



## On the efficiency of monetary policy rules with flexible prices and rational expectations

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### Abstract

The classic Sargent–Wallace–Lucas (SWL) rational expectations-flexible price model is usually interpreted as implying “policy ineffectiveness”: systematic monetary rules cannot affect the distribution of real output. A contrary but not widely-appreciated result of Dotsey and King suggests that there exist “prospective feedback” rules (future money depending systematically on current but as yet unobserved information) which improve output distribution by means of improving agents’ ability to perceive relative prices.

We show the Dotsey–King proposition in fact to be a colossal understatement: prospective feedback rules applied vigorously enough (and even “contemporaneous feedback” rules based on current interest rates, provided at least one prospective feedback is active) can in the limit drive price-perception errors to zero. This is not to say such a policy would be desirable. Feedback parameter combinations that reduce current price level misperception tend to produce high forecast error variances with respect to future prices, with attendant loss in capital market efficiency. Whatever the desirable frontier among these different social cost-producing variables, feedback parameters will in general be needed in order to get on the frontier as well as to move along it. Monetary policy clearly produces social gain even in a version

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of this model which contains no elements of price “friction,” inefficient use of available information, or asymmetry in information as between the government and the public.

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## 1. Introduction

Two conclusions concerning the Sargent–Wallace–Lucas (SWL) literature of the 1970s and 1980s have survived in graduate classrooms, at least as an important piece in the history of economic thought.<sup>1</sup> First and most widely celebrated is this model’s “policy ineffectiveness” proposition whereby systematic policy rules connecting current nominal money to currently observed variables (like interest rates) known by all agents have no impact on the distribution of real output. A second, contrary and much less widely appreciated, proposition is that “feedback” policy rules, nominal money responding to previously observed variables, actually can improve the distribution of current real output. Such real impacts in the SWL framework can only come about as a result of the rules’ impact on expectations of *future* nominal money (therefore future prices and inflation over the upcoming period) in response to variables not yet observed. [Dotsey and King \(1983\)](#) and [King \(1982, 1983\)](#)—authorities on the subject of rules in the rational expectations context—referred to these feedback rules in this context as “prospective” feedback rules, as contrasted with rules relating current nominal money to currently observed information—which they referred to as “contemporaneous” feedback rules.

Interest in the SWL model stems from its conceptual rather than its descriptive value. The model’s strong assumptions concerning price flexibility, efficient use of information at the local level, and (especially) aggregate information symmetry as between the Fed and local agents provide an obvious “null” from which to explore questions about optimal monetary policy settings in more realistic frameworks. Unfortunately, both the policy ineffectiveness and effectiveness propositions referred to above have been based on analysis both incomplete and misleading. The social loss usually considered is the variance of local output about the full-information level which arises from perception errors at the local level as to the general price level. We show that with this model: (a) there exist settings of prospective and contemporaneous feedback rules that drive price-perception errors at the local level arbitrarily close to zero; (b) the settings that provide very low price-perception errors also produce arbitrarily *high* inflation forecast error variances. The cost of deteriorated predictability in returns cannot reasonably be treated as a side-effect to be ignored. (c) Finally—and this is the key contribution of this paper—we demonstrate that in general there exist policy settings which, as compared with “no policy” (zero feedback parameter) settings, reduce both local price-perception error variance as well as aggregate price and inflation forecast error variances. The upshot: it is in general necessary to use both contemporaneous and prospective feedback policy to get on the efficient frontier as well as to move along it. Monetary policy produces unambiguous social gain in the context of this model which contains no element of price “friction” or government/public information asymmetry.

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