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Obstacles to International Policy Coordination, and How to Overcome Them

Jonathan D. Ostry and Atish R. Ghosh

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Prepared by Jonathan D. Ostry and Atish R. Ghosh[1]

Authorized for distribution by Olivier Blanchard

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Author's E-mail Addresses: JOstry@imf.org, AGhosh@imf.org

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CONTENTS **PAGE**

BOXES

EXECUTIVE SUMMARY

Notwithstanding a handful of exceptions, examples of international macro policy coordination have been few. The most successful cases have been when the world economy seemed on the brink of collapse. In more normal times, despite strong theoretical arguments and evident systemic stresses, policymaking takes a national rather than multilateral perspective.

Why do we not see more policy coordination in practice? This paper argues that the most compelling reasons are asymmetries in country size; disagreement about the economic situation and cross-border transmission effects of policies; and often policymakers' failure to recognize that they face important tradeoffs across various objectives. Coordination works by allowing countries to improve the policy tradeoffs they face under autarky. Like most efficiency arguments, welfare gains will not be huge (they are, in fact, very similar to estimated gains from global trade liberalization) but certainly measurable and worth pursuing.

This leads us to a couple of proposals. Given that uncertainty and disagreements are genuine impediments to coordination, we suggest that a neutral assessor may play a useful role in helping to bridge the divergent views of national policymakers, provided of course that the credibility and neutrality of the assessor is accepted by all parties. The assessor would not necessarily propose policies, but would present analyses of alternative strategies and the resulting tradeoffs. This would enable individual countries or groups of countries to judge reasonable quid pro quos that are the essence of coordination.

Our second proposal is intended both to buttress international coordination and to provide safeguards when coordination proves impossible to achieve, by implementing two guideposts to limit negative spillovers through the current account and the capital account, respectively.

Our proposals for a neutral assessor and for guideposts on conduct in the international monetary system build upon existing processes. An essential goal of IMF surveillance is objective analysis and ruthless truth-telling, precisely to overcome the biases that are likely to be inherent in countries' own perspectives. The Integrated Surveillance Decision, recently adopted by the membership, suggests that countries consider policies that engender less adverse outward spillovers while still achieving their domestic objectives; our proposed guideposts, building on the Integrated Surveillance Decision, would press countries to abjure policies with large negative cross-border spillovers even if there was some domestic cost. The logic of such guideposts is clear but the specificities are for the international community to decide.

I. INTRODUCTION

The global financial crisis elicited an unprecedented degree of policy activism centered on monetary and fiscal stimulus as well as policies to stabilize the financial system. While there is broad consensus that these policies helped avert a potentially catastrophic great depression and a seizing up of financial systems, there is also concern they generated spillovers in many dimensions, including output, external balances, capital flows, currency values, and asset prices. Now that major tail risks are largely off the table, the debate has shifted to how best to underpin the postcrisis global recovery. Topics of—at times heated—discussion include when and how to exit from unconventional monetary easing, the balance between short-term fiscal stimulus and medium-run consolidation, and a raft of financial and structural reforms to lay the foundation for medium-run growth, to enhance crisis prevention and resilience, and to address internal and external imbalances. Policies during this recovery phase are just as likely to generate cross-border spillovers, some of which are already in evidence.

The current juncture clearly calls for a cooperative approach to policymaking. Yet—with a handful of notable exceptions, such as the 1978 Bonn Summit, the 1985 Plaza Agreement, and the 1987 Louvre Accord—examples of international macroeconomic policy coordination have been few. The most successful instances have been when the world economy seemed on the brink of collapse: the 1987 stock market crash, when the G-7 coordinated interest rate cuts and liquidity provision, and the 2008 global financial crisis, when the G-20 coordinated fiscal expansions. In more normal times, despite evident stresses on the international monetary system, policymaking seems to take a national rather than multilateral perspective.

In this paper, we examine the reasons why this may be so, with a view to determining whether it should be of concern (that is, are potentially large welfare gains being forgone); whether misconceptions account for the lack of coordination; and whether there may be ways of reducing, if not eliminating, genuine impediments to successful international cooperation.

The case for policy coordination rests on the principles of standard welfare economics. Since all policymaking involves tradeoffs across targets—for instance, monetary stimulus boosts output but at the cost of greater inflation or financial stability risks—efficient global outcomes require that policymakers internalize both domestic and cross-border effects when setting policies. Because there is no global market in such policies, externalities resulting from cross-border effects imply Pareto-inefficient outcomes in the absence of coordination. When these externalities are positive—meaning the instrument has a beneficial effect on the foreign country—then, from the global perspective, there will be too little use of the policy; when negative, too much. The uncoordinated equilibrium is the best that the country can do unilaterally: moving toward cooperative policies yields a first-order welfare gain to the foreign country but a second-order loss to the home country. When both parties move toward the cooperative equilibrium, there will be first-order gains to each that outweigh the second-order losses and, hence, net welfare gains to each party. Coordination, in this sense, does not require policymakers to act against their national interests, but rather to recognize that

alternative policy packages—when pursued by all parties—can allow each to improve national welfare.

So why do we not see more macro policy coordination in practice? Our sense is that the most compelling reasons are three-fold. First, policymakers often do not think in terms of trade-offs across their objectives. All too often, coordination discussions founder on each party refusing to budge from some specific macroeconomic goal, apparently not recognizing that a different tradeoff across objectives may be welfare improving. Like most efficiency arguments, welfare gains will not be huge (in fact, they are very similar to the estimated gains from global trade liberalization), but—like the gains from trade liberalization—certainly measurable and worth pursuing. But there can be no such gains if policymakers fixate on one objective (say, closing the output gap), myopically ignoring others (keep in check financial-stability risks). A key role of country surveillance is thus to point out the various tradeoffs and to underscore consequences of policies that may be beyond policymakers' horizons.

The second obstacle is disagreement about the economic situation and cross-border transmission effects of policies—"model uncertainty" or deliberate "model disagreements." Such uncertainty, while raising potential gains from coordination, makes it more difficult both to reach cooperative agreements and to sustain them. And the third problem is asymmetries in country size (such that, at the global level, a significant portion of gains from coordination may accrue to countries that are too small to be included in any agreement).

These obstacles lead us to a couple of proposals. Given that uncertainty and disagreements are genuine impediments to coordination, our first suggestion is that a neutral assessor may play a useful role in helping to bridge the divergent views of national .policymakers. Beyond technical competence, such an assessor would need to be perceived as being impartial in its assessment. The assessor would not necessarily propose policies, but would present analyses of alternative strategies and the resulting tradeoffs. This would enable individual countries or groups of countries to judge reasonable quid pro quos that are the essence of coordination. One advantage the IMF would have in this role is that, through its bilateral surveillance, it may be well placed to underscore to countries that their macroeconomic objectives should not be unidimensional, but rather involve important tradeoffs across a variety of goals. Once that is accepted, it may be easier for countries themselves to identify coordinated policy packages that they would find welfare superior.

Our second proposal is intended both to buttress international coordination and to provide safeguards when it proves impossible to achieve such coordination or to take adequate account of spillovers on "small" countries. This proposal is to establish two guideposts that should limit the most egregious negative spillovers through countries' current account and capital account, respectively.

Both our proposals—for a neutral assessor and for guideposts to conduct in the international monetary system—build upon existing processes. An essential goal of the surveillance undertaken by the Fund is objective analysis and ruthless truth-telling, precisely to overcome

the biases that are likely to be inherent in country perspectives of the domestic and cross-border effects of national policies. The Integrated Surveillance Decision, recently adopted by the IMF's membership, urges countries to consider policies that engender less adverse outward spillovers while still achieving the countries' domestic objectives. Building on the ideas underlying the Integrated Surveillance Decision, the guideposts we propose would press countries to reject policies with large negative cross-border spillovers (through trade or financial flows) even if there was some domestic cost. The logic of such guideposts is clear, while the specifics are for the international community to decide.

Section II of this paper lays out more formally the theory of international policy coordination and gives an overview of the reasons why, in practice, episodes of coordination are rare. Section III surveys the evidence on cross-border spillovers and policy transmission effects. Section IV explains how uncertainty raises both the gains from, and the obstacles to, successful coordination. Section V explores ways of reducing these obstacles. Section VI concludes.

II. WHY DO WE NOT SEE MORE POLICY COORDINATION?

The case for policy coordination is founded on well-established welfare economics. Since all policymaking involves tradeoffs across targets—for example, monetary stimulus boosts output but at the cost of greater financial instability or inflation risks—efficient outcomes require that policymakers internalize both domestic and cross-border effects when choosing what policy to undertake. Since there is no global market in these policies, the externalities resulting from cross-border spillovers will imply Pareto-inefficient outcomes in the absence of coordination (Hamada,1974, 1976; Canzoneri and Henderson,1991; Ghosh and Masson, 1994; Subacchi and van den Noord, 2012).[2] When these spillovers are positive (meaning the policy has a beneficial impact on the foreign country), there will be too little use of that policy from a global perspective; when negative, too much. The essence of coordination is getting policymakers to recognize—and internalize—these spillovers when setting policies.

It is generally assumed that, in the absence of coordination, policies will be at a Nash equilibrium: authorities set policies to maximize their own country's welfare, taking as given policies of other countries and ignoring spillovers. The resulting equilibrium will not be Pareto-efficient in the sense that, starting at the Nash equilibrium, some perturbation of the foreign country's policies will result in a first-order gain to the home country and only a second-order loss abroad (Box 1). Hence, countries can agree to a joint package that is mutually beneficial. The package and associated split of the welfare gains depend upon the

[2] This is essentially a "revealed preference" argument: since the parties to the cooperative agreement could choose the same policies as they would have chosen in the non-cooperative equilibrium, coordination should not make them worse off, and in general should be welfare enhancing. The only exception to this is when the constraints facing the policymakers change when they coordinate; Rogoff (1985) constructs such an example, where coordination exacerbates policymakers' time consistency problems and therefore reduces welfare. Buiter and Marston (1984) includes several studies of policy coordination in the 1980s; Jeanne (2013) examines possible gains from coordination in the current global conjuncture.

bargaining process, with the stipulation that each country must be better off than it would be under autarky. In trade, the potential gains to the larger country are more limited because the world price is very similar to the autarky price. Likewise, in coordination, the small spillovers on the larger country mean that the tradeoff implied by the combination of domestic and transmission multipliers will be very similar to that implied by domestic multipliers alone. Hence, the potential gains to the larger country will be more limited (though greater bargaining power may allow the larger country to capture a larger share of the gains).

An example helps clarify the analytics. Suppose two countries are undertaking monetary easing to reduce an output gap. While stimulus helps close the output gap, it also risks unanchoring inflationary expectations or fuelling an asset bubble that raises financial stability risks. Monetary stimulus has two effects on the foreign country: a positive effect on the demand for its exports and, through the exchange rate, a negative effect on foreign output. For concreteness, suppose that this negative effect dominates. In the noncooperative equilibrium, policymakers in each country ignore this externality, which leads to excessive stimulus. When the two countries coordinate, they internalize this spillover and ease policy less than when they do not cooperate. While this does result in a larger output gap, the benefit in terms of lower financial stability risks more than it compensates. Moreover, to the extent that excessive global liquidity was raising financial stability risks in third countries, they too may benefit even though they are not party to the cooperative agreement. That gains from coordination may accrue to third parties is not just a theoretical possibility: in the runup to the Latin American debt crisis, Sachs and McKibbin (1985) estimated, monetary policy coordination among the major countries (whose disinflation policies had been excessively tight) would likely have helped highly indebted poor countries. Whether third parties gain or lose will depend on specific circumstances, suggesting that some "rules of the road" may be needed to safeguard the interests of smaller countries (see below).

Although, by construction, each country is better off under coordination, the equilibrium is inherently fragile: provided the other party sticks to the agreed policies, a country that reneges makes a first-order welfare gain. In this example, having agreed to restrain its monetary stimulus in the coordinated equilibrium, the home country can raise its own output by "cheating"—undertaking more stimulus than had been agreed. Since both parties have this same incentive, coordination breaks down. In the absence of international sanctions, the only way the cooperative agreement can be sustained is by the implicit threat that a failure to deliver will result in a refusal (or moratorium) to coordinate again in the future.

While this theory of policy coordination (Hamada, 1974, 1976) is well understood, a number of reasons have been suggested to explain why we don't see more coordination in practice, except possibly during periods of crisis when the counterfactual to coordination may be a seismic global event (like a great depression).[3] In the rest of this section, we consider six

[3] This is not to deny that there are various forums (BIS, G-20, etc.) where there may be useful consultations and, perhaps, behind-the-scenes coordination. Moreover, while international macroeconomic policy coordination is relatively rare, international cooperation in other facets of economic policymaking—such as trade (World Trade

Box 1. The Theory of International Policy Coordination

Suppose policymakers in two symmetric countries have an objective function defined over two targets, $v(y_1, y_2)$, that are affected by domestic and foreign policies, m, m^*:

$y_1 = \alpha_1 m + \beta_1 m^*; y_2 = \alpha_2 m + \beta_2 m^*$, where α are domestic multipliers, and β are transmission multipliers. In the Nash or noncooperative equilibrium, the home policymaker sets his instrument to maximize utility, taking as given the foreign country's instrument setting:

$$\partial v / \partial m \mid m^* = 0 \Rightarrow \alpha_1(\partial v / \partial y_1) + \alpha_2(\partial v / \partial y_2) = 0 \text{ or } [(\partial v / \partial y_1) / (\partial v / \partial y_2)] = -(\alpha_2 / \alpha_1)$$

In other words, the *marginal rate of substitution* (MRS) between the two targets should be set equal to the *marginal rate of transformation* (MRT) achievable between them by use of the home country's instrument—and likewise for the foreign country. Starting at this Nash equilibrium, suppose there is a perturbation in the foreign country's policy setting (the home country will do likewise):

$$\partial v / \partial m^* = \beta_1(\partial v / \partial y_1) + \beta_2(\partial v / \partial y_2) = (1 / \alpha_1)(\partial v / \partial y_2)[\alpha_1\beta_2 - \beta_1\alpha_2]$$

This expression will be non-zero except in the degenerate cases where policymakers have as many instruments as targets (here, one, so this would mean $\partial v / \partial y_2 = 0$) or the trade-off across targets achievable by the domestic effects of policies (α_1 / α_2) is identical to that achievable through the transmission effects (β_1 / β_2). Hence, at the Nash equilibrium, there exists a perturbation in the foreign country's policy settings that would raise welfare of the home country, and vice versa. The cooperative equilibrium can be obtained by assuming a global planner maximizes a weighted average of each country's objective function: $v^c = 0.5v + 0.5v^*$. The planner's optimum requires:

$$\partial v^c / \partial m = 0 \Rightarrow 0.5[\partial v / \partial m + \partial v^* / \partial m] = 0 \text{ or } [(\partial v / \partial y_1) / (\partial v / \partial y_2)] = -(\alpha_2 + \beta_2) / (\alpha_1 + \beta_1)$$

Thus, the global planner sets the MRS equal to the MRT *achievable through coordinated policies* (i.e., taking account of the transmission effects, not just the domestic effects). There is thus an analogy to trade theory: the Nash equilibrium is like autarky, where policymakers set the MRS to the MRT implied by domestic multipliers; coordination is akin to free trade, where the MRS is set equal to the MRT implied by domestic and foreign transmission multipliers—just as, under trade, the MRS is set equal to the world price (the MRT achievable through both domestic and foreign production).

As an example, suppose the instrument is monetary policy and the two targets are output and (low) inflation: $y = \alpha_1 m + \beta_1 m^* - \varepsilon$; $\pi = \alpha_2 m$, where $\alpha_1 > 0, \alpha_2 > 0, \beta_1 > (<) 0, \varepsilon > 0$ and the objective function is $v = -(1/2)\{y^2 + \omega\pi^2\}$. Nash policies are: $m^N = m^{N*} = \alpha_1\varepsilon / [\alpha_1(\alpha_1 + \beta_1) + \omega\alpha_2^2]$. Cooperative policies are: $m^C = m^{C*} = (\alpha_1 + \beta_1)\varepsilon / [(\alpha_1 + \beta_1)^2 + \omega\alpha_2^2]$. Therefore, monetary policy will be too expansionary in the noncooperative equilibrium ($m^N > m^C$) if $\beta_1 < 0$ (policy is negatively transmitted) and insufficiently expansionary if $\beta_1 > 0$ (positively transmitted). In the case of negative transmission, the cooperative equilibrium will entail less monetary stimulus and therefore a lower level of output, but the two countries will nevertheless be better off because of the lower inflation/financial stability risk. Likewise, in the case of positive transmission, cooperation entails greater stimulus and greater financial stability risk, but countries gain from the higher output.

Organization), financial regulation (Financial Stability Board), liquidity provision (IMF financing, central bank swap lines)—is more frequent.

possible reasons for why we may not see more than episodic coordination, and delineate which among them merit further scrutiny (issues we take up in the remainder of the paper).

First, policymakers may believe that spillovers are too small to offset the costs of coordination: if in the limit policy spillovers are close to zero, it is clear that there is no scope for policy coordination. But as far back as the 1980s, multi-country econometric models incorporated appreciable cross-border transmission effects of the macro policies of major economies. It is true that across various models these transmission effects differed markedly in size and even sign, so on *average* were quite small, a small average effect (with a large variance of estimates across models) has very different implications for the gains from coordination than does a consensus that the transmission effects are small (Box 2). Moreover, growing trade and financial linkages since the 1980s are likely to have raised transmission multipliers further. This logic, and the discussion in Section III below, suggests that small spillovers are not a plausible reason for the episodic nature of coordination.

Second, since coordination works by allowing policymakers to achieve a better policy tradeoff, they must in fact face such trade-offs. This means each policymaker must have fewer instruments than targets. In the example above, if policymakers cared only about output (and not at all about possible inflation or financial stability risks), there would be no (perceived) welfare gains from coordination since there would be no cost associated with the expansionary monetary policy. Literally, of course, policymakers clearly have more targets than instruments, but in practice they may relegate a number of them to the back burner. Myopia about the nature of policy tradeoffs thus may indeed provide a clue as to why we do not see sustained policy coordination in practice. However, if anything, the cost of such myopia is likely to have increased as a result of the global financial crisis, which has diminished the availability of usable policy instruments (the zero lower bound in the case of monetary policy; high public debt and political paralysis in the case of fiscal policy) and increased the need to focus on more targets (including financial stability).

Third, coordination is generally understood to mean moving from Nash policies—that is, policies that are the best the country can achieve unilaterally—to the cooperative package of policies. Studies (e.g., Becker and others, 1986; Canzoneri and Edison, 1990; Frenkel and others, 1989; and Ishii and others, 1985) that relax the assumption that the initial position is a Nash equilibrium find much larger gains from moving to globally optimal policies. What does this have to do with coordination? Coordination may deliver a quid pro quo that enables domestic policymakers to overcome the constraints that are thwarting the achievement of even the domestic Nash outcome. In our example, if political paralysis results in an inappropriate domestic policy mix (skewed toward monetary easing and fiscal tightening and leading to a deficiency of global demand), coordination that resulted in an expansion in global demand by surplus countries might induce a better global outcome in part by easing domestic constraints (policymakers might be assured that less monetary easing would not compromise domestic

goals). But if policymakers are not convinced that coordination will deliver the foreign policy quid pro quo, we will see neither coordination nor a relaxing of domestic constraints.

Fourth, the nature of the shock must be such that the economy is sufficiently off its desired path, policies are able to make an appreciable difference in returning the economy to equilibrium, and there is some form of policy conflict between countries as they try to do so. If the economy is close to equilibrium, then policy has little role and there would be no need for coordination (or indeed any active policy). Alternatively, even if there is a large shock but policy can make little difference, gains from coordination will be necessarily limited. It seems unlikely that, in the wake of the dislocation engendered by the global financial crisis, gains

Box 2. Policy Coordination: What Models Tell Us

A large body of literature on coordination developed in the 1980s. Representative of these studies is Oudiz and Sachs (1984) who consider a disinflation game between two countries following an initial shock (such as the 1979 oil price hike). By appreciating the exchange rate, each country seeks to "export" inflation. But in equilibrium, they cannot both appreciate, and the Nash equilibrium is characterized by overly tight monetary policy and a correspondingly large output gap and unemployment. Under cooperation, they do not engage in this futile game, and inflation is a bit higher but unemployment lower. Applying their analysis to the United States, Japan, and Germany, Oudiz and Sachs conclude that "the gains from coordination are certainly present, but they appear modest … the utility equivalent of one-half percentage point of GNP in each of the next few years of a more coordinated expansion."

Why so small?First, the cross-border multipliers in the models employed by Oudiz and Sachs are relatively small. Although Oudiz and Sachs recognize that different models yield different multipliers, they do not take explicit account of model uncertainty. Ghosh and Masson (1988) show that taking account of uncertainty in their setup roughly doubles the estimated gains from coordination. Second, since policymakers' preferences cannot be observed directly, Oudiz and Sachs reverse-engineer the implied utility functions by assuming that observed policies represent the Nash equilibrium. But during the recession of the early 1980s, unemployment became very high. If this represented the outcome of Nash policies, then policymakers must have implicitly assigned low weight to unemployment. Now it is clear why the coordination—which would have implied somewhat lower unemployment—would not represent a significant welfare gain. (The assumption that countries were at their Nash equilibrium is clearly crucial here in the small estimate of the gains from coordination.) Third, in Oudiz and Sachs's set up, there is no long-run policy conflict between the countries—once the inflationary shock has passed, there is no need for coordination. Moreover, while the shock lasts, there is not a lot that policy can do about it. The only difference that policy can make is to shift the timing of output losses (Oudiz and Sachs, 1985), which is welfare improving because of the convex cost of the output gap, so smoothing these out is preferable to a short but severe recession.

from policy activism to bring economies closer to their warranted paths could be negligible. As to the gains from coordination itself, estimates suggest that, while not huge (as with most efficiency arguments), they are hardly negligible. Indeed, the estimated gains are similar in magnitude to those resulting from multilateral trade liberalization, and thus, as with the efforts devoted to such liberalization, should be well worth pursuing.[4]

Fifth, most of the welfare gains from coordination may accrue to countries that are small and possibly not even parties to the coordination—and, by the same token, such countries may suffer the most from the lack of coordination. Economically more important countries may be uninterested in coordinating with smaller countries because the latter cannot make an appreciable difference to them, but from a global perspective, the aggregate welfare gain to the smaller countries could be considerable. For instance, Sachs and McKibbin (1985) argue that greater policy coordination among the industrialized countries in the early 1980s would have resulted in lower world interest rates—the main beneficiaries of which would have been the highly indebted developing countries. Likewise, emerging market countries that are now contending with reversals of capital inflows might have benefited from earlier coordination of monetary policies among the advanced economies. The likelihood of asymmetric gains and losses from coordination may suggest the need for rules of the road that could substitute for actual coordination—with such rules proscribing or constraining policies that have appreciable adverse cross-border spillovers, especially to "small" countries.

And sixth, there may be too much uncertainty about the state of the economy or the effects of policies to make coordination worthwhile in practice. In fact, uncertainty about the cross-border effects of policies *raises* rather than reduces the welfare gains from coordination. The intuition, elaborated upon in Section V, is that the volatility associated with uncertainty about the effects of policy is itself a negative spillover, and since the gains from coordination are increasing in the size of spillovers, uncertainty makes them correspondingly greater. But while such uncertainty raises the gains from coordination, it makes it more difficult to negotiate and sustain cooperative agreements. Like any other form of trade, how the gains are split among parties depends on the agreement they negotiate. Governments can use disagreements over the model as a negotiation tool to skew gains in their favor. In the monetary policy game considered here, each party would have the incentive to claim its output gap is larger—and the effects of its own policy smaller—than it truly believes, in order to justify a more expansionary stance for its own monetary policy. Such disagreements can make it impossible to arrive at cooperative agreements—or to sustain them once reached.

Our sense is that disagreement about the size (or even the sign) of spillovers and transmission multipliers remain central to current debates on the desirability of policy coordination—these

[4] Oudiz and Sachs (1984) estimate the welfare gains from coordination at some 0.5 to 1.0 percent of GNP—the same order of magnitude as the gains estimated to have accrued from the Uruguay Round (McKibbin, 1997) or to potentially accrue from a completed Doha Round (IMF, 2011). Gains that incorporate dynamic effects may be larger. Likewise, of course, gains from coordination are assessed to be larger in turbulent times than in quiet times; in the current postcrisis period, gains are likely to be somewhere in between.

issues are taken up further in the next two sections of this paper. Exclusive focus on a very limited number of macroeconomic goals—in effect, ignoring policy tradeoffs—is also likely to be a key impediment to coordination in practice. The role of IMF surveillance in identifying such tradeoffs, together with possible guideposts to limit adverse outward spillovers especially from large to small countries, is taken up in Section V.

III. CROSS-BORDER SPILLOVERS

Fundamental to the case for coordination is the existence of cross border transmission effects of macroeconomic policies, which are often the subject of dispute. Not surprisingly, when spillovers are negative, the source country has the incentive to claim the effects are small, while the recipient country has the incentive to argue the opposite. While there are difficult issues of econometric identification, existing evidence suggests that there are transmission effects between countries through trade and financial linkages (Box 3).

The early literature suggested that fiscal policy was nearly always transmitted positively across borders, while monetary policy had more ambiguous effects. A variety of multi-country models were developed in the 1970s and 1980s to examine these issues. Averaging across models, transmission multipliers were found to be small, around one tenth the size of domestic multipliers. However, this is because in many cases, the transmission effect in one model was positive while it was negative in another model, resulting in an average that was not very different from zero. In absolute value, however, the transmission multipliers were more like one-third to one-half the size of domestic multipliers.

More recent evidence suggests that transmission multipliers have grown in size, reflecting deeper trade and financial integration across countries, and are now about one half the size of domestic multipliers. Transmission effects are larger for large economies, during periods of downturns, and for countries that are closely interconnected. For the United States, recent estimates (IMF, 2013b) suggest fiscal policy transmission multipliers that are as high as 60 percent of domestic multipliers, with larger multipliers for Latin America and Europe, and smaller ones for Asian economies. These results are similar to those found in the recent empirical literature (e.g., Ilzetzki and Jin, 2013; and Romer and Romer, 2010). Monetary policy shocks in major economies are also found to have large transmission multipliers, particularly in the case of countries whose currencies are pegged to the U.S. dollar. Monetary policy transmission multipliers are found to be about 40 percent as large as domestic multipliers, with the largest effects being recorded for Latin American countries. Such variation in the multipliers tends to be related to the strength of trade and financial linkages, with financial linkages explaining about a third of the cross-country variation and trade linkages explains about 10 percent of the variation (or more in the case of fiscal policy shocks).

While rising real and financial integration is acting to increase cross-border policy transmissions over time, there is also evidence that suggests that transmission multipliers may

be larger in crisis periods than in quiet times (this may reflect higher cross-country output co-movements in crisis times). Transmission effects may be both positive and negative: some episodes of U.S. quantitative easing led to generalized reductions in bond yields, rises in equity prices and appreciation of foreign currencies vis-à-vis the dollar, while some event studies suggest that the quantitative and qualitative monetary easing policy of the Bank of Japan led to falls in foreign equity prices (as well as appreciations of currencies against the yen). The behavior of capital flows has also differed through time, with some early episodes of quantitative easing leading to capital outflows from emerging market economies, later episodes leading to inflows to emerging market economies, and talk of tapering again leading to outflows. (This is with the caveat that there is significant cross-regional variation—Asia and Latin America look quite different from Europe in many of these episodes.).

Model simulations suggest that quantitative easing is positively transmitted to the rest of the world (i.e., higher output), reflecting looser financial conditions and higher asset prices globally. Such simulations also suggest that monetary easing worsens external balances abroad, though less so when countries take measures to resist the resulting currency appreciation. But this is not a universal result, with other simulations showing for example that quantitative and qualitative monetary easing tended to be negatively transmitted to foreign output (especially for countries with close trade links to Japan), reflecting the sharp yen depreciation and initial downdraft to equity prices. The evidence also suggests heightened cross-border financial risks from monetary easing through increased capital flow and exchange rate volatility, and rapid credit growth. This has given rise to concerns that delayed exit from ultra-easy monetary policy is exacerbating financial instability risks/spillovers in a number of quarters.

Simulations have therefore sought to address the issue of possible transmission effects from countries exiting from unconventional monetary policy. The news from such simulations is mixed because, like all simulations, the results reflect a combination of the underlying shock and the policy response. When exit occurs against the backdrop of good growth news at home, transmission effects tend to be positive (growth effects dominate tightening of financial conditions effects), especially in cases where trade channels dominate. When the news is less good, for example if tightening occurs mainly because of rising domestic financial risks, the reverse happens, contributing to a sizable downdraft in global growth relative to baseline. Other aspects of the policy agendas of systemically important countries may also be an important source of future spillovers, as documented in the recent spillover reports from the IMF (IMF, 2013a). For example, simulations of a failure to achieve internal rebalancing in China suggest large adverse spillovers, perhaps on the order of 1–2 percent of world GDP, an example of an important "reverse transmission" from emerging market countries back to advanced economies. Global losses could be similar if markets repriced Japan's sovereign debt and yields rose by 200 basis points or so; losses would be larger were a similarly sized reappraisal to take place with respect to U.S. sovereign debt. Aside from macro policies, simulations also underscore that the failure to close structural reform gaps in various

Box 3. Cross-Border Transmission Effects—Some Evidence

How important are cross-border transmission effects? Much of the literature looks at output correlations on grounds that policies should have effects on the domestic economy, which in turn will be transmitted abroad via demand for other countries' exports. While such correlations ignore possible direct effects (e.g., through capital flows or exchange rate movements), and not all domestic output fluctuations are the result of policy, they nevertheless represent a useful start in looking at possible transmission effects. To this end, Table 1 reports the results of a regression of growth on lagged growth in a country's main advanced and emerging market economy trading partners for 29 advanced economies and 53 emerging markets over 1980–2011.

Table 1. Real GDP Gowth and Trading Partner Growth, 1980-2011

	Full sample		Advanced		EMEs	
	(1)	(2)	(3)	(4)	(5)	(6)
Advanced growth (lagged)	0.340**	0.264**	0.152	0.062	0.492**	0.346**
	(0.161)	(0.124)	(0.172)	(0.121)	(0.198)	(0.157)
EME growth (lagged)	0.761***	0.343***	0.241*	0.267***	0.856***	0.367***
	(0.198)	(0.096)	(0.130)	(0.089)	(0.200)	(0.132)
Real GDP growth (lagged)		0.442***		0.499***		0.396***
		(0.047)		(0.050)		(0.057)
Observations	2,182	2,182	826	826	1,356	1,356
R-squared	0.182	0.343	0.405	0.528	0.183	0.308
No. of countries	82	82	29	29	53	53

Note: Dependent variable is real GDP growth rate (in percent). Advanced and EME growth is export-share weighted avg.of real GDP growth rates of top three advanced and EME export partners, respectively. Constant included in all specifications. Outliers (i.e., growth rates in the bottom and top percentile of the distribution) are excluded from the estimations. Clustered standard errors at the country level reported in parentheses. ***, **, and * indicate statistical significance at the 1, 5 and 10 percent levels, respectively.

The results suggest appreciable cross-border correlations. Across the full sample, output growth is correlated with lagged output growth in both advanced and emerging market economies, even controlling for the country's own lagged output growth. These findings are consistent with the literature which finds significant cross-border correlations, especially when there are strong trade and financial linkages.[1] Kose and others (2008) use a global dynamic factor model to decompose fluctuations into global, country-group (advanced versus emerging market), and country-specific factors. They find convergence in business cycle fluctuations both within advanced economies and emerging market economies, but decoupling between these two groups. One notable exception is Cesa-Bianchi and others (2012), who use a variant of the Global Vector Autoregressive Model (GVAR) to estimate the impact of the international business cycle on Latin America. They find that the impact of Chinese shocks has increased dramatically since the mid-1990s, and has come to dominate that of the United States, with much of the strength of the former coming from indirect effects via third countries.

[1/] See Heathcote and Perri (2004), Stock and Watson (2003), Kose and others (2008), Bordo and Helbling (2004), Baxter and Kouparitsas (2005), Kose and others (2003) and Kalemli-Ozcan and others (2013)

regions—including Japan, the euro area and elsewhere—would also have palpable spillovers at the global level.

Taken as a whole, the various structural models and econometric studies suggest substantial cross-border spillovers of policies operating through both direct and indirect effects. These may be especially large during times of crisis, but even in more normal times, they are sufficient to justify greater coordination of macroeconomic policies.

IV. COORDINATION UNDER UNCERTAINTY

Beyond political constraints, uncertainty about the state of the economy (e.g., output gaps versus shocks to potential output) and the impact of policies (long and uncertain lags; real-financial linkages) is often considered the most serious impediment to effective policymaking. This is particularly true in the arena of international policy coordination, where the cross-border transmission effects may be varied, uncertain, and subject to dispute. As Martin Feldstein (1983, p. 44), then chairman of the U.S. Council of Economic Advisers, noted:

> Economists armed with econometric models of the major countries of the world can, under certain circumstances, identify co-ordinated policies that, quite apart from balance-of-payments constraints, are better than uncoordinated country choices. But in practice, the overwhelming uncertainty about the quantitative behavior of individual economies and their interaction, the great difficulty of articulating policy rules in a changing environment ... all make such international fine tuning unworkable.

In fact, uncertainty about the effects of policies may *raise* rather than reduce the gains from coordination. One view about such uncertainty is that the precise effects of policy depend on a whole host of factors such that, in effect, the multiplier in any particular instance can be considered a random variable.[5] As a general principle, even within the domestic economy, whenever the effects of a policy instrument are uncertain, use of that instrument should be more conservative because the instrument itself becomes a source of volatility (Brainard, 1967). In the international context, uncertainty about transmission effects itself becomes a (negative) cross-border spillover, since risk-averse policymakers dislike the resulting volatility. By increasing the magnitude of spillovers, such uncertainty raises the gains from international policy coordination (Box 4).

[5] An alternative view is that there is a unique, constant, true transmission of country policies (but the problem is that this true model is unknown), in which case gains from coordination should be evaluated in terms of actual outcomes rather than ex-ante expected welfare. Frankel and Rockett (1988) argue that, depending on the distance between the true model and the one used to set policy, coordination could actually make things worse. Ghosh and Masson (1991), however, show that for coordination to be welfare deteriorating the model must be very wrong (its predictions about the effects of policy very different from outcomes)—but in that case, it will be easy for policymakers to learn that they have the wrong model and update their views accordingly.

To return to our example, suppose that policymakers in the two countries not only want to raise aggregate demand in the face of negative shocks, but they also want to stabilize output around its full employment level (while also being mindful of the inflationary or financial-stability risks from easing). Suppose further that there is broad consensus that cross-border transmission effects are indeed sufficiently small that they can be ignored. In that case, the coordinated and uncoordinated policies would be similar, and the gains from coordination too modest to be worthwhile. Now suppose that, while on average cross-border effects are expected to be small (due to offsetting effects on exchange rates, capital flows, and the demand for exports), there is a great deal of uncertainty about the effect of the policy—perhaps it is an unconventional instrument that could have a fairly large positive cross-border effect or it could have a large negative effect. In that case, the instrument is causing negative cross-border spillovers by increasing the volatility of output abroad; uncertainty itself is a negative spillover. Even though on average the transmission effect is expected to be small, coordination would involve more conservative use of the instrument—i.e., *less* expansionary monetary policy. Since in the uncoordinated equilibrium policymakers ignore cross-border spillovers, *including on foreign volatility*, the divergence between coordinated and uncoordinated policies may be substantial, and the coordination gains correspondingly large.

But what if there is not just uncertainty, but also *disagreement* between the policymakers of the two countries regarding the true model? Such disagreement does not in itself present particular problems: in designing the coordinated package of policies that maximizes joint welfare, each country's model is used in calculating its expected welfare.[6]

A problem arises, however, when one considers the bargaining needed to reach the coordinated outcome. As with any other form of trade, how the gains from coordination are split between the parties depends on their ability to negotiate the most favorable package from among the set of Pareto-improving policies. This gives rise to an incentive to misrepresent views about the effects of policies. A country that is creating negative spillovers will want to claim that they are small or even positive, while their recipient will want to exaggerate the negative impact. Since beliefs are unobservable, this incentive to misrepresent can pose a formidable obstacle to reaching a cooperative agreement. Indeed, it can be shown that, even though there would be positive gains from coordination under each of the models claimed by the two parties (or some average model), it may nevertheless be impossible to negotiate an agreement on the coordinated package of policies (Ghosh and Masson, 1994).

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[6] The global planner maximizes a geometrically weighted average of each country's gain from coordination: $v^G = (v^C - v^N)^{\chi}(v^{C*} - v^{N*})^{(1-\chi)}$; under model uncertainty, the global planner maximizes $v^G = (\Sigma\pi^i(v^C(y^i) - v^N(y^i)))^{\chi}(\Sigma\pi^{*i}(v^{C*}(y^{*i}) - v^{N*}(y^{*i})))^{(1-\chi)}$ where π^i (π^{*i}) are the home (foreign) country's priors over the models, and y^i (y^{*i}) the values of the policy targets implied by model *i*.

Box 4. Uncertainty and the Gains from Policy Coordination

It is often claimed that, regardless of any theoretical benefits from cooperation, uncertainty about the state of the economy or the impact of policies on the domestic or foreign economy ("multiplier" or "model" uncertainty) means that there will be few, if any, gains in practice. In fact, uncertainty can actually raise the welfare gains from coordination.

To see how uncertainty can increase the gains from coordination, it is simplest to start with a case where, in the absence of uncertainty, there would be no such gains; to wit, when policymakers in each country have one target, and one instrument to maximize expected welfare:

$$Max -\frac{1}{2}E(y_1)^2;\ y_1 = \alpha m + \beta m^* - \varepsilon \qquad (1)$$

where ε is a random shock with mean $\bar{\varepsilon}$ and variance σ_ε^2, and the policy multipliers are also uncertain, with means μ_α, μ_β and variances, $\sigma_\alpha^2, \sigma_\beta^2$. Policymakers here not only want to raise aggregate demand in the face of a negative shock, they also want to *stabilize* output around its full-employment level. The Nash and cooperative policies are:

$$m^N = m^{N*} = \mu_a \bar{\varepsilon} / [\mu_a(\mu_a + \mu_\beta) + \sigma_\alpha^2]; m^C = m^{C*} = (\mu_a + \mu_\beta)\bar{\varepsilon} / [(\mu_a + \mu_\beta)^2 + \sigma_\alpha^2 + \sigma_\beta^2] \quad (2)$$

By inspection of (2), when there is no multiplier uncertainty, $\sigma_\alpha^2 = \sigma_\beta^2 = 0$, the cooperative and noncooperative policies coincide so there are no gains from cooperation. Conversely, starting from a situation in which there are no gains from coordination, multiplier uncertainty (either $\sigma_\alpha^2 > 0$ or $\sigma_\beta^2 > 0$) will itself give rise to gains from coordination (additive uncertainty $(\sigma_\varepsilon^2 > 0)$ is irrelevant for the incentive to coordinate). A slightly different case is where there are gains from coordination even in the absence of uncertainty: does model uncertainty then further increase or decrease these gains? That depends on whether the uncertainty is about domestic (α) or transmission (β) multipliers: the former tends to reduce the gains from coordination, the latter to increase them (this is intuitive from (2): as $\sigma_\alpha^2 \Rightarrow \infty, m^C = m^N = 0$, so policies under both cooperation and non-cooperation become more conservative and thus converge, but as $\sigma_\beta^2 \Rightarrow \infty$, they diverge because policymakers in the noncooperative equilibrium ignore the uncertainty spillovers of their policies). Since cross-border transmission effects are usually more uncertain than domestic multipliers, model or multiplier uncertainty will tend to *strengthen* the case for coordination.

Moreover, even if it is possible to reach a cooperative agreement, uncertainty makes sustaining it more difficult. Although both parties benefit from coordination, the equilibrium is inherently fragile: each party has the incentive to renege and revert to the noncooperative policy setting provided the other party is abiding by the agreement. But since both parties have the same incentive to cheat, cooperation would break down immediately if there were no penalty for reneging. In the absence of international sanctions, the only credible penalty is a refusal to coordinate again—at least for some period of time (the "punishment" period). In a repeated game, it may be possible to sustain the cooperative agreement provided policymakers have a sufficiently long horizon, do not discount the future too heavily, and either expect sufficient gains from coordination even in normal times or expect to face further shocks such that coordination would bring substantial benefit.

What triggers the reversion to noncooperation? Since policies are observable ex post, it would seem simple to verify whether countries had abided by their agreed commitments. In reality, however, policies must be set based on policymakers' estimates of the current and future state of the economy—both of which are unobservable. For instance, in our monetary policy game, the policymaker in one country could appropriate more of the gains from coordination by claiming that the economy is headed into recession and that monetary easing has only a limited effect—thus justifying greater easing than truly necessary. To rule out such cheating, the expected cost of cheating (lower welfare during the punishment period times the probability of triggering punishment) must just balance the expected benefit (the national gain from deviating from the policy warranted by an unbiased forecast). The incentive mechanism must be designed so that, at the margin, the expected cost (due to the increase in probability of triggering the reversionary period) is greater than the benefit of "cheating" by negotiating on the basis of deliberately biased estimates (Box 5).

Even though in equilibrium neither party will cheat (by design of the trigger mechanism), there will be random shocks that nevertheless trigger the punishment period. What is the effect of uncertainty about the state of the economy or the effects of policies? Both make it more difficult to link observed macroeconomic outcomes to possible (and unobserved) biases in each country's forecasts. Accordingly, to remain incentive compatible, the trigger must be made *tighter* when uncertainty rises (so that even small deviations from the expected outcome triggers the reversionary period). But a tighter trigger will mean that coordination breaks down more often—again, despite neither party having actually cheated. Uncertainty thus leads to coordination endogenously breaking down more often.

In reality, of course, trigger mechanisms cannot be calibrated so precisely as to eliminate the possibility of at least some cheating (each side "talking its book" when estimating spillovers); neither the trigger nor the punishment period is formalized or specified in advance; and policymakers contending with a major shock may discount the future heavily, and not really care whether a period of noncooperation follows. Given that there are always unexpected shocks hitting the world economy, outcomes will differ from expectations, and there will be suspicion that the other parties had not been fully forthright in their estimates of the state of

their economies or the effects of their policies. Anticipating this, countries may choose not to coordinate, especially if the group does not have much experience in working together and especially at times of heighted uncertainty—or, if they do coordinate, the agreement may break down very quickly.

The possibility of deliberate disagreements about the state of the economy or the nature of spillovers may thus provide a compelling explanation for the episodic and sporadic nature of international policy coordination that is typically observed. It is noteworthy, for example, that after the 1979 oil price shock derailed the policy coordination attempted in the London and Bonn summits, almost seven years passed before even the G-7—a close-knit group of politically allied nations that, in various configurations, had cooperated in the international economic arena since Bretton Woods—would again seek to coordinate their policies at the 1985 Plaza Accord. Such disagreement may also provide a powerful rationale for a neutral assessor to bridge different perspectives on transmissions, and to set guidelines for policies when spillovers impact parties that are not included in coordination exercises (e.g., smaller countries). These issues are taken up in Section V below.

V. Toward Some Guideposts for Enhancing Prospects for Cooperation

The discussion so far has considered a number of obstacles to coordination, but has zeroed in on a few focal areas that seem to undercut the global economy's ability to reap the gains from coordination on a sustained basis. The first roadblock is simply that policymakers tend to focus excessively on a narrow set of objectives, often failing to recognize unexploited trade-offs that could be welfare-enhancing. The second obstacle arises because different players in the global economy perceive policy transmissions differently—the disagreements seem to be a fundamental obstacle to agreeing a set of coordinated policies. The third issue is that the number/identity of countries that may benefit from coordination of policies greatly exceeds actual or prospective participants in coordination agreements—agreements reached by the "few" are unlikely to internalize the spillovers to the "many" (and this for logical reasons, namely that the spillovers from the many are likely to be individually small).

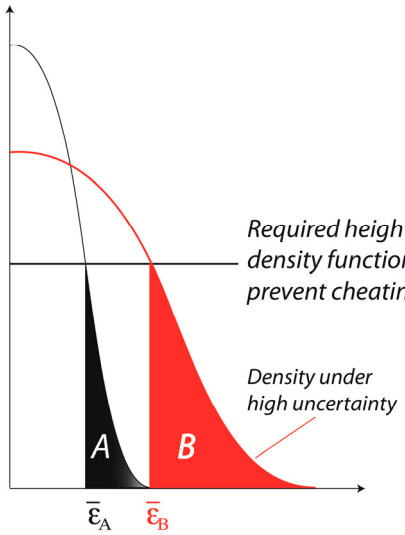
The first issue arises because at particular moments certain targets seem especially pressing. This is natural: when unemployment is high, policymakers' efforts will be centered on closing the output gap; when the financial system is on the verge of collapse, the priority will be restoring stability. Yet policymakers must also be cognizant of the trade-offs they face over time. Yes, closing the output gap may be the priority, but too much stimulus may risk inflationary expectations becoming unanchored or, more insidiously, risk fuelling asset price bubbles that result in financial crisis down the road. A key element of the Fund's bilateral surveillance is to point out such trade-offs and to warn about consequences of policies that may be beyond policymakers' immediate horizon. Once such trade-offs are recognized, it may be possible to identify different combinations of the macro objectives (closing the output gap more slowly, but at lower risk of asset price bubbles) that are superior from the country's own perspective, and which may be essential for successful policy coordination.

Box 5. Uncertainty and the (Un)Sustainability of Cooperation

An inherent property of the coordinated equilibrium is that as long as one party sticks to the agreement, the other can do even better by reneging on it. In a static context, it may be impossible to sustain coordination without international sanctions. In a dynamic context, however, the "folk theorem" of repeated games suggests that the threat of not cooperating again in the future, or at least some period of time ("punishment period"), can sustain the coordinated equilibrium. Since welfare is lower without coordination, the punishment will be effective in sustaining a cooperative agreement provided the punishment period is long enough, and the parties do not discount the future too heavily.

How does uncertainty complicate matters? While policies are generally observable, the information and forecasts on which they are based typically is not. Therefore, the reversion must be triggered on the basis of macroeconomic outcomes being sufficiently different from what would have been expected had the parties designed policies on their truthful beliefs about the economy. Let z be the macro variable, $\hat{z}$ its forecast, then the punishment is triggered if $\varepsilon = \mid z - \hat{z} \mid > \bar{\varepsilon}$, where $\bar{\varepsilon}$ is the trigger level. Too tight a trigger, and the punishment is imposed too often; too loose a trigger, and there is scope for cheating. The trick is to calibrate the trigger such that, in weighing the costs and benefits, neither party has the incentive to cheat. In particular, the benefit of cheating needs to be weighed against the increased probability of "getting caught" (i.e., triggering the punishment period). For a given benefit of cheating and cost of being caught, there is a minimum *increase* in likelihood of triggering the punishment period that makes cheating not worthwhile. But the increase in the probability is simply the derivative of the distribution function—that is, the density of ε. Therefore, ensuring incentive compatibility amounts to setting the trigger to achieve a certain minimum height of the density function. With such a trigger, in equilibrium, neither party will cheat. Nevertheless *there will be random realizations of* ε *such that the punishment period is triggered and cooperation breaks down even though neither party cheated*. The probability of this is given by the area marked *A*. Uncertainty about the effects of policies is equivalent to a larger variance of ε—a flattening of the density function and a larger area under the curve (*B*). Hence, greater uncertainty about the effects of policies leads to a higher likelihood that cooperation will break down. An assessor that provides unbiased assessments about the state of the economy and the effects of policies may reduce this uncertainty, allowing for a less stringent trigger, and therefore fewer instances in which cooperation breaks down due to random shocks.

Uncertainty and Probability of Triggering Non-Cooperation



Area under curve is probability of triggering non-cooperation. Greater probability under high uncertainty (*B*) than under low uncertainty (*A*).

On the second issue, there seems little doubt that policy spillovers are large, have grown larger as real and financial integration has progressed, and are particularly meaningful during turbulent periods when economic variables are considerably off their desired paths. Yet, it is

also amply clear that different players in the global economy perceive differently the spillovers/transmissions from actual/prospective policies—the divergent perspectives on unconventional monetary policies (both on the way in and more recently on the way out) and on policies to accelerate internal and external rebalancing in the major surplus/deficit countries are prime examples. The spillovers are multidimensional—output transmission, as well as transmissions through financial flows and prices: model uncertainty, as discussed above, gives ample scope for disagreement on the size and even the sign of spillovers. These disagreements seem highly relevant in understanding the episodic nature of coordination.

The third issue is no less salient. Because most countries do not participate in coordination exercises, such exercises will not converge to a global optimum but, rather, in the most positive case, to an optimum that internalizes spillovers among only a subset of countries. The excluded countries individually do not have sufficient mass in goods or financial markets to make a difference to the big players (they cannot offer interesting policy trades to the big countries) even though collectively they constitute a significant part of the global economy. The small countries, moreover, may not see eye to eye on the nature of spillovers: one subgroup might prefer more use of the policy instrument, another subgroup less, and a global planner might not be able to find a Pareto-improving set of policies. The result is either that coordinated policies are some way from the global optimum (they are at an optimum for the big players alone); or that coordination just doesn't occur because average spillovers are small even though bilateral spillovers may be large, if only in one direction.

What steps are desirable to overcome these problems? Our main suggestion as far as the first two issues are concerned focuses on the role of a neutral third party "assessor," whose purpose would be to scrutinize country assessments of inward and outward spillovers, and assess alternative policy packages or trades that would be acceptable to principals while increasing global welfare. To the degree that there are inherent biases in countries' perspectives, there would be scope for an assessor to bridge differences across countries on the basis of a model that is more objective than those invoked by particular countries.[7] The assessor would not necessarily propose policy packages: it would assess policy spillovers, identify tradeoffs, and subject its assessments to the scrutiny of all parties. It would use the results of bilateral surveillance—and the policy tradeoffs identified in such surveillance—to highlight the merits of alternative policy packages at the national level, and assess the extent to which mutually beneficial policy trades exist.

Neutrality and credibility of the assessor is not an absolute, but is something that should be considered relative to the biases inherent in individual country perspectives: the assessor may not be perfectly neutral but may be useful in raising global efficiency if it is more neutral than

[7] The idea of establishing a neutral party that would undertake unbiased analysis is not new: on a more modest scale, the Working Group on Exchange Market Intervention (Jurgensen Report) was commissioned at the 1982 Versailles Economic Summit to examine the effectiveness of sterilized intervention. The notion was that such a working group would provide a more objective take on the issue than would any of the principals in the debate.

any of the individual participants. Credibility, however, is likely to be undercut when the assessments of the assessor themselves give rise to suspicion of bias. This could occur if there were a systematic tendency of the assessor to identify a change in policy (tighter fiscal policy; looser monetary policy; structural reforms) as always yielding welfare gains at *both* the national and global levels. This would breed suspicion because the base case should be that countries do not fail to exploit available welfare gains and that, to the degree that policy settings are found wanting, some constraint faced by the policymaker (and not recognized by the assessor) may be responsible. Of course, national policymakers can fail to maximize the welfare of their citizens, and the assessor should not shy away from calling out suboptimal policy choices in such cases (ruthless truth telling in the parlance of IMF surveillance). But it is implausible that welfare gains at the national and global levels should *always* be positively correlated: the essence of coordination is that there are tradeoffs, and that policy changes may carry a cost that can be offset by policy changes elsewhere. The assessor would be expected to identify situations where a quid pro quo is needed to offset the effect of a domestic policy change that is globally desirable but domestically costly.

A reply to this proposal could be that an assessor has existed in many of the recent attempts at international policy coordination. So what would be different under our proposal? One interpretation is that, indeed, not much in fact is different, that the international community has already been able to avail itself of the services of an assessor, and that this proves that coordination simply cannot work in quiet times, simply because the gains are too small to offset the costs. We cannot rule out this possibility, though as mentioned the gains certainly seem to be real given the weight of the empirical evidence, and not out of line with gains from multilateral trade liberalization which have been actively pursued over the decades.

Our preferred interpretation, however, is that the assessor role has not been performed in the best possible way in the past, and that improvements are possible. Two examples seem relevant. First is the tendency for the assessor to confound policy changes to reach the global optimum with those needed to reach the Nash. Why might this be a problem? If countries do not accept that they are significantly off their Nash but do accept that there is a global problem amenable to correction, they may not really accept the analysis of the assessor. One interpretation of the recent history is that countries (say, the participants of the Multilateral Consultation; see Box 6) accepted that there was a global problem (risky global imbalances) but that the source of the problem lay on someone else's doorstep. By always concluding that policy changes are desirable both to move toward the Nash and the global optimum, the assessor may have undercut rather than enhanced the prospect of achieving the coordinated outcome. The presumption of the assessor may have been that no country will listen if policy changes are identified as being contrary to the national interest. Since the interest of the assessor was to promote coordination, it would be tempting to sell policy changes as being unilaterally in the countries' own interests. This misses the point of course, since typically, policy changes to reach the coordinated outcome *will* be contrary to a single nation's interest (in the absence of a foreign quid pro quo), which is why coordination needs to identify the set of policy *trades* that can move the global economy to the coordinated equilibrium.

A second possible issue with the assessor role in the past is a failure to recognize the pros and cons of policy actions in a consistent way. An example might be the evaluation of monetary policies after the global financial crisis. It is important that the evaluation of such policies consistently include the impact on growth, external and financial stability. Our sense however is that, in order to keep the messaging simple, assessments have at times dwelt excessively on only one aspect (growth), without acknowledging that there were actual or latent risks for external and financial stability in other countries (or indeed in the country undertaking the policy). While the balance across risks changes over time, assessments need to acknowledge the many facets of spillovers at all times. The assessor may, in essence, have suffered from the same kind of myopia as potential participants in coordination exercises—failing to comprehensively assess the multidimensional aspects of policies at all points in time (and thus appearing to be biased to one or other of the participants as the balance of risks shift)—see Box 6.

With respect to the third issue, we do not see any practical way to expand the scope of coordination agreements by including more participants—indeed, if anything, heterogeneity of present larger groupings (like the G-20) probably hampers their effectiveness relative to the smaller groupings of earlier decades. Our proposed solution is instead a substitute for coordination—namely, that the international community agrees to abide by a set of guideposts for each country; see, in this connection, Ostry and others (2012). The purpose would be to limit the most potentially harmful outward spillovers in two key areas: trade flows and financial flows. It is important to realize that limiting harmful outward spillovers of policies will sometimes be costly domestically. For example, it may be in the national interest of one country to lend in its currency to unhedged borrowers in another country; curtailing such lending may reduce the profitability of domestic banks and economic growth even as it reduces financial-stability risks in the recipient country. Likewise, a policy of undervaluation may spur domestic growth and may even be justified if there are production externalities at home; but the policy may nevertheless force undesirable external adjustments in other countries, and curtailing the policy may be costly for the home country. Indeed, there will be situations in which correcting policies that violate the guideposts will involve a cost to the violator (in much the same way that moving to the global optimum may take you away from the domestic Nash position, recognizing the full gamut of domestic constraints).[8]

It is important that any such guideposts not be so stringent that they stand no chance of being adopted. We therefore stick to areas that are already fundamentals of IMF surveillance—

[8] The Integrated Surveillance Decision envisages that countries will choose among policies that leave it as well off those that have smaller adverse spillovers. Occasionally, however, it may not be possible to achieve a Pareto improvement in the process of mitigating spillovers; the proposals here build upon the ideas underlying the Integrated Surveillance Decision.

Box 6. International Policy Coordination in Historical Perspective

There have been several attempts at international monetary coordination in modern times, dating back to at least the interwar conferences in Brussels in 1920, and in Genoa in 1922. Bretton Woods sought to go beyond episodic cooperation by codifying certain "rules of the road" that would limit the scope for beggar-thy-neighbor policies. During the stagflationary period that followed the first oil price shock, the major industrialized countries tried to coordinate efforts to jump start the world economy during the 1977/78 London and Bonn Summits. The 1985 Plaza Agreement and 1987 Louvre Accord were focused on coordinated foreign exchange intervention. The G-7 central banks coordinated interest rate cuts and liquidity provision after the stock market crash in October 1987 (and the G-20 coordinated fiscal expansion in the aftermath of the global financial crisis).

Two recent episodes illustrate the difficulties of successful international policy coordination. The first is the multilateral consultation on global imbalances, which was established in the mid-2000s as a tool of multilateral surveillance to address the issue of resolving global imbalances while maintaining robust global growth. The aim of the multilateral consultation as to facilitate action-oriented debate and, ultimately, policy actions by participants that would make a contribution to reducing imbalances. While the consultations did identify policy packages to be adopted by each participant, it is fair to say that implementation of the packages fell short of the intentions. One reason may have been that the process, which did not come from the participants themselves, lacked ownership. Rather than being perceived as an opportunity for joint action to result in better outcomes for all, the exercise became more a "blame game" in which each participant preferred to blame others as responsible for global imbalances. Moreover, even though participants recognized the potential risks from ever-growing imbalances in the abstract, they were not seized by the urgency for action. As a result, policies were not materially altered and, in the event, the Great Recession that followed the multilateral consultation reduced the urgency of dealing with global imbalances.

The second episode follows the eruption of the global financial crisis, when the G-20 asked the IMF to undertake a mutual assessment of policies (MAP), under which members would have their policy frameworks scrutinized by fellow members, with the IMF acting as a secretariat. While it is too soon to make a definitive assessment, evidence to date does not suggest that any of the large countries have made significant adjustments to their economic policies in response to peer pressure under the MAP (Faruqee and Srinivasan, 2012). Incentives for collective action, moreover, seem to be waning now given the distance from the darkest days of the crisis, as well as political-economy factors specific to each country/region and the multi-speed global recovery. Certainly, the increasing focus of the MAP on structural reforms—rather than macro policies—reflects a desire to move away from areas that face stronger political resistance and where monitoring by G-20 peers is likely to reflect a lighter touch. While the MAP (as the initiative of the G-20) is likely to be better owned than the multilateral consultation, the absence of an effective broker in the MAP that could help countries to identify mutually beneficial policy trades on the basis of a shared model seems to have been an important element contributing to the failure of this exercise to live up to its potential.

though we recognize existing norms do not constitute international obligations. Clearly, broad acceptance would depend on making progress with existing toolkits for assessing spillovers and the effects of alternative policies in mitigating adverse spillovers.

The first guidepost would seek to prevent currency misalignments—the notion being that policy agendas need to add up to a multilaterally consistent whole with multilaterally desirable external balances and exchange rates. How might this work in practice? One possibility is that Fund surveillance tools—including the External Balance Assessment /External Stability Report—could be used to identify exchange rates and external balances that are consistent with fundamentals and appropriate policy settings. Countries would be urged to address deviations and the policies (monetary policy; foreign exchange market intervention policy; fiscal policy; structural reforms that affect the composition of demand between tradables and nontradables) that might be contributing to deviations would be identified. The international community would back the call for reductions in the most salient policy distortions. We recognize that the devil as always is in the details, but such an approach would effectively put the weight of the international community behind the assessment of Fund staff. It would also build on the current practice of bilateral and multilateral surveillance.

The second guidepost is the mirror of the first, centering on financial flows instead of trade. The guidepost would shine a light on exporting financial-stability risks across borders and the policies that might be contributing to such outward spillovers. Loose monetary policy or lax prudential regulation might be having a salient effect on lending booms and financial stability risks abroad. While divergence of policies from appropriate settings are less clear than in the case of trade and currency values, gauging the financial-stability risks (domestic and cross-border) is a key focal point of IMF surveillance. Tools could and should be developed that build on existing analytical/empirical work assessing the risk of credit/asset bubbles/booms/cycles, how healthy and risky they are, and the contribution of cross-border flows to such cycles. Countries should always of course take steps to prevent crises at home through appropriate prudential/regulatory/capital account management policies; the point here is to create some reciprocal considerations for the source country. Such reciprocity is desirable given the convexity of policy costs (operating at both ends of the transaction is likely to be more efficient than confining oneself to one end only, as Keynes recognized long ago, given that the welfare costs of taxes/regulation increase at an increasing rate). In the capital flows context, source countries might be expected to take measures to raise the cost, and thereby reduce the quantity, of risky carry trade lending, just as recipient countries would be expected to adopt prudential policies and in some circumstances capital inflow controls to reduce the risk of harmful boom-bust cycles.

VI. CONCLUSION

As the global financial crisis unfolded, countries at its epicenter embarked upon a period of unprecedented policy activism, in turn generating cross-border spillovers for output, external balances, capital flows, currency values, and asset prices. As these measures are withdrawn,

and other policies are adopted for the recovery phase, equally widespread spillovers are to be expected. The recent and forthcoming periods are therefore ripe for exploiting the potential benefits from international policy coordination.

This paper has argued that we see less coordination in practice than seems to be optimal in theory for three main reasons. First, policymakers seldom think in terms of trade-offs across their objectives. Rather, they tend to fixate on specific objectives without recognizing the longer-term implications of their policies. Identifying such trade-offs, and different combinations of objectives that are welfare enhancing, is essential to successful coordination. Second, countries do not agree about the nature and size of spillovers and how alternative policy packages could deliver a more favorable set of spillovers and provide a credible basis for trading macroeconomic policies. Third, the global economy is highly asymmetric: winners from coordination may be small and diffuse, and it thus may be very difficult in practice to arrange the policy trades that could form the basis of a cooperative strategy.

To strengthen the odds of successful coordination in the future, we make two suggestions. The first is for the international community to focus on the role that a neutral assessor can play in helping to bridge the divergent views of national policymakers—with the key requirement that the assessor be perceived as impartial in its assessment. The assessor would not necessarily propose policies but would present analyses of alternative policy strategies and the resulting tradeoffs to enable individual countries or groups of countries to judge reasonable quid pro quos that are the essence of coordination. Given that coordination is not about "making concessions" as is commonly assumed, but rather about mutually beneficial trades, the assessor would highlight policy packages that would make each party better off. As such, coordination would not require changes in domestic mandates but simply recognition that alternative policy packages could better achieve those domestic mandates.

Will this suffice to induce major countries to coordinate policies? In normal times, when economies are on balanced growth paths and policies can largely be on autopilot, the additional benefits from coordination may be too small to overcome the practical and political hurdles. In crisis times, coordination seems to emerge almost spontaneously. But it is times such as now, clearly neither in crisis nor in normalcy, that there may be worthwhile gains from coordination that are not being realized because of the various obstacles discussed in this paper. It is in such instances that we believe a neutral assessor can play a useful role, tipping countries toward greater cooperation.

Our second proposal is intended both to buttress international coordination and to provide safeguards when it proves impossible to achieve coordination given asymmetries in the global economy. This proposal consists of guideposts that should limit the negative spillovers through the current and capital accounts. The first guidepost seeks to limit policies that give rise to misaligned currency values or external balances; the second seeks to limit policies that give rise to cross-border instability in financial flows and, where necessary, remedial actions

by both source and recipient countries. The logic of such rules is clear: the specifics, would, however, be for the international community to decide.

Both our proposals—for a neutral assessor and for guideposts for conduct in the international monetary system—build upon existing processes. An essential goal of the bilateral and multilateral surveillance undertaken by the Fund is objective analysis and ruthless truth-telling, precisely to overcome the biases that are likely to be inherent in country perspectives of the domestic and cross-border effects of national policies. The Integrated Surveillance Decision, recently adopted by the membership, suggests that countries consider policies that engender less adverse outward spillovers while still achieving their domestic objectives; our proposed guideposts would press countries to abjure policies with large negative cross-border spillovers (through trade or financial flows) even if there were some domestic cost.

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