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Forewords

Foreword by the World Economic Forum

Real estate markets have become more international, particularly commercial real estate, which accounts for a substantial proportion of the total real estate market. The global flows of foreign investment may make local markets more susceptible to real asset volatility. Even though speculative bubbles show certain commonalities, no single definition and no unanimously accepted single root cause of their development exist. However, it is commonly agreed that underlying mechanisms, such as self-reinforcing feedback loops and groupthink dynamics, lead to property prices well above the level justified by market fundamentals. The development of a speculative bubble can be described as a “social epidemic of enthusiasm” in which increasing asset prices create further excitement, which in turn attracts more investors.

After the financial crisis of 2007-2008, economists have turned their attention to what they truly know about real asset cycles, since market volatility cannot be explained by models of purely rational choice. Policy-makers are currently reconsidering whether major cycles or bubbles can or should be managed in the public interest.

In the first year of the initiative, we tried to understand better the underlying mechanisms of asset pricing and the root causes of asset bubbles, and to investigate leading theories on how to identify and detect emerging cycles. With support from case studies, lessons were taken from history, and the impact of highly volatile markets with boom and bust cycles were assessed. Facilitated by the World Economic Forum, the Advisory Committee focused their multistakeholder discussions with central bankers, academia and business leaders on how asset volatility can be moderated and its consequences limited. Based on the recent findings, some initial industry recommendations on how policies and strategies might contain and mitigate negative consequences of asset price volatility were developed and are presented herein.

This report is a direct result of a cooperative process with leaders from government, civil society and the private sector, in particular the real estate and financial services industries, as well as investors. In this regard, we would like to thank and acknowledge the Forum's Partner companies that served on this initiative's Steering Committee: JLL, Colliers International, Dalian Wanda Group, Rajesh Wadhawan Group, WS Atkins, Bilfinger, RMZ Corp., Emaar Properties, Pine River Capital Management, The Perot Companies, Newmark Grubb Knight Frank, BlackRock and Pearson. We would like to specially acknowledge Colin Dyer, President and Chief Executive Officer, JLL, for his relentless interest and commitment to serve as the Chair of the initiative, as well as David Rees, Regional Director and Head of Research, JLL Australia, and the global JLL team

Foreword by the Reserve Bank of Australia

In its first year after launch, the Emerging Horizons on Real Estate – Asset Price Dynamics Initiative extraordinarily supported by stakeholders from business, academia and central banks successfully published two key reports: The first report, Profiles, Prescriptions and Proposals, provides a general analysis of the asset price dynamics topic from real estate perspective and concludes with initial high-level industry recommendations. The second report, Executive Case Studies, assembles case studies which describe real asset bubbles around the globe and attempts to extract lessons for the future.

The case study collection represents a valuable evidence base that can inform policy-makers' understanding of property markets. Many of the studies show how these markets can exacerbate episodes of economic and financial instability. Taken as a collection, they provide a welcome counter to the recent tendency in some quarters to view all risks and instability through the prism of the recent US housing meltdown. In particular, some of the case studies underline that commercial real estate – especially of office property – is if anything more prone to painful busts than residential real estate.

Among the reasons for this are that times to build are longer, so supply overhangs are more likely to build up. It is also more feasible for foreign capital flows to end up in commercial real estate than in a diffusely held housing sector.

Boom-bust dynamics typically develop in a situation of over-exuberant expectations about an asset class where purchases can be made with leverage. The special wrinkle added in the case of real estate markets is that, being a physical asset, its supply response to price signals is inherently sluggish. Cycles in real estate can persist for many years, and can appear (at least at first glance) completely justifiable by fundamentals, right up until the turning point. Within this broad outline, many factors contribute to the build-up of these cycles. This suggests that many different policy responses may be helpful in reducing the risk of a painful bust, at least to some degree. The question is whether it is sufficient to break one link in the chain of causality, or whether many policy responses must work in concert to lean against various risk factors.

One lesson that can be drawn from this collection of case studies is that national institutional details matter. Indeed, institutional settings that have been regarded as sources of vulnerability in some cases can be sources of stability in others, depending on the context. For example, restrictions on building are seen as exacerbating the 1970s cycle in office property in the United Kingdom, but more recently in Ireland, tighter restrictions might have helped to prevent the geographic misallocation of construction activity. Similarly, the use of fixed-rate loans is regarded as stabilizing in German-speaking countries, whereas in Australia the prevalence of variable-rate mortgages is seen as stabilizing because it encourages rapid amortization, beyond what the loan contract requires.

Many of the boom-bust episodes were sparked, at least in part, by financial deregulation. Freed of past quantitative restrictions, banks eased their lending standards and expanded credit beyond levels that could be reasonably serviced once the market turned down. But this shift necessarily only happens once. It remains to be seen if these episodes could repeat themselves in the same countries. Yet memories fade, and the lax lending standards that characterized some of the boom phases described in this collection have re-emerged in some cases. The stance of prudential supervision seems to be important here, in that

Foreword by the Bank of Finland

A sound real estate sector is an important part of a national economy. Although the market for real estate assets has become increasingly global, there are significant differences in the way the sector is organized, managed, and financed between countries. The recent financial crisis that started from the US subprime market was a painful reminder for global investors of the importance of studying and bearing such differences in mind. Being a representative of a country which has experienced the negative consequences of booming real estate prices and the subsequent crash, I regard this initiative on Asset Price Dynamics as highly important.

Why is the real estate sector and the related financing so often at the epicentre of financial crises? A historical comparison of asset booms and crashes suggests that the economic downturns following real estate busts are larger and they last longer than other downturns, making the economic costs of excessive real estate cycles more severe than other asset price cycles.

An unsustainable build-up of real estate prices is often a sum of many factors. The seeds of a financial crisis are typically sown during a bank lending boom under conditions of generous liquidity. Bank balance sheets grow rapidly. Because it is relatively easy for banks to scale up real estate related lending, this is the sector in which excessive liquidity, seeking new investment opportunities, typically ends up.¹ During the boom, the rise in real estate prices provides seemingly good collateral for further lending. Unfortunately, lending standards tend to weaken in the process and the marginal productivity of new real estate investments starts to decline.

Moreover, appreciation of the collateral values contributes to the growth of indebtedness in the system. Increased indebtedness raises the overall systemic risks as the shock-absorbing ability becomes reduced. Typically, the financial system vulnerability is further aggravated by the fact that banks' balance sheet growth is increasingly funded by short-term liabilities. As a result, the interlinked developments in real estate markets and bank balance sheets are crucial for financial stability and are, hence, of primary concern for financial authorities.

Although there are differences in the causes of real estate cycles, there are also observable similarities. A look back in history reveals some information concerning the most hazardous combinations of causes that often lead to unsustainable price developments. The similarities in the conditions preceding real estate bubbles can provide valuable early warning indications of potential risky developments and build-up of fragilities.

This initiative makes an important contribution to the discussion concerning the various underlying mechanisms and root causes of bubbles. It also serves as a valuable contribution concerning the discussion of optimal policy responses against overheating prices. The report underlines the fact that optimal tools and responses should always be chosen according to their strength to mitigate the underlying root causes behind rising prices. The purpose of the policy tools is to tackle the causes, not the symptoms of problems.

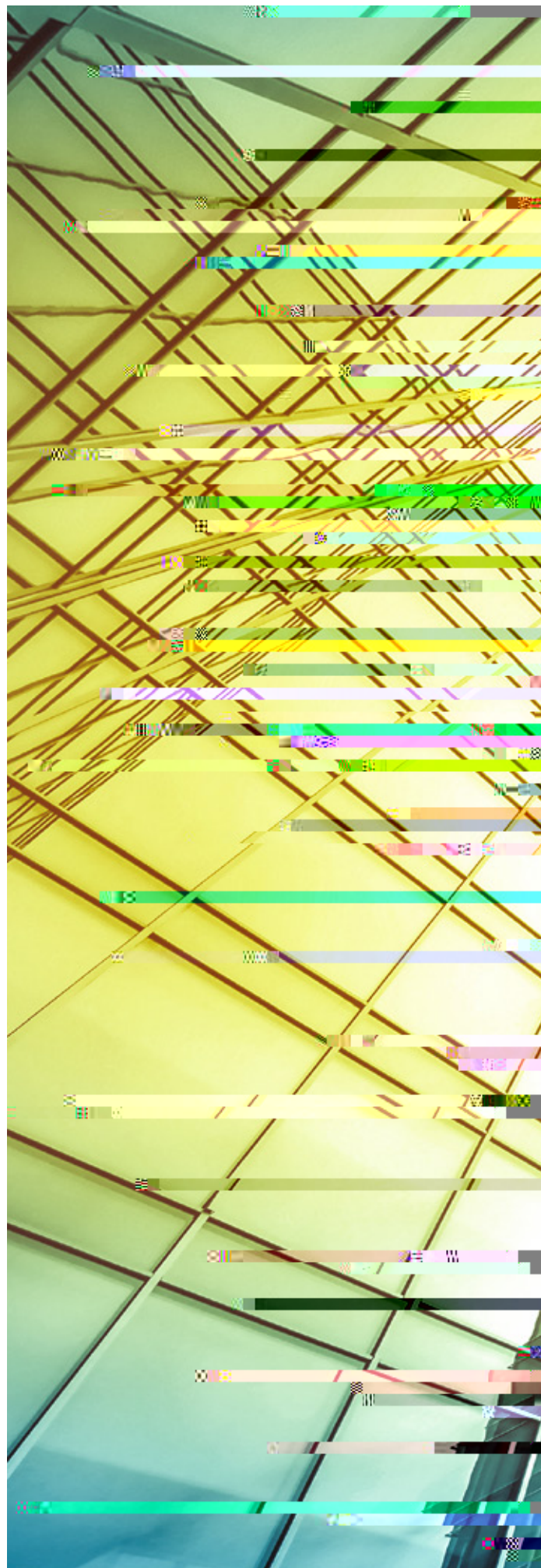
Concerning central banks, monetary policy has been largely concerned with real estate sector developments because of the ways in which it may affect general price stability. The intensified focus on financial stability has raised the need to develop additional policy instruments to address multiple policy targets. As a result, central banks and regulators around the world are adopting new macroprudential tools to account for time-varying risks in the financial system and to curb excessive credit cycles. The aim is also to increase the resilience of systemically important market participants by building up buffers in stable times. These tools include counter-cyclical capital requirements for banks and restrictions on loan-to-value ratios for mortgage borrowers.

The global financial crisis demonstrated the significant role of the shadow banking sector and, therefore, work is also under way to better understand risks of this sector. From the policy perspective, particular challenges are posed in cases in which credit cycles and increases in indebtedness are originated outside the banking system. Our ability to mitigate such cycles with current tools is weak. More research will be needed to guide the development and calibration of the new policy tools and to find optimal combinations of different policies.

Contributors

Project Team

Charles Goodhart, Professor, London School of Economics; Member (1997-2000), Monetary Policy Committee, Bank of England
John Mulcahy, Member of the Board, Iput, Chief Executive Of cer (2002-2010), JLL Ireland; Head (2010-2012), Portfolio Management, NAMA;
Stijn van Nieuwerburgh, Professor of Finance, Leonard N. Stern School of Business, New York University
Susan Wachter, Worley Professor of Financial Management, Wharton University
Warwick McKibbin, Professor of Economics, Australian National University; non-Resident Senior Fellow, Brookings Institution; Member of the Board (2001-2011), Reserve Bank of Australia
Nicholas Scarles, Chairman, Real Estate Finance Group, UK; Group Finance Director, Grosvenor
Kiyohiko Nishimura, Professor, School of Economics, University of Tokyo; Deputy Governor (2008-2013), Bank of Japan,
Venkatesh Panchapagesan, Professor of Finance and Head, IIMB-Century Real Estate Research Initiative, Indian Institute of Management (IIM), Bangalore
Olivier Steimer, Vice-President, Bank Council, Swiss National Bank; Chairman, Foundation Board, Swiss Finance Institute (SFI)
João da Rocha Lima Jr, Professor of Real Estate, Head Real Estate Research Group, Universidade de São Paulo, EPUSP



Executive Summary: Initial Recommendations

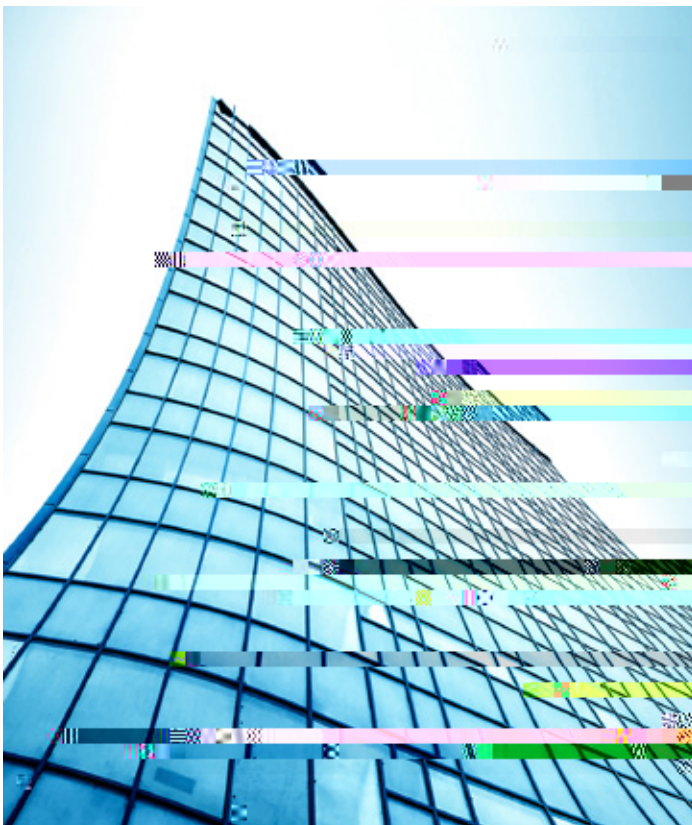
1. Market data: Regulatory authorities will work with the real estate industry to deliver robust and timely market data, analysis and information, including data related to the financing of real estate investment and development, noting the global and national initiatives already under way.
2. Transparency and understanding: National and international authorities should adopt targets for delivering enhanced transparency and understanding, broadly defined, across real estate markets and related markets for securities and derivatives.
3. External policy impacts: The real estate industry

The real estate sector is the focus of this report.

The purpose is to provide a platform for discussion and to chart a path towards policy recommendations, including the development of tools that may help to provide early warnings of future potential boom or bust cycles.

The desired outcome is that a wide range of interested parties – central bankers, real estate managers and investors, market regulators, financiers and academics – will contribute to a better understanding of the machinery and management of real estate asset cycles.

Better tools of analysis, consistent and timely data at a global, national and sector level, and improved market transparency will allow policy-makers and participants in real estate markets to implement policies at the global and national level, as well as strategies at the individual entity and investor level. This may limit the frequency and the impact of asset price cycles, reducing their immediate and longer-term economic and social costs.



2. Asset Market Bubbles: Definitions and Decisions

Debate about the definition of an asset bubble often precedes discussion about underlying causes. Even if agreement could be reached on an all-purpose definition of an asset market bubble, identifying the early stages of a bubble and then applying appropriate policy measures remains challenging and controversial.

These preliminaries, however, are necessary precisely because policy tools that enable regulators to manage market cycles, such as “early warning indicators”, can only proceed from a robust platform of diagnosis and analysis of the causes of market cycles?

Kindleberger has compiled a history of volatility in financial, real estate and commodity markets. The latest edition lists 47 financial crises (from 1618 to 2008) comprising 20 different assets or asset classes. Reinhart and Rogoff have identified banking crises in high-income countries in 28 of the 99 years between 1802 and 1900⁵.

Analysis of market cycles has spawned many descriptions of a “typical” asset bubble. The Minsky cycle⁶, which starts with an exogenous shock (or “displacement”), is widely quoted.

The typical Minsky-Kindleberger cycle comprises five stages:

- Displacement: alters relative prices or profit opportunities in at least one important sector of the economy
- Boom: is fuelled by the expansion of credit that presses against the productive capacity of the economy, resulting in rising prices and profits
- Euphoria or “overtrading”: involves buying assets for resale at higher prices, rather than for their investment income
- Profit-taking or “revulsion”: occurs as knowledgeable insiders sell assets to newly arrived “outsiders”
- Panic: is precipitated either by a single event or a more gradual realization that stock prices cannot go higher; the process of liquidating stocks becomes a stampede

Many other explanations for asset market cycles have been proposed. Kumhof, Ranciere and Winant address the similarities between the last two major economic crises, the Great Depression of 1929 and the Great Recession of 2008, and find causality in the rise in income inequality and a consequent increase in debt-to-income ratios⁷.

How does real estate feature in these historical analyses?

Real estate emerges as a prominent participant, if not a regular primary source of volatility, in financial markets, and also in cycles in the real economy. “Real estate bubbles may occur without banking crises. And banking crises may occur without real estate bubbles. But the two phenomena are correlated in a remarkable number of instances ...”⁸ While real estate figures in many market crises, debt is widely identified as a critical ingredient: “If there is one common theme to the vast range of crises we consider ... it is that excessive debt accumulation ... often poses greater systemic risks than it seems during a boom.”⁹

Time horizons, however, are important. Shiller finds that residential real estate is a comparatively recent arrival on the financial volatility scene: “We have found relatively little talk about anything that could be considered national bubbles in home prices until the last decades of the twentieth century.”¹⁰ In the cycles listed by Kindleberger, commercial real estate (of office buildings) is named for the first time in 1874. Despite its relatively late arrival, “in the 20th century most of the manias and bubbles have centred on real estate and stocks”.¹¹

As the accompanying case studies reveal,² real estate market cycles have often been the unintended result of shocks elsewhere in the national or global economy, as the Minsky “displacement” model anticipates – an observation with implications for policy recommendations.³

Other explanations for asset market cycles come from a range of disciplines; these particularly concern the increasingly transparent frontier between economics and psychology. For example:

Psychology provides a range of insights, such as the Asch experiment,¹⁴ which illustrates the power of group opinion to influence individuals’ choices, while the assumption of a marketplace comprising always rational and always alert decision-makers has been widely challenged.⁵ For example, money illusion can be shown to account for rising house prices in an inflationary market, if investors fail to distinguish between nominal and real interest rates.⁶

Game theory offers many insights; for example, in a small market, individually rational decisions to develop office buildings can result in collective oversupply. The “tragedy of the commons” parable⁷ and accompanying historical evidence highlight how inappropriate, or inexact, property-rights arrangements can generate adverse outcomes in a society of self-interested but uncoordinated actors.

Stochastic models built around the diffusion of epidemics, news and rumours illustrate a range of factors that can determine whether a specific item of information (accurate or inaccurate) will acquire enough momentum to generate a market-moving response.¹⁸

Herding theories emphasize the role of group behaviour under a range of different assumptions. Shiller proposes that investment managers do not investigate all available opportunities because they are constrained by time and resources.¹⁹ They might observe other managers and conclude that their decisions are based on solid private information, or they might simply be “inattentive”.

Agency problems emerge in a range of contexts²¹ to explain why specific incentive structures can lead rational decision-makers to produce suboptimal outcomes for their clients, as in the following examples:

- Compensation arrangements reward portfolio managers based on relative rather than absolute performance.
- Limited liability creates asymmetrical reward structures that encourage risk-taking by institutional investors.
- Conflicts of interest can emerge when ratings agencies are remunerated by issuers of, rather than investors in, securities. Advisers or consultants remunerated on the basis of turnover, and irrespective of long-term investment returns, may have a preference for liquid assets with low transaction costs and continuous price disclosure (such as REITs), rather than illiquid physical real estate assets.

Theories on information asymmetry address the opacity intrinsic to real estate and credit markets, and some contributions challenge the view that improved market transparency is a necessary requirement for limiting market panics or crises.²²

What are the costs of information asymmetry in real estate markets?

4. Policy Challenges and Complexities

While real estate market cycles impose economic and social costs, so too do most macroeconomic or macroprudential countercyclical policy options. Moreover, real estate market cycles also deliver benefits, such as creating long-duration physical assets and employment. Therefore, even the correct identification of an impending bubble is not a sufficient condition for an activist response from regulatory or monetary authorities. The timing of a policy response is also critical to its effectiveness.^{27,28}

For policy-makers, an alternative and pragmatic approach to the definitional problem of asset bubbles is to approach the question in a different way. For example, is something occurring that seems increasingly likely to be a misalignment, and that carries an attendant risk of creating instability when a realignment occurs? Assuming the answer is yes, the next step is to determine the appropriate course of action or, indeed, inaction. Strategic responses are seldom immediately obvious, and some may even be counter-intuitive.

The net costs arising from policy responses, along a spectrum ranging from aggressive pre-emptive action to total passivity, are what matters. For example:

- Even if it can be shown (or is suspected) that low-interest-rate settings have stimulated an impending cycle of escalating prices, a rise in interest rates will not necessarily reverse the process. Responses to policy settings may not be symmetrical. Path dependency or “lock-in” is a potential problem; to use a medical analogy: smoking causes lung cancer, but cessation is not a cure for lung cancer. Once the process of speculation starts, raising interest rates may be of limited benefit, or rates may have to be raised so high that the broader economic cost – in terms of lost output, rising unemployment and economic recession – exceeds the likely cost of the bubble.³⁰
- Nor is it obvious that, once started, the least-cost policy option is to slow down or smooth the bubble. For example, if a bubble’s costs are a function of its duration (as might be the case in real estate, where supply responds to rising prices with a lag), then the least-cost policy might be to encourage the bubble to burst as quickly as possible. Whether the optimal response is tighter monetary policy, which may reduce the amplitude of the bubble but extend its duration, or looser monetary policy that encourages it to blow up more quickly, is embedded in the stochastic process that describes the bubble.³¹

- Advisories and public warnings are low-cost ways for monetary and regulatory authorities to influence markets, but potential feedback problems can emerge. Aside from the obvious question of whether monetary authorities’ judgement on asset pricing is superior to that of market participants, statements may elicit perverse responses. For example:
 - a. Successful intervention may not be repeatable. Suppose a central bank warns of an “impending” bubble; the warning is effective and the market subsides. Because no bubble existed, the market interprets this as just another case of the central bank “crying wolf” (a Type 1 error)³². When a similar set of circumstances emerges again, the market ignores the warning.
 - b. A cautionary statement of an “impending” bubble precipitates a rush to sell, inaugurating a crash that otherwise would not have happened (a Type 2 error)³³; alternatively, the warning may actually encourage buyers on the basis that values, while ambitious, are not yet dangerously inflated.^{34a}

Another approach is to accept that it is impossible to predict when a property market will crash and that calling the top

preliminarily argues about the value of risk for
 In all, it is difficult to predict when a crash is likely to occur, and it is difficult to predict when a market will crash and that calling the top

- Adverse selection problems may arise in volatile markets where vendors are urgent sellers. An entity under pressure to liquidate a portfolio can be expected to hold on to prized assets, disposing of those less favoured first. Since vendors can be expected to have superior information about their own assets to the market in general, intending purchasers may apply an additional discount to their valuations.

While a wide range of indicators can be identified as candidates for an active macroprudential policy, such as a countercyclical capital surcharge, and for a cross-section capital surcharge to address network risk;⁴³ Goodhart suggests, as a practical approach, that a macroprudential authority should focus on “between two and four such indicators”, for example:

- (a) A rate of growth of (bank) credit which is significantly faster than average, and above its normal trend relationship to nominal incomes.
- (b) A rate of growth of housing (and property) prices which is significantly faster than normal and above its normal trend relationship with incomes.
- (c) A rate of growth of leverage, among the various sectors of the economy which is significantly faster than usual and above its normal trend relationship with incomes.⁴⁴

Resolving the inherent tension between rules and discretion for macroprudential policy-makers will require dexterity; “any rule might need to be quite simple, and may need to be accompanied by the use of judgement to make robust policy choices. While those arguments point to the importance of a macroprudential regime being flexible, flexibility and discretion would not, however, be costless.⁴⁵

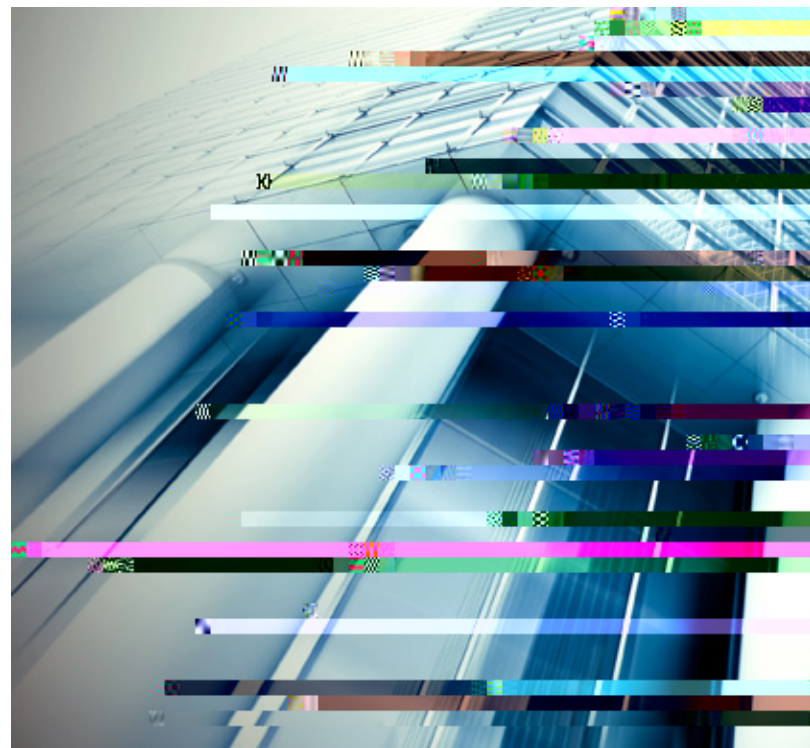
But regulators are themselves subject to political and commercial pressures, and for them, too, information is incomplete and costly.⁴⁶ Goodhart addresses this problem by “the adoption of a set of ‘presumptive indicators’, which, when triggered, require the [regulator] either to comply with remedial action, or to explain, in public, why there is no need to do so”.⁴⁷

5. Winners and Losers: Measuring the Costs of Real Estate Market Volatility

Market cycles redistribute wealth and divert economic resources. Both are matters of concern, although the outcomes are neither inevitably adverse, nor necessarily a call to action for policy-makers. Market cycles generate winners and losers who, at times, are the same people. Overall, this can reflect an element of a zero-sum game. In the case of, say, the dot-com boom/bust cycle (1995-2002), while spectacular increases in wealth were sometimes followed by sharp declines, the adverse impact on economic resource allocation may have been relatively small. Do the long-term benefits of the dot-com boom that persist – in investment and the innovation of information technology – perhaps now exceed the short-term costs of the 2001-2002 stock market “bust”?

Aside from equity considerations, wealth redistribution does matter when household balance sheets or business confidence is affected, because this flows on to broader economic drivers, such as consumer spending, business investment, employment and economic growth. These are demand-side effects, to which residential real estate markets are particularly prone. For example, in a cross-national study of 19 countries, Hofmann and Goodhart showed that “housing price fluctuations are considerably more closely related to subsequent variations in real output than are either exchange rates or equity prices”.⁴⁸

Important and long-term costs also emerge on the supply side, if physical resource misallocation manifests itself as empty office buildings or ghost housing estates.⁴⁹ As for credit markets: “An increase in activity and asset value in one sector, such as mortgage lending, may crowd out resources from other sectors and activities, such as borrowing and investment by commercial firms.”⁵⁰ Given the time lags inherent in many real estate supply functions,



and the assets' long lifespan, costs on the supply side are likely to be particularly concerning for real estate cycles. A comparison of equity- and residential-market downturns suggests that the economic costs of residential market busts are about twice as large as those of equity market busts, and the downturns last twice as long⁵¹

Not only is the misallocation of resources in real estate markets potentially large and long lasting, but it may be decades before a national accounting of the balance of a construction boom's costs and benefits can be drawn up. Many of the case studies (ref. Executive Case Studies report, January 2015) describe a sequence of events that reveals a mismatch between demand and supply, leading to price and value volatility and an aftermath of high vacancy rates. This evidence of resource misallocation is suggestive, but ultimately not conclusive.

If capital or land is temporarily cheap, for example, it might be efficient to over-build and "warehouse" the excess stock until demand conditions improve. High levels of vacancy in commercial or residential markets suggest, but do not prove, a misallocation of productive resources.^{52a} Assessment of the costs and benefits arising from any particular cycle demands a retrospective, discounted cash flow analysis.

Acting as they must in real time, policy-makers and market regulators do not, and never will, have the luxury of this information. But some guidance on the broad parameters involved in assessing the costs (and benefits) of real estate cycles is nevertheless relevant to informed policy prescriptions.

From the policy perspective, the costs worth imposing to reverse or limit a market cycle must be assessed against the costs of not doing so; thus, policy-makers need more information on the costs and benefits of different types of real estate bubbles, as well as the costs of policies aimed at limiting their impact. Included in this analysis would be an assessment of the probability, and the potential costs, of contagion.

6. Next Steps: Information and Further Understanding Required

- Accurate historical and real-time market information and data are prerequisites. They are needed if regulators and policy-makers, as well as decision-makers within the real estate sector itself, are to assess, anticipate and, if appropriate, take action to pre-empt or limit real estate market cycles.^{52b} Accurate and consistent data are particularly sparse in non-residential real estate markets, and the process of compiling data and analysis is costly and requires a commitment of resources over an extended time period.⁵³ Timely data would also assist in implementing post-bubble damage limitation and recovery policies. In a globalizing market, contagion is unlikely to be confined to national boundaries. At the international level, a number of initiatives to address data availability are currently under way⁵⁴
- Early warning indicators are an important ingredient in the policy-makers' arsenal. The case studies illustrate how frequently real estate cycles are initiated by shocks from other sectors or other countries (such as deregulation of the banking sector, commodity price booms and changes to foreign tax regimes). "Policymakers need clear and reliable signals indicating when to 'worry' and when to take action ..."⁵⁵

An early warning system is likely to select from a broad menu of market indicators, including but not limited to⁵⁶

- a) Physical market metrics
 - Market values (inflation-adjusted) vs historical benchmarks
 - Yields and yield spreads to real bond rates vs historical benchmarks
 - Transaction volumes and trends
 - Vacancy rates and take-up rates
 - Development pipelines as a percentage of market size
 -

c) Capital market metrics

- Credit growth broadly defined and related to specific markets
- Measures and specific locations (by location and market sector) of loan default and financial stress
- Capital flows (domestic and cross-border)
- Loan expiry profiles
- Cost of debt, credit spreads and swap rates vs historical benchmarks
- Sources of debt finance – domestic banks, offshore banks and public debt markets
- Profile of loan-to-value ratios by market and age of loan
- Loan-to-a cycle insensitive market value ratios^{68a}

The selection of appropriate early warning indicators will inevitably vary across individual markets, according to regulatory and financial structure and the availability of data.

The development of early warning indicators is already the focus of considerable effort.^{68a} However, early warning devices need to be embedded in an effective policy framework:

The most significant hurdle in establishing an effective and credible early warning system, however, is not the design of a systemic framework that is capable of producing relatively reliable signals of distress from the various indicators in a timely manner. The greatest barrier to success is the well-entrenched tendency of policy-makers and market participants to treat the signals as irrelevant archaic residuals of an outdated framework, assuming that old rules of valuation no longer apply.⁶⁹

- Analysis of the costs (and benefits) of asset market cycles is essential for informed decision-making. The impact of alternative policy options is also an important consideration. More needs to be known about the short- and long-term costs and benefits of real estate bubbles, as well as the costs and benefits of alternative policies, to guide policy-makers and regulators on whether and how to address or ignore impending bubbles. Market cycle costs and accompanying policy measures are also relevant for real estate industry participants because they are likely to bear these costs.

Without information on costs and benefits of alternative policies, regulators are severely handicapped, and even an effective early warning system offers limited policy guidance. *Primum non nocere* (first, do no harm) is advice that applies to market regulators and physicians. Eliminating asset price volatility is neither the ideal nor the desired outcome, because such volatility is how markets send signals. However, mitigating the impact of market cycles and reducing the impact of false signals can be pursued.

A useful cost-benefit analysis of real estate cycles is likely to be sector- and country-specific, and will provide no more than general guidance of short- and long-term costs and benefits; nevertheless, it remains an important contribution to successful policy implementation.

- Microeconomic factors can influence price and market behaviour. A better understanding is needed of the impact on market dynamics of specific market features, such as lease duration, rent review conditions, and procedures for home mortgage defaults. Residential market structures and ownership profiles in particular vary between countries. These differences can provide a fruitful basis for analysis; why did housing markets within Eurozone countries, for example, behave so differently between 2008 and 2012?
- Financial market regulation and derivatives can play important roles. Growth in the volume and complexity of financial instruments related to real estate is widely seen as a key contributor to the boom in asset prices that preceded the global financial crisis. However, financial instruments, appropriately designed and prudently managed, have an important role to play in mitigating risk and lubricating activity, particularly in relatively illiquid markets such as real estate. How restrictions on “short selling” and limited-liability incentive structures contribute to market volatility merits investigation.
- Public-sector policies impact on real estate. The impact of a range of such policies that potentially increase market risk and volatility at international, country and local levels also needs to be better understood; for example:
 - a) Urban planning policies, which potentially drive up land and, therefore, asset prices, leading to larger mortgages for investors and homeowners, as well as higher levels of financial leverage for lending institutions.
 - b) Taxes on transactions, which reduce market liquidity and limit the usefulness of prices, capitalization rates and rents as market-signalling mechanisms.
 - c) Policies that retard supply responses, such as

– The globalization of real estate markets has

4. Information clearing house (“hub”): A platform should be established for tracking and communicating significant new policies and recent research to senior decision-makers in the real estate, banking and finance sectors, and to public-sector policy-makers.

Specific areas of focus might be:

- The economic costs and benefits of alternative policy options, as applied to real estate sectors
- Developments in derivative markets and their impact on real estate
- Global and national reform of the banking sectors and the impact on real estate
- The impact of microeconomic factors, such as planning regimes, bankruptcy processes and consumer protection legislation, on real estate market volatility.

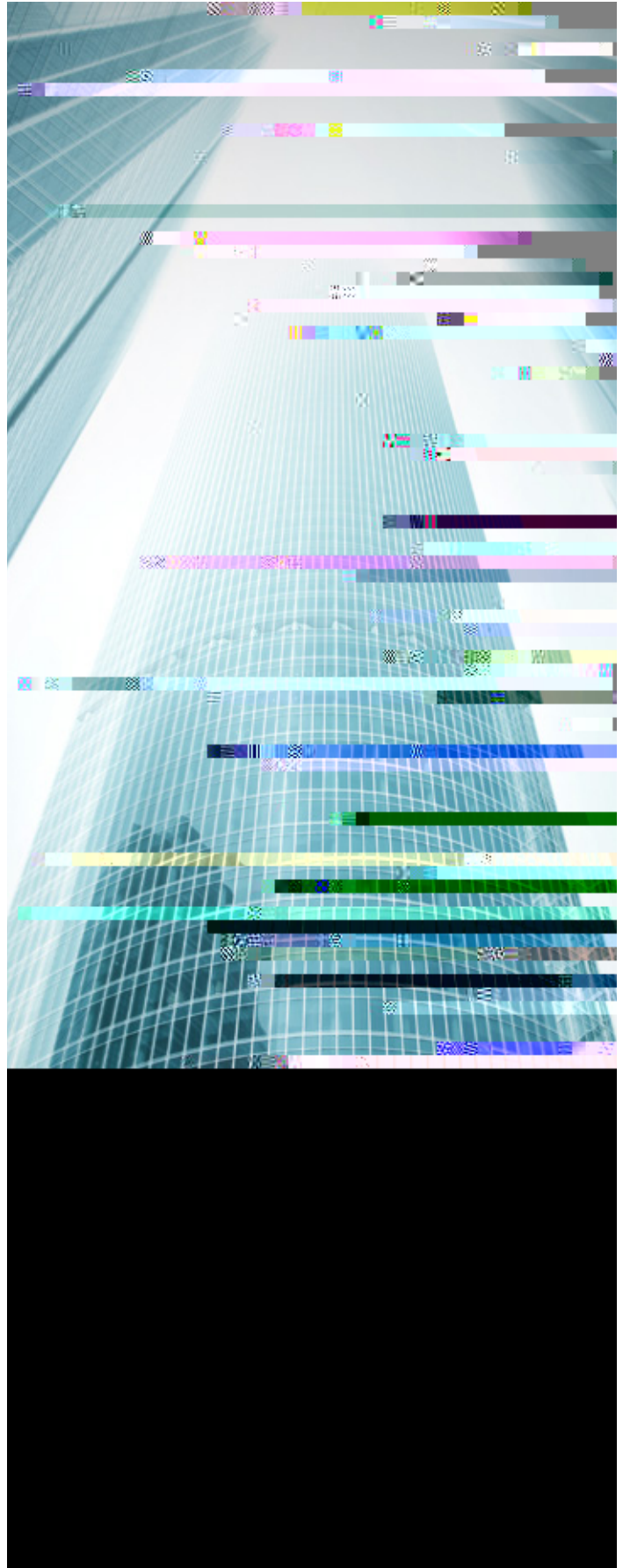
Rationale:

Many organizations at the international and national level are engaged in analysing and applying the policy lessons of the global financial crisis. Initiatives to improve real estate market data are well advanced. New regulations for banks and derivative markets are in the pipeline. Many early warning indicators and macroprudential strategies have been proposed. These initiatives all have implications for real estate and the related sectors (e.g. finance, construction, building materials, legal) that contribute to it. Senior decision-makers in the public and private sectors are challenged to be kept informed of these developments. The World Economic Forum can provide a valuable platform for synthesizing and communicating these developments, and in facilitating high-level communication between the real estate sector and bankers, policy-makers and regulators.

5. Emerging markets: Specific policy options are required by EMEs; the World Economic Forum should provide its convening platform for addressing specific issues arising from asset price volatility in EMEs.

Rationale:

In many EMEs, regulatory institutions are embryonic, data is often limited, capital markets are illiquid and transparency is low. The range of policy options is therefore narrow, and early warning systems are constrained. However, such markets are often where substantial benefits in asset values and capital flows are available, under well-structured policy implementation; and, where economic growth, and therefore the underlying demand for real estate assets, is strong.



47. Goodhart (2011), op. cit., p. 2.
48. Goodhart, in Hunter et al. (2003), op. cit., pp. 473-4.
49. “... I believe that the most important issues are not the impact of asset prices on aggregate demand but the impact of asset prices on aggregate supply.” McKibbin, W., “Discussion”, in Asset Prices and Monetary Policy: Proceedings of a Conference, Reserve Bank of Australia, 2003, p. 101.
50. Chakraborty, I.; Goldstein, I.; and MacKinlay, A., 2013. Do Asset Price Bubbles Have Negative Real Effects?, mimeo, p. 2.
51. IMF (2003), op. cit., pp. 61-95; and, “... during 1970-2002, even though housing price busts involved much smaller price declines [than equity busts], they were associated with output effects that were about twice as large as those of equity price busts”, pp. 68-69.
- 52a. See, for example, Hutt, W.H., 1939. The Theory of Idle Resources, London: Jonathan Cape.
- 52b. See Real Estate Finance Group 2014. A Vision for Real Estate Finance in the UK. Recommendations for reducing the risk of damage to the financial system from the next commercial real estate market crash. Recommendation 1 (loan database). https://www.ipf.org.uk/home/vision_for_real_estate_finance/default.aspx
53. Borio (2012), op. cit., p. 4.
54. For example, the Group of 20 Data Gaps initiative, launched in April 2009, resulted in a joint project of the Financial Stability Board and the IMF, in cooperation with Eurostat, which published the Residential Property Prices Indices Handbook in April 2013. A companion volume, a handbook on commercial property price indices, is scheduled for publication in early 2015. See also Borio, C. (2013), op. cit.
55. IMF, 2013. Key Aspects of Macroprudential Policy, p. 19.
56. See also Reinhart and Rogoff, op. cit., Table 17.1, for suggested early warning indicators of banking and currency crises.
57. It should be noted, however, that some convenient ratios are also susceptible to misinterpretation: “... conventional metrics for assessing pricing in the housing market such as price-to-rent ratios or price-to-income ratios generally fail to reflect accurately the state of housing costs”. Himmelberg, C.; Mayer, C.; and Sinai, T., 2005. “Assessing High House Prices: Bubbles, Fundamentals and Misconceptions”, in Journal of Economic Perspectives, Vol. 19(4), pp. 67-92; p. 2.
- 58a. See Real Estate Finance Group 2014. A Vision for Real Estate Finance in the UK. Recommendations for reducing the risk of damage to the financial system from the next commercial real estate market crash. Recommendation 4 (use of long-term value measures for risk management), pp 23-30. https://www.ipf.org.uk/home/vision_for_real_estate_finance/default.aspx
- 58b. For example: Alessi, L. and Detken, C., 2009. ‘Real Time’ Early Warning Indicators for Costly Asset Price Boom/Bust Cycles: A Role for Global Liquidity, European Central Bank, Working Paper Series, No. 1039; Dreger, C. and Kholodilin, K., 2011. “Speculative Bubble on Housing Markets: Elements of an Early Warning System”, in DIW Economic Bulletin, No.4; Bierut, B. 2013. Global liquidity as an early warning indicator of asset price booms: G5 versus broader measures, De Nederlandsche Bank Working Paper, No. 377 (JLL 1e).
59. Reinhart and Rogoff, op. cit., Chapter 17.
60. Analyses of specific episodes and markets are already available (e.g. Chakraborty et al. [2013]). The literature in this area is fragmentary, however, and it is not clear what general conclusions can be drawn from analysis of specific episodes. For example, “bailout costs vary markedly across studies, depending on the methodology, and vary even more across time, depending on the length of the horizon used to calculate the fiscal impact of the crisis ...” (Reinhart and Rogoff, op. cit.).
61. Although in the case of a boom/bust cycle, a rapid supply response to temporary price rises can have the perverse impact of increasing the subsequent oversupply when the market turns down; see the Sand States case study.
62. Shleifer and Vishny, op. cit., p. 30.
63. Lizieri, C., 2009. Towers of Capital: Office Markets & International Financial Services, Oxford: Wiley-Blackwell, p. 259.

