



Munich Personal RePEc Archive

# **The Building Up of New Imbalances in China: The Dilemma with ‘Rebalancing’**

Wagner, Prof. Dr. Helmut

FernUniversitaet in Hagen

May 2016

Online at <https://mpra.ub.uni-muenchen.de/71494/>

MPRA Paper No. 71494, posted 23 May 2016 13:35 UTC

# The Building Up of New Imbalances in China: The Dilemma with ‘Rebalancing’<sup>1</sup>

Helmut Wagner<sup>a</sup>

May 2016

## **Abstract**

*This paper offers a theoretical basis for the concept of rebalancing and applies it to China, where it is currently a topical issue. Rebalancing here means the correction of economic and social imbalances built up during industrialization. This correction is accompanied by a structural transformation towards a more inward- and consumption-driven growth path, associated with growth slowdown. Attempts to mitigate this growth slowdown by either retarding this structural reform process or by using expansionary stimulus programmes as done over the past decade in China create new imbalances that have to be corrected (rebalanced) again. Managing these multiple rebalancing tasks together is a tremendous undertaking, as this paper shows.*

**Keywords:** rebalancing, China, development strategy

**JEL Classification:** F41, O10, O40, O53

<sup>a</sup> Helmut Wagner

University of Hagen, Chair of Macroeconomics

Universitätsstraße 11, D-58084 Hagen, Germany

Phone: +49(0)23319872640

Fax: +49(0)2331987391

E-Mail: [helmut.wagner@fernuni-hagen.de](mailto:helmut.wagner@fernuni-hagen.de)

---

<sup>1</sup> A first draft of this paper was written and presented during my visiting fellowships at IMF’s Asia and Pacific Department in Washington, DC, in September/October 2015, and at the Bank for International Settlements’ (BIS) Representative Office in Hong Kong in February 2016. I thank my colleagues at these institutions as well as Prof. Xu from Hong Kong University and Dr. Dollar from Brookings Institution for useful discussions, comments and hints. My special thanks go to Linda Glawe for her excellent research assistance.

## I Introduction

The term ‘rebalancing’ was used by the Chinese government in its 12th and 13th five-year plans (initiated in 2011 and 2016 respectively). This was meant to be the necessary shift in the Chinese economy from an export- and investment-driven growth path to a more inward- and consumption-driven path. This rebalancing, or restructuring, process was supposed to be associated with a gradual decline in the economic growth rate, also called the ‘New Normal’. The rebalancing strategy initiated by the Chinese government followed earlier advice from the International Monetary Fund (IMF, see, e.g. Blanchard and Giavazzi 2005; Aziz 2006; Prasad 2009). There it was argued that the investment- and export-led growth strategy in China would create ever greater imbalances that would have negative effects not only on China but on the world economy as well (see chapter III below for more detail).

The call for a rebalancing of the economy is not a new topic only in China, but in Asia as a whole. In Asia, the term rebalancing has been particularly used in discussions on the necessary change in economic policy in East Asia over the past couple of years. It was often argued that Asia, or Asian economies, would need a new paradigm for development, a paradigm that creates ‘more balanced’ growth. The reasoning behind this point is that Asia recognised that the old growth strategy established after the Asian crisis (1997/8), which was accompanied by a strong dependence upon exports, created a great deal of vulnerability with respect to demand for domestic goods from other (esp. developed) countries. This became apparent after the global financial crisis (2008/9) when demand from the Western countries drastically diminished. Therefore the voices that call for growth that is less dependent upon exports to these countries have become louder (see, e.g. Prasad 2009; Kawai and Lee 2015).<sup>2,3</sup>

In general, rebalancing means the correction of imbalances built up in the past. In this paper I will show that China faces *multiple* rebalancing challenges, namely correcting ‘old’ imbalances built up during industrialization and ‘new’ imbalances triggered in the process of correcting the old imbalances. On the one hand, by having followed an unbalanced development strategy over the past three decades, China has built up substantial economic and non-economic imbalances, which led to the demand for ‘rebalancing reforms’ by the IMF, taken up by the Chinese government in the past two five-year plans (here called ‘old’ imbalances). On the other hand, China is currently building up further/new economic imbalances that could cause significant problems over the next decade. These

---

<sup>2</sup> Although it first seemed as if East Asia would not be significantly affected by the crisis, from September 2008 to the first half of 2009, all emerging economies in East Asia faced a sharp decrease in rates of export growth leading to even negative values accompanied by a falling output (see Kawai and Lee 2015, 32).

<sup>3</sup> This view is not uncontroversial among Asian economists as it can be argued that fewer exports is not an (not the only) option for small and thus export-dependent economies. Even for China, export-dependency is not the major problem, rather the too high investment ratio (see below).

latter new imbalances arise from the government's political reaction to (i) the recently started structural transformation process towards a tertiarized economy, and (ii) the large external demand shocks as a consequence of the global financial crisis. Both reactions (to i and ii) included Keynesian-type expansionary macroeconomic stimulus programmes, which led to new imbalances such as overcapacity and excessive debts, etc. (here called 'new' imbalances). Correcting these new imbalances will (at least temporarily) intensify the growth slowdown associated with structural change at the beginning deindustrialization (accompanying the original rebalancing process). This will be explained below in more detail.

The paper is structured as follows. Chapter II provides a theoretical basis for the discussion on rebalancing. In chapter III, the theoretical foundation for the concept of rebalancing is further worked out and a categorisation of imbalances is developed<sup>4</sup>; moreover, we will analyse the types of multiple imbalances China is confronted with. Chapter IV will then document these imbalances in more detail and elucidate the dangers of new rebalancing problems in the near future in China. Chapter V will highlight the implications and draw some conclusions.

## **II A theoretical basis for the discussion on rebalancing**

The term 'rebalancing' is mostly used in the literature as a general term without any theoretical underpinnings. Here, I want to give a short introduction to the theoretical basis of my understanding of rebalancing, which is relevant for my further analysis in this paper.

A political party (running, or participating in, a government) usually has a political programme that sets out or includes its long-term goals. And it has some mid-term (e.g. economic) goals that it intends to, or announces that it will, fulfil within its term of office (i.e. a certain shorter-term period).<sup>5</sup> Missing such goals creates political problems. Assume that a planner sets an economic growth rate goal for a certain planning period. In the case of a 'rational' and 'patient' planner, this growth goal can be interpreted as a kind of balanced growth goal, meaning that this goal is consistent with an assumed balanced development path (trying to avoid system-destabilising imbalances). Sustainably overshooting or undershooting this goal will lead to imbalances (or an unbalanced growth or development path) insofar as some sectors (or subsystems) will fall into disequilibrium. Overshooting the goal will lead to excess demand associated with exploitation of resources (e.g. of natural resources, and of human resources, leading to labour exploitation and undersupply of social security) and with

---

<sup>4</sup> Previous discussions about rebalancing (in China) have been rather a-theoretical.

<sup>5</sup> Also in a one-party system like in China there are terms of offices; in China five-year-periods, which are associated with five-year-plans, where specific goals are set.

increasing income inequality. (I will show below that this has been the case in China.) Furthermore, and perhaps even more importantly, sustainably overshooting the growth goal (which leads to a quicker-than-originally-planned increase in the standard of living measured by the GDP/output per capita) will increase the future expectations and the claims behaviour of the population (expecting further sharp/quick increases in the standard of living), i.e. further overshooting.

But such imbalances have to be corrected sometime (i.e. a rebalancing process has to be started, and past excesses have to be deleveraged orderly<sup>6</sup>). However, reducing the imbalances by reducing the overshooting (or even by undershooting the growth goal) will then create disappointment among the voters or the public in general. Multiple undershooting of goals – or of higher claims/demands built up in the prior process of sustained overshooting of the goals – will create a loss of legitimation for the elected party or government. We can think of something like a ‘**red** line’ (or political-legitimation threshold), which the party or government should not undershoot frequently or for too long in order to avoid political-legitimation problems (revolts, or the danger of not being re-elected).<sup>7</sup> Furthermore, undershooting will also be associated with creating imbalances such as idle resources such as (sectoral) unemployment, which will cause further disappointment among the public and hence create additional political-legitimation problems.

Therefore, if there is (a threat of) multiple undershooting of this **red** line, the party/government will try or be forced to counteract this by delaying or slowing the rebalancing process and/or by reforming its policy or strategy (employing structural reforms). However, as these structural reforms may take some time – more time than the party/government has until its next campaign for re-election – it will be inclined to implement some short-term effective political countermeasures to avoid violating the **red** line. By doing this (to speed-up the adjustment process, e.g. by some expansionary short-term stimulus programmes) it will necessarily create social and economic imbalances, which have to be corrected afterwards in some way.

There are many practical examples for this type of behaviour. I will explain the above attitude in the examples outlining attempts to attain ambitious economic (growth) goals with specific reference to China.

As argued above, we can differentiate between (A) long-term goals set in development (political) programmes and (B) short- to mid-term goals during terms of office.

---

<sup>6</sup> As recently started in China; this will be explained below in chapters III and IV.

<sup>7</sup> As mentioned, this **red** line can endogenously shift upwards by allowing a longer lasting overshooting of the goal, thereby triggering rising expectations or claims behaviour.

### **A) Long-term goals set in development programmes**

To use the example of China after 1978 when the Communist party started to implement comprehensive structural reforms (e.g. the Coastal Development Strategy in the 1980s) and gradually opened the country to the world economy, one can argue that the first long-term (economic) goal set by Deng Xiaoping was to reduce poverty, i.e. take the country from a poor to a kind of mid-income status (also referred to as the 'get rich first' strategy). This is a goal that cannot be reached in a balanced way within a few years. However, there are strategies that can accelerate this development or catching-up process. These unbalanced development or growth strategies, however, will be accompanied with triggering social and economic imbalances over time, which ultimately, will have to be corrected (or rebalanced) in a (usually) painful way resulting, in the worst case, in getting stuck in the so-called middle-income trap, or at least in having to suffer a painful period of cleansing and consolidation.

In China, the chosen development strategy was characterised by over-focusing on the manufacturing sector (creating excessive investment ratios) and on the external sector (exports) for a very long time, which finally created the need to rebalance – also emphasised in the last two five-year plans of the Communist Party of China. I will discuss these aspects in more detail in chapter III.

After having succeeded in attaining the above-mentioned first long-term goal of evolving from a poor, developing to a mid-income emerging economy, the next or second economic long-term goal of a country like China is to overcome the so-called middle-income trap (see e.g. Gill and Kharas 2007; Aoki 2011; Eichengreen et al. 2013; Agénor and Canuto 2015), in which most of the mid-income countries have been stuck during the past fifty years (see World Bank 2012), and to proceed converging towards a relatively rich-income status. Whether a country is successful in reaching this goal or not, and whether it can do it in a balanced way, again depends upon the chosen development or growth strategy (see Wagner 2015). If it again tries to speed-up the convergence process by using an unbalanced development or growth path, it will again produce new structural imbalances that will finally have to be corrected (rebalanced) in a probably painful way.

This will be shown with specific reference to China in chapters III and IV.

### **B Short- to mid-term goals**

As already said, within terms of office (in China, the five-year plans), other ('lower') goals are set. Nevertheless, not reaching these goals will also create some re-election problems or dangers for the party or government (no matter what the reasons: it may have been mismanagement, overambitious

goals (overoptimistic expectations), or external demand (export) shocks). Counteracting to avoid a sustained undershooting of the **red** line by using structural reforms will take some time, probably too much time to become effective within the term of office. Hence, there will be a strong incentive for the party/government to employ faster, effective measures such as expansionary macroeconomic stimulus programmes (in the case of economic growth goals). However, this again will most probably create some social and economic imbalances (such as excessive increase in debt, inflation, sectoral overcapacities, increases in income inequality, etc.), which will have to be corrected at some point (in a so-called rebalancing process).<sup>8</sup>

I will also discuss this in detail with specific reference to China in chapters III and IV.

### III Rebalancing in China

As said before, rebalancing means the correction of imbalances. Here we can also differentiate between structural and cyclical imbalances and apply them to the case of China today. Structural imbalances include, on the one hand (1a), the legacies of an unbalanced development strategy or path over the prior decades. On the other hand (1b), they encompass the imbalances triggered by the attempt to rebalance, i.e. to correct the legacies or 'old' imbalances by implementing/promoting sectoral structural change process towards tertiarization or, respectively, deindustrialization. In contrast, cyclical imbalances (2) are the consequence of unbalanced expansionary Keynesian-type monetary and fiscal policy employed after external demand/export shocks hit an economy. As mentioned above, there is another way of classifying these imbalances, namely into old imbalances, i.e. imbalances built up in China over the industrialization period of 1978 to 2009, and new imbalances China has created since 2010. Old imbalances include structural imbalance type (1a), whereas new imbalances encompass structural imbalance type (1b) as well as cyclical imbalances (2). Table 1 illustrates the classification alternatives of these multiple imbalances.

---

<sup>8</sup> Such effects have not only been experienced by developing/emerging economies but also by developed economies, of course. For example, Great Britain knows this very well when thinking back to the years of Thatcherism. But also many other countries had to suffer huge costs over a long period of cleansing and consolidation in the 1980s following previous temporary economic successes triggered by expansionary stimulus programmes.

**Table 1:** Multiple Imbalances

	<b>Structural Imbalances</b>	<b>Cyclical Imbalances</b>
<b>Old Imbalances</b>	Legacies of an unbalanced development strategy (1a)	
<b>New Imbalances</b>	Effects of delaying the rebalancing/correcting the old imbalances (1b)	Effects of political reactions to external demand/export shocks (2)

This will be explained in detail, and in a theoretically based way in this chapter. Chapter IV will then show that China currently faces the challenge of having to simultaneously correct these three types of imbalances. Thus, China is confronted with the need of mastering multiple rebalancing tasks.

### **1 ‘Old Imbalances’ built up until 2010: Legacies of an unbalanced development strategy**

Due to China’s attempt to speed-up the convergence process and the consequent decision to take an unbalanced development path, the country has built up enormous imbalances over the last decade. We will first elucidate the theoretical foundation of this path choice before we apply it especially to China.

In growth and development theory, there are two different views of growth strategies, namely the balanced growth strategy and the unbalanced growth strategy, respectively. The former was postulated initially by Rosenstein-Rodan (1943) and Nurkse (1953) and emphasises the necessity for a complementary sector expansion during the development process of a country. According to this view, an increasing output of one sector enhances the market size for the other sectors. However, the balanced growth strategy was criticised by several authors, especially by Hirschman (1958), who developed an unbalanced growth strategy. According to Hirschman’s view, growth in emerging economies is necessarily an unbalanced dynamic process as coordinated investment would place excessive demands on developing countries. Individual sectors may temporarily overshoot, thus creating the conditions for development in the other sectors. Hence there is always a steady need for rebalancing.

For the future development of the per capita GDP growth rate, the choice of growth strategy is fundamental. First of all, it is important to know which goals the government aims to achieve. In most cases it will prefer increasing prosperity and therefore a successful convergence process toward becoming a developed economy and – as a secondary condition – political and economic stability. However, different goals may lead to an alternative choice of development strategy. Equally im-



portant is the question of how quickly the country wants to achieve these goals (e.g. a very rapid or a slower but more sustained catching-up process). Finally, it is also interesting to know whether the government's strategy is a free choice or whether it is kind of a forced decision (e.g. due to economic limitations).

An unbalanced growth strategy enables a country to generate rapid and very high growth. However, this trend may reverse at a certain point in time if the imbalances that have been necessary to achieve this strategy are growing too large. In contrast, a balanced growth strategy probably needs longer to achieve the desired effect (in particular convergence towards the developed reference countries), but is more sustainable.

China's government has chosen an unbalanced growth strategy, as developed by Hirschman (1958). Due to this strategy choice, China was able to experience exceptional growth – in terms of both speed and magnitude. However, this came at the cost of imbalances, which are now hindering China from further quickly catching up to developed countries. Since 2005, various authors have referred to these imbalances and the necessary rebalancing process (e.g. Blanchard and Giavazzi 2005; Aziz 2006; Aziz and Cui 2007; Prasad 2009; Zhu and Wan 2012). According to these authors, China's economic growth strategy in the last decades has been characterised by (too) high savings, (too) high investment and a (too) strong export orientation. For example, Blanchard and Giavazzi (2005) gave a comprehensive list of imbalances (e.g. uneven growth across provinces, skill levels, and sectors; weakened safety nets; misallocation of investment; and growing macroeconomic imbalances)<sup>9</sup> that had already emerged by the beginning of the 2000s, along with the exceptional growth China had experienced in the two decades before. They then developed a rebalancing strategy, described as a 'three-handed approach', which focuses on a decrease in (private) saving, an increase in the supply of (health) services and an appreciation of the renminbi. However, the authors stress that these measures need to be carefully balanced because they may conflict in some dimensions. The other authors listed above have also emphasised these and other imbalances, their corresponding triggering factors and necessary reforms. For example, Aziz (2006) identifies the low cost of capital as an important factor explaining China's low consumption (induced by non-performing loans, borrowing constraints, and uncertainty over changes in government guidance on bank lending, which forced small- or medium-sized enterprises to save extensively and to pay low wages in order to be able to finance their investments). Prasad (2009) as well as Chamon and Prasad (2010) focus on the negative impact of high household savings, whereas Aziz and Cui (2007) emphasise the negative influence of the declining household income share. However, all authors mention the importance of financial

---

<sup>9</sup> This is the result of a strategy chosen deliberately by Deng Xiaoping in the mid-eighties (in order) to develop a large, poor country quickly.

sector development. Furthermore, Zhu and Wan (2012) argue that income inequality is closely related to the building up of imbalances (through the negative effect on consumption).

The background to the increase in these (old) imbalances was the Chinese government's focus on promoting the industrial sector and the export sector (in order to speed-up economic convergence), thereby intentionally disregarding the service sector and consumption demand as well as social security.

Moreover, against the background of the Coastal Development Strategy, the Chinese government focused primarily on the economic development of the coastal areas (because of their favourable geographical positions, e.g. their proximity to ports) in terms of tax reliefs and the quick approval of investment. In contrast, the inland regions did not receive these favourable treatments.<sup>10</sup>

This explains part of the strong dependence of the Chinese economy on investment and on exports. In particular, the investment ratio in China has been huge compared to other countries or regions. In the period 2009–2014 it was between 45 per cent and 48 per cent of GDP in China, whereas the investment ratio in other emerging market economies was usually about 33 per cent and in Western industrial economies it was about 10 per cent of GDP (see figure 1).<sup>11</sup>

**Figure 1:** Export and Investment Share (per cent of GDP) in China



Source: World Bank (WDI, 2016).

<sup>10</sup> Therefore, Deng Xiaoping's strategy choice, which is also known as the 'get rich first' strategy, allowed some people (in particular those living in coastal regions) to get rich first, serving as examples for the rest of the country, so that later, the whole Chinese population would benefit from this increasing wealth (e.g. via spillover effects).

<sup>11</sup> See the World Development Indicators (World Bank 2016).

Only at the beginning of this decade did China take note of these criticisms on its rising imbalances and started to rebalance its economy (firstly in the 12th five-year plan in 2011, and again in the 13th five-year plan in 2016).

## **2 The building up of ‘new Imbalances’ (after 2010): Political reaction to the effects of rebalancing and of external demand shocks**

A major challenge China is currently facing is how to react to multiple-growth slowdown side effects, which it is confronted with, namely of deindustrialization and of being hit by external demand/export shocks (in the aftermath of the global financial crisis).

The question is how to react to the disappointment among the public over the growth slowdown and the feared rise in unemployment associated with the started/initiated rebalancing process.

First, we show this situation in a general way. We start with (i) the effects of rebalancing (correcting the old imbalances) and proceed to (ii) the external demand shocks that have hit China since 2010 after the global financial crisis.

### **i) Political reaction to the growth-slowdown-effects of rebalancing (creating ‘new structural imbalances’)**

Correcting a (too) high investment share requires the implementation of a sectoral structural transformation process towards tertiarization (a higher share of the service sector and, associated with, a higher consumption share as well as higher real wages and higher social security expenditures).

However, this usually is accompanied by a decrease in average productivity growth and hence a slowdown in the economic growth rate (see, in detail, Wagner 2013, 2015). Now, a government has to think carefully whether it can politically survive such a growth slowdown associated with a fast (unhindered) structural rebalancing. If it is unsure, it may be inclined to delay or slow the rebalancing (structural change) process. However, this will prolong and perhaps even increase the old imbalances as it will keep the investment share and the export-dependency high, so that a later rebalancing including the associated growth slowdown may be even more drastic and painful (undershooting the **red** line even more significantly and for a longer period of time).<sup>12</sup>

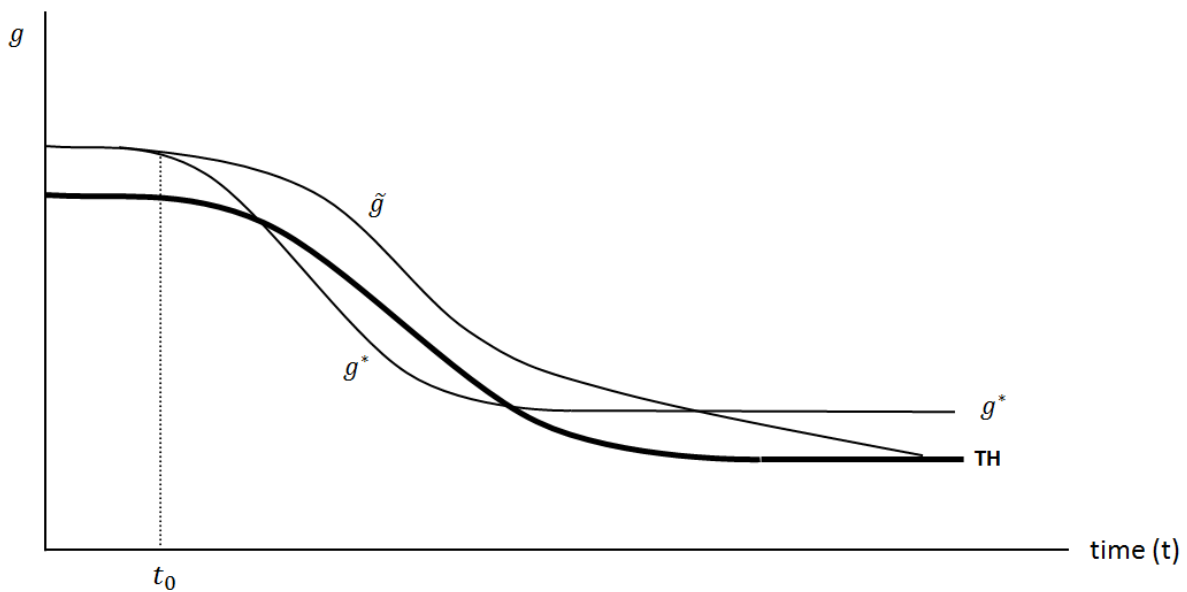
In the following figure 2, we assume that there is a sluggish (slower) adjustment of expectations and of claims behaviour (relative) to the change in actual equilibrium growth during the process of dein-

---

<sup>12</sup> Examples can be found among the experiences of East European post-Communist countries when they underwent necessary structural transformation processes towards a market-type economy in the early 1990s.

dustrialization.<sup>13</sup> In such a situation, waiting for the restructuring/rebalancing reforms to become effective may be (regarded as) dangerous, insofar as a **red** line, delineated in figure 2 as the ‘thick line’ (the political-legitimation threshold, TH), could be undershot. Hence, there is an incentive for a government to either delay or slow down the pace of required restructuring/rebalancing reforms so that the growth slowdown will be smaller (the decline in the growth path will be flatter in figure 2). Or, alternatively, the government may implement a Keynesian-type expansionary stimulus programme, the effects of which are described in the next subsection (ii) and in the related Appendix A. This again shall avoid an undershooting of the thick line by the actual growth path.

**Figure 2:** Alternative future development paths in China



**Note:**  $g^*$  illustrates the equilibrium or market growth path if the government does not intervene, whereas  $\tilde{g}$  represents the growth path with government intervention (showing a delayed tertiarization process). TH delineates the political-legitimation threshold line.

If the government decides to delay or slow/retard the tertiarization process it may be able to keep the growth rate above the TH line in the short term by building up new imbalances (similar to those that have already been built up before). However, in acting in such a way, the government only postpones the growth slowdown, and in the medium term the growth rate will ultimately decline and come dangerously close to the TH line, as the imbalance will have to be corrected sometime. Therefore, if a government wants to avoid the undershooting of the political-legitimation threshold line in the current period, this is only possible at the expense of a later undershooting that may possibly be even worse and that, in turn, can only be avoided if even more imbalances are accumulated (giving rise to a kind of vicious cycle).

<sup>13</sup> There is much evidence in the literature for such sluggish adjustment behaviour of expectations and claims behaviour (see, for example the literature on adaptive expectations building in economics).

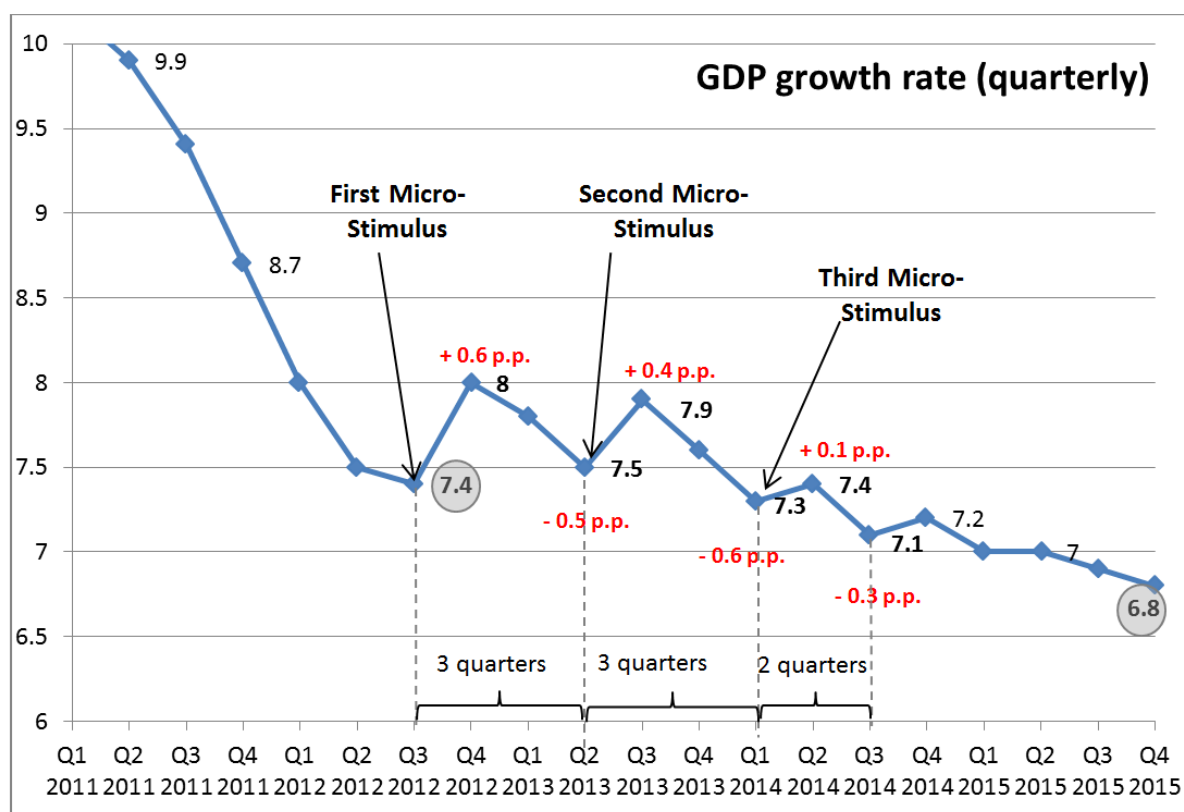
## **ii) Political reaction to external demand shocks (creating cyclical imbalances)**

Ironically, just during the start of the above-mentioned rebalancing process (initiating the sectoral structural transformation towards a service economy that is associated with triggering a growth slowdown, as just described), China was hit by drastic external demand shocks in the aftermath of the global financial crisis. In this situation, the fear of a drastic growth slowdown and high unemployment led the Chinese government to start implementing Keynesian-type expansionary stimulus programmes to counteract an even stronger growth slowdown. Directly after the global financial crisis, China launched a huge economic stimulus package equal to about 586 billion dollars to avoid a strong recession. Therewith, China aimed at and succeeded in not being strongly affected by the global financial crisis and, moreover, functioned as a catalyst for the following global recovery after the crisis. Nonetheless, in the following years, economic growth continued to decrease, caused mainly by the deindustrialization process initiated by the Chinese government to rebalance the economy, as announced in the 12th and 13th five-year plans.<sup>14</sup> To alleviate the negative effects of this growth slowdown on employment, the government, from 2011 onwards, started to implement several further, but smaller, so-called micro-stimulus packages. These packages, however, were not really successful, as they only stopped the growth decline for a very short period of time, meaning they had to be followed by further stimulus programmes (see figure 3).

---

<sup>14</sup> In the period between 2011 and 2015 the Chinese government aimed to increase the service sector contribution to GDP up to 43.3% (in contrast to this, the 11th five-year plan target was 40.3%) and over the next five years (until 2020), the Chinese government wants to reach the 56% mark. China was able to meet the goals of the last two five-year plans. In order to reach the 13th five-year plan target as well, the service sector has to grow by an average of 3.5% p.a. (until 2020).

**Figure 3:** Micro-stimulus Programmes and GDP Growth Rate Development in China, 2011–2015.

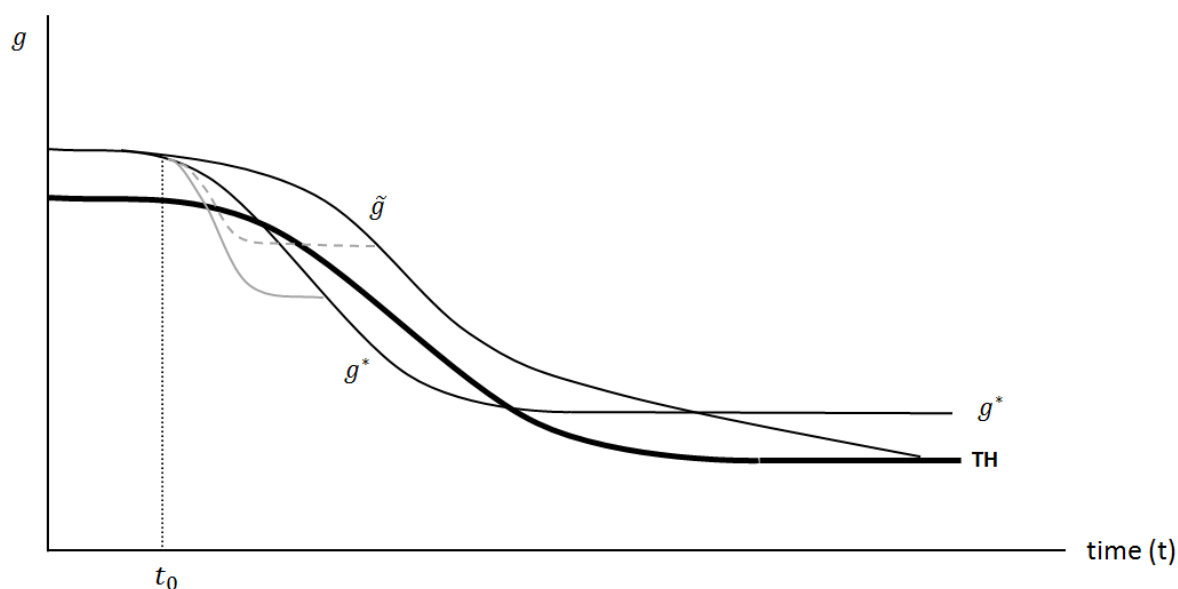


Source: National Bureau of Statistics of China. Own representation based on Wang (2016).

In sum, by acting in this way, the government created transitory overshooting in some sectors, such as construction and real estate, with lasting overcapacities in these sectors.

The following figure 4 extends figure 2 by adding the above-described external demand or export shock (occurring in  $t_0$ ; the growth effects of which are delineated by the grey line). In general, there are always moderate cyclical fluctuations around the trend growth rate. However, after a financial crisis, a far stronger slump in the growth rate is expected. Therefore, the government will probably try to mitigate the negative impacts of the demand/export shock on the growth rate by implementing stimulus programmes leading to the (flatter) dotted grey line. By doing so, China has again built up more imbalances that accrue additionally to the imbalances described in i).

**Figure 4:** Alternative future development paths in China (figure 2 with external shock)



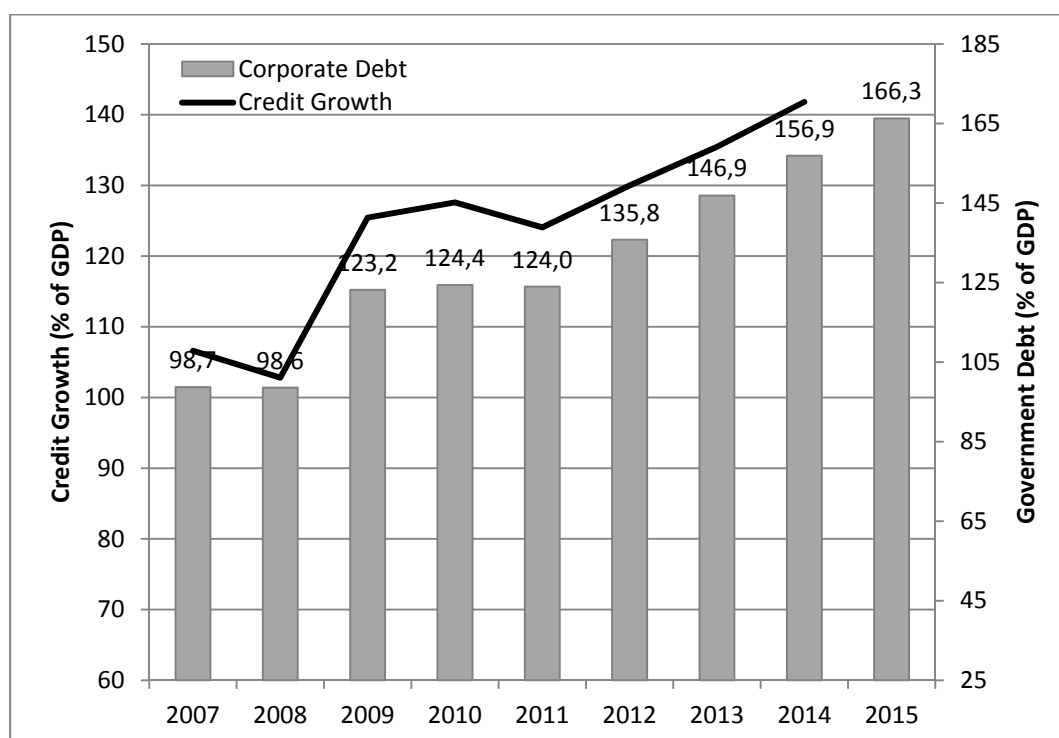
In the Appendix A, I show how the functions and workings of these expansionary stimulus programmes can be described analytically.

With regard to an empirical analysis as in chapter IV, it is difficult to differentiate between growth slowdowns triggered by deindustrialization and those following external demand shocks, in particular if they occur simultaneously, as has been the case in China over the last seven years. Therefore, in the next chapter, I renounce differentiating these parallel growth slowdowns in such a way.

#### IV The danger of new rebalancing problems for China in the near future

A main challenge or problem arising from the above-described Keynesian-type stimulus programmes is that they were largely financed by credit expansion having led to an excessive level of debt, which was not covered by corresponding total factor productivity (TFP) growth (see figure 6). In figures 5 and 6 the development of credit growth, debt levels and TFP growth from 2007 to 2014/15 is depicted.

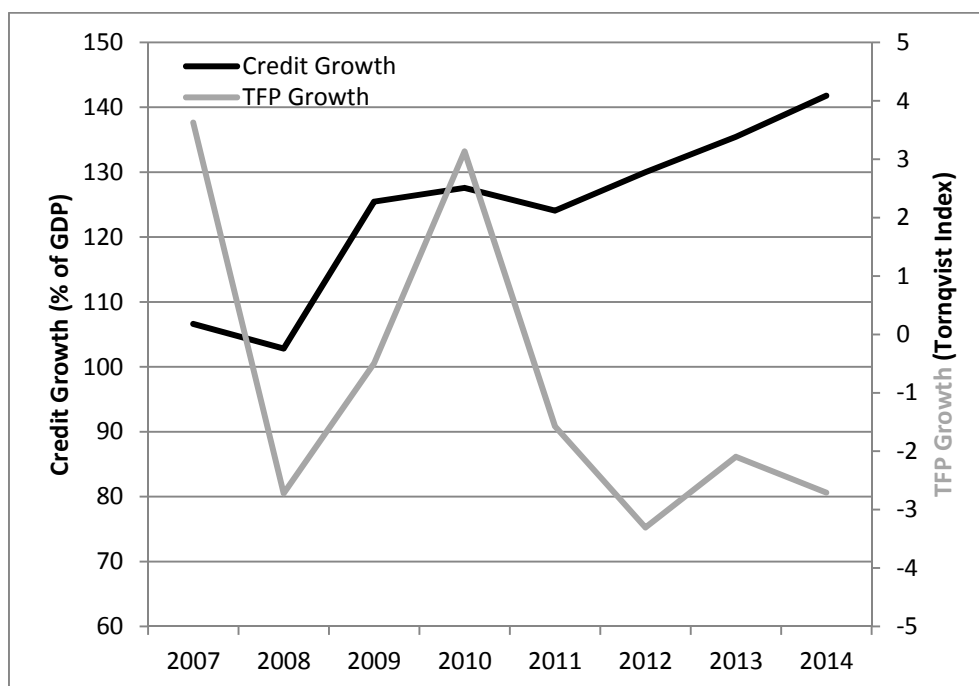
As shown in figure 5, corporate debt has increased from 98.7 per cent in 2007 to 166.3 per cent in 2015. Moreover, we see that the development of the debt level was positively correlated to the development of credit expansion.

**Figure 5: Credit Growth and Corporate Debt**

Source: Corporate Debt: Bank for International Settlements (always last quarter (end of year), 2015 third quarter). General government gross debt (per cent of GDP): IMF; domestic credit to private sector (per cent of GDP): World Bank (WDI, 2016).

Interestingly, as figure 6 shows, credit growth in China was accompanied by a decrease in (total factor) productivity growth (at least since the global financial crisis when China started to focus on Keynesian macroeconomic stimulus programmes).

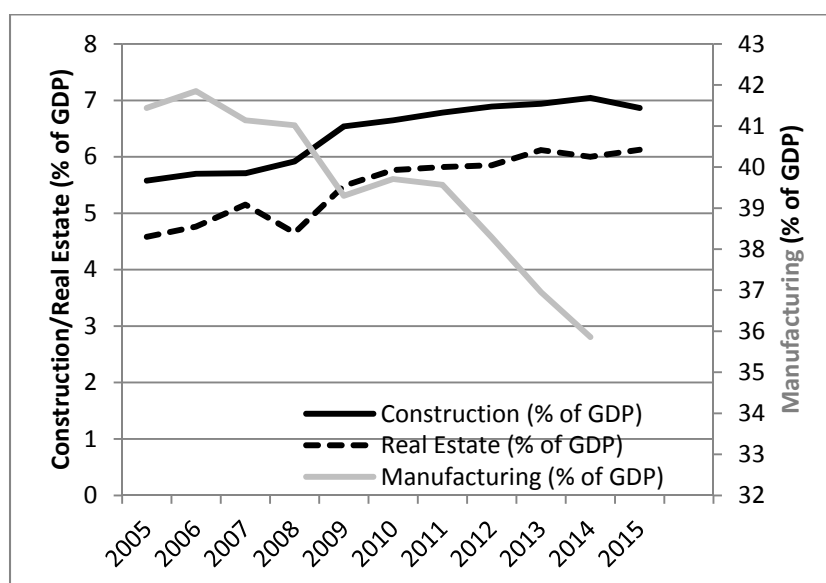


**Figure 6: Credit Growth and TFP Growth**

Source: Domestic credit to private sector (per cent of GDP): World Bank (WDI, 2016); TFP Growth (Tornqvist Index): the Conference Board Total Economy Database (Sep 2015).

Moreover, as shown in figure 7 (in combination with figure 6), credit expansion in China after the global financial crisis (in the period of beginning deindustrialization or tertiarization) has been accompanied by a reallocation of resources from high productivity sectors (in manufacturing) to low productivity sectors (such as construction and real estate).<sup>15</sup> That means that the stimulus programmes financed by credit expansion in China will probably not be sustainable but have negative side effects in the form of a decrease in TFP growth.

<sup>15</sup> In this context, a current discussion in Western industrial countries on the interrelationship between credit growth and productivity slump (against the background of the 'old' theories of Wicksell, von Mises and von Hayek) could well be transferred to China as well. The main argument is that credit cycles lead to imbalances in the real economy. Credit expansion allows firms to get easier financing for risky (lower quality) projects so that misinvestment or misallocation becomes more frequent (see, e.g. Gorton and Ordonez 2015). Hence, the share of less productive activities widens at the expense of more productive sector activities during credit booms (see, e.g. Borio et al. 2016). When booms eventually burst, this is likely associated with painful adjustments. Cecchetti and Kharroubi (2015) developed a model that allows them to predict that expanding the financial sector favors investment projects that are characterized by high collateral for credit but low productivity (e.g. real estate). Furthermore, they show that skilled labour is attracted away from more productive sectors when the financial sector expands.

**Figure 7: Reallocation of Resources**

Source: Construction (per cent of GDP): National Bureau of Statistics, own calculation; Real Estate (per cent of GDP): National Bureau of Statistics, own calculations; Manufacturing (per cent of GDP): World Bank (WDI, 2016).

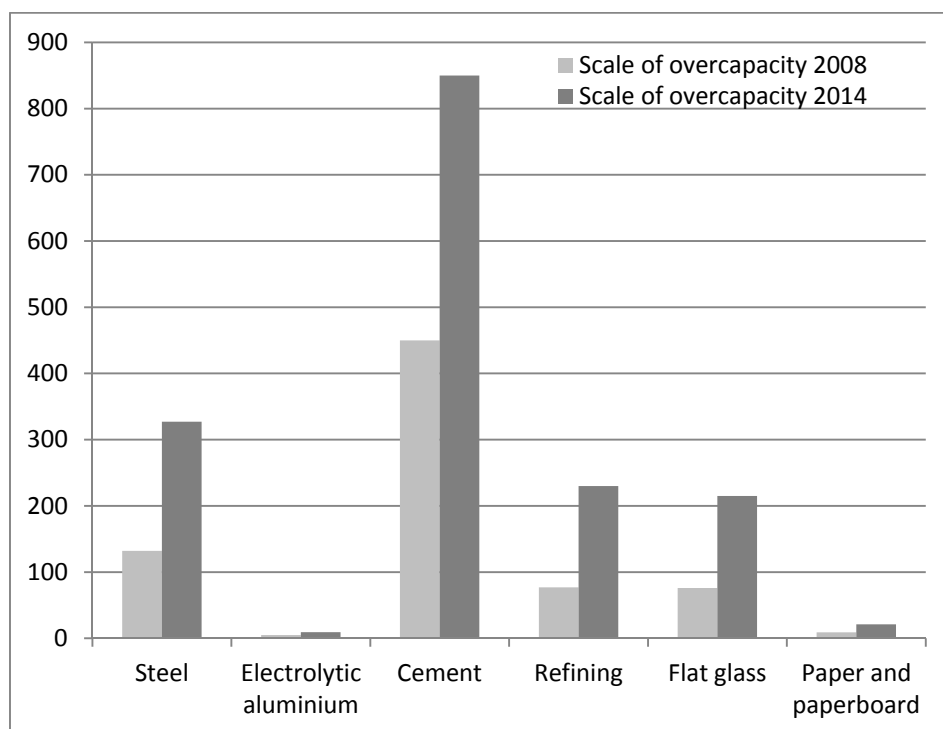
Of course, the above correlations (depicted in the figures) alone do not say anything about causation. However, many other observers, even from China, have concluded that the recent stimulus programmes in China have not been very effective and, moreover, have decreased investment efficiency and marginal productivity. For example, Wang (2016) emphasises in his dynamic stochastic general equilibrium (DSGE) model-based analysis that ‘since 2008, one of the side effects of the large-scale investment stimulus plan and micro-stimulus policy is further raising the incremental capital-output ratio (UCOR) of the national economy (...), reducing the efficiency of investment’ (Wang, 2016, p. 54).

Overall, the imbalances in China are significant. As shown in table 1.1 and table 1.2 in the Appendix, China has already exceeded or is about to exceed a critical threshold for various indicators, particularly with regard to private debt, the change of the real effective exchange rate, and the y-o-y change in financial sector liabilities.<sup>16</sup> A similar pattern emerges when looking at the Chinese asset prices. The yearly change in share prices as well as in house prices frequently exceeds the respective critical thresholds (+/-20 per cent for share prices and +/-6 per cent for house prices) developed by Agnello and Schuknecht (2011) and Bondt et al. (2011) respectively (see also table 1.3 in the Appendix).

<sup>16</sup> I refer here to the critical values constructed by the EU Commission for EU countries (see European Commission 2012). However, using these thresholds requires caution, in particular because the EMU countries and China are characterized by significant differences in their respective economic and political structures. Nonetheless, these thresholds may be useful in gaining a first indication and to establish a starting point for further research. Indeed, China is on its way to becoming a developed country and the China’s imbalances may expand even further in the near future.

An even more alarming picture is shown in table 1.2 in Appendix B: The Chinese savings and investment rate (the latter measured in terms of gross capital formation, per cent of GDP) each amount to more than 200 per cent of the corresponding Economic and Monetary Union (EMU) value. In contrast, the Chinese household consumption rate is only two-thirds of the average rate of the eurozone countries. The corruption situation is by no means less dramatic: The deviations between China and the EMU are so large that one does not even need critical thresholds to detect these imbalances (see table 1.2).

Rising overcapacities are another major imbalance China is currently confronted with. The European Union Chamber of Commerce in China (EUCCC 2016, 2) defines overcapacities as ‘the difference between production capacity and actual production, i.e. overcapacity is considered the converse of the utilization rate’. According to the Chamber’s 2016 report (*Overcapacity in China – An Impediment to the Party’s Reform Agenda*), China’s overcapacity problem in the industrial sector has worsened dramatically since the global financial crisis with the scale of overcapacity doubling in major industries (see figure 8). For example, in the steel industry, the scale of overcapacity increased from 132 tonnes in 2008 to 327 million tonnes in 2014, meaning that China now accounts for more than twice the combined output of Japan, India, the US and Russia, presenting the four next biggest steel makers after China (EUCCC 2016). The refining industry has seen the severest increase (the scale of overcapacity almost tripled), whereas the cement industry has recorded the highest scale of overcapacity (850 million tonnes). The severe overcapacity problem in China is mostly due to its strong dependency on exports: Because of the strong decrease in global demand after the financial crisis, China could not continue to use exports for absorbing the overcapacities in the same extent as before (EUCCC 2016).

**Figure 8:** Scale of Overcapacity in China (Several Industries)

Source: European Union Chamber of Commerce in China (2016).

All in all, tables 1.1–1.3, as well as figure 8, indicate that China is confronted with severe imbalances that should not be underestimated. Therefore, there is now a need to correct these imbalances to avoid destabilising the economy in China and creating social unrest.

However, as argued above, correcting these imbalances, i.e. rebalancing, requires the political acceptance of negative side effects such as a growth slowdown. If these side effects are politically critical and, moreover, are accompanied by negative external demand/export shocks, governments are inclined to retard the reform process or, respectively, to employ expansionary macroeconomic stimulus programmes, which trigger new imbalances and hence create the need of further future rebalancing.

## V Implications/Conclusions

China has to accept that in the course of structural change and rebalancing (i.e. elimination of imbalances and, therefore, deindustrialization) economic growth (the actual as well as the equilibrium growth rate) will decline. Market-endogenous reasons alone are not responsible for this. On the one hand, as China has approached the technological frontier, there are fewer opportunities to profit from the import of external knowledge via foreign direct investment (FDI), and fewer opportunities

to export low-priced/simple products due to rising wages/costs.<sup>17</sup> Consequently, the economic growth rate principally has to decline, and will further decline due to deindustrialization in the context of sectoral structural change, unless there are ongoing path-breaking innovations. On the other hand, a decline in the economic growth rate will occur since China has to get rid of the large imbalances built up in the industrialization period, such as environmental pollution, corruption, overcapacities, large inequalities among regions, urban versus rural areas, and between Eastern and Western regions in general. And, last but not least, this will occur because China will have to expand its social security (welfare) system.<sup>18</sup> The latter will be very expensive and require large investments into social service activities, which are less productive (particularly if organised by state-owned enterprises (SOEs) and thus will reduce overall productivity and hence economic growth in China in the coming years (if, as seems very likely, steady significant product and process innovations will not become effective enough in the manufacturing and particularly the service sector. (See Wagner, 2015, for a simulation study with respect to the effects of these processes.) All this will not be easy to sell to the public.

However, China has in recent years, time and again, attempted to sustain or even raise the high growth rate – to levels that may have been appropriate during the industrialization process, but not any more under deindustrialization – with government support (monetary and fiscal policy, and industry policy incentives). By doing this, the government intended to avoid crises (economic adjustment recessions as well as political unrest) in order to keep control, but actually built up more and more imbalances. High taxation led to high public savings, which allowed the government to finance macro-/micro-stimulation programmes (mainly via investment in infrastructure, esp. construction and real estate), thus building up overcapacities, pollution and increasing corporate debt, i.e. imbalances.<sup>19</sup>

It is understandable that if citizens or social groups in the country are shocked and dissatisfied by/with the rapid decline in economic growth, governments are threatened by social unrest and thus

---

<sup>17</sup> That is, the manufacturing sector has run into labour shortages and hence has to start paying higher real wages. In other words, China has reached the 'Lewis turning point' (Lewis 1954).

<sup>18</sup> The *Quarterly Forecast and Analysis* Report of the Center for Macroeconomic Research, Xiamen University (2015), indicates that the 'total amount of social security, medical, and educational expenditure in public fiscal expenditure gradually rose from 29.5% in 2010 to 31.7% in 2014'. Nonetheless, as argued there, the welfare system in China is still underdeveloped relative to Western economies where '(i)n 2011, the EU-27's spending on health, education, and social protection together accounted for 47.8% of the central (federal) government spending' and '(i)n 2013, the US social security, Medicare, and Medicaid spending accounted for 48% of federal fiscal expenditure' (Center for Macroeconomic Research of Xiamen University 2015, 57).

<sup>19</sup> As Anzoatesui et al. (2015, 2–3, 24–25) emphasize, over the past years, China's government has created large distortions by intervening in the market process and driving the economy into disequilibrium. For example, low administratively controlled interest rates and other distortions artificially boosted savings rates and reduced the cost of capital in China. This, together with implicit state guarantees, supported the building up of imbalances.

cannot withstand the incentive to intervene and ‘stimulate’ the economy in order to mitigate the decline in economic growth (thereby delaying the rebalancing reform or transformation process). By this means, the government makes the transformation process, in the short term, more tolerable for dissatisfied citizens or social groups in the country; but, by intervening in such a way, it also builds up new imbalances, which are costly to reduce or rebalance. The most important question in that case is who (which social group) should bear which part of these costs. Political conflicts about this question among political groups or parties representing their interests can and often have led (particularly) in emerging economies to a delay in the reform processes necessary to carry out the rebalancing process(es) (see the literature on the war of attrition dilemmas).<sup>20</sup> If this delaying of reforms continues for a while, it can easily drive the economy into a long-enduring period of suboptimal growth development. In this way, a so far successfully developing economy like China can get stuck in a so-called middle-income trap and miss the opportunity to further catch up to the rich countries. This is a danger China will be confronted with if it does not manage to successfully implement the major (structural, institutional and technological) reform steps necessary for successful rebalancing.<sup>21</sup>

All in all, the experience of the last few years has clearly shown that the existing Chinese growth strategy is inappropriate to deal with the severe growth slowdown China is confronted with in the context of rebalancing. Therefore, it is essential that China’s government supports the necessary transition process and implements a more consumption and inward-oriented, innovation-driven growth strategy by focusing more on structural as well as on institutional reforms (instead of expansionary stimulus programmes), in order to successfully complete the transformation into a developed, high-income country during the next years or decades.<sup>22</sup>

---

<sup>20</sup> See e.g. Alesina and Drazen (1991) and Agénor and Montiel (2015).

<sup>21</sup> For these necessary steps, see Wagner (2015).

<sup>22</sup> However, as the current president of the European Commission, Jean-Claude Juncker, once said about the difficulties of getting the Euro crisis solved: ‘We all know what to do, we just don’t know how to get re-elected after we’ve done it.’ *The Economist* (2007), ‘The Quest for Prosperity’, 15 March 2007 (online available at: <http://www.economist.com/node/8808044>). This can generally be applied to China as well. However more transparency and better political communication of the inevitability of the negative side effects of the rebalancing process would help to overcome this dilemma in China.

## VI References

- Agénor, Pierre-Richard and Canuto, Otaviano. 2015. "Middle-Income Growth Traps." *Research in Economics* 69(4): 641-660.
- Alesina, Alberto and Drazen, Allen. 1991. "Why are Stabilizations Delayed?" *American Economic Review* 81, 1170-1188.
- Agénor, Pierre-Richard and Montiel, Peter J. 2015. *Development Macroeconomics. Fourth Edition*. Princeton University Press: Princeton.
- Anzoategui, Diego, Chivakul, Mali and Maliszewski, Wojciech. 2015. "Financial Distortions in China: A General Equilibrium Approach", IMF Working Paper WP 15/274.
- Aoki, Masahiko. 2011. "The Five-Phases of Economic Development and Institutional Evolution in China and Japan". ADBI Working Paper Series No. 340.
- Aziz, Jahangir. 2006. "Rebalancing China's Economy: What Does Growth Theory Tell Us?" IMF Working Paper, 291.
- Aziz, Jahangir and Cui, Li. 2007. "Explaining China's Low Consumption: The Neglected Role of Household Income." IMF Working Paper WP/07/181.
- Bank for International Settlements (BIS). 2016. BIS total credit statistics.
- Baumol, William J., Blackman, Sue Anne Batey and Wolff, Edward N. 1985. "Unbalanced Growth Revisited: Asymptotic Stagnancy and New Evidence." *American Economic Review* 75(4), 806-817.
- Blanchard, Oliver and Giavazzi, Francesco. 2005. "Rebalancing Growth in China: A Three-Handed Approach." CEPR Discussion Paper, 5403.
- Borio, Claudio, Kharroubi, Enisse and Upper, Christian and Zampolli, Fabrizio. 2016. "Labour reallocation and productivity dynamics: financial causes, real consequences." BIS Working Papers No 534.

Cecchetti, Stephen G. and Kharroubi, Enisse. 2015. "Why does financial sector growth crowd out real economic growth?" BIS Working Paper No 4901.

Center for Macroeconomic Research of Xiamen University. 2015. *China's Macroeconomic Outlook – Quarterly Forecast and Analysis Report, March 2015*. Current Chinese Economic Report Series, Springer: Heidelberg.

Chamon, Marcos and Prasad, Eswar. 2010. "Why Are Saving Rates of Urban Households in China Rising." *American Economic Journal: Macroeconomics* 2(1), 93-130.

Eichengreen, Barry, Park, Donghyun and Shin, Kwanho. 2013. "Growth slowdowns redux: New evidence on the middle-income trap." NBER Working Papers, 18673, Cambridge.

EUCCC (European Chamber). 2016. *Overcapacity in China – An Impediment to the Party's Reform Agenda*. European Union Chamber of Commerce in China.

European Commission. 2012. "Scoreboard for the surveillance of macroeconomic imbalances." *European Economy, Occasional Papers* 92.

Gill, Indermit and Kharas, Homi. 2007. *An East Asian Renaissance – Ideas for Economic Growth*. Washington, DC: World Bank.

Gorton, Gary and Ordonez, Guillermo. 2015. "Good Booms, Bad Booms." NBER Working Papers 22008.

Hirschman, Alberto. 1958. *The Strategy of Economic Development*. New Haven: Yale University Press.

IMF (International Monetary Fund). 2015. *People's Republic of China: Staff Report for the 2015 Article IV Consultation*. IMF Country Report No. 15/234.

Kawai, Masahiro and Lee, Jong-Wha (Eds.). 2015. *Rebalancing for Sustainable Growth – Asia's Post-crisis Challenge*. Springer: Tokyo.

Lewis, W. Arthur. 1954. "Economic Development with Unlimited Supplies of Labor." *Manchester School of Economic and Social Studies* 22, 139-191.



Nurkse, Ragnar . 1953. *Problems of Capital Formation in Underdeveloped Countries*. Oxford: Basil Blackwell.

Prasad, Eswar. 2009. "Rebalancing growth in Asia." IZA Discussion Papers, 4298.

Rosenstein-Rodan, Paul. 1943. "Problems of industrialisation of eastern and south-eastern Europe." *Economic Journal* 53, 202–11.

Wagner, Helmut. 2013. "Challenges to China's Policy: Structural Change." *Comparative Economic Studies* 55(4), 721-736.

Wagner, Helmut. 2015. "Structural Change and Mid-Income Trap - Under which conditions can China succeed in moving towards higher income status." *European Journal of Comparative Economics* 12(2), 165-188.

Wang, Yanwu. 2016. "Understanding the Macroeconomic Effects of China's "Micro-Stimulus" Policies: Based on NKM with Productive Government Spending and Inventory." Center of Macroeconomic Research. Xiamen University, Working Paper.

World Bank. 2012. *China 2030: Building a Modern, Harmonious, and Creative High-Income Society*. Washington D.C.: World Bank.

World Bank. 2015. Worldwide Governance Indicators (WGI). Washington, DC: World Bank. Available online at <http://info.worldbank.org/governance/wgi/index.aspx#doc>, 2015 Update.

World Bank. 2016. World Development Indicators (WDI). Washington, DC: World Bank. Available online at <http://data.worldbank.org/data-catalog/world-development-indicators>, last updated 11/04/2016.

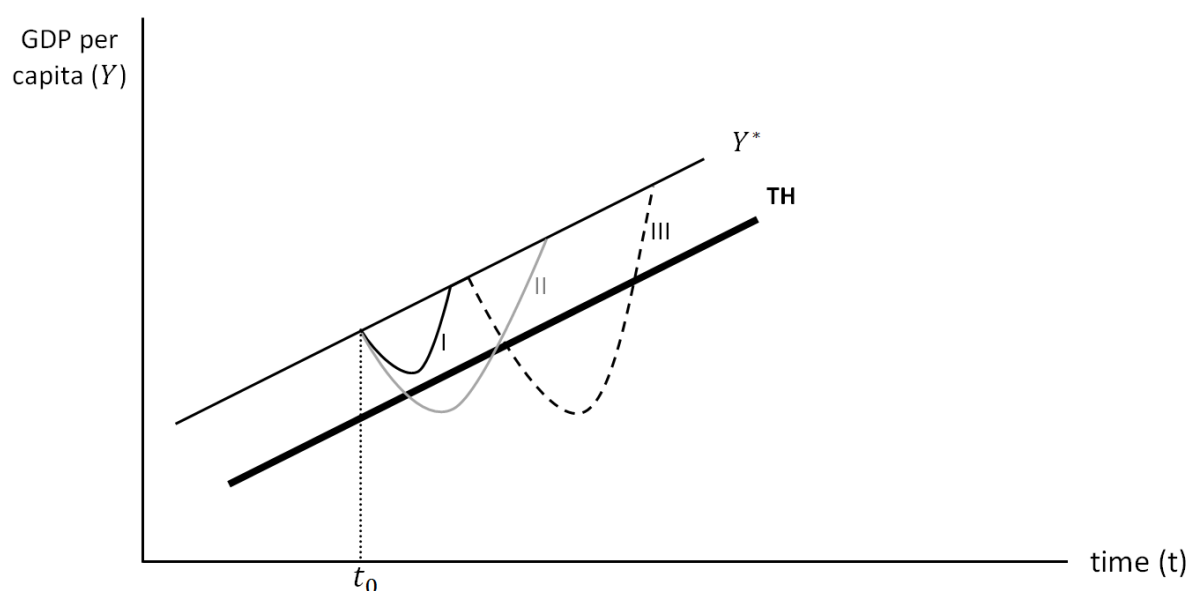
Zhu, Cuiping and Wan, Guanghua. 2012. "Rising Inequality in China and the Move to a Balanced Economy." *China & World Economy* 20(1), 83-104.

## Appendices

### Appendix A: Functions and workings of expansionary stimulus programmes

As described above, China was hit by external demand/exports shocks in the aftermath of the global financial crisis. Figure 1.1 shows the reaction functions of the two considered policy options of how to react to a growth slowdown originated by such shocks. Path I (in black) shows what happens if the government jumps in with expansionary Keynesian-type macroeconomic (monetary and fiscal) stimulus programmes. Path II (in grey) delineates the effects of the alternative of a ‘market solution’ (when the government provides the right market incentives and institutions and waits for the workings of the market solution via the price mechanism).

**Figure 1.1:** Shock reaction with and without policy stimulus programmes (I)



Here,  $Y^*$  is the equilibrium GDP per capita level, meaning here the GDP per capita level that is consistent with full (or desired) employment.  $t_0$  describes the point in time when an external demand/export shock occurs. Transition path I describes the reaction function if the government jumps in with expansionary Keynesian-type macroeconomic (monetary and fiscal) stimulus programmes in order to mitigate the negative downturn effect triggered by the shock. In contrast, path II shows the transition path if the government chooses the market solution and waits for the effectiveness of stabilisation via the price mechanism. This would presumably take longer and end up in a deeper, more extended recession or depression.

The fundamental relationships can be explained with the traditional income identity:

$$C_0 + I_0 + G_0 + NX_0 = Y_0 \triangleq Y^* \text{ (full-employment income or output),}$$

with  $C_0$  = consumption,  $I_0$  = investment,  $G_0$  = government expenditure,  $NX_0$  = external demand, and  $Y_0$  = aggregate income/output.

Due to the external export shock,  $NX$  will decline to  $NX_1 < NX_0$ . Hence  $Y$  will decline to  $Y_1 < Y_0$ .

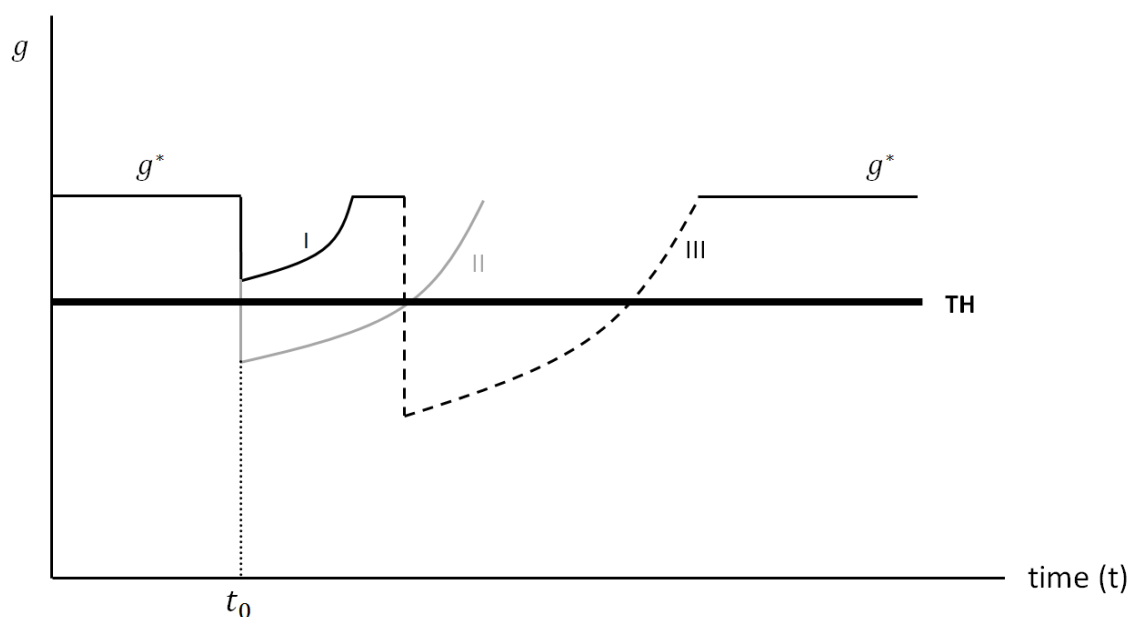
Rebalancing, as understood by the IMF and in the recent Chinese five-year plans, means that external demand ( $NX$ ) should partly be compensated by domestic private demand ( $C, I$ ) by restructuring the economy. However, this takes time and in the meantime the growth slowdown originated by the external demand shock could add up to a dangerous level so that the above-described threshold TH may be undershot. To avoid this, the government tries to help out by using expansionary Keynesian-type macroeconomic stimulus programmes (as long as the rebalancing reforms do not become effective). Thus, it compensates the loss of or decline in external demand ( $NX_1 - NX_0$ ) by additional government demand ( $G_1 - G_0$ , where this symbolises the aggregate effect of the governmental support programme (initial investment) and the thereby triggered consecutive private activities acting as multiplier and accelerator effects).

The alternative policy reaction delineated in figure 1.1 as transition path II is the market solution, i.e. providing a free market framework and waiting for the solution/stabilisation via the price mechanism. Even if the government were to trust this solution mechanism and therefore chose it (which is unlikely in the case of China), the stabilisation would most probably take longer than the Keynesian-type solution. (At least, this was probably the belief of the Chinese government.) However, by choosing the faster Keynesian reaction way, the government accepts that it thus creates economic and social imbalances knowing that they will likely have to be corrected sometime in the future. Path III (dashed black line) in figure 1.1 delineates this correction path. The imbalances making this correction path necessary show up if/as governmental investments and subsidies happen in an unbalanced way, i.e. some enterprises/branches/sectors profit more than others so that overcapacities may arise in some of these and may end up in a boom and bust cycle. In the Chinese case, SOEs have profited more than the other enterprises. Additionally, infrastructure and real estate branches have benefited more than others. In general, the manufactural sector has mostly profited from the stimulus programmes.

If the governmental stimulus programmes and the affected private follow-up investments (in the multiplier–accelerator process) are mostly financed by credit expansion, then a financial crisis (bust) may arise.

The above presentation in figure 1.1 can alternatively be presented in a growth presentation:

**Figure 1.2:** Shock reaction with and without policy stimulus programmes (II)



Here,  $g^*$  is the equilibrium growth rate, meaning the growth rate that is consistent with full (or desired) employment. Transition path I again describes the reaction function if the government jumps in with expansionary Keynesian-type macroeconomic (monetary and fiscal) stimulus programmes. In contrast, path II shows the transition path if the government chooses the market solution and waits for the effectiveness of stabilisation via the price mechanism. As described, this would take longer and culminate in a deeper, more extended recession or depression. Perhaps (or probably) the growth slowdown during this process would (at least temporarily) undershoot the above threshold  $TH$  with the above-described consequences. Therefore, a (risk-averse) government usually chooses the reaction policy described by path I, thus producing imbalances that have to be corrected sometime in the future (delineated by the transition path III in figure 1.2). However, this ironically may then create the undershooting of the threshold,  $TH$ , which it was intended to avoid in the first place (by using the transition path I).

## Appendix B: Extent of Imbalances in China

**Table 1.1:** Imbalance Indicators (I)

INDICATOR	3-year per cent change of REER (CIP based)	Private sector debt as per cent of GDP	y-o-y changes in total FSL	3-year p.p. change of the activity rate
THRESHOLD	(+/-)5% EA/ (+/-)11% N-EA	133%	16.5%	-0.2%
Year				
2007	3.91	106.61	<b>25.96</b>	<b>-1.3</b>
2008	<b>14.28</b>	102.81	-37.89	<b>-1.7</b>
2009	<b>17.12</b>	125.45	<b>33.90</b>	<b>-1.6</b>
2010	10.94	127.58	<b>108.55</b>	<b>-1.6</b>
2011	4.45	124.07	4.68	<b>-0.6</b>
2012	5.97	130.00	-45.04	-0.1
2013	<b>14.69</b>	<b>135.45</b>	<b>110.99</b>	0.2
2014	<b>14.86</b>	<b>141.80</b>	-23.23	0.1
2015	<b>18.46</b>	-	-	-

Source: 3-year per cent change of REER (CIP based): OECD, own calculations; Private sector debt as per cent of GDP: World Bank (WDI, 2016); y-o-y changes in total FSL: State Administration of Foreign Exchange, own calculations, 3-year p.p. change of the activity rate: World Bank (WDI, 2016), own calculations. Explanation: REER = Real Effective Exchange Rate, CPI = Consumer Price Inflation, FSL = Financial Sector Liabilities.

**Table 1.2:** Imbalance Indicators (II)

INDICATOR	Gross Capital Formation (per cent of GDP)		Gross Savings (per cent of GDP)		Household Consumption Final Expenditure (per cent of GDP)		Corruption	
							CPI- Index	WGI CoC
THRESHOLD	right side column for each indicator: per cent of EMU-Value for the corresponding year						< 0,75 x EU-Value	
Year								
2007	41.39	174 %	50.26	206 %	37.62	68 %	0.54	33.50
2008	43.67	186 %	51.83	225 %	36.56	66 %	0.56	35.44
2009	47.58	234 %	51.92	249 %	35.32	62 %	0.57	34.93
2010	47.35	226 %	50.60	236 %	36.59	65 %	0.55	32.38
2011	47.17	219 %	48.64	219 %	37.71	67 %	0.57	34.60
2012	47.32	237 %	49.86	228 %	36.59	65 %	0.61	39.23
2013	47.68	245 %	49.50	225 %	35.98	64 %	0.63	46.89
2014	47.18	238 %	-	-	36.52	65 %	0.56	47.11
2015	-	-	-	-	-	-	-	-

Source: Gross Capital Formation (per cent of GDP), Gross Savings (per cent of GDP), and Household Consumption Final Expenditure (per cent of GDP): World Bank (WDI, 2016); CPI-Index: Transparency International; WGI CoC: World Bank (2015). Explanation: WGI = Worldwide Governance Indicator, CoC = Control of Corruption, CPI = Corruption Perceptions Index. The CPI-Index EU-value is constantly about 1.0 and the WGI CoC is about 78.8 respectively.

**Table 1.3:** Imbalance Indicators (III)

Indicator	Share price (yearly change)	House price (yearly change)	Indicator	Share price (yearly change)	House price (yearly change)
Threshold	+/- 20%	+/- 6%	Threshold	+/- 20%	+/- 6%
Time			Time		
Q1 2005	-30.77	-	Q4 2010	-12.06	-
Q2 2005	-34.84	-	Q1 2011	-12.51	0.48
Q3 2005	-21.77	-	Q2 2011	-2.80	-1.68
Q4 2005	-18.94	-	Q3 2011	-5.49	-2.30
Q1 2006	-0.83	-	Q4 2011	-24.66	-2.23
Q2 2006	27.92	-	Q1 2012	-23.65	-3.71
Q3 2006	37.85	-	Q2 2012	-22.35	-4.16
Q4 2006	56.51	-	Q3 2012	-22.73	-3.26
Q1 2007	79.83	-	Q4 2012	-14.58	-2.71
Q2 2007	89.77	-	Q1 2013	-2.75	-0.35
Q3 2007	98.65	-	Q2 2013	-8.43	3.52
Q4 2007	91.54	-	Q3 2013	-3.80	5.76
Q1 2008	36.43	-	Q4 2013	0.93	6.89
Q2 2008	-22.51	-	Q1 2014	-15.01	6.44
Q3 2008	-69.61	-	Q2 2014	-9.42	3.27
Q4 2008	-104.54	-	Q3 2014	3.40	-1.43
Q1 2009	-74.20	-	Q4 2014	17.21	-4.98
Q2 2009	-21.81	-	Q1 2015	47.04	-6.85
Q3 2009	21.95	-	Q2 2015	76.74	-6.94
Q4 2009	47.32	-	Q3 2015	45.11	-3.99
Q1 2010	34.92	-	Q4 2015	26.58	-0.59
Q2 2010	2.01	-	Q1 2016	-15.82	1.38
Q3 2010	-19.94	-			

Source: Datastream.<sup>23</sup>

<sup>23</sup> House and share prices are expressed in real annual growth rates. They have been deflated with the consumer price inflation. The corresponding Datastream codes are CHQSP001F (share prices), CHHOUSE.R (quarterly averaged house prices), CHCCPI..E (quarterly averaged consumer price index).

In table 1.3, the coloured fields delineate that China has exceeded the critical thresholds in this quartile for the yearly change in the respective asset price. Note that we use countrywide house price data here. However, if we focus on the large eastern provinces of China (e.g. Shanghai, Peking or Shenzhen) the yearly change in house prices is much higher.