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Does Monetary Cooperation or Confrontation Lead to Successful Fiscal Consolidation?

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Active accommodation of fiscal consolidations by monetary policy is controversial, as can be seen in current euro area discussions. While many observers acknowledge that there is usually a place for monetary accommodation in response to fiscal consolidation, a sequencing argument is often heard today that fiscal commitment must precede any loosening. Some analysts go further to suggest that toughness by central banks taking a hard line on adjustment is critical to inducing sustained fiscal stabilization. This policy brief looks at the recent historical record of central bank behavior vis-à-vis fiscal authorities, at least until the current crisis period, and whether accommodative approaches ahead of consolidations have proven dangerous or helpful. We also try to assess the market credibility of fiscal consolidations as a function of the central banks' monetary stance prior to fiscal consolidation. We find clear evidence of positive associations between the degree of monetary ease in advance of fiscal consolidation programs and both those programs' success and their market credibility.

1. HOW SHOULD MONETARY POLICY RESPOND TO THE NEED FOR FISCAL CONSOLIDATION?

As fiscal policies become unsustainable, monetary policy becomes irrelevant at best. Under extreme fiscal conditions, even if central banks resist direct monetization of excessive government debt, inflation or collapse will ultimately result. Markets would decline to buy the debt, raising long-term interest rates, and the currency would depreciate, importing inflation, irrespective of the monetary stance. So there is no question that price and financial stability depend upon the maintenance of fiscal stability.

What role monetary policy should play in achieving that stability, however, is far from evident. Theoretical analyses of fiscal-monetary coordination have not yet produced clear general results.[1] Even under normal economic conditions, it is unclear from the literature whether coordination is superior to fiscal and monetary policymakers each setting policy independently, or which of monetary or fiscal authorities should move first in achieving a coordinated outcome. Thomas Sargent and Neil Wallace (1981) and Michael Woodford (2003) influentially argue for a form of "monetary dominance" whereby central banks pursue inflation stabilization irrespective of fiscal policy moves.

Policymakers' more informal discussions in recent decades also usually have come to the conclusion that monetary policy should pursue price stability—in an inflation targeting Taylor Rule framework—without direct reference to fiscal policy, except insofar as it affects the medium-term inflation forecast. The reasons given usually stress four arguments why monetary authorities should take fiscal policy as given and set policy in response to it without attempting to influence fiscal policy directly:

- Fiscal policy is the end result of a political sausage-making process, while monetary policy reflects decisions made (more) coherently in near real-time.

1. See Sargent and Wallace (1981), Blinder (1983), Nordhaus (1994), Dixit and Lambertini (2003), and Woodford (2003) for the most cited model-based analyses.

- Fiscal policy is inherently political, about distributional issues, while monetary policy attempts to be nonpartisan and without a direct distributional agenda.
- Fiscal policy is best constrained in countercyclical terms to automatic stabilizers, while monetary policy has more room for discretionary use in response to shocks.
- Fiscal policy tends to be asymmetric in practice, with expansionary programs persisting beyond their cyclical needs, and only rarely running surpluses in booms, while monetary policy is (closer to) balanced over the cycle.

This approach would imply that when fiscal policy is forecast to tighten with impact over the central bank's time-horizon for policymaking, monetary policy should loosen in anticipation, taking into account lags of monetary policy's effect and fiscal policy's implementation. Even fully anticipated fiscal policy movements that cut spending or raise taxes

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will have a short-run contractionary effect on output and thus on inflation, though multipliers and lags will vary.[2] Currency effects from fiscal consolidation could go either way, depending upon the relative interest rate and confidence effects[3]—most central banks will monitor futures markets for the home currency to make their forecast, however, rendering such an *a priori* assessment moot. Sometimes there will be a political complication, in that a central bank should not be seen as forecasting the outcome of an election, let alone endorsing a particular party position, by explicitly stating its fiscal forecasts. This can often be partly finessed by taking the sitting government's announced fiscal policy as given and preparing to update rapidly upon political resolution. The basic result that monetary policy should loosen in anticipation of fiscal tightening, *ceteris paribus*, is robust from the practitioner's perspective in normal times.

Should that monetary policy guidance change if an economy has headed down an arguably unsustainable fiscal path? This situation could arise through a series of negative shocks, a political breakdown, ongoing expansion of entitlements, erosion of tax collection, and/or demographic change. We say "arguably" because there is no one strict definition of fiscal sustainability, but a government needs the sum of discounted future revenues to be at least equal to the sum of discounted future expenditures. Meeting this condition will depend in part on financial markets' confidence in future fiscal plans and growth prospects, as expressed in the price and availability of credit to fund deficits.[4] Exiting an unsustainable path will require a policy of *fiscal consolidation*, meaning a multiyear program to reduce budget deficits (and often run primary surpluses) requiring sustained austerity efforts.[5] As noted previously, once such a program is under way and looks likely to be fulfilled, most central banks would loosen monetary policy absent inflationary shocks.

The more pressing and controversial question is the appropriate action of monetary policy in the run-up to such a consolidation, when its being undertaken or credibly sustained as long as needed is in doubt. An influential body of opinion arising out of the euro crisis holds that only a tough approach by monetary policy will induce the necessary fiscal consolidation actions by politicians.[6] While starting from the indisputable idea that large-scale monetization of government deficits will lead to (hyper) inflation, these arguments move well beyond it. Some suggest that tactically putting the reward before the commitment will reduce the necessary pressure on politicians to make commitments; others emphasize the fundamentals that, until a fiscal consolidation is credibly, and, thus, likely well under way, the central bank's own ability to anchor inflation expectations and deliver on price stability will be eroded. These are not mutually exclusive reasons for believing in "tough love" for politicians from monetary authorities. Believers in both views might expect delayed consolidation to prompt rises in long-run interest rates or depreciation of the currency. Both would justify monetary policymakers taking the path of fiscal policy into account beyond its direct

2. See Auerbach, Gale, and Harris (2010), Fatas and Mihov (2009), and Kuttner and Posen (2001a), among many others. Fantasies of expansionary consolidation must be dismissed by any responsible policymaker, except under very rare conditions unlikely to apply to major economies with independent central banks.

3. See the debate between Ball and Mankiw (1995) and Greenspan (discussion thereof) on the exchange rate impact of a budgetary consolidation.

4. A good example of a multifaceted fiscal sustainability assessment is given by Cline (2012).

5. See Alesina and Ardagna (2010) and Leigh et al. (2010) for more detailed definitional discussions.

6. See Bergsten and Kirkegaard (2012), Bogenberg Declaration (2011), De Grauwe (2011), Dombret (2012), Lerrick (2011), Stark (2011), Weber (2011), and Weidman (2011) for expressions and discussions of this point of view.

effect on aggregate demand and through that channel to the medium-term forecast for inflation.

In the recent past, what approaches have monetary policymakers taken in the periods preceding fiscal consolidations: confrontation or coordination? What have been the results in terms of the success of consolidations and of impact on market credibility? Are there any virtues to monetary "tough love" when fiscal consolidation is called for? The empirical investigation of these questions is the topic of our policy brief.

Some might be concerned with a potential identification problem. Since worsening economic conditions are thought to often precede fiscal consolidations, what monetary easing we might find would perhaps be prompted on average by such conditions or the expectation thereof. We would note, however, that we are less interested in the stance of monetary policy per se than in the relationship between changes in monetary policy and the success/credibility of subsequent fiscal consolidations. While it is reasonable to argue that a common factor (e.g., macroeconomic outlook) may be driving the monetary loosening and the subsequent fiscal consolidation, it is not equally obvious that a common factor explains both the degree of monetary loosening and the success/credibility of the subsequent consolidation.

2. ANALYZING THE AVAILABLE CATALOG OF FISCAL CONSOLIDATION EFFORTS

Over the past 30 years, a large number of economies, both advanced and developing, have undertaken fiscal consolidation programs. Thanks to the efforts of Daniel Leigh and colleagues at the International Monetary Fund (Leigh et al. 2010), there is now a comprehensive dataset of these policy events, their timing, and associated macroeconomic data (Leigh et al. 2010, Devries et al. 2011). The dataset includes 173 episodes from 17 advanced countries over the period 1978–2009. Each successive year of fiscal consolidation is treated as a separate observation. The events are identified through a narrative method, inspired by the work of Christina Romer and David Romer (1989) on monetary policy.[7] We find this method a persuasive and useful approach, especially given the political economy concerns often expressed about the dependence of governments' willingness to consolidate on economic conditions, which puts a premium on intentions.[8]

That said, the data as published are annual, so we are unable to pinpoint precisely the date when fiscal consolidations were implemented. This prevents us from looking at the success or failure of truly tactical short-term interactions between central banks and fiscal authorities.[9] Such high frequency interactions are unlikely to make a sustained difference to monetary or fiscal policy, however, unless the meaningful policy settings are changed (which takes time to deliver) and those changes are sustained (which takes time to become evident). Moreover, the dataset measures the implementation of fiscal policy actions rather than the announcement thereof (which may already weed out some less than credible consolidation efforts).

Within the fiscal consolidations dataset there is significant variation in experience. Some of these consolidations were undertaken in response to outright crises or to the requirements of IMF programs, while others were more preemptive ahead of extreme market pressures. Within each of those subsets, consolidation efforts can be designated as successful and unsuccessful (more on that definition in the next section). This is where the narrative approach becomes critical for answering the questions that we raise, in that it allows for identification of intended and attempted consolidations, rather than reasoning backwards from the realized *ex post* movements in fiscal stance, which to some degree assumes the result.

On the monetary side, Leigh et al. (2010) has already established that, in this sample, monetary ease following the start of consolidation efforts increases their likelihood of success. The interaction of fiscal and monetary policy prior to consolidation, however, is to our knowledge unaddressed in the empirical literature, despite its prominence in the current discussions in the euro area and elsewhere. We measure monetary accommodation by the amount of change in the central bank's instrument interest rate between January and December in the year of, or the year prior to, a consolidation period (since we do not include the consolidation efforts begun in 2010, quantitative easing and other noninterest rate monetary policy measures are not an issue). That means we are not using the narrative method to identify monetary policy intentions the way we rely on the IMF dataset to do for fiscal policy. We believe this is justified for independent central banks, which control their policy instruments and for which there are no implementation issues.[10]

7. The methodology identifies fiscal policy actions motivated by deficit reduction (as opposed to a desire to restrain domestic demand for cyclical reasons) by examining accounts and records including IMF and OECD reports and country-specific sources. For more detail, see Devries et al. (2011).

8. Alesina and Ardagna (2010) offer a different approach to identification of fiscal consolidation episodes.

9. An example of that kind of short-term bargaining would be the press characterizations of the European Central Bank "withholding" the buying of Italian government debt through its Securities Markets Programme in November 2011, when the Silvio Berlusconi government was seen as "backtracking" on its fiscal commitments.

10. Also, justifiably or not, it is rare to find in recent history instances of any monetary policy committee reversing the direction of policy in a given year without an extended pause at a particular level of monetary conditions.

3. RELATIONSHIP BETWEEN PRIOR MONETARY EASE AND SUCCESS OF CONSOLIDATIONS

The analysis below distinguishes fiscal consolidations along two dimensions: success and credibility. It seems natural to define the success of a fiscal consolidation in terms of its impact on key fiscal variables, the government debt and deficit as a share of GDP, and the extent to which these improvements are sustained beyond the immediate period of tight policy.[11] Thus, we have defined a successful consolidation as one where the average increase in the cyclically adjusted primary budget balance (CAPB) between the year of the consolidation and each of the subsequent three years is at least 80 percent of the size of the consolidation, as measured by the Leigh et al. (2010) methodology. The 80 percent threshold was chosen to split the full sample roughly in half between successful and unsuccessful consolidations.[12]

Since we are interested in analyzing the interaction between monetary and fiscal policy where the central bank can choose the degree to which it accommodates fiscal consolidations, we restrict the sample to periods and countries where the central bank is independent. We make use of the classification of Kuttner and Posen (2001b) and restrict our sample to periods of full central bank autonomy as measured therein.[13] To boost the sample size a little, we also include Canada and Australia post-1991 even though they are classified as only partially autonomous by Kuttner and Posen (2001b).[14]

The figures below compare the average change in the policy rate in the year preceding or year of successful consolidations (calculated as the difference between the policy rate in December and January of that year) with the average change preceding unsuccessful consolidations. We are looking to see whether successful consolidations have tended to be preceded by looser monetary policy relative to unsuccessful consolidations. To assess whether the degree of monetary policy accommodation becomes more important as the size of the consolidation increases, we repeat the exercise for different subsamples where we successively drop the smallest consolidations remaining in the sample.

Figure 1 is based on our benchmark sample of fiscal consolidations when the central bank is independent. Along the x-axis is the minimum size of consolidations in a given sample. When this is 0, it means that all consolidations are included. At 0.1 on the x-axis, only consolidations larger than 0.1 percent of GDP are included, and so on, as we move to the right. The bars in the figure show the number of observations for successful and unsuccessful consolidations, respectively. There are 82 observations in the sample as a whole split between 37 successful and 45 unsuccessful consolidations (see height of the two bars at 0). As the minimum size of consolidation increases, the sample size decreases, as indicated by the shrinking bars. Notably and unsurprisingly, the number of successful consolidations falls faster than the number of unsuccessful consolidations as the minimum size of the consolidations left in the sample increases. Only three consolidations larger than 1.4 percent of GDP in the sample are successful, while 12 are unsuccessful.

Successful consolidations tend to be preceded, or accompanied just before or from the start, by greater loosening of monetary policy than unsuccessful consolidations, especially as the size of the consolidation increases.

The two lines in figure 1 show the mean monetary policy change in the year preceding successful and unsuccessful consolidations and how this mean changes as the minimum size of consolidation in the sample is increased. The blue line shows that unsuccessful consolidations are on average preceded by a reduction in the policy rate of around 0.5 percentage points between January and December of the preceding year, and this does not vary much by the size of the consolidation. The red line shows that, over the whole sample, successful consolidations tend to be preceded by similar falls in the policy rate as unsuccessful ones. But when the smaller consolidations are excluded from the sample, the degree of

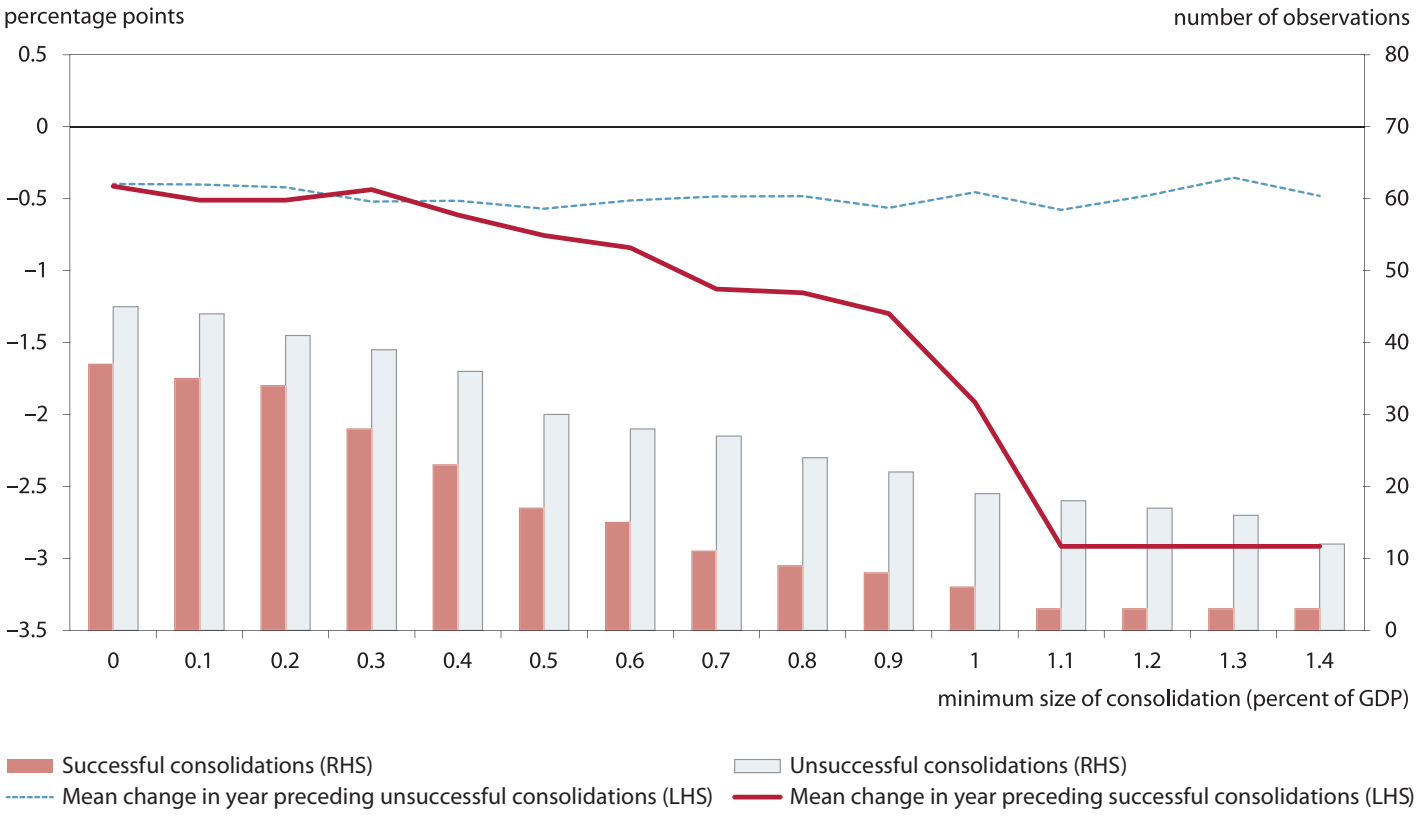
11. Alesina and Ardagna (2010) define a successful fiscal consolidation as follows: "A period of tight fiscal policy is successful if a) in the three years after the tight period, the ratio of the cyclically adjusted primary deficit to GDP is on average at least 2 per cent of GDP below its value in the year of tight policy, or b) three years after the tight period, the ratio of the debt to GDP is 5 percent of GDP below its level in the year of the tight period." This, however, depends on *ex post* results (as does their definition of consolidations), rather than being in the spirit of the fiscal intentions from the narrative approach.

12. Given the tenet of faith in modern monetary economics that monetary policy has no lasting impact on real variables the three-year horizon seems appropriate for the analysis of monetary-fiscal interaction. We recognize, however, that the success of a fiscal consolidation depends also on various structural factors such as the elasticity of fiscal bases to taxation and so a complementary assessment would take these longer-term conditions into account.

13. See Kuttner and Posen (2001b) for the definition and coding of central bank independence, as well as evidence on the spread of central bank independence across economies. An updated dataset is available upon request. See also Arnone, Laurens, and Segalotto (2006).

14. These two central banks are deemed independent over the period by Arnone, Laurens, and Segalotto (2006). Our results do not, however, depend on the inclusion of these cases.

Figure 1 Mean policy change in the year preceding consolidation



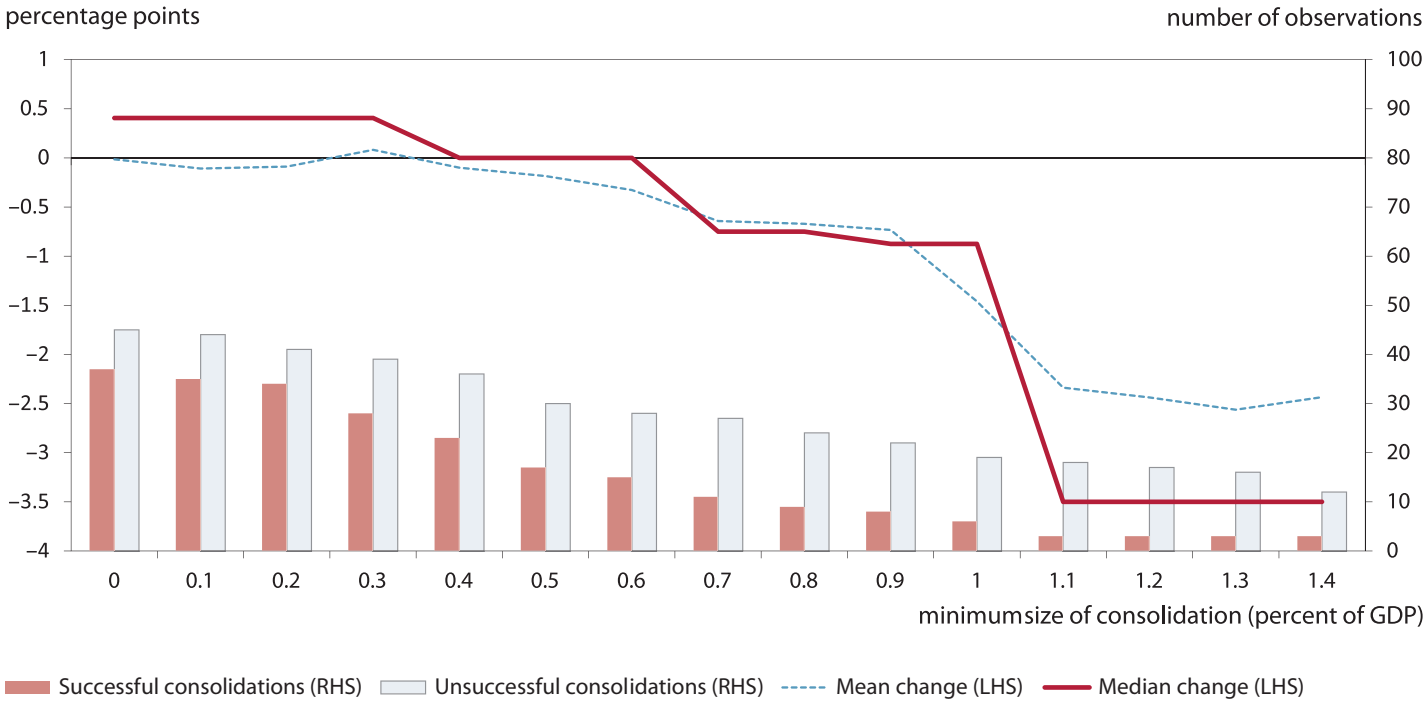
Source: Authors' calculations.

monetary policy accommodation of successful consolidations is much larger (right hand part of the figure).

For consolidations in excess of 1.1 percent of GDP, the monetary policy rate in the year preceding successful programs has been reduced on average by around 2.5 percentage points more than the average reduction of the policy rate in the year preceding unsuccessful consolidations. Figure 1 is thus revealing with regards to the potential endogeneity of monetary loosening to a common cause with fiscal tightening. One could think that the size of consolidation attempted would be related to the size of the preceding macro shock, and that of course would also affect the monetary policy pursued. Yet, the fact that the proportion of *successful* consolidations in the sample *falls* as the minimum size of attempted consolidation is increased is consistent with our interpretation that what matters is the monetary policy setting beyond common responses of fiscal and monetary policy to a preceding shock. What is striking is that monetary policy preceding unsuccessful consolidations does not loosen by more when the average consolidation in the sample is large and by implication the size of the macro shock is large as well.

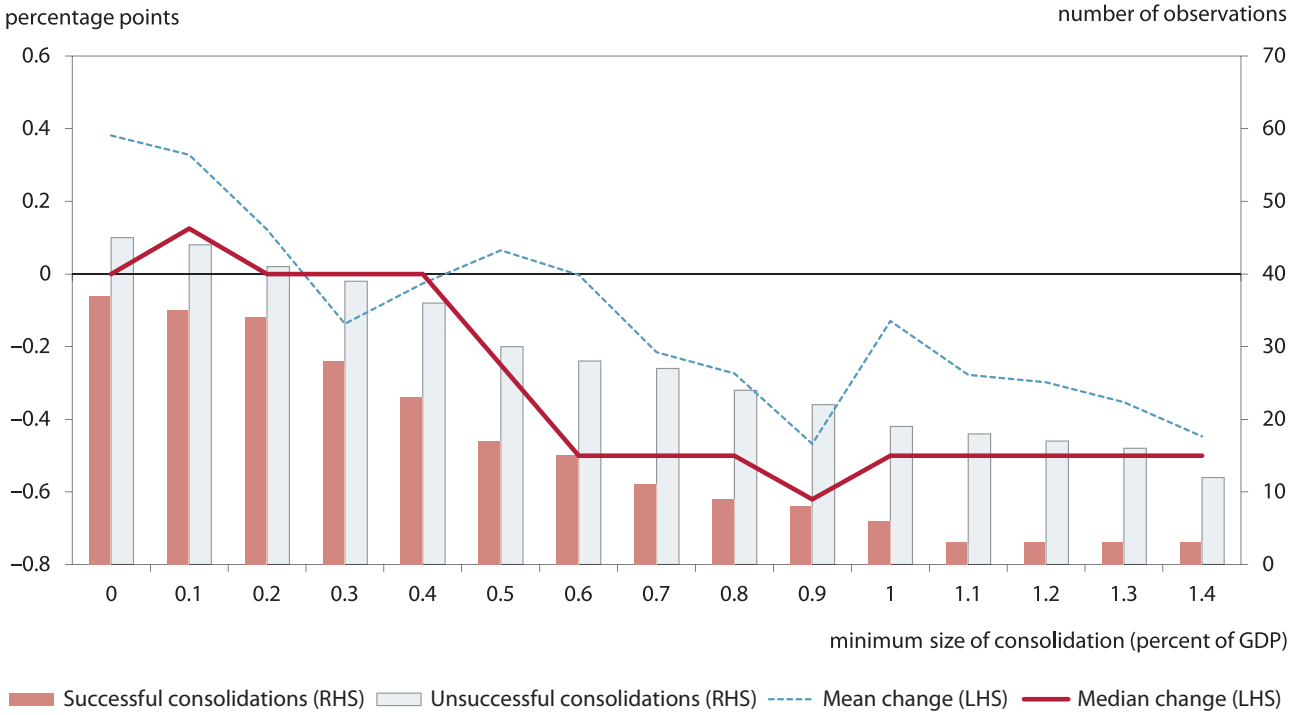
Figure 1 shows the mean change in the policy rate in the year preceding the consolidation. We can also repeat the exercise for the median. In order to avoid showing too many lines, in the figures below we show the difference between the red and the blue lines—that is, the difference between the average change in the policy rate in the year preceding successful consolidations and the change in the average policy rate in the year preceding unsuccessful consolidations. This can be seen in figure 2. The blue line in figure 2 corresponds to the difference between the blue and the red lines in figure 1. Points on the lines below 0 indicate that successful consolidations tend to be preceded by greater loosening of monetary policy than unsuccessful consolidations. And the downward slope of the blue line indicates that the difference in the degree of monetary policy accommodation in the year preceding successful and unsuccessful consolidations is getting larger as the minimum size of the consolidation left in the sample increases. The red

Figure 2 Policy change in the year preceding consolidation (successful - unsuccessful)



Source: Authors' calculations.

Figure 3 Policy change in the year of consolidation (successful - unsuccessful)



Source: Authors' calculations.

line in figure 2 repeats the same exercise using the median change in the policy rate in the year preceding the consolidation and shows a similar pattern.

Figures 2 and 3 thus show that successful consolidations tend to be preceded (figure 2), or accompanied just before or from the start (figure 3), by greater loosening of monetary policy than unsuccessful consolidations, especially as the size of the consolidation increases.

As a further robustness check, figures 4 and 5 reproduce, respectively, figures 2 and 3, but excluding the fiscal consolidations implemented by Italy and Spain in 1994. We have decided to exclude these observations because the large cuts in policy rates seen in Italy (–4.0 percentage points) and Spain (–4.25 percentage points) in the year preceding the 1994 fiscal consolidations were prompted by the widening in 1993 of the margins under the Exchange Rate Mechanism (ERM). Insofar as the ERM had distorted domestic monetary policy setting, a relaxation of its terms triggered an abrupt adjustment of monetary policy stances in some of its members, which might not constitute an autonomous decision on monetary policy settings, whether with respect to the forecast or to fiscal policy. These two consolidations are classified as successful according to our definition and their exclusion makes the difference between the degree of monetary accommodation of successful and unsuccessful consolidations somewhat less striking. Nevertheless, when the size of the attempted fiscal consolidation is large, the results continue to suggest that successful consolidation programs tend to be preceded or accompanied from the start by greater loosening of monetary policy than unsuccessful consolidations.

4. RELATIONSHIP BETWEEN PRIOR MONETARY EASE AND CREDIBILITY OF CONSOLIDATIONS

Policy credibility is usually defined in terms of the extent to which private sector actors believe that the stated objectives of the policymaker will be pursued and achieved. In the case of fiscal consolidations, the primary objective of policy is to reduce cyclically adjusted deficits and thereby put public finances on a sustainable path. In assessing the credibility of fiscal consolidations it is therefore natural to look at market perceptions regarding the sustainability of public finances and the likelihood of a sovereign default. These perceptions can be captured by the excess return that investors demand for holding government debt relative to a risk-free rate of return (which may vary over time as a result of changes in investors' risk appetite, for example).

In the analysis below, we proxy the risk-free return using the government bond yields on German bunds, which are considered a very safe asset by investors. Again, our sample ends before 2010 and thus avoids the distortions in the market for lower-risk government securities and for bunds in particular that emerged in recent years. Thus, we measure the credibility of a fiscal consolidation by its impact on the spread of similar duration public debt of the respective government over German bunds. In particular, we once again split the sample roughly down the middle into those consolidations accompanied by a fall in the spread to bunds (between January and December of the year of consolidation—labeled "credible") and those accompanied by a rise (labeled "not credible"). For obvious reasons we exclude Germany from the credibility analysis, and we also exclude the United States given that the special role of the US dollar as a reserve currency might make US yields less responsive to fiscal consolidation programs or their failure.

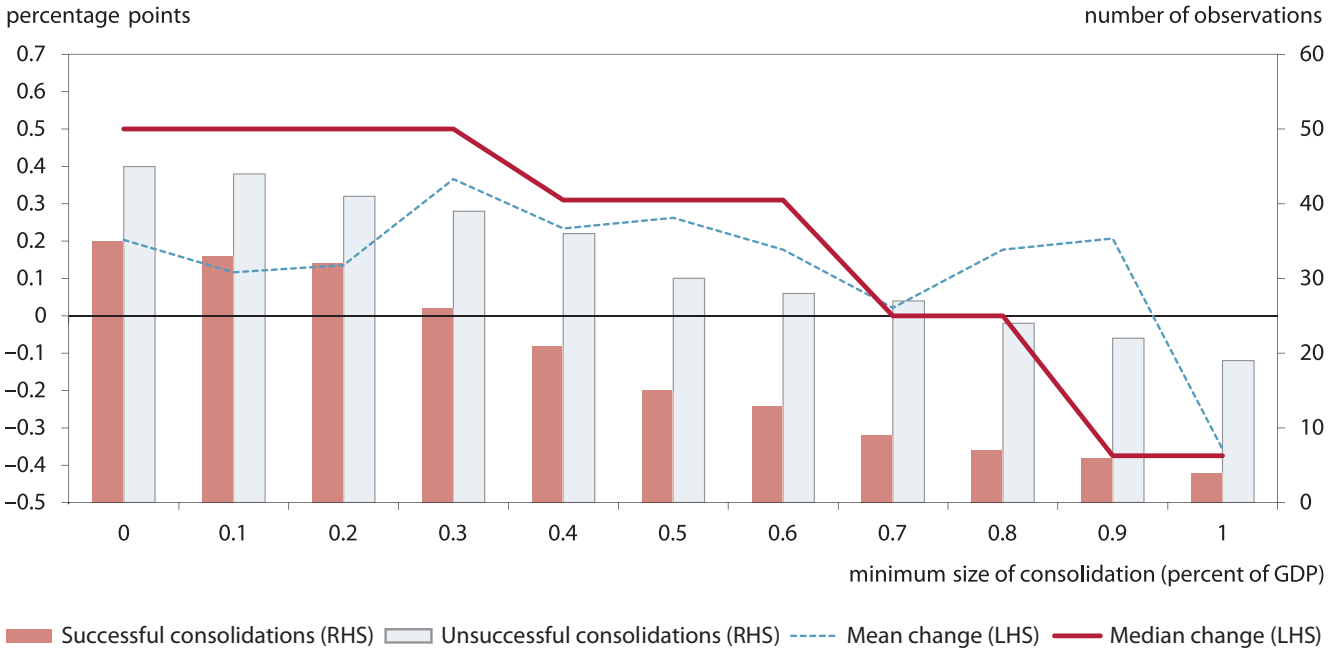
Figures 6 to 9 repeat the exercise from the preceding section, this time looking at the change in the spread of countries' sovereign bond yields over German bund yields. The lines on the figures show the difference between the average change in the policy rate associated with credible consolidations and the average policy rate associated with consolidations that were not credible as determined by markets. Figure 6 shows that the results for policy changes in the year prior to the consolidation differ greatly, depending on whether the mean or median change in policy is used. It turns out that this reflects the inclusion of the Italian and Spanish fiscal consolidations in 1994, which were undertaken in partial reaction to the ERM realignment as previously noted. These consolidations are not credible according to our definition.

When the ERM realignment cases are excluded from the sample (figure 8), the mean policy rate cut associated with "not credible" consolidations falls, and credible consolidations are found to be preceded by greater monetary loosening. Figure 7 shows that credible consolidations also tend to be accompanied by much greater monetary policy loosening in the year of the consolidation than consolidations that are not credible. In contrast to the success measure, however, the difference between credible and noncredible consolidation efforts does not vary much according to the size of the consolidation. Figure 9 suggests that these results are not sensitive to the exclusion of Italy and Spain in 1994.

5. FURTHER ROBUSTNESS CHECKS

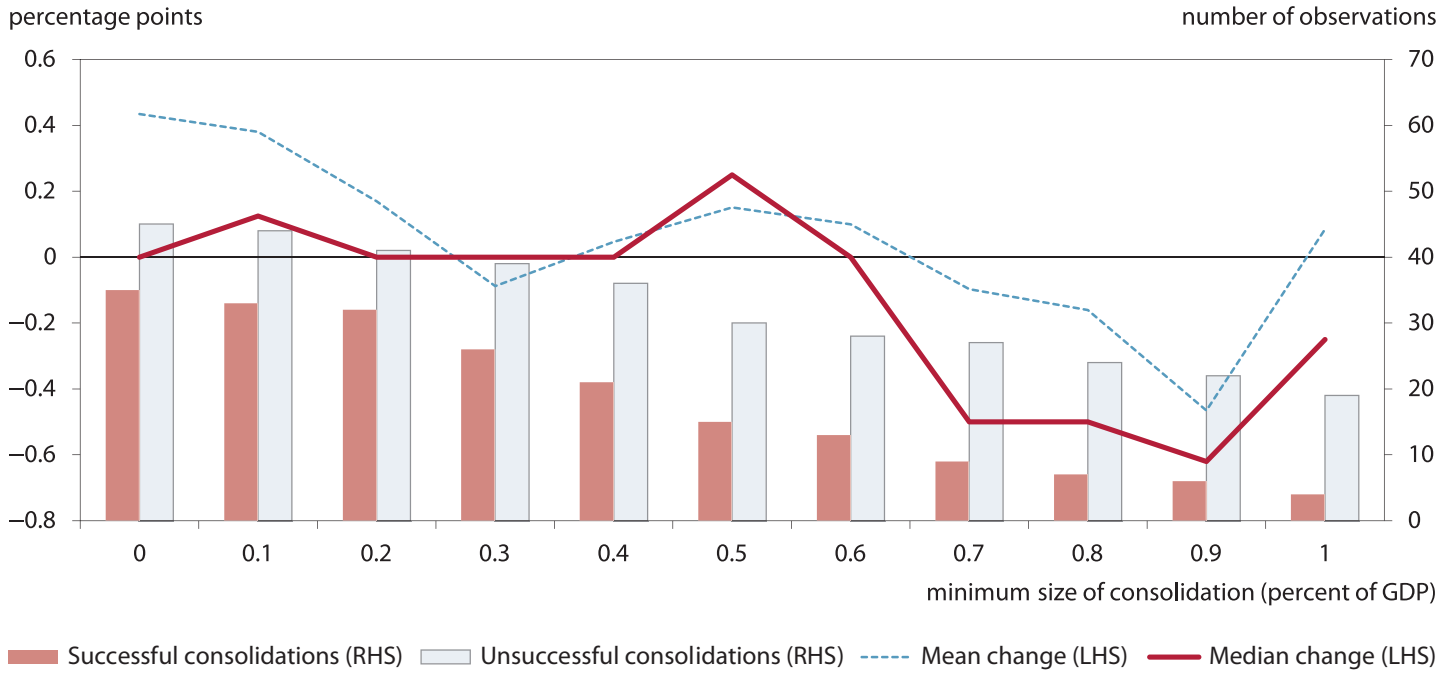
As a robustness check we have reproduced our experiments based on two alternative samples, regardless of the independence status of the central banks: (a) covering 1990–2009 and (b) covering the full post-1978 sample (this part has only been done for program's success because we do not have govern-

Figure 4 Policy change in the year preceding consolidation (successful - unsuccessful), excluding Italy and Spain in 1994



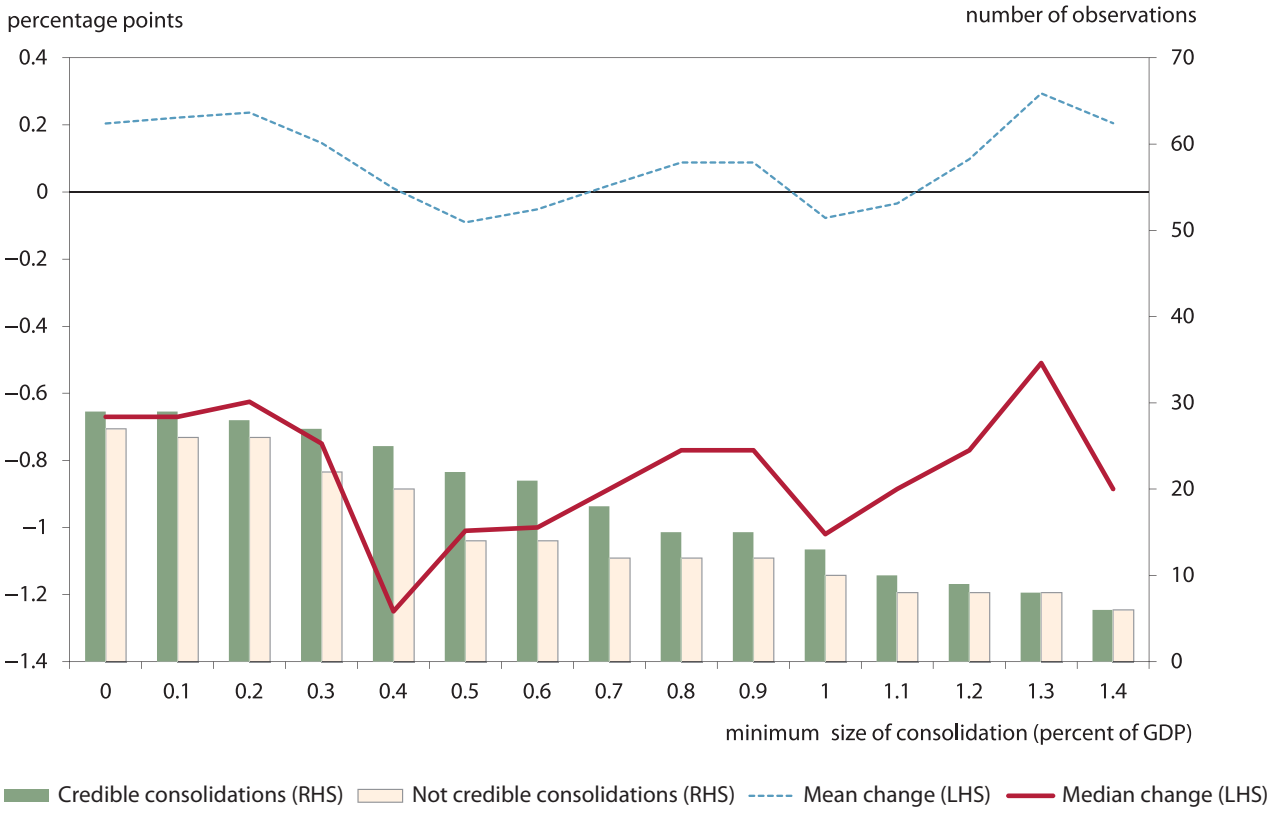
Source: Authors' calculations.

Figure 5 Policy change in the year of consolidation (successful - unsuccessful), excluding Italy and Spain in 1994



Source: Authors' calculations.

Figure 6 Policy change in the year preceding consolidation (credible - not credible)



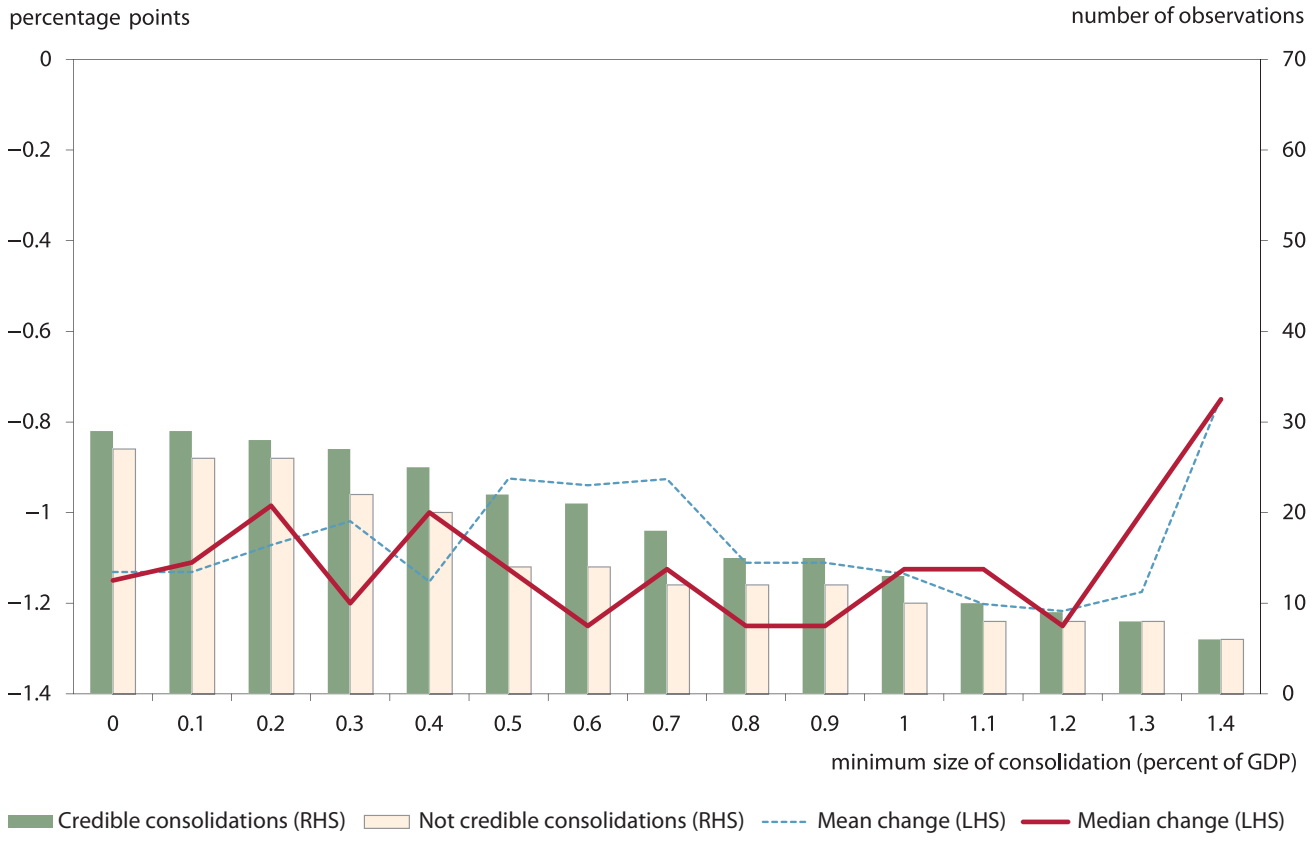
Source: Authors' calculations.

ment bond yields data going back before 1990). These results, available upon request, corroborate the finding that successful consolidations tend to be preceded or accompanied from the start by greater loosening of monetary policy than unsuccessful consolidations, especially as the size of the consolidation increases. This result continues to hold for both samples when the Italian and Spanish consolidations of 1994 are excluded (more so than in our benchmark sample restricted to independent central banks). In the 1990–2009 sample analyses, which focus on the credibility of fiscal consolidations, the same sensitivity to the inclusion or exclusion of the 1994 Italian and Spanish episodes is displayed. Once these are excluded, we again find that credible consolidations tend to be preceded or accompanied by greater monetary loosening than noncredible consolidations.

6. THE REVEALED CASE FOR ACCOMMODATION

Examining the historical record of fiscal consolidations in advanced economies over the period 1978–2009, we find clear evidence that successful fiscal consolidations tend to be preceded or accompanied from the start of implementation by greater monetary easing (as measured by change in the instrument interest rate) than unsuccessful ones. Furthermore, we find that this difference in the extent of monetary accommodation between successful and unsuccessful consolidations is greater, the greater the ambition of the consolidation undertaken. This result is robust to analysis of a subsample limited to consolidation cases where independent central banks face fiscal authorities. More credible fiscal consolidation efforts—as measured by the decline (or not) in sovereign spreads over bunds—are also clearly associated with greater monetary accommodation preceding or accompanying from the start those efforts' implementation. Again, this holds for a

Figure 7 Policy change in the year of consolidation (credible - not credible)



Source: Authors' calculations.

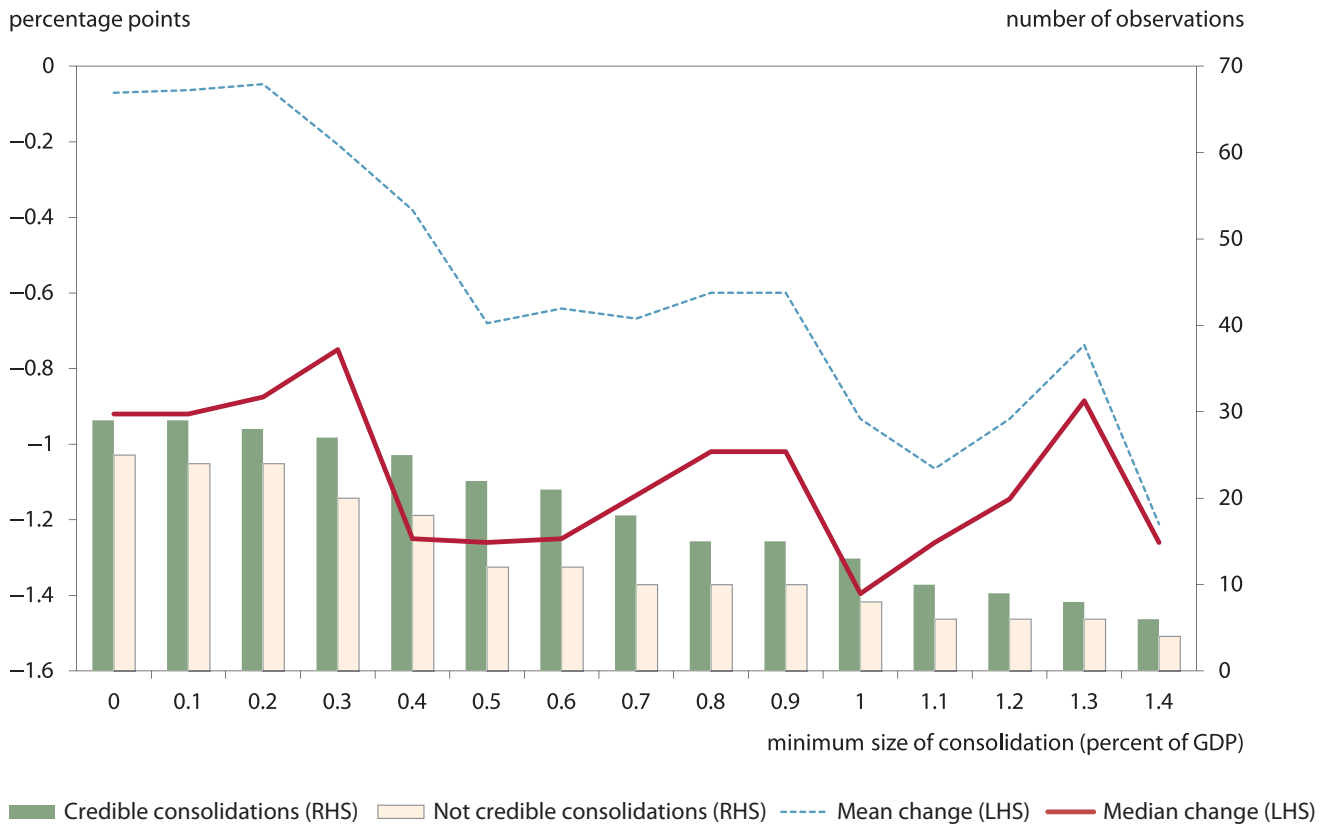
subsample including only independent central banks setting monetary policy. There is no clear evidence, however, of an increasing relationship between the ambition of the consolidation program and the extent of monetary easing with respect to its credibility impact, the way there is for program success.

Thus, in terms of the choice between confrontation and coordination of monetary and fiscal policy ahead of fiscal consolidations, or at least between confrontation and nonconfrontation, set out at the start of this policy brief, our analysis shows that central banks have generally come down against the former. In fact, our study suggests that central banks actively ease monetary policy more ahead of or contemporaneous with the start of successful and credible fiscal consolidations. This record is in direct contradiction of the arguments put forward for "tough love" or a hard constraint imposed by monetary policymakers on elected officials as an incentive for the implementation of successful, credible fiscal consolidation programs.

This is not to say that monetary policymakers in recent decades have repeatedly engaged in a form of positive inducement to engender episodes of greater fiscal discipline, at least not consciously. Our analysis does not allow us to distinguish between monetary policy simply set taking fiscal policy as a given among other forecast economic conditions and policy set as a positive incentive to politicians.[15] What our analysis does rule out is any visible benefits from, and shows very few cases of, central banks tightening monetary policy as an

15. In the abstract, one could either through narrative or statistical means separate out whether the cuts in interest rates in our sample were in line with the monetary policymakers' standard reaction function, or whether they went beyond, perhaps then signifying easing with an eye to influencing fiscal policy. In practice, given the limitations on the estimated precision and robustness of empirical monetary reactions, this would be impossible.

Figure 8 Policy change in the year preceding consolidation (credible - not credible), excluding Italy and Spain in 1994

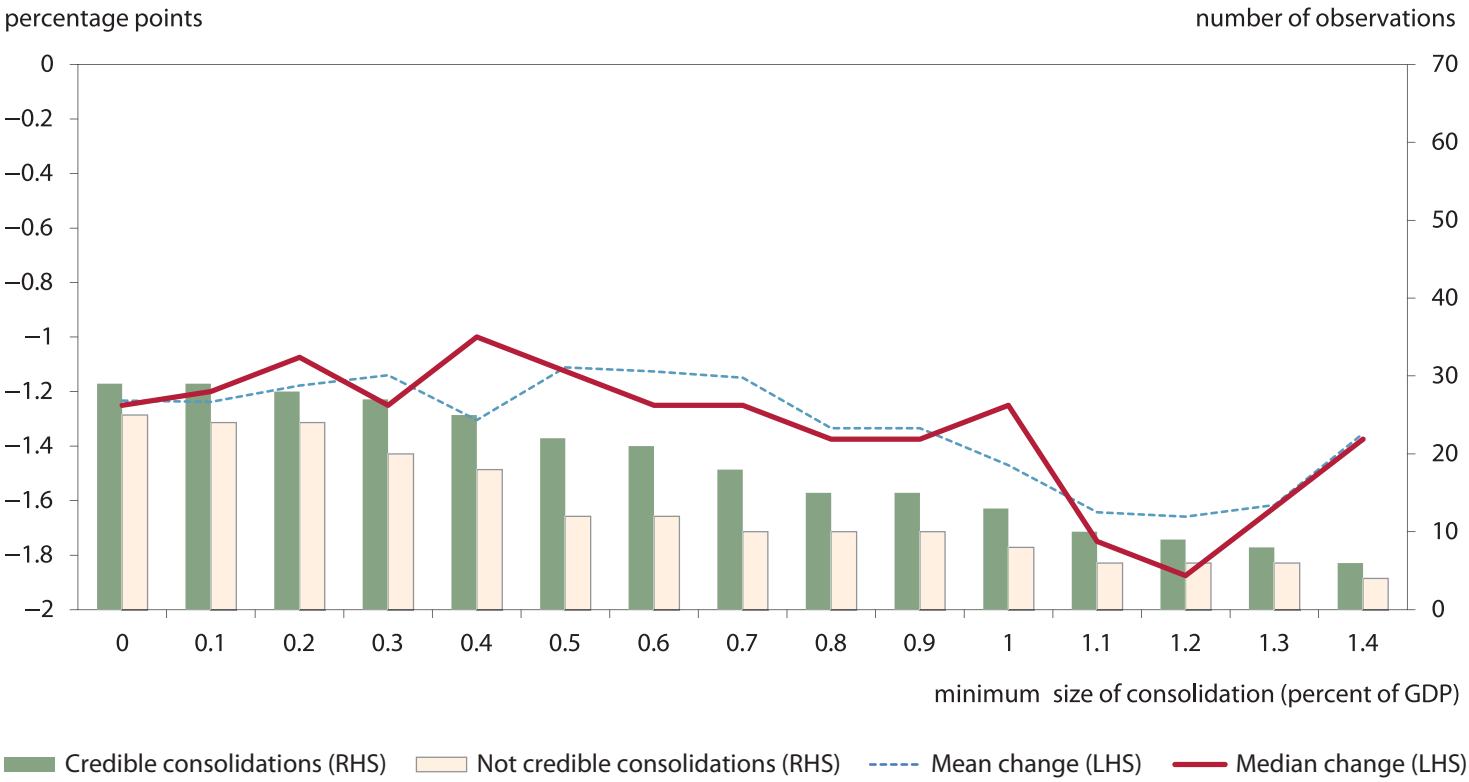


Source: Authors' calculations.

incentive to credibly and successfully implementing fiscal consolidation.

We would emphasize that the interesting result from our analysis is not just that monetary policy tends to loosen prior to fiscal consolidation on average, but that there is evidence of a difference in the degree of accommodation between successful/credible and unsuccessful/not credible consolidations. We would argue that a severe macroeconomic shock would both tend to call forth a greater degree of monetary loosening and simultaneously reduce the likelihood of success and credibility of the subsequent fiscal consolidation efforts. This is because a large shock leads to a more severe deterioration in public finances such that the chances of a negative feedback loop developing from austerity to weak growth and weak tax revenues increase (as is currently happening in Greece). If this were the case, then controlling for the size of the shock (or declining outlook) might be expected to lead to a greater difference between the degree of monetary accommodation in successful/credible consolidations and in unsuccessful/not credible ones than we have estimated. We believe the potential endogeneity bias is less severe in the latter case and if anything biases our results towards finding less difference in the degree of accommodation between successful/credible and unsuccessful/not credible consolidations. In any event, our results do demonstrate that for a wide range of cases of fiscal consolidation, monetary policymakers did not hesitate to pursue accommodative policies and try to improve economic conditions ahead of those programs' implementation.

Figure 9 Policy change in the year of consolidation (credible-not credible), excluding Italy and Spain in 1994



Source: Authors' calculations.

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