



INTERNATIONAL CONFERENCE ON A NEW PARADIGM IN HOUSING POLICY
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Seoul, Republic of Korea

REGULATING HOUSING MARKETS IN A NEW GLOBAL ERA: DO WE HAVE A FRAMEWORK?

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“The challenge is to improve our understanding of the linkages between the financial sector and real activity”
Donald Kohn, Vice-Chairman of the U.S. Federal Reserve, Speech, November 2008

1 INTRODUCTION

1.1 Challenge of regulating housing markets for stability and social access in a new era

The global financial and economic crisis of 2007-09 (GFC) has ushered us into a new global economic, social, political and environmental era. Prior to the global financial crisis, in high income economies decades of financial liberalization and innovation had seen quickening waves of housing price cycles of increasing amplitude, especially in the U.S. that has been the dominant economy. (FIGURE 1). We expect that many national housing systems will now perform differently from the way they did during the Great Moderation and the great liquidity boom that fed the global housing boom.²

National policy makers are confronted collectively with the challenge of regulating housing markets to make them more robust and achieve two things simultaneously: on one hand prevent the recurrence of the large bubbles that triggered a systemic financial crisis in the US and several other Western economies, on the other hand insure that the housing system provides access to a socially acceptable level of housing services for all households across all forms of tenure: ownership, private rental and social rental.

¹ The author is currently Principal of Renaud Associates in McLean, VA, USA. He was formerly the Housing Finance Advisor at the World Bank. In 2011, he was a visiting professor at KDI School where he co-taught with Man CHO a course on real estate cycles and economic stability. This paper has benefited from extensive conversations with Man CHO and Kyung-Hwan KIM in the context of a comparative project on housing in East Asia. However, the author is solely responsible for the contents of this paper.

² Kyung-Hwan Kim and Bertrand Renaud (2009), “The Global House Price Boom and its Unwinding: an Analysis and a Commentary”, *Housing Studies* (Special issue) V.24. N1. January

1.2 Two old housing policy questions and three new ones

Until the end of the 20th Century, policy makers faced two universal questions:

1. What is the proper role of the government in insuring the stability of the real estate sector and an effective housing delivery system?
2. How do the different segments of the housing system interact and what are appropriate social policies for low income groups and for the poor in the case of housing?

The global financial crisis added a new question:

3. What do we know about the impacts of a real estate boom-and—bust on the macroeconomy, both domestically and in other countries?

Looking ahead, policy makers have to address two more questions:

4. What are the implications of aging for the housing sector? Demographic trends are the most predictable of all trends. The calendar is very clear, but not yet the policy responses.³
5. What instruments exist to harmonize housing goals with the need for environmentally sustainable of cities? The discussion that follows takes the view that the social challenge of improving access to housing services properly is not separable from avoiding housing market instability and that avoiding financial instability is a prior condition to maintaining or improving the housing systems. With the new global environment we need to modify the old saying in housing policy that finance is a national matter but housing is a local one. Today finance is global but housing remains local.

1.3 The primary threat today is financial instability, but social inequality has increased

The global financial crisis of 2007-09 was preceded by the very rapid growth of the global financial systems over the past three decades. Financial markets began to be liberalized in the mid-1970s. This financial turning point marked the end of the 1944 Bretton Woods agreement that had successfully shaped global growth after World War II for three solid decades.

The rapid growth of financial systems was fueled by the spread of the IT revolution and a rapid rate of financial innovations, which fundamentally changed the structure and behavior of financial markets, and fostered competition as well. This growth is well documented in the annual reports of the Bank of International Settlements (BIS) and in its broad range of technical publications reporting the work of its various technical committees. This growth is also conveniently illustrated in the reports on the global financial system produced annually by the McKinsey Global Institute, until the GFC.

The liberalization and deregulation of national financial systems that started in the 1970s was already accompanied by a wave of banking crises in the 1980s. These crises led to major initiatives in financial sector reforms with “the building of new legal and regulatory frameworks, strengthening of banking and financial institutions, removal of interest rate and exchange rate restrictions, liberalization of market entry into the financial sector, commercialization and privatization of state-owned financial institutions, and opening of financial markets to greater domestic and foreign competitions.”⁴

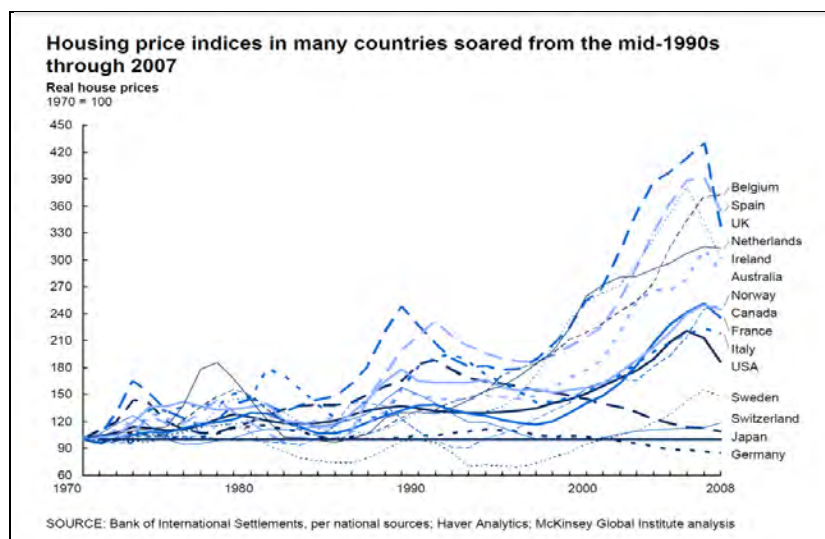
³ Managing the changing composition of the housing stock for an aging population might be the easiest policy to address. In addition, population aging is requiring major adjustment in labor markets and also in consumer finance where new products are needed as complements for housing assets, or rather as substitute. What rate appreciation can we expect for housing in an aging population? Contrary to the previous generations, will housing still remain the primary wealth accumulation vehicle that it has been?

⁴ See Andrew Sheng, ed. (1996) *Bank Restructuring. Lessons of the 1980s*. Washington DC: The World Bank.

The striking phenomenon during the “Great Moderation” was that while inflation measured by the CPI was very stable, asset prices were rising and becoming increasingly volatile. In particular, housing prices in high income countries, which were the only economies where such data was more or less adequately measured⁵ were going through successive cycles of greater amplitude, and started rising extremely fast in most – but not all – high-income countries after 1995.

The basic policy challenge of maintaining housing price stability is illustrated by FIGURE 1 that shows the rising cyclical volatility of housing prices since the 1970s in most high income economies, but not all of them. This volatility culminated in powerful housing price booms between 1995 and the financial crisis of 2007-2009. Housing and other asset bubbles were increasing the fragility of the global financial system until it crashed following the burst of the US subprime housing bubble in late 2006.

FIGURE 1: Increasing Volatility of Housing Prices after Financial Liberalization



(Source: McKinsey Global Institute, 6th Annual Financial Report, Sept 2009)

1.4 Organization of the paper

Most of the building blocks for a workable “stability and access” policy framework that will maintain both housing stability and social access probably exist in most high-income countries already, but supporting analyses are fragmented. It seems that much more than pure technical solutions, the quality of national governance will be the critical factor of success. Will decision-making centers that are used to acting autonomously have the ability and willingness to communicate effectively among themselves? Will they agree on diagnoses and priorities? When there are conflicts between valid goals, how will they be resolved? When it comes to day-to-day management, will these regulatory and supervisory centers coordinate among themselves? This coordination must be achieved in a very new environment, analytically and operationally.

⁵ It is a fact glossed over by magazines like the *Economist* and surveillance organizations like IMF and OECD that housing prices are collected very differently in different countries. They are not directly comparable across countries, especially in terms of price levels. The noise ratio is lower in time series for one market collected on the same basis over time, see figure 1. The spread of sound housing price indices has been a slow and expensive process now greatly improved by modern IT: the foundations of today’s Case-Shiller housing price index in the U.S. were laid by Case’s 1986 study of Boston prices. The quality of housing prices indices in China is notoriously poor, a common problem during the peak of the urban transition. Korea adopted a quality housing price index only recently (2002?)

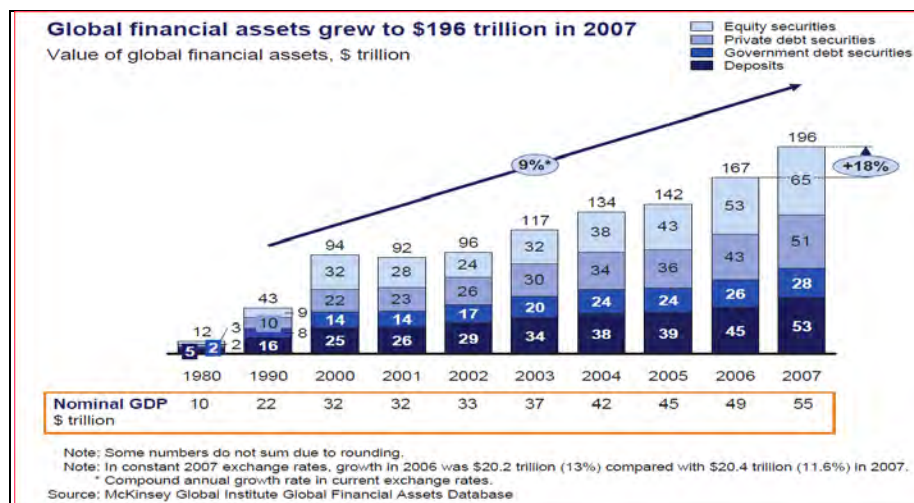
The organization of the paper reflects the global dominance of financial instability at present. First the paper reviews important features of the GFC and how this once-in-century crisis has changed our environment on so many ways, raising the question of what might be our “New Normal.”⁶ The paper then outlines what we have learned about the varied causes of financial instability and focuses on the stylized features of housing cycles compared with other types of real estate bubbles. With this background, the paper can outline the contents of the “stability and access” housing framework needed to manage the main sources of housing instability: the international pillar, the banking and financial sector pillar and the housing pillar proper. The closing section asks what we can learn about the design of an effective housing stability framework by comparing it with an FSAP evaluation of the stability and strength of a financial system.⁷ Do we know enough now to spell out the core principles of a stable housing system?

2 IMPACTS OF THE 2007-2009 GLOBAL FINANCIAL CRISIS

2.1 Steady and rapid growth of global financial markets up to the global crisis of 2007-09

The growth of the global financial markets from the time liberalization and deregulation started in the 1970s was steadily upwards. FIGURE 2 shows that around the start of liberalization in 1980, global financial assets were no more than 1.2 times the size of the global GDP. Then financial assets grew at a rate that was about three times larger than the nominal growth rate of global GDP for three decades. On the eve of the global crisis, in 2007, the global financial system had grown to about 3.6 times larger the size of the world GDP. Underlying the link between the growth of credit and financial fragility, the global financial system expanded by 18% in one single year in 2007.

FIGURE 2: The Global Financial System Grew Three Times Faster than World GDP



Source: McKinsey Global Institute, *Mapping Global Markets: Fifth Annual Report*, October 2008

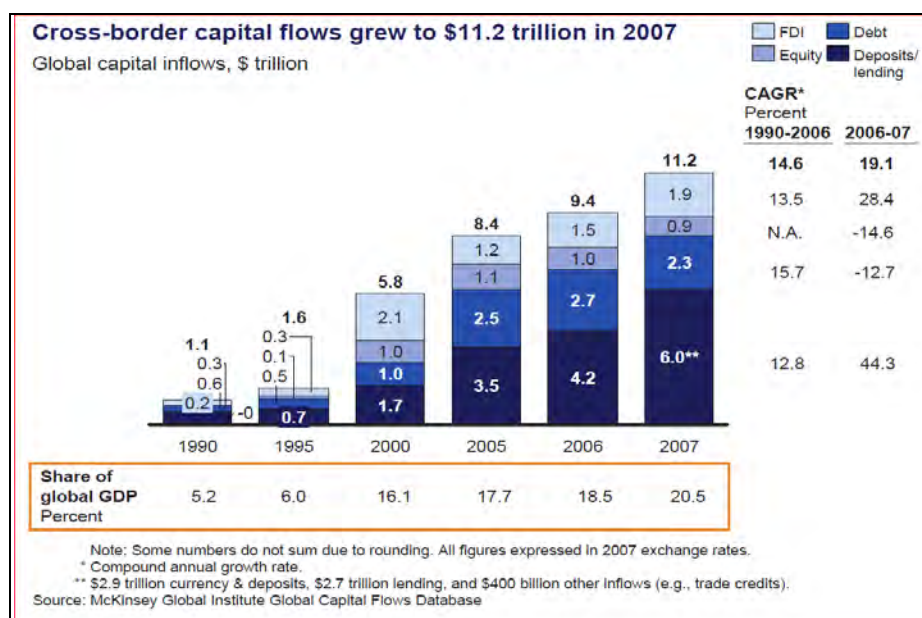
⁶ Mohamed El-Erian, “The Shape of the Global Economy Will Fundamentally Change.” *Foreign Policy*, September/October 2011. http://www.foreignpolicy.com/articles/2011/08/15/the_shape_of_the_global_economy_will_fundamentally_change

⁷ An FSAP assessment is the review of the stability of the financial system of a country by a team of external experts. <http://www.imf.org/external/NP/fsap/fsap.aspx> See for example the recent assessment of China’s financial system, November 16, 2011 <http://www.imf.org/external/pubs/ft/scr/2011/cr11321.pdf>

2.2 Accelerated Globalization of Financial Markets after 1995

Another major transformation of the global economy has been the massive growth of cross-border capital flows since 1995. (FIGURE 3) Global money flows have grown faster than international trade, which itself has grown faster than the world GDP. The implication is that managing external financial shocks has taken an even higher priority for national decision-makers, especially central banks with their close links to macroeconomic policies.

FIGURE 3: Accelerated Growth of Cross-Border Capital Flows after 1995



Source: McKinsey Global Institute, *Mapping Global Markets: Fifth Annual Report*, October 2008

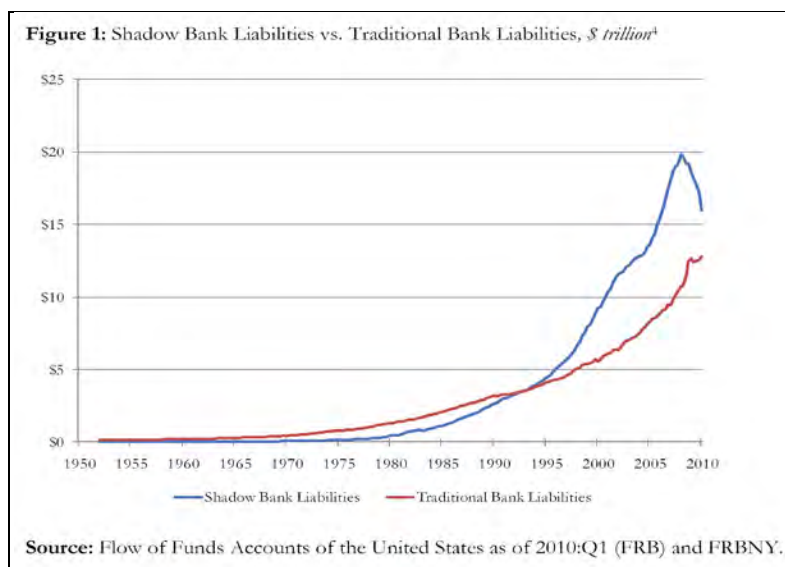
2.3 Massive surge of the unregulated “shadow banking” sector after 1995

The extremely rapid growth of the unregulated ‘shadow banking’ system was so unappreciated and its impact on the stability of the global financial system so little understood that it did not even have a name until 2007 when GFC burst.⁸ The core feature of the complex shadow banking system is that it is not regulated. Like the rest of the global financial system, the largest share of the shadow banking system is based in fewer than 15 countries. The evidence now shows that the size of the liabilities of the US shadow banking system that dominates the global financial markets to these days overtook the regulated “traditional banking” system by 1995 (FIGURE 5). This period coincides with the rise of the synchronized housing booms and bubbles across many, but not all, high-income countries in the US, Western Europe, Eastern Europe, and the Middle East, but not in Asia.⁹ The institutional structure and regulatory mechanisms that controlled housing price volatility and financial instability in the countries without suffering housing busts is of general interest now.

⁸ The first comprehensive measurement and description of the US shadow banking system by the New York Fed in 2010 defines shadow banks as “financial intermediaries that conduct maturity, credit, and liquidity transformation without access to central bank liquidity or public sector credit guarantees. Examples of shadow banks include finance companies, asset-backed commercial paper (ABCP) conduits, limited-purpose finance companies, structured investment vehicles, credit hedge funds, money market mutual funds, securities lenders, and government-sponsored enterprises.” http://www.ny.frb.org/research/staff_reports/sr458.pdf

⁹ See Bertrand Renaud and Kyung-Hwan Kim (2007) “The Global Housing Price Boom and its Aftermath” *Housing Finance International*, V. XXII, December. <http://www.housingfinance.org/uploads/Publicationsmanager/Dec%202007.pdf>; and, K.H. Kim and B. Renaud (2009) “The Global House Price Boom and its Unwinding: An Analysis and a Commentary”. *Housing Studies* V. 24, No.1, 2009 (Special Issue)

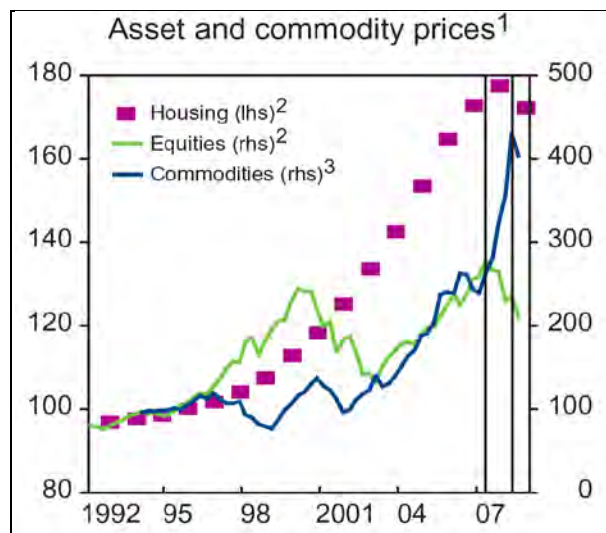
FIGURE 4: Explosive Growth of U.S. Shadow Banking After 1995



Source : Zoltan Pozsar et al. [2010] *Shadow Banking*, N.Y. Fed. Res. Bank, Staff Report 458, July

A global “savings glut” was widely discussed in the US in the mid-2000s.¹⁰ This glut was not coming from excess international savings, but from the liquidity manufactured by the shadow banking system, which played a key role in the massive credit surge that fed various types of global asset booms (FIGURE 5)

FIGURE 5: THE GLOBAL CREDIT SURGE TRIGGERS ASSET PRICES BOOMS AFTER 1995



Source: Claudio BORIO, “The financial crisis of 2007-? Origins, Policy Lessons”, G-20 Workshop, Mumbai, 24 May 2009

¹⁰ See Ben Bernanke’s speech of March 2005. <http://www.federalreserve.gov/boarddocs/speeches/2005/200503102/>

The global shadow banking system peaked at \$50 trillion in 2007 compared to the global GDP estimated at under \$55 trillion that year. After declining temporarily to \$47 trillion during the crisis the shadow banking sector is now back to \$51 trillion. The US has the largest banking system at \$24 trillion.¹¹

2.4 The GFC triggered a crisis for macroeconomics and the surveillance of financial markets

The once-in-a-century GFC raised the question of what went wrong with economics on the run-up to the crisis.¹² Microeconomics has survived the GFC more or less intact, but macroeconomics has not. Work to complement micro-prudential policies with macro-prudential framework started almost immediately after the crisis.

Until the events of 2007-2009, dominant views within the economics profession and in the major global financial centers had been that: markets are efficient; financial innovation transfers risks to those best able to bear them and is an overwhelming force for good; self-regulation works best, government intervention is ineffective and harmful; prudential regulations and central bank policies are strong defenses against financial crises; in short the fundamental problems have been solved. The financial industry was the immediate beneficiary of such views and strongly supported them in the research it funded and in its lobbying of national and state legislatures. Similarly, the US housing finance industry promoted these views through the research it funded and vigorously lobbied for them in Congress and the state legislatures as well as internationally.

Evidence-based analysis going against these views was rejected, sometimes very aggressively. The reception that Raghuram Rajan experienced in 2005 at the Jackson Hole annual conference of the elite of central bankers and economists for his paper asking whether financial development was making economy more instable not less so, became part of record of the period.¹³ The mindset of IMF officials during the buildup to the 2007-2009 crisis was criticized by the IMF's own Independent Evaluation Office: "The IMF's ability to correctly identify the mounting risks was hindered by a high degree of groupthink, intellectual capture, a general mindset that a major financial crisis in large advanced economies was unlikely, and inadequate analytical approaches."¹⁴

Except for the Bank of International Settlements (BIS), other international institutions and central banks had not seen the GFC coming, and neither did the majority of economists. The BIS pioneered comparative analyses of the negative impact of real estate bubbles on the stability of banking systems in 1993. It wanted to draw the lessons from the commercial real estate booms and busts that followed the liberalization of banking systems and caused systemic banking crises in Europe and in Japan in the 1980s.¹⁵

¹¹ See Financial Stability Board (2011), *Shadow Banking: Strengthening Oversight and Regulation, Recommendations*, 27 October. http://www.financialstabilityboard.org/publications/r_111027a.pdf

¹² "What went wrong with economics? And how the discipline should change to avoid the mistakes of the past?" *Economist*, July 16, 2009. <http://www.economist.com/node/14031376>. A widely read comment is Paul Krugman "How Did Economists Get It So Wrong?" *New York Times Magazine*, September 2, 2009 <http://www.nytimes.com/2009/09/06/magazine/06Economic-t.html?pagewanted=all>

¹³ See Raghuram G. Rajan (2005) "Has Financial Development Made the World Riskier?" <http://www.kc.frb.org/publicat/sympos/2005/pdf/rajan2005.pdf>

¹⁴ See IEO, 2011 Report on the "IMF Performance in the Run-Up to the Financial and Economic Crisis: IMF Surveillance in 2004-07." <http://www.ieo-imf.org/ieo/pages/IEOPreview.aspx?img=i6nZpr3iSIU%3d&mappingid=dRx2VaDG7EY%3d>

¹⁵ For a review of this first generation of real estate booms and busts, see Bertrand RENAUD (1997) "The 1985 to 1994 Global Real Estate Cycle: an Overview" *Journal of Real Estate Literature*, V.5.

the Fall of 2003. It was decided that real estate indicators could be included – but only on an optional basis – in the new financial stability reports by central banks motivated by the Asia Financial Crisis. Not making real estate indicators mandatory reflected in part the absence or poor quality of real estate information in many countries and also made room for the necessary learning process.

The World Bank had reported in 2001 in a financial policy paper that the “recent decades have seen a record wave of crises: by millennium end there had been 112 episodes of system banking crises in 93 countries since the late 1970s – and 56 borderline crises were recorded in 46 countries.”¹⁶ However, in operational terms these financial crises were usually viewed as failures to meet the standards of modern financial development and the “efficient market” test.

Work is now in progress in most academic and policy centers to reconsider the tenets of macroeconomics. The views of Keynes and Hyman Minsky on financial instability have re-entered the mainstream.¹⁷ There are major effort to rethink central banking and its relation to macroeconomics .¹⁸

2.5 Asian experiences during the AFC and the GFC

During the Asian Financial Crisis (AFC) of 1997-98, Asian countries were blamed by Western economists for the structural weakness of their economies and their failure to adapt to the standards of the modern global economy.¹⁹ In contrast, during the GFC of 2007-2009, the most affected economies have been Western economies that must face the fact that the global financial system that they had promoted and dominated is flawed and needs to be fixed. East Asian economies have performed well during the GFC and there have been calls “to learn from East Asian macro-prudential policies” and why these economies maintained their stability so much better than most Western economies.²⁰ Analyses show that, after the 1997 AFC, East Asian decision-makers have changed the way they manage their international finance and in particular rely on large international reserves to make their economies more resilient to international financial shocks.²¹

The economic damages caused by the AFC of 1997 and the GFC of 2007-2009 has demonstrated to East Asian policy makers that the financial industry can be a dangerous source of instability for the global economy and for their own national economies. The concern is not so much that a financial crisis will bring

¹⁶ See World Bank (2001) *Finance for Growth. Policy Choices in a Volatile World*. Page 75. (Gerard Caprio and Patrick Honohan main authors and project leaders), Washington DC.

¹⁷ In addition to his 1986 book, Minsky presented his fundamental concern about the instability of financial systems in his last 1992 paper: Hyman P. Minsky, *The Financial Instability Hypothesis*, May 1992, Working Paper No. 74, Levy Institute, Bard College, N.Y. <http://www.levyinstitute.org/pubs/wp74.pdf>

¹⁸ For an update on mainstream thinking see: Committee on International Economic Policy and Reform , *Rethinking Central Banking*. Washington DC: Brookings, September 2011. http://www.brookings.edu/~media/Files/rc/reports/2011/09_ciepr_central_banking/Rethinking%20Central%20Banking.pdf

¹⁹ See for instance, Paul Krugman (January 1998) “What Happened to Asia?” This analysis originally written for the *New York Times* is now posted at <http://web.mit.edu/krugman/www/DISINTER.html>

²⁰ Gerard Lyons, “The West has much to learn from the East’s Policy Toolkit’ *Financial Times*, July 27, 2010. Dr. Lyons is global head of research and chief economist at Standard Chartered Group. StanChart, however, was not in this year’s first list of 29 “systemically important banks” for the global economy (the G-SIFI list), which it probably welcomed given the expect capital cost of such a listing. http://www.financialstabilityboard.org/publications/r_111104bb.pdf

²¹ See Joshua Aizenman, Menzie D. Chinn, and Hiro Ito (April 2010) “Surfing the Waves of Globalization: Asia and Financial Globalization in the Context of the Trilemma” NBER Working Paper No. 15876. The risk management strategies adapted by different East Asian countries to manage their international risks is discussed as part of the internal first pillar of the risk framework in Part 5.

some financial institutions down; it is that such failures can badly damage the real economy. A widespread concern is that far from remaining a service industry that exists to improve the performance of the real economy, the financial sector has taken a life of its own over the last three decades. Yet, the reality remains that in a sound environment “finance is the derivative of the real economy.” The question is how to make it remain so?²²

3 THE NEW GLOBAL ENVIRONMENT

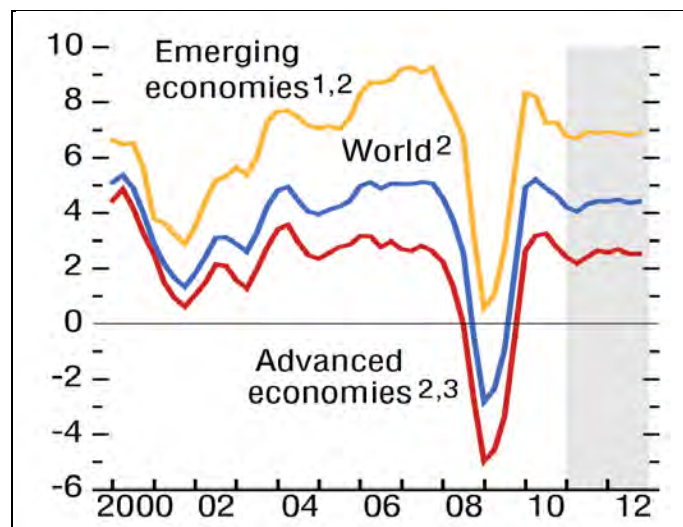
3.1 Multispeed global recovery and heightened uncertainty

The rising volatility of financial markets puts pressure on policy makers and regulators to find institutional arrangements and regulatory measures capable of increasing the robustness of the financial system and improving the stability of the macroeconomy.

The global economy has changed and the level of uncertainty has risen:

- The GFC has clearly accelerated the shifts in the structure of the global economy.
- The global economy faces a multispeed recovery differentiated between slow or minimal growth in high income economies and high growth rates in the presently overheating “newly emerged economies.” (FIGURE 6)

FIGURE 6: Two-Speed Growth of the Global Economy before and after the GFC



IMF, World Economic Outlook, April 2011, Fig.1.6

- New and stable forms of global governance have yet to emerge.
- Trade patterns and supply chains continue to change rapidly across the globe

²² Andrew L.T. Sheng in “Conclusion: An Asian Perspective on the Asian Crisis” in Harwood, Litan and Pomerleano eds. (1999) *Financial Markets and Development: The Crisis in Emerging Markets*. Washington D.C.: Brookings Institution Press. Drawing on his insider experiences, Sheng presents the lessons from the AFC and the GFC crises for Asian economics in his book *From Asian to Global Financial Crisis*, Cambridge University Press, December 2009.

- The non-traded housing sector is exposed to greater external financial shocks, in addition to traditional risks of domestic bubbles
- The “systemically important” economies of the U.S., the EU, Japan and China, as formally designated by the IMF, have become highly interactive leading to a new series of “spillover reports.”²³
- For the time being, the environment for risk management has shifted from quantifiable risks to politically-driven uncertainty.

3.2 The internal structure of the financial markets has been moving toward greater volatility

Many experienced observers of financial markets are broadly reaching the same conclusion that “a key difference from the bear market lows of 1932 and 1982 [...] when financial pain had squeezed moral hazard out of the system. [...] is that in 2009, despite the disasters of 2007 and 2008, politicians made a conscious decision to reignite risk-taking, to jump-start the market [...] The danger is that another more severe financial dislocation will be needed finally to purge the markets of [major] distortions.”²⁴

- The structural instability of financial markets continues to rise
- The share of individual investors has declined sharply. Institutional investors now dominate
- “Average holding periods for US and UK banks fell from about three years in 1998 to three months in 2008.”
- Possibility of diversifying risk have declined as all segments of global markets are becoming increasingly synchronized
- “The rhythm of financial markets has changed. Investors are getting savvier, reactions are speeding up.”²⁵
- With lower economic growth rates and higher levels of debts, external shocks of the same magnitude as in the past are more likely to tip an economy into a recession
- The “risk free” status of western sovereign debt was never under question for decades. It now has been proven unwarranted. This change is raising questions for regulatory systems such as Basel III.
- Problems of “tunnel vision,” failures to coordinate and “turf fights” affect public and private institutions, including international organizations and regulatory bodies charged with improving global governance.
- Meanwhile the unregulated shadow banking system is growing again.²⁶

3.3 Do we face immediate prospects of more housing bubbles?

The generalization that every country should focus on the macroeconomic risks posed by housing bubbles needs two qualifications. One is structural; the other cyclical. First, some economies may not be structurally exposed to a high level of risk because their housing sector is not leading the cycle. Second, given the slowdown of the global economy the probability of synchronized housing cycles causing another round of macroeconomic instability has fallen. Shall we observe an global overall decline of housing investment as a share of GDP as happened in the early 1980s? This shift occurred during the period of global growth

²³ See IMF: “New reports by the IMF dedicated to analyzing the economic flows and risks between countries” <http://www.imf.org/external/pubs/ft/survey/so/2011/NEW092711B.htm>

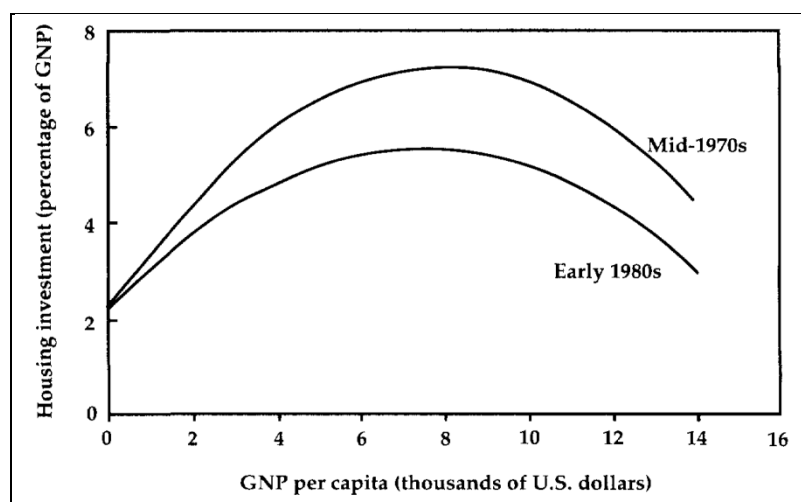
²⁴ John Authers (2010) *The Fearful Rise of Markets*, London: FT Press, p.192. Authers provides a concise yet complete inventory of the innovations and structural changes making global financial markets more volatile.

²⁵ Gillian Tett, “Heed the ‘transparent’ lessons from MF Global”, Insight Column, *Financial Times*, 25 November 2011. Gillian Tett is presently U.S. Editor of the FT. She <http://www.jchs.harvard.edu/publications/MF10-5.pdf> was previously its Capital Markets Editor.

²⁶ For a significant comment about causes of instability in the shadow banking sector comes from Soltan Poszar who led the first study of the shadow banking system in 2010: “Time to reform the confidence trick played by banking” *Market Insight, Financial Times*, 7 December 2011

slowdown triggered by the switch from negative to positive, large real interest rates caused by the anti-inflation policies of the U.S. Federal Reserve? (FIGURE 7)

FIGURE 7: Global Downward Shift in Housing Investment in Early 1980s



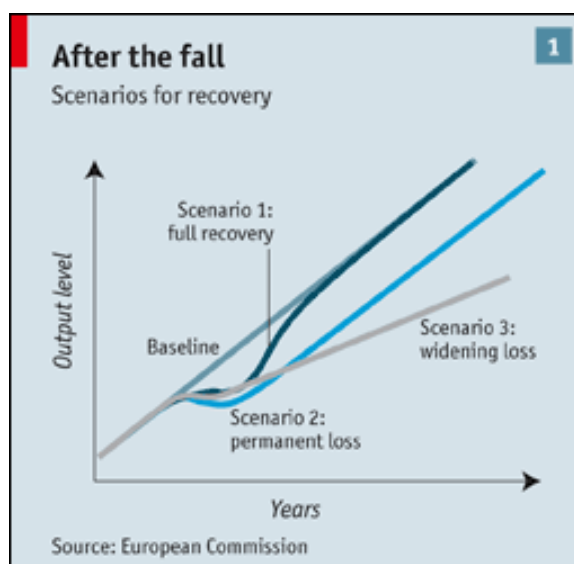
(Source: *Housing: Enabling Markets to Work*, World Bank Policy Paper 1993, Figure S-11)

Today, the pattern of housing investment across countries is likely to be more differentiated between high-income economies and the newly emerged economies, and also within these groups. The probability of major new housing booms and bubbles in high income economies has declined sharply for the short and medium term. In the economies severely affected by real estate and financial crises such as the US, Spain, or Ireland the historical record points to a long period of growth rates below past trends, but country specific conditions and specific policies will make a difference, as discussed below.²⁷ (FIGURE 8). In the rapidly growing newly emerged economies, where will a credit surge come from? Large external capital inflows compared to the size of the domestic financial market? (See 5.2.2)

These days, the technical work on including housing in the new macro-prudential stability frameworks can proceed at a calm and deliberate pace in most high-income countries, with the possible exception of commodity -exporting Australia and Canada where an overheated housing sector remains a concern. A risk management framework for the housing sector specifically focused on preventing housing bubbles is neither a necessary nor a sufficient to managing macroeconomic stability. The priority focusing should be on building up economic resilience through improvement of the banking systems and the housing system, which includes work on better early-warning systems for real estate booms.

²⁷ Drawing on their IMF experience, Reinhart and Rogoff presented the implications of the real estate and financial crisis for the medium-term growth of the U.S. economy. It was in January 2009 to the annual meeting of the American Economic Association, the crisis was in progress and their audience was still in denial. Carmen M. Reinhart, Kenneth S. Rogoff, "The Aftermath of Financial Crises," NBER Working Paper No. 14656, January 2009. http://www.economics.harvard.edu/files/faculty/51_Aftermath.pdf

FIGURE 8: Recovery scenarios based on past combined real estate and banking crises



Source: *Economist Special Report on the Global Economy, "The long climb"*, 3 October 2009

4 SYSTEMIC FINANCIAL INSTABILITY AND CAUSES OF CRISES: AN OUTLINE

4.1 Causes of financial crises or heavy financial disruptions: an overview

A systemic financial crisis means the collapse of the financial system that suddenly becomes unable to provide payment services or to allocate credit to productive investment opportunities. A heavy financial disruption means that the financial system can only provide financial services but only at very high interest rates and with a severe impact on the performance of the economy. Financial crises vary greatly in their origins and their development because institutional structures vary across countries, and over time in the same country.

Research done by the World Bank and IMF has studied systematically the variety of financial and economic crises that have occurred worldwide since the late 1970s.²⁸ Reinhart and Rogoff have now expanded this research back into previous centuries, and they highlight the fact that “periods of high capital mobility have repeatedly produced international banking crises, not only famously as they did in the 1990s, but historically.”²⁹ There have been many causes of crises:

- Mismanaged financial deregulation
- Shifts in financial intermediation between banks and non-banks
- Failure of a single, large “core” institution
- Commodity crises
- Property-related crises
- International debt and currency crises
- Crises linked to a stock market crash

²⁸ See for instance the research at the World Bank by Gerard Caprio, Patrick Honohan and others synthesized in World Bank, *Finance for Growth, Policy Choices in a Volatile World*, Oxford U. Press (2001). See also the research carried over the years at IMF by Carmen Reinhart, Gabriela Kaminski, Stijn Claessen, Luc Laeven and other IMF staff until today.

²⁹ See Carmen Reinhart and Kenneth S. Rogoff (2008), NBER working paper 13882, p.7. Their NBER paper was followed in 2009 by *This Time is Different: Eight Centuries of Financial Crises*, Princeton U. Press.

- Twin or multiple crises: banks, real estate, currency

The public policy concerns are not – or should not be – the failure of a financial institution but the contraction of credit to the non-financial sector, wider economic disruptions accompanied by large, and lasting economic losses with a falling standard of living and increased socio-economic inequalities. In the case of multiple crises, where real estate and banking crises combine with a currency crisis to become a multiple crisis as discussed further below.

After the GFC, all the attention is focusing specifically on the potential contribution of housing to macroeconomic instability. However, commercial real estate crises can also lead to systemic banking crises as happened in Scandinavian countries during the liberalization of their financial systems. In Japan also, real estate played a large part in the bubble together with housing.

All studies of asset bubbles and financial crises come to the same conclusion that there cannot be an asset bubble without a prior credit surge, and that credit growth is the single best predictor of financial instability. What causes these credit surges?

4.2 Factors behind external credit surges

From a prudential viewpoint, factors behind external credit surges are quite varied. They can be:

- Current account deficits above historical trends in the country³⁰
- International portfolio capital flows, and to a lesser extent foreign direct investment
- “Carry trade” funded by zero interest policies of major central banks (Japan, US Fed)
- Speculative attacks on perceived undervalued exchange rates in relatively small economies
- Herding behavior on the part of institutional investors, such as the popularity of BRIC countries
- Degree of relative openness of the capital account compared to other economies

Causes of domestic asset bubbles can be:

- An acceleration in domestic credit growth (China’s 2009 stimulus package led to a bank credit expansion from 5.6 to 9.6 trillion Yuan, i.e. a massive 71% in a little more than one year).
- Financial repression causing negative real interest rates and driving investments into a few asset classes such as land, housing and real estate.

The asset classes most prone to booms and bubbles and with the largest macroeconomic impacts, depending on the country are:

- Export commodities
- Commercial real estate
- Residential real estate
- Stock market shares

Financial sector vulnerability to a bubble is always country specific and depends on:

- The structure of the economy and its exposure to the booming sector

³⁰ A new study finds that national financial crises are typically preceded by larger current account deficits relative to the country’s own history, But it does not show that large international crises can be linked to abnormal current account trends. See Oscar Jordà, Moritz Schularick, Alan M. Taylor, “Financial Crises, Credit Booms, and External Imbalances: 140 Years of Lessons”, NBER WP 16567, Dec. 2010.

- The structure and behavior of the financial system
- The coverage and quality of both financial regulations and supervision
- The type and size of the bubble and the intensity of price overshooting are more symptoms than causes, even if they are eye-catching. In international comparisons, the US bubble was not the worse and the US did not appear to be the most exposed. But the US housing system had long-standing structural flaws, which interacted with other factors.³¹

4.3 Stylized features of housing bubbles

Conceptually, the nexus of housing bubbles is the interplay between household decisions, credit conditions, the housing market structure and the behavior of housing assets. A common misconception is that housing bubbles are necessarily national in character, but in fact they are market specific. The national impact is through contagion across the financial system. The historical record leads to the following conclusions:

- Bubbles funded mostly with equity such as stock market bubbles are fiscally the least costly and are also the least harmful to GDP growth.
- Bubbles funded on leverage are much more costly and much more harmful. The losses they trigger are usually larger and their direct and indirect effects usually last several years.
- Both residential real estate bubbles and non-residential real estate bubbles have triggered very expensive systemic banking crises because both involve compounded leverage. Interactions between real estate and the financial system always deserve very close monitoring.³²
- Residential real estate bubbles have different triggers from non-residential bubbles and they also have a much larger impact on the macroeconomy through household consumption channel, the banking channel and the construction channel.³³
- There are different types of non-residential real estate markets: offices, retail, industrial, and hospitality real estate. These exhibit very significantly diverse cyclical behavior.³⁴ Office real estate has the largest micro-prudential importance i.e. prudential policy focusing on distressed individual financial institutions.
- Twin real estate and banking crises are very costly because they owe their origins to dual, interactive leverage. This combination of real estate and banking crises is rather frequent for reasons that motivate today's discussions.³⁵
- In the case of multiple crises the findings on the sequence of crisis during the Asia Crisis appears to have broad validity, as illustrated lately by the US subprime disaster. "One striking feature of the

³¹ See Luci Ellis, "The housing meltdown: Why did it happen in the United States?" *BIS Working Papers No 259*, September 2008. <http://www.bis.org/publ/work259.pdf>

³² The most complete analysis of the impact of a commercial real estate bubble on the US is in Lynn E. Brown and Eric S. Rosengren (Eds.), *Real Estate and the Credit Crunch*, Federal Reserve Bank of Boston, Conference Series No. 36, (September 1992) <http://www.bos.frb.org/economic/conf/conf36/conf36a.pdf>

³³ For an introduction to these channels of influence, see John Muellbauer (2011) *Housing and the Macroeconomy*. An entry for the Encyclopedia of Housing (Elsevier, forthcoming).

³⁴ For a primer of the fundamental parameters of endogenous real estate cycles See William C. Wheaton (1999) "Real estate "Cycles": Some fundamentals." *Real Estate Economics*; Summer 1999; 27, 2 <http://econ-www.mit.edu/files/2396>

³⁵ See Richard J. Herring and Susan M. Wachter (1998). "Real Estate Cycles and Banking Crises: An International Perspective," Zell/Lurie Center Working Papers 298, Wharton School, University of Pennsylvania. This long version of their paper contains the most detailed behavioral analyses. <http://ideas.repec.org/p/wop/pennzl/298.html> A different version with a greater financial sector perspective is Herring-Wachter (1999) "Real Estate Booms and Banking Busts: An International Perspective, Financial Institutions Center, WP 99-27 originally presented at LTCB seminar in Japan. <http://www.businesscycles.biz/passsubscriberemails/busts.pdf>

current Asian financial crisis is that the most seriously affected countries first experienced a collapse in property price and a consequent weakening of their banking systems before experiencing an exchange rate crisis”³⁶.

- The fiscal cost of a twin real estate and banking crisis is usually high in terms of fiscal costs in the form of a sharply increased stock of public debt. To this fiscal cost must be added the opportunity costs suffered by the economy in terms of lost employment and the shift of the economy down to a lower level of GDP growth that can last a long time, as shown by the great Japanese bubble of the 1980s and is being demonstrated again by the US housing bubble of the 2000s that burst in late 2006 from which analysts say a sector recovery may not happen until 2013.
- In the case of multiple crises combining a real estate crisis, a banking crisis and a currency crisis like Chile in 1981 or Thailand in 1997 the fiscal cost in terms of the rise in the stock of public debt alone can shoot over 40% of GDP, without counting the other social and economic costs.³⁷

“Unholy” alliances between real estate developers and bankers with weak bank governance and inadequate supervision are more prevalent among less competitive second-tier regional banks and local banks than among national banks. In such cases, the contagion effect between bank-specific crises and a systemic crisis is more easily contained. The serious and costly, but non-systemic problems of the German *Landesbanken*, the Spanish *Cajas de ahorro*, or the Korean savings banks owe their origin to flawed bank governance. In these three cases, the cause lies in the duality between a national regulatory system of high standard for national banks and separate lower regulatory and supervisory standards for local banks directly exposed to local political influence. Such a regulatory and supervisory issue is familiar since the 1980s. Segmented regulatory systems (or balkanized ones in the case of the US) are also an open door to regulatory arbitrage.

4.4 Post-GFC approaches to financial and economic stability

“The theorizing mind tends always to oversimplifications of its materials. This is the root of all the absolutism and one-sided dogmatism by which philosophy and religion have been infested.” William James, *The Varieties of Religious Experiences. A Study in Human Nature*. (1902)

The empiricist criterion: “By their fruits you shall know them, not by their roots” W. James. *Varieties*.

“As anyone who has done economic theory knows, the style of our models determines their content - issues that are awkward to address are generally not addressed”, Paul Krugman, *Geography and Trade*, 1991

“Evidence-based macro research needs to replace faith-based models”. John Muellbauer, 2010, BIS WP 306.

The GFC has focused attention sharply on systemic risk and has triggered a major reconsideration of the analytical approaches and policies regarding financial stability. There were conceptual failures to make meaningful analytical connections between vital interactive parts of the economy. One of them was the absence of the financial sector in macroeconomic models that were expected to shape public policy. From a quasi-ideological, one-dimensional focus on monetary policy, macroeconomic policy has shifted to a more realistic three-dimensional approach that considers jointly the monetary, fiscal and financial dimensions of

³⁶ See Herring and Wachter (1999) See also the eight country cases studied in Koichi Mera and Bertrand Renaud eds.(2000) *Asia's Financial Crisis and the Role of Real Estate*, New York: M.E. Sharpe. Actually the H-W comments applies to Thailand only because only Thailand experienced a triple crisis in Asia. Their characterization applies to Chile's triple crisis.

³⁷ Gerard Caprio and Daniela Klingebiel (2003), “Episodes of systemic and borderline financial crises”, world bank, working paper, financial sector strategy and policy department. http://siteresources.worldbank.org/intres/resources/469232-1107449512766/648083-1108140788422/episodes_of_systemic_borderlinefc_dataset2.pdf.

macroeconomic policy.³⁸ The task of rethinking macroeconomic s and its impact on central banking and financial stability is very large.³⁹

The existing micro-prudential framework that focuses on the stability of individual institutions is now being complemented by a macro-prudential framework with a “systemic” orientation that takes a view of the financial system as a whole and moves from a partial equilibrium perspective to a general equilibrium perspective. The two perspectives are complementary, not substitutes.⁴⁰

The discussion of the impact of housing volatility on macroeconomic stability is part of this vast regulatory transition. What components belong to the framework needed to assess (financial and economic) stability issues in the case of housing?

5 COMPONENTS OF STABILITY FRAMEWORKS FOR HOUSING

5.1 Starting points when assessing the stability of a housing system

Discussions of financial and economic stability frameworks for housing face a series of issues and facts:

- What is the relationship between “financial stability” and “financial fragility”? Central bankers and seasoned regulators tend to think of financial fragility as the brittleness of a financial system that may be gradually reduced over time and of financial stability work as managing a severe event and sometime a tail event like the GFC.
- As mentioned, the interplay of household decisions, credit conditions and the price of housing are the heart of housing stability work but in practice this dynamics is context dependent
- In managing for stability one challenge is always to deal with heterogeneity. This is very pronounced in the case of housing: the markets are segmented into households of very different income and different behavior. Differences among lenders are usually quite significant. And the structure of the construction industry that is an important channel between housing and the wider economy is also a factor.
- Together with finance, space is an intrinsic component of housing, housing price volatility is locally based and critically affected local supply conditions.
- In our new global environment of volatile financial markets and highly interactive economies, the findings (and mindset) of open economy macroeconomics apply now to even the largest economies such as the US, China and Japan.
- Understanding the choices made by a country to manage its exposure to external shocks originating from the global economy is part of a good assessment. External credit surges have different origins (see 4.1).. Housing can be exposed to large external shocks not of its own internal doing. Housing cannot be seen as the only large source of instability to be tamed,
- Macroeconomists and microeconomists do not communicate well. Yet, it is important to keep in mind the reasons why housing is an information-intensive economic good that is not always easily managed

³⁸ See for instance, Olivier Blanchard, Giovanni Dell'Ariccia, and Paolo Mauro (2010) “Rethinking Macroeconomic Policy” , IMF February 26, 2010. One of the series of “Seoul papers” on current macro and financial issues discussed in advance of the Seoul G-20 summit of November 2010.

³⁹ In his new paper, Claudio Borio gives a reference list of 12 pages and approximately 240 references! See “Rediscovering the macroeconomic roots of financial stability policy: journey. Challenges and a way forward”, BIS WP 354, <http://www.bis.org/publ/work354.pdf>.

⁴⁰ See Gabriele Galati and Richhild Moessner (2011) Macroprudential policy – a literature review, BIS Working Paper No.337, February 2011. <http://www.bis.org/publ/work337.pdf>

because of its characteristics. Four key characteristics of housing are: durability measured in decades; heterogeneity in terms of physical features; value linked to location in specific neighborhoods; and, extensive financial, fiscal and physical regulation by governments.

- The organization of the financial system and the structure of the housing sector are never the same from country to country. Any stability assessment must go beyond the stylized facts steadily accumulating from comparative research that can only guide the questions, but do not provide the answers.
- Co-movements between the housing sector and the rest of the economy are very large in fully urbanized, high-income economies. Housing is an important part of consumption and of investment.
- The objective of policy actions against instability is not to protect financial institutions from their mistakes or their greed, but to permit the housing sector to provide housing services in a stable manner to all households, in every form of tenure (private owners, private renters and renters of social housing). The question is how the housing sector can remain free from the disruptive impacts of bank failures and their possible contagion effects.

Choices of tools against instability must be based on the locally-agreed interpretation of local evidence. Financial systems and housing systems are complex, dynamic and interactive: there is an analogy between the interactions with the housing system and those between various parts of the human body. Taking the personal history of the patient is a fundamental requirement for successful medical treatment. Like in medicine, prescriptions against instability have to be based on a combination of research evidence and clinical experience. How good is the research? How experienced are the financial authorities?

The review of the components and tools for greater housing stability that follows drawn examples from East Asian economies, namely: Japan, Korea, China, Taiwan, Hong Kong and Singapore.

5.2 External sources of instability: East Asian Choices since the Asia Financial Crisis

5.2.1 Facing the “Impossible Trinity” when fending off external sources of instability

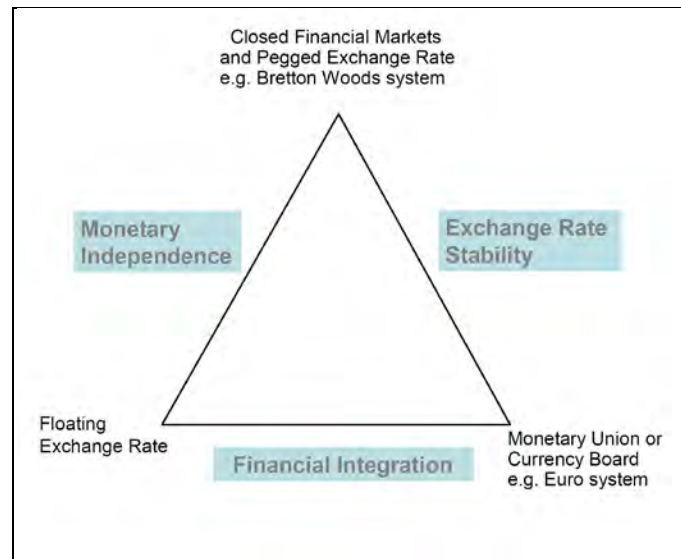
East Asian emerging economies are quite open to international trade in goods and financial assets in the highly globalized environment. Yet they have maintained a low level of aggregate output volatility comparable to those of the industrialized countries before the GFC. Aizenman, Chinn and Ito show in their in-depth study that East Asian countries have adopted international economic policies that permitted them a better macroeconomic performance.⁴¹

A central hypothesis of international finance is the “Impossible Trinity” or the “Trilemma” which states that a country can selected any two, but not all three goals of: monetary independence and the freedom to set interest rates according to the need of the domestic economy; exchange rate stability; and, financial integration with the global financial markets through an open capital account.⁴² [FIGURE 9]

FIGURE 9: The “Impossible Trinity”, Central Hypothesis in International Finance

⁴¹ Joshua Aizenman, Menzie D. Chinn, and Hiro Ito, “Surfing the Waves of Globalization: Asia and Financial Globalization in the Context of the Trilemma” NBER Working Paper No. 15876, April 2010. <http://web.pdx.edu/~ito/w15876.pdf>

⁴² Aizenman, Chinn and Ito report in a separate paper that the impossible trinity is empirically binding: Assessing the Emerging Global Financial Architecture: Measuring the Trilemma’s Configurations over Time, NBER Working Paper No. 14533, December 2008. <http://web.pdx.edu/~ito/w14533.pdf>



Source: Aizenman, Chinn, Ito (2010) *Asia, Financial Globalization and the Trilemma*, NBER WP 15875

Each international policy choice has its problems.

- Under monetary independence, the monetary authorities may abuse their autonomy to monetize the government's fiscal debt.
- Under a fixed exchange rate the economy will import the interest rate of the country against which it has pegged the exchange rate (like Hong Kong with the US dollar). The authorities lose their ability to implement appropriate policies consistent with local needs. The economy would be prone to asset booms and busts with an overheated economy. This is exactly what happened with the 1990s real estate bubble in Hong Kong. It happened again to Ireland and Spain inside the Eurozone in the 2000s.
- External financial liberalization has been the most debated of the three choices. On one hand, open financial markets could lead to economic growth and a more efficient allocation of resources. On the other hand financial openness can expose the economy to volatile cross-border capital flows and very disruptive sudden stops or reversals making the entire economy vulnerable to boom-bust cycles. Some leading international economists have even argued that trade liberalization improves national welfare, but that the benefits from financial liberalization were not clear.
- The choice of any two pair is not easy as the effect of each policy can differ dependent on the other policy choice made.

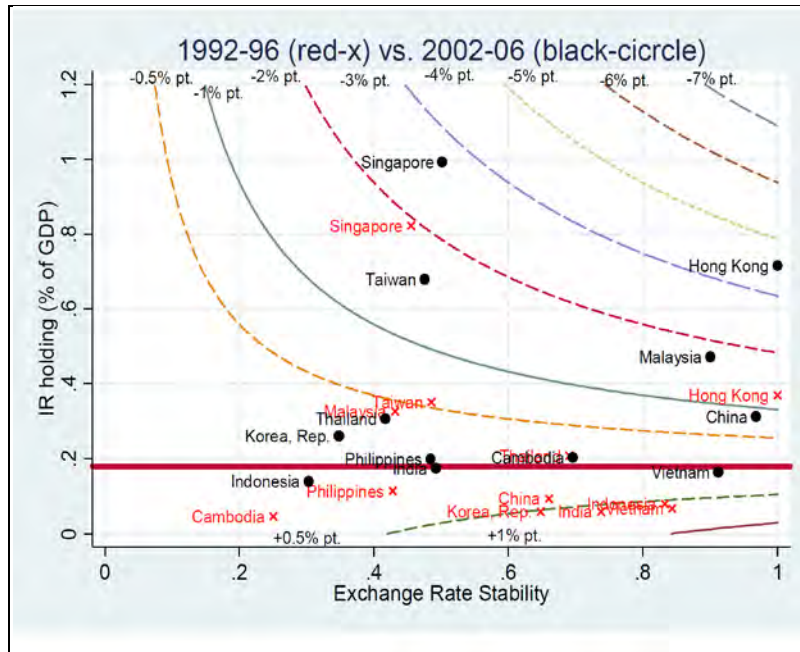
A-C&I pay close attention to three other factors: international reserves (IR), the level of financial development, and international finance (net inflows of FDI, portfolio investment, and bank lending). They find that the IR level has for effect to mitigate the negative effects of the combination selected. Their econometric results suggest that international reserves may reach their maximum stabilization effect at an IR threshold level of about 20% of GDP.

East Asian countries have raised their level of IR in the aftermath of the 1997 AFC to mitigate the impact of the Trilemma and lower the volatility of their economy while favoring the exchange rate stability choice. A-C & I do not find this to be the case for non-emerging market economies of Asia or Latin America.

Greater exchange rate stability (ERS) implies greater output volatility, which is mitigated by IR holdings. In FIGURE 10, the pre-crisis East Asian joint choices of exchange rate facility and IR levels are in red (light) and the post -crises ones are in black (dark). The heavy horizontal line marks the international reserves

threshold. Exchange rate stability is at the highest on the right-hand side). The adjustments in external stability strategies across East Asia following the 1997 AFC are clear. The isoquants show the marginal interactive effects between ERS and IR for a given level of output stability in each period.

FIGURE 10: Exchange rate stability and international reserves holdings in East Asia after the AFC



Source: Aizenman, Chinn, Ito (2010) *Asia, Financial Globalization and the Trilemma*, NBER WP 15875

5.2.2 Current Account Deficits, Credit Surges and Real Estate Volatility

The real estate sector has played a key role in the aggregate output boom and bust cycles of the 2000s. Capital inflows associated with large current account deficits have magnified the welfare costs of preexisting distortions (like moral hazard) deepening the bust at the end of the cycle. In a study of 43 countries (of which 25 are OECD) over the period 1990-2005, Aizenman and Jinjarak (2008) find that out of seven variables affecting the level of real estate prices in (urban population growth, per capita GDP growth, inflation, financial depth, the institutional structure, the real interest rate, and the size of the current account deficit) the size of the current account deficit had the largest effect by far.⁴³ There is a significant time lag between a rise in the current account deficit and rising real estate prices.

A new study of credit boom-bust episodes in advanced economies over 140 years finds that national financial crises are typically preceded by larger current account deficits relative to the country's own history. But the study does not show that large international crises can be linked to abnormal current account trends. Jordà, Schularick and Taylor find that credit growth is the best predictor of financial

⁴³ Joshua Aizenman and Yothin Jinjarak "Current Account Patterns and National Real Estate Markets" NBER Working Paper No. 13921 April 2008, Revised October 2008

instability.⁴⁴ Over a long period of 140 years, they find only limited evidence that external imbalances have played a major role.

5.2.3 *High housing prices in East Asia and the Penn-Balassa-Samuelson effect*

The housing price level can be an indirect cause of price instability by making a greater percentage of the population more vulnerable to economic shocks. A frequent question is why relative housing prices in East Asia have been so high compared to most countries.

Housing is the quintessential non-traded good. The Penn-Balassa-Samuelson explains the fact that non-tradable goods have a higher relative price in wealthier economies. The PBS effect results from the fact that the non-traded sector has a low productivity compared to the traded sector. Indeed, housing has a low productivity compared to other sectors of the economy. The relative price of non-tradable will rise over time with the capital-labor ratio as the structure of the economy is deepening. There is also a dynamic PBS effect of increasing relative price effects in rapidly growing economies.

The PBS effect on housing price to income ratio (PIR) has been very much in evidence in East Asia, in the form of extremely high PIR values across when these economies were industrializing rapidly and were also urbanizing at their fastest rate during their peak rate of urbanization around the 50% urbanization level. Asia economies reached their highest GDP growth rates during that period.⁴⁵

One should not overlook a “microeconomic” factor contributing to both the high relative price of housing and its volatility. Both Japan and Korea have created rigid land-use planning systems that render housing supply highly inelastic across these countries. This significant destabilizing factor for housing prices has been too frequently ignored by macroeconomists because it comes under the rubric of urban planning issues. Urban planning is a topic on which the quality and coherence of communication (and recommendations) between these two types of policy makers too often ranges from poor to non-existent.

One exception has been the Chancellor’s review in the UK and the Barker report on housing supply (2004). UK economists estimate that housing prices in the UK are six times more sensitive to short term interest rates in the UK than in the US thanks to the joint effects of the mortgage system and the planning system in the UK (G.Meen, 2002). In their recent review of the Korean housing system for OECD, Kim and Cho (2011) find that Korea has the most volatile housing prices among OECD countries, by a multiple factor, with only Italy showing a comparable volatility. The contribution of the inelasticity of supply to housing price volatility and the severity of housing price boom and busts should on the list of issues and stability parameters.

5.3 **Macroeconomic policies and stability tools**

5.3.1 *Use of monetary policy and interest rates*

There is widespread agreement that interest rate policy is too blunt a tool to use to cool down a housing boom. An interest rate change cannot be targeted and will impose needless substantial costs on all other sectors of the economy. A separate argument is that when expectations of rapidly housing prices are high, the user cost of housing might not be changed much by an interest rate increase.

⁴⁴ Oscar Jordà & Moritz Schularick & Alan M. Taylor, May 2010. "Financial Crises, Credit Booms, and External Imbalances: 140 Years of Lessons," NBER Working Papers 16567,

⁴⁵ Bertrand Renaud (2011), “Property Booms at the Peak Rate of Urbanization. China’s Boom in East Asian Perspective” (Keynote presentation at the 2011 joint AsRES-AREUEA conference; to appear in IRER)

On the other hand, using interest rates to manage a general overheating of the economy is another matter. This is the proper role of monetary policy, but when it comes to housing, the situation could be asymmetrical: Alan Taylor and other have criticized the over-extended low-interest rate policy after the burst of the dot.com bubble for fueling the US housing bubble.

After the GFC, there has been criticism internationally about the impact of US Fed zero interest rate policy (QE1 and QE2) for encouraging a surge of capital inflows from investors seeking higher yields into the newly emerged economies already operating at close to full capacity,

5.3.2 Are findings from Western economies universally applicable?

Depending on context, the same policy tool can have different effects. The large volume of conceptual and empirical work of quality done in the US does not automatically provide policy short-cuts, merely the outline of a possible framework and useful points of departure for comparisons. For instance, a comment triggered recently by a Chinese monetary policy issue was that “we tend to be so US-centric when we think about economics – including, unfortunately, most Chinese economists that we automatically assume [...].”⁴⁶ There are benign explanations for such a behavior, beginning with the large number of foreign graduate students seeking advanced degrees in economics at U.S. schools. Another factor is the design of academic incentives and the outcome. On the other hand, saying that the US experience may not always be appropriate to the analysis of East Asian experiences begs the question of what is the appropriate framework.

Building suitable policies based on local evidence presents challenges. For instance, when asked to discuss the impact of housing on macro-economic stability, a US economist will automatically assume that the housing sector is a *leading* component of the business cycle. The title of the paper by Edward Leamer that “Housing *is* the Cycle” is still fresh in the minds of many economists.⁴⁷ So, when considering the impact of housing on financial and macroeconomic stability, why is it that in Korea “housing is not a driver of GDP but is a follower of fluctuations in the wider economy”? If so, what are the regulatory and macro-prudential implications for Korea? Does housing stability remain a priority issue for national economic stability?

Reliable comparative housing analyses that could be used for stabilization frameworks remains scarce. Because housing is a non-traded sector, until the emergence of the global financial markets, national policy-makers did not see a need to understand the institutions and performance of the housing sector of their neighbors. The mind set was that of a closed economy everywhere, including in the US. For example, the US housing subprime bust happened in late 2006, but it took until 2010 for analyses of what the US system could learn from other housing finance systems to enter the mainstream of debates on U.S. housing reforms.⁴⁸

⁴⁶ Michael Pettis, Professor of Finance, Peking University in: “Will raising Chinese rates increase inflationary pressure?” *China Financial Markets*, October 3, 2011.

⁴⁷ Edward E. Leamer, paper presented to the 2007 Symposium of the Kansas City Federal Reserve Bank on “Housing, Housing Finance and Monetary Policy”. <http://www.kc.frb.org/publications/research/escp/escp-2007.cfm>

⁴⁸ See Michael Lea (2010) “Alternative Forms of Mortgage Finance: What Can We Learn From Other Countries?” Harvard Business School and JCHS Symposium, “Moving Forward: The Future of Consumer Credit and Mortgage Finance” 18 February 2010. <http://www.jchs.harvard.edu/publications/MF10-5.pdf>; and, Dwight M. Jaffee (2010) “Reforming the U.S. Mortgage Market Through Private Market Incentives”, Conference “Past, Present, and Future of the Government Sponsored Enterprises,” Federal Reserve Bank of St. Louis, November 17, 2010. <http://research.stlouisfed.org/conferences/gse/Jaffee.pdf>

The main source of policy-motivated comparative analyses so far has been the Eurozone. There the pressures of convergence are producing regulatory insights and comparing policy lessons. Outside this source, even the best books written by national experts typically lack a convincing framework. They only offer collections of country cases with non-comparable data and still remind us of travel guidebooks through interesting countries, albeit guidebooks for professionals.⁴⁹

5.3.3 *Impact on households of East Asian growth strategies using financial repression*

Macro and microeconomic causes of housing instability in East Asia are shaped by individual institutional structures. East Asian housing sectors have been profoundly and differently shaped by the growth model adopted by each country. Key regime changes in housing and the financial system have occurred over time since the days when these strategies were initially adopted. Yet these institutional structures continue to impact the volatility of housing prices and housing output. Like many institutional structures, housing systems are path dependent.

In Japan, Korea in earlier decades and in China today, financial repression and directed credit has played a major role in the intersectoral misallocation of resources at the expense of households and away from housing. These policies have had a significant distributive impact across the household income distribution and made housing prices chronically more volatile, especially in Korea. A detailed discussion of these East Asian growth strategies is well beyond this short review of stability tools.

Four very different types of economic growth strategies have deeply shaped the household sector, aggregate consumption and housing systems across East Asia. They could be described as follows:

- State-led industrialization, financial repression and lending directed to export-oriented industrialization with under-investment in housing. With a state control special housing finance circuit on the demand side and on the supply side rigid land policies (**Japan, South Korea**).⁵⁰
- Non-interventionist, market-based housing policies benefiting from balanced economic growth, decentralized urbanization and 'growth with equity' (**Taiwan**)
- Large-scale public housing programs in support of a small open, market economy in city states where infrastructure investment and housing investment are both closely related to labor productivity and social stability (**Hong Kong, Singapore**)
- Central planning's view of housing as a social good to be distributed by the state (**China** until 1979, **North Korea** until today)

These growth strategies were adopted decades ago when these societies were urbanizing and still below their peak rates of urbanization. The direct link between the housing price bubbles in 2010 in China and the current "investment-led growth model" shows the limits of taking a purely cyclical view of stability policies when major structural factors are also at work. The Chinese case is interesting today for several other reasons. China has become the second largest economy and its success in achieving the soft landing of its overheated economy is of direct significance for the global financial markets; a major component of China's investment-led growth model is housing and urban infrastructure; and, Chinese authorities are using most of the stabilization tools to cool down its housing boom. There is a growing consensus that the current strategy of squeezing the household sector and consumption to fund an increasingly

⁴⁹ See for instance the new collection of 20 country chapters assembled by Bardhan, Edelstein and Kroll eds. (2011), "[Global Housing Markets: Crises, Policies, and Institutions – Essays from Around the World](#)," John Wiley & Sons.

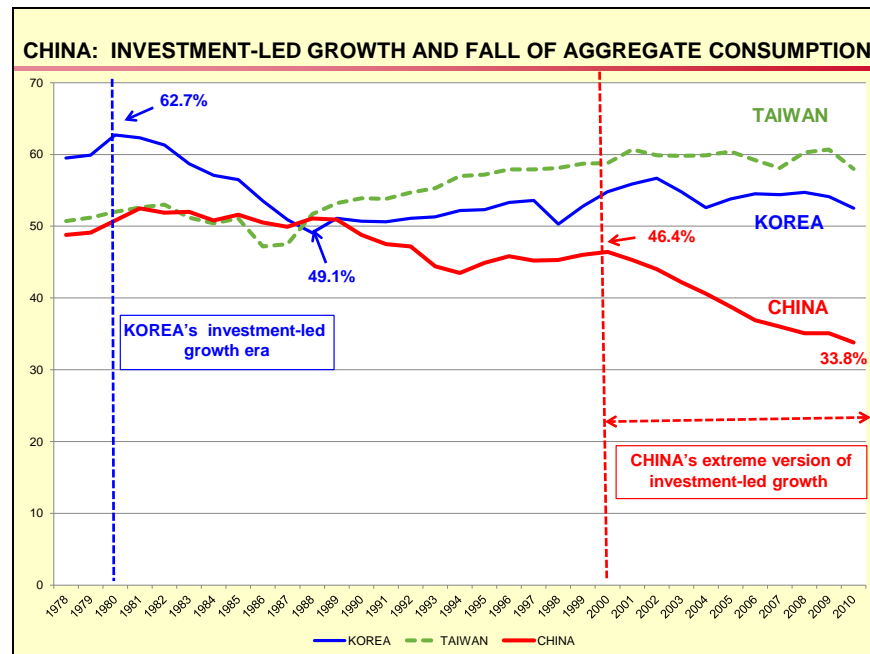
⁵⁰ One of the most valuable comparisons of the development strategies of South Korea and Taiwan during their economic take-off remains: Tibor Scitovsky, "Economic Development in Taiwan and South Korea, 1965-81" Ch. 4 in Lawrence Lau ed. (1984) *Models of Development. A Comparative Study of economic Growth in South Korea and Taiwan*. San Francisco: ICS Press.

inefficient investment –led growth has run into a dead end. What a shift to a different growth model and the much debated rebalancing of the economy means for China’s housing sector remain unclear as the country is undergoing a major political transition in 2012.

China’s investment-led growth model , especially after 2000 has been taxing the household sector very heavily and suppressed consumption through three macroeconomic policies, which in order of impact on Chinese households: (1) financial repression with artificially low interest rates negative deposit rates and directed credit to SOEs at the expenses of SMEs⁵¹; (2) an undervalued exchange rate that favor exporters and penalizes consumers, (3) control of the rate of growth of wages that is below the rate of productivity growth.

The full effects of this strategy of household wealth transfers are opaque - especially for the international media - because Chinese household incomes are still rising at very high rates by international standards. Yet the impacts can be seen in three ways. First there has been a steady fall of aggregate consumption to a down to the extraordinary low level of 33.8% of GDP in 2010, a level never previously recorded in a significant economy (FIGURE 11). By comparison, Korea’s own investment-led growth of the 1970s and 1980s never brought aggregate consumption to such a low level as seen in Figure 11. Second, there has been a massive rush by Chinese households to invest in housing because they cannot protect their savings in other ways while saving a very high percentage of their income for precautionary reasons and old age security. Third, there has been a rapid deterioration in the distribution of household income and wealth with housing benefitting the higher income deciles most.

FIGURE 11: Rapid fall of aggregate consumption in China, 2001-2011



China’s investment-led growth model could be seen as an extreme version of Korea’s growth model during the 1970s and 1980s when aggregate consumption fell almost continuously from 75.5% of GDP in 1991 to

⁵¹ See the critique of the effects of present policies on China’s SMEs by Yasheng Huang (2008) *Capitalism with Chinese Characteristics. Entrepreneurship and the State*, Cambridge U. Press.

49.1% in 1988.⁵² In contrast with Korea's private *chaebols*, the role of the public sector enterprises and the hybrid public-private enterprises dominant in China. In China recently, housing stabilization policies have rapidly alternated between cooling measures and stimulus measures until 2009. The 2009 massive stimulus package of RMB¥ 4 trillion (US\$ 586 billion) was channeled through the state banks and disbursed extremely rapidly to state and hybrid corporations and played a large role in the V-shaped recovery of Asian economies by 2010. Unfortunately this credit surge turned strong housing booms in a number of major coastal cities into genuine bubbles.

The current stabilization program of China's central government has to fit the structure of the financial system and the intergovernmental structure. The tools being used include:

- Tighter monetary policy
- Stepwise increases in interest rates
- Tighter banking underwriting regulations on housing loans and lending to developers
- Administrative guidance to provincials and city governments
- Transaction taxes on speculative real estate investments.

(For a description of the components of China's stabilization framework, including the decision-making centers that are involved, see Annex A).

5.4 How proposed macro-prudential tools fit East Asian experiences?

Self-feeding expectations and excessive levels of leverage are at the heart of all real estate booms and busts. The GFC has been characterized by extraordinary level of leverage by lenders - especially in the unregulated shadow banking sector- interacting with very high levels of leverage in mortgage loans.

Motivated by the cyclical experiences of Western economies during the global housing boom and the housing meltdowns in the US, Ireland, Spain and other European countries, initial macro-prudential discussions by macroeconomists have focused their attention on the leading role of housing in the business cycle. They rightly point out that financial regulation is not macro-economically neutral, which the US financial deregulation age has amply demonstrated once again.⁵³ To cool down housing investment by households they focus on two policy tools as possible new "macro-prudential" tools: mortgage loan-to-value ratios (LTV) and household debt-to-income ratios (DTI).⁵⁴ East Asian experiences with these two tools show that taking the personal history of the patient before prescribing these two instability medicines will be essential to his/her recovery prospects. The clinical evidence in support of these tools is negative or inconclusive so far in East Asia. More clinical trials are required and experimental samples needs to be large enough. Also, what is the appropriate "rat model"?

5.4.1 Is housing always leading the business cycle?

⁵² Bertrand Renaud, "Compounding Financial Repression with Rigid Urban Regulations: Lessons of the Korean Housing Market," *Review of Urban and Regional Studies* 1, no. 1 (1989): 1–22.

⁵³ Olivier Blanchard, Giovanni Dell'Ariccia, and Paolo Mauro (2010) "Rethinking Macroeconomic Policy", IMF Staff Position Note, SPN/10/03 February 12, 2010. <http://www.imf.org/external/pubs/ft/spn/2010/spn1003.pdf>

⁵⁴ Christopher Crowe, Giovanni Dell'Ariccia, Deniz Igan, and Pau Rabanal (2011) "Policies for Macrofinancial Stability: Options to Deal with Real Estate Booms", IMF Staff Discussion Note SDN/11/02, February 25, 2011. <http://www.imf.org/external/pubs/ft/sdn/2011/sdn1102.pdf>

Most Western economists will automatically assume that the housing sector is a *leading* component of the business cycle. Edward Leamer's 2007 paper titled "Housing *is* the Cycle" is still fresh in the minds of most economists.⁵⁵ So, when considering the impact of housing on financial and macroeconomic stability, why is it that in Korea "housing is not a driver of GDP but is a follower of fluctuations in the wider economy"? If so, what are the regulatory and macro-prudential implications?⁵⁶

Why is the Korean case different? In an influential study of East Asian development experiences, Robert Wade analyses how East Asian governments managed their economies during their economic take-off and "governed the market."⁵⁷ In Korea, during the period of highest growth and fastest urbanization, the Korean government (GOK) actually micro-managed the housing sector. Making sense of the behavioral forces shaping the housing cycles today in Korea implies the challenging task of unraveling the net effects of occasionally conflicting actions by different ministries. A national review conducted in 2007 identified "59 major real estate policy packages introduced by the government between 1967 and 2007, with 31 of them being labeled as anti-speculative, 17 being market stimulus policy shifts, and 11 being low-income housing policies (e.g., expansion of rental housing)."⁵⁸ In the West, excluding post-communist European transition economies, the closest comparison to Korea is probably the Swedish housing system before its deregulation. Modeling the behavior of Sweden housing system before its liberalization defeated the skills of some of the finest urban economists of the era such as Alex Anas and his Swedish colleagues.

5.4.2 Use of LTV and DTI ratios does not work the same way across East Asia

Since the US subprime meltdown, macroeconomists have been focusing intensely on the impact of housing wealth on aggregate consumption and economic stability. Indeed, it stands to reason to focus on the largest component of GDP, which rose to its highest historical level in the US until the subprime bust. Housing wealth has two effects. The most difficult effect to measure robustly is the change in the willingness to consume, which could well be asymmetric between the boom and the bust phases of a cycle. The other effect is based on the rising collateral value of housing and the extent to which the banking system facilitates wealth extraction through loan refinancing and or a 'home-equity loan.' Most studies of Western economies so far show that the housing wealth effects tend to be larger than the stock market wealth effects. At the aggregate level, we expect the magnitude of the wealth effect to be affected by the percentage of homeowners in the country, the percentage of homeowners who own their unit debt-free, the rate of increase of housing prices, the rate of increase in the volume of trades, which is strongly procyclical, and the services offered by the financial system.

To address the leverage issue directly, international surveillance organizations like IMF have taken an interest in the use of loan-to-value ratio (LTV) and debt-to-equity ratios (DTI) as stabilization tools for macro-prudential purposes. In support, they cite the successful experiences of Hong Kong and Korea. These two cases are excellent illustrations of the critical importance of taking the personal history of these two patients to understand the effects of LTV and DTI medicines on them. The Hong Kong and Korea

⁵⁵ Edward E. Leamer, paper presented to the 2007 Symposium of the Kansas City Federal Reserve Bank on "Housing, Housing Finance and Monetary Policy". <http://www.kc.frb.org/publications/research/escp/escp-2007.cfm>

⁵⁶ Kyung-Hwan Kim (2004), "Housing and the Korean Economy" *Journal of Housing Economics*, V.13, Section 2.4 "Housing Investment and Macroeconomic Fluctuations."

⁵⁷ Robert Wade (1990) *Governing the Market: Economic Theory and the Role of Government in East Asian Industrialization*, Princeton U. Press <http://press.princeton.edu/titles/4724.html>

⁵⁸ Man CHO and Kyung-Hwan KIM (2011) "Housing Sector Reforms: Contrasting Reforms in the Real Sector and in Housing Finance", Final draft, OECD MRH project.

cases differ very significantly in their context and the outcomes. Neither case provides support nor contradicts the uses of LTV and DTI ratios in other contexts. It all depends on the specific economy.

In Hong Kong, the currency is pegged to the US dollar and therefore interest rates are driven by the US Federal Reserve not by local economic conditions. The banking system is private and the financial system is an international hub. Operating in a city state, local banks cannot diversify their risks geographically and their exposure to real estate is significant. Hong Kong banks are very well capitalized. A significant percentage of stock market capitalization consists of real estate shares.⁵⁹ An additional feature of the Hong Kong housing market is that housing 'pre-sales' play a major role in the private housing market. A well-known impact of Asian pre-sales is to make housing markets for new sales highly liquid and prices more volatile. From a straight prudential perspective, the use of LTV and DTI ratio has long made sense and these two ratios have been a banking regulatory tool for a long time. However, promoters of these two ratios for "macro-prudential" reasons should keep in mind that Hong Kong authorities could not stabilize housing prices during the strong bubble of the 1990s that burst in 1997 and affected housing prices for more than seven years. What the ratios achieved was to maintain the soundness of the banking system. Hong Kong did not experience a twin real estate and banking crisis.

Essential to understanding the social feasibility of using LTV and DTI ratios in Hong Kong is the division of the housing stock into two equal parts between public housing and private housing. These two vastly different subsystems interact along a complex and changing regulated boundary. What this means is that LTV and DTI ratios affect only the top half of the income distribution and do not cut off access to first-time home ownership for young households as they would do in other markets where the social share of housing is very much smaller than 50%. Finally, the Hong Kong land system is completely owned and controlled by the government that trades with a limited number of large developers through auctions. The typical underselling of land has been used by the authorities to stabilize real estate prices. The impact of this land system on the quality of economic growth in Hong Kong is beyond the scope of today's discussion.⁶⁰

In Korea the use of the two underwriting ratios has quite different origins from Hong Kong. This cannot be dissociated from the long history of significant, direct government interventions into the housing market mentioned earlier. The GOK has had a long history of direct intervention into housing finance. Korea pushed the concept of 'special housing finance circuits' to its limits. At the time of the AFC, in 1997, the combined market share of the government-owned Korea Housing Bank and the National Housing Fund (managed by KHB) was over 90%. The aggregate LTV ratio on the mortgage portfolio was 29%. Borrowers were from the middle and the upper-middle segment of society. Their equity contributions came from parents. Lending rates were below markets. KHB managed a long-waiting list with savings contracts that helped fund it below market loans. As should be expected, loan delinquencies were minimal. The depth of the mortgage market remained below 10% of GDP.

As Cho and Kim (2011) show there was a major regime change in mortgage finance as part of the overall financial sector liberalization that followed the 1997 AFC. But there was a minimum regime change in the housing market which remains heavily regulated by the central government through various means. LTV regulations on mortgage originations began in 2002 when an LTV ceiling of 60% applied to all

⁵⁹ This stock market feature was behind the notorious "double play" attack on the Hong Kong dollar peg by the global financial markets during the 1997 Asia crisis. The Hong Kong Monetary Authority successfully defeated the attack by stabilizing falling share prices through short-term stock purchases. This HKMA move was roundly criticized in the Western press by "efficient market" advocates verifying the old dictum that when one reads a financial article, s/he should always worry whether the writer is "talking his trading book" and/or lobbying for some group. See Chapter 10 in Andrew Sheng, *From Asian to Global to Financial Crisis*, 2009.

⁶⁰ However, see David Pilling, "Hong Kong's land system that time forgot", *Financial Times*, 10 March 2011.

properties. The rationale was only partly prudential in response to the rapidly growing competition among lenders and the total change in the types of loans and their riskiness. Another major dimension was the micromanagement of mortgage lending to achieve social and spatial objectives. The LTV rules compare in their degree of detail with the usual underwriting process of a private mortgage lender, but without reference to implied risks. The LTV rules applied to major loan characteristics, to the location of the property (including a set of 'speculation zones' determined by the GOK, not even by local governments), and to the type of lender. The DTI regulations appeared in 2004 initially as part of specific government efforts to promote the development of FRMs in order to permit 70% LTVs for borrowers these FRMs. Then the DTI rules quickly spread to all types of loans, borrowers, house collateral, and urban locations. It is noteworthy that the presidential administration in charge during the period 2003-2008 had among its explicit top policy priorities to achieve zero nominal in housing price growth.

There does not seem to have been any evaluation of the economic and social costs and benefits of the use of LTV and DTI ratios in Korea. Their benefits from a sector stability perspective do not seem to have been estimated either. One should note that the use of DTIs has not slowed down the rapid and continuous rise of mortgage debt and total household debt in Korea. Nor has it stopped the decline in household savings. Hong Kong mortgage lenders would probably ask why the GOK micromanages the entire loan underwriting process to such an extent that lenders lose sight of their true lending risks.

Could the use of LTV and DTI ratios spread within the East Asia region? To illustrate the diagnosis issues, consider Taiwan where housing prices continue to rise in 2011, in much contrast with Korea where housing prices are mostly flat, expectations of rising prices are low and the housing industry is considered in recession. Taiwan has a flexible, properly valued exchange rate. The banking system is local and still includes a number of publicly-owned banks. Until the 1980s lending for housing was restricted, this fuelled the rapid diffusion of presales for the purchase of housing. The home ownership rate today is very high at 88%. The reason for this high ownership rate lies in the favorable taxation of land and real estate under individual ownership. The land market is fully private with a widespread and dispersed ownership. It is regulated by an urban planning system that is structuring more than opposing markets. The social housing sector is minimal. The main driver of housing prices seems to be the continued public confidence in the housing market. Taiwanese experts wonder and worry about possible factors that could change and reverse expectations as seems to have happened in Korea after 2009. A case study of the likely impact LTV and DTI ratios in stabilizing housing prices in Taiwan would probably start with the study of the three main sources of credit flows into housing: the structure and growth of the mortgage market; the size and rate of growth of presales; and, much more difficult to measure, the net inflow of funds from Greater China into the high income segments of the housing markets. Are fund inflows from Greater China behind the strong performance of the Taipei while Kaohsiung housing prices are weak?

5.5 Market participants behavior and housing sector instability

Households, lenders and developers are the three main players in the housing market – to which one must add governments as a fourth player. How the different expectations and leverage behavior by - are at the core of housing price and new output instability. How the balance-sheets of these three actors behave during a boom and after a bust is key to understanding the power of the boom and how long the recovery from a bust is likely to take.⁶¹ By looking at behavioral issues for the three players in the housing market

⁶¹ Richard C. Koo *The Holy Grail of Macroeconomics. Lesson's from Japan's Great Recession*. 2009 John Wiley (Revised and updated). Richard Koo pioneered the analyses of 'balance-sheet recessions' in the case of Japan's 1991 real estate busts and the protracted recession that followed. His work was long ignored by US macroeconomists because concepts of balance-sheets and cash flows are alien to their analytical frameworks as Daniel Kohn's criticism suggests in the that opens the paper.

(plus one for governments) we can establish a realistic view of what the components of a housing stability framework should typically be. Making the housing system more resilient to shock would be based on the same list.

5.5.1 Household issues

Housing market instability is driven by homeowners. In East Asia current issues are:

- What differentiate expectations across households? What have trends in the user cost of housing?
- What explain the very high and still rising level of household debt? How large is mortgage debts in total household debt?
- How is household debt changing across income groups? How is it changing across age groups?
- In Korea, the price performance of the unique *chonsei* (or *jeonse*) system is best thought of as asset investment issue rather than as rental contract issue. The behavior of *chonsei* contracts is local-market dependent. Supporting the perspective of *chonsei* contracts as an asset reflecting homeownership decisions, in some markets the causal direction in pricechanges goes from *chonsei* price changes to housing price changes. This price behavior may not be uniform across markets.

5.5.2 Lender issues

- East Asian financial systems are bank based, not market based. Traditional regulatory and supervisory issues apply. Concerns with a large unregulated shadow banking system apply only to China. In other East Asian countries, market based interest rates have greatly shrunk the informal financial sector.
- The structure of the banking industry matters. Like in other markets, second-tier banks tend to take more risks. This is the segment of the market where actual lending policies may deviate the most from official internal lending standards.
- National banks in some systems have high loan-to-deposit ratios, which means dependence on wholesale funding, and possibly greater exposure to the global financial markets.
- The framework of mortgage lending regulations is country specific and the range of loan products approved by national regulators tends to be more conservative than in Western markets. LTV and DTI ratios practiced by lenders are conservative.
- Housing equity withdrawal loans are not approved.
- Prudential rules for non-residential real estate lending differ substantial across systems

5.5.3 Developer issues

- Tradable presales contracts to finance new housing construction are prevalent across Asia. Hong Kong has one of the most mature regulatory framework
- Research shows that presales are procyclical and increase price volatility

5.6 Early warning systems

This discussion of how to manage housing instability issues would not be complete without the briefest of reference to early warning systems. Since the Asia Financial Crisis central banks have been working on

early warning systems through what has now become the Financial Stability Board to which the GFC has additional momentum. The FSB has recently produced a consultative document on mortgage loan underwriting.⁶²

A fundamental difference between housing and other asset classes is that housing assets have two intrinsic and very distinct dimensions a financial dimension and a spatial dimension. The dynamic interactions between these two key dimensions are well explained by the DiPasquale-Wheaton conceptual framework. Early warning systems currently focus only on the financial dimension of real estate, which can lead to oversimplifications and lost opportunities to track the behavior of the sector. Both dimensions should be fully exploited.

6 CONCLUSION: ANALYTICAL RELEVANCE AND COORDINATION

The outline of a framework for housing stability exists. The components are known. However, two obstacles stand on the path of successful learning by doing: the analytical relevance of research and the ability of decision-makers to work together.

The years leading up to the global financial crisis show that macroeconomists, microeconomists, financial economists, and real estate economists have an uncanny propensity to ignore the best of each other's work. Yet, the most fruitful areas of progress are typically at the boundaries of different fields. Also, evidence-based modeling should be the only acceptable professional route to success. Macroeconomists need to develop a genuine understanding of heterogeneities in the real estate sector. Real estate economists need to gain much greater appreciation of the risk channels between real estate and the macroeconomy. Both macroeconomists and real estate economists must gain a better understanding of financial markets. Within their own field, real estate economists must also rebalance their interest between the financial dimensions of real estate and its spatial dimensions.

Isn't effective communication the key component of the new housing paradigm in our shifting environment of heightened risks? Two images come to mind. Most of us are familiar with the Buddhist parable of the blind men groping the elephant who misunderstand the nature and function of the different parts of the elephant's body each one is touching. Others speak of "the frog in its well" syndrome. How can a lonely frog sitting at the bottom of its deep well and seeing only a tiny piece of the sky make such big claims about the movements of the heavens? Why don't all these frogs climb out of their wells and share their limited individual knowledge?

The most immediate need is the development of housing data of quality, domestically and internationally, Housing market information is a public good, in contrast with data on income-producing real estate which investors are willing to pay for. Wrong data shape expectations just as much as good data.

ANNEX A

Measures adopted by Mainland China to curb property prices in 2010 and 2011 Q1

⁶² Financial Stability Board, *FSB Principles for Sound Residential Mortgage Underwriting Practices, Consultation Paper*, 26 October 2011. http://www.financialstabilityboard.org/publications/r_111026b.pdf

Date	Announced by	Measures
2010.1.7	The General Office of the State Council	The down payment ratio for second-time homebuyers should not be less than 40%.
2010.4.17	The State Council	<ol style="list-style-type: none"> 1. The down payment ratio for first-time homebuyers should not be less than 30%. 2. The down payment ratio for second-time homebuyers should not be less than 50% and the lending rate is not allowed to be less than 1.1 times the PBC benchmark lending rate. 3. Banks in areas with excessively rising house prices could suspend mortgage lending to third-time homebuyers. 4. Banks could suspend mortgage lending to non-resident citizens who fail to offer certificates which evidence payment of taxes or social insurance for one year or more.
2010.5.25	The Ministry of Finance of Mainland China	<ol style="list-style-type: none"> 1. Strengthen the collection of land value appreciation tax. 2. Raise pre-levy rate of land value appreciation tax. 3. The assessment-based levy rate of land value appreciation tax should not be lower than 5%, and forbid tax authorities taking assessment as major means for collection of land value appreciation tax.
2010.9.29	The People's Bank of China (PBC) The China Banking Regulatory Commission (CBRC)	<ol style="list-style-type: none"> 1. Suspend mortgage lending to third-time homebuyers. 2. Suspend mortgage lending to non-resident citizens who fail to offer certificates which evidence payment of taxes or social insurance for one year or more. 3. Restate that the down payment ratio for first-time homebuyers should not be less than 30%, for second-time homebuyers should not be less than 50% and the lending rate should not be less than 1.1 times the PBC benchmark lending rate.
2010.9.29	The Ministry of Finance of Mainland China	Starting 1 October 2010, cancel the personal income tax exemption for home-sellers who purchase another house within one year.
2010.11.4	The Ministry of Housing and Urban-Rural Development of Mainland China The State Administration of Foreign Exchange	<ol style="list-style-type: none"> 1. Offshore individuals are allowed to purchase only one residence to live in. 2. Offshore institutions that have branch or representative offices in Mainland China are only permitted to purchase properties for business use in cities where they are registered.
2011.1.26	The General Office of the State Council	<ol style="list-style-type: none"> 1. Homeowners who sell homes within five years of acquisition will be charged full transaction taxes. 2. Raise minimum down payment ratio for second-time homebuyers to 60% and restate that the lending rate should not be less than 1.1 times the PBC benchmark lending rate. The branches of the PBC may raise the aforementioned ratio and

(CONTINUED NEXT PAGE)

Measures adopted by Mainland China to curb property prices in 2010 and 2011 Q1

(END)

		<p>floor rate according to local government policy.</p> <p>3. Impose fines and withdraw land use rights from developers if they fail to obtain building construction licenses within two years. Real estate developers are not allowed to transfer underlying land or development items if their paid-in construction investments are less than 25% of the amount (excluding land price) of the project planned.</p> <p>4. Cities with surging or high house prices and large cities, such as municipalities, should implement house purchase limit policies. Suspend selling houses to residents who already owned two or more houses, nonresidents who already owned one or more houses or nonresidents who fail to offer certificates which evidence payment of taxes or social insurance.</p>
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Source: CBC staff summary.

Source: Central Bank of the Republic of China (Taiwan), *Financial Stability Report* May 2011, Issue No. 5 pages 24-25.