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Gunther Schnabl

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Monetary Policy and Wandering Overinvestment Cycles in East Asia and Europe

Gunther Schnabl
Universität Leipzig
Grimmaische Straße 12
D-04109 Leipzig

Abstract
The paper analyses the role of monetary policy for cyclical movements of investment and asset markets in East Asia and Europe based on a Mises-Hayek overinvestment framework. It is shown how the gradual global decline of interest rates has triggered wandering overinvestment cycles in Japan, Southeast Asia and China. Similarly, it is shown how a one-size monetary policy within the European Monetary Union has not preserved the European Monetary Union from idiosyncratic economic development and crisis because of uncoordinated fiscal policies. With monetary policy crisis management being argued to impede financial and economic restructuring, a timely exit from ultra-expansionary monetary policies is recommended for both East Asia and Europe to reconstitute economic stability and growth.

Keywords: Hayek, Mises, East Asia, European Monetary Union, monetary overinvestment theory, fiscal policy, asymmetric shocks, secular stagnation.

JEL-Codes: E52, E58, F42, E63.

1. Introduction

Europe and East Asia are at the cross-roads. In East Asia, Japan remains stuck in a lasting stagnation, with the Abenomics having failed to kick-start the Japanese economy. Growth in China and a set of smaller East Asian countries is still high, but continues to slow down. China's fading economic dynamics put into question the future path of the giant economy. In Europe, different parts of the economically highly integrated region have followed different cycles. Whereas the southern member states of the European Monetary Union (EMU) remain stuck in crisis, Germany exhibits buoyant economic activity, with unemployment continuing to decline.

Despite a still positive growth performance in some parts of East Asia and Europe, the growth trends point downwards since the bursting of financial market bubbles (see Figure 1). Whereas the bubble economy in Japan had reached its peak already in the early 1990s, in Southeast Asia the crisis occurred in 1997/98. The European financial and debt crisis broke out in 2007/08, bringing Greece, Ireland, Italy, Portugal and Spain into a lasting slump. Even China's impressing economic performance is staggering since the year 2014. Capital flight and depreciation pressure on the Chinese yuan indicate upcoming economic turmoil.

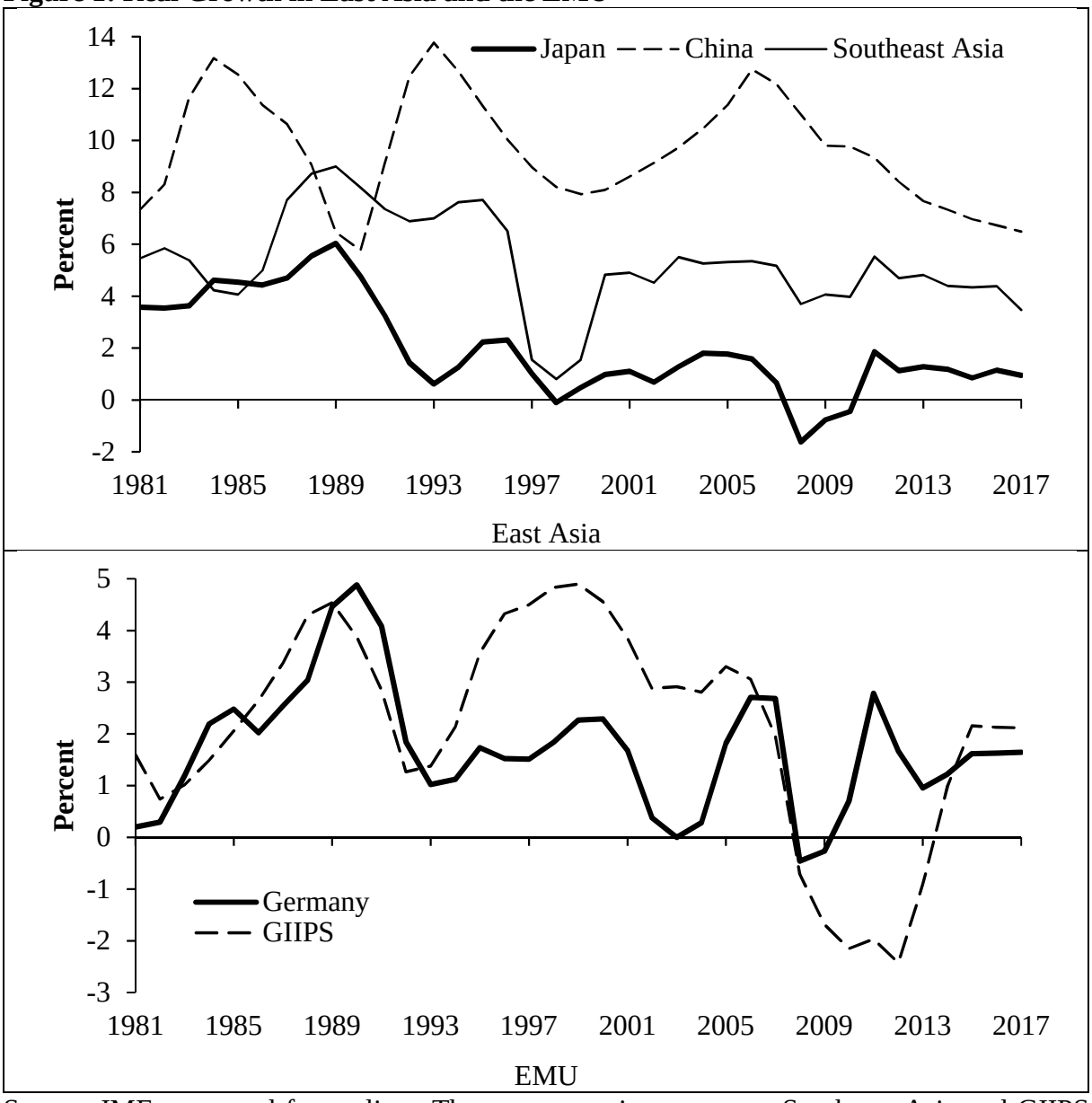
Up to the present, structurally low productivity gains and growth have been explained by ageing societies (Summers 2014) and a pre-determined declining marginal efficiency of investment (Gordon 2012). The assumed decline of the natural rate of interest originating in growing savings and declining investment is taken as a justification for increasingly expansionary monetary policies of central banks. As an alternative approach, here the monetary overinvestment theory of Mises (1912) and Hayek (1929) is used as a theoretical framework because it allows to understand the prominent role of monetary policy for cyclical fluctuations in the economic activity.

Thus, the innovation of the paper is to provide an alternative theoretical approach to the standard dynamic stochastic equilibrium frameworks (Galí 2008, Woodford 2003) to understand cyclical fluctuations on financial markets, which are accompanied by cyclical fluctuations in investment activity (rather than determining an optimal level of investment).[1] The motivation is that the dynamic stochastic equilibrium frameworks have been widely criticized to have failed to understand the reasons and to project financial market crisis (Mankiw 2006), as "*models*

[1] This would be regarded by Hayek (1974) as "pretence of knowledge".

attribute fluctuations in aggregate variables to imaginary causal forces that are not influenced by the action that any person takes" (Romer 2016: 1).

Figure 1: Real Growth in East Asia and the EMU



Source: IMF, corrected for outliers. Three-year-moving averages. Southeast Asia and GIIPS calculated as arithmetic averages.

2. The Role of Monetary Policy for Overinvestment from a Mises-Hayek Perspective

In contrast to the dynamic stochastic general equilibrium models (Woodford 2003) the policy framework provided by Mises (1912) and Hayek (1929) does not presuppose a long-term general equilibrium. Instead the business cycle is assumed to be the outcome of dynamic

interaction of private economic agents and policy makers. The divergence of the central bank and capital market interest rate from the natural interest rate allows to understand boom and bust cycles as they occurred in East Asia and Europe since the mid 1980s starting in Japan and most recently evolving in Germany.

Based on the overinvestment theories of Mises (1912) and Hayek (1929) four types of interest rates can be distinguished (see Hoffmann and Schnabl 2011): The internal interest rate i_i reflects the (expected) returns of (planned) investment projects. The natural interest rate i_n is the interest rate that balances supply of (saving) and demand for capital (investment).[2] The central bank sets the central bank interest rate i_{cb}. The capital market rate i_c is defined as the interest rate set by the private banking (financial) sector for credit provided to private enterprises. The model simplifies from the fact that in reality, there are different interest rates with different maturities.

2.1. Boom and Bust in the Overinvestment Framework

In the monetary overinvestment theory, an economy is in equilibrium when the central bank rate and therefore the capital market interest rate are set equal to the natural interest rate. Then, planned savings are equal to investment. An economic upswing starts, when – for instance – an important innovation raises the internal interest rate of investment from i_{i_1} to i_{i_2}. In the left panel of Figure 2 the investment curve shifts from $I_{i_{i_1}}$ to $I_{i_{i_2}}$, with the natural rate of interest rising from i_{n_1} to i_{n_2}.

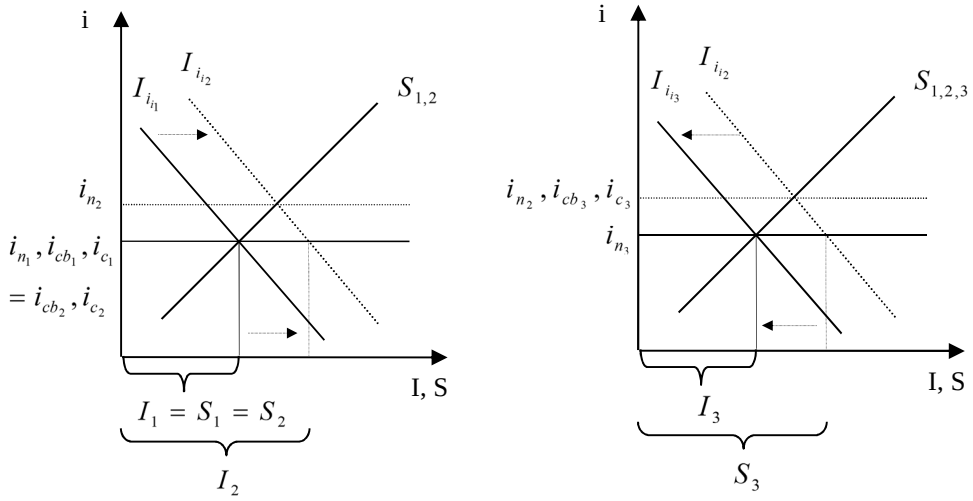
If the central bank would lift the policy rate from i_{cb_1} to i_{n_2}, assuming a perfect interest rate transmission to credit markets, planned savings and investment in the economy would stay in

[2] Hayek (1929) and Wicksell (1898) had different concepts of the natural interest rate. According to Wicksell (1898), the deviation of the central bank and capital market interest rates from the natural rate of interest disturbs the equilibrium between ex-ante savings (S) and investment (I) plans. This leads to inflation (I>S) or deflation (S>I). Hayek (1929) explained the natural interest rate as the interest rate which aligns saving and consumption preferences with the production structure over time. In contrast, Woodford (2003) defines the natural rate of interest as the real interest rate that prevails if output is equal to its steady state value given fully flexible prices. This implies that in the Woodford setting the natural interest rate can be negative, for instance if saving structurally increases, while investment structurally declines. In the view of Mises (1912) and Hayek (1929) the natural rate (albeit empirically unknown) has to be positive, because it reflects time preferences in consumption, which is assumed to be positive for human beings.

equilibrium ($S_2 = I_2$). If, in contrast, as in the left panel of Figure 2 the central bank does not raise the central bank rate ($i_{n_1} = i_{cb_1} = i_{cb_2} < i_{n_2}$), an unsustainable overinvestment boom will evolve. Holding policy rates too low (for too long) is defined as type 1 monetary policy mistake.

To market participants a rise in credit to the private sector at constant interest rates signals that saving activity of households has increased. Additional credit-financed investment projects aim to satisfy the expected rise in future consumption. As planned household savings did not increase, an unsustainable disequilibrium between ex-ante saving and investment $S_2 < I_2$ at $i_{c_2} < i_{n_2}$ is constituted. Additional investments of some enterprises lead to further investments of other enterprises, which accelerates the cumulative upward process. As soon as capacity limits are reached and free capacities in labor markets are fully used, wages and prices rise.

Figure 2: Overinvestment Boom and Crisis



Price increases signal to enterprises additional profits and therefore trigger further investments. There are spill-over effects to financial markets. Stocks are attractive because of low interest rates on bank deposits. Stock prices increase, also encouraged by higher (expected) profits of enterprises. When stock prices move upward, speculation may set in, providing extra momentum such that "*the symptoms of prosperity themselves finally become* […] *a factor of prosperity*" (Schumpeter 1912: 226). As the owners of stock and real estate feel richer, consumption is stimulated via the wealth channel, thereby adding to inflationary pressure.

The boom turns into bust, when the central bank increases the central bank rate to contain inflationary pressure (Mises, 1912; Hayek, 1929). The benchmark for the profitability of past and future investment projects is lifted. Investment projects with an internal interest rate below

the risen central bank and capital market interest rates turn out to be unprofitable. As first enterprises are forced to dismantle investment projects, the investment activity of other enterprises will stagger. This shifts the investment curve back from $I_{i_{i_2}}$ to $I_{i_{i_3}}$ (see right panel of Figure 2). As stock (and other asset prices) fall, the equity of banks and enterprises shrinks as well. A cumulative downward process sets in, as a credit crunch evolves and more investment projects are dismantled. Wages fall and unemployment grows.

The monetary overinvestment theories assumed that during the downturn the central bank holds the interest rates above the natural interest rate. This is labelled type 2 monetary policy mistake. The high central bank interest rate comes along with a high capital market interest rate and thus a tightening of credit during the crisis. The right panel of Figure 2 shows that when the policy interest rate is held above the natural interest rate ($i_{cb_3} = i_{c_3} > i_{n_3}$), ex-ante saving is higher than investment ($S_3 > I_3$). The recession is aggravated.

2.2. Asymmetric Central Bank Crisis Management

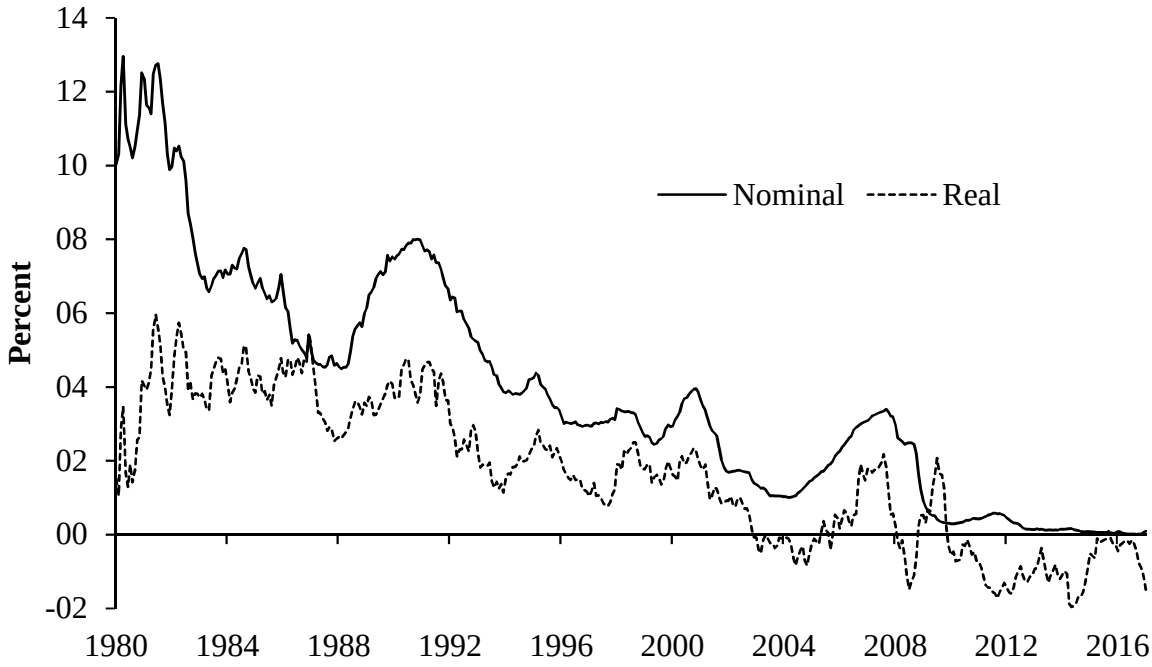
Since the mid 1980s the central bank monetary policy mistakes were not made in a symmetric way as assumed by Mises (1912) and Hayek (1929). Instead, since the mid 1980s the large central banks tended to set policy interest rates low for long during upswings and thereby nurtured overinvestment as well as financial market booms (type 1 monetary policy mistakes).[3] In contrast, in the face of (financial) crises interest rates were cut decisively to prevent type 2 monetary policy mistakes.

As economic upswings were increasingly led by boom phases in financial markets, central banks developed an asymmetric response pattern to financial market cycles. In the so-called 'Jackson Hole consensus' (Blinder and Reis 2005), central bankers claimed that central banks do not have sufficient information to recognize bubbles and therefore should refrain from "leaning against the wind" in phases of financial market exuberance. However, central banks should react decisively to sharply declining asset prices during crisis. The outcome of this asymmetric monetary policy crisis management pattern has been a cyclical downward-trend in nominal and real interest rates in the large economies as shown in Figure 3. Despite the gradual

[3] In the dynamic stochastic general equilibrium models (Woodford 2003, Galí 2008) time-dependent asymmetric policy action is excluded by assumption.

monetary expansion consumer price inflation remained low, as the effects of monetary expansion increasingly became visible in financial instead of goods markets (see Gertler and Hoffmann 2016).

Figure 3: Short-Term Interest Rates: US, Japan and Germany/Euro Area

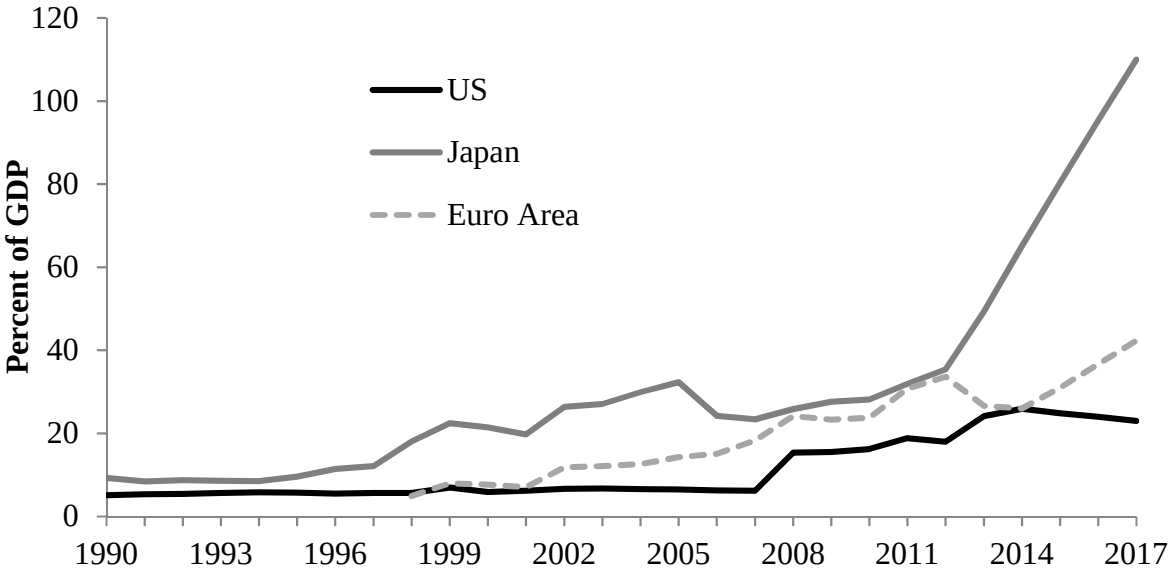


Source: International Monetary Fund (IMF). Arithmetic averages. Money market rates: Germany up to 1998, euro area since then.

When short-term interest rates approached the zero-bound (in Japan since 1999 and the US and euro area since 2008), large-scale asset purchases gradually inflated the central bank balance sheets (Figure 4). The purchases of mostly government bonds by central banks in the course of unconventional monetary policies further depressed the interest rates at the long end of the yield curves.

Up to the present only the Federal Reserve has started to (very carefully) exit from ultra-expansionary monetary policies by reducing asset purchases to zero (the so-called tapering) and slowly lifting short-term interest rates. In contrast, in the euro area and Japan ultra-expansionary monetary policies continue in form of extensive government bond purchases. The unprecedented gradual monetary expansion of the large central banks (Federal Reserve, European Central Bank, Bank of Japan) had an unprecedented impact on investment activity and financial markets in both Europe and East Asia.

Figure 4: Central Bank Assets as Percent of GDP: Japan, US, Euro Area



Sources: World Economic Outlook (WEO), European Central Bank and Eurostat. 2016 and 2017 are projections.

3. Wandering Overinvestment Cycles in East Asia

East Asia is part of the world dollar standard (McKinnon 2013). Because both trade with the US as the most important trading partner and flourishing intra-regional trade are invoiced in dollars, for all countries the exchange rate against the dollar remain crucial determinants of growth. With international liabilities and assets being denominated overwhelmingly in dollars, exchange rate stabilization against the dollar is an important tool of financial stabilization. Within this dollar standard, gradually declining interest rates in the United States have become the breeding ground for overinvestment as well as for boom and bust cycles in financial markets. Three main waves of boom and bust can be identified in East Asia since the mid 1980s.

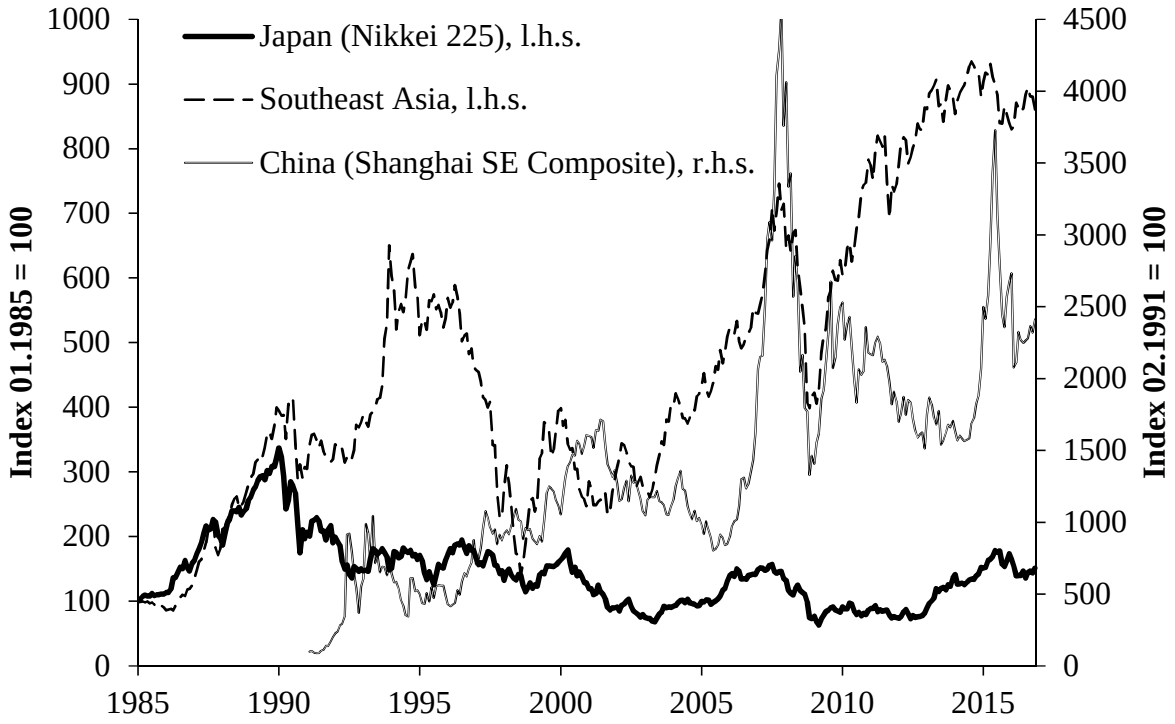
3.1. The Japanese Bubble Economy

The exuberance in the Japanese stock and real estate markets originated in the second half of the 1980s as expansionary monetary policy was paired with fiscal expansion (Schnabl and Hoffmann 2008). [4] The starting point of the Japanese bubble was a conflict about the trade imbalance between US and Japan, which had emerged after the liberalization of Japanese international capital flows during the first half of the 1980s. The United States put pressure on

[4] In addition, the liberalization of capital markets and the resulting erosion of bank-based lending are identified as important reasons for the bubble economy.

Japan to cure the trade imbalance by a strong revaluation of the yen against the dollar (McKinnon and Ohno 1997).

Figure 5: Stock Prices in Japan, Southeast Asia and China



Source: IMF. Southeast Asia is defined as the arithmetic average of the Set Index for Thailand, the Bursa Malaysia KLCI for Malaysia and the Korea Composite Stock Price Index for South Korea.

With the Plaza-Agreement of September 1985 a substantial appreciation of the Japanese yen against the US dollar was announced and underpinned by a monetary tightening in Japan (Funabashi 1989). This opened the door for one-way bets on yen appreciation (McKinnon and Ohno 1997), which led to a yen appreciation far beyond the targeted range. The resulting sharp decline of Japanese exports and a high-yen induced recession prompted the Bank of Japan to soften the appreciation pressure by cutting the short-term interest rate from roughly 8% in Sept. 1985 to 3.5% in Sept. 1987.

The resulting easing of credit conditions facilitated investment in the Japanese industry to regain international competitiveness. Investment as a share of GDP substantially increased (Figure 6). As in the monetary overinvestment theories, the investment-driven upswing was accompanied by a real estate and stock market boom (Figure 5). Real estate prices, in particular in the metropolitan areas, increased fast. In densely populated Japan real estate became a widely-used collateral for speculative stock purchases, which drove up stock prices. From

February 1987, following the Louvre-Accord (February 1987) additional government spending added further momentum.[5] The Nikkei 225 was boosted from about 15.000 points in January 1985 to closely below 40.000 points in December 1989.

3.2. Southeast Asian Economic Miracle and Asian Crisis

The Japanese bubble burst in the stock market in December 1989 and in the real estate market in 1991. To stabilize the Japanese economy after the bursting of the bubble economy, the Bank of Japan gradually cut interest rates to prevent asset prices from further falling. This stabilized the ailing Japanese banking sector via two channels. First, the amount of non-performing loans, which strongly depended on real estate prices, was contained.

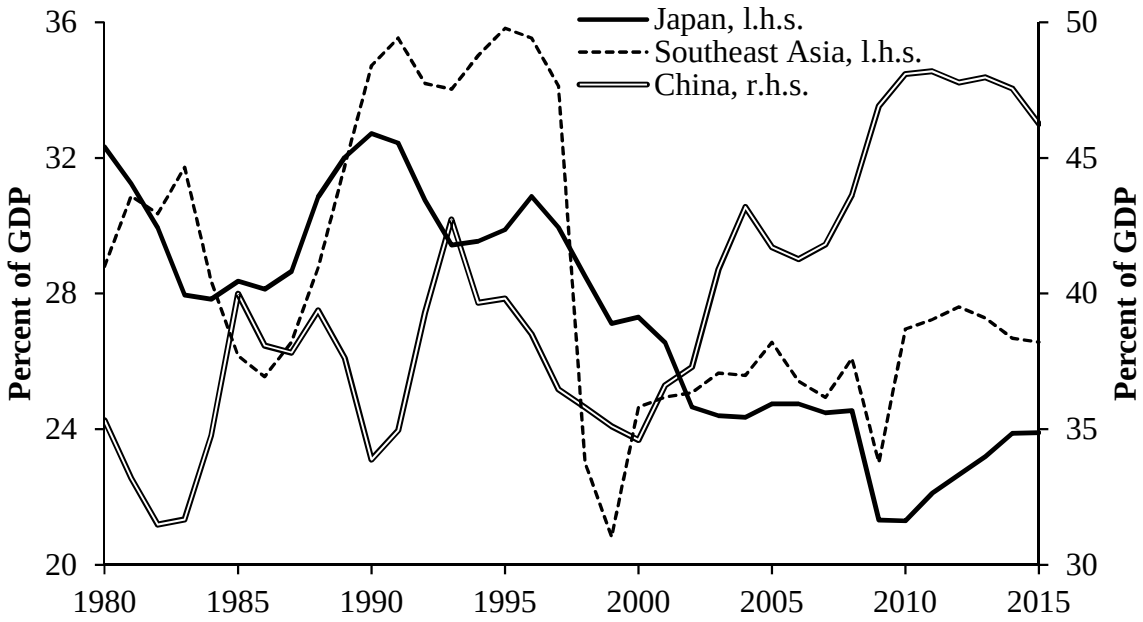
Second Japanese banks could realize new profits by funnelling low-cost liquidity to the fast-growing Southeast Asian countries (Indonesia, Malaysia, Philippines, South Korea, Thailand).[6] Japanese banks financed in particular Foreign Direct Investment (FDI) of the Japanese enterprises in the region. The FDI helped Japanese enterprises to reduce production costs, as in the first half of the 1990s the Japanese yen continued to strongly appreciate against the dollar. The capital inflows into Southeast Asia were further encouraged by exchange rate pegs to the dollar, which subdued foreign exchange risk.

The accelerating capital inflows to the Southeast Asian countries constituted a Mises-Hayek-type overinvestment boom, which was accompanied by a hike in stock and real estate prices. As capital inflows made interest rates decline, an increasing number of investment projects looked profitable. Figure 6 shows that investment as share of GDP in the Southeast Asian countries further increased from a high level and peaked at 36% by 1997. As in Japan, the Mises-Hayek overinvestment boom was accompanied by fast rising stock and real estate prices. Figure 5 shows the respective rise of stock prices as an arithmetic average of the five Southeast Asian tiger economies (Indonesia, Malaysia, Philippines, South Korea, Thailand).

[5] The Japanese current account balance as the target of the yen appreciation remained more or less unchanged, because not only exports but also imports declined (McKinnon and Ohno 1997). Therefore, Japan was urged to stimulate the domestic economy via fiscal expansion to reduce the current account surplus via the import channel (Funabashi 1989).

[6] The five Southeast Asian countries have all individual country-specific characteristics. Nevertheless, they have similar structural similarities with respect to the pre-crisis build-up of vulnerabilities and the course of the crisis. This is also acknowledged by the literature (see e.g. Corsetti, Pesenti and Roubini 1999).

Figure 6: Investment as a Share of GDP in Japan, Southeast Asia and China



Source: IMF, IFS.

Like in Japan and in the Hayek-Mises overinvestment theories during the course of the boom the average marginal efficiency of investment in the tiger economies declined as represented by growing current account deficits. As the investment and speculation in asset markets was financed by foreign-currency denominated debt growing foreign exchange risk[7] finally eroded the trust in the Southeast Asian boom and capital flows reversed. In June 1997, the crisis started in Thailand with the collapse of the dollar peg and was transmitted to the other Southeast Asian tiger countries. With the benefit of hindsight Corsetti, Pesenti and Roubini (1999) and Krugman (1998) modelled the Asian crisis as an overinvestment crisis. As shown in Figures 4 and 5 both investment (as share of GDP) and asset prices slumped.

2.3. The Chinese Overinvestment Boom

With the Asian crisis, international capital returned to the safe havens of the international monetary system (in particular US, Japan, euro area), where central banks cut interest rates to absorb the financial shocks originating in the emerging market economies and the resulting capital inflows. The interest rate cuts became the breeding ground for bubbles in the new economy segments of the stock markets (dotcom bubbles). After these bubbles had burst in the year 2000, the large central banks cut interest rates again. From then onwards capital inflows into high-growth China accelerated.

[7] From the mid 1990s the depreciation of the Japanese yen had started to undermine the competitiveness of the exports of the Southeast Asian countries to Japan and in third markets such as the US and Europe.

Given inward-bound capital controls, the interest rate level in China had remained substantially higher than in the industrialized countries, which constituted per se an incentive for capital inflows. Furthermore, the decision to allow for a gradual appreciation of the Chinese yuan starting from the year 2005[8] created an incentive to bet for yuan appreciation (McKinnon and Schnabl 2012). The acceleration of capital inflows is represented by the rapid increase of foreign reserve holdings by the People's Bank of China, which reached their peak in July 2014 at around four trillion dollars.

Given capital controls, the hot money flows took the form of Foreign Direct Investment, which contributed to the build-up of overcapacities in the Chinese industry. Alternatively, hot money inflows were disguised as repatriated receipts from exports, which explains the dramatic increase of the Chinese current account surplus between 2005 and 2008. The hot money inflows became the source for the build-up of large overcapacities.

To prevent an overheating as observed during the Southeast Asian boom, starting from 2005 the People's Bank of China sterilized the monetary effects of foreign reserve accumulation by selling central bank bonds and by extending reserve requirements. To minimize the costs of sterilization the People's Bank of China kept the remuneration rate for required reserves substantially below the prevailing lending rate and the inflation rate.

This non-market-based liquidity absorption became the basis for the build-up of large overcapacities in the Chinese industrial sector (i.e. overinvestment) via so-called *window guidance*.[9] Because the interest rate on credit was kept low by a ceiling below the market clearing level, a surplus demand in the capital market emerged. This allowed the Chinese government to allocate credit to specific enterprises via the state-controlled banking sector. A preferential treatment seems to have been given to investment of the state-owned and export-oriented enterprises rather than to the households and small and medium enterprises. As shown

[8] Therefore, China's move towards a gradual appreciation path after July 2005 up to the year 2014, with a major interruption between July 2010 and July 2012, is an important determinant of this overinvestment boom.

[9] The window guidance (*madoguchi shidô*) was a way of allocating credit during the catch-up process of Japan. It allowed a preferential treatment of specific sectors and enterprises such as the automobile industry (Hamada and Horiuchi 1987: 244-246).

in Figure 6 investment as a share of GDP grew rapidly from 33% in the year 2000 to 44% in 2014 at the cost of household consumption.[10]

Furthermore, the preferential capital allocation fostered a sharp increase in real estate prices. Because low-remunerated reserve requirements created opportunity costs for banks in form of the difference between the lending rate and the remuneration rate for the required reserves, the Chinese banks sought for ways to cope with this burden. As a ceiling was put on lending rates, deposit rates were lowered. This created an incentive for households to transfer deposits from state-owned banks to the shadow banking sector. The shadow banks tended to use these funds to finance small and medium enterprises and in particular real estate projects, as real estate prices were/are expected to further rise (McKinnon and Schnabl 2012). The boom in the real estate market was accompanied by erratic increases of prices in the comparatively underdeveloped Chinese stock market (Figure 5).

Since the year 2014 the Chinese overinvestment, real estate and stock market booms are staggering. Capital flows are reserved and depreciation pressure on the Chinese yuan gives indication that the overinvestment boom has ended. The Chinese government aims to absorb overcapacities in the industry by creating additional domestic consumption. News about overcapacities in the Chinese real estate sector get denser. In 2015, sharply declining stock prices prompted the Chinese authorities to heavily intervene in stock markets via interest rate cuts and outright purchases of stocks. Like the Bank of Japan and European Central Bank the People's Bank of China aims to forestall a crisis by interest rate cuts, de-sterilization and low-cost credit provision to keep potentially unprofitable enterprises alive (He 2016). This has helped to prevent a harsh crisis in the short term as credit to the private sector continues to grow.

Nevertheless, real growth continues to trend downwards (upper panel of Figure 1), which can be seen as evidence that the overinvestment boom in China has ended. The Abenomics in Japan, which have taken the form of tremendous government bonds purchases by the central bank have not only slightly reanimated investment activity as well as stock and real estate prices (see Figure 5 and Figure 6).[11] The resulting depreciation of the yen against the yuan has put a further

[10] The resulting increase in capacities could ceteris paribus not be fully absorbed by domestic demand. By keeping the price level of Chinese manufacturing products low via sterilization policies cum low cost-credit provision, the real exchange rate of the Chinese yuan was kept undervalued. This helped to clear the overcapacities in the international markets (McKinnon and Schnabl 2012).

[11] The scale of the new Japanese overinvestment and speculation boom is, however, substantially smaller than

drag on Chinese growth.

4. Overinvestment Cycles within the Monetary Union

While the interest rate cuts in Japan and the United States after the bursting of the dotcom bubble contributed to wandering overinvestment and financial market cycles in the East Asian periphery of the world dollar standard, the interest rate cuts of the European Central Bank in response to the bursting European dotcom bubble triggered imbalances at the inner and outer periphery of the euro area. The fact that the monetary expansion has caused wandering overinvestment and speculation booms within the monetary union in different periods of time is due to the constructional flaw of the euro area as a monetary union with widely independent national fiscal policies.

4.1. The Southern European Speculation and Overconsumption Boom

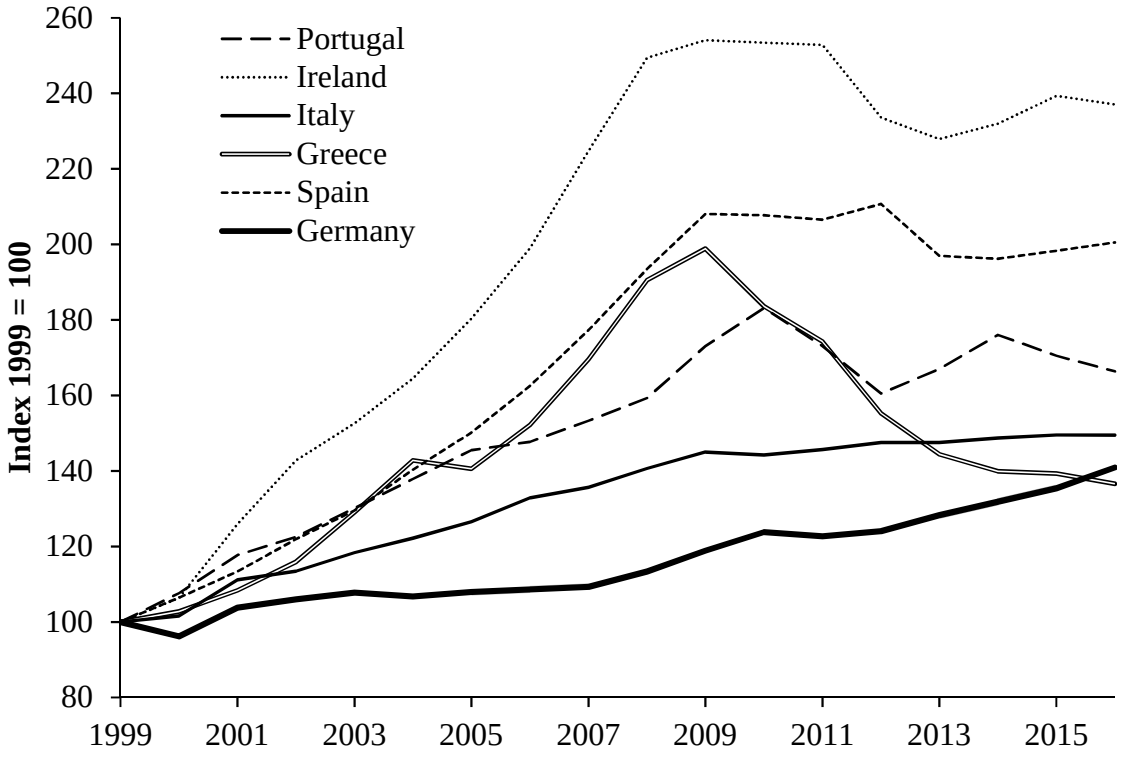
To explain different inflation rates and growth rates in different parts of the European Monetary Union (and beyond) since the turn of the millennium, the role of fiscal policies in encouraging Mises-Hayek-type overinvestment booms has to be considered (Schnabl and Wollmershäuser 2013). From the very beginning, the European Monetary Union was a heterogeneous monetary union with different economic structures and therefore a high likelihood of asymmetric shocks, i.e. idiosyncratic business cycles (see Blanchard and Quah 1989). According to Mundell's (1961) theory of optimum currency areas an heterogeneous monetary union necessitates a high degree of labor market flexibility, which is not the case for the highly-rigid labor markets in most EMU member states. Alternatively, asymmetric shocks have to be counterbalanced by fiscal policies, as monetary policy and exchange rate adjustment cannot address country-specific economic developments (De Grauwe 2016).

From the turn of the millennium, a low interest rate policy combined with region-specific fiscal policy stances amplified idiosyncratic business cycles instead of balancing them out. After the turn of the millennium, the ECB interest rate cuts in response to the bursting dotcom bubble was combined with a tight fiscal policy stance in Germany, whereas spending substantially increased in Greece, Ireland Italy, Portugal and Spain. This increased the probability of region-

in the second half of the 1980s despite the much larger scale of monetary expansion (see Figure 3).

specific Mises-Hayek-type overinvestment booms in the parts of the monetary union, where expansionary monetary policy was paired with expansionary fiscal policy in form of increasing spending.[12]

Figure 7: Diverging Spending Paths of Germany and EMU-Crisis Countries



Source: IMF: WEO. General government expenditure in euros indexed to 100 in 1999.

In the late 1990s the high costs of the German unification had brought the generous German welfare state to its limits. Unemployment had grown from 6.2% in 1990 to 9.4% by 1998. In 1999, general government debt reached 60% of GDP, which brought Germany in conflict with the Maastricht criteria for general government debt.[13] The government felt forced to implement comprehensive reforms to curtail government expenditure. Wage increases in the public sector were restrained and social security benefits were streamlined. As shown in Figure 7 general government spending in Germany hardly increased between 1999 and 2007.

[12] In some countries such as Ireland and Spain fast growing tax revenues generated government surpluses despite fast growing expenditures. This implies that the Maastricht deficit criterion did not fulfil its information function concerning unsustainable government expenditure.

[13] After the introduction of the euro also the general government budget deficit increased beyond the -3% of GDP Maastricht limit, as the reforms slowed down growth and thereby reduced tax revenues.

As labor markets were deregulated, the wage austerity in the public sector was followed by wage austerity in the private sector. Investment declined as the domestic business outlook deteriorated because of sluggish domestic public and private demand. By keeping domestic inflation low, the tight fiscal policy stance kept the real interest rate in Germany high compared to other EMU member states. This prevented an overinvestment and speculation boom from emerging despite the ECB's strong interest rate cuts in response to the bursting dotcom bubble.[14]

The combination of a loose monetary policy with a tight fiscal policy boosted capital outflows from Germany as domestic economic activity remained sluggish.[15] Capital outflows to other member states of the euro area and beyond accelerated from the year 2001. In many countries, inside **and** outside the euro area[16] the capital inflows boosted investment, public spending, consumption and growth (Sinn and Wollmershäuser 2012). As inflation increased, declining real interest rates triggered an investment boom as shown in Figure 8. As in the Mises-Hayek overinvestment theory, the boom came along with speculation in real estate and stock markets. The resulting hike of tax revenues induced a dramatic increase in government expenditures, which added further momentum to the exuberance in Greece, Ireland, Portugal and Spain. Figure 7 shows how general government expenditure of the later euro area crisis countries diverged significantly relative to Germany.

The impact of diverging fiscal policy stances in the euro area on diverging overinvestment and speculation cycles in the face of a too loose one-size monetary policy can be characterized as a "waterbed effect":[17] the liquidity issued by the European Central Bank as a crisis therapy for the whole euro area was one-sidedly pushed to the periphery. There, the generous credit provision pushed the real capital market interest rate below the natural interest rate, triggering unsustainable overinvestment booms as modeled in the left panel of Figure 2. The growing

[14] The main financing rate was set below the Taylor rate for the whole euro area, whereas for Germany the main refinancing rate remained above the Taylor rate (see Schnabl 2017).

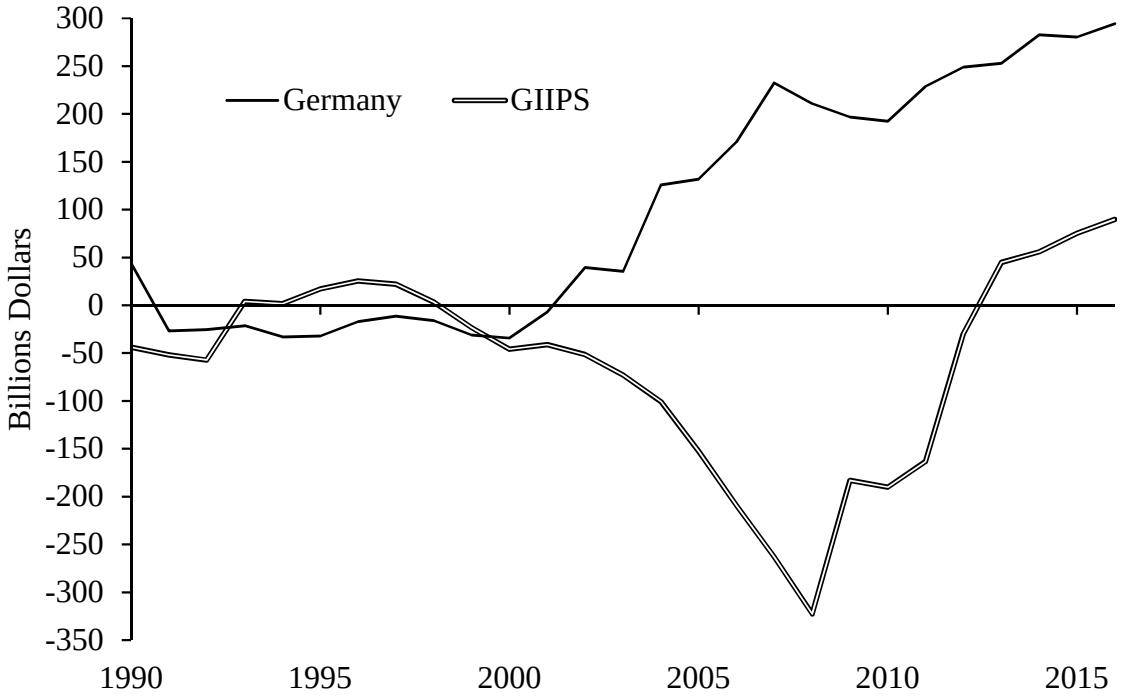
[15] As the reduction of future pensions was paired with incentives for private provisions for retirement, savings of households increased. In addition, growing demand for German export products contributed to higher profits of enterprises and thereby enterprise savings. The resulting dramatic rise of aggregate savings over investment contributed to the significant rise in capital outflows, which finance purchased of German products.

[16] Also, many central and eastern European countries, Iceland, the UK and the United States became target destinations of large capital inflows originating in Germany.

[17] The Mises-Hayek-based interpretation of the boom in the southern and western European later crisis countries is opposed (or complementary) to the widely-accepted convergence scenario which attributes the declining interest rates in the later crisis countries to their entry to the European Monetary Union (which made interest rates converge) (see Sinn and Wollmershäuser 2013). The convergence hypothesis neglects, however, the fact that similar booms took place in non-euro area countries such as the Baltic countries, Iceland and the United States.

imbalances within the European Monetary Union were mirrored in fast growing current account imbalances within the European Monetary Union (Figure 8), as real wage increases far beyond (below) productivity gains led to real appreciations (depreciation) of the euros of the later crisis countries (of Germany).

Figure 8: Intra-EMU Current Account Imbalances



Source: IMF: WEO. GIIPS = Greece, Ireland, Italy, Portugal and Spain.

With the break-out of the US subprime crisis in the year 2007 the boom in the euro area periphery countries and beyond ended. As in the overinvestment theory the turn-around of capital flows was initiated by a gradual increase of the central bank interest rate (main refinancing rate) by the European Central Bank from 2005 onwards. The subprime crisis added to the monetary tightening, as it led to a curtailing of international credit provision by the private banking sector. As German banks realized painful losses in the subprime market, they had to reduce risk exposure in the southern and western euro area countries, where German savings had financed low-return investment, speculation in the real estate markets and proliferate government and private consumption.

4.2 The German Overinvestment and Speculation Boom

With the crisis in the southern euro area private capital flows were redirected toward Germany, where therefore growth perspectives improved. This is particularly the case, as the reform process after the turn of the millennium has strengthened the international competitiveness of the German industry. With the ECB´s monetary policy rescue measures becoming increasingly focused on the southern European crisis countries, the main refinancing rate was cut to zero and the balance sheet was further expanded by large-scale (mostly) government bond purchases. As the robust economic performance of Germany does not necessitate such an extraordinary monetary expansion, this suggests that now for Germany the central bank interest rate has fallen below the natural interest rate. This would imply from the point of view of the overinvestment theory that an overinvestment boom is currently evolving in Germany.

However, in contrast to the monetary overinvestment theory, investment activity in Germany has remained sluggish (Figure 9). Nevertheless, asset markets show characteristics of a Mises-Hayek-type speculation boom as German real estate and stock markets flourish. Whereas during the pre-crisis boom stock and real estate prices have strongly increased in the southern euro area countries (and stagnated in Germany), now German stock and real estate prices (the latter ones in particular in the economic centers) are steeply pointing upwards.

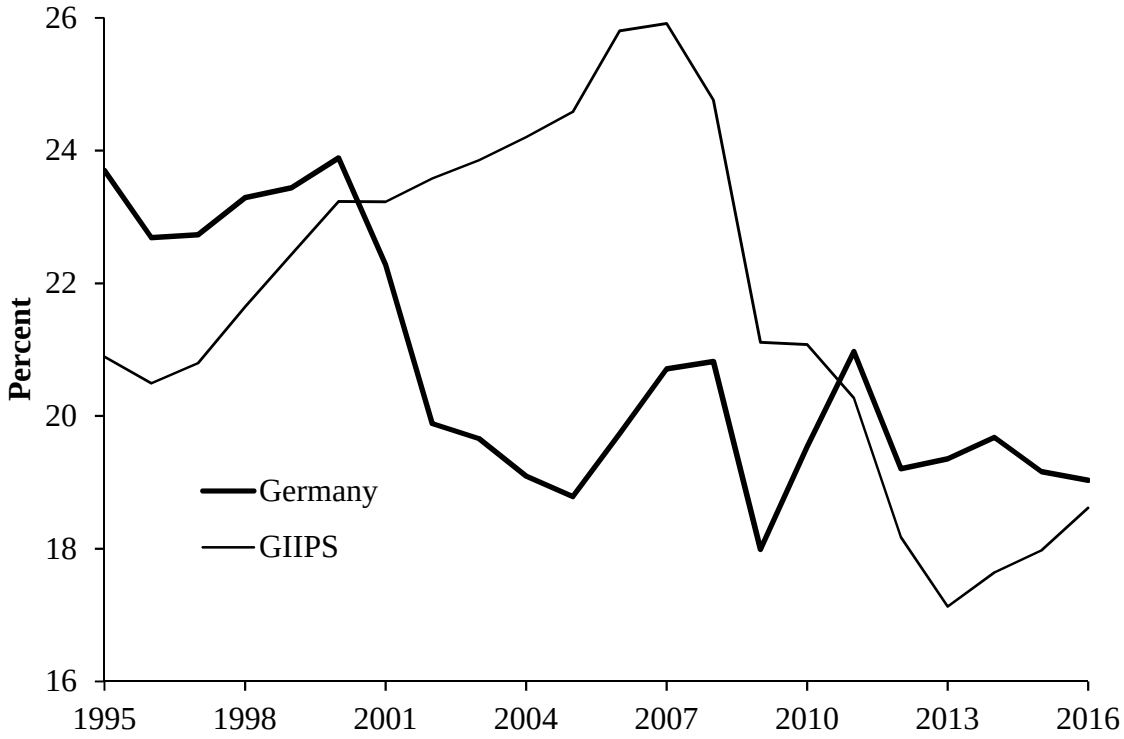
The monetary policy crisis management of the European Central Bank has boosted German real estate prices (lower panel of Figure 10), because financing conditions for real estate projects are generous, keeping real estate still affordable despite rising prices. Furthermore, whereas bank deposits have been historically the preferred form of saving in Germany because of low inflation[18], the trust in the stability of the common European currency is fading. This has triggered a shift from nominal to real assets. In addition, capital flight from the southern European crisis countries has induced additional demand on the German real estate market, where prices compared to most other European countries are perceived as comparatively low.

The German stock prices as shown in the upper panel of Figure 10 are boosted via the export channel. While German industrial enterprises still profit from the past reforms, the ECB's monetary policy rescue measures have created windfall profits by depreciating the euro. The

[18] Therefore, the share of Germans living in their own flat or house is small compared to southern European countries, where inflation has been traditionally high.

current account surplus of Germany continues to be high although the European current account deficits of the European crisis countries are consolidated because of tighter fiscal controls of the European authorities (Figure 7).

Figure 9: Investment as Percent of GDP in Europe



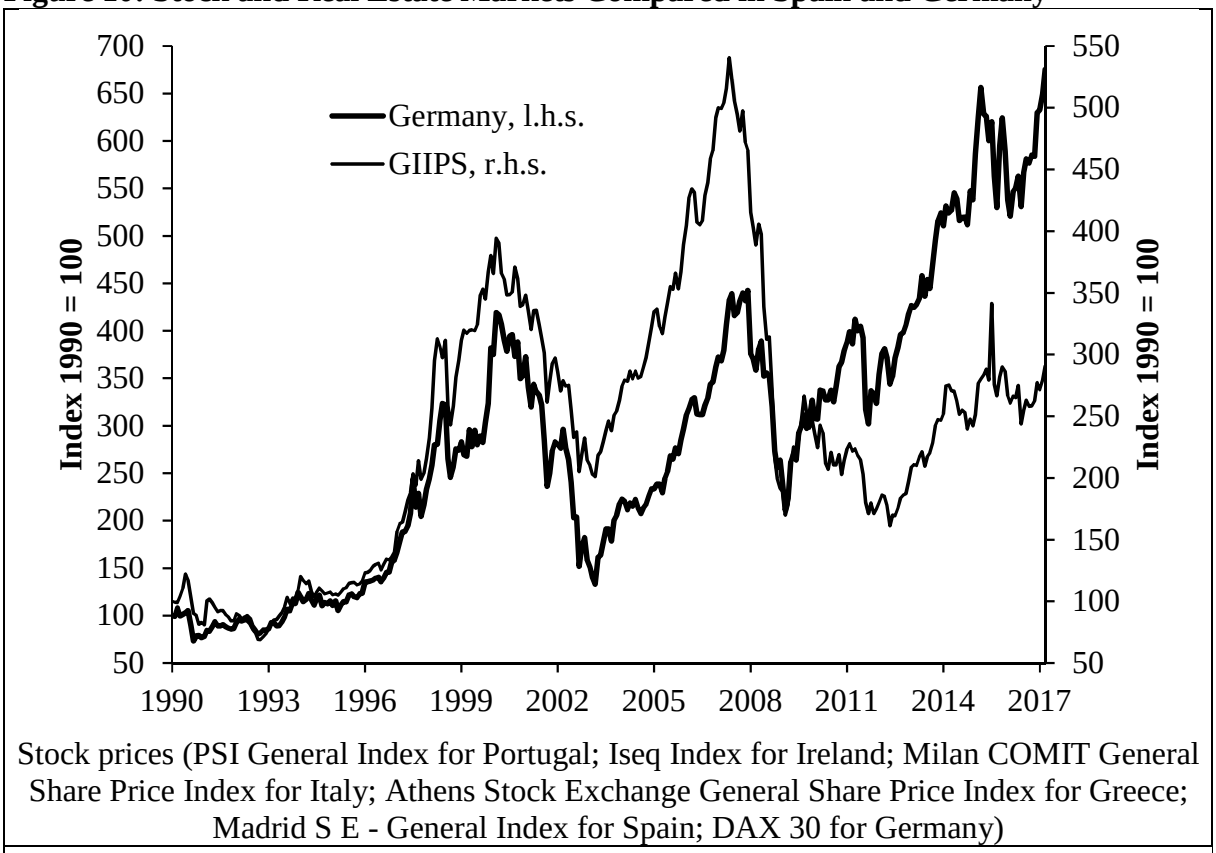
Source: IMF: WEO. GIIPS is the arithmetic average of Greece, Ireland, Italy, Portugal and Spain.

The recent acceleration of public spending of Germany, which is triggered by growing tax revenues,[19] as well as growing real wages not sufficiently large to substantially reduce the German current account surplus. As a result, Germany's net capital outflows – and thereby the German current account surplus – are redirected towards third countries. The new target destinations are in particular the United States and United Kingdom, where fiscal spending continues to grow from already high levels. It has to be seen, if the current German net capital exports will turn out as over- or malinvestment in the future. The monetary overinvestment theories suggest, however, that the likelihood of overinvestment and speculative bubbles has dramatically increased, as on a global level central banks have depressed interest rates below the natural interest rate level. This has disturbed the allocation function of interest rates, which separates investment with high expected returns from investment with low expected returns.

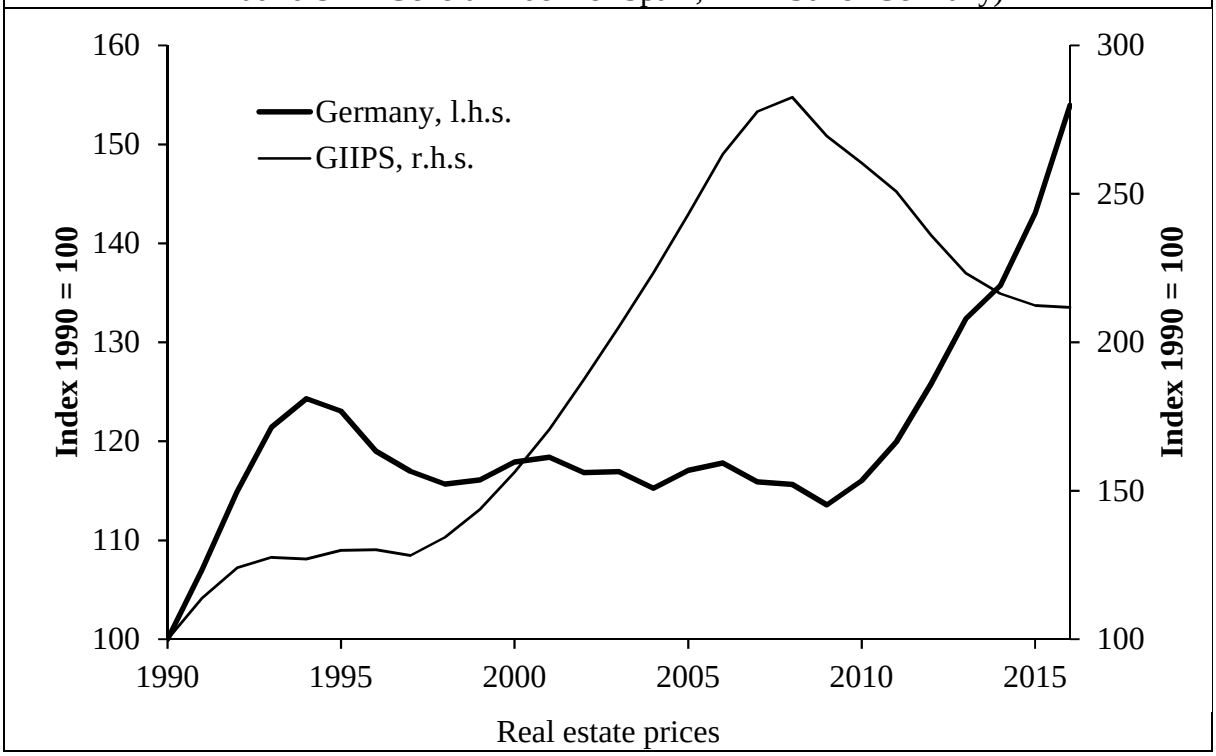
[19] Like in the current crisis countries prior to the crisis, now in Germany tax revenues are inflated.

Also, the signaling function of interest rates (which indicates the risk of default, for instance of over-indebted countries is undermined.

Figure 10: Stock and Real Estate Markets Compared in Spain and Germany



Stock prices (PSI General Index for Portugal; Iseq Index for Ireland; Milan COMIT General Share Price Index for Italy; Athens Stock Exchange General Share Price Index for Greece; Madrid S E - General Index for Spain; DAX 30 for Germany)



Real estate prices

Source: Thompson Reuters Datastream (stock prices), Oxford Economics (real estate prices).

In the past, major devaluations of the German foreign assets occurred during the subprime crisis as well as during the European financial and debt crisis. For the current net capital outflows the likelihood of default is even higher, as globally central bank interest rates are very likely to have fallen far below the natural interest rate during the pre-crisis period.

5. Outlook

The gradual decline of interest rates in the large industrialized countries has been accompanied by wandering overinvestment and speculation cycles in different parts of East Asia and Europe in different time periods. This cyclicality of investment and financial markets in East Asia and Europe can be well explained with the monetary overinvestment theories of Mises (1912) and Hayek (1929). As every crisis following the end of an overinvestment boom has triggered a further monetary expansion a recursive process of monetary expansion and overinvestment-induced crises can be identified in different parts of East Asia and Europe.

This poses the question about the long-term consequences, which can be best observed in Japan, where the bubble has burst first and therefore the monetary policy based crisis management has been lasting longest. In Japan, the unprecedented degree of monetary expansion could not reanimate growth and has led Japan into an era of low-productivity growth, declining real wages and growing income inequality (for details see Caballero, Hoshi and Kashyab 2008, Peek and Rosengreen 2005). In Europe, the southern European crisis countries have embarked on similar paths of stagnation in the course of the ECB´s monetary policy crisis management, albeit Spain has shown a more robust growth performance recently.

The negative growth effects of cheap liquidity provision as a crisis therapy can also be explained by the monetary overinvestment theories of Mises (1912) and Hayek (1929): During the upswing, the average marginal efficiency of investment declines, as investment projects with low marginal efficiency are realized. During the down-turn the low return-investment projects are conserved with even more low-cost liquidity provision. As distorted economic structures are kept alive and financial restructuring is prevented, the creative destruction of Schumpeter (1912) is impeded. In the long-term, growth inevitably declines as it is shown in Figure 1 for both East Asia and the EMU.

Whereas in East Asia, China remains – despite slowing growth dynamics – an engine of growth and prosperity, in Europe Germany continues – thanks to past reforms – to provide growth momentum. However, as the overinvestment boom seems to have already ended in China, the positive spill-over effects originating in the middle kingdom can be expected to gradually slow down. In Germany, economic activity will remain buoyant as along the real estate and export bubbles last. Once the bubbles burst, European growth perspectives can be expected to further deteriorate, if ultra-loose monetary policy crisis therapies last.

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