Taking the yolk from the white: New filter separates trend and cycle in macroeconomic data

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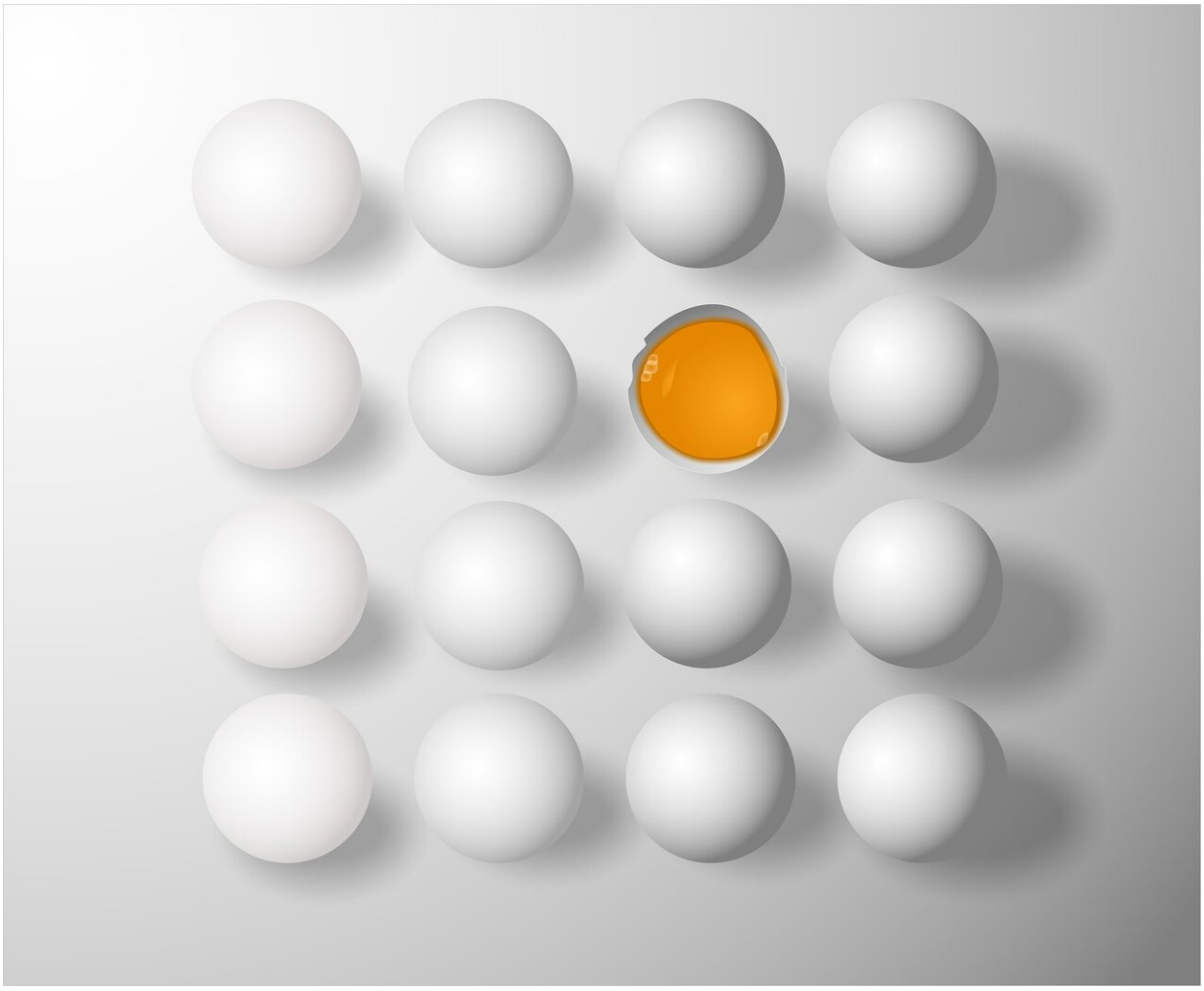

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In research published in the *International Journal of Computational Economics and Econometrics*, Peng Zhou of Cardiff University proposes a new filter technique that can separate the yolk from egg white, figuratively speaking. The filter separates trend and cycle based on stylised economic properties, rather than relying on ad hoc statistical properties such as frequency, he writes. The effectiveness of the approach has been tested against the long macroeconomic data collected by the Bank of England from 1700 to 2015.

Zhou explains how there is a division in macroeconomic theory that segregates studies on long-run economic growth, driven by low-frequency changes, and short-run business cycles, driven by high-frequency changes. There may well be a philosophical distinction, but there is no actual distinction when it comes to the data—the data for economic growth and business cycles are collected together.

The side effect of the philosophical division is that commonly testing or estimating an economic growth theory looks at the growth rate of the raw data and ignores the possible role of business cycles. Conversely, testing or estimating a business cycle theory usually involves filtering the raw data with statistical procedures, which smooths over detail. "Without a proper measurement, the validity and reliability of the empirical inferences are questionable," Zhou suggests.

As a cook might separate egg white and yolk, for different recipes, so Zhou has proposed a filter that neither ignores one philosophy nor smooths over the other but allows two different recipes to be carried out for economic growth studies and business cycle analyzing the same data "egg." He makes use of some stylised economic properties of trend and cycles to separate them.

More information: Peng Zhou. Separating yolk from white: a filter based on economic properties of trend and cycle, *International Journal*

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