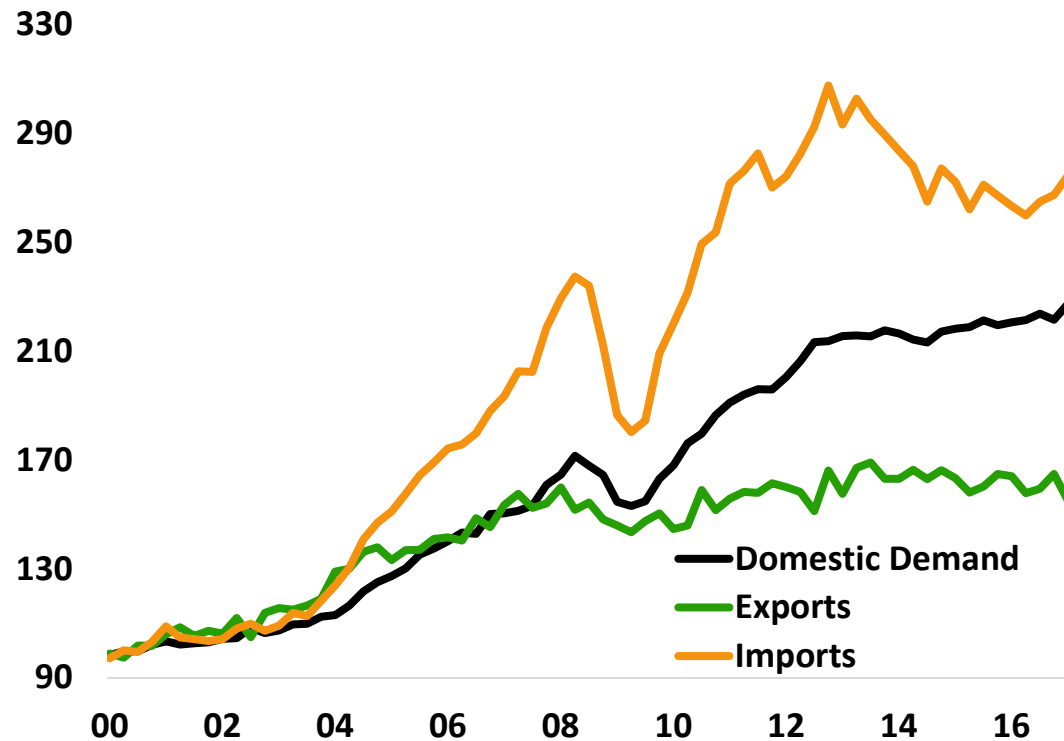
- The exchange rate is—by definition—a relative price. It depends on both the numerator and denominator
- Traditionally, fixed exchange rates becoming unsustainable under pressure from shocks; large devaluations as trigger of recession
- Real effect of variations in the exchange rate:
 - Capital gains and capital losses in the public, private and financial sector
 - Competitiveness, tradable and non-tradeable prices
 - Companies' operating margins
 - Response from exports, imports, domestic demand
 - Inflation: pass-through and expectations
- Origin of exchange rate fluctuations
- Exchange rate with respect to what?

The origins and consequences of exchange rate fluctuations have changed

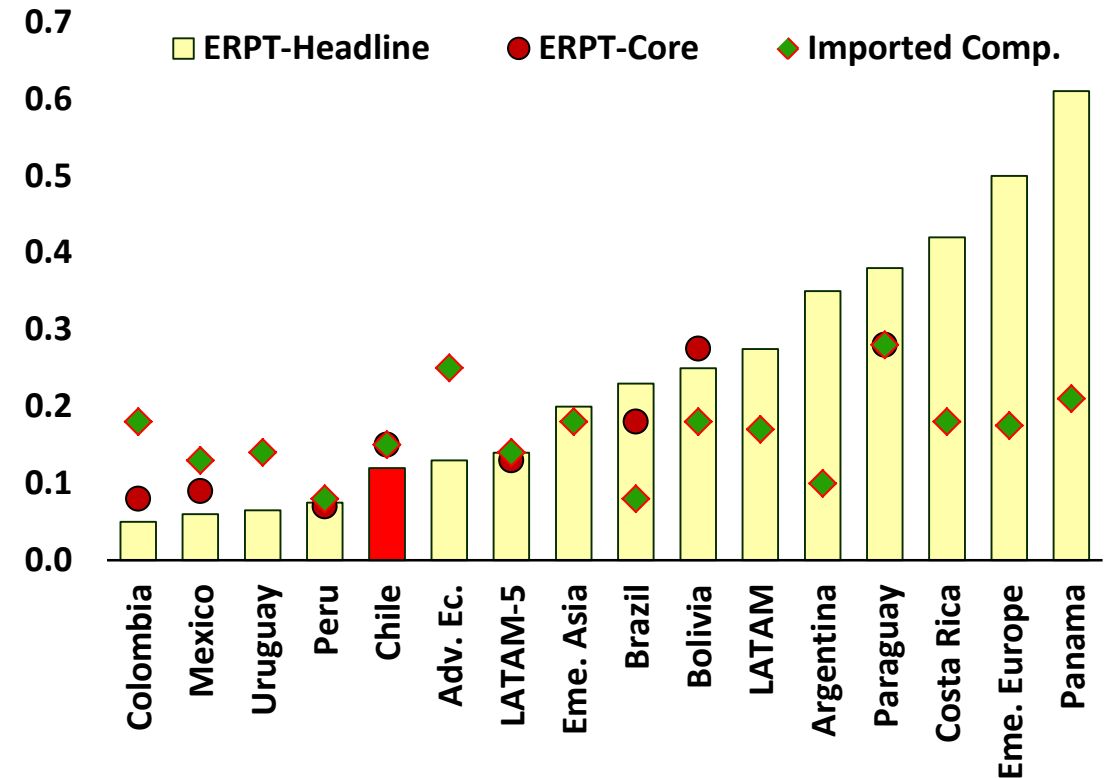
- **Origin:** Generalisation of float, capital mobility
- **Consequences:**
 - Wealth effect: “pesofication,” nominalisation of the economy, public sector external financial assets, institutional investors, enterprises
 - Effect on margins and competitiveness: role of trade diversification and forex derivatives
 - Pass-through to prices and policy response
- The exchange rate now provides a cushion for external shocks with less spillovers
- Making inflation targeting easier to execute once supply and demand pressures on prices are properly identified

International trade and pass-through

Domestic Demand and Trade Components
(index, 2000=100)



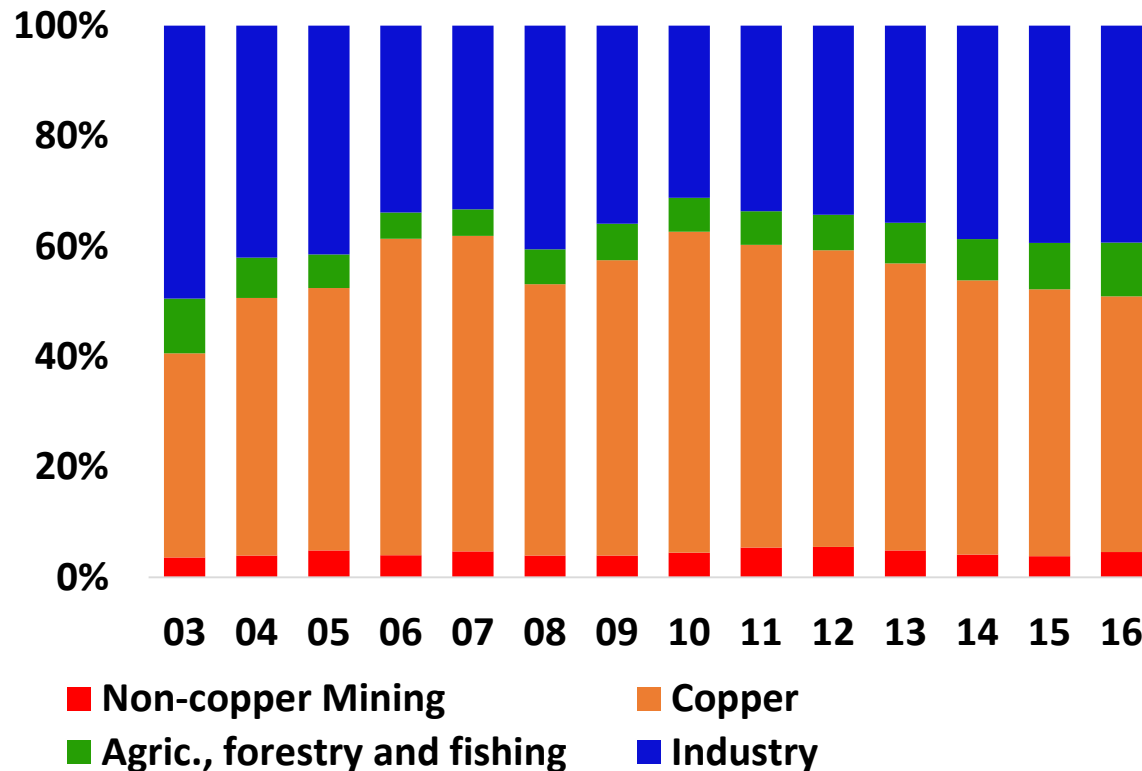
Exchange Rate Pass-through compared
(percentage)



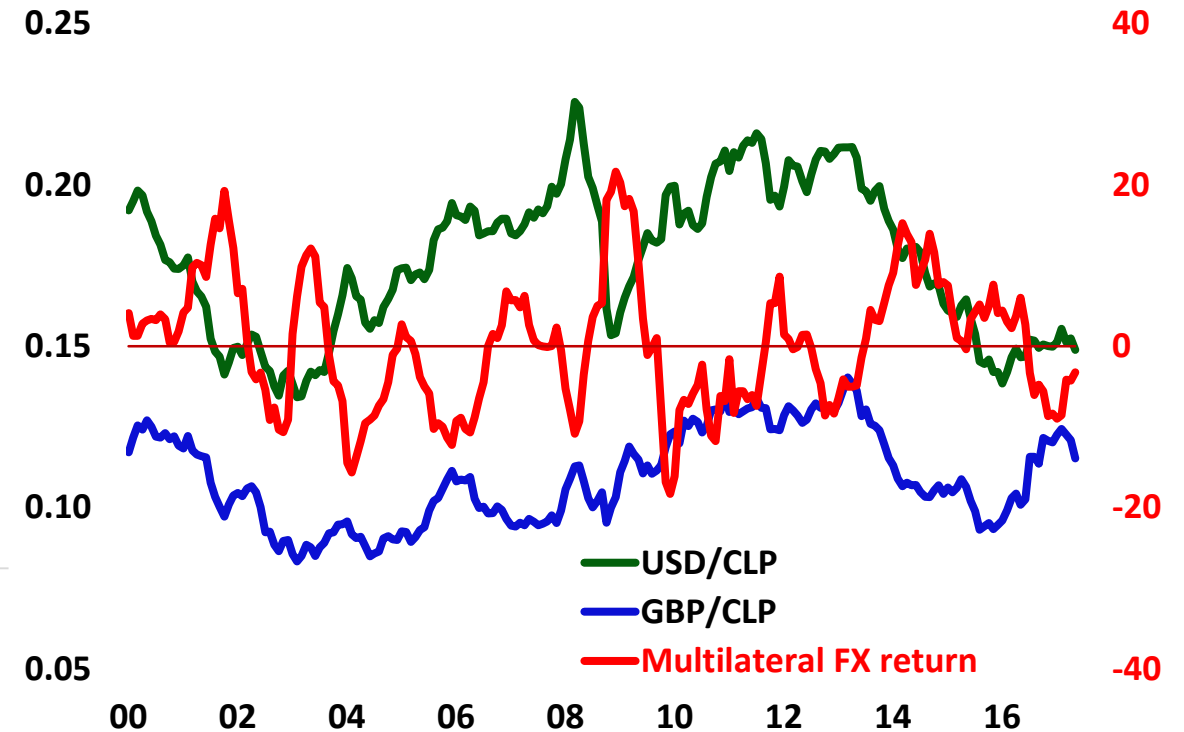
Sources: Central Bank of Chile and International Monetary Fund (REO Western Hemisphere, 2016).

Export diversification and exchange rates

Exports of Goods, 2003-2016
(percent of the total)

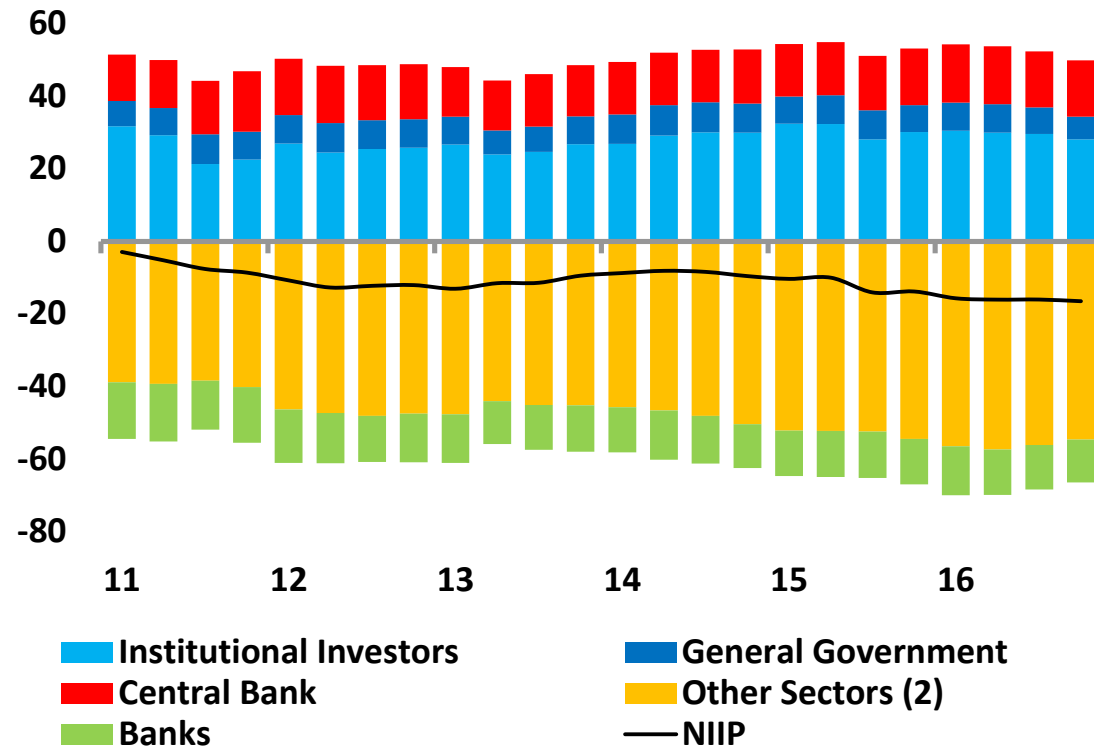


**FX (USD and GBP) and
Multilateral FX return**
(USD/CLP, GBP/CLP; percentage)

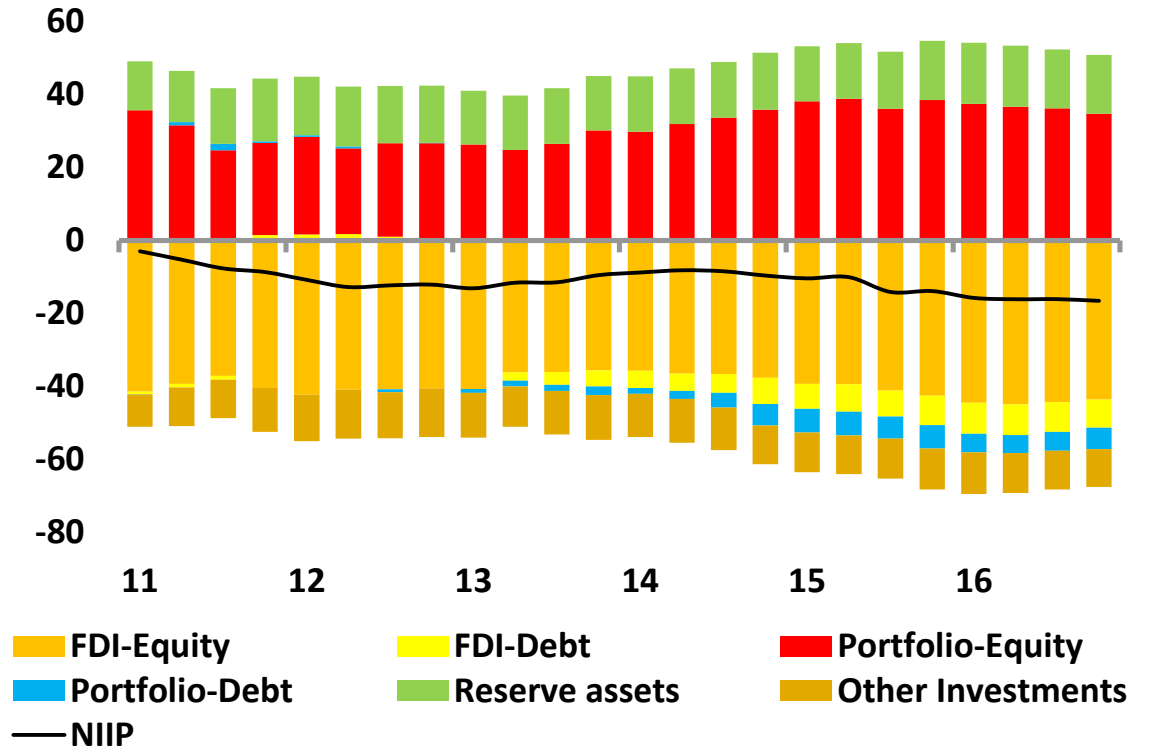


On the asset side, institutional investors assets stand out—mostly portfolio equity

NIIP, by institutional sector
(percent of GDP (1), 2016.IV)



NIIP, by type of instrument
(percent of GDP (1), 2016.IV)



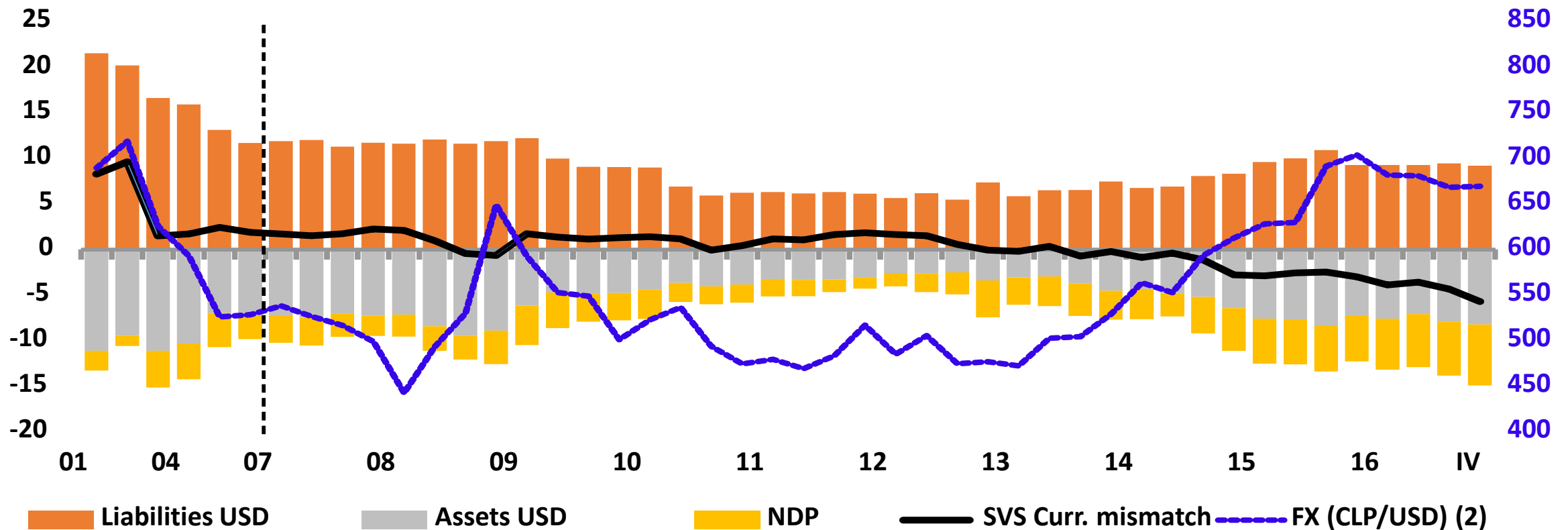
(1) GDP is calculated based on the exchange rate at the end of 2016. (2) Includes non financial firms and households. Source: Central Bank of Chile.

Hedging exchange rate risk

- Significant growth of ER derivatives between 1998 and 2013: US\$76 bn to US\$903 bn. The Global Financial Crisis did not reduce the use of derivatives by exporters of any size, but reduced the number of exporting firms
- **EXP:** In 2000 only 48 firms utilised derivatives, and 602 did in 2010 (net derivatives position: 19%). **IMP:** In 2000, 199 firms utilised derivatives; in 2010 the number had risen to 1,560 (net derivative position: 9%)
- Positive correlation between firm size and number of firms using FX derivatives as a hedging strategy, especially importers
- The exchange rate mismatch of corporations remains limited, reducing the impact of peso depreciation

Currency mismatches in the corporate sector

Composition of corporate currency mismatches (1)
(percent of total assets)



(1) The mismatch is calculated as liabilities in USD minus assets in USD, minus net derivatives position, over total assets. Individual information companies reporting their balance sheets in pesos. Annual data up to 2006, quarterly data onwards. Does not consider state-run, mining or financial firms. (2) Average exchange rate of the last month of the quarter (or year) on right axis. Source: Central Bank of Chile using SVS information.

Growth in financial derivatives

- Chile's level of penetration is high compared with other emerging and LATAM countries. During the Global Financial Crisis, Chile suffered less stress than other EMEs in and outside LATAM
- In 2008.III, Pension funds (AFPs) had such large short positions that they allowed the two local sectors with short forex positions (i.e. banks and non-financial entities) to operate as counterparties
- Pension funds did not cease to hedge nor did they undo large existing positions. Hedging rose to way above the regulatory requirements, especially in 2008.IV and 2009.I



Resilience, macro policies and characteristics of the business cycle

Adjustment and resilience of the Chilean economy

- **External scenario** Documented discrepancy between indicators of political-economic uncertainty (EPU) and financial volatility (VIX) (Monetary Policy Report)
- This time is different: policy shocks and dominance of global recovery

How can these risks impact EMEs?

- Some immediate impacts:
 1. Spillover of financial turbulences from advanced economies,
 2. Capital flight caused by both financial turmoil and policy changes, and
 3. Increased exchange rate volatility caused by some of the above
- Initial impact on EMEs and policy response will depend on each country's monetary and fiscal policy frameworks. Chile: small open economy in an inflation-targeting regime with flexible exchange rate
- Because the exchange rate is a forward-looking variable, the immediate financial impact is a depreciation of the local currency, followed by a tightening of domestic lending conditions

How can open EMEs mitigate the impact of shocks?

- Structural long-term aspects
 1. Liquidity in foreign currency and institutional financial assets
 2. Long-term domestic depth and liquidity
 3. Capitalisation and resilience of financial institutions
 4. Exchange rate pass-through to inflation
- Short-term aspects
 5. Exchange rate and exposure of financial and corporate sectors
 6. Preparation of policy to float
 7. Credibility of monetary policy
 8. Ability/vulnerability of fiscal policy to act

Chile's strengths

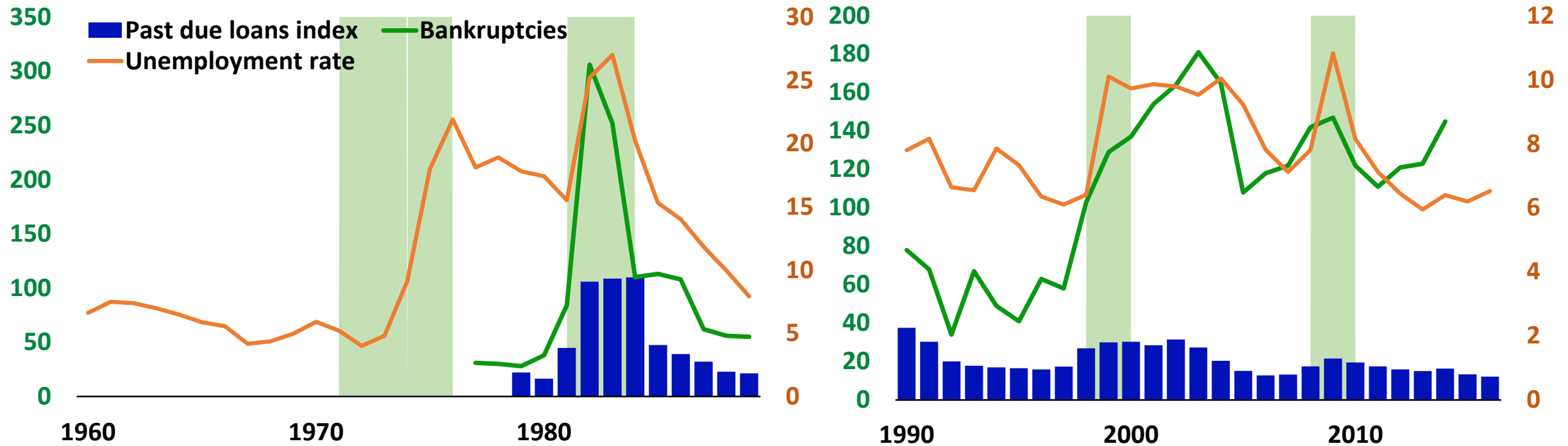
1. Sovereign funds, pension funds investments abroad and insurance companies totalling 14% of GDP, compared with reserves of 15% of GDP
2. The Chilean financial market is, in general, deeper than those of other Latin American and Caribbean countries: institutional investors and greater maturity than in other countries in the region
3. Banks' capital adequacy indicators are similar to those of other economies in the region, but substantially lower than in OECD countries (13.75 vs 16.78) (new General Banking Act and Basel III)
4. Exchange rate pass-through to inflation is lowest in the region
5. Although corporate debt to GDP ratio is relatively high (118% of GDP), it looks normal when compared with the size of the assets
6. Resistance of the Central Bank of Chile to pressures to tighten monetary policy in 2015 despite obvious inflationary pressures from 49% devaluation in 2014-2016
7. Inflation expectations 24 months out have remained anchored to the 3% target

Consequences on the business cycle

- Adjustments of markets and economic agents
 - Labour market
 - Productive sector
 - Financial sector
- Consequence of change in relative prices
- Orientation and effectiveness of monetary policy
- Recession vs protracted stagnation

Recessions' characteristics

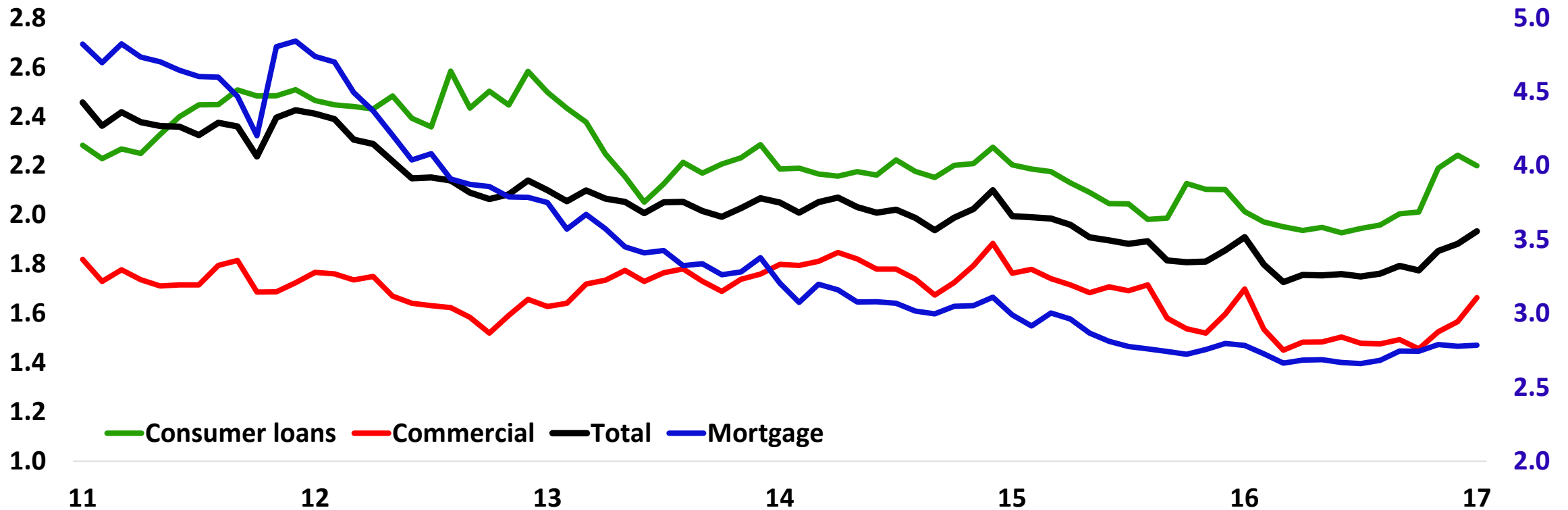
Bankruptcy, unemployment, and non-payment
(number of firms; percentage; percent of total placement)



(*) Sources: Díaz, Lüders, and Wagner (2016), Martínez, Matus, and Oda (2017), and Superintendency of Insolvency and Entrepreneurship.

Protracted stagnation may hide underlying wear and tear

90-day Delinquency Rate Indicator per portfolio
(percentage)



Source: Central Bank of Chile using SBIF data.



Challenges

Challenges

- Regulatory amendments
 - Financial inclusion and liquidity constraints
 - Capital requirements, risk management and credit behaviour
- Structural changes
 - Internationalisation of enterprises
 - Households' composition



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