Journal of Development Economics 109 (2014) 98–123

Contents lists available at ScienceDirect

Journal of Development Economics

journal homepage: www.elsevier.com/locate/devec

Have business cycles changed over the last two decades? An empirical investigation ☆

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ARTICLE INFO

Article history:
Received 25 October 2012
Received in revised form 26 February 2014
Accepted 3 March 2014
Available online 12 March 2014

JEL classifications:
E32
F41

Keywords:
Business cycles
Peaks and troughs
Emerging markets

ABSTRACT

We document the properties of business cycles of 71 countries (23 industrial countries and 48 emerging market economies, or EMEs), from 1970q1 to 2012q4 using the Harding and Pagan dating algorithm. First, recessions are deeper, steeper and costlier among EMEs (especially in East Asia and Latin America). Second, recoveries are swifter and stronger among EMEs, partly due to stronger rebound effects. Third, recessions became less costly during the globalization period (1985–2007) for industrial countries and EMEs, thus reflecting institutional changes made during the "Great Moderation." Fourth, the dynamic behavior of macroeconomic indicators around peaks in real GDP is more volatile in downturns associated with crisis compared to other downturns. Fifth, peaks in financial cycles (credit and asset prices) tend to precede peaks in real output cycles. Finally, although both industrial and emerging markets have experienced deep recessions during the recent global financial crisis, the emerging markets have recovered faster.

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1. Introduction

Emerging market economies (EMEs) have experienced greater macroeconomic volatility than industrial economies. Fluctuations in output, exchange rates, and current account balances are typically more frequent, sharper, and abrupt in EMEs. This phenomenon is typically attributed to country-specific factors that amplify external shocks and have led to a higher incidence of banking, currency, and external debt crises (The World Bank, 2007).[1] These country-specific characteristics include excessive dependence on a few volatile sectors, a narrow tax base, fragile financial systems, weak institutions, and poor economic policies. More recently, however, the focus has gradually shifted towards the external (exogenous) environment faced by EMEs, including real shocks, e.g., shocks to commodity prices and to a country's external demand (Arora and Vamvakidis, 2005; Broda, 2004), financial shocks, such as rising world interest rates and global risk aversion (Neumeyer and Perri, 2005; Uribe and Yue, 2006), and natural disasters (Calderón and Levy-Yeyati, 2009; Loayza et al., 2012; Raddatz, 2007).

In the search for an explanation for the excess volatility of output fluctuations in EMEs relative to advanced economies, Aguiar and Gopinath (2007) build a real business cycle where shocks to trend growth are the main drivers of output fluctuations in EMEs while developed economies tend to experience transitory fluctuations around a stable trend. The introduction of stochastic productivity trends permits the authors to replicate the stylized facts of business cycles in EMEs vis-à-vis industrial countries. Other authors show that business cycle features of EMEs can be replicated in models with financial imperfections that amplify transitory productivity shocks (Chang and Fernández, 2013).

This paper attempts to describe the main features of the business cycles of emerging market economies and industrial countries as captured by the duration, amplitude, slope, and cost of downturns and upturns in real economic activity. To accomplish this task we use a comprehensive quarterly dataset for 71 countries (23 industrial economies and 48 emerging-market economies) from 1970q1 to 2012q4. The focus of our paper is to compare the main features of real output cycles in EMEs vis-à-vis industrial countries before the outbreak of the global financial crisis (1970–2007). Next, we examine whether those facts changed

☆ We would like to thank Gianluca Clementi, Alberto Naudón, Klaus Schmidt-Hebbel, Rodrigo Valdés and two anonymous referees for comments and suggestions, as well as participants at the WB-CEPR-CREI Conference on "The Growth and Welfare Effects of Macroeconomic Volatility," 2007 LACEA Conference in Bogotá, 2007 Meetings of the Chilean Economic Society (SECHI), the Central Bank of Chile Seminar and the 2010 Econometric Society World Congress in Shanghai. Special thanks to David Rappoport for outstanding research assistance. The views expressed in this paper are those of the authors, and do not necessarily reflect those of the World Bank or its Boards of Directors. The usual disclaimer applies.

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[1] Recent examples of such crisis episodes are the Tequila and East Asian crises and massive depreciations of the Brazilian and Russian currencies, the subprime crisis in the U.S., and the Greek sovereign debt crisis. The recurrence of crisis episodes has increased interest in disentangling the sources of economic crises.

http://dx.doi.org/10.1016/j.jdeveco.2014.03.001
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with the advent of the recent global crisis by comparing the periods 1990–2006 and 2007–2012.[2]

The main contribution of this paper is three-fold: First, we use a *common methodology* for dating turning points for a large sample of countries using quarterly data.[3] This analysis allows us to estimate comparable statistics of duration, depth, and speed of recessions and recoveries for both industrial and emerging-market economies. Second, we examine the evolution of the main business cycle characteristics over time. Specifically, we compare the main features of the cyclical output phases during the periods of pre-globalization and globalization (1970–84 and 1985–2007, respectively) for both industrial and emerging-market economies. Third, we assess whether the length and size of cyclical phases of real output for industrial and emerging markets have changed during the recent global financial crisis compared with the performance of real economic activity over the past 15 years. Here, we focus not only on the differences across country groups in the duration and depth of the recession but also on the speed and strength of the ensuing recovery.

We further document the excess volatility of real output fluctuations in EMEs when compared with industrial countries by first reporting the joint distribution of output contractions by duration (short, medium, long, and protracted) and amplitude (mild, moderate, severe, and depression).[4] Second, we compare the main features of recessions during crisis and their ensuing recoveries with those that do not coincide with crisis episodes.[5] Third, we zoom in on the correlates of real output cycles by exploring the dynamics of macroeconomic variables around recessionary periods using event study analysis. We report the trajectory during a four-year window around peaks in real GDP associated with banking crises and compare them with periods without crisis for the following real and financial indicators: private consumption, investment, real credit to the private sector, stock prices, and real exchange rates. Finally, this paper provides a first assessment of the traits of recessions and recoveries during the recent global financial crisis (GFC). We compute the duration, amplitude, and slope of recessions as well as their ensuing recoveries for industrial and emerging-market economies during the most recent cycle (2007–2012) and we compare these findings with those of output cycles over the last 15 years before the GFC (1990–2006). Next, we examine the dynamic pattern of real and financial indicators around peaks in real economic activity during 1990–2006 and 2007–2012.

In sum, we aim to answer the following questions: Are there systematic differences in the main features of business cycles (duration, amplitude, and cost) in industrial countries vis-à-vis emerging markets? Are business cycles alike within emerging markets? Are business cycles similar over time and across country groups? Are the main features of recessions and recoveries different when a crisis occurs? Do crises matter for the dynamics of macroeconomic indicators around recessionary periods? Have the main stylized facts remained invariant during the recent global financial crisis? Are recessions longer and deeper this time around? Are the ensuring recoveries faster and stronger?

The evidence presented in this paper confirms that recessions in emerging-market economies are deeper, steeper, and hence, costlier than those in industrial countries, although they have the same duration. On the other hand, the ensuing recoveries in EMEs are stronger and more intense but slower and more volatile. The strong recovery among EMEs could be attributed to a larger rebound effect or to the fact that these countries have experienced a larger trend-growth rate than industrial economies during the period of analysis. We provide evidence that recessions during the globalization period (1985–2007) are less severe for Latin America and the Caribbean (LAC) compared with the previous period (1970–1984) while the main traits of recessions in East Asia and the Pacific (EAP) and Eastern Europe and Central Asia (ECA) remain unchanged with the advent of globalization.

Deeper and costlier recessions in EMEs are associated with a higher incidence of (financial, currency, or debt) crises. During crisis-related downturns, troughs in consumption and investment are deeper while real credit and asset prices tend to be more volatile in EMEs (as opposed to regular recessions). Moreover, we find that peaks in real credit and stock prices tend to precede peaks in real output during crises in EMEs, and that the domestic currency tends to depreciate in real terms, while it appreciates for industrial countries.

Finally, recessions among industrial countries and EMEs, except for Latin America, are deeper and steeper during the recent global financial crisis when compared with the pre-crisis globalization period. Interestingly, the rebound from the profound downturns among industrial economies has been slower this time around, as opposed to the fast recovery of EMEs (excluding ECA).

The paper is divided into four sections. In Section 2 we briefly describe some methodological issues regarding business cycle dating. Given the lack of consensus in the literature, we opt for a methodology to characterize business cycles that has the following characteristics: (a) it does not rely on arbitrary trend-cycle decompositions, (b) it provides a uniform statistical foundation to identify turning points, (c) it is robust to changes in the sample period, and (d) it is easy to replicate for a wide array of countries. Specifically, we implement the quarterly adaptation of the Bry–Boschan algorithm (BBQ) proposed by Harding and Pagan (2002). Following the traditional approach outlined by Burns and Mitchell (1946), we identify turning points in the level of output and define the different phases of the cycle (recession, recovery, and expansion) and their characteristics—including duration, amplitude, slope, and cumulative movements for each phase of the cycle. In Section 3, we first discuss the business cycle features of our sample of 71 countries from 1970q1 to 2007q4 (before the onset of the global financial crisis). Then, we argue that the greater depth of business cycles in EMEs relative to industrial countries is influenced by their coincidence with crisis episodes. Therefore, we compute the main features of downturns and upturns associated with crisis and examine the correlates of downturns in economic activity using event-study analysis for consumption, investment, credit, and asset prices during crisis. Next, we compare the length, depth, and intensity of business cycles during the recent global crisis (2007–2012) and the pre-crisis period of 1990–2006. Recessions are significantly deeper in industrial economies and emerging markets, except for LAC. However, recoveries are faster and stronger in EMEs (other than ECA countries), and slower and weaker in industrial countries. Finally, Section 4 concludes.

2. Measuring business cycles

This section outlines the methodology used to characterize business cycles for a sample of industrial countries and emerging market economies. The first part of the section discusses the advantages and disadvantages of some of the methodological options for detecting turning points, whereas the second part describes the statistical technique used in this paper; that is, the quarterly adaptation of the Bry–Boschan (BBQ) algorithm proposed by Harding and Pagan (2002).

2.1. Methodological issues

There is no single approach in the literature to characterizing the features of the business cycle. On the one hand, the seminal work by

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