

Grömling, Michael

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Michael Grömling

A Supply-Side Explanation for Current Account Imbalances

Advanced economies with relatively high manufacturing shares tend to have current account surpluses. One reason for this is the dominant role played by transactions involving manufactured goods in world trade. An additional factor is that the catching-up process in emerging and developing economies has been accompanied by a marked boom in investment. Countries with relatively large manufacturing sectors specialising in capital equipment are correspondingly better placed to achieve trade surpluses.

In the aftermath of the financial market and sovereign debt crises, there has been an ongoing debate about global current account imbalances. Since the turn of the millennium, many countries have accumulated sizeable and persistent current account imbalances. On the one hand, there are countries with considerable current account deficits, such as the US, the UK, France, Italy and Spain. On the other hand, Germany, China, Japan and Korea have long had large surpluses.

The relationship between a country's current account balance and the risk of a banking or sovereign debt crisis has long been a matter of controversy among economists.¹ Particular attention has been given to the simultaneous occurrence of a government deficit and a current account deficit. The situation is exacerbated if such a twin deficit is accompanied by excessive debt in the private sector. Domestic production and income cannot cover consumption, investment and government expenditures. Gaping shortages of goods and capital have to be filled by importing both.

Current account imbalances are the result of many factors,² and there is a wealth of empirical studies on their determinants.³ The emphasis is usually on demand-side explanations, e.g. excessive government or private consumption in the case of a persistent current account deficit. The present analysis will focus on a supply-side explanation with the following hypothesis: economies with a relatively high proportion of manufacturing tend to have current account surpluses.⁴ Current account balances can be explained by the historical development of economic structures resulting from myriad entrepreneurial decisions. The supply side of an economy thus determines demand and the ratio of domestic to foreign customers. Improvements in supply side conditions and competitiveness reinforce this relationship.⁵

The opposite causality is also conceivable. In this case, the current account balance leads to a certain economic structure, with a current account surplus contributing to the emergence or continuation of a relatively high manufacturing share. The assumption here is that a country's economic structure is the result of

1 C.M. Reinhart, K.D. Rogoff: This time is different: a panoramic view of eight centuries of financial crises, NBER Working paper series, No. 13882, Cambridge, MA, 2008; M. Obstfeld: Does the Current Account Still Matter?, in: American Economic Review: Papers and Proceedings, Vol. 102, No. 3, 2012, pp. 1-23.

2 M. Grömling: Ways to interpret Turkey's current account, in: *Inter-economics*, Vol. 40, No. 4, 2005, pp. 217-225; B. Busch, M. Grömling, J. Matthes: Current Account Deficits in Greece, Portugal and Spain – Origins and Consequences, in: *Inter-economics*, Vol. 46, No. 6, 2011, pp. 354-360; European Central Bank: Competitiveness and external imbalances within the euro area, Occasional Paper Series, No. 139, 2012, Frankfurt am Main.

3 S. Barnes, J. Lawson, A. Radziwill: Current Account Imbalances in the Euro Area, OECD Economics Department, Working Paper, No. 826, 2010; C. Cheung, D. Furceri, E. Rusticelli: Structural and Cyclical Factors behind Current-Account Balances, OECD Economics Department, Working Paper, No. 775, 2010.

4 M. Grömling: Wirtschaftsstruktur und Leistungsbilanz, in: *IW-Trends*, Vol. 40, No. 1, 2013, pp. 3-19.

5 S. Danninger, F. Joutz: What Explains Germany's Rebounding Export Market Share?, IMF Working Paper, WP 07/24, 2007.

Michael Grömling, Cologne Institute for Economic Research; and International University of Applied Sciences Bad Honnef/Bonn, Germany.

Table 1
Manufacturing share and foreign trade

	Manufacturing share, in % of total value added	Trade balance, in % of 2007 GDP	Current account balance, in % of 2007 GDP
Korea	28	11	2
Germany	24	12	7
Ireland	22	16	-5
Japan	21	6	5
Austria	20	3	4
Switzerland	20	4	9
Sweden	20	5	9
Italy	19	3	-1
Belgium	16	9	2
Spain	15	-6	-10
Portugal	15	-7	-11
Netherlands	14	9	7
Denmark	14	-1	1
US	13	-4	-5
France	12	-1	-1
UK	12	-6	-2
Greece	9	-14	-15
Luxembourg	9	-8	10

Note: Data for Portugal: 2006.

Source: OECD; IMF; own calculations.

domestic and foreign demand for the goods and services that the country provides.

Current account and manufacturing share

Table 1 shows the manufacturing shares, current account balances and trade balances for a sample of 18 economies in a comparable state of development. The manufacturing share is measured as the nominal value added of all manufacturing sectors as a percentage of the total nominal value added. Current account and trade balances are calculated as a percentage of gross domestic product (GDP). The data refer to the year 2007 and describe the situation before the global financial and economic crisis. This point in time was chosen because in many cases the relevant data are only available through 2009. Since the period 2008 to 2010 was characterised first by heavy declines in trade and output and then by the subsequent recovery, an analysis of data from these years would be influenced by the global crisis. However, the following analysis is

not concerned with cyclical effects but predominantly with medium- and long-term structural relationships.

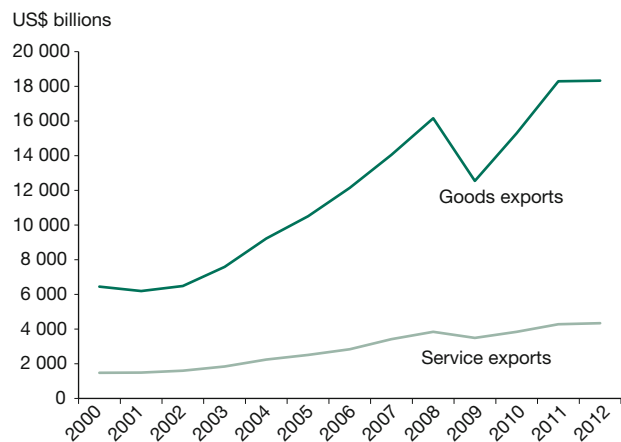
In 2007, countries with relatively high manufacturing shares had current account surpluses. This was the case for Korea and Germany, which, at 28 and 24 per cent respectively, had the highest manufacturing shares. Japan, Austria, Switzerland and Sweden also had high manufacturing shares of about 20 per cent as well as distinct current account surpluses. Although Italy had a comparable manufacturing share, in 2007 its current account was slightly in deficit. In contrast, countries with relatively low manufacturing shares tended to have current account deficits. With but few exceptions, this applies to all countries with a manufacturing share lower than 15 per cent of total value added. Among the 18 countries examined, the Netherlands and Luxembourg (low manufacturing share and high current account surplus) and Ireland (high manufacturing share and high current account deficit) do not fit the general pattern. Comparing the manufacturing shares and the current account balances, we obtain a coefficient of determination (R^2) of 0.12 and a correlation coefficient of 0.35.

However, the relationship between foreign trade and economic structure becomes closer if we substitute the trade balance for the current account balance. The trade balance is a component of the current account balance and reflects only imports and exports of goods, excluding services, transfers and factor income. Moreover, since manufactured goods make up the bulk of traded goods, the relationship between the trade balance and the manufacturing share can be assumed to be stronger. Table 1 shows that, without exception, countries with relatively high manufacturing shares generate (high) trade surpluses. For Korea, Ireland, Italy and Belgium, there are pronounced differences to the current account situation, a fact which reinforces the underlying hypothesis. In contrast, Sweden and the Netherlands show a weaker relationship. For Luxembourg the relationship reverses, which puts it now in line with our initial hypothesis. Comparing the manufacturing share and the trade balance, the coefficient of determination (R^2) increases to 0.65 and the correlation coefficient rises to 0.8.

Dominance of trade in goods

An explanation for the positive relationship between the manufacturing share and the trade balance (and, in many cases, also the current account balance) can be found in the booming of world trade, which is still

Figure 1
Global trade in goods and services



Source: WTO.

driven to a considerable extent by trade in manufactured goods – although current trade statistics have their limitations in representing global trade affairs.⁶ This leads to the following explanation: economies which specialise in the production of manufactured goods have an advantage when global trade in goods expands, making it easier for them to achieve surpluses in their trade balances.

Figure 1 shows the development of global trade in goods and services from 2000 to 2012. Global trade gained momentum after 2002. From the trough in 2002 to the first peak in 2008, nominal global exports of goods increased by 149 per cent and service trade by 139 per cent, according to the underlying WTO definition. The graph also shows that the global financial and economic crisis predominantly hit the trade in goods, particularly in 2009. Exports of goods declined by 22 per cent against the previous year, which was twice the decline in service exports. Afterwards, the worldwide exchange of goods continued to expand at a noticeably higher speed than service trade. However, in 2012 global trade in goods almost stagnated due to the slowdown of the world economy. From 2002 to 2012, global exports of goods increased by 182 per cent and service exports by 170 per cent. The structure of world trade remained constant, with an 80 per cent share for trade in goods.

It must be remembered that the surge in nominal goods exports was also driven by hefty price increases

for energy and raw materials. However, even price-adjusted values continue to show that the global exchange of manufactured goods outperformed all other categories in the decade under review. While price-adjusted trade in agricultural products increased by 30 per cent and trade in fuels and mining products rose by 27 per cent from 2002 to the first peak in 2008, real trade in manufactured goods in the same period grew by 54 per cent. In terms of volume, the international exchange of manufactured goods showed the strongest expansion, even when the period is extended to 2012.

What explains this predominance of manufactured goods in global trade? First, it must be mentioned that, in spite of modern information and communication technologies, a considerable range of services are still not internationally tradable. Household and government services continue to be focused on a narrow regional clientele.⁷ Moreover, international liberalisation policies have favoured goods over services.⁸

The importance of the trade in goods is also based on the fact that the international division of labour is more advanced in the production of goods. The use of country-specific advantages in production and costs has led to the intense cross-border integration of intermediate goods in the last two decades.⁹ Modern and cheaper logistics also foster international specialisation and the fragmentation of value added chains. Though there is an increasing trend towards outsourcing in the service sector, the main beneficiary of this development remains the production of manufactured goods.

Global investment boom

Another pivotal explanation for the booming trade in goods lies in the catching-up process pursued by the emerging market and developing economies, which has caused a pronounced investment boom in the past decade.¹⁰ The investment boom has in turn stimulated the worldwide trade in investment goods, to the benefit of countries specialised in the production of these

6 A. Jara, H. Escaith: Global Value Chains, International Trade Statistics and Policymaking in a Flattening World, in: *World Economics*, Vol. 13, No. 4, 2012, pp. 5-18.

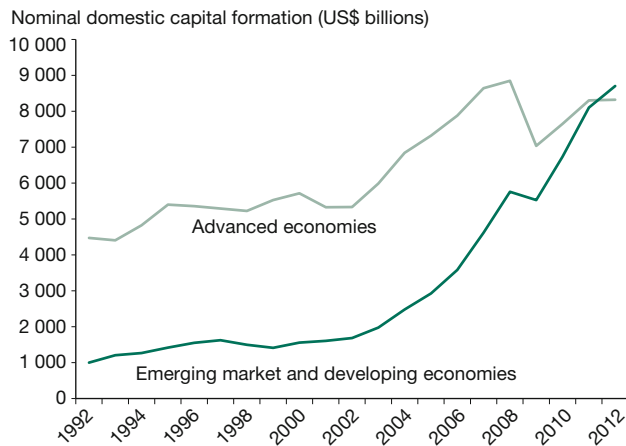
7 By contrast, huge progress can be observed in the international tradability of business services.

8 R. Adlung: The (Modest) Role of the GATS, in: *Intereconomics*, Vol. 40, No. 3, 2005, pp. 135-139.

9 M. Grömling: Makroökonomische Daten zur Messung von Outsourcing, in: *ASTA – Wirtschafts- und Sozialstatistisches Archiv*, Vol. 4, No. 2, 2010, pp. 185-199.

10 The many factors behind this convergence process are discussed by A. Abiad, J. Bluedorn, J. Guajardo, P. Topalova: *The Rising Resilience of Emerging Market and Developing Economies*, IMF Working Paper, WP12/300, 2012.

Figure 2
Global investment



Source: IMF; own calculations.

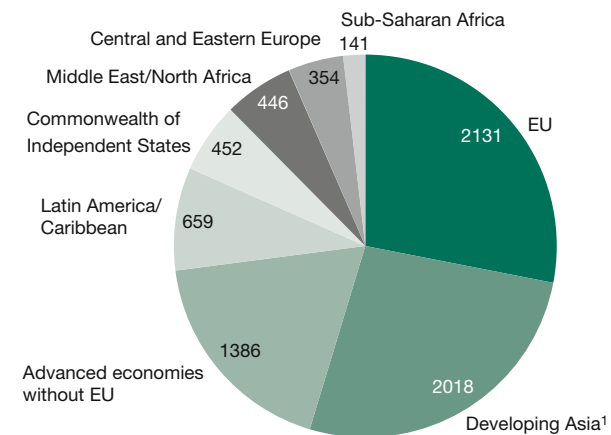
goods. This phenomenon is correspondingly an argument in favour of the supply-side interpretation of the relationship between a country's economic structure and its current account balance.

Global investment has skyrocketed in the past decade (see Figure 2). Worldwide gross capital formation – i.e. private and government investment in machinery, equipment, buildings and inventories – climbed from US\$ 7 trillion in 2002 to US\$ 14.6 trillion in the first peak year 2008. After declining temporarily in 2009, the expansion continued, and in 2012 global investment amounted to more than US\$ 17 trillion. This contrasts with an absolute increase of a mere US\$ 1.5 trillion during the previous decade (1992 to 2002). Moreover, global capital formation in the latter seven years of that period stagnated at a more or less constant level of US\$ 7 trillion.

As a result of this mighty investment boom, which took off in 2002, the global structure of capital formation has changed tremendously. While only a quarter of global investment went to emerging market and developing economies in 2002, this share surged to almost 40 per cent in 2008 and rose further to slightly more than 50 per cent in 2012. Global investment volume is thus now divided equally between the emerging and advanced economies. This shift in weighting has accelerated in the last couple of years as investment in advanced economies has been negatively affected by the global financial market crisis and has not yet regained the levels of 2007 and 2008. By contrast, the financial market crisis has barely hit investments in emerging economies. Their investment boom has continued almost unabated, reaching a new peak of US\$ 8.7 trillion in 2012.

Figure 3
Structure of the global investment boom

Change of domestic gross capital formation, 2002-2008 in US\$ billions



¹ Asia excluding Japan, Korea, Hong Kong, Taiwan, Singapore.

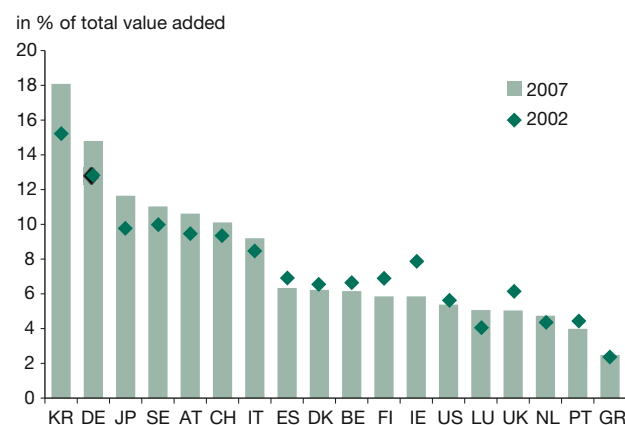
Source: IMF; own calculations.

The emerging market and developing economies contributed 54 per cent of the total global increase in investment (US\$ 7.6 trillion) from 2002 to 2008, and if we extend our analysis to the whole decade from 2002 to 2012, their contribution amounted to 70 per cent of the total global increase in investment.¹¹ In the previous decade, 1992 to 2002, the distinctly moderate growth had been driven by the advanced economies.

A closer look reveals that the latest global investment boom was powered by the emerging market and developing economies in Asia in particular. Among emerging markets, Asian countries played a dominant role as an investment target. The Asian contribution was only slightly smaller than that of the European Union. Figure 3 shows that the other emerging regions were virtually eclipsed by the Asian performance. More than a quarter of the total increase in investment in the period 2002 to 2008 can be attributed to the emerging economies in the Far East (i.e. excluding the advanced Asian economies of Japan, Korea, Hong Kong, Taiwan and Singapore). Of course, this can partially be explained by the high population of this region. In 2010, almost 4.2 billion people, or around 60 per cent of the world population of almost 7 billion, lived in Asia. Even ex-

¹¹ M. Grömling: Asia Drives Global Investment – a Self-priming Pump? China Research, Linnaeus University, 2013, available at <http://blogg.lnu.se/china-research/blog/asia/asia-drives-global-investment-a-self-priming-pump-2/>.

Figure 4
Production of investment goods



Note: Data for Portugal: 2006.

Source: OECD; own calculations.

cluding the five advanced economies, Asia's share of the world population still amounts to 58 per cent.

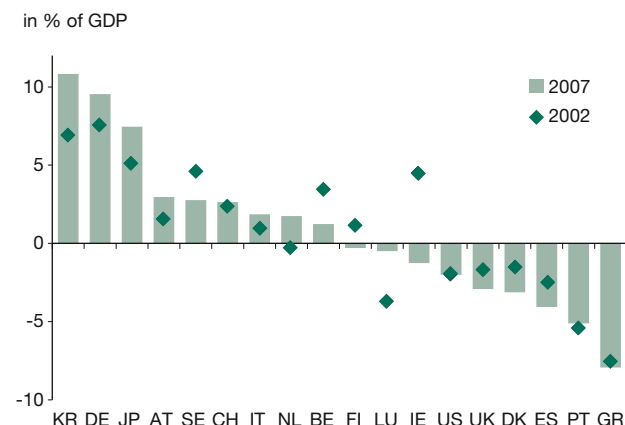
Domains of investment goods production

In the light of the preceding explanations of the global trade in goods and the investment boom, we can reformulate the initial hypothesis: the global investment boom and the accompanying international trade in investment goods favour economies for which the production of investment goods is of relatively high importance. Such countries are better positioned to generate trade and current account surpluses in times of booming global demand for investment goods.

Figure 4 shows the share of investment goods production as a percentage of total value added for 18 countries. In 2007 this share amounted to 18 per cent in Korea and 15 per cent in Germany. Since 2002 it has increased by three percentage points in Korea and two percentage points in Germany. Japan (12 per cent), Sweden and Austria (11 per cent), and Switzerland (ten per cent) are close behind. The production of investment goods accounted for only six per cent of total value added in Spain, Denmark, Belgium, France and Ireland in 2007, a share which had, moreover, declined since 2002. In the US and the UK, the share of investment goods production was only around five per cent. Obviously, countries with weak supply potential cannot take advantage of strong global demand for investment goods.

The relationship between the trade or current account balance and the share of investment goods produc-

Figure 5
Trade balance with investment goods



Note: Data for Portugal: 2006.

Source: OECD; own calculations.

tion is closer than that between the former and the total manufacturing share. It should be borne in mind that the increasing or decreasing shares of investment goods in total value added are the result of the many different determinants of structural change. The sectoral pattern of research, changes in the sectoral distribution of labour, improvements in price competitiveness and the country-specific development of the service sector are all relevant factors.¹² The present argumentation is that a certain presence of investment goods producers is necessary for global demand to be transformed into increased exports and the accompanying trade surpluses.

The next step must be to examine whether countries with a relatively high degree of specialisation in the production of investment goods actually achieve trade surpluses with these goods – and vice versa. Figure 5 shows the trade balance for investment goods for 18 countries in 2007 and 2002. Countries with a relatively high share of investment goods production did indeed have relatively high trade balances with investment goods. In Korea and Germany, these surpluses amounted to around ten per cent of GDP in 2007. This compares with a simultaneous German current account surplus of 7.5 per cent and a trade surplus of almost 12 per cent of GDP. Japan is next with a surplus in its investment goods trade of 7.5 per cent. A surplus of almost three per cent of GDP was achieved in Austria,

12 M. Grömling: Economic Change in Germany since 1989, in: N. O'Mahony, C. O'Reilly (eds.): *Societies in Transition: Ireland, Germany and Irish-German Relations in Business and Society since 1989*, Baden-Baden 2009, Nomos Publishers, pp. 65-92.

Sweden and Switzerland. While the surplus increased in Austria from 2002 to 2007, it declined in Sweden. In addition, Italy, the Netherlands and Belgium generated small surpluses in 2007. However, while Italy and the Netherlands had increased their surpluses since 2002, Belgium's had been reduced by about half. The remaining countries all generated trade deficits, which amounted to almost five per cent of GDP in Portugal and Spain and to nearly eight per cent in Greece. The US and the UK also had deficits in their international trade in investment goods. All in all, the relationship between a country's trade balance and the share of investment goods production in the country is very close. The coefficient of determination (R^2) is 0.83, and the correlation coefficient amounts to 0.91.

Economic policy implications and outlook

The German current account and trade surpluses result to a large extent from a surplus in trading investment goods. The production of such goods is traditionally of great importance in Germany, as it is in Korea, Japan, Sweden, Austria and Switzerland. Obviously, the global investment boom sparked off a decade ago favours economies producing investment goods. The historical structure of a country's economy, developed over time through countless entrepreneurial decisions, determines whether it can capitalise on a certain demand, which may prove temporary. The surpluses of countries producing investment goods also occur because their domestic investment requirements can be fulfilled from their own supply. However, the same relationship applies for all tradable goods and services in general: resource-rich countries profit from a strong demand for resources.¹³ Economies with large tourism sectors will benefit when recreational travel booms. Current account balances partly mirror countries' sectoral specialisations and the international division of labour.

In consideration of the current European imbalances and the results of the analysis, at least two policy conclusions can be drawn. First, a certain current account constellation can be temporary in nature. During the global investment stagnation in the second half of the 1990s, the German trade surplus was small and the current account was in deficit. The German trade surplus in capital goods will decrease in the wake of a worldwide slowdown in investment.¹⁴ In addition, it

cannot be taken for granted that the investment cycle in emerging market and developing economies will be sustained.¹⁵ Some emerging markets will have to fight hard to remain attractive locations for investment. Several sizeable emerging markets in Asia, Africa and South America have benefited from the increasing global demand for natural resources and the resulting price increases. It is a moot point whether these countries can compensate for a possible cutback in their present growth driver with stronger domestic demand or exports of other goods. On the whole, the growing populations in the emerging market and developing economies and their desire to catch up favour ongoing investment.¹⁶ If their standard of living is to continue rising, there is no alternative to increasing capital formation and the capital-labour ratio. There is an enormous need for infrastructure investment in the present and forthcoming decade.¹⁷ Material poverty in many countries is still high. Weakening investment might cause serious economic and social problems. Furthermore, the adjustment burdens due to scarce resources and climate change require huge investments. All these factors argue for a continuation of the present current account surpluses in investment goods-producing countries.

Secondly, however, countries with relatively small manufacturing sectors are not doomed to generate ongoing trade deficits. One option for those countries is to join the industrial value added chains by providing innovative manufacturing-related services or intermediate products, e.g. in the transport, consulting or financial sectors. Countries with different economic structures can benefit from the global demand trends outlined here through cooperation with and integration into international business networks. Cooperation, both cross-border and cross-sector, is the right way forward to integrate countries with different specialisations to the benefit of all countries involved. To maximise gains from this option, governments have to provide business-friendly market conditions and companies must be innovative and competitive in order to take part in international networks.

13 H. Morsy: Current Account Determinants for Oil-Exporting Countries, IMF Working Paper, WP/09/28, 2009.

14 N. Jannsen, S. Kooths: German Trade Performance in Times of Slumping Euro Area Markets, in: *Intereconomics*, Vol. 47, No. 6, 2012, pp. 368-372.

15 B. Eichengreen, D. Park, K. Shin: Growth slowdowns redux: New evidence on the middle-income trap, NBER Working Paper Series, No. 18673, 2013.

16 M. Grömling, H.-J. Haß: Globale Megatrends und Perspektiven der deutschen Industrie, IW-Analysen, No. 47, 2009.

17 Allianz Global Investors: Infrastructure – The Backbone of the Global Economy, Analysis & Trends, Frankfurt am Main, 2012; Organisation for Economic Co-operation and Development: Strategic Transport Infrastructure Needs to 2030, Paris, 2012.