

RESEARCH ARTICLE

Monetary policy for emerging market economies: beyond inflation targeting

Benjamin M. Friedman*

Department of Economics, Harvard University, Cambridge, MA, USA

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Monetary policymakers normally seek to achieve multiple objectives: for prices as well as real economic activity, sometimes for the composition of real activity as well as the aggregate, and often for aspects of the economy's international balance. The fact that monetary policy has only one basic instrument to use therefore creates both complexity and tensions among these objectives. Although inflation targeting represents a way of imposing a logical consistency on monetary policy, in the presence of multiple policy objectives inflation targeting undermines policy transparency and therefore makes accountability more difficult too. Because of the limitation of monetary policy's having only one instrument, but multiple objectives, fiscal policy and prudential supervision and regulation of financial institutions are also important for enabling emerging market economies to achieve their macroeconomic aims.

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Throughout much of the developing world, both monetary policy and the macroeconomic conditions for which monetary policy is in part responsible have shown a significant, indeed historic, improvement during the past decade and more. In the wake of the Asian financial crisis of the late 1990s (which also engulfed some economies far from Asia), many central banks thought they faced a choice between firmly fixing their exchange rate, thereby foregoing any attempt at an independent monetary policy, and resolutely hands-off floating, which allowed monetary policy to be independent but only by foregoing any influence over the exchange rate at all. Today evidence based on actual central bank behaviour suggests that the 'empty middle of the spectrum' is in fact well populated. The difference is partly due to the enormous increase in many developing countries' holdings of international reserves – for example, from \$21 billion to \$166 billion in India, from \$19 billion to \$73 billion in Mexico and from \$12 billion to \$284 billion in Russia, between 1996 and 2006.¹ But part of the story as well has been, in one country after another, the imposition of a more focused, more rational and more analytically disciplined approach to monetary policy-making. In some developing economies – nearly a dozen and a half at last count, including the 'transition economies' in Eastern Europe – this change in turn has involved the adoption of one or another form of inflation targeting. But inflation

*Email: bfriedman@harvard.edu

targeting is hardly the whole story either, since countries that have not adopted this specific form of monetary policy-making (India is a leading example) have likewise been part of the more general improvement.

At the same time, macroeconomic performance has also improved. For the decade 1987–96, ending just before the strains of the Asian financial crisis occurred, the average rate of consumer price increase among countries that the International Monetary Fund designates as ‘emerging market and developing countries’ was 56.6% per annum. For 1997–2001, the average was 9.4%, and for 2002–2006 it was just 5.6%. But while output and employment suffered in many of these economies during the actual years of disinflation (and, of course, during the financial crisis), since then most have returned to robust growth. Among the same group of developing economies, after-inflation economic growth during 1987–96 averaged 3.9% per annum. The comparable growth rate was 4.5% during 1997–2001, and 7.0% during 2002–2006. Moreover, the year-to-year volatility of both inflation and real economic growth has declined as well.²

Because of their huge populations, together with the prevalence of poverty there several decades ago, this strong economic growth performance has been especially important in China and India. They are the two main reasons why the number of people living in poverty worldwide, while still far too high, is nonetheless falling rapidly. In 1985 China’s per capita income, measured in 2005 Purchasing Power Parity (PPP) dollars, was \$1300, while India’s was \$1500. But since then China has achieved an average increase of 8.4% per annum, maintained fairly steadily throughout the period, and in 2005 Chinese per capita income (again on a PPP basis) was \$6600. India had a slower start. Growth there began to accelerate in the 1980s, but in an unbalanced form that proved unsustainable. After a near halt at the end of the decade, however, and then a series of reforms in the early 1990s, India’s growth pace has steadily increased, within the past few years approaching China’s. In 2005 Indian per capita income was \$3500.³

Progress in hand is not ground for complacency, however, and especially in the context of the challenges of economic development a number of key questions surrounding the making of monetary policy remain. One concerns the objectives that monetary policy-makers should seek to achieve. A second – which, despite the label, is relevant even if policy-makers seek to achieve objectives beyond just the inflation rate – is whether inflation targeting is the best way to go about making monetary policy. (A broader way to pose this question is in terms of the usefulness, or lack thereof, of monetary policy rules more generally.) A third, despite the rediscovery of the middle ground between pure currency pegs and pure floating, is what role the exchange rate should play in monetary policy.

And it is also important to recognize the limits of monetary policy: not just in order to foster a more realistic assessment of what monetary policy can accomplish, but to highlight the other important tools of public policy that also potentially bear on the ability to achieve macroeconomic objectives. The need for a sound fiscal policy, and the analytical connections between monetary and fiscal policies, are already well understood. The relationship between monetary policy and financial regulation and supervision has received less attention (perhaps because advocates of inflation targeting and other rule-based approaches to monetary policy-making are often hostile to government interference with the conduct of private-sector profit-seeking activity), but it too is potentially a significant factor in enabling a developing economy to achieve its macroeconomic aims.

What objectives should monetary policy seek to achieve?

The purpose of any economic policy is to advance a nation's economic well-being, meaning the prosperity of its citizens and the vitality of the institutions through which they participate in economic activity, both in the present and for the future. Whether working men and women are able to make a living, whether the businesses that they own and at which they work can earn a profit and invest adequately for future growth, and whether the banks and other financial institutions on which both individuals and businesses rely can survive in the face of the risk-taking that is central to their reason for existing, are all fundamental aspects of that well-being. In settings in which most citizens' standard of living is low compared to international norms, as is true in any 'developing' economy, achieving growth of output and incomes is a particular priority.

In recent years many central banks, mindful of the significant problems that rapid and even explosive price inflation has brought in the not very distant past, have placed price stability at or near the top of their objectives for monetary policy. Some central banks have, for all practical purposes, made achieving and maintaining low inflation their only monetary policy objective. Experience shows that rising (or falling) prices can and sometimes do undermine the efficient functioning of economic activity, so that price stability is certainly a key desideratum in just this regard. But price stability is instrumental, valued not for itself but for how it enhances an economy's capacity to achieve those goals that, even if they are not genuinely primary from the perspective of basic human concerns, are at least instrumental at a higher level. The idea that economic policy should pursue price stability as a means of promoting more fundamental economic well-being, either currently or in the future, is not ground for pursuing price stability at the expense, much less to the exclusion, of that more fundamental economic well-being.

If monetary policy were unable to exert influence over real outcomes in any more direct way, but were able nonetheless to influence the evolution of prices, then – from the perspective of how to conduct monetary policy, though not more generally – promoting fundamental economic well-being and pursuing price stability would amount to the same objective. But today the debate over whether monetary policy is 'neutral' with respect to real economic outcomes seems largely an episode from the discipline's past, perhaps worth recalling for whatever insights into subsidiary matters it may have provided along the way but not a serious challenge on the core question that was at issue. Few economists, and certainly few business people, market investors, or even ordinary citizens who concern themselves with economic affairs, believe that actions taken by the central bank have no impact on output, or employment, or asset values. Hence it is not legitimate to duck the question of whether and how monetary policy *should* seek to affect real outcomes by subsuming that question within the larger one of whether monetary policy *can* do so. Both theory and evidence indicate that, in developing and mature economies alike, monetary policy can affect output, employment and other quantitative aspects of non-financial economic activity over at least some significant period of time.⁴ The relevant question is in what way it should seek to do so.

Merely pointing to generic 'real outcomes' does not constitute a constructive normative position either, however. Individual citizens are, and have a right to be, concerned with many facets of the economic environment in which they live: their income levels, their employment prospects, their ability to start a business or borrow to purchase a new home, just to name a few. From an aggregate perspective, yet further aspects of an economy's actual and prospective situation are plausibly of concern to public policy-makers: the levels of production and employment in relation to 'full-employment'

benchmarks, the economy's international balances, its investment rate, among others. In economies where average living standards are low, rapid aggregate growth is a prime objective. Even when these disparate measures of economic activity are positively correlated (which they are not under all circumstances), the relationships are far from perfect. Hence some view of which real objectives policy-makers should be seeking to achieve – along with price stability – is important.

The composition of economic activity also matters as soon as the purview of policy becomes forward-looking. Among economies that have already reached industrial, or even post-industrial status, physical capital formation is plausibly secondary to advances in intangible technology as an engine of further growth in productivity and therefore per capita output. In the developing world, however, not only is capital formation *per se* important – including private-sector production facilities such as factories as well as key elements of infrastructure like highways, airports and power plants – but much of the ability to import and implement new intangible technology likewise depends on installing new physical capital.

It is a mistake to believe that no investment ever takes place apart from government initiative. At any point in time, individuals' economic well-being hinges largely on how much they are consuming, but both individuals and the economy in the aggregate have good reason to consume less than all of current production in order to invest in future productive capacity. To the extent that such forward-looking expenditures involve debt financing (or, equivalently, to the extent that required equity returns vary with interest rates), monetary policy has the ability to affect private economic agents' willingness and ability to undertake productive investment – indeed, judging from historical experience, greater ability to affect the pace of their investment than their consumption.

Importantly, however, monetary policy actions (say, variations in whatever interest rate the central bank is setting) that affect investment also affect aggregate output and employment, as well as economywide price setting, and only by coincidence would the policy stance consistent with any given investment rate be identical to that consistent with what is optimal on more aggregative grounds. Only in conjunction with some other policy instrument, therefore – most obviously fiscal policy – is it plausible to entertain distinct policy objectives with respect to both aggregate output and the investment–consumption mix within that aggregate.

The same argument applies to exchange rates and the economy's international imbalance, as the last decade's discussion of the supposed choice between a pure peg and a pure float highlighted. Especially in the developing world, where economies are often subject to supply shocks in specific markets in which their exports compete, and are often dependent on investment from abroad to achieve goals for investment and growth (and, to put the matter bluntly, where most countries lack 'clout' in international financial politics), there are ample cogent reasons for policy-makers to be concerned with the relationship between exports and imports, and in parallel between capital outflows and capital inflows.

Considerations of exchange rate management have long been a central focus of attention in the developing world.⁵ Part of this discussion concerns long-run economic objectives: should a country keep its exchange rate low, to help promote its exports abroad and encourage its nascent import-competitive industries at home? Or high, in order to resist inflation and (implicitly) tax its economy's export sector? Part too concerns shorter-run issues, typically the desire to cushion supply shocks in the economy's key export markets, or shocks to the economy's terms of trade more broadly. One important lesson is that practically every case of sustained high growth in a developing economy in recent

decades – Taiwan, South Korea, Chile, China – has come in conjunction with an exchange rate that is undervalued by conventional measures.

Capital flows are an important element of this equation also. Foreign capital inflows can fund a higher physical investment rate than an economy could otherwise manage on its own. In the case of direct investment, the fact that any given project is undertaken by a foreign firm often makes it a vehicle for potentially valuable technology transfer. Even portfolio investment sometimes brings exposure to new ways of thinking and new forms of management. As the Asian financial crisis once again demonstrated, however, such inflows carry risks as well. Further, over time the accumulation of an ever larger overall net debtor position requires the devotion of an increasing share of national income to servicing the resulting obligations.

Some developing countries, most notably China, face the opposite situation. China has benefited enormously from foreign investment, but Chinese imports remain sufficiently below exports that the resulting balance of payments surplus finances a large excess of investment abroad over foreign investment at home. China has therefore accumulated a massive stock of foreign exchange reserves (more than \$1 trillion worth as of 2006). From a long-run perspective, this strategy amounts to pre-funding the outflow that will inevitably occur once China removes the capital controls that prevent Chinese citizens from investing freely abroad. But in the meanwhile, managing the ever larger stocks of reserves – in other words, foreign-denominated and foreign-domiciled assets – presents challenges of its own.

Here too, however, the monetary policy actions that affect the relationship of imports and exports, and the net balance of capital inflows and capital outflows, are the same as the monetary policy actions that affect aggregate output and employment. Only in conjunction with a second policy instrument – again most obviously fiscal policy (as in the classic model due to Mundell and Fleming), but in this case also a vast array of potential restrictions on capital flows – is it plausible for the central bank to entertain independent objectives with respect to the nation's foreign trade and investment balances.

Finally, as the Asian financial crisis showed in a particularly dramatic way, monetary policy-makers in developing countries also have sound reasons for seeking to maintain the vitality of financial institutions and the functioning of financial markets. Nor, for that matter, is this aim limited to developing economies. The US Federal Reserve System, for example, was created as a direct response to a series of banking crises (in 1901, 1907 and 1913, and before that in the nineteenth century also) that not only shut down much of the nation's financial system but spilled over to impair the non-financial economy as well. The visible sign of that motivation was the new central bank's charge to 'provide an elastic currency'. The USA is no longer a developing economy in the familiar sense, but the Federal Reserve continues to take financial stability as part of its mission along with macroeconomic stability. The Asian financial crisis, the decade and more of stagnation in Japan following the end of that country's run-up of prices for real estate and equity, and most recently the collapse of the market for 'sub-prime' mortgages in the USA, all clearly demonstrated how the impairment of a country's banking system can interrupt the credit creation process, destroy asset values, and otherwise impede the ability of households and firms to carry out their ordinary economic affairs.

What is less clear is what efficacy monetary policy per se has with respect to financial soundness. To be sure, because of the leveraged positions that most financial institutions normally take, simple reductions in market interest rates can help to shore up balance sheets, and sometimes even ensure survival, when adverse price movements for particular assets place some institutions in jeopardy. But policy-makers' main goal is (or at least

should be) to prevent crises from happening in the first place. For this purpose, more specialized policy instruments like bank capital requirements, or prudential regulation and supervision, or margin requirements on the purchase and holding of specific assets, are what mostly matter. Here too, therefore, monetary policy can be effective for these objectives only in conjunction with other policy tools.

Is inflation targeting the best way to achieve these objectives?

Concluding that monetary policy can, indeed should, pursue multiple objectives – for the economy's rate of price inflation, for the level and rate of growth of aggregate economic activity, in some settings for the investment rate and perhaps also the exchange rate and the economy's international balance, not to mention issues of financial stability – is easy enough. But under most countries' institutional arrangements (and, behind those, the fundamental logic of how monetary policy works in a market economy), monetary policy has only one instrument: typically either a short-term interest rate or the level or rate of growth of some measure of the central bank's liabilities, or under a pegging policy the country's exchange rate. Even apart from the inability to predict future economic developments in a setting in which the influence of policy is subject to time lags, therefore, monetary policy cannot be expected to achieve desired paths for all of the numerous dimensions of economic activity that policy-makers rightly seek to affect. Barring some special coincidence, the best that policy-makers with only one instrument at their disposal can achieve is to keep the economy on the path that represents the optimal compromise among their diverse objectives.⁶ Considerations of uncertainty only make matters more difficult.

In recent years many central banks, both in the developing world and among already mature economies, have addressed this tension between multiple objectives and their unitary monetary policy instrument by resort to 'inflation targeting'. Beginning with Chile in 1991, then Korea in 1998, both Mexico and Brazil in 1999 and Thailand in 2000 (in each case in response to the Asian financial crisis), and continuing on with the Philippines, Peru, Indonesia, Turkey and others as well, many developing countries have chosen to adopt some variant of this path for their monetary policies. So too have many of the 'transition economies' in Eastern Europe, beginning with the Czech Republic (in 1998), and now also including Hungary, Romania and the Slovak Republic.

Although the forms of inflation-targeting strategies for monetary policy are many and varied, in current usage of the term the two essential components are (1) the clear public statement of what rate of price increase policy-makers are seeking to achieve over some medium- to long-run horizon, in practice typically stated in terms of a target range, and (2) the formulation, in internal central bank discussion as well as statements to the public, of the economic trajectory intended to follow from the chosen monetary policy in terms of the implied path for inflation. One immediate virtue of this policy rubric, as is the case with most rules-based regimes, is that it imposes a logic and rationality on a country's monetary policy-making process and thereby presumably helps to avoid large errors. An economy with an inflation-targeting monetary policy is unlikely to suffer hyperinflation, or an economic crisis with deep and widespread loss of output in the process of ending that inflation experience. Especially in the developing world – recall the average 56.6% per annum inflation during 1987–96 (182.3% among developing countries in the Western hemisphere) – assurance of merely avoiding first-magnitude mistakes is clearly of some value. Whether that lesson remains to be learned, however, well into the new century, is less clear. And if not, then the question that arises is how the many other objectives that are also valid for a developing economy fit into an inflation-targeting regime.

In principle, as many advocates of inflation targeting have emphasized, this way of conducting monetary policy need not imply that the chosen inflation rate is policy-makers' sole objective.⁷ As Tinbergen explained long ago, the number of economic variables sufficient to express the economic trajectory sought by any economic policy normally equals the number of independent instrument variables policy-makers are using.⁸ Hence with only one instrument – again, a short-term interest rate, or the quantity or rate of change of central bank liabilities, or the exchange rate – monetary policy-makers can always describe their intended economic trajectory with only one variable. The appeal of doing so by means of inflation (or prices), rather than some real variable like output or employment, or the economy's growth rate, rests on the presumption that in the long run monetary policy is neutral with respect to those real outcomes, which ultimately depend only on factors such as endowments, preferences and technologies. Hence by choosing inflation for this purpose, policy-makers are focusing on a variable that monetary policy can influence over not just the medium horizon but the long run as well.

This implication of the Tinbergen principle is most explicit in the inflation-targeting framework developed in recent years by Lars Svensson, in which policy-makers frame their decision in terms of how rapidly to bring inflation back to the desired rate after some departure from it:⁹ given policy objectives for both inflation and output/employment (the only two variables for which policy-makers have objectives in Svensson's typical model, although the logic is easily extendable to more), the length of the interval over which policy-makers should optimally seek to return inflation to the publicly declared target range depends on the weight that they place on their inflation objective relative to that on their output/employment objective. For a given short-run cost of disinflation in terms of unemployment and foregone output, the greater is the weight on real outcomes the more slowly monetary policy would optimally seek to return inflation to the target range, and vice versa.

Advocates of inflation targeting, both within central banks and among academic researchers, frequently ground the argument in favour of this way of conducting monetary policy in considerations of transparency and accountability: telling the public which single variable to associate with monetary policy, and also the numerical target at which the central bank is aiming for that variable, makes clear what policy-makers are trying to achieve. When the aim of policy is well known and the results straightforward to monitor, it is also possible for both higher authorities and the public to hold policy-makers accountable for their success or failure. Transparency of the central bank's policy is presumably helpful in that it reduces the uncertainty that financial market participants, as well as households and firms more generally, face in carrying out their respective economic plans, thereby making the economy as a whole more efficient. Further, especially when the objective is low and stable inflation, transparency of that particular objective also helps to anchor the public's inflation expectations, thereby reducing the real economic costs associated with combating any unexpected increase under circumstances (such as are commonly assumed in today's 'new Keynesian' economic framework) in which price-setting behaviour at any point in time depends not only on real economic activity relative to full-employment benchmarks but also on expectations of future inflation.¹⁰ Accountability of policy-makers for the efficacy of their decisions and actions is plainly part of what constitutes effective democracy.

The argument for the greater transparency of the inflation-targeting strategy fails, however – and with it the argument for the consequently greater accountability of monetary policy – when policy-makers have objectives for output or employment, or the economy's investment rate, or its external balance, or for that matter any other aspect of

economic activity other than the stated price target. Formulating and describing policy-makers' intended economic trajectory in terms of inflation alone need not imply that they have no objectives apart from that for inflation, but nor does it preclude their having such a univariate objective. The essential question is whether monetary policy-makers have objectives for other aspects of their economy, or not.

If they do – if, for example, policy-makers in a developing country are actively seeking to increase the economy's investment rate, or to raise or lower the exchange rate to offset a recent shock to the economy's terms of trade, or to keep the exchange rate systematically low in order to foster export-led economic growth – then inflation targeting is more likely to undermine transparency of monetary policy than to promote it. The chief reason is that under inflation targeting policy-makers normally reveal to the public only one of these multiple objectives: that for inflation. If the public knew (and were able to use) the economic model on which policy-makers rely in evaluating potential actions, whoever is interested could infer what path for output, or employment, or the investment rate, or the exchange rate, or any other variable of interest would be expected to accompany the targeted inflation trajectory. But few central banks disclose this information, including those that follow inflation-targeting strategies. Moreover, policy-makers in many central banks do not rely on a single economic model for these purposes anyway, and this is especially likely to be the case in developing countries where both the internal structure of the economy (often with a significant 'informal' sector) and the external exposure to hard-to-model supply shocks in key export markets make such models inherently less reliable to begin with. Inflation-targeting central banks also rarely if ever quantify for the public, or often even for themselves, the relative importance that they attach to their objectives for inflation and for these other aspects of economic activity.

Indeed, many inflation-targeting central banks at least appear to go to some effort *not* to reveal such aspects of their policy-making to the public. An increasingly common practice, for example, following the initial lead of the Bank of England, is to issue at regular intervals a detailed monetary policy report, but to call it an 'Inflation Report' – as if inflation were the only aspect of economic activity of concern to monetary policy. Similarly, many inflation-targeting central banks, in the public explanation that they provide of the rationale underlying their monetary policy strategy, avoid any reference to the possibility of tension, even in the short run, between their inflation objective and any real outcome.¹¹ In light of the presumed favourable consequences for short-run inflation-output trade-offs that ensue from keeping expectations of future inflation anchored at a low level, as is explicit in the standard New Keynesian representation of price-setting behaviour, the incentive for policy-makers to downplay or even conceal their objectives for other economic outcomes is clear. (Even so, the by now voluminous empirical literature seeking to establish the benefits of inflation targeting in terms of an improved short-run output-inflation trade-off, or some other aspect of measurable economic performance, has led to only mixed results.¹²) But doing so hardly contributes to the transparency of their policy.

The same considerations also undermine the argument for inflation targeting on grounds of promoting the accountability of monetary policy. If policy-makers have objectives for both inflation and other economic outcomes, but disclose only their inflation objective, then higher authorities as well as the general body politic can hold them accountable in an explicit way at most for their success or failure in meeting their inflation objective; the rest must rely on inference and guesswork. To be sure, if those other aspects of economic activity are obviously at variance with any reasonable set of objectives, presumably everyone would understand that the central bank had failed to execute its

responsibilities and hold it accountable. But the same is true under other ways of conducting monetary policy too. The debate over the potential contribution of inflation targeting to enhancing the accountability of monetary policy is, to repeat, about more than simply avoiding first-magnitude errors.

The other possibility, of course, is that policy-makers may not have objectives for real outcomes, but instead may actually direct their policy solely toward the achievement of the stated rate of inflation. An inflation-targeting central bank is not necessarily concerned with inflation alone, but there is no reason that this cannot be the case. If it is, then an inflation-targeting policy is fully transparent, and the standard consequences argued for accountability obtain as well. In this situation, however, monetary policy-makers would be foregoing their capacity to seek, within the capacities of the instrument at their disposal, to influence the other aspects of economic activity that also matter for achieving the objectives of public policy.

Indeed, one interpretation of the movement toward inflation targeting among so many of the world's central banks (and, perhaps even more so, among academic researchers who advocate this policy rubric) is that this is precisely the state of policy-making that inflation targeting is intended to bring about over time. A plausible consequence of constraining the discussion of monetary policy to be carried out entirely in terms of an optimal inflation trajectory is that, in time, objectives for other aspects of the economy will atrophy, or even disappear from policy-makers' purview altogether. This eventuality may ensue not only because the language and analytical framework within which discussion takes place naturally shapes what is discussed, but also because – exactly as the argument for accountability assumes – policy-makers inevitably take more seriously those aspects of their responsibilities for which they expect to be held accountable. Disclosing only the inflation objective, when in fact policy-makers have objectives for inflation as well as other economic outcomes, biases the relative importance that they will attach to these respective objectives by fostering their accountability for inflation and not for the other outcomes. In time, the objectives for other aspects of the economy will devolve into a rhetorical fiction.

The limits of monetary policy

With multiple economic objectives, but only one policy instrument by which the central bank is able to pursue them, the need to buttress monetary policy with other aspects of economic policy is straightforward. To begin, the role of fiscal policy in this regard – in particular the bearing of an economy's monetary–fiscal policy mix on its investment rate, its exchange rate and its international balance – is by now well understood at the analytical level. But especially when it comes to practical matters of exchange rates in developing economies, just what to do in this regard is hardly obvious. In principle, maintaining a responsible fiscal policy should enable a country to run an easier monetary policy, with lower interest rates and a consequently higher investment rate, together with a lower exchange rate that is likely to be conducive to faster economic growth. Sometimes a developing country that rights a fiscal imbalance instead experiences an increase in confidence among international investors, and hence a temporary *appreciation* of its exchange rate that leads to surging consumption, weaker exports and slower growth, with more risk of instability if the resulting international imbalance is unsustainable. But over time, the goal of a lower – in this context, more competitive – exchange rate is best achieved with a structural surplus in the country's fiscal balance.

The potential role of financial regulation and supervision is less widely understood. Well functioning financial markets are a vital ingredient to economic development. It is no

accident that today the label often used to refer to those developing economies that actually are developing is 'emerging markets' – meaning not just markets for imported goods but for financial assets. The record of severe fluctuations that have interrupted economic growth in developing countries around the world, most recently the Asian financial crisis of 1997–99, amply illustrates the powerful non-financial effects of financial crises. Moreover, even in the absence of actual crises, the fear of such events has often led to debilitating problems of capital flight.

The importance of a healthy financial system goes well beyond the need to avoid crises, however. Financial markets play a crucial role in guiding the allocation of scarce resources. Indeed, that is their fundamental economic function. At the most aggregated level, financial influences acting on savers (typically individuals) and investors (often mostly businesses) are powerful determinants of how much an economy consumes out of its current output and how much it devotes to building its stock of productive capital. In economies that are significantly open to international capital flows, financial forces also in part govern a country's ability to draw on foreign saving to invest in excess of its own saving out of current domestic output. Influences that operate in the financial system are also important at less aggregative levels. Whether an economy's capital formation is for business or residential use, and which industries grow and which stagnate within the business sector, are also outcomes determined in major part in financial markets.

The reason a smoothly functioning financial system is so important in this context is that the resources being allocated are scarce. After all, what distinguishes a developing economy from one with an already high per capita income is not just the level of output but also the resources – not merely natural resources, but human and physical resources too – available to be brought to bear on production. A saving–investment allocation different from the optimum either forces current consumers to sacrifice excessively, or overly favours consumption today at the expense of subsequent opportunities. Even within a given investment total, inefficient allocation at the sectoral or industrial level is equivalent to a smaller amount of total investment allocated efficiently. Such inefficient allocations in general both lower output levels today and impair growth in the future.

This importance of efficient allocation of capital resources is especially apparent in the context of rapid economic development involving high rates of capital formation and therefore large sacrifices in terms of current consumption possibilities. With very high rates of saving and investment, as is the case in many of today's developing economies (especially in Asia), even a modest loss of efficiency in investment allocations means a sizeable sacrifice of combined private plus public consumption. Put the other way around, a comparable gain in allocative efficiency would facilitate a significant acceleration in effective capital formation, and hence allow significantly more rapid economic development, at no additional cost in terms of sacrificed consumption by a population that is not consuming all that much to begin with.

Because the allocations determined by unadulterated market forces do not necessarily constitute optimal outcomes – externalities are familiar in both mature economies and developing ones – most governments systematically interfere with market allocation processes. Often, however, economic considerations seem to play a subsidiary role in such interventions. Further, as economic development proceeds the ability of any central authority adequately to guide resource allocation weakens. Decisions that are straightforward to handle at a central level in more primitive economic contexts become problematic, if not impossible, to deal with in this way in more advanced systems. Given the information-processing advantages inherent in decentralized market processes,

development of the financial system typically proceeds in step with real economic development.

This development of financial systems usually exhibits several familiar features: markets evolve an increasing number of distinct financial institutions serving specialized functions. Ownership of key financial institutions passes from the public (or semi-public) to the private sector. And the arrangement of the growing share of individual credit transactions becomes sufficiently standardized to take place at least in part in securities markets rather than private loan markets. Each of these developments usually serves to enhance the financial system's ability to absorb and process relevant information from disparate sources, and therefore enhances the average efficiency of the resource allocations determined via the financial system. But these developments also increase the need for effective regulation and supervision of institutions that are increasingly specialized and privately owned, and likewise increase the need for regulation of transactions that are increasingly securitized.

Extreme cases like the Asian financial crisis – in which some countries' financial institutions created near-catastrophic consequences both for themselves and for their economies by regular and widespread use of practices that any sound regulatory and supervisory system would preclude – amply show how financial crises can disrupt non-financial economic activity. But even when no actual failures occur, the self-protective actions that other market participants take in anticipation of the risk created by such practices can distort market outcomes in ways that prevent efficient resource allocation. Even apart from the obvious need to prevent crises, therefore, maintaining confidence in the integrity of both credit institutions and credit instruments is itself a valuable public good. The role of financial regulation and supervision is to provide that confidence. Waiting until a crisis occurs and then looking to monetary policy to solve the problem leads to second-best outcomes at most. Looking to monetary policy to maintain ongoing confidence in an economy's credit institutions and credit instruments is to ask the impossible.

As is the case with all public goods, it is possible to provide either too much financial regulation or too little. But especially during an economy's period of rapid financial development, involving such major transitions in market structure as the emergence of newly specialized institutions, the passage to private ownership, and the securitization of transactions, the need for effective financial regulation and supervision is of heightened importance. (Because different countries' existing financial institutional structures vary, however, as do their respective political and social institutions, specifying the appropriate details of this kind of regulation is impossible in any general way.)

The point, valid in the case of fiscal policy no less than financial regulation and supervision, is not just that these other tools of public policy are needed to fill the important gaps left by the limitations of monetary policy. More than that, proper use of those tools also allows monetary policy to do its own job more effectively.

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Notes

1. Data are from the IMF, *World Economic Outlook*, various issues.
2. Data are again from the IMF, *World Economic Outlook*.

3. Data are from the World Bank, *World Development Report*, various issues, and the online *World Development Indicators*.
4. See Friedman (1996).
5. See, for example, the recent discussion of this issue in Edwards (2006).
6. See Blanchard and Gali (2005) for an analysis of just such a 'coincidence'.
7. See King (1997) for a particularly forceful statement of this idea; King famously coined the phrase 'inflation nutter' to refer to a central bank that has no objectives other than the inflation rate.
8. The essential references are Tinbergen (1952, 1966).
9. See, for example, Svensson (1997).
10. See, for example, the canonical model analysed in Clarida, Gali and Gertler (1999). This implication of anchoring forward-looking inflation expectations is also the heart of the analysis in the application of time inconsistency to models of monetary policy, as in Barro and Gordon (1983) and Rogoff (1985).
11. A good example is the Bank of Canada, which until recently stated the rationale for its policy as follows: 'Inflation control is not an end to itself; it is the means by which monetary policy contributes to solid economic performance. Low inflation allows the economy to function more effectively. This contributes to better economic growth over time and works to moderate cyclical fluctuations in output and employment.'
12. See, for example, the contrasting results reported by Levin, Natalucci and Piger (2004) and by Ball and Sheridan (2003).

Notes on contributor

Benjamin M. Friedman is the William Joseph Maier Professor of Political Economy at Harvard University. His most recent book is *The Moral Consequences of Economic Growth*.

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