



# High-growth recoveries, inventories and the Great Moderation

Maximo Camacho<sup>a</sup>, Gabriel Perez Quiros<sup>b,c,\*</sup>, Hugo Rodriguez Mendizabal<sup>d,e</sup>

<sup>a</sup> Universidad de Murcia, Spain

<sup>b</sup> Banco de España, Spain

<sup>c</sup> CEPR, London, UK

<sup>d</sup> Instituto de Análisis Económico (CSIC), Spain

<sup>e</sup> Barcelona GSE, Spain

## ARTICLE INFO

### Article history:

Received 15 July 2009

Received in revised form

9 March 2011

Accepted 10 March 2011

Available online 14 April 2011

### JEL classification:

E32

F02

C22

### Keywords:

Business cycle features

Great Moderation

High-growth recovery

## ABSTRACT

We present evidence about the disappearance of the high-growth recoveries from recessions with intense job creation typically observed until the eighties. This result matches the belief that recessions now have an L-shape as opposed to the old-time recessions that always had a V-shape. We also show how this change in business cycle dynamics can explain part of the Great Moderation. We postulate that these two phenomena may be due to changes in inventory management brought about by improvements in information and communications technologies.

© 2011 Elsevier B.V. All rights reserved.

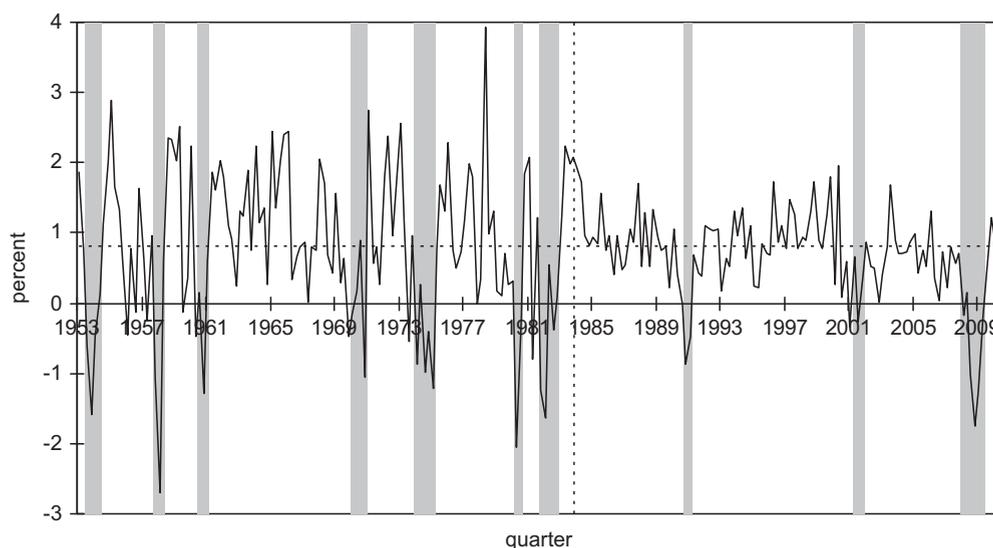
## 1. Introduction

There is a traditional debate in economics on how recessions finish, i.e., whether they are “V-shaped” or “L-shaped”. The former type of recession refers to the case in which the economy springs back rapidly from its slump, whereas the latter refers to the case in which the economy faces a period of flat or at best slowly improving performance. Facing either V-shaped or L-shaped recessions has both economic and econometric implications. The economic implications of facing each of these types of recoveries are evident. V-shaped recessions are viewed as evidence in favour of Friedman’s (1993) plucking model, in which output cannot exceed a ceiling level but is occasionally plucked downward by recessions which have only temporary effects. On the contrary, recessions which are followed by flat recoveries (L-shaped) are viewed as having permanent effects on the level of production.

The econometric implications of facing these two alternative recoveries have to do with the traditional discussion regarding whether US output exhibits either a deterministic or a stochastic trend. On the one hand, Kim and Nelson (1999b) document that US recessions were usually followed by periods of very high growth which have been called the “third phases of business cycles”. Having rebounds after recessions which spring the economy back to pre-recession levels can be viewed as the economic interpretation of the papers that find evidence that GDP is trend stationary and that the effects of recessions are mainly transitory. In this context, Cheung and Chinn (1999) conclude that, with a long span of data, one can obtain evidence of trend stationarity. On the other hand, if one cannot observe the rapid recoveries in output,

\* Corresponding author at: Banco de España, Spain

E-mail address: [gabriel.perez@bde.es](mailto:gabriel.perez@bde.es) (G. Perez Quiros).



**Fig. 1.** GDP growth rates 1953:1–2010:2. Note: Shaded areas correspond to recessions as documented by the NBER. The vertical discontinuous line refers to 1984:1. The horizontal discontinuous line represents the average growth rate of the whole sample.

the negative effects of recessions can be viewed as more permanent. Supporting this view, [Campbell and Mankiw \(1987\)](#) show that there is a considerable permanent effect of a surprise change in output.

In this paper we show that, after the eighties, business cycle recoveries have turned out to be L-shaped, so the periods following recessions are now characterized not by high growth but by lower growth than in the course of the expansion. The change in this business cycle feature roughly coincides with the jobless recoveries from the recessions since the nineties, as documented by [Groschen and Potter \(2003\)](#). To provide a view of the form of US recoveries, [Fig. 1](#) shows the growth rates of GDP together with the recessions as documented by the NBER. In the graph, we can observe the decline in the relevance of the high-growth recovery phase of the cycle in the last three recessions. While the end of the seven recessions prior to the mid-eighties were characterized by above-average growth rates, the recessions after that date were followed by quarterly growth rates below the average. According to our discussion above, an important consequence of the disappearance of this high-growth recovery phase is that recessions now have the potential to have long run effects on the economy.<sup>1</sup>

The sluggish pace of recovery in output during the recoveries since the nineties contributes to the sluggishness of job creation observed after the latest recessions. In these recoveries, [Groschen and Potter \(2003\)](#) find more evidence of permanent job losses than of temporary layoffs and reallocation of jobs from one industry to another. [Schreft et al. \(2005\)](#) show that one common feature of the recent jobless recoveries was the greater use of just-in-time employment practices, the employment of temporary and part-time workers and the use of over time to achieve a more flexible workforce.

Noticeably, the loss of the high-growth recovery phase of business cycles and the evidence of jobless recoveries roughly coincide with the period of the Great Moderation previously documented by [McConnell and Perez Quiros \(2000\)](#) and [Kim and Nelson \(1999a\)](#), which has been dated in the first quarter of 1984. In this paper we present evidence to show that these two features of US business cycle dynamics may be related. According to our measures, part of the high volatility of output growth before 1984 can be explained by the existence of the high-growth recovery phase. By means of a counterfactual exercise, we show that when this phase is removed from business cycle dynamics, the statistical evidence for a structural change in the volatility of output decreases dramatically.

In addition, we postulate that both the volatility reduction and the loss of the high-growth recovery phase can in part share the same economic sources, which are related to changing business practices. [Kahn et al. \(2002\)](#) analyze the role of inventory management as the source of reduction in output growth volatility. In addition, [Davis and Kahn \(2008\)](#) and [Kahn \(2008\)](#) directly relate the Great Moderation to changes in the role played by inventory accumulation from avoiding stockouts (see [Kahn, 1987](#)) to smoothing production. But this change in inventory management could also explain the loss of the high-growth recoveries since the eighties. According to these authors, firms maintained inventories to avoid stockouts until the eighties. In periods of low demand, inventories are low because the probability of stockout is low. As the economy exits the recessionary period, firms increase production not only to satisfy growing demand but also to replenish inventories above the level they had during the recession which would lead to recoveries with rapid growth. Using this view, [Sichel \(1994\)](#) stated that the high-growth recovery phase of business cycles until the eighties could be linked to inventory accumulation. However, the rapid improvements in information technology in the eighties have led firms to rationalize the use of inventories, which are now used to smooth production. In periods of low demand, firms maintain their production levels and accumulate inventories to

<sup>1</sup> [Sichel \(1994\)](#) and [Kim and Murray \(2002\)](#) documented the inexistence of the third phase after the 1991 recession.

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات