Non-cooperative and cooperative policy reforms under uncertainty and spillovers

Carsten Hefeker⁎⁎, Michael Neugart

⁎⁎ University of Siegen, 57068 Siegen, Germany
⁎⁎⁎ CESifo, Germany
⁎⁎⁎ Technical University of Darmstadt, 64283 Darmstadt, Germany

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When countries need to implement costly economic policy reforms, these often imply uncertainties about their effectiveness for the home country and their spillovers to other countries. We develop a model to show that under these circumstances countries implement too few or too many policy reforms. From a social perspective, too many reforms follow if the spillover effects of reforms become sufficiently uncertain. Since centralization of policies to correct inefficient policies is often not possible, we look for alternative instruments that can restore the efficient level of reforms. We compare subsidizing reform efforts with insuring against bad outcomes, and argue that subsidies are advantageous in terms of requiring less information for implementation. Journal of Comparative Economics 000 (2017) 1–9. University of Siegen, 57068 Siegen, Germany; CESifo, Germany; Technical University of Darmstadt, 64283 Darmstadt, Germany.

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1. Introduction

Setting the right kind of economic policy becomes ever more difficult in an increasingly interdependent and uncertain world. The integration of new regions and countries in the world economy, higher volatility of commodity prices, or an increasing pace of financial and technical innovations require individual countries constantly to adapt their structural policies to a changing set of circumstances or to large scale economic shocks like the global financial and economic crisis. Yet, the impression is that countries do not implement policy changes or reforms to the extent desirable. Moreover, the effect of reforms is highly uncertain. In fact, Babecky and Campos (2011) show in their meta analysis of more than 46 studies and 500 estimates that structural reforms undertaken in recent decades had often variable and even negative outcomes.

Could it be that the interplay of uncertain effectiveness of reforms and countries’ economic interdependence is distorting reform efforts? And if so, are there remedies that lead governments to properly reform their countries? To answer these questions, we develop a model of a group of countries where domestic policy reforms have uncertain effects on the output of the reforming and other countries. We show that inefficient levels of policy reforms arise because reforms are costly,

⁎⁎ We thank two anonymous referees for very helpful comments.
⁎⁎⁎ Corresponding author at: University of Siegen, 57068 Siegen, Germany
E-mail addresses: carsten.hefeker@uni-siegen.de (C. Hefeker), neugart@vwl.tu-darmstadt.de (M. Neugart).

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outcomes are uncertain, and non-cooperative policies among countries do not take into account uncertain spillover effects. In particular, we demonstrate that policy changes may actually not only be too small but, depending on the size and uncertainty of the spillover effects, may also result in too large an extent of reforms. This would explain why reform policies are often not as successful as expected by policymakers or even fail.

The remedy most often proposed to correct outcomes when externalities distort policy incentives is to harmonize or centralize policies. This, however, often fails in reality because countries are reluctant to give up policy autonomy. A more limited form of policy coordination instead, supported by market instruments and limited fiscal pooling, might have better chances to find common support. Indeed observers have stated that proxies for centralized decision making such as agreements, treaties, accords and other forms of international understandings should be considered (Tanzi, 2008).

Assuming that a directly centralized policy intervention which induces countries to set the “right” level of policy reforms is not possible, we explore how policy choices are changed in the presence of subsidies and insurance. Under the first scheme, policy reforms in a particular country are subsidized by others who benefit from them. This creates an ex-ante incentive for individual countries to pursue more reforms. Second, we explore a mechanism of ex-post redistribution among countries or regions. If “bad” outcomes of policy experiments can be insured by those with “good” outcomes, this provides an incentive to reform more. We derive the optimal amount of subsidies or insurance needed to restore efficiency, and compare the instruments with respect to their implementability.

There are several possible applications of our analysis:

**Example 1.** Consider European Union member states’ labor market reforms to reduce unemployment. States have national autonomy over their labor market policies and are free to pursue different policies to reduce unemployment, such as reducing hiring and firing costs, lowering payroll taxes, allowing more or less migration, or increasing or lowering public spending. However, the outcome of a particular policy measure is often uncertain because the policy is implemented for the first time or, if used elsewhere, because it unfolds differently since its effectiveness depends on the institutional environment of the implementing country if there are complementarities with product markets, the educational system, or the tax system (Coe and Snower, 1997; Freeman, 2005). Moreover, a positive outcome of a policy reform will usually have positive spillover effects to other member states because of increased demand for their products or because of migration. At the same time, labor market reforms are unpopular among the population and thus governments tend to hesitate to implement them. All these factors tend to lead to a sub-optimal level of reforms.

**Example 2.** Another application for the European case is the discussion about how to deal with the great recession. While some countries advocate more expansive fiscal policies, others weigh against it. One reason for the differences in policy proposals is that countries are uncertain about the outcome of more fiscal expansion. While more spending could directly increase output and employment through public investment, others fear that a loss of confidence in financial markets will push countries even deeper into recession. Moreover, it could be that countries in Europe simply try to free-ride on each other’s efforts. If policy reform in one country increases its output, others might hope to benefit from this without being forced to implement policy changes themselves. As a consequence, European countries take too few policy measures themselves, instead relying on other countries.

**Example 3.** A third possible application is the G-20 group of major advanced and emerging market economies. The reduction of excessive current account deficits and surpluses or the regulation of financial markets are also fields where substantial spillover effects exist, where the outcome of particular policy measures are uncertain, where policy reforms are not very popular with the electorates or important interest groups, and where observers lament that national governments are not doing enough (Angeloni and Pisani-Ferry, 2012). Here as well, uncertainty about the outcome of possible reforms, and the attempt to free-ride on the positive spillover effects of other countries’ reforms are likely to be an explanation for the observed lack of reform efforts.

**Example 4.** Lastly, global efforts at climate protection have not been very successful so far because such efforts have an uncertain outcome as well as strong spillovers. Arguably, too few measures are taken because countries still dispute the causes of climate change, cannot agree what policy measures are right, and do not want to impose the costs of those policies on their electorate without other countries also implementing climate protection policies. In this case, in particular, it is likely that the free-rider motive dominates other motives because costly climate policies are likely to have very little impact on the reforming country, whereas countries benefit strongly from all others undertaking such policy measures.

In all these examples, as centralized policy setting to improve the collective outcome is apparently not possible, some degree of subsidization or insurance of policy reforms might be capable of yielding more efficient outcomes while being at the same time more acceptable to politicians and national electorates than transferring policy sovereignty. Especially in the European case such a fiscal mechanism could build on existing limited fiscal integration in the European Union, and might thus be easier to be agreed upon than in a more heterogeneous groups of countries without a common history of partial integration.

The paper proceeds as follows. The next section connects our paper to the earlier literature, Section 3 develops the model and derives non-cooperative and cooperative policies. Section 4 introduces subsidies and an insurance scheme as instruments to correct inefficient policy choices and evaluates the two mechanisms. Section 5 concludes.
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