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Structural change, rebalancing, and the danger of a middle-income trap in China

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Structural Change, rebalancing and the danger of a middle-income trap in China

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Structural change, rebalancing, and the danger of a middle-income trap in China

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Contents

Abstract 4
1. Introduction 5
2. China's recent growth slowdown and the fear of an MIT 5
2.1. Growth slowdown: The sum of multiple determinants and structural change 6
2.2. MIT concept 8
3. MIT as a result of ineffective rebalancing in China 10
3.1. The first wave of imbalances 10
3.2. The second wave of imbalances 11
3.3. Need for simultaneously reducing the old and new imbalances 12
3.4. MIT-concept vs. low-convergence concept 15
4. Growth slowdown (2010–2017) cyclical or trend? – revisited 17
5. How to avoid an MIT / slow convergence in China? 18
6. Concluding remarks and further research 20
7. References 22

Helmut Wagner*

Structural change, rebalancing, and the danger of a middle-income trap in China

Abstract

China is currently experiencing a structural change toward tertiarization and an implied growth slowdown associated with it. The paper investigates whether this growth slowdown is merely cyclical or a negative trend, and further what China is doing or should do to avoid falling into a "middle-income trap," a problem many emerging economies have experienced in recent decades. The pitfalls of the current "soft" rebalancing policy in China are analyzed in the context of this development.

Keywords: structural change, rebalancing, middle-income trap, development, China

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1. Introduction

Present-day China can be characterized by the following stylized facts: (1) China is an emerging middle-income country; (2) China wants to continue catching up to the leading industrialized countries (fast convergence); and (3) China has followed (at least so far) an unbalanced fast convergence path that has led to high, ever-increasing multi-sectoral imbalances.

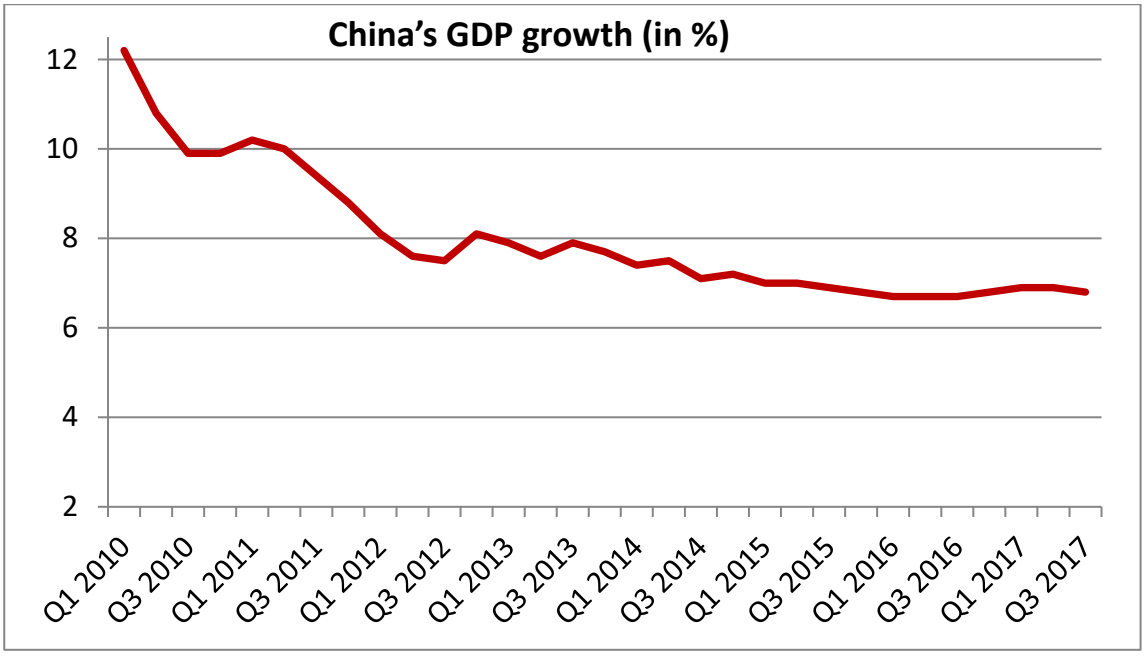
There are three major questions discussed in this paper. First, how can China find (or return to) a balanced and sustainable, yet fast, convergence path? Second, how can it avoid a rebalancing that ends up in a middle-income trap (MIT)? And finally, is "Xiconomics," the policy strategy of China's president Xi Jinping, an effective way of achieving this?

The rest of the paper is structured as follows. Section 2 describes China's recent growth slowdown and the fear of an MIT in China. Subsection 2.1 lists the various determinants of the recent growth slowdown with a special focus on structural change, while subsection 2.2 analyzes the MIT concept in detail. Section 3 investigates the danger of falling into an MIT as a result of the current "soft" rebalancing policy in China. Sections 4 and 5 analyze the necessary policy reforms China has to accomplish in order to avoid or overcome an MIT. Section 6 contains concluding remarks and suggests a potential avenue for further research.

2. China's recent growth slowdown and the fear of an MIT

Over the past seven years, a major concern of the Chinese government has been China's economic growth slowdown (see Figure 1).

Figure 1. China's GDP growth (in percent)



Data source: National Bureau of Statistics of China (2017).

This growth slowdown has created the fear that China may get caught in an MIT.[1] After decades of extraordinarily high (on average, double-digit) growth rates, the recent growth slowdown has made China anxious about whether this growth slowdown would follow a strong negative trend so that the aspirational fast convergence toward the income level of a rich developed country would become impossible, or at least slow significantly.

2.1. Growth slowdown: The sum of multiple determinants and structural change

The growth slowdown in China since 2010 is the sum of various determinants:

a) After-effects of the global financial crisis
b) Expansionary counter-policies
c) China's "rebalancing" policies
d) Structural change

Determinants a) and b) describe short-term effects, whereas c) and d) stand for long-term effects (although a) and b) can trigger some hysteresis-effects, thereby also affecting the mid- to long-term). Whether the recent growth decline will form a structural trend largely depends on the last two factors. While c) is a policy determinant, d) is a general or deep development determinant. The determinants b) and c) are country-specific factors (which can be directly influenced), whereas structural change is an unavoidable development stage in the development path of any developing country.

In this paper, I focus on the above long-term effects. The first issue is modeling the growth effect of "structural change," generally and specifically in the case of China. Structural change means the change in dominance of sectors. Over time, the economy transitions from an agriculture-dominated economy to a manufacturing-dominated economy to a services-dominated economy (see van Neuss, 2018). The transition from agriculture as the leading sector to manufacturing as the dominant sector is called "industrialization." The second transition, from manufacturing as the dominant sector toward services as the leading sector is usually called "tertiarization" or de-industrialization. This structural change is a common feature of development in all countries.[2] There are at least three major explanations for this process:[3]

- **High income elasticity of services demand** that increases private demand for services in countries with rising income levels (see Kongsamut et al., 2001);

[1] This concern was already expressed by scholars at universities and international organizations such as the IMF in the second half of the 2000s. Numerous publications have since taken up this concern. The Economist titled its April 5, 2011 edition, "The middle-income trap. China's economy may soon face a slowdown." A Reuters item in the New York Times on April 29, 2013 was entitled, "I.M.F. Warns of 'Middle-Income Trap' in Asia." The March 12, 2016 edition of Foreign Policy asked, "Can China Avoid the Middle-Income Trap?" Chinese politicians have also addressed this issue. For example, in 2015, China's premier Li Keqiang emphasized at the World Economic Forum in Davos, "As long as we succeed in doing so [focus on structural reform, encourage mass entrepreneurship and innovation, increase supply of public goods and services], the Chinese economy will successfully overcome the 'middle-income trap' and move ahead along the path of sustainable and sound development." In the same year, China's then-finance minister Lou Jiwei warned, "China has a 50/50 chance of falling into an MIT within the next 5 to 10 years."

[2] De-industrialization is a relatively new phenomenon. To my knowledge, it first occurred during the last century. De-industrialization first affected the world's economically most successful countries, but later also a number of low- and middle-income countries. See van Neuss (2018) and Herrendorf et al. (2014) for comprehensive surveys of the theoretical and empirical structural-change literature.

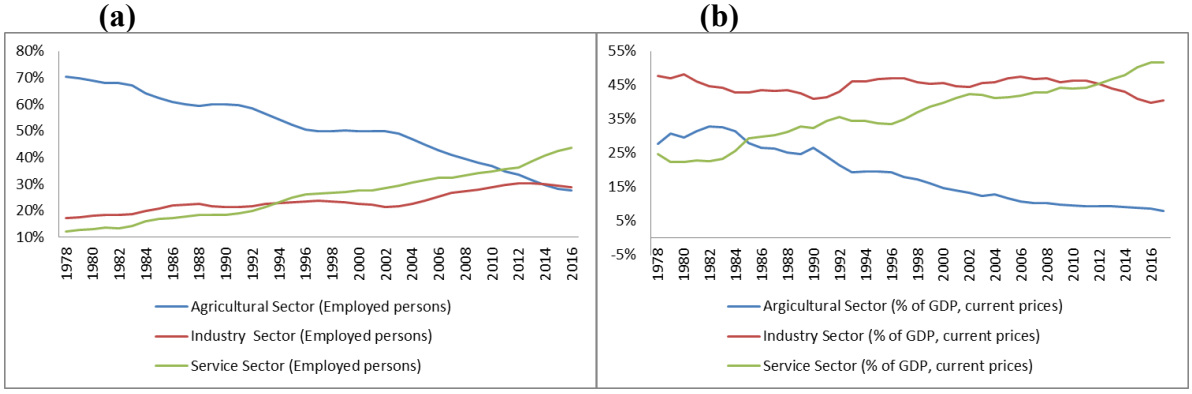
[3] For a more detailed analysis, see Wagner (2013). For a valuable discussion of the first two explanations, see van Neuss (2018).

- **Sectoral differences** in TFP growth, factor intensity and the elasticity of substitution between factors (see e.g. Baumol, 1967; Ngai and Pissarides, 2007; Acemoglu and Guerrieri, 2008; and Alvarez-Cuadrado et al., 2017); and
- **Significant negative side-effects of industrialization** such as increasing income disequilibria and other undesired distortionary effects that cause governments to take counter-measures that favor tertiarization (see Wagner 2013 and 2015 for details).

Regarding the second explanation, theoretical and empirical studies suggest that productivity growth in the service sector is lower than productivity growth in the manufacturing sector (Wagner, 2013 and 2015). One reason for this is "Baumol's cost disease", a phenomenon identified in the seminal studies of Baumol and Bowen (1965, 1966) and Baumol (1967). These studies, which show that wage increases generally outpace corresponding productivity increases in the service sector, conclude that overall productivity growth and overall economic growth eventually slows in a society with a growing service sector (tertiarization).[4,5]

When we look at structural change in China since 1978 in terms of both value added and employment, we see that the service sector only began to dominate the other two sectors (manufacturing and agricultural in terms of both employment and value added) in 2011–2013 (see Figure 2). Thus, China appears to be at the very beginning of its tertiarization phase.

Figure 2. Sectoral shares in (a) total employment and (b) GDP



Data sources: Datastream, Ministry of Human Resources and Social Security, China.

Furthermore, we can see from Figure 3 that the average labor productivity growth in China from 2000 to 2016 was lower in the service sector compared to the other two sectors. The difference even widened after 2010.

Thus, given a relative increase in the sectoral share of the service sector, the growth rate in an economy, and the Chinese economy in this case, will decrease ceteris paribus (again, see Wagner 2013 and 2015 for details).

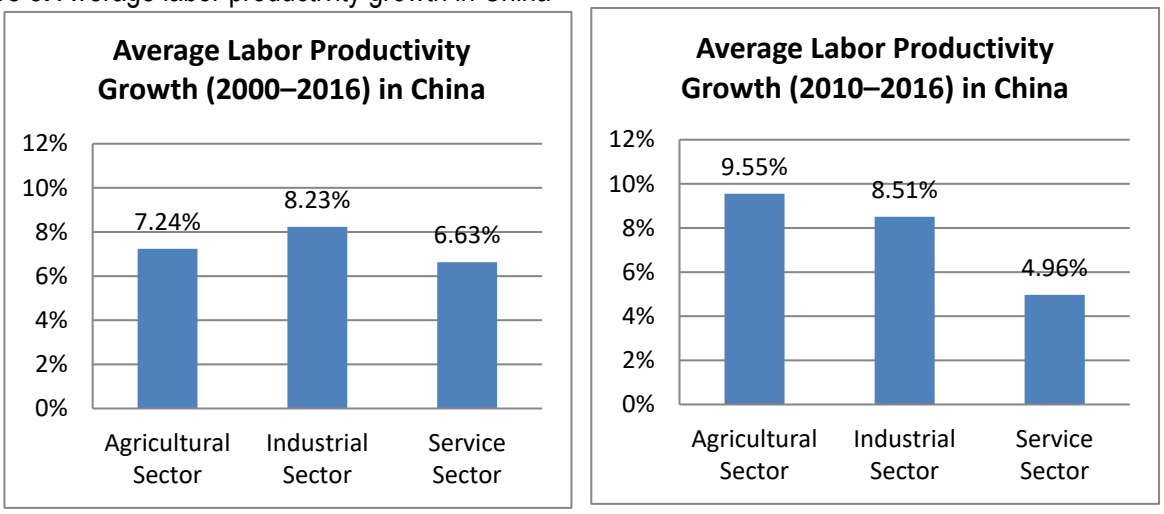
This phenomenon became a major concern during the first half of the 2010s as it raised apprehension that China might slip into an MIT.[6] In section 3, I argue that the recent growth slowdown may intensify as rebalancing proceeds.

[4] See Murach and Wagner (2017) for an empirical demonstration with respect to China, South Korea, and Japan.

[5] Productivity growth in China's agricultural sector was long lower than in the manufacturing sector. In recent years, however, it started to surpass the growth rate of the manufacturing sector. See Figure 3.

[6] This concern seems to have slightly diminished in China in 2018. China's former finance minister Lou Jiwei stated in 2017, "I can speak with full confidence that after the sweeping reforms we've been carrying out since 2½ years ago, China is likely to become a high-income country in three to five years." This optimism, as I argue here, is based on the effects of the expansionary macroeconomic counteracting measures of the Chinese government in the current decade that are unsustainable. Instead, they create ever-increasing imbalances.

Figure 3. Average labor productivity growth in China



Data sources: Datastream (National Bureau of Statistics of China, Ministry of Human Resources and Social Security, China), GDP per employed person.

2.2. MIT concept

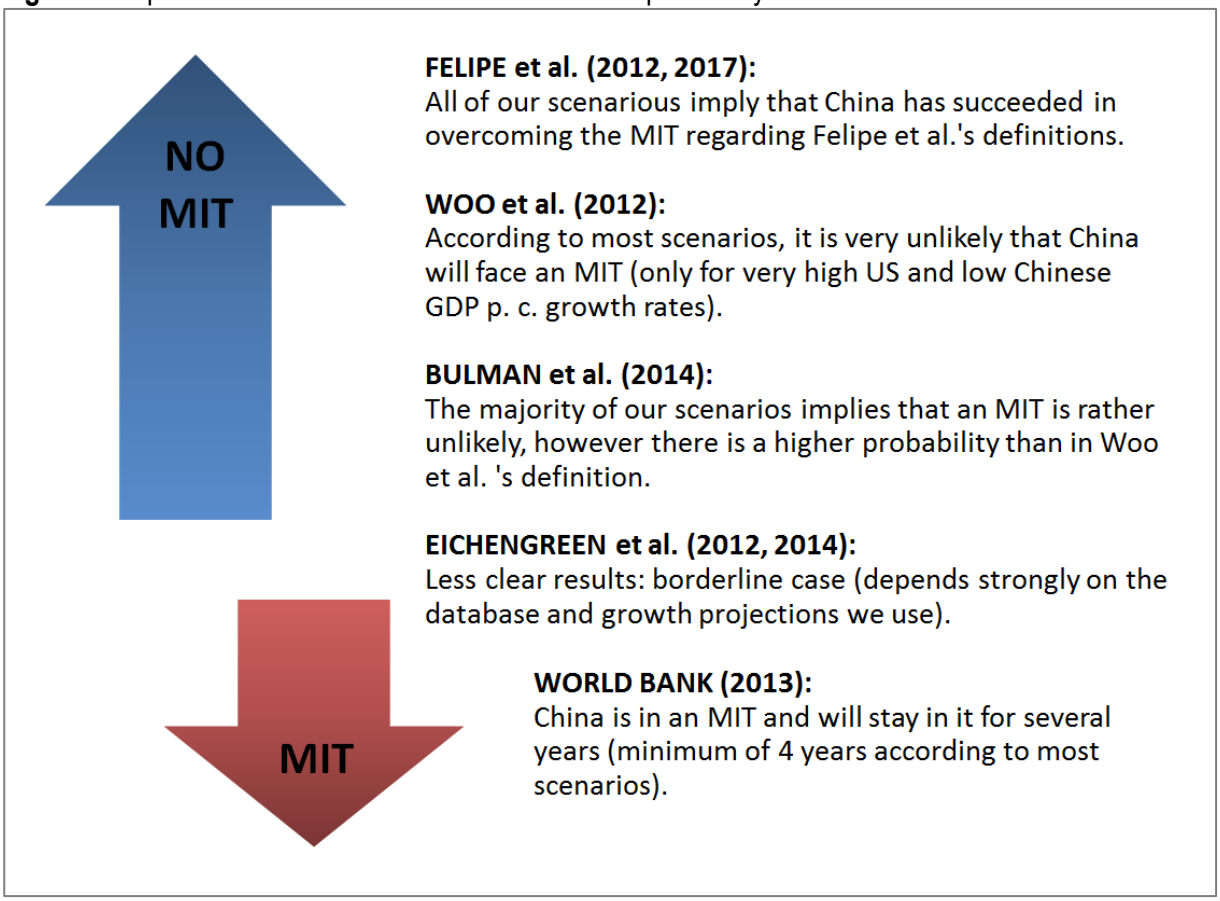
The term MIT refers to countries that have experienced rapid growth and thus quickly reached middle-income status, however then fail to overcome that income range to further catch up with the developed countries (Glawe and Wagner 2016).

There are many empirical MIT definitions in the literature referring to either absolute or relative middle-income thresholds. The definitions of Eichengreen et al. (2012, 2014) and Felipe et al. (2012, 2017) are examples of absolute definitions (referring to absolute middle-income thresholds), whereas the definitions of the World Bank (2013), Woo et al. (2012) and Bulman et al. (2014) belong to the group of relative definitions (referring to the per capita income relative to the US).

In Glawe and Wagner (2017a, 2017b), we apply the absolute and relative MIT definitions to China, extend the data and use various growth projections to make MIT forecasts. For the growth forecasts, we use the projections of the Conference Board (2010, pessimistic scenario), OECD (2012), World Bank (2013), Albert et al. (2015), Bailliu et al. (2016), Zhang et al. (2015), Barro (2016), and various versions of the IMF's World Economic Outlook forecasts.

Depending on which definition, database, and growth projections we use, we can say it is possible to find empirical support for any possible case, i.e. China is or is not in an MIT; China will or will not fall into the MIT. Indeed, it is relatively easy to produce or manipulate a desired outcome. In Figure 4, you see a brief overview on the Chinese MIT probability implied by the different definitions, taken from Glawe and Wagner (2017c, p. 4). An extensive discussion is provided by Glawe and Wagner (2017a).

Figure 4. Implications of the different definitions for the probability of an MIT in China



Source: Modified version of Figure 2 in Glawe and Wagner (2017c, p. 4).

Nevertheless, certain consistencies stand out. The majority of our scenarios imply that China is not yet in an MIT, and most scenarios imply that China is or will soon be in the middle-income range (MIR), but not trapped in an MIT. In most scenarios, China enters the MIT only if the Chinese growth rate drops to 3-4 % p.a., a scenario predicted only by the most pessimistic growth projections (e.g. Barro, 2016).

As a whole, we can state major weaknesses of the empirical definitions mentioned. There are, on one hand, the standard problems associated with cross-country growth regressions, e.g. measurement and specification errors, and sample selection bias. On the other hand, there are some conceptual problems, including the varied definitions of MIR and GDP data discrepancy across (different versions of) databases. For an extensive discussion of the weaknesses of the empirical MIT definitions, see Glawe and Wagner (2017a).

We have focused so far on empirical definitions for determining whether a country is "trapped" in middle-income purgatory, but there is another major concept in the literature for identifying an MIT. It involves searching for "triggering factors" (such as export structure) that speed up or decelerate growth.

In Glawe and Wagner (2017a, 2017c), we perform a meta-analysis of triggering factors identified in the basic MIT literature and apply them to China. Based on our literature survey, we find 18 factors relevant for identifying an MIT. Among these triggering factors, the most widely mentioned are export structure, human capital, and TFP. We concentrate on these three aspects in Glawe and Wagner (2017a), and after thorough investigation find that China shows a catching-up tendency with respect to the export structure measured by high-tech exports as percentage of GDP, its export sophistication index (EXPY), and its product space profile.

Regarding TFP, the picture is less clear. While the R&D expenditure (% of GDP) index shows a catching-up tendency, we cannot assess the TFP index correctly due to data problems (TFP data varies widely across studies). However, we discover that China lags behind regarding education (measured as secondary education average years, tertiary education completed, tertiary education average years, PISA results, and access to education). Thus, further improvements regarding human capital accumulation and education, as well as a reduction of the widening (rural-urban) educational inequality, seem to be necessary measures to avoid an MIT.

In the following section, I focus on the demand-side triggering factors applied to China. Concretely, I shall ask whether the practiced "soft" rebalancing, which tries to make the costs of reforms bearable by delaying fast and harsh reforms and by conducting stimulative macroeconomic (counteracting) policies, can be regarded as a triggering factor of an upcoming MIT in China.

3. MIT as a result of ineffective rebalancing in China

A major challenge for China is the build-up of imbalances that fuels the need for more rebalancing. I distinguish here between two development waves or sources of imbalances, and thus two rebalancing needs in China since 1978 (see Wagner 2017a). The first wave of imbalances occurred between 1980 and 2010. These imbalances were the result of the prior unbalanced and overambitious convergence path that created the need for the first type of rebalancing ("rebalancing 1") in China. From 2010 to the present, there has been a second wave of imbalances. These new imbalances are the result of expansionary macroeconomic policies to counteract the slowing growth associated with "rebalancing 1". They created the need for additional rebalancing ("rebalancing 2").

3.1. The first wave of imbalances

The first wave of rebalancing was the result of the Deng-development strategy or "Dengonomics." It was characterized by the following strategic objectives (see Wagner, 2018a):

(1) Stepwise regional development of the country;
(2) Prioritization of maximizing economic growth while "neglecting" the effects on the social and ecological environment in China's boom regions;
(3) An export-led, industry/manufacturing-supporting growth path;[7] and
(4) Political "decentralization" (a partial shift of power from the central to the local governments in the regions).

Dengonomics produced ever-increasing imbalances such as

- Income inequality
- Environmental pollution
- Overcapacities
- Political and cultural instability ("historical nihilism")

(see Wagner, 2017a and 2018a)

Since about 2010, the Communist Party of China (CPC) has accepted the need for "rebalancing," i.e. a new development policy. This paved the way for Xi Jinping's new policy, which was introduced in 2012.

[7] This describes a development strategy where investment in physical assets and exports are the primary sources of growth.

3.2. The second wave of imbalances

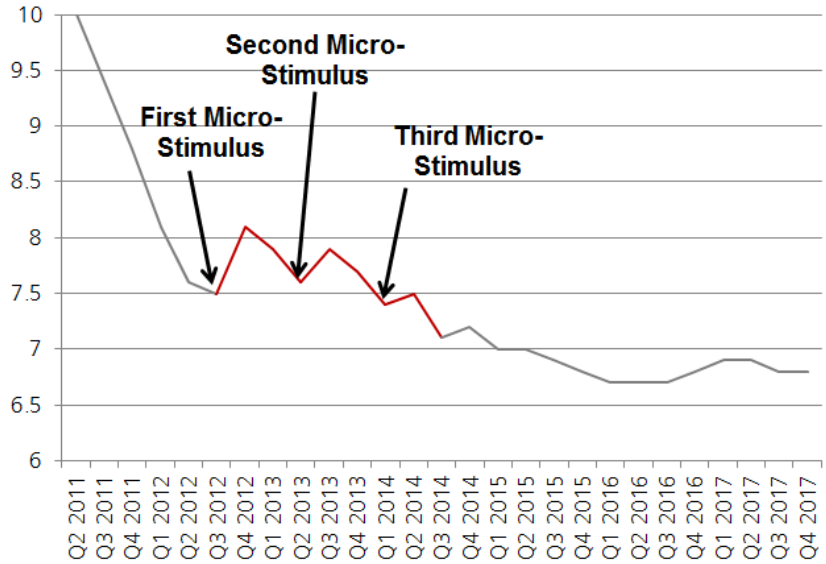
Additional imbalances have been built up as the result of the political answer to the growth slowdown in China since 2010. As argued above, the growth slowdown since 2010 has been caused by a sum of various determinants, among them external factors, structural change, and not least by the kind of "rebalancing" policy followed under Xi Jinping (see below). The political answer to this growth slowdown has been expansionary stimulus programs allowing gradual delays of rebalancing 1-type reforms, to make the costs of the policy change acceptable for the public ("stop-and-go structural reforms"). These expansionary stimulus programs led to ever-increasing new imbalances, particularly

- Expansionary credit growth
- Rising debt levels
- Boom-bust cycles in asset prices

(Wagner 2017a and Wagner 2018a)

Figure 5 illustrates "micro-stimulus" programs from 2012–2014.

Figure 5. Micro-Stimulus Programs (GDP growth in percent)



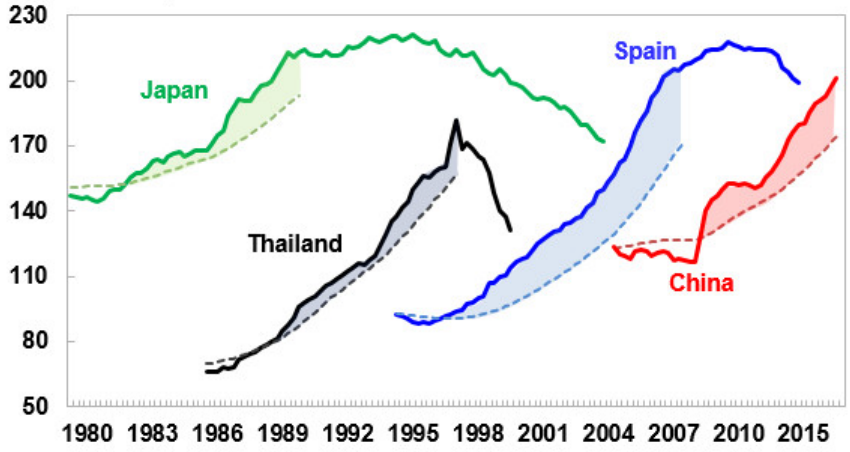
Data source: National Bureau of Statistics of China (2017).

The micro-stimulus programs could be seen as desperate attempts to control the costs of structural change and rebalancing (associated growth slowdown and increase in unemployment). The challenge for policymakers is making them palatable to the public. If they are too onerous or cause too much suffering among the general populace, they could damage the political legitimacy of the ruling government and the CPC. While the first micro-stimulus programs were initiated by the central government, during the last couple of years the quasi-autonomous attempts of the local authorities to protect local firms and local workers, and to maintain high economic growth in their regions,[8] have created regional growth-increasing (particularly infrastructure) investments. The financing of these investments has been ensured more and more by "shadow banks". This led to the mentioned credit expansion and the debt increase of firms and local governments.

[8] The reason for this was that there have been wrong incentives over the past decades rewarding individual and regional growth-maximizing behavior in China (see in more detail Wagner 2018a).

Figure 6. Widening credit gap

China's credit grew rapidly, averaging 20 percent per year, much more than nominal GDP.
(in percent of GDP)



Sources: Bank for International Settlements (BIS); and IMF staff estimates.
Note: Total credit to the private nonfinancial sector. Dotted lines represent the credit trend.

Source: IMFBlog, online available at: https://blogs.imf.org/2016/12/16/china-must-quickly-tackle-its-corporate-debt-problems/

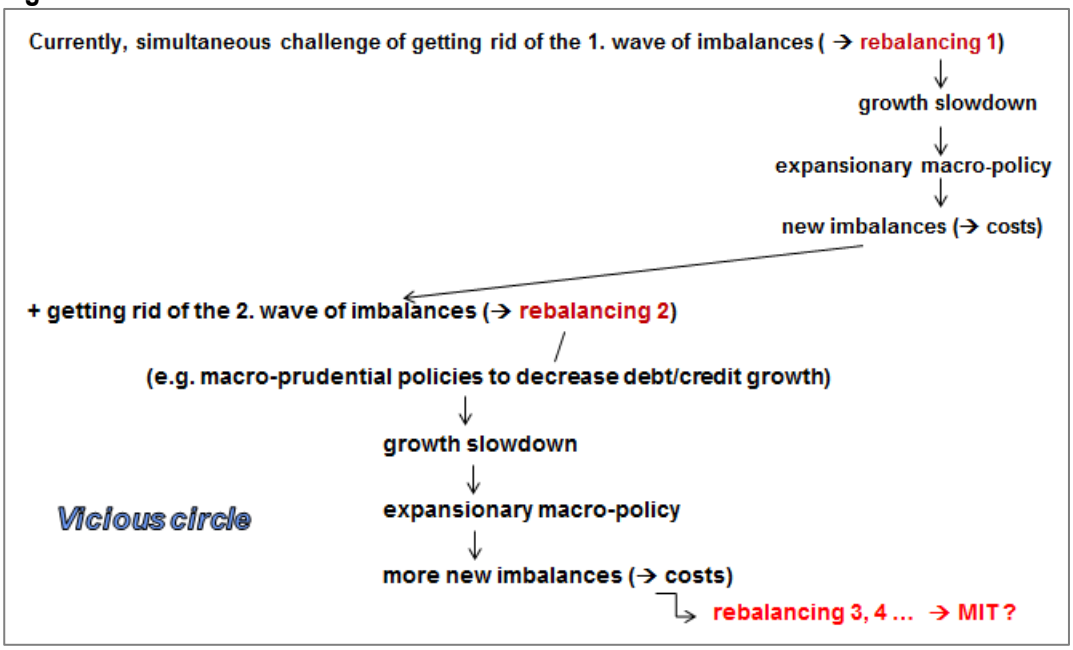
Figure 6 describes a new kind of imbalance, a widening credit gap, triggered by various stimulus programs. China's credit gap, which emerged only over the past ten years, looks quite threatening when we compare it to those of Japan, Thailand, and Spain earlier. Those credit gaps triggered soon-following financial crises/busts.[9]

3.3. Need for simultaneously reducing the old and new imbalances

Today, we see in China the simultaneous challenge of eliminating the old first-wave imbalances (→ rebalancing 1) and the new second-wave imbalances (→ rebalancing 2). Both rebalancing courses have led to slowing growth. In order to limit the costs for the public, the government has used expansionary macroeconomic policy and in this way created new imbalances (costs). Reducing the above-mentioned new imbalances has required counter-measures such as macro-prudential policies to decrease credit expansion and debt. This, in turn, has exacerbated the danger of a growth slowdown that must again be countered with expansionary macroeconomic policy, creating more new imbalances (see Figure 7).

[9] See e.g. IMFBlog, available at: https://blogs.imf.org/2016/12/16/china-must-quickly-tackle-its-corporate-debt-problems/.

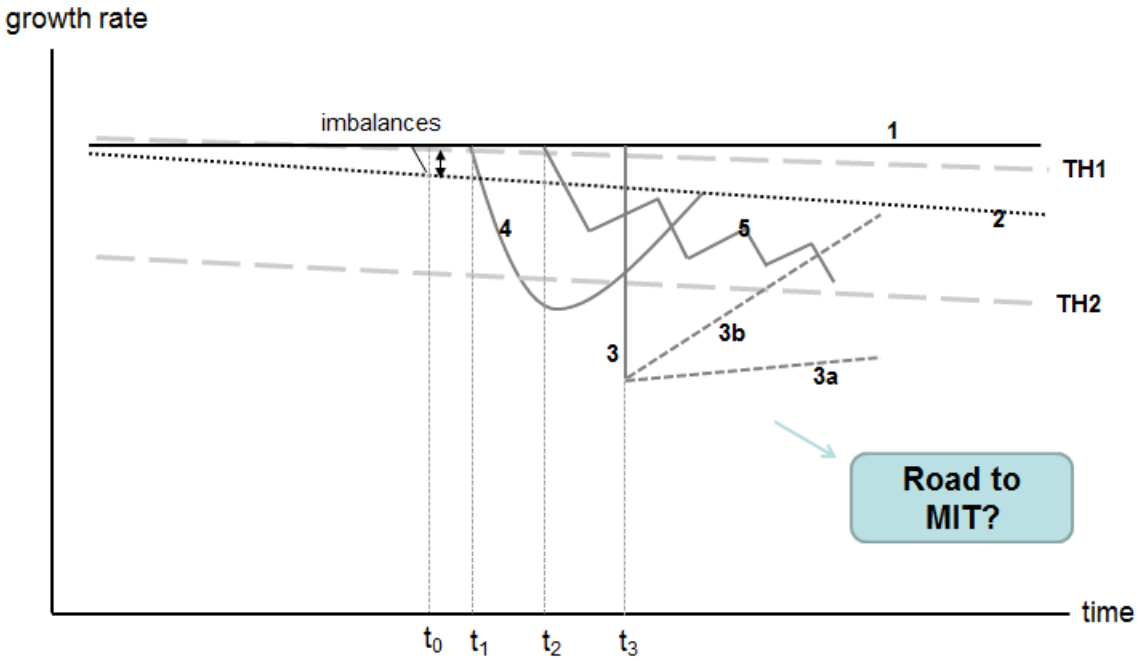
Figure 7. The vicious circle of new imbalances



With such danger arises the possibility of a vicious circle of new imbalances followed by growth-slowing rebalancing or regulation measures, each time countered by expansionary stimulus programs that generate new imbalances and the need for further rebalancing programs (3, 4, …and so on). The growth slowdown continues, but so does the credit expansion and debt increases. Eventually, China finds itself ensnared in an MIT or a slower growth/convergence path (see Figure 8).

Figure 8 contains seven lines or curves. Line 1 stands for the unbalanced growth path, representing China's overambitious growth/convergence policy over recent decades. Line 2 presents the theoretical balanced growth path. Lines "TH1" and "TH2" present two threshold lines: TH1 for the economic costs of imbalances acceptable by the public and thus politically palatable, and TH2 for the political legitimation threshold regarding the accepted suffering of austerity effects. Curve 3 pictures the option of a benign-neglect reaction of politics to the imbalances. Curve 4 delineates the effects of a sharp proactive policy reaction to the imbalances. Curve 5 illustrates the actual "soft" rebalancing (stop-and-go proactive) policy of China's government over the past six years.

Figure 8. Alternative growth paths



Notes**:** TH1: economic threshold line. TH2: political threshold line; Line 1: unbalanced growth path. Line 2: balanced growth path. Line 3: benign-neglect policy leading either to a significantly lower (balanced) growth path (Line 3a) or a (stepwise) return to the old balanced growth path (Line 3b). Curve 4: strong reaction (shock therapy). Curve 5: stop-and-go proactive policy (soft rebalancing).

Figure 8 is based on a scenario, whereby, in t_0, a new government considers which policy it intends to adopt for the next few years to tackle and offset existing imbalances. The government (acting under uncertainty) has two general options, each with multiple sub-options:

(1) The government follows a **policy of benign neglect**, which is comparable to the central bank policy approach of many countries before the global financial crisis. Here, the government waits and continues down the unbalanced growth path until it determines
   - (i) whether the imbalances will actually do serious damage. The government's hope is that they do not, and therefore there will not be a crash (occurring with probability x<1), or
   - (ii) if serious damage looks inevitable (i.e. when with ever-increasing imbalances and thus ever-increasing economic costs, depicted by the gap between line 1 and 2, line 1 overshoots the economic threshold TH1 in Figure 8), whether the damage is sufficient to trigger a crash. In this case, the government's hope is that the mess (the effects of the crash) can then be cleaned up quickly and with manageable costs.

Choosing the benign-neglect option (1), depicted in Figure 8 as line 3, could be rational or acceptable for an independent central bank, particularly if it has committed mainly to stabilizing the price level. For the CPC, however, such a strategy would have been seen as too risky as a crash (occurring with a probability of 1-x) would have created a recession so deep that the political legitimation threshold TH2 would surely have been undershot and thus posed a threat to the power of the CPC.[10]

[10] In other words, allowing the economy to get outside the two thresholds (into the areas above the TH1 line or, respectively, below the TH2 line in Figure 8) would have been dangerous for the CPC, as these areas above and below these thresholds are "instability areas". Above the TH1 line, the economic costs of the imbalances rise and the probability of experiencing a crash is positive and increasing the further one deviates from the threshold. Below the TH2 line, the probability of experiencing a political legitimation crisis is positive and becomes greater the larger and longer-lasting the

Therefore, the Chinese government chose the second option, namely:

(2) The government follows a **proactive policy**, whereby the government acts to reduce the imbalances in a timely fashion, e.g. by hiking interest rates significantly or cutting back on public investment. Here, the government again has two sub-options. It can either

(i) move ahead with a painful reform (shock therapy), hoping to eliminate the imbalances very fast. This is depicted by curve 4 in Figure 8. However, such a strong policy reaction is likely to produce large transition costs and undershoot the political legitimation threshold TH2. With probability z, the undershooting of TH2 will only be short, but with probability 1-z it can also take a long time.[11] The government may not find such a risk acceptable, because it could mean being swept out of power or banished from the political scene.

(ii) the government can alternatively adopt a "soft" proactive policy reaction, represented as a stop-and-go policy (curve 5 in Figure 8). As soon as the transition costs get high so that the growth path approaches the TH2 threshold, the government temporarily returns to an expansionary policy reaction (thus stimulating the economy for a while). By doing this, the imbalances grow again, the government returns to the restrictive reform course, but only until growth threatens to fall below the TH2 threshold. The cycle is then repeated.

This "soft" rebalancing policy comes with its own risks. In the case of China, it is associated with the repeated use of corrections to counter the negative effects of restrictive policy measures by conducting credit-financed stimulus programs as soon as the growth slowdown approached the political threshold line (TH2). Growth may be stabilized (or even increased) for a while with the increase in imbalances associated with this stimulus policy. Eventually, the restrictive policy measures have to be re-initiated, however. This process can be repeated several times even as growth slowdown gets deeper and deeper. Ultimately, despite all transitory stimulative counter-measures, the policy may threaten to undershoot the political legitimation threshold – exactly what the government originally sought to avoid with this strategy option. The advantage of the soft rebalancing option is that it may buy the government time to allow technological and other innovations to save the day. It would allow time, for example, to make the shift to Xiconomics (see below) and draw the growth trend back toward the balanced growth path (line 2).[12] Therefore, the chosen policy strategy in China in the current decade cannot be assessed as irrational, only as probably over-optimistic.

3.4. MIT-concept vs. low-convergence concept

Despite misconceptions, falling into an MIT does not mean the economy will stagnate (growth rate of zero), but only that convergence occurs so slowly that even after decades of catching up a country remains mired in middle-income territory. Thus, while MIT avoidance is the popular theme, this potential misunderstanding may not make it the most appropriate concept for analyzing China's current challenges. For China's leaders, after all, the issue is not whether the country is trapped in an arbitrarily defined middle-income range for an arbitrarily defined period of time, but whether China risks falling back to a much slower convergence path so that the convergence expectations of the government and in particular of the people are disappointed and a political legitimation crisis

undershooting of TH2. For the basics and pitfalls of stabilization policy, see Wagner, 2018b. For a discussion of central bank policy reactions before the global financial crisis, see Wagner, 2010).

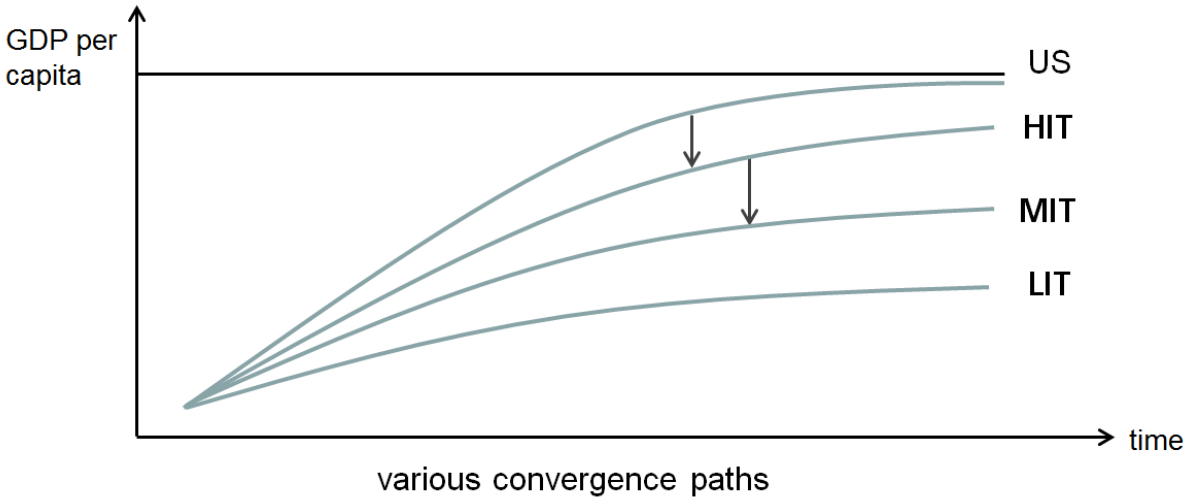
[11] The economy then would fall onto a lower balanced growth path (corresponding to the MIT convergence path in Figure 9 below).

[12] Line 2 in Figure 8 corresponds to the HIT convergence path in Figure 9.

emerges. As mentioned at the start of this discussion, China wants to catch up to the leading industrialized countries and experience fast convergence. Xi Jinping has reiterated this goal, stating that he wants to lead China until 2049 to a state where China is at eye level with the United States and then goes on to become the world-wide frontrunner in major technological branches ("Made in China 2025"). This economic view is paired with the hope of regaining the political "soft" power of former times ("Make China great again"). Not reaching these goals will lead to disappointments and can trigger a political legitimation crisis dangerous for the CPC.

In this context, it has to be emphasized that technological innovations are insufficient in themselves to avoid a steady growth (convergence) slowdown triggering an MIT. China also needs to create incentives for a market-friendly, open environment (entrepreneurial spirit). This again requires steady new institutional reforms. Furthermore, it needs a macroeconomic policy that effectively manages the reduction of the old and new imbalances. Otherwise, the country may fall back from a high to a low convergence path ending up on an MIT-convergence path. See Figure 9. Figure 9 assumes that countries that want to catch up and join the ranks of rich, developed countries (here the US) need to get on a rapid or very-high-convergence path. Indeed, China earlier was on such a very-high-convergence path. Due to structural change, however, China fell back to a lower convergence path (here described as HIT, high-income trap path), and threatens to shift to the low-convergence MIT (middle-income trap) path.[13]

Figure 9. Various convergence paths (1)



Note: HIT, MIT, and LIT stand for high-income trap, middle-income trap, and low-income trap, respectively.

Why? The reason is the above-described delay of necessary structural reforms and the imbalances built up by the associated credit-financed stimulus programs. Only by steadily creating both, new technological innovations (at the highest level) *and* institutional reforms, can a country avoid getting stuck on an MIT path and return at least to the HIT path.[14]

[13] This concept of various convergence paths accords with the neoclassical conditional convergence theory (see Barro and Sala-i-Martin, 1992). While the existence of a global convergence path would require that the only difference between all the economies regarded is their initial per capita level of capital, conditional convergence allows for structural differences in geography, colonial heritage, culture, etc. as initial conditions among economies (see Ito, 2017, who also favors a similar multiple convergence-paths concept). Therefore, different groups of economies can be on different convergence paths at the same time; or, respectively, one country can be on different convergence paths over time, due to changing structural conditions in this country.

[14] Sometimes the convergence path is presented in terms of a reduction of the technology gap vis-à-vis the US (see e.g. Acemoglu and Zilibotti, 2001).

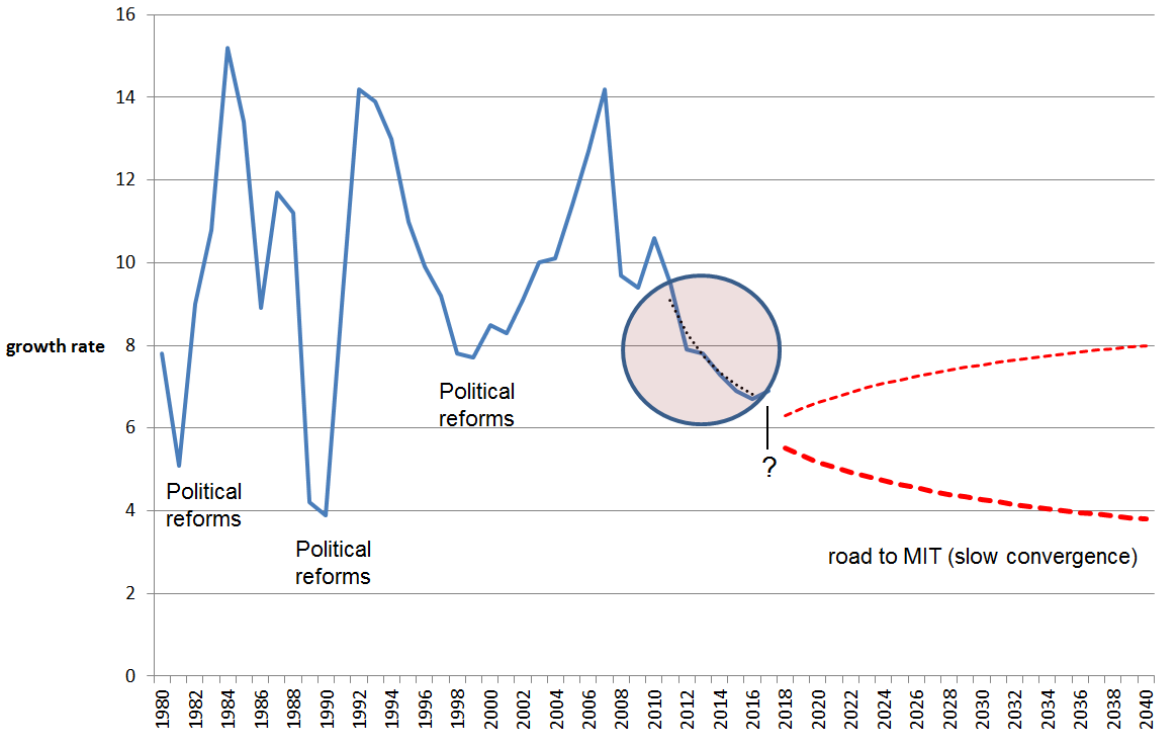
4. Growth slowdown (2010–2017) cyclical or trend? – revisited

At the start of this discussion, we posed the question of whether the growth slowdown between 2010 and present was a cyclical or structural trend. We assess this by looking back four decades to 1978 when China's major reforms began.

Figure 10 shows that China has experienced several sharp up-and-down fluctuations over the past 40 years. These are not business cycle fluctuations, but growth fluctuations. Each deep growth trough (1981, 1984, 1990, 2001) could only be reversed by comprehensive political reforms. Glawe and Wagner (2017b) describes this in detail using a neoclassical growth model based on the multi-sector modeling literature (Laitner, 2000; Kongsamut et al., 2001; Ngai and Pissarides, 2007; Acemoglu and Guerreri, 2008). Here, a market-exogenous MIT explanation is suggested, whereby Chinese growth since 1978 has been created by a series of reforms:

Phase 1. During 1978–1984, reforms mainly occur in the agricultural sector. This phase is highlighted by an increase in agricultural goods prices around 1979, the implementation of the household responsibility system (HRS) reform (1981–1984), and the increase in arable land (1982-1985).

Figure 10. Growth fluctuations



Data source: Datastream (National Bureau of Statistics of China), GDP (constant, % YoY), dashed lines at the right-hand side of the figure are own calculations for illustration purposes.

Phase 2. During 1985–1992, the policy reforms happen primarily in the manufacturing sector. We see the emergence of a dual-track system in the manufacturing sector, and creation of a favorable policy environment for township and village enterprises.

Phase 3. From 1992 to present, the policy reforms are introduced via FDI and trade. Highlights include Deng Xiaoping's southern tour in 1992 (commitment to open-door policy), further liberalization of trade (WTO accession in 2001), and nationwide implementation of FDI-enhancing policies.

All these reform phases generated a series of ***transitory*** growth phases.

In 1978, China had a large potential for transitional growth-generating reforms and by gradually exploiting the growth potentials of the reforms, it accomplished the middle-income range in a relatively short amount of time. However, if this potential for simply enforceable reforms is exploited, China's growth slows, and there is a danger of an MIT.

Among all the reforms, the third-phase reforms could also trigger relatively high growth rates over subsequent decade(s) if China manages to (a) accumulate further capital via FDI and (b) exploit the technological progress embodied in FDI.

In addition, the reform of the service sector appears to be a necessary sequel to the reforms since 1978: According to our model (and the standard literature), services will account by far for the largest share of the Chinese economy in the future. Hence, future total factor productivity will depend increasingly on service sector productivity. This is also the result of the growth-projection studies in Wagner (2015) and Murach and Wagner (2017).

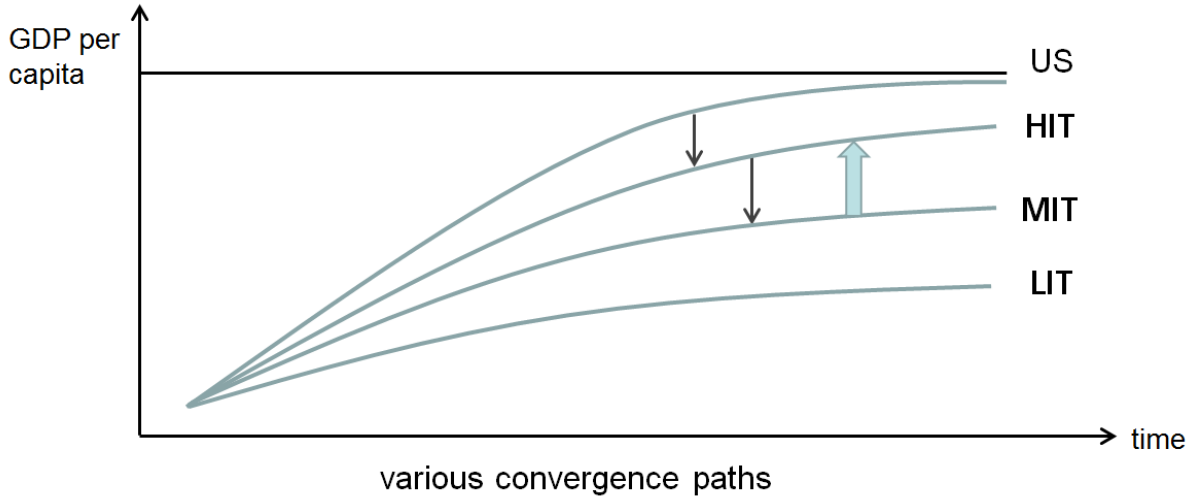
5. How to avoid an MIT / slow convergence in China?

Against the background of the above argumentation, implementing of the following political measures in China may be helpful in avoiding an MIT:

(1) Sharpen and speed structural change reforms (rebalancing 1) – and accept the associated long-term decrease in the growth rate.
(2) Decrease the credit expansion, the high level of bad loans on bank balance sheets, and the high debt level (particularly corporate debt) built up in the current decade – and accept the associated short-term decrease in growth rate.
(3) Increase technological innovation, particularly in the service sector.
(4) Increase institutional reforms and innovation, acknowledging that measure (4) is a precondition for making (3) more productive.

By implementing (and only by implementing) both measures (3) *and* (4), a sustainable return movement from the MIT convergence curve to the HIT convergence path and beyond is possible (see Figure 11).

Figure 11. Various convergence paths (2)



One major pitfall of China's present development strategy appears to be a lop-sided fixation on technological innovation, most notably the "Made in China 2025" program.

Although "Made in China 2025" and the "One Belt, One Road" initiatives are important steps toward strengthening the country economically and as a global political power, this probably will not be enough to ensure further fast convergence (sufficiently high growth). What China also needs to do is install institutions that (i) promote entrepreneurial spirit in business and administration, and (ii) trigger creativity in education.

The question here arises as to whether China's current policy strategy, called "Xi-strategy" (Wagner, 2018a) or Xiconomics (ECB conference, 2018[15]), is appropriate for addressing these needs. Wagner (2018a) argues that the set of policy pillars of the Xi presidency, i.e. "Xi-strategy", comprise four elements:

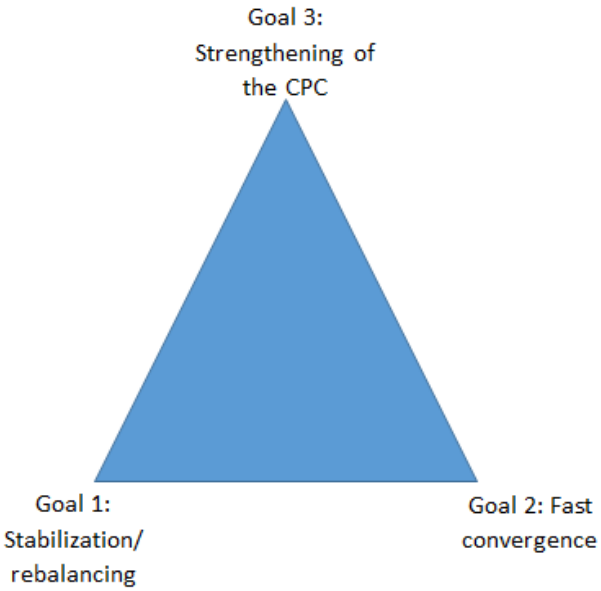
(1) An attempt to integrate the western regions of China into China's development strategy.
(2) An emphasis on improving the social and ecological standards within China.
(3) Rebalancing the economy toward a consumption- and service-led growth path.
(4) An attempt to (re)stabilize society by re-authorizing the political system (refocusing on central control) and rejection of Western values.

This strategy, elsewhere referred to as Xiconomics, is here understood as the policy strategy of Xi Jinping that tries to achieve his goals of rapidly catching up – economically, technologically, and politically – with the world's leading developed countries. The adequacy of this strategy for reaching these goals can be discerned to some extent with what I call China's "magic triangle."[16] To my understanding, China's president Xi Jinping seeks to simultaneously achieve three major political-economic goals (see Figure 12):

Goal 1: (Re)stabilize the economic and social system ("rebalancing").
Goal 2: Maintain high, sustained growth and fast convergence.
Goal 3: Maintain and strengthen the political power of the CPC.
The latter could be extended to a fourth goal of attaining world power status.

[15] This paper is based on the keynote speech for this conference.
[16] For example, this could be investigated with the help of system-theoretical analyses. The basics of this system-theoretic analysis are treated in Wagner (2017b) and Stijepic and Wagner (2018).

Figure 12. China's "magic triangle"



There is a fear that Xi-strategy, and its policy pillar (4) of hardline authoritarianism in particular, may thwart the mid- to long-term Goal 2 of high growth and fast convergence. Authoritarianism hinders the building up of institutions that foster entrepreneurial spirit and creativity in education. On the other hand, Xi-strategy makes it easier to meet Goal 1 (stabilization), China's most pressing challenge over the next five to ten years. Last, but not least, it best ensures the power of the CPC (Goal 3) over the coming decades, which in turn supports China's efforts to gain world power status. However, whether sufficiently high sustained growth for fast convergence (Goal 2) can be achieved in China with this strategy depends mainly on whether president Xi Jinping and the CPC are willing to give up some power (reduce authoritarianism) and allow further liberalization once stabilization (Goal 1) has been achieved.

6. Concluding remarks and further research

In this paper, I first described the recent growth slowdown and fears of an MIT in China. After enumerating various determinants of this growth slowdown, I next focused on the growth effects of structural change. After explaining the MIT concept, I showed that the current "soft" rebalancing policy in China, which delays structural reforms and instead conducts credit-financed stimulus programs, can lead the country into an MIT, or, respectively, put the country on a slow MIT convergence path. Finally, I listed the policy reforms I think China needs to implement to avoid or overcome an MIT. In this context, I asked whether "Xiconomics" (the policy strategy under Xi Jinping) can help achieve the three pillars of what I call China's "magic triangle."

In order to correctly assess the growth possibilities of China for the future, one new research route emerges as the most promising and useful to follow: i.e. research on the "deep determinants" of China's growth path.

Neoclassical growth theory generally confines itself to input factors (TFP, physical capital, and human capital) to derive growth development projections. The deep determinants approach looks at underlying factors of economic growth and development that determine such proximate factors:

deep determinants	→	proximate determinants	→	economic development
(institutions, trade, geography)		(input factors)		(growth)

In two new papers, Glawe and Wagner (2017d, 2017e) aim to provide a specification of the debate on the deep determinants of growth with a special focus on the MIT concept.

The first paper (Glawe and Wagner, 2017d) uses simple statistical hypothesis testing to analyze whether the deep determinants have positive or negative impacts on the probability of a country experiencing a prolonged stay within the middle-income range. We show that not all findings of the deep determinants literature can be easily transferred to the MIT phenomenon, especially regarding institutional variables.

In the second paper (Glawe and Wagner 2017e), we apply the studies by Acemoglu et al. (2001), Rodrik et al. (2004), and Easterly and Levine (2016) to the MIT phenomenon. The deep determinants (especially institutional quality) are shown to play important roles in determining whether a country falls into an MIT. However, some differences compared to the results of the standard literature become apparent, particularly regarding transmission channels and inter-relationships.

Our latest research project (Glawe and Wagner, 2018) looks at the deep determinants of economic development in China from a provincial perspective. Here, we show that institutional quality plays an important role in provincial economic success, trumping geographical factors and integration (which only have indirect effects through influencing institutional quality).

A tantalizing research theme involves investigating the lessons China can draw upon from successful transition countries in East Asia that managed to avoid the MIT and catch up successfully. This is not a small challenge. Even the most notable examples, Japan and South Korea, each have their own specific constraints to consider, and those constraints have evolved and change over time. In Wagner (2015) and Murach and Wagner (2017), the lessons from the recent history of these countries were used to conduct growth projections for China.

Lessons from other advanced economies may also be useful. For example, Wagner (2013) compares the structural change patterns of Germany many decades ago with the structural change patterns of China during the past four decades and finds surprising similarities between China and Germany. In both countries, the industrial sector overwhelmingly dominated the service sector for relatively long periods of time (compared to OECD countries and India). The German industrial sector accounted for a greater share in GDP and total employment than the service sector for about *100 years*. Nonetheless (or perhaps because of this), Germany managed to maintain its competitiveness within the world economy for a very long time.

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