博士学位论文

中国经济周期的“典型事实”
及其形成机制研究

A Study of China’s Business-Cycle “Stylized Facts”
and Its Formation Mechanism

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中国经济周期的“典型事实”及其形成机制研究

1. 经济周期的一般具有几个基本特征:
   1. 重复发生性，经济的扩张或收缩现象反复出现。
   2. 经济变量围绕其长期趋势进行调整。
   3. 经济中的诸变量具有共同波动的趋势（Co-movements）。在经济处于高涨时，大多数变量均处于扩张期，而在经济萧条时，大多数变量则均处于收缩期，经济活动中的诸变量存在着同涨同落的现象。

2. 本文以建国以来中国经济周期波动历史演变及形成机理为主线索来安排篇章结构，全文共分四章:
   第一章，经济周期的理论述评。在该部分主要考察经济周期理论的发展历史，通过分析各经济周期理论的产生背景和主要观点，梳理、整理出各经济周期理论的优缺点，为分析和理解中国的经济周期现象提供理论上的参考。所考察的理论主要有：古典经济周期理论、凯恩斯经济周期理论和现代经济周期理论。所涉及的内容包括：经济周期的定义、经济周期的类型、经济周期阶段的划分、当代西方主要经济周期理论评述等。
   
   第二章，中国经济周期的“典型事实”。通过运用计量经济学的方法，测定和描述中国经济周期波动的“典型事实”，该部分所研究的内容主要有：通过运用"Dickey-Fuller"单位根检验法，验证中国经济诸变量的长期增长趋势是否具有随机性。通过运用差分法、HP滤波法和Band-Pass滤波法分离中国经济诸变量的长期趋势，从而得到经济变量的周期项。对所得到的周期项，采用时域分析的方法（互相关性分析），计算各经济变量与GDP序列的互相关性，判断各经济变量的顺周期性（Procyclical）和逆周期性（Counter-Cyclical）。运用频域分析的方法（谱分析）分析各经济变量的谱密度，计算与GDP序列的相干谱（Coherency）和相位谱（Phase Spectrum），得到经济变量的一些典型事实，划分中国经济周期波动阶段，比较改革前后中国经济周期的波动特征。
   
   运用偏度（Skewness）统计量，对我国经济周期波动的非对称性形态和特点进行研究。
第三章，中国经济周期的形成机制。该部分所研究的内容主要有：

对居民消费与收入关系进行了协整分析，运用可变参数模型(Time-Varying Parameter Model)来反映我国居民消费结构的变化情况，对我国居民消费的敏感度进行了估算；对我国财政支出的乘数效应进行了动态估计，分析了财政政策的挤出效应；运用投资波动的二阶加速模型(SOA)来解释和分析我国投资波动的内生机制；通过建立联立方程组模型分析外贸出口对我国经济周期的影响；对我国货币供应量的外生性进行了检验，运用Logistic模型分析了货币政策的反周期特征，同时检验了货币政策的非对称性；对我国金融市场与经济周期波动关系进行了Granger因果关系检验。

第四章，中国经济景气循环指数的构建。该部分主要结合我国经济的实际情况，运用国际经济合作组织(OECD)开发的经济循环模型体系—阶段平均趋势法(Phase Average Trend, PAT)模型构建我国景气循环复合先行指数，同时对我国经济循环周期年表进行了简要分析。
新与贡献方面主要有:

1、运用谱分析等手段，较系统地对中国主要经济变量的周期波动特征进行了测定和描述，给出了主要经济变量的周期长度，判定了主要经济变量的顺、逆周期特征，为我国经济周期的理论研究提供了基本的参考和事实依据。

2、首次运用偏度（Skewness）统计量，对我国经济周期波动的非对称性形态和28个省及直辖市的GDP时间序列的非对称性进行了检验。

3、首次运用马尔可夫体制变化模型，对我国的“产出-物价”菲利普斯曲线进行了估计。

4、在构造经济循环指数时，采用了固定资产投资额、社会消费品零售额、出口额三个指标复合而成的综合指数作为参照序列，进而构造复合领先指数的方法。

关键词：经济周期，波动性，典型事实，形成机制
Macroeconomics is the study of the long-run growth trend of the main economic aggregates and the short-run fluctuations of the main economic aggregates in a country. The former is the theory of economic growth and the latter is the theory of business cycle. The history of economic growth shows that the fluctuation of economic aggregates is a universal phenomenon in most industrialized countries and many developing countries. As an important field in macroeconomics, the study of business cycle theory already has last more than 200 years, and has itself undergone periods of intense activity in the 1920s and relative dormancy in the 1960s. With the growing of people's understanding of business cycle and the development of econometric techniques, new theories and methods of business cycle analysis are constantly being proposed and therefore building a lot of economic schools of thought and analysis models. Among them, the Keynesian theories of fluctuations that being proposed in 20 centuries have a profound effect on modern Macroeconomics, so we can divide a lot of business cycle theories as pre Keynesian theories, Keynesian theories, post Keynesian theories and modern business cycle theories.

In the earlier years, business cycle theories is concerned with classical cycles, and they believe that the durations of business cycles are combinations of deterministic cycles of different lengths, the long-run growth trend of the main economic aggregates and the short-run fluctuations of the main economic aggregates are dichotomies. The types of fluctuations of economic aggregates are Kondratiev (50-56 years), Kuznets (15-25 years), Juglar (7-11 years) and Kitchin (40 months) cycles.
As a result of theoretical level development, the key characteristics of modern business cycle analysis emphasize that the fluctuations of economic aggregates are consistent with the long-run growth of economic aggregates, they hypothesize that the fluctuations are stochastic, and stress the interaction of the fluctuations of economic aggregates and the long-run growth of economic aggregates. For example, in a RBC model, technology shocks are a major source of business fluctuations, The economic persons with rational expectations make a best reaction towards the price variation which caused by real factors of persistent technique shocks etc., adjusting the labor to supply and consumption. The yield and employments change is been taken as making Pareto adjustment process to the shocks of output functions, therefore, The fluctuations of output are variation of natural rates of growth but not deviations from trend, and the view which takes the long-run growth trend of the main economic aggregates and the short-run fluctuations of the main economic aggregates as dichotomies has thus been abandoned. Although the definition of the business cycles, the major macroeconomic schools of thought say different, some properties of cycles are same as: 1. Recurrence, the expansions and contractions in aggregate economic activity appears again and again. 2. The fluctuations of economic aggregates are deviations from its trend. 3. The co-movements among the main economic aggregates. When economy is in a boom, most of economic variables are in expanding phase, and when economy is in a recession, most of economic variables are in contracting phase. The co-movements among the main economic aggregates are not only similar across different cyclical episodes but are similar across cyclical phases.

This paper is organized according to the main clues of the evolution of China’s economic fluctuations and its formation mechanism; the literature is...
divided into four chapters:

Chapter 1 is a selective review of business cycle theories. In this chapter, we investigate the history of business cycles theories, based on giving an overall and systematic combination of the history background of foreign business cycles theories and its main standpoints, we attempt to find theoretical evidence for understanding and measuring China’s economic fluctuations. The theories we investigate in this chapter include: the classical cycles theories, Keynesian theories of fluctuations and modern business cycles theories. The contents involved in this chapter include: the definition of business cycle, the types of business cycles, discerning the phases of business cycles and the summary of contemporary business cycle theories.

Chapter 2 presents some stylized facts about China’s economic fluctuations. We apply econometric techniques to measure and describe the characteristics of China’s business cycles. The contents involved in this chapter include:

We apply Dickey-Fuller unit root test approach to examine whether the long-run growth trend of China’s economic aggregates have stochastic trends or not.

The Hodrick-Prescott filter, Band-Pass filter and First Order Differencing filter are employed for isolating the cyclical components of China’s macroeconomic time series from long-term secular trends, after obtaining the cyclical components, we apply time-domain statistical techniques to calculate the cross-correlation coefficients between real GDP and other variables, so we can see whether a variable is procyclical or countercyclical. Again, we apply frequency-domain statistical techniques to calculate the Coherence coefficients and Phase Spectrum coefficients between real GDP and other variables. We apply the above methods to obtain some stylized facts about China’s economic
fluctuations, to classify the phases of China’s business cycles and compare the characteristics of China’s business cycles before 1978 with the period since the initiation of economic reforms.

In this chapter, we also apply the skewness statistics to test business cycle asymmetry in China and the asymmetry of 28 provinces GDP time series, to identify the nature of regional economy. We adopt Markov-Switching Model approaches to estimate the function of “output-inflation” Phillips curve.

Chapter 3 presents the formation mechanism of China’s business cycles. In this chapter, we apply cointegration regression to show the relationship between income and consumption, adopt Time-Varying Parameter Model to reflect the variations of consumption structure, and the excess sensitivity of consumption is been estimated, the multipliers of fiscal policy and the crowding-out effects of fiscal policy in Chinese economy are also been estimated, the fluctuations of investment can be interpreted as a second order accelerator mechanism, we establish the Simultaneous Equations Models to estimate the effects of exports, Carried on the examination to the exogeneity of monetary supply, we analyze the anti-cyclical characteristics of monetary policy and the asymmetry of monetary supply by means of Logistic models. In addition, the Granger Causality Tests are been carried out between the financial markets and the fluctuations of GDP time series.

Chapter 4 turns to cyclical indicator systems in China. According to the actual circumstances in our country, we set up a leading indicators system for China by means of Phase-Average Trend (PAT) method that developed by OECD; meanwhile, we analyze the reference chronology of China’s business cycles.

Because the economic stylized facts are those conclusions that have been tested by statistical techniques, they are of little relevance to economic theories,
the stylized facts are not only the objects of theoretical research, but also have been taken as a benchmark in the empirical analysis. Therefore, the study of business cycles theories, particularly in China, the first thing is to draw the stylized facts from the fluctuations of economic aggregates, regarding above all, the purpose of this paper, based on the systematical analysis of the business cycles theories, is devoted to explain the surges in China’s economic aggregates, after measuring and describing the characteristics of China’s business cycles, we clarify the general formation mechanism of China’s business cycles, discerning the structural transformation since 1980s, the paper also provides the favorable evidence for recognizing the laws of economy, building up scientific monitor systems, predicting the economic movement tracks and making policies. The main contributions of this paper are as follows:

By means of spectral analysis, the paper gives an overall and systematic measuring to the fluctuations of the main economic aggregates in China, provides the favorable evidence for theoretical research on business cycles, applies the skewness statistics to test business cycle asymmetry in China and the asymmetry of 28 provinces GDP time series, adopts Markov-Switching Model approaches to estimate the function of “output-inflation” Phillips curve, and in cyclical indicator systems, the paper adopts a composite reference series which is combination of investment in fixed assets, retail sales value and total exports value to construct the composite leading indicators.

**Key Words:** Business Cycles; Fluctuation; Stylized Facts; The Formation Mechanism.
前言

经济周期问题是宏观经济学中古老而常青的课题。经济发展的历史表明，经济波动与经济增长是一对孪生兄弟，它们共生于每一个经济体中。早在1937年，Haberler对当时的经济波动理论进行了系统总结，而Burns和Mitchell（1946）则从时间序列数据入手，通过建立经济周期参考年表证明了有规律的经济周期的存在，并刻画了与周期各阶段有关的价格和数量序列的特征。之后以凯恩斯理论为基础的所谓新古典经济理论通过建立可计量的多部门宏观模型，将理论与政策融为一体，试图通过政策来影响经济周期。但在上世纪70年代中期，凯恩斯理论受到了理论上和实践上的双重挑战。随着经济理论研究的不断深入以及经济计量学的广泛运用，现代经济周期的研究方法和研究手段都在不断的丰富，研究的重点也逐渐转变到解释经济周期的特征上来，通过分析经济运行中的“冲击-传导”过程来解释经济波动的原因。当然，在对冲击的来源和传导机制的性质认识上，各经济学派并不统一，较有代表性的观点有两种：一种是实际经济周期理论（RBC），它强调在竞争经济下技术冲击是宏观经济波动的原因（Kydland and Prescott等，1982），该理论来源于Lucas（1972）。早期理论认为货币冲击对经济波动不起主要作用，但近期理论认为货币冲击对经济波动是有一定的作用（Freeman and Kydland, 2000）；另一种称为新凯恩斯理论，该理论认为总需求冲击是经济波动的主要因素，其最重要的假设是市场不完善导致的工资和价格粘性。这两种理论的差异现在并不大，只是强调的重点不同而已。统计分析表明，就经济波动而言，不发达国家经济波动要高于发达国家的经济波动。而对中国的情况来说，由于我国经历了计划经济和市场经济两种完全不同运行机制，经济运行的特定难点在于找不到一条较为稳定的增长机制。
中国经济周期的"典型事实"及其形成机制研究

中国经济周期的"典型事实"及其形成机制研究

路径,使得经济总是处在大起大落的状态。应该说,造成我国经济周期波动的原因是复杂而多样的,除了体制方面的原因外,投资因素、货币因素、财政政策等都对我国的经济运行产生了实质性冲击。同时,随着我国对外开放程度的不断加深,特别是加入WTO后,我国经济已经融入到全球经济的大环境里,世界经济的变化对我国经济周期的影响程度也越来越大。

从总体上看,改革开放前中国经济周期波动的幅度要大于改革开放后的周期波动,并且引起经济周期波动的原因也相对单一。改革开放后,特别是20世纪90年代后,我国的经济建设进入了一个新的阶段,同时也面临一些前所未有的难题,其间,经济如何保持持续稳定增长的问题始终没有得到很好的解决,引起经济周期波动的成因也变得更为复杂和多样。为此,我国学术界进行了广泛和深入的讨论和研究。但迄今为止的文献,并未对我国经济周期的"典型事实"进行一个系统的判定和总结,对周期形成的机理也众说不一。

本文研究的目的在于:通过对我国经济周期的基本事实进行总结,为我国经济周期的理论研究提供借鉴和事实依据;通过对我国经济周期形成机制的研究,揭示我国经济发展变化的基本规律;通过构造中国经济循环指数,为建立我国经济预警系统、进行宏观预测提供借鉴和参考。全文的结构安排是:第一章,经济周期的理论述评。第二章,中国经济周期的"典型"事实。第三章,中国经济周期的形成机制。第四章,中国景气循环指数的构建。
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