

Output gap uncertainty and real-time monetary policy

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Abstract

Output gap estimates are subject to a wide range of uncertainty owing principally to the difficulty in distinguishing between cycle and trend in real time. We show that country desks tend to overestimate economic slack, especially during recessions, and that uncertainty in initial output gap estimates persists several years. Only a small share of output gap revisions is predictable based on output dynamics, data quality, and policy frameworks. We also show that for a group of Latin American inflation targeters the prescriptions from monetary policy rules are subject to large changes due to revised output gap estimates. These explain a sizable proportion of the deviation of inflation from target, suggesting this information is not accounted for in real-time policy decisions.

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“What is it that no one can see, hear, smell, taste or touch,
yet everyone knows is there? Answer: the output gap.”

— Caroline Baum, *Bloomberg*, April 12, 2010

1. Introduction

Output gap measures are used as if they were essential and reliable for assessing macroeconomic policies. Both fiscal and monetary policy reaction functions use output gap estimates as an input in assessing the appropriate settings for

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relevant instruments (e.g., the structural fiscal balance or the interest rate). While fiscal and monetary authorities analyze a wide variety of indicators in assessing the cyclical position of the economy (including deviations of unemployment from its natural rate), they frequently resort to the output gap to summarize their assessment of economy-wide spare capacity.

Despite being widely used to formulate policy recommendations, initial output gap estimates are characterized by large uncertainty. This has been extensively documented in the literature. For instance, Orphanides and van Norden (2002) show how real-time estimates of the U.S. output gap have often proven highly inaccurate. Ley and Misch (2013) highlight this phenomenon across a broad range of countries. In a somewhat related fashion, Ho and Mauro (2014) find that long-term growth forecasts suffer from “optimism bias”, in particular for countries whose recent growth has been below trend. Uncertainty as to the position of the economy in the cycle was particularly important at the time of the global financial crisis. For instance the size of the output gap in the United States has been repeatedly reassessed after 2007, given the large uncertainty on the impact of the financial crisis on potential output (IMF, 2010). Needless to say, this uncertainty has important policy implications and can lead to difficulties in setting a policy that is appropriate given the true state of the economy. This topic has become particularly important for emerging markets, including many in Latin America. This is the case as, during the last decade, many of these countries have transitioned toward rule-based monetary policy frameworks.

This paper revisits the issue of output gap uncertainty by analyzing properties and determinants of real-time output gap estimates from different sources for the period 1990–2014. It focuses on the changes in output gap estimates that arise due to *ex-post* GDP data revisions and changes in the decomposition of actual GDP data into its cyclical and trend components. It empirically assesses whether real-time data can predict how much the output gap will be revised later. The paper then analyzes the implications of output gap uncertainty for five Latin American economies that have implemented inflation targeting over the last decade. Our results suggest that real-time estimates of output gap are highly unreliable. In particular, country desks tend to overstate economic slack. In addition, we show that revisions are substantial (especially during recessions), persistent, and, to a large extent, unpredictable. Finally, we find that revisions help to explain deviations of inflation from the target, suggesting that this information is not accounted for in real-time policy decisions.

The paper is organized as follows. Section 2 examines the statistical properties of output gap estimates and their revisions in order to quantify the uncertainty that surrounds initial estimates of the output gap. Section 3 looks at whether these revisions can be predicted based either on country-specific characteristics or the country’s position in the business cycle at the time of the initial estimate. Section 4 illustrates the policy implications of output gap uncertainty on five Latin American economies that have operated with inflation targeting schemes during the last decade. Section 5 concludes.

2. Output gap revisions

This section examines the statistical properties of output gap estimates and their revisions, in order to evaluate the degree of confidence that can be attached to initial assessments of an economy’s cyclical position.

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