Towards a New Macroprudential Regulatory Framework

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Introduction

- Israel and other countries have implemented various regulatory measures as part of policy to deal with financial crisis and ensuing economic and financial pressures.
- But… ***ad hoc*** policy measures do not constitute a policy framework.
- Issue at hand:

  To begin thinking about an ongoing macroprudential regulatory framework that will serve authorities and society at large for many years.
- We are in midst of historical opportunity for paradigm change; must think accordingly.

Outline of Presentation

- Describe Bank of Israel experience with MaP policy measures – Assess lessons for thinking about MaP regulatory framework.
- Think about foundations for MaP regulatory framework: Concentrate here on issues for analytical framework; tools, institutions, decision-making process important but dealt with elsewhere.
- Conclusions: Where do we go from here?

BoI experience:
Existing Regulatory Framework

- Three separate regulators deal with different issues relevant to MaP: (1) Banking Supervision Department at BoI; (2) Capital Markets, Insurance and Savings Division, Ministry of Finance; (3) Israel Securities Authority.

- Inter-institutional team (three regulators and BoI financial stability unit), recently formed, as a forum of professional cooperation regarding systemic risks of the financial system. Professionals, not policy makers. Few tangible results so far.

- Goals of the inter-institutional team:
  - To identify systemic risks in the financial system.
  - To exchange key information among the authorities regarding financial institutions, financial markets status and the different financial instruments.
  - To discuss possible courses of actions, preventive and ex post in crises for dealing with systemic risk.

- In addition, the Bank of Israel and the Ministry of Finance are working to develop the legal framework for establishing a Financial Stability Committee; key FSAP recommendation.

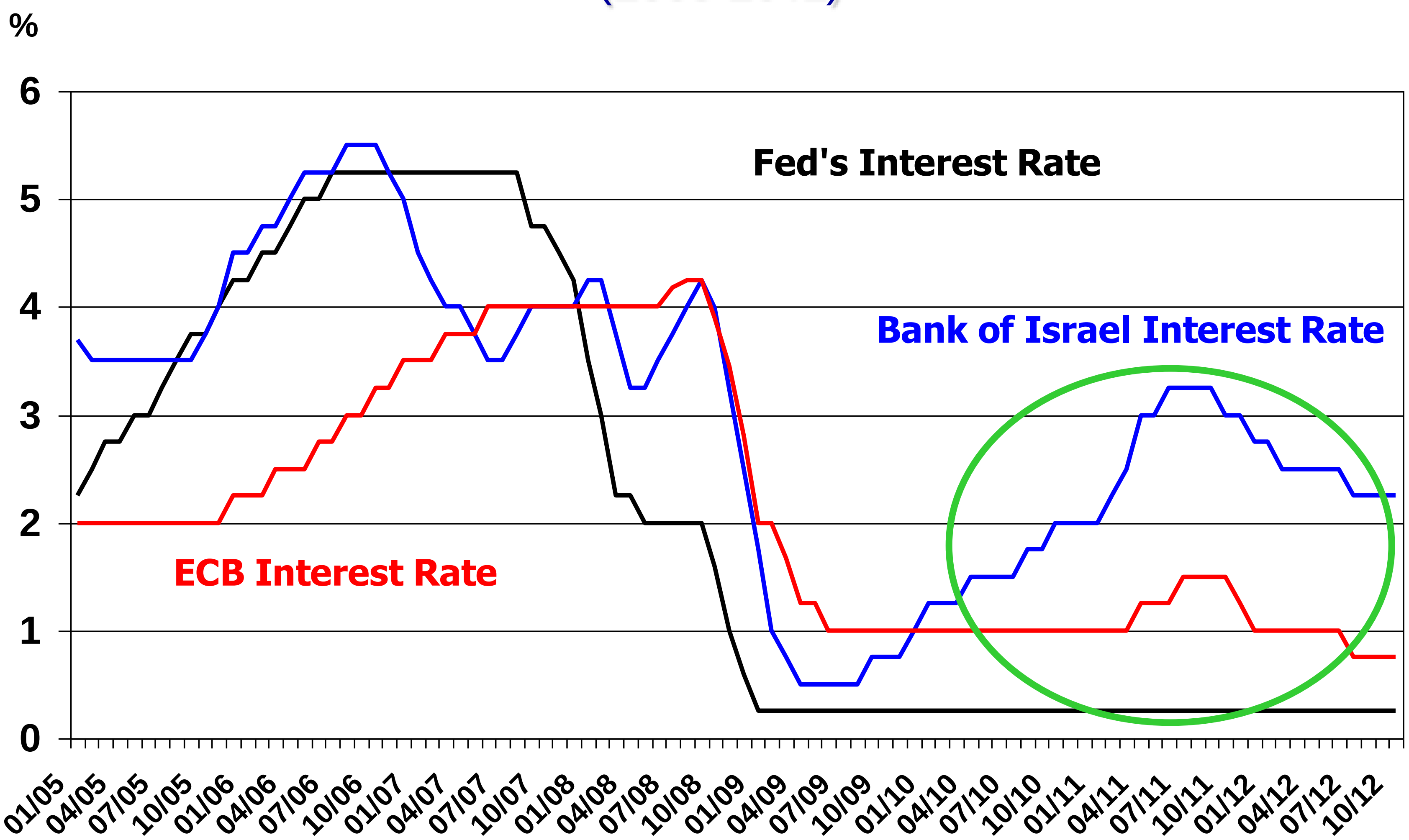
BoI experience: Key Risks Since Crisis

- Effects of global financial crisis – relatively benign but…
- Partly due to massive forex intervention in 2008 – 2010, keeping NIS weaker than otherwise, generating actual and incipient forex inflows due to expected appreciation;
- BoI rate lower than appropriate for domestic economy, but higher than in major trading partners. Similar to other SEMEs (successful, emerging economies). Capital flows due to “carry trade”, especially in “Makam” (monetary T-bills).
- Low interest contributed to housing price inflation.
- Effects of 2005 financial reform – divest contractual savings from banks; led to expansion of NBFI credit via rapid expansion of corporate bond market; large holding companies, ie, “tycoons”. Idiosyncratic local development.
- Overall – need additional policy tools to deal with new range of risks.

BoI experience: Forex Market

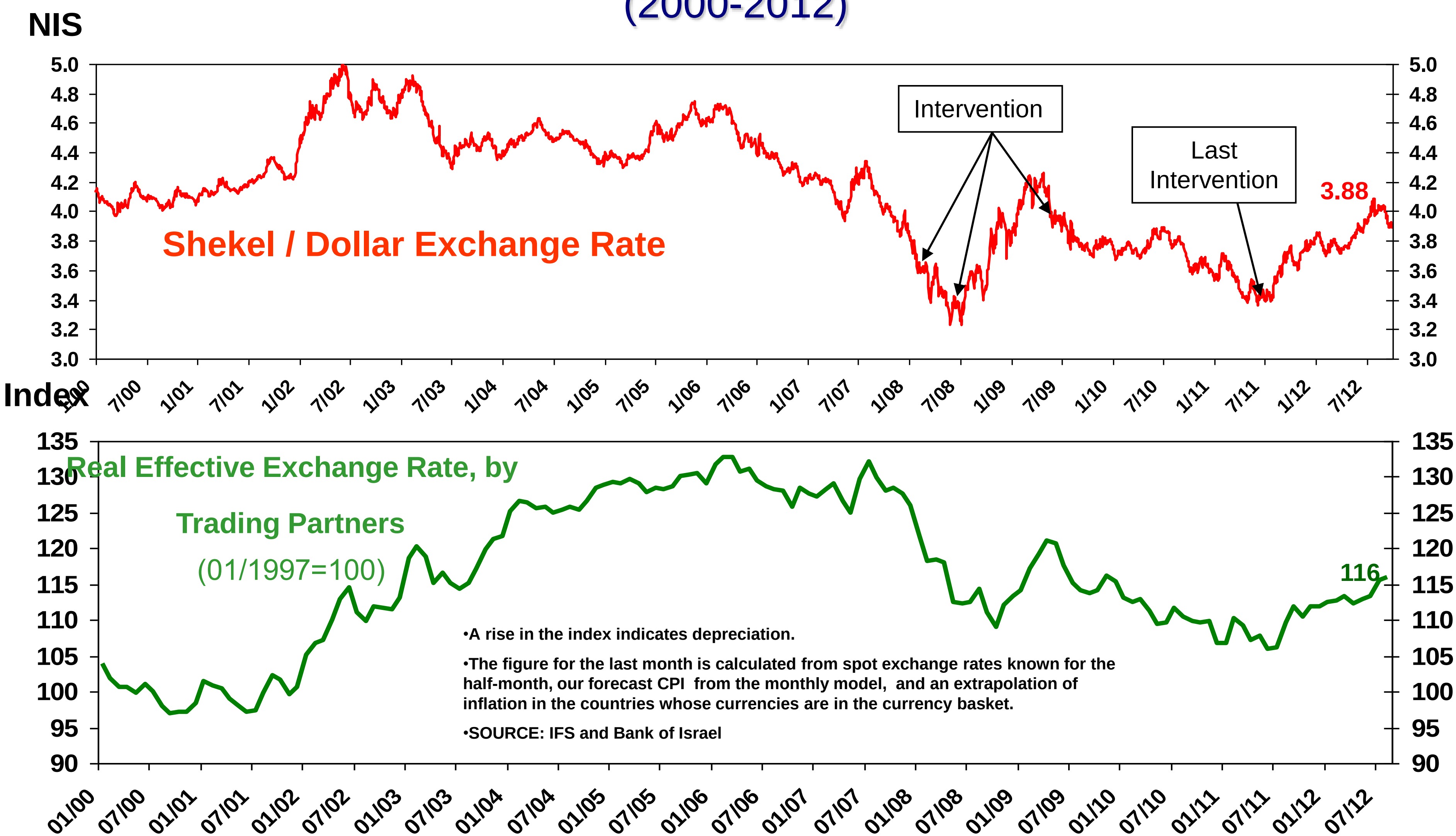
BOI, FED and ECB Interest Rate

(2005-2012)



Nominal and Real Exchange Rates

(2000-2012)



- The NIS/$ chart is on a daily basis, while the real exchange rate chart is on a monthly basis.

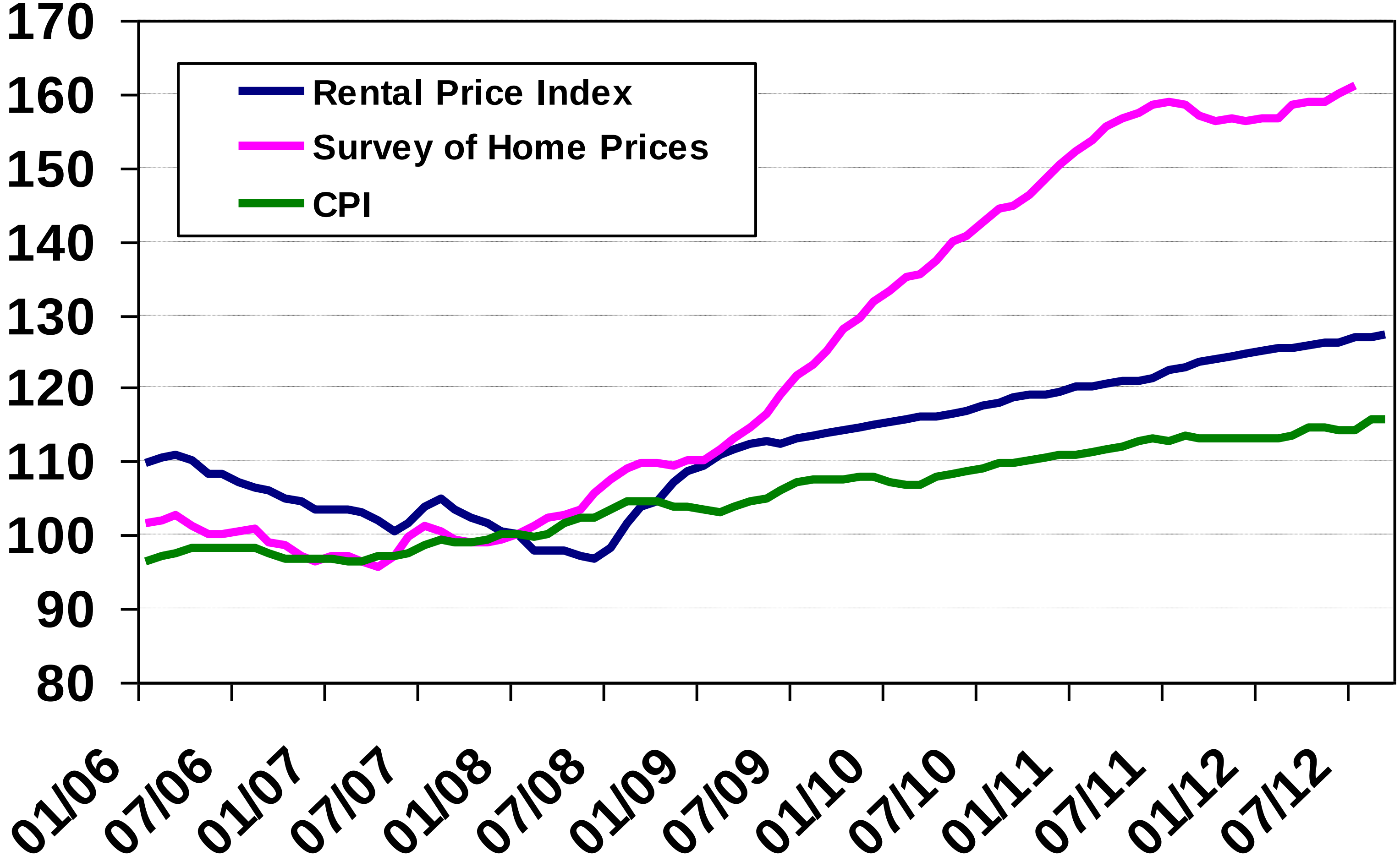
Monetary Policy Measures
FX Market Intervention

- **January 2008**: foreign exchange reserves stood at **$28.7 billion**
- **March 2008**: The BOI began purchasing foreign exchange at a daily rate of **$25 million** a day.
- **July 2008**: forex purchases were increased to **$100 million** per day.
- **August 2009:** the BOI announced that it would **stop** the daily purchases but that it would intervene in the FX market in the case of fluctuations in the exchange rate that do not match fundamental underlying economic forces.
- **January 2011 : MaP tool** Reporting requirement was imposed on foreigners' activities in the forex derivatives market and the *Makam* and short-term government bond markets.
- **January 2011**: **Map tool** Imposition of reserve requirement on foreign exchange derivative transactions by nonresidents.
- **July 2011**: Last purchase of foreign exchange.
- **September 2012**: foreign exchange reserves at **$75.6 billion, up $46 billion** since the beginning of the program.

BoI experience: Housing Prices

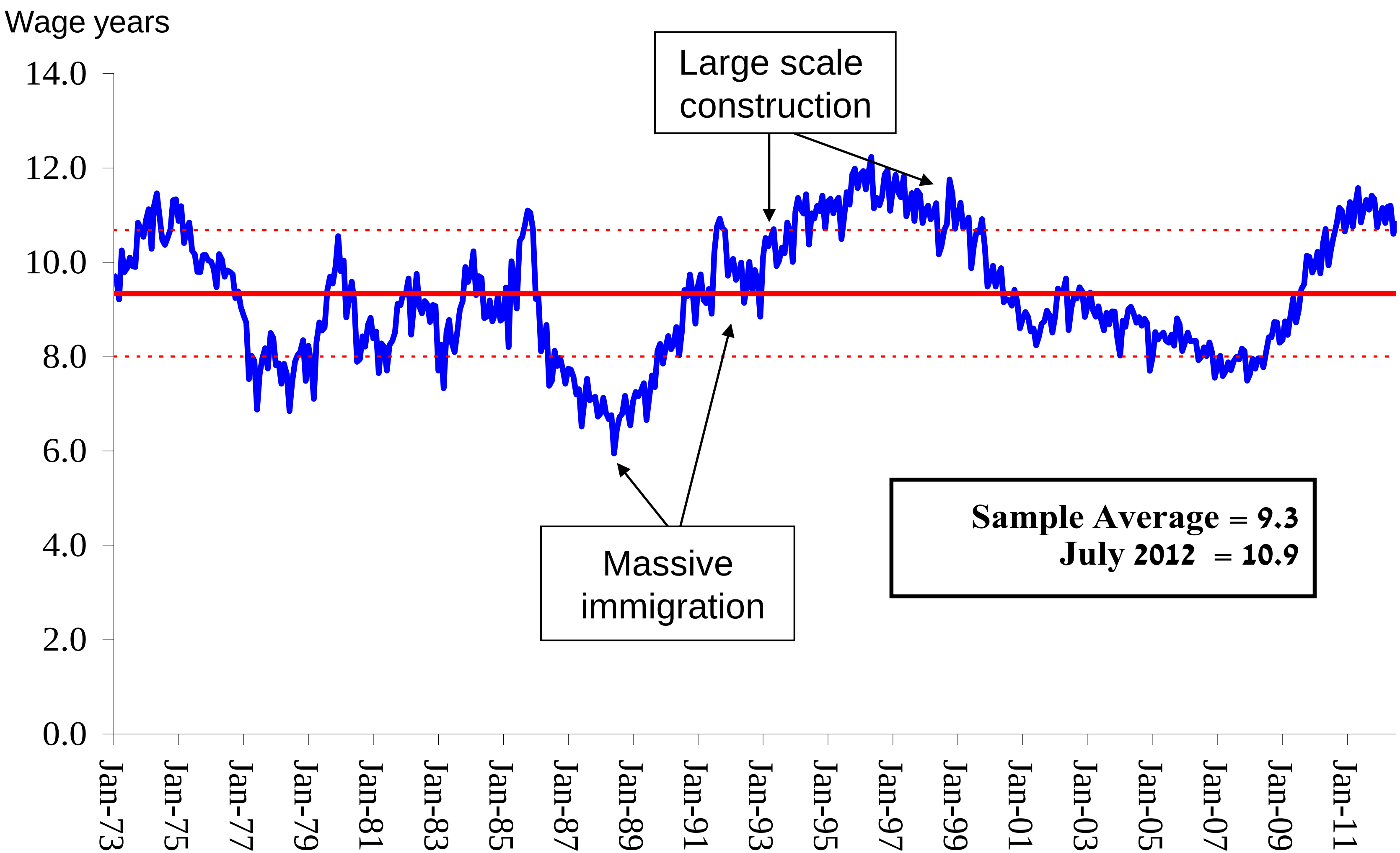
The Rapid Rise of Housing Prices

Housing Indices (January 2008 = 100)



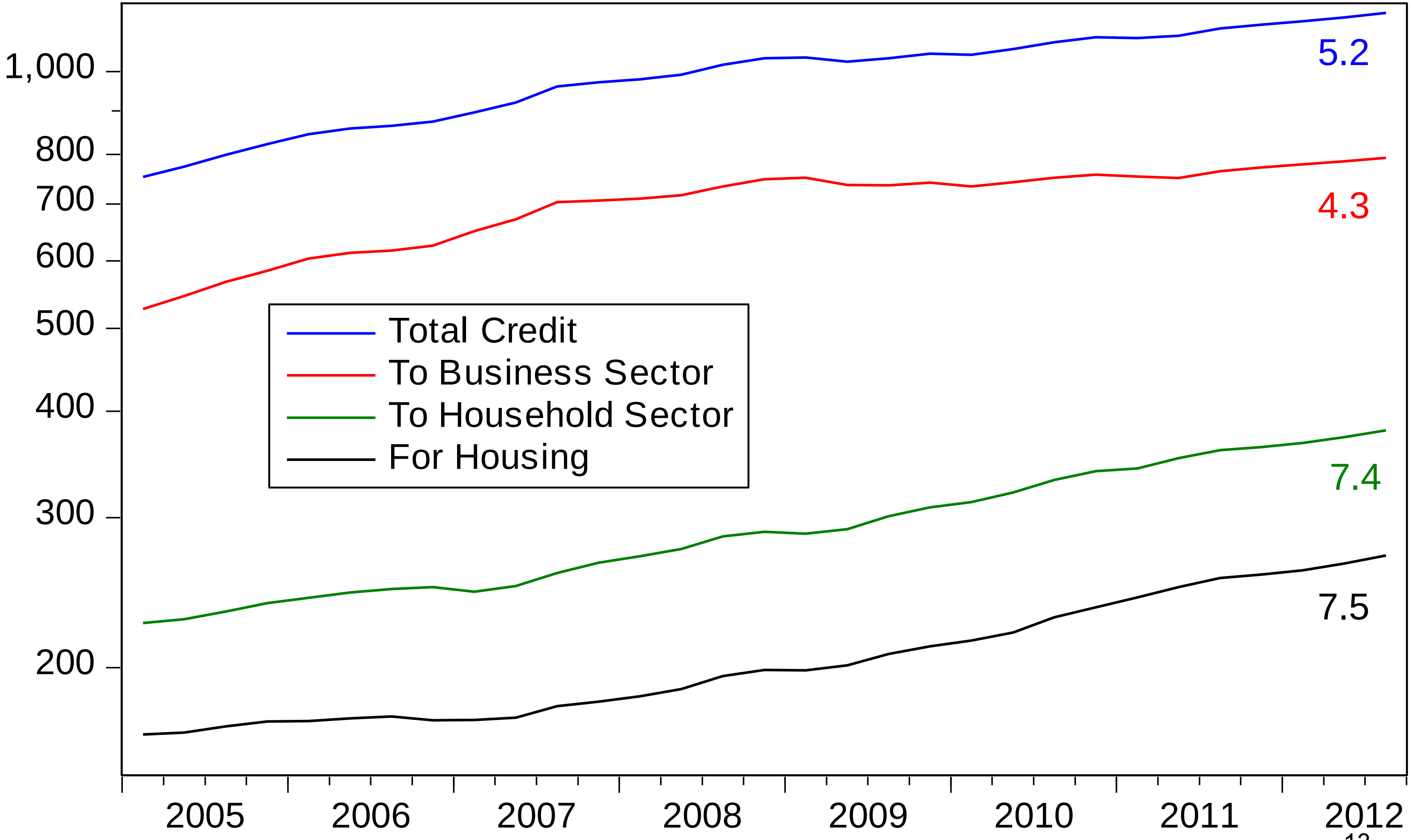
The Ratio of the Average Home Price to the Average Wage Per Employee Post

(January 1973-July 2012, monthly figures, wage years)



Total Credit to Private Sector

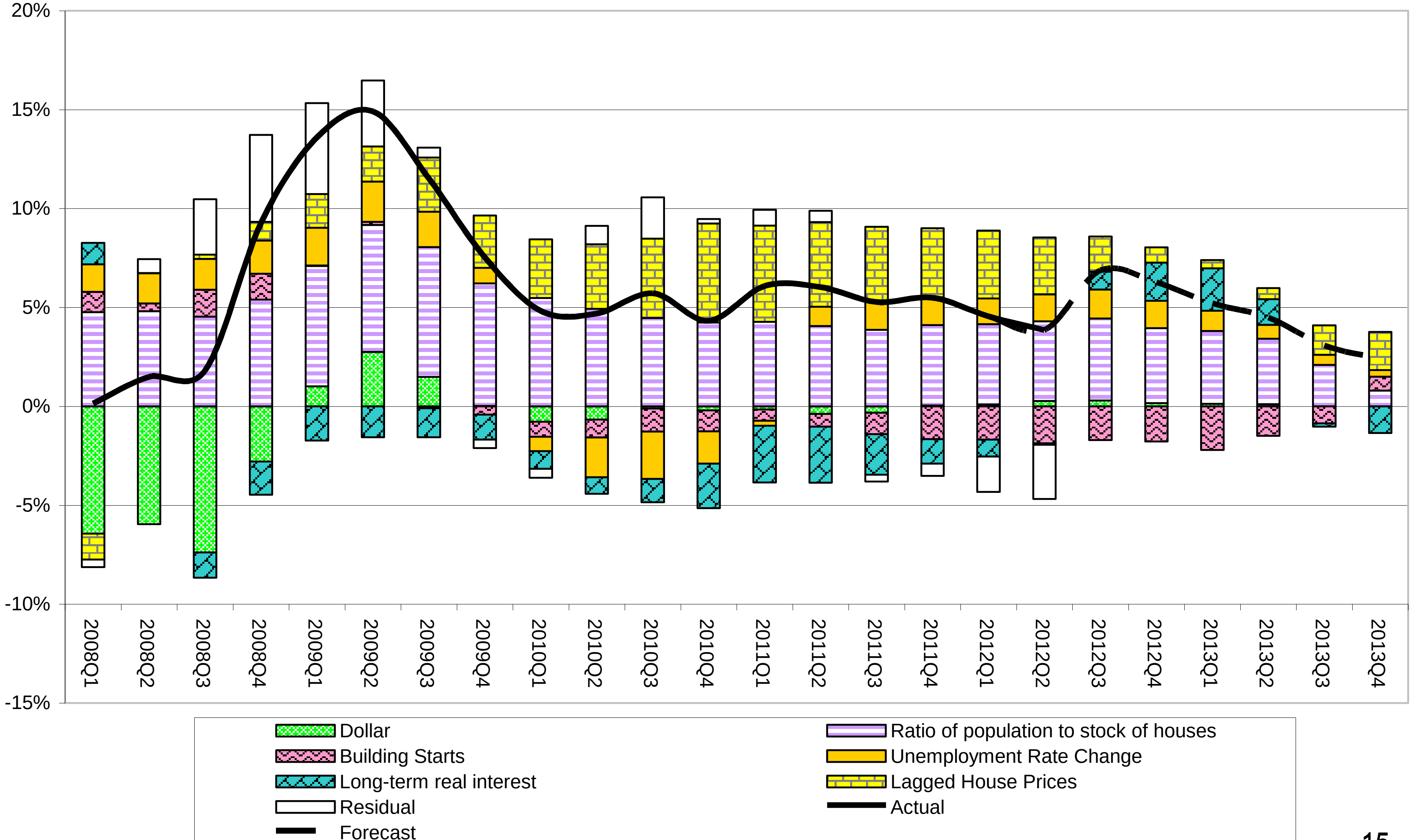
(NIS millions, current prices, logarithmic scale)



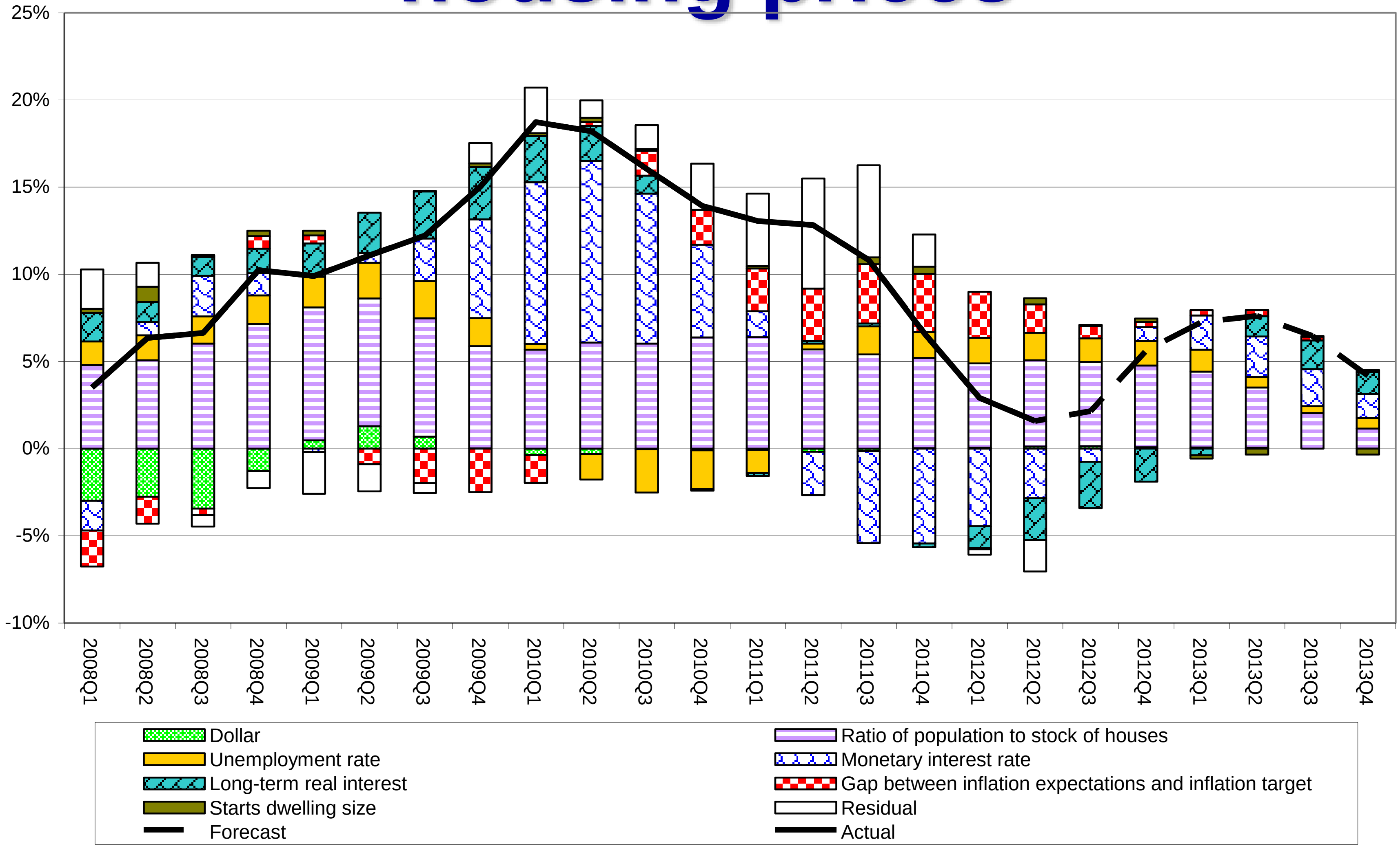
Evaluating the behavior of house prices

- Direct observation :prices were rising at 16.2% per annum July 2009-July 2011.
- Econometric estimation: (1) equation for rents in new & renewing rental contracts (CPI housing component) ; (2) equation for apartment prices, derived from simple asset-pricing equation. Key rhs variables are ratio of population to apartment stock and interest rates (BoI, indexed real rate).
- Excellent out-of-sample performance.
- Although the public debate is generally based around whether a bubble in house prices is developing, the BoI has argued that this is not a useful way of analyzing the behavior of house prices.
- The issue is rather whether housing prices are in a well-defined sense either "too high" or rising "too fast". Nearly impossible question for policy purposes – What are fundamentals? Need normative assessment of what is “adequate” housing. What is policy objective – financial stability vs. social equity?

Forecast decomposition: rate of change in rent on new & renewing contracts



Model of the rate of change of housing prices



MaP Measures in Housing Market

- Bank of Israel has implemented MaP measures to contribute to moderating price of housing:
  - **May 2010**: Requirement for banks to make **additional provisions for housing loans with high loan-to-value ratios**. Additional loan-loss provision of not less than 0.75 percent for outstanding housing loans in which the loan-to-value ratio when the credit was granted was greater than 60 percent; guidelines requiring banks to examine the need to increase their loan-loss provisions
  - **October 2010**: Requirement for a **higher capital provision for floating-interest mortgages granted with a high loan-to-value (LTV) ratio.** Increase capital provision for floating-interest-rate mortgages, in which the loan represents more than 60 percent of the value of the property, and the ratio between the floating interest rate part of the loan and the total sum of the loan equals or exceeds 25%. The directives did not apply to housing loans of less than NIS 800,000 when granted.

MaP Measures in Housing Market

- **April 2011**: **Limitations on the percentage of housing loans issued at a variable rate of interest.** The part of a mortgage loan issued at a variable rate of interest is limited to one third of the total loan; also, disclosure requirement, obliging banks to advise customers who have in the past taken housing loans at variable interest rates indexed to the prime rate of interest, where the indexed component of the loan is one third or more of the total loan.

- **November 2012 (announced): BoI imposes restrictions on LTV ratios for mortgages.** Maximum of 75% LTV on mortgage for first residence; max LTV of 50% for investors and foreign purchasers of residential real estate; max of 70% on all other residential mortgages (primarily for housing upgrades).

BoI experience: Lessons

- BoI has implemented various MaP measures to mitigate effects of specific imbalances, with some significant effects.
- Banking Supervision has also undertaken various supervisory measures, e.g., follow through to implement Basel II in 2009 as per long term plan, in spite of crisis.
- Measures taken on *ad hoc* basis, generally without coordination among regulators; no MaP regulatory *framework* in place.
- Idiosyncratic issues, short and long term, are central; one size does not fit all. But they are not whole story.
- Problems of SEMEs are different from problems of AMEs. Will elaborate below.
- Challenge to assess importance of each factor contributing to each possible source of systemic risk.

BoI experience: Other points

- Financial deepening requires appropriate regulatory deepening (GFSR, p.92).
- Collateral requirements (e.g. for CCPs) can be very problematic in relatively illiquid markets. Further impinge on liquidity; bad systemic properties.
- TASE as CCP: watch out on CCP stability. In words of Willie Sutton: Central banks are where the money is, not CCPs.

Towards a New Macroprudential Regulatory Framework:

Thinking About an Agenda

Key Issues to Address

- “Take away punchbowl when party gets going” (Wm. M. Martin) – How to anticipate and control financial stress at early stage? Harder than counter-cyclical context.
- “…Strong two-way interactions between macro-prudential policy and other areas of public policy…” (Caruana speech, Sept. 2012); all the shocks affect all the variables and there is an assignment problem.
- Need analytical framework to combine macroeconomic and macrofinancial elements (GFSR, Oct. 2012, Ch.3)
- What constitutes a “framework” rather than a bunch of policy measures; can we learn from thinking about monetary policy frameworks?
- Issues of institutional design, tools, policy process: important, beyond scope of this presentation; excellent treatment in Nier, Osinski, Jacome and Madrid (2011).

What might MaP policy framework look like?

- Possibly like Inflation Targeting framework, i.e., tolerance range for one or more FSI or FCI, perhaps sectoral, with contingency plans for applying MaP tools.
- Framework is established in “peacetime”, i.e, in advance of crisis on the basis of sensible analysis; role for judgement but in well-defined, presumably limited roles; opposite of current “seat of the pants” approach.
- Transparency is welcome up to some limit; Why limit? Because some judgmental decisions inevitable and there may be some societal benefits for not being too predictable.

Big Picture Problems with MaP Policy Framework

- Monetary policy has an obvious societal objective – nominal anchor – which is public good since level of local currency prices is arbitrary.
- Not so with MaP policy. It helps protect individual property rights (like requiring drivers to purchase insurance) and must protect "real sector economic agents", especially taxpayers from asymmetry that individual investors and financial managers share all of (gross) upside but share downside with taxpayers. But all of this is disputable and often is disputed.
- Knowledge of ***relevant*** laws of motion – near to "nada" so far (e.g. Gorton (2012)), though lots of work by giants on whose shoulders others will stand.
- So…on to "little picture" issues; hard enough.

Stages of systemic risk & crisis

- Crisis management – post onset; ELA, resolution, etc. (Homefront command). Issues largely recognized.
- Tactical crisis prevention: When risks and financial instability pressures well into “build up” stage (missiles in air - Iron Dome). Current activity of *ad hoc* implementation of MaP measures; questionable effectiveness in medium and long run. Much thinking about new regulation concerns this stage, eg, preventing fire sales, capital buffers as loss absorbers.
- Strategic crisis prevention: Prevent risks and pressures from developing to begin with (maintain peace or at least non-belligerence). This should be main objective and focus of MaP regulatory framework; hardest to achieve. Some steps taken, eg, capital buffers to condition expectations, but not a “framework” ; payoff to success is huge so worth major effort.

Analytical Framework: Where do systemic risks come from??

Macroeconomic Environment: General Issues

- Domestic long run factors: demography (eg, aging, urbanization); effects of globalization, eg, off-shoring; economic and financial innovation and reforms…
- Domestic short run factors: natural (flood, drought) and man-made supply shocks (oil prices), policy “errors” (fiscal largess, monetary).
- Unintended consequences of ultra-easy monetary policies (White, 2012).
- General issue: How to assess and sort out factors affecting (1) long-term trends; (2) business cycle; (3) financial cycle.

Macroeconomic Environment: SEME issues

- Foreign trade absolutely essential and foreign aid and FDI can be very useful… but exposed to imported instability.
- Difficulty to insulate economy from pressures from abroad; capital flows – good cholesterol vs. bad cholesterol; limitations on monetary policy.
- Some capital controls may be beneficial but hard to identify which ones and may be slippery slope to excess.
- AMEs over-financed (Rajan, others); SEMEs under-financed – illiquid markets, concentration of borrowers and of intermediaries, main borrowers large relative to financial firms.
- Legal jurisdiction issues promote home bias.
- One-size fits all not appropriate for regulation (see Nier, et.al.) but there is problem of regulatory arbitrage.

Macroeconomic Analysis

- Available tools not suited to problem at hand, eg, radar charts, many FSIs and stress test methodologies based on econometrics of stationary time series – usual pre-filtering probably throws out baby with bathwater.
- DSGE: Financial and monetary quantity modeling in this framework just starting ; “well micro-founded” relevant theory not available (may never be – Gorton (2012)).
- No coherent analytical framework for connecting ongoing policy issues to financial stability issues, ie, build up of financial risks, eg. when do “bubbles” get started.
- Does “financial stability” belong in objective function or in constraints…or both??
- Small economy issues not well addressed, e.g., What is relevant concept of potential output if output mix (read “exports”) are key objective? Need two sector model and appropriate adjustment of MP reaction function and macro model to include output mix.

So…where do we stand on development of MaP framework??

- The list of analytical issues is long and difficult – seems overwhelming.
- But…Longest march starts with small step(s).
- Progress on institutional aspects and on tools seems somewhat better.
- Took 10 – 15 years to “fully” develop inflation targeting framework.

Where does an SEME begin?

- Establish formal planning body such as ESRB, FSOC; set agenda to simultaneously address analytical and institutional issues.
- From long, unmanageable list, identify key ***relevant*** vulnerabilities ***for your country***; do not neglect domestic idiosyncratic issues, e.g., is banking system vulnerable because of inter-bank networks or because ALM too similar, or some other key feature?
- Develop analytical framework to link key features of macroeconomy and of financial structure. Such frameworks just now being to “crop up” eg., Kashyap, et.al. Detailed quantification not needed as yet.
- “Fuzziness” to balance standardization vs. capacity for dealing with idiosyncratic features. (SDDS analogy).

Thank you for listening