

# Middle Income Trap and International Portfolio Allocation

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## **Abstract**

The present note links the middle income trap to the EU convergence methodology and aims to offer by simple conjecture several discussion points on immediate and intermediate consequences of the middle income trap for portfolio investments in emerging markets. The note affirms prima facie evidence of the existence of the middle income trap between 1992 and 2012 highlighting differences between EU and emerging markets economies. Nominal and real convergence patterns are reviewed showing significant differences in the duration of nominal and real convergence cycles. Fixed income appears to offer attractive investment opportunities amid short convergence cycles. The long duration of real convergence cycles seems to indicate that emerging markets stock market outperformance may remain elusive over normal investment horizons. The relationship between portfolio flows and economic growth may establish self-fulfilling expectations for generating conditions for the middle income trap.

## **1 Introduction**

The middle income trap may have significant adverse implications for international portfolio investors. The attraction to invest in emerging markets rests largely on two explicit assumptions: Macroeconomic stabilisation offers nominal convergence trades; higher economic growth offers real convergence trades. Both together produce inter alia higher risk adjusted returns. The middle income trap would diminish at least prospects of real convergence that may but must not also undermine macroeconomic stability and together with recent volatility in emerging markets currency and bond markets and relatively lacklustre emerging markets equity returns may require recalibrating the case for portfolio investments in emerging markets. The middle income trap therefore could be a key determinant for international portfolio allocation strategies and vice versa for leading to diminished

portfolio flows establishing self-fulfilling expectations for generating conditions for the middle income trap.

The middle income trap has been widely studied highlighting the importance of structural and macroeconomic factors for sustained economic development. The recent growth slowdown of China and related pressure to adjust its growth model have redrawn interest to the middle income trap. The European Union and post-unification Germany similarly offer important insights into economic convergence patterns. However, while there have been extensive studies on the effect of economic variables on asset prices, little attention has been paid to the implication of the middle income trap for international portfolio investments. The present note links the middle income trap to the EU convergence methodology and aims to offer by simple conjecture several discussion points on immediate and intermediate consequences of the middle income trap for portfolio investments in emerging markets.

The note finds *prima facie* evidence of the existence of the middle income trap between 1992 and 2012 highlighting differences between EU and emerging markets economies. Following the EU convergence methodology, nominal and real convergence patterns are reviewed showing significant differences in nominal and real convergence patterns. Nominal convergence exhibits relatively short cycles. Real convergence shows very long cycles. This suggests that fixed-income investments would be less susceptible to middle income trap related risks than equities investments. No view is taken here of what causes the middle income trap and what economic policies countries need to implement to avoid the middle income trap.

## 2 Middle Income Trap, Nominal and Real Convergence

The middle income trap – as is well known – is based largely on the observation that few countries have managed to become high income countries from being middle income countries over a given period.<sup>1</sup> To assess occurrence of the middle income trap, following the EU methodology for assessing convergence as part of the EU accession process, real and nominal convergence patterns are reviewed. Real convergence is assumed to represent convergence of gross domestic product (GDP) per capita levels. Nominal convergence is assumed to describe a reduction in relative inflation levels towards levels of price stability. The latter may facilitate the former and vice versa where the process is deemed to be mutually enforcing. While the

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<sup>1</sup> On the middle income trap see e.g. (Eichengreen, Park, & Shin, 2013), (Agénor, Canuto, & Jelenic, 2012), (International Monetary Fund, 2013) and (World Bank and Development Research Center of the State Council, the People’s Republic of China, 2013). On nominal and real convergence in the EU, see e.g. (Bini-Smaghi, 2007), (Herrmann & Jochem, 2003), (Lein-Rupprecht, León-Ledesma, & Nerlich, 2007).

middle income trap has been assessed mostly in relation to real convergence, the relationship between nominal and real convergence suggests possible interdependence and sequencing of nominal and real convergence patterns.<sup>2,3</sup>

Real and nominal convergence patterns are reviewed with data from 1992 to 2012.<sup>4</sup> GDP per capita at market prices in current US dollars relative to Germany is used as a proxy for real convergence and average annual inflation relative to Germany as a proxy for nominal convergence. 166 countries report GDP per capita and 170 average inflation in 1992 to 2012.<sup>5</sup> The relatively short period is chosen to take account of data availability in particular for the transition economies and Commonwealth of Independent States member and participant countries. The period length is also seen as more relevant than longer periods given normal policy and investment horizons. Countries are classified here as low income with less than 5% percent GDP per capita of Germany, as middle income between 5% and 50% of GDP per capita of Germany – USD 2,093 and USD 20,933 in 2012 – and as high income with GDP per capita greater than 50% of GDP per capita of Germany. The income threshold is significantly higher than set for example by the World Bank on the basis that intra-EU income differences are considered to become unduly diluted under the World Bank classification.<sup>6</sup> Income convergence is naturally constrained by the relatively short observation period and high income threshold. Nominal convergence is seen as a significant reduction in inflation relative to Germany.

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<sup>2</sup> The EU accession process – stipulating that countries upon entering the EU join the Economic and Monetary Union (EMU) – as part of the economic dialogue between the EU and accession countries rests to a large extent on real and nominal convergence elements based on the underlying rationale that there is considerable interdependence between real and nominal convergence: “[...] the Eurosystem has emphasised that advancing real convergence should be done in parallel with – and not at the expense of – nominal convergence [...]. Indeed, by fostering real convergence through structural reform [...] – the accession countries can support the nominal convergence process. Likewise, by further advancing nominal convergence [...] the countries would improve prospects for economic growth and thus real convergence;” ECB (European Central Bank, 2002).

<sup>3</sup> The EU “Maastricht criteria” – forming the set of necessary criteria to adopt the euro – based largely on nominal elements should in light of the above also be seen as proxies for real convergence. For the EU convergence criteria, see Protocol (No. 13) (European Union, 2012).

<sup>4</sup> GDP and inflation data from IMF World Economic Outlook (WEO) database October 2013.

<sup>5</sup> For GDP per capita: 1993 Estonia, Slovak Republic; 1994 Georgia, 1995 Czech Republic, Malta. For average inflation: 1993 Armenia, Azerbaijan, Belarus, Croatia, Eritrea, Macedonia, Kazakhstan, Kyrgyz Republic, Latvia, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan; 1994 Estonia, Slovak Republic, Slovenia; 1995 Georgia; 1996 Czech Republic.

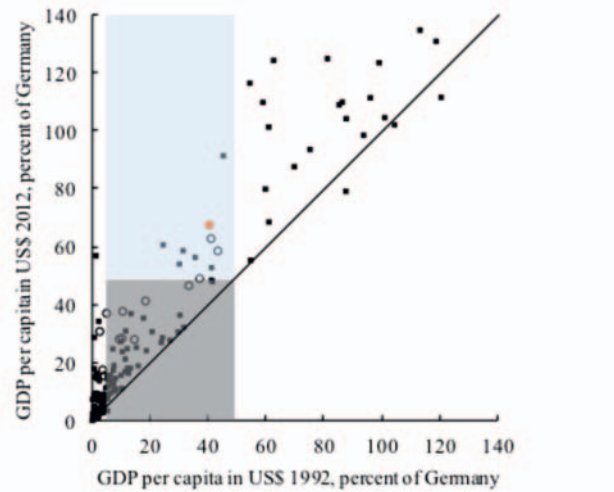
<sup>6</sup> The World Bank classifies on the basis of gross national income (GNI) per capita: Middle income USD 1,006–12,275; (World Bank, 2012).

Countries' GDP per capita relative to Germany has on average increased from 21% in 1992 to 33% in 2012 (chart 1). Emerging markets and developing countries representing 146 countries had on average GDP per capita of 11% of Germany in 1992 and 21% in 2012. The incidence of low income countries declined significantly from 87 countries in 1992 to 51 in 2012. However, of 58 middle income countries in 1992 – 9 countries – Bahrain, Cyprus, Greece, Korea, Malta, New Zealand, Oman, Saudi Arabia, Slovenia – have been high income countries in 2012.<sup>7</sup>

Real convergence in the EU among old and new accession countries has progressed between 1992 and 2012. Portugal is the only old accession EU Member State that was middle income in 1992 and has not been high income in 2012 (it was high income in 2001-10). The new accession countries have remained on average middle income in 2012 with 16% of GDP per capita of Germany in 1992 and 38% in 2012 with the exception of Cyprus, Malta and Slovenia (chart 1). The pace of progression relative to Germany has been significant with a 22 percentage point increase in relative GDP per capita compared with only 9 percentage points of other emerging markets on average. However, significant differences in GDP per capita persist with for example Bulgaria representing only 17% of Germany's GDP per capita and Poland 30% in 2012. Real divergence occurred with the financial and economic crisis; the GDP per capita of the EU emerging markets member countries declined from 40% relative to Germany in 2008. In contrast other emerging markets increased GDP per capita relative to Germany from less than 16% in 2008 to 19% in 2012.

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<sup>7</sup> The World Bank conducted a similar study comparing GDP per capita levels in PPP terms relative to the United States between 1960 and 2008 (World Bank and Development Research Center of the State Council, the People's Republic of China, 2013). Of 101 middle income economies in 1960 13 became high income by 2008: Equatorial Guinea, Greece, Hong Kong SAR, Ireland, Israel, Japan, Mauritius, Portugal, Puerto Rico, Korea, Singapore, Spain and Taiwan POC. Using similar income thresholds (not allowing for any adjustment between GNI and GDP) as the World Bank for 1992–2012 – defining middle income by a GDP per capita of 3–30% of Germany in 2012 or USD 1,256–12,560 – 12 out of 66 countries – (in descending order of income) Oman, Czech Republic, Slovak Republic, Estonia, Chile, Uruguay, Venezuela, Croatia, St. Kitts and Nevis, Libya, Poland, Hungary – were high income in 2012 and middle income in 1992.

*Chart 1: Real Convergence*

Source: IMF WEO, Statistisches Bundesamt. 166 reporting countries in 1992 and 2012.

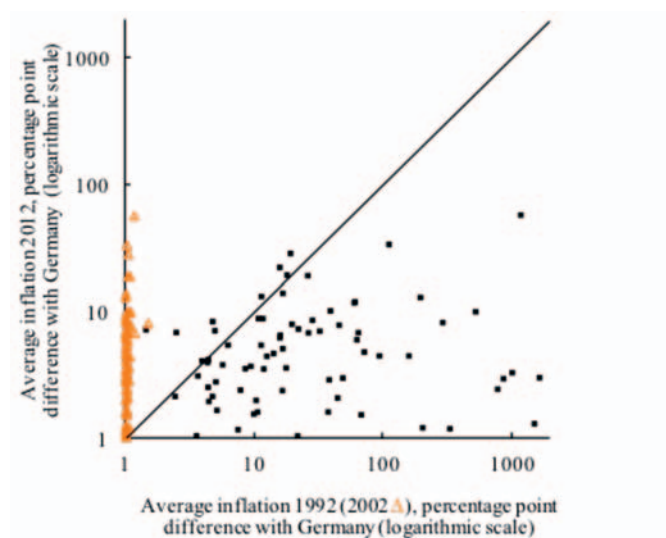
○ emerging markets EU 28 countries.

● Germany new Federal States (excluding Berlin) percent of old Federal States. 1993 Estonia, Slovak Republic; 1994 Georgia, 1995 Czech Republic, Malta.

The integration of Germany's new Eastern Federal States (Bundesländer) with the unification of Germany in 1990 shows significant real convergence over the observation period. Since 1992, the new Bundesländer increased their GDP per capita (Bruttoinlandsprodukt) from 41% relative to the old Bundesländer in 1992 to 68% in 2012 (chart 1). Given the relatively ideal situation for facilitating convergence amid a fairly homogenous space and an explicit economic policy for promoting convergence supported by considerable fiscal resources – though suffering from significant human capital emigration – the new Bundesländer have been among the most successful ascendants to high income status. At the same time, the new Bundesländer already achieved 63% of GDP per capita of the old Bundesländer by 2002.<sup>8</sup>

<sup>8</sup> For a calculation on the transfers from the old to the new Bundesländer, see e.g. (Jansen, 2004).

Chart 2: Nominal Convergence



Source: IMF WEO. 170 reporting countries in 1992 and 2012. 1993 Armenia, Azerbaijan, Belarus, Croatia, Eritrea, Macedonia, Kazakhstan, Kyrgyz Republic, Latvia, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan; 1994 Estonia, Slovak Republic, Slovenia; 1995 Georgia; 1996 Czech Republic.

Countries' average inflation levels relative to Germany show a significant reduction from 184 percentage points in 1992 to about 4 percentage points in 2012. While there were 70 countries with average inflation of 10 percentage points or higher than Germany in 1992 there were 13 in 2012 (chart 2). Average inflation in emerging markets declined from 210 percentage points higher than Germany in 1992 to 4 percentage points in 2012. In the EU, the emerging markets countries reduced inflation relative to Germany from 170 percentage points in 1992 to about 1 point in 2012. However, in 2002, countries' average inflation was already only about 5 percentage points higher than Germany and while there were 83 countries in 2002 with inflation of 1.5 percentage points or lower than Germany there were 78 in 2012 (chart 2).

### 3 Emerging Markets Portfolio Investments

International cross border portfolio investments excluding in and from off-shore centres and excluding assets held as international reserves have increased significantly with a continued rise in investments in emerging markets. However, the economic and financial crisis has led to a slowdown in the growth and in a change of the composition of the stock of portfolio investments that has remained signifi-

cantly below its pre-crisis peak relative to output. Emerging markets have maintained a different allocation pattern compared with all countries and have with the crisis reduced investments in emerging markets. While the total stock of international portfolio assets is dominated by debt, investments from emerging markets are largely composed of equities. Investments from emerging markets as a share in all countries, despite having increased, remain very small.

The stock of international portfolio investments in emerging markets increased from USD 0.6 trillion in 2001 to USD 3.1 trillion in 2007 and to USD 4.4 trillion in 2012 representing 5%, 9% and 12% of portfolio investments, respectively.<sup>9</sup> Emerging markets have decreased their investments in emerging markets from 14% in 2007 to 11% in 2012. However, the share of debt securities in emerging markets investments in emerging markets has increased from 8% to 14% over the same period. Emerging markets show a significantly higher allocation to the U.S. of 34% and lower allocation to the euro area of 26% in 2012 compared with all countries. Total portfolio investments in emerging markets continue to be low at 15% of emerging markets' GDP in 2012 compared with 51% for all countries. Investments from emerging markets have remained small relative to all countries representing 3% of all portfolio investors in 2012 (table).

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<sup>9</sup> Data from IMF Consolidated Portfolio Investment Survey (CPIS). Earliest comprehensive survey data are from 2001.

Table 1: International Portfolio Investments

Excluding assets held as international reserves	2001	2007	2012
<b>Total portfolio investments‡</b>			
From all countries † (US\$ trn)	11.1	35.3	37.1
Investment in (percent)			
U.S.	21.3	16.5	17.4
Eurozone	40.6	40.8	37.1
Emerging markets*	5.4	8.9	11.7
From emerging markets (US\$ trn)* †	0.1	0.6	1.0
Of all countries (percent)	0.8	1.8	2.6
Investment in (percent)			
U.S.	42.9	32.6	34.4
Eurozone	18.1	26.9	25.9
Emerging markets*	5.8	14.0	10.9
<b>Total debt securities</b>			
Investment from all countries (US\$ trn) †	5.9	18.3	20.6
Of total portfolio investments (percent)	53.8	51.9	55.4
Investment in (percent)			
U.S.	22.5	18.6	18.4
Eurozone	44.8	47.4	43.7
Emerging markets*	4.9	4.6	9.1
Investment from emerging markets (US\$ trn)* †	0.0	0.3	0.4
Of all countries † (percent)	0.7	1.4	2.0
Of emerging markets investments* † (percent)	45.3	40.6	43.3
Investment in (percent)			
U.S.	59.5	44.7	40.5
Eurozone	16.4	26.1	27.3
Emerging markets*	9.2	7.6	13.9
<b>Memorandum items:</b>			
Total portfolio investments (percent of all countries' GDP)	34.0	62.5	51.4
Portfolio investments in emerging markets (US\$ trn)*	0.6	3.1	4.4
Of emerging markets' GDP (percent)	7.8	17.7	14.9
Debt securities investments in emerging markets (US\$ trn)*	0.3	0.8	1.9
Of portfolio investments in emerging markets (percent)	49.6	27.0	43.2

Source: IMF CPIS; IMF WEO.

‡ Excluding confidential and unallocated data and investments by international organisations.

\* Excluding off-shore centres. Financial Stability Forum (FSF) classification including inter alia as off-shore centres Hong Kong, Luxembourg, Singapore, Switzerland.

† excluding investment from China.



Portfolio asset price performance has varied significantly between representative emerging markets fixed income and equities benchmark indices. The JP Morgan Emerging Markets Bond Index (EMBI) Global, total return in USD, increased by 586% from December 1993 through December 2012 and by 550% through December 2013 compared with the WGBI Germany, total return in USD, that increased by 246% and 239%, respectively.<sup>10</sup> The MSCI Emerging Markets, total return in USD, increased between December 1993 through December 2012 by 210% and through December 2013 by 203% compared with the MSCI Germany, total return in USD, that increased by 296% and 424%, respectively (chart 3).

*Chart 3: Stock and Bond Market Relative Performance*



Source: Bloomberg. \*MSCI Emerging markets/MSCI Germany. \*\*JP Morgan EMBI GD/WGBI Germany.

The benchmark indices' constituent countries differ significantly by income. The JP Morgan EMBI Global constituent countries have on average a GDP per capita of 15% of Germany in 2012. The MSCI constituent emerging markets countries have on average a GDP per capita of 32% of Germany in 2012. This indicates that constituent countries in the EMBI are on average relatively low middle income countries while those in the MSCI are relatively high middle income countries.

<sup>10</sup> The inception date of the JP EMBI Global is 31. December 1993.

## 4 Middle Income Trap and Asset Prices

The rationale for international portfolio investors in emerging markets seeking higher total returns on a risk adjusted basis rests on the fundamental assumption that emerging markets investments are mispriced. This is due inter alia to emerging markets risk normally being overestimated and/or prospects for nominal and real convergences being underestimated. Emerging markets therefore tend to trade at a discount to comparable advanced economy credits implying market segmentation between advanced economies and emerging markets. The notion of convergence refers to the contention that upon convergence emerging markets securities should be priced identical to any comparable advanced economy security. This is naturally based on the assertion that there is a relationship between financial markets and real activities with the relative performance of asset prices being determined at least in large part by nominal and real convergence patterns.<sup>11</sup> Here rests the fundamental assumption that emerging markets asset prices should outperform advanced economies' in the process of convergence.

By conjecture, the middle income trap would imply that emerging markets asset prices should not outperform advanced economies'. Equally if the middle income trap is not binding, market segmentation should not prevail. In the same token, an erroneous assumption about occurrence of the middle income trap may lead to a lower than optimal allocation to emerging markets.

Further by conjecture, nominal and real convergences are expected to have different implications for different portfolio asset classes: Fixed income investors tend to focus on nominal convergence while equities investors seek exposure to real convergence. The former rests on the close relationship between interest rates and inflation. The latter is based on the assertion that stock market performance is driven to a large extent by income, postulating that income is a function of nominal and real factors and that there is a positive relationship between interest rates and income, but that convergence of incomes should be a key determinant of stock market performance.<sup>12</sup> Nominal convergence may then not be sufficient for stock markets to outperform but stock markets should outperform a reference portfolio in the event real convergence materialises.

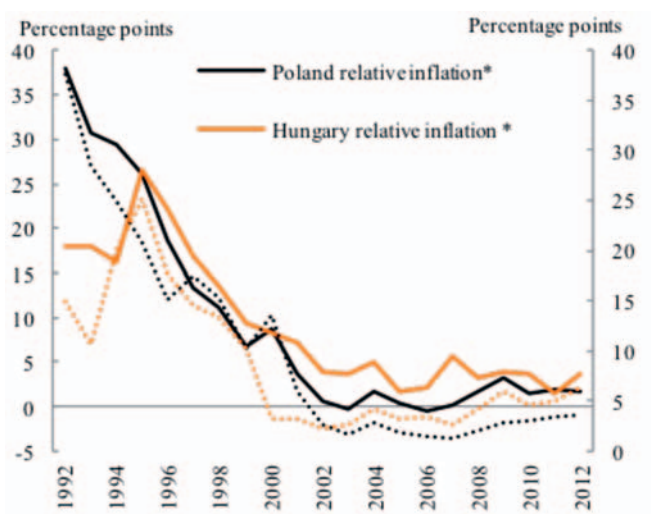
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<sup>11</sup> Empirical evidence is mixed though between economic growth and stock market performance; see e.g. (Levine & Zervos, 1998) and (Henry & Kannan, 2008). For a study on the relationship between convergence in the EU's large old accession countries and stock prices, see e.g. (Phengpis, Apilado, & Swanson, 2004) that find a strong relation between convergence and stock market returns.

<sup>12</sup> External factors to the location of stock markets naturally may influence stock market performance and likely to reduce the correlation between [domestic] income growth and stock market performance.

The middle income trap if binding may affect portfolio flows possibly creating self-fulfilling expectations for generating conditions for the middle income trap. By conjecture, international portfolio investors betting on real convergence may have no incentive for increasing and/or maintaining allocations to emerging markets subject to the middle income trap. The slowdown of portfolio flows could then cause a material reduction of investments in affected countries – assuming that the middle income trap is related to investment activities to support productivity and hence income growth – with adverse implications for the balance of payments and economic conditions more generally exacerbating conditions leading to the middle income trap.

*Chart 4: Nominal Convergence and Interest Rate Performance*



Source: IMF WEO, OECD. \*Average annual inflation minus Germany; \*\*Long-term interest rate minus Germany's long-term interest rate (short-term rate Poland 1992–2000; Hungary 1991–1999).

*Chart 5: Real Convergence and Stock Market Performance*

Source: Bloomberg, IMF WEO. \*GDP per capita in percent of Germany; \*\*MSCI total return in USD relative to MSCI Germany total return in USD rebased 1998 = 100.

The rapid reduction of bond yields for example in the case of EU accession countries and emerging markets has highlighted investment opportunities for fixed income (chart 2). While unforeseen shocks may upset nominal convergence trades, the existence of relatively short nominal convergence cycles and important coincident performance of inflation and interest rates have repeatedly offered key opportunities for fixed income investors (chart 4).

The long real convergence cycles risk complicating stock market investments. GDP per capita thresholds also likely play a role in determining minimum conditions for stock market outperformance. The real convergence cycle duration would imply that stock market outperformance may take a very long time to materialise. While emerging markets on average have increased their GDP per capital relative to Germany by 10 percentage points from 1992 to 2012, relative income in emerging markets EU countries increased by 22 percentage points. Preliminary observations suggest that there is some coincident movement between real convergence and stock market outperformance (chart 5).

## 5 Conclusions

This paper finds *prima facie* evidence for the middle income trap in line with earlier studies. Real convergence from middle to high income status remains rare. Nominal convergence appears considerably more widespread. The findings also seem to validate that the EU has been particularly successful in raising income of EU emerging markets in absolute terms relative to other emerging markets but that the financial and economic crisis has caused convergence reversals in the EU. At the same time, the data seem to confirm that emerging markets have through the crisis maintained real convergence. Following the EU accession methodology assuming convergence exhibits nominal and real elements, the data appear to indicate that the middle income trap is above all a real phenomenon. This may also suggest that there is only a weak relationship or that there are considerable lags between nominal and real convergence or that nominal convergence may serve only very partially to guide estimations about real convergence.

The increasing importance of portfolio investments in emerging markets naturally raises the susceptibility of emerging markets to adverse portfolio flow shocks. Emerging markets portfolio allocations remain small by any economic metric and are expected to continue to increase. At the same time, concerns about the middle income trap if warranted could significantly dampen portfolio investment flows and thus have adverse consequences for the stability of emerging markets. This could risk fuelling self-fulfilling expectations for generating conditions for the middle income trap.

Fixed-income investors have taken advantage of interest rate outperformance on the basis of the relatively short nominal convergence cycles by assuming exposure to nominally converging economies. Fixed income investments may therefore be the preferred strategy to invest in middle income emerging markets. The long real convergence cycles imply that equities investors may need to base their allocations on very long investment horizons, that is, equities investments betting on real convergence may simply take too long for the career of most portfolio managers.

If the middle income trap is binding and driven by real convergence elements equities investors may be better off investing in low income countries or middle income countries further away from the high income threshold. Given that representative benchmark emerging markets stock market indices attach a large weight to relatively high middle income economies and given the lacklustre performance of emerging markets stock markets relative to advanced economies stock markets, it could – very tentatively – be a sign of a binding middle income trap. The dominance of equities in emerging markets portfolio investments may thus warrant a revision of existing emerging markets investment strategies.

The observed convergence patterns may also help calibrate paths and expectations about convergence over a given time horizon. Real convergence has been a measured process even though relative GDP differences have narrowed for a large number of countries, absolute income differences have remained large including within the EU. This is also consistent with the notion that low income countries find it relatively easy to become middle income. Post-unification Germany may similarly help form reasonable expectations about convergence and/or outline actual limitations to convergence.

More research is needed to explore the relationship between convergence and stock market performance. Given that evidence about the relationship between stock market performance and economic growth has remained mixed, the importance of nominal and real convergence for stock market performance could be analysed further. The significance of income thresholds for stock market performance may also require more analysis.

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