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Competitive depreciation and the role of distorting taxes in an interdependent economy[☆]

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This paper investigates the manners in which international cooperation in monetary policies affects the rate of inflation in a two-country sticky-price model. Within reasonable parameter values, international monetary coordination increases the steady-state inflation for given tax policies. When the tax regime is endogenously chosen, however, self-oriented monetary policies can engage in competitive depreciation and induce a higher average inflation than the first best inflation rate.

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1. Introduction

In recent years, there have been calls for Japan and China to alter their exchange-rate policies. While Japan's efforts to weaken the yen and China's implicit peg to the U.S. dollar may be good for domestic employments in these economies, the policies can trigger competitive depreciations and systematic inflation. China has begun to pose concerns about inflation and is often thought to signal the upcoming revaluation. Are these policies good for Japan and China but bad for the rest of the world? Would Japan, China, and the rest of the world achieve a better management of inflation with increased international cooperation on exchange-rate policies?

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Rogoff (1985) provides one answer to these questions. He argues that increased international monetary cooperation may raise the rate of inflation. Using a sophisticated modern framework, Obstfeld and Rogoff (1995) also show that the surprise monetary expansion has a positive welfare spillover. In light of these prominent papers, has the Mundell–Fleming–Dornbusch result of competitive devaluation become outdated? More recent literature suggests that this is not the case. Some studies (Betts and Devereux (2000) and Jensen (1997), among others) show that monetary expansion can produce a negative welfare spillover under enriched environments.

In considering these pros and cons, the literature thus far assumes that no distorting taxes are present or that taxes merely play secondary roles in supporting the monetary policy. In reality, taxes distort decision making in the private sector, and it is interesting to discover what happens if we relax these assumptions. This paper addresses this question and finds that, in the absence of an endogenous choice of tax policies, international monetary cooperation raises the rate of inflation. On the other hand, if taxes are set in accordance with the monetary regime, competitive depreciation is possible.

Our model considers a two-country economy similar to that of Obstfeld and Rogoff (1995, 2000), except for the presence of distorting taxes. Goods markets are under monopolistic competition and the prices in producers' currencies are set before the technology shock occurs. Prices are inefficiently high due to monopoly markups and price setting under uncertainty, which potentially motivates governments to correct. Since the tax policy is chosen by collective opinions within a country, it has an implementation lag and cannot react to ex-post productivity shocks. The monetary policy, on the other hand, is implemented by a delegated decision-maker such as the central bank and can be determined under discretion. Prices are sticky and hence do not respond to policy shocks in the short run. Once prices are set and all shocks have been revealed, each monetary authority supplies money. We examine how the optimal rate of money growth changes with cooperation between monetary authorities.

This paper assumes that governments monitor utility from consumption and the disutility of work effort. Owing to the law of one price and unit intratemporal elasticity,¹ consumptions are equated and produce no conflict between nations. However, since there are no markets to trade the risks of country-specific fluctuations in production, labor is a source of conflict between the objectives of different countries. Each monetary authority has the incentive to use contractions to reduce work efforts in favor of their own country and expansions to increase consumption. By cooperating, countries endogenize the exchange rate externality that improves the purchasing power of foreign residents. Other things being equal, each central bank depends on the other to expand its money supply and to benefit overseas consumers, at the cost of reducing their own residents' leisure.

This positive welfare spillover can be overturned, however, when distorting taxes are endogenously determined. If a fiscal authority switches its objective in accordance with the international cooperation regime, the Pigouvian subsidy is optimal under cooperation and the coordinated monetary policy produces no inflation or deflation. On the other hand, under reasonable parameter values, the self-oriented tax policy can be less likely to boost the aggregate demand compared to the monetary policy, which gives the monetary policy an incentive to engage in competitive depreciation.

One of the most notable results on the international welfare spillover of monetary policy is the “beggar-thy-neighbor” effect indicated by Mundell (1963, 1964), Flemming (1962), and Dornbusch (1976). In contrast to these works, Rogoff (1985) analyzes a reduced-form model and argues that inflation might be systematically higher under monetary cooperation than under monetary noncooperation. Obstfeld and Rogoff (1995) further develop a model using micro-foundation, which analyzes the short-run deviation from the steady state and demonstrates that monetary

¹ In order to insulate the effect of monetary expansion on the current account when extending the analysis to a multiperiod setting, the intratemporal elasticity is set to unity so that the expenditure-switching effect and the change in the real price of products directly offset each other.

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