

Brenke, Karl

**Article**

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# Greek Economy Needs Growth Strategy

by Karl Brenke

Greece has been living beyond its means for a long time now and has accumulated foreign debt. The high level of national debt is merely a reflection of the problems; the actual cause is insufficient economic power. The top-priority political objective is to strengthen the substance of the economy—in particular, the export base—to such an extent that in future, the balance of payments is at least equalized. This means Greece needs a growth strategy to catch-up industrialization.

So far, revenue in the economic exchange with other countries has been mainly generated by tourism. However, this pillar is far from sufficient; although there are growth prospects in tourism in southern Europe, these should not be overestimated. On the other hand, Greece's industrial base is only small and heavily biased towards the domestic market. Its production structure and foreign trade links for goods show that the Greek economy presents virtually no competition for developed industrialized nations. Consequently, contrary to claims, the wage restraint in Germany has not put the Greek economy under significant pressure, either. The manufacturing sector and large sections of the economy are to a large extent marked by small-scale production. Overall, in Greece, there is one self-employed worker for every two employees; the employment structure more typical of a transition economy.

Although national bankruptcy has not been officially declared, the Greek state is effectively insolvent and has no means of refinancing on the capital market. In 2010, the debt accumulated by the state (including social security payments) reached almost 329 billion euros; this amount corresponds to 145 percent of the GDP.<sup>1</sup> The level of debt has continued to grow rapidly over the last year; the Greek government currently estimates the new debt for 2011 at 21.6 billion euros, which is almost ten percent of economic performance.<sup>2</sup>

Whether or not it ends in bankruptcy depends, however, not on the amount of debt but on the trustworthiness and the solvency of the debtor. For instance, Japan has a much higher level of debt than Greece (amounting to around 200 percent of its GDP), but can still finance additional debts and maturing loans at very low interest rates—even after the major earthquake, which had led to lower tax revenue and higher government expenditure to remedy the damage.<sup>3</sup> Consequently, the creditors, Japanese citizens in the vast majority of cases, attribute an extremely high creditworthiness to the debtor.<sup>4</sup> Creditors therefore have confidence that the state will pay them the interest accrued and settle its debt by the agreed date.

The picture is very different for Greece. When it became clear in fall 2009 that public borrowing was much higher than previously indicated, yields on Greek government bonds climbed considerably. As of spring 2010, financing problems escalated. Contrary to claims by politicians, this development was not due to speculation on the financial markets, but to the loss of investor confi-

<sup>1</sup> Hellenic Statistical Authority, press release, October 27, 2011, preliminary data.

<sup>2</sup> Hellenic Republic Ministry of Finance, press release, January 12, 2012.

<sup>3</sup> At the time of the earthquake, the ten-year yield on Japanese government bonds was at around 1.3 percent and it is currently one percent.

<sup>4</sup> W.R. Lam and K. Tokuoka, „Assessing the Risks to the Japanese Government Bond (JGB) Market,” IMF Working Paper, no. 292 (2001).

dence in Greece's creditworthiness.<sup>5</sup> Even financial assistance provided by other countries in the eurozone and by the International Monetary Fund (IMF) could only facilitate a short-term reduction of the high interest rates. Bond purchases by the European Central Bank (ECB) also had no lasting effect. And the hope shared by many politicians in May 2010, when the first bailout package was introduced that Greece would quickly be able to re-finance itself on the bond markets was not fulfilled. It was also for this reason that the eurozone countries in July 2011 adopted a second recovery package. Because the solutions decided upon were considered to be inadequate, this led to further negotiations in October 2011. Financial institutions and the Greek government have just decided on a debt cut, meaning that private creditors "voluntarily" write off at least half of their loans to Greece.<sup>6</sup> The national debt could thus be reduced by around 100 billion euros. The majority of the remaining debt would then be distributed among international institutions and, thus, indirectly, other countries. This share will continue to grow since Greece will receive further financial assistance of 100 billion euros up until 2014, plus another 30 billion euros to cover private creditors for the planned debt cut.<sup>7</sup> Even if forecasts made as part of the most recent recovery measures prove to be right, the country is still expected to have a debt burden of 120 percent of its GDP in the year 2020.

### Lost Confidence in Economic Performance

As far as both EU and German politicians are concerned, the financial problems of Greece and some other states in the eurozone are seen as a public debt crisis. If this were the case, however, that would mean, for example, Japan has been insolvent for a long time now. Apparently, sufficient economic potential is attributed to this country to repay the debt. This is hardly surprising because up until 2011, Japan consistently generated foreign trade surpluses and consequently was not dependent on capital from abroad. Greece's capacity, on the other hand, is deemed to be insufficient by potential financial backers. We are not just dealing with a public debt crisis, but, more importantly, the country's economic power is considered to be so weak that it cannot carry its debt burden.

<sup>5</sup> M.G. Arghyroua and A. Ktononikasb, „The EMU sovereign-debt crisis: Fundamentals, expectations and contagion. European Economy," Economic Papers, no. 436 (2011).

<sup>6</sup> At the euro summit of 26 October 2011, bank representatives agreed in principle to write off approx. half of the debt. The banks represented at the relevant negotiations cannot speak for all private creditors, however.

<sup>7</sup> Decision of the European Council of October 2011, Brussels, October 26, 2011.

Therefore, proposed solutions aiming only at countries such as Greece reducing their public expenditure and increasing their government revenue are not far-reaching enough. These may even prevent the country from achieving its objective—long-term consolidation of public budgets. As experience with the government austerity measures already introduced in Greece shows, they have considerable negative repercussions for the economic cycle and lead to reduced revenue and increased public sector expenditure, for instance, for social security benefits. Thus, the situation regarding public budgets deteriorated again in 2011.<sup>8</sup> An austerity policy cannot serve to strengthen the economic base—on the contrary.

Surprisingly, this aspect is largely ignored in the debate surrounding the euro crisis and, apart from some economically adventurous ideas,<sup>9</sup> only vague structural reforms<sup>10</sup> are said to be necessary in order to strengthen the economic base. Or there is a call for money from the European Structural Funds and other special funds to be concentrated on crisis countries such as Greece<sup>11</sup>—it remains unclear exactly which countries these are, what this is meant to achieve, and how other beneficiaries will react towards this.

In the following analysis, the economic development of the past decade and fundamental structures of the Greek economy will be outlined so as to identify weaknesses and find indications of whether, under the given circumstances, there are in fact any starting points at all for significantly strengthening the economic base in the foreseeable future. The main source of statistics

<sup>8</sup> International Monetary Fund, Greece: Fifth Review Under the Stand-By Arrangement, Rephasing and Request for Waivers of Nonobservance of Performance Criteria. 2011; Press Release on the Executive. IMF Country Report, no. 11/351, 7f. Board Discussion and Statement by the Executive Director for Greece.

<sup>9</sup> One example of this is the „Helios" project proposed by the Greek Ministry of the Environment, Energy and Climate Change and also supported by the faction in the German Bundestag of Alliance 90/the Greens (paper no. 17/7098 of the German Bundestag). Solar power production in Greece is to be developed but it will have to be subsidized, too. This is something we know from the examples of Italy and Spain where the development of power production through solar energy facilities has required financial backing. Greece does not have the resources to heavily subsidize ongoing production.

<sup>10</sup> Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung: Verantwortung für Europa wahrnehmen. Jahresgutachten 2011/12, Wiesbaden: 2011.

<sup>11</sup> G.A. Horn, F. Lindner, and T. Niechoj, (2011): Schuldenschnitt für Griechenland – ein gefährlicher Irrweg für den Euroraum. IMK-Report no. 63, 16.

used is the Eurostat database—drawing on the most up-to-date information available here.<sup>12</sup>

### Low Per Capita Output

Greece joined the eurozone in 2001. The state has 11.3 million inhabitants—slightly more than Baden-Württemberg (10.7 million). The per capita economic output in 2010 was 20,100 euros, in 2008—that is, before the onset of the crisis—it was 20,700 euros. This is less than in Mecklenburg-Vorpommern (2010: 21,700), the German federal state showing the weakest economic performance. Regarding economic output per person employed, Greece has fared better and, at around 48,000 euros, exceeded the average of the eastern German federal states (46,000 euros) in 2010, but lagged significantly behind western Germany (57,400 euros). Participation in the labor market is correspondingly relatively low: in Greece, persons aged between 15 and 64, only accounted for a share of just under 60 percent in 2010, in the EU as a whole and in Germany, it was 77 percent (western Germany: 76 percent; eastern Germany: 80 percent).<sup>13</sup>

### The Road to Crisis ...

Over the past decade, economic performance in Greece rose dramatically. According to Eurostat, from 2000 to 2008, the real GDP increased by almost a third overall, growth in the EU as a whole was at one sixth, and in the eurozone at one seventh. In 2009 and 2010, however, the price-adjusted value added decreased by a good 3.3 and 3.5 percent, respectively. A fall of 5.5 percent is anticipated for 2011. The decline beginning in early 2009 was initially the result of the global financial crisis, then further exacerbated by Greece's specific problems.

There was a strong and steady increase of private expenditure up until 2008, and then it fell dramatically (Figure 1). There was a similar development with public expenditure: but here, there was no drop until early 2010—after the expansion had even accelerated in the previous

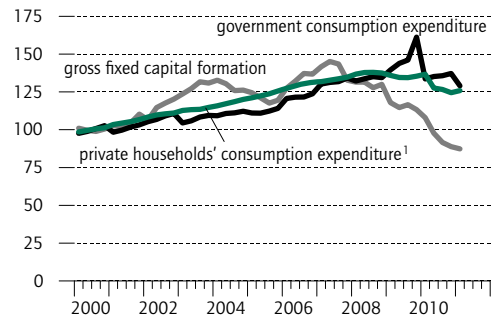
<sup>12</sup> Particularly in the case of Greece, some of the data presented are accompanied by a note that they are based on estimates or that the information is to be considered to be preliminary. In other words, there is still uncertainty as to the reliability of some of the information. Naturally, the shadow economy is completely inadequately captured by the official statistics. This is much more significant in Greece than in most European countries. Schneider, F. „Size and Development of the Shadow Economy of 31 European Countries from 2003 to 2010,“ published manuscript, 2010: [www.econ.jku.at/members/Schneider/files/publications/LatestResearch2010/ShadEcEurope31\\_Sept2010\\_RevisedVersion.pdf](http://www.econ.jku.at/members/Schneider/files/publications/LatestResearch2010/ShadEcEurope31_Sept2010_RevisedVersion.pdf).

<sup>13</sup> Data source for Greece: Eurostat. For Germany: Working Group on Regional Accounts and the Microcensus on Labour Force Participation.

Figure 1

### Consumption and Investment in Greece

Index 2000 = 100, chained volumes



<sup>1</sup> Including nonprofit organizations serving households.  
Source: Eurostat, calculations by DIW Berlin.

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There was rapid growth in consumption until the crisis.

year. Before disclosure of the actual budget crisis, expenditure was still visibly increasing dramatically. Up until early 2004, investments increased more rapidly than economic performance, which may well have been not least because of expenditure on the Olympic Games.<sup>14</sup> Despite a favorable economic situation, this was followed by flagging investment activity, which recovered as of summer 2005, but cooled off again only two years later. The development was driven by interest rates which were very low due to inflation (Figure 2).

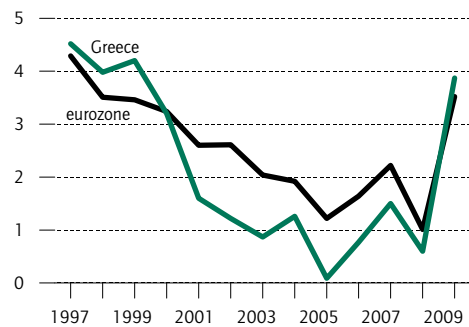
### ... Was Paved with Massive Foreign Trade Deficits

The primarily consumer-driven expansion was accompanied by an enormous increase in goods imports (Figure 3). Although goods exports, starting from a significantly lower level, also rose, growth lagged significantly behind that of imports. The decline in consumption was then followed by a sharp downturn in goods imports, which continues today due to constantly shrinking domestic demand. Exports also fell temporarily—but not to the same extent. From the end of 2009 to the first quarter

<sup>14</sup> The overall cost of the 2004 Olympic Games in Athens and other venues was just under nine billion euros, according to a statement of the former Greek Finance Minister George Alogoskoufis, that was provided by the Greek Embassy in Germany. It is not known how much of this is accounted for by investment—however, based on past experience with comparable major sporting events, this must be where the majority of funding came from. As a comparison, in 2003, Greece's total gross fixed capital formation was 40 billion euros.

Figure 2

**Real Interest Rates<sup>1</sup> in Greece and the Eurozone**  
In percent



<sup>1</sup> Ten-year yield on government bonds less the price increase according to the EU harmonized consumer price index.

Source: Eurostat, calculations by DIW Berlin

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Real interest rates in Greece were zero at times.

of 2011, the quarter for which the latest data is currently available, they have more or less stabilized.

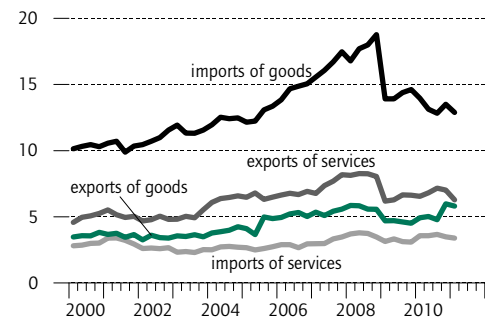
The opposite pattern emerges for services. Up until 2008, exports were able to increase at a greater rate than imports, but then, here, too, the financial crisis had a dampening effect. As regards the export of services, which are more significant than export of goods, these are primarily services provided by the tourist industry in Greece because visitors from abroad bring money into the country. From the end of 2009 onwards, both exports and imports stagnated. Therefore, as far as trade in services is concerned, there are no serious consequences of the crisis to be seen to date in Greece.

In the exchange of services, thanks to its tourist industry, Greece was able to record a surplus throughout the whole of the last decade, but this was far from sufficient to compensate for the enormous deficit in the trade in goods. According to Eurostat data, in the period from 2000 to 2010, the foreign trade deficit for goods and services amounted in total to one eighth of the GDP on average. In 2008, that is, before the crisis, it was even one seventh. By now, the deficit is falling because of the strong decline in goods imports; in the first quarter of 2011, the foreign trade deficit was still eight percent of the GDP.

The high foreign trade deficit was and is reflected in a high consumption ratio—that is, the share of private and public spending as a percentage of the GDP. Through-

Figure 3

**Greek Foreign Trade**  
In billion euros at current prices



Source: Eurostat, calculations by DIW Berlin.

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Growth of imported goods was strong until the crisis.

hout the last decade, it was around 90 percent. No other country in the EU attained such a high value: all states in the Community reached just under 80 percent, with a slight increase recently. The countries in the eurozone were slightly below this value.

**Strengthening of Export Base Essential**

The key to emerging from the crisis is to reduce external imbalances by improving economic performance. A strategy aiming at import substitution, in other words, replacing foreign imports with domestic production, can only have limited success, however. Experience with such development plans as attempted, for instance, in South America from 1930 to 1980 has, for various reasons not to be discussed here, been disappointing.<sup>15</sup> In the case of Greece, the prerequisites needed for such a strategy (in particular, an autonomous monetary and a foreign trade policy) are not in place. Moreover, the plan has become questionable in view of increasing international division of labor.<sup>16</sup> Therefore, the only option left is to strengthen the export base.

The extent of the export activity capacity of an economy is dependent on a number of factors: its production

<sup>15</sup> L. Hoffmann, *Imports substitution und wirtschaftliches Wachstum in Entwicklungsländern*. Tübingen: 1970; Boris, D. *Zur Politischen Ökonomie Lateinamerikas. Der Kontinent in der Weltwirtschaft des 20. Jahrhunderts*. Hamburg: 2001.

<sup>16</sup> J. Bhagwati, *In Defense of Globalization*. Oxford: 2004.

structure and thus the range of goods it can supply, its geographical proximity to significant sales markets, and also its size. Consequently, companies in big countries are less reliant on export trade than providers in small countries, thanks to their receptive domestic market. Accordingly, the empirical evidence shows a negative correlation within the EU between the size of a country (measured by the population) and the value of exports in goods and services in relation to the GDP (Figure 4). There are two notable exceptions—on the one hand, Germany, which has very high exports, given its size, and on the other hand, Greece, which has relatively low exports. Greece also has the lowest export rate of all the EU states.

Detailed information about the foreign trade position of Greece is available for the movement of goods. For all the product groups identified, imports were higher than exports (Table 1). It is not surprising that as a country poor in raw materials, Greece has a foreign trade deficit for fossil fuels (i.e., oil, gas, coal). However, its position concerning mechanical engineering products and vehicles is also very weak—imports in 2010 were six times higher than exports, and this disparity was even greater in previous years. The discrepancies for chemical products were significant, but not quite so great—mainly because very little was imported. The situation looks better for other manufactured goods (not further specified) which, however, only constitute a very small share of foreign trade. Greece is relatively strong in export of

comestible goods, but even here, the country shows a deficit—even in trade with countries in the EU and with Germany.<sup>17</sup> This is remarkable, since agriculture plays a relatively major role in Greece (Table 2).

The export base of an economy or region is made up of economic activities through which goods that can be traded between regions or countries are produced and sale of these brings in income from other areas. Such activities generally include, in particular, extraction of certain raw materials, a number of sectors of manufacturing, including processing of agricultural products, some business services and tourism. The statistics available make no distinction whether the goods produced are tradable or not internationally tradable. Nevertheless, information about the production structure can be deduced from the data.

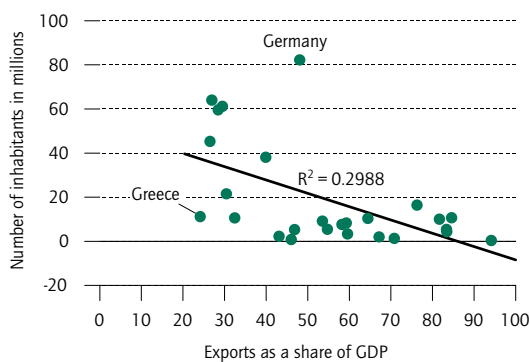
### Weak Industrial Base with Strong Domestic Market Bias

Manufacturing only plays a minor role in the Greek economy. In 2012, the entire manufacturing industry only generated one tenth of the country's value added. Only the small island state of Cyprus has an even lower figure, and only in countries such as the UK and France, which underwent significant deindustrialization, does the manufacturing industry produce the same share as in Greece.<sup>18</sup> The total Gross Value Added (GVA) of the Greek manufacturing industry is only marginally higher than the combined figure for the German federal states of Thuringia and Saxony-Anhalt. In 2010, industry value added was 1,800 euros per capita which was lower than in the German federal state of Mecklenburg-Vorpommern (2,000 euros).<sup>19</sup>

Within the manufacturing industry, production is relatively highly concentrated on a small number of products. The production of comestible goods alone generates a third of the total net value (Table 3). Wood processing, paper production and printing works are equally significant, as is the production of plastic, glass, and ceramic goods. However, these are all basic goods, which

Figure 4

#### Export Rates and Population in EU Member States<sup>1</sup> in 2010



<sup>1</sup> Excluding Luxembourg.

Source: Eurostat, calculations by DIW Berlin.

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The larger the country, the lower the export rate measured against economic output—Greece bucks this trend.

<sup>17</sup> According to Eurostat, Greece recorded exports of 2.6 billion euros and imports of 4.6 billion euros for agricultural products in trade with other EU states in 2010. According to the German Federal Statistical Office, there was also a trade deficit with Germany amounting to 200 million euros in the same year. German exports of agricultural products to Greece were about a third higher than imports.

<sup>18</sup> On the deindustrialization of France, see M.A. Chatillon (rapporteur), „Rapport D'information fait au nom de la mission commune d'information (1) sur la désindustrialisation des territoires," Ordinary Session of the Senate, 2010-2011, no. 408 (2011).

<sup>19</sup> Sources of data for Greece: Eurostat and for Germany: Working Group on Regional Accounts.

Table 1

**Greek Foreign Trade by Product Groups**

In million euros

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Exports</b>											
Comestible goods, tobacco	2 487	2 856	2 321	2 290	2 247	2 602	2 836	3 045	3 452	3 451	3 591
Raw materials	1 015	1 019	791	983	848	1 022	1 420	1 129	1 145	1 012	1 236
Fossil fuels, lubricants	1 751	1 281	924	753	865	1 322	2 171	2 105	2 056	1 363	1 809
Chemical products	1 030	1 145	1 075	1 469	1 637	2 029	2 177	2 365	2 340	2 107	2 364
Other manufactured goods	4 847	4 833	4 308	4 566	4 737	4 784	5 380	5 678	5 988	4 451	4 877
Mechanical engineering products, vehicles	1 592	1 536	1 440	1 542	1 666	1 768	2 092	2 291	2 474	2 016	1 938
Unassigned goods	1	179	154	229	306	360	450	591	481	275	465
<b>Total</b>	<b>12 723</b>	<b>12 848</b>	<b>11 013</b>	<b>11 830</b>	<b>12 306</b>	<b>13 888</b>	<b>16 525</b>	<b>17 204</b>	<b>17 937</b>	<b>14 675</b>	<b>16 280</b>
<b>Imports</b>											
Comestible goods, tobacco	3 880	4 096	4 066	4 273	4 541	4 662	5 134	5 749	6 151	5 726	5 534
Raw materials	893	1 025	1 054	1 073	1 194	1 234	1 395	1 817	2 002	1 240	1 420
Fossil fuels, lubricants	4 398	5 076	4 522	5 437	5 383	7 888	9 713	9 915	13 475	8 382	11 543
Chemical products	4 215	4 550	3 655	5 018	5 721	6 356	6 924	7 744	8 414	7 741	7 286
Other manufactured goods	9 783	10 030	8 955	9 820	10 914	11 049	12 963	15 089	16 097	11 823	10 700
Mechanical engineering products, vehicles	12 992	12 017	11 072	13 984	14 618	12 502	14 375	16 548	16 693	14 838	11 538
Unassigned goods	89	74	63	45	42	66	164	441	114	40	34
<b>Total</b>	<b>36 249</b>	<b>36 868</b>	<b>33 387</b>	<b>39 650</b>	<b>42 415</b>	<b>43 755</b>	<b>50 668</b>	<b>57 302</b>	<b>62 945</b>	<b>49 791</b>	<b>48 055</b>
<b>Balance</b>											
Comestible goods, tobacco	-1 393	-1 240	-1 745	-1 983	-2 294	-2 060	-2 298	-2 704	-2 699	-2 275	-1 943
Raw materials	122	-6	-263	-90	-346	-212	25	-688	-857	-228	-184
Fossil fuels, lubricants	-2 647	-3 795	-3 598	-4 684	-4 518	-6 566	-7 542	-7 810	-11 419	-7 019	-9 734
Chemical products	-3 185	-3 405	-2 580	-3 549	-4 084	-4 327	-4 747	-5 379	-6 074	-5 634	-4 922
Other manufactured goods	-4 936	-5 197	-4 647	-5 254	-6 177	-6 265	-7 583	-9 411	-10 109	-7 372	-5 823
Mechanical engineering products, vehicles	-11 400	-10 481	-9 632	-12 442	-12 952	-10 734	-12 283	-14 257	-14 219	-12 822	-9 600
Unassigned goods	-88	105	91	184	264	294	286	150	367	235	431
<b>Total</b>	<b>-23 526</b>	<b>-24 020</b>	<b>-22 374</b>	<b>-27 820</b>	<b>-30 109</b>	<b>-29 867</b>	<b>-34 143</b>	<b>-40 098</b>	<b>-45 008</b>	<b>-35 116</b>	<b>-31 775</b>

Source: Eurostat, calculations by DIW Berlin.

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are normally mainly traded regionally. The mineral oil processing industry plays a major role and a significant share of its production is exported.<sup>20</sup> The production of investment goods, on the other hand, is only of very minor importance.

A look at the goods with the highest turnover illustrates the strong domestic market bias of the Greek manufacturing industry even more clearly. Soft drinks, cigarettes, cheese products, milk and dairy produce, sausage products, fruit products, baked goods, and printed materials (particularly newspapers and magazines), cement, concrete, and other construction-related products (made from wood, plastic and metal, for example) and also packaging (made from paper or plastic) are all high-

ly significant. It is more difficult to clearly distinguish the sales territory for the various aluminum products (including beverage cans) produced in Greece because of its bauxite deposits. There are also the remnants of a ship building industry (particularly ship repair), a sector which is at a disadvantage throughout Europe due to competition from Asia. Additionally, Greece has a number of pharmaceutical companies but overall their sales volume is insignificant.<sup>21</sup>

A comparison of the Greek industry and production structure with that of imports shows that most imports are complementary—competition between domestic and imported goods is minimal.

<sup>20</sup> According to the Hellenic Petroleum's 2009 Annual Report, Greece's largest oil refining company, of the total 14.9 million tons produced in that year, 3.8 million went into the transit market and 2.3 million was exported.

<sup>21</sup> According to Eurostat, total pharmaceutical production turnover in Greece in 2009 was just under 900 million euros; by way of comparison, in Saxony-Anhalt the equivalent figure for the same year was 1.2 billion euros (Statistical Office, Saxony-Anhalt).

Table 2

**Selected Sectors' Share of the Total Gross Value Added in EU Member States**

In percent

	Agriculture, forestry and fisheries	Manufacturing industry / Production of goods	Hospitality industry	Programming activities, IT services	Architectural offices and engineering firms; technical, physical, and chemical testing and analysis	Research and development
	2010			2009		
EU	1.7	14.9	3.1	1.8	1.4	0.5
Belgium	0.7		1.7	1.7	1.2	0.3
Czech Republic	1.7	23.3	1.9	2.1	1.7	0.3
Denmark	1.3	11.5	1.4	2.1	1.8	0.6
Germany	0.8	20.9	1.6	1.7	1.4	0.4
Estonia	3.3	16.4	1.1	1.9	1.3	0.6
Ireland	1.7	25.8	2.1	1.4		0.1
<b>Greece</b>	<b>3.1</b>	<b>10.0</b>	<b>6.8</b>	<b>0.4</b>	<b>0.9</b>	<b>0.3</b>
Spain	2.6	12.9	7.2	1.2	1.3	0.1
France	1.7	10.0	2.6	2.2	1.6	1.0
Italy	1.9	16.0	4.1	1.6	0.9	0.6
Cyprus	2.4	6.4				
Latvia	4.5	13.4	1.5	1.4	1.3	0.2
Lithuania	3.3	18.8	1.4	0.8	1.0	0.3
Hungary	3.8	22.3	1.5	1.8	1.2	0.4
Malta	1.8	13.5				
Netherlands	1.8	12.3	1.7	2.2	1.5	0.4
Austria	1.5	17.5	4.9	1.4	1.3	0.2
Poland	3.8	16.8	1.2			
Portugal	2.2	12.7	5.0 <sup>1</sup>	1.0	0.9	0.4
Romania	6.7	22.0	1.9 <sup>1</sup>	1.0	1.0	0.3
Slovenia	2.5	19.4	2.2	1.5	2.1	0.6
Slovakia	3.1	23.6	1.1	1.8	1.2	0.3
Finland	3.0	18.0	1.7	2.2	1.7	0.6
Sweden	1.8	15.8	1.5 <sup>1</sup>	2.7		
UK	0.6	10.0				

<sup>1</sup> Data from 2009.

Source: Eurostat, calculations by DIW Berlin.

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The small-scale structure of the Greek economy is particularly striking. Almost half of all those employed in the manufacturing industry work for companies with fewer than 10 employees (Table 5).<sup>22</sup> In all other EU member states, small enterprises are much less prominent. On the other hand, there are barely any larger companies in Greece; businesses with 250 employees or more only provide a fifth of all jobs. This is further evidence that companies operating in the manufacturing industry in Greece have a strong domestic market bias as small enterprises generally have a sales radius that is confined to a smaller territory and often lack the capacity to operate on foreign markets.

### Prominent Role of Tourism

Official government statistics provide no direct information about the economic significance of the tourist industry. This is because a number of branches of the economy are linked with the tourist trade, but no details are available on the exact contribution tourism makes to these branches' economic output. Industries providing tourist services include parts of the transport industry and health economy. The retail trade also benefits. However, it is simplest to use statistical information from the hospitality industry as an indicator of tourism, even though this only captures part of the tourist industry's economic output, and some of the revenue from this branch of the economy also has to be assigned to domestic demand.

<sup>22</sup> Data is only currently available up to 2007. This should, however, be sufficient for this study as size structures only tend to change very slowly.



Table 3

### Structure of Gross Value Added in the Manufacturing Industry in 2010

In percent

Production or manufacture of...	Greece	EU
Comestible goods; beverages, tobacco	33.3	13.7
Textiles, clothing, leather, leather goods	4.7	4.1
Wood and paper, printed matter	10.3	7.3
Mineral oil	10.5	1.2
Chemical products (excluding mineral oil etc.)	4.3	6.9
Pharmaceutical products	5.6	4.6
Rubber and plastic products, glass, ceramics, stone and earth	8.0	9.0
Metal, metal products	12.5	14.2
Data processing devices, electronic, and optical products	0.6	4.4
Electrical equipment	2.5	5.4
Machinery	2.0	10.9
Cars and car parts; other vehicles	1.9	9.4
Furniture, jewelry, musical instruments, toys; repairs	3.8	9.0
<b>Total</b>	<b>100</b>	<b>100</b>

Source: Eurostat, calculations by DIW Berlin.

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Food production accounts for a third of the Greek net product.

Table 4

### Industrial Goods Manufactured in Greece<sup>1</sup> with the Highest Revenue in 2009

In million euros

Rank	Prodcom-code	Commodity group	Revenue
1	110	Beverages	1 436.6
2	105	Milk and dairy products	1 428.8
3	244	Aluminum and copper products	1 034.7
4	235	Cement, lime, plaster	949.7
5	212	Medicinal drugs	886.2
6	103	Products from fruit and vegetable processing	868.5
7	222	Plastic products	763.2
8	108	Sugar, confectionary, cocoa, coffee, convenience foods	712.0
9	107	Baked goods, pastry goods	700.4
10	241	Iron, ferrous products	688.7
11	181	Printed matter	646.6
12	251	Structural metal products, metal joinery elements	638.4
13	236	Concrete construction products, limestone, plaster	609.4
14	101	Products from meat processing	608.5
15	120	Cigarettes, tobacco	480.4
16	106	Flour, other milled products, starch	453.8
17	172	Products from paper and cardboard processing	426.0
18	204	Soap, detergents, personal hygiene products	351.1
19	331	Repairs (of ships, boats, machinery)	349.8
20	104	Food oils and fats, margarine	341.1

<sup>1</sup> Does not include goods produced by companies subject to confidentiality due to small sample size (fewer than three).

Source: Hellenic Statistical Authority, calculations by DIW Berlin.

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The commodity groups with the highest turnover by far are beverages and dairy products.

In 2010, the accommodation and food service activities accounted for almost seven percent of the Greek net product; this is more than twice the EU average. Among those countries for which information is available, only the Spanish tourist industry contributes a higher share. Approximately three quarters of the hospitality industry's output is produced by international tourism based on the ratio of overnight hotel stays by foreign tourists to total overnight stays. However, the hospitality industry does not represent the entire tourist industry; the German hospitality industry, for example, provides approximately 40 percent of services to foreign tourists.<sup>23</sup> If we transpose this share onto Greece, then foreign tourism generates between a tenth and an eighth of the country's net product. This means that foreign tourism is slightly more significant for the Greek economy as a whole than the manufacturing industry but considerably more important if we take the export base into account, as manufacturing industry output in Greece is focused primarily on the domestic market.

Foreign tourism is highly dependent on economic trends. This is why the global financial crisis had such a negative impact on business in Europe's key tourist countries (based on the number of overnight stays) (Table 6). During the economic upturn which preceded the crisis, on the other hand, mostly strong growth was observed. However, since the crisis, foreign tourism has begun to recover again—also in Greece. Moreover, there are certain developments, independent of economic trends, which are dictated by tourists' preferences: over the last decade, some key tourist destinations such as Spain have become less attractive to foreign visitors, while others, such as Italy, have managed to attract more foreign tourists. Greece has also experienced a slight upward trend.

Tourism is currently on a worldwide growth trend although growth of European tourism is below average.<sup>24</sup> Focusing on the Mediterranean region, tourism in eurozone countries such as Greece has to compete with those countries both outside the EU (Croatia, North Africa) and also within the EU but outside the eurozone (Bulgaria), which are able to provide tourist services at more favorable prices, and also with countries that have managed to capture market shares by significantly expanding capacity, such as Turkey.<sup>25</sup>

<sup>23</sup> F. Pavel, Wirtschaftsfaktor Tourismus. Ein modulares Tourismus-Satellitenkonto (TSA) zur Berechnung der Wertschöpfungs- und Beschäftigungseffekte der Tourismuswirtschaft in Deutschland. Berlin: 2012.

<sup>24</sup> See UNWTO, „Tourism Barometer,“ Statistical Annex, no. 10 (January 2012).

<sup>25</sup> Prime Minister of the Republic of Turkey, Investment Support and Promotion Agency of Turkey, Turkish Tourism Industry Report (2010).

Foreign tourism in Greece is hugely seasonal, which leads to low capacity utilization and relatively high costs. In the summer months from July to September, for example, the number of overnight stays by foreign tourists was over 30 times higher than in the months from December to February.<sup>26</sup> In other tourist areas in, for instance, Northern Europe and probably also overseas, seasonal fluctuations are not as dramatic. In Italy, the equivalent ratio is 4 to 1, and in both Spain and Portugal, it is 3 to 1. In Austria, the ratio is 1 to 1.

Labor costs play a comparatively minor role in the Greek hospitality industry. In 2010, wages only constituted a sixth of the hospitality industry's GVA, while in Spain this figure was a third, and in Italy, almost a half. This is only partially due to wage levels. According to Eurostat, the hourly wage in the hospitality industry in 2008 (the most recent available information) was 15.76 euros in Italy, 12.83 euros in Spain, and 11.39 euros in Greece. The hourly wage in this industry was only 8.49 euros in Portugal, for example, 4.00 euros in Turkey, and as low as 1.55 euros in Bulgaria. The low share of labor costs in Greece is mainly a result of a relatively large number of self-employed people working in the hospitality industry. In 2010, half of all those working in the hospitality industry in Greece were self-employed—in the EU as a whole, this figure was a sixth, in Italy a third, and in Spain a quarter. Prices are, therefore, heavily dependent on self-employment earnings and building costs.

### Very Few High-Quality Business Services

Another component of the export base are certain business services, including consulting and engineering services which are sold abroad, and also software development or commercial research and development. These are essentially high-value goods. In Greece in 2012, engineering firms generated 0.6 percent of the total GVA and research and development companies 0.3 percent, which is very low by international standards. There are no statistics available for Greece on the sales in these sectors from a regional perspective. In Germany, engineering firms have an export ratio of 16 percent (2009 sales revenues from customers based abroad), and commercial research and development companies exports a fifth of all their services.<sup>27</sup> Even if Greece realized the same export rates as Germany, this sector would still only play a rather minor role in Greek foreign trade.

<sup>26</sup> Calculation based on Eurostat data. In Austria, for example, the ratio is 1:1.

<sup>27</sup> German Federal Statistical Office, „Dienstleistungen. Strukturhebungen im Dienstleistungsbereich. Erbringung von freiberuflichen, wissenschaftlichen und technischen Dienstleistungen 2009," Series 9, Row 4.4 (2009).

Table 5

### Distribution of Employment in the Manufacturing Industry by Company Size in 2007

Share in percent

	Companies with ... employees				
	1 to 9	10 to 19	20 to 49	50 to 249	250 and above
Greece	46	4	9	20	21
Cyprus	32	14	17	23	13
Italy	25	15	16	21	22
Portugal	21	12	19	29	18
Spain	18	11	20	24	27
Poland	18	4	9	28	42
Netherlands	16	9	15	28	32
Hungary	14	7	11	25	43
Slovenia	13	5	9	27	46
Czech Republic	13	6	10	27	44
France	12	7	12	22	47
Belgium	12	6	13	24	45
UK	11	7	12	26	43
Sweden	11	6	10	23	50
Austria	10	7	11	26	46
Latvia	10	9	17	38	27
Estonia	10	8	17	38	27
Bulgaria	10	7	15	35	33
Lithuania	10	8	15	35	33
Finland	9	6	10	24	51
Romania	8	6	12	29	46
Denmark	8	6	12	28	46
Germany	7	8	7	25	53
Ireland	6	6	13	30	45
Luxembourg	5	5	8	23	60
Slovakia	5	5	8	26	56

Source: Eurostat, calculations by DIW Berlin.

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The Greek manufacturing industry is strongly characterized by small enterprises.

However, as engineering services are often linked with the supply of goods (in plant construction, for instance), we can assume that this sector has a low rate of export in Greece. Research services are also frequently correlated with the demand for manufacturing goods. Greece also only has a very small number of software production and IT service companies.

### Small-Scale Economic Structure

Economies of scale play a significant role in international competition as large-scale production is generally accompanied by lower marginal costs. National economies where small enterprises are of central importance are, therefore, invariably at a disadvantage—provided that the small companies do not represent a wave of start-

Table 6

**Overnight Stays Made by Non-Residents in Tourist Accommodations**

	Greece	Spain	Italy	Portugal	France	Austria	Germany
	Millionen						
2000	47.0	233.9	140.4	25.8	108.8	64.5	42.4
2001	42.5	231.4	146.7	25.2	110.3	65.5	40.6
2002	41.0	220.7	145.6	25.1	113.2	67.3	40.4
2003	40.4	217.9	139.7	24.9	103.7	68.2	41.6
2004	38.8	209.1	141.2	24.6	104.2	68.3	45.4
2005	40.7	209.5	148.3	25.4	108.0	69.7	48.2
2006	43.1	224.5	156.9	26.8	105.9	70.0	52.9
2007	48.1	225.5	163.5	28.7	108.6	71.5	54.5
2008	48.0	223.8	161.8	28.1	107.0	74.7	56.2
2009	46.7	200.6	159.5	25.0	98.7	72.2	54.1
2010	49.0	213.3	165.2	25.4	120.4	66.8	59.7
	2000 = 100						
2001	90	99	104	98	101	102	96
2002	87	94	104	97	104	104	95
2003	86	93	99	96	95	106	98
2004	83	89	101	95	96	106	107
2005	87	90	106	98	99	108	114
2006	92	96	112	104	97	109	125
2007	102	96	116	111	100	111	128
2008	102	96	115	109	98	116	133
2009	99	86	114	97	91	112	128
2010	104	91	118	98	111	104	141

Source: Eurostat, calculations by DIW Berlin.

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### Greek tourism picked up again slightly in 2010.

ups leading to the beginning of a growth process, which is not the case in Greece. The structure of Greek enterprises represents a gradual development.

As has already been shown, small enterprises play an exceptionally important role in the Greek manufacturing industry. As can be seen from the rate of self-employment as a share of total employment, this phenomenon also extends into other branches of the Greek economy. In 2010, the aforementioned rate of self-employment (including family workers) as a share of total employment was 30 percent (Figure 5).<sup>28</sup> If public administration is excluded, this figure is almost 40 percent (Figure 6). This represents the highest rate in the EU. All other member states have a far lower self-employment rate. There is also evidence that a higher self-employment rate is generally an indicator of economic underdevelopment as there is a slight negative correlation

between the self-employment rate and economic growth per capita in EU member states.<sup>29</sup>

Self-employment rates are particularly high in agriculture and fisheries, the hospitality industry, professional and also scientific and technical services, trade, and the transport industry. In the construction industry, the rate is lower but even here, there is still one self-employed worker for every employee. Even in manufacturing, the ratio is three to one. As expected, there are barely any self-employed workers in the energy and water supply sector.

## Conclusion

For a long time, Greece has been living beyond its means. Consumption of goods has far exceeded economic output. This development was not triggered by entry to

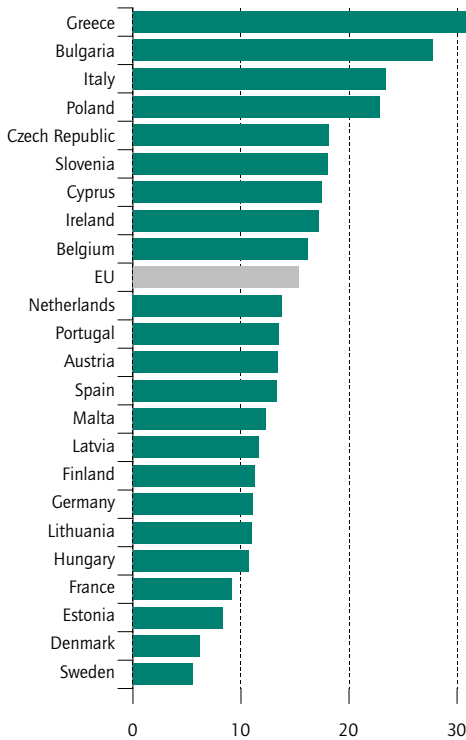
<sup>28</sup> The share has fallen over the last decade; in 2000, it was two percentage points higher.

<sup>29</sup> K. Brenke, „Solo-Selbständige in Deutschland – Strukturen und Erwerbsverläufe. Untersuchung für das Bundesministerium für Arbeit und Soziales,“ (in preparation) (2012).

Figure 5

**Self-Employment<sup>1</sup> as a Share of Total Employment in 2010**

Share in percent



<sup>1</sup> Including family workers.  
Source: Eurostat, calculations by DIW Berlin.

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The Greek self-employment rate as a share of total employment is considerably higher than average.

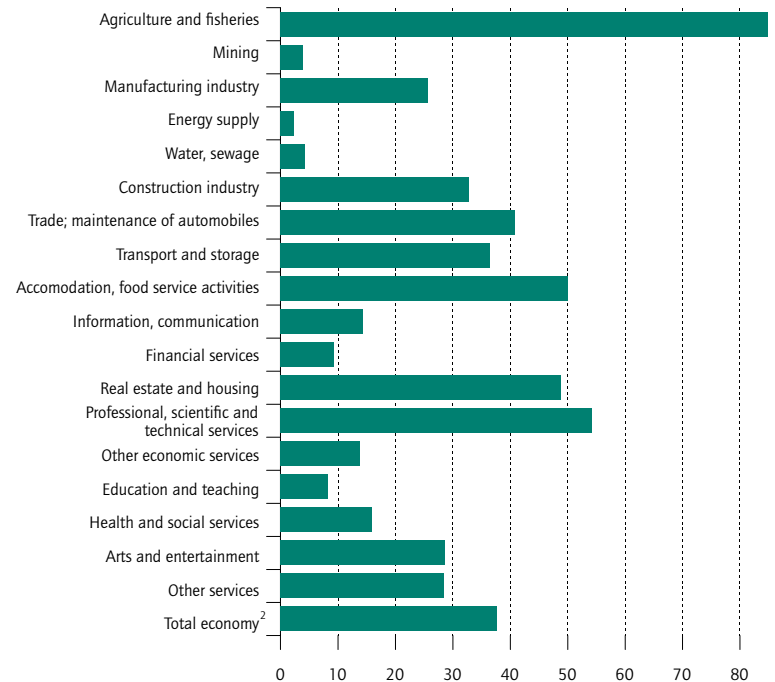
the eurozone, but is rather a consequence of the significant foreign trade deficits which, according to official data recently published by the Hellenic Statistical Authority, have been accumulating at least since the mid-90s.<sup>30</sup> Entry to the euro simply accelerated the excessive consumption of goods, as a lax monetary policy and the banks' generous lending provided incentives for a large increase in private and public consumption. Evidently, the government was responsible for channeling money from abroad and then redistributing it. When, at the end of 2009, it became clear that public debt was far higher than initially indicated, capital market operators lost confidence in the Greek government. However, this was just the trigger. At some point in the very near future, there would have been a proverbial straw to

<sup>30</sup> The oldest data that could be found were for 1995; at that time, the current account deficit was a substantial seven percent of the GDP.

Figure 6

**Self-Employment<sup>1</sup> as a Share of Total Employment in Selected Industries in Greece in 2010**

Share in percent



<sup>1</sup> Including family workers.  
<sup>2</sup> Excluding public administration, social security, defense.  
Source: Eurostat, calculations by DIW Berlin.

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The rate of self-employment is particularly high in the agriculture and hospitality sectors.

break the camel's back in any case. The eurozone member states and international institutions are essentially on track to becoming Greece's only creditors—apart from loans from private investors, which, since the reduction in Greek debt, are tied up in the long term. Re-financing of the country's capital market is currently not an option and this will continue to be the case in the medium term.

This raises the question as to why Greece was even granted credit for such a long time. On the one hand, entry to the eurozone played a part as it meant that creditors were no longer exposed to the risk of devaluation of the national currency and thus also state debt. On the other hand, as is so often the case in history, national insolvency was never deemed to be credible—especially not in Europe.

Even during the current crisis, Greece is continuing to accumulate debts abroad because it still consumes and invests more than it produces in spite of the fact that consumption has already been dramatically reduced. If consumption were to be cut even further, production, which has a strong domestic market bias in Greece, would also fall and the economy would find itself in even more of a downward spiral. Measures to consolidate government finances should, therefore, not be put on the back burner. Such steps include the development of a more effective administration and an efficient system of taxation as well as the privatization of state property. Infrastructure facilities can only be privatized as far as regulatory policies allow. Further tax increases are also an option, particularly those focusing on high income and wealth, which are, therefore, less likely to have a damaging effect on overall economic demand. However, such measures can only alleviate Greece's problems.

First and foremost, it is essential that the country's economic base is strengthened. Due to its large external deficit, it is not enough for Greece to be able to balance its export trade—in the medium-term it needs to accumulate a surplus in order to be able to pay off its remaining debt. Economists who claim that the dramatic wage increases in Greece, and particularly the wage restraint in Germany, undermined the competitive position of Greek producers, have not put their finger on the real problem. Entire national economies do not compete with one another, it is only sectors or industries that do this, and Greece simply has an extremely limited export base.

An important component of the Greek export base is tourism, which, in comparison with other Southern European countries, has experienced rather favorable development.<sup>31</sup> Wages do not play a particularly dominant role in this sector, particularly in Greece. The general price level, which, in turn, depends on the exchange rate poses a greater problem—in comparison with Turkey, for example. As a massive wage reduction is not really possible, the price level can be beaten down at best through currency devaluation. Other measures to extend the season could have a positive impact on Greek tourism (expansion of health-related tourism, for example). However, such measures require significant investment. It is unlikely that tourism could become the main pillar of the export base although the situation may differ for a small number of Greek regions. Furthermore, Greece has very few attractive city tourism destinations, and city tourism is booming worldwide.

**31** H. Flassbeck and F. Spieker, „Die griechische Krise hat deutsche Wurzeln,“ *Financial Times Deutschland*, December 11, 2009; Horn, Lindner, and Niechoj, „Schuldenschnitt für Griechenland.“

The industrial base is extremely weak and manufacturing industry production is primarily focused on the domestic market. Small-scale industries are always particularly strongly focused on local sales, as, all over the world, there is demand for goods which are, to a certain degree, produced locally (perishable foodstuffs, daily newspapers, or goods with high transportation costs such as concrete components). Greece's trade in goods with Germany, for example, is clearly complementary and, because there is very little reciprocal competition, the weak wage development in Germany does not place the Greek automobile industry under pressure, as it simply does not exist. Consumers are even less likely to purchase olive oil produced in Germany. Only the poor development of mass income in Germany and the resulting fall in consumer demand may have had an impact on Greece. Wage development in Germany is only likely to have caused problems for countries which have substitutive trade relations with Germany i.e., countries producing goods which are similar to those manufactured in Germany for export.

It is essential for Greece to broaden its industrial base. As the situation in the East German federal states illustrates, this is a long-term goal and achieving this has enormously high cost implications. However, comparable financial resources are simply not available. If such resources were to be mobilized by the EU, other countries would then also request similar assistance—particularly as unilateral financial support for the Greek economy would lead to competitive disadvantages in other regions. Any comparison with eastern Germany is invalid inasmuch as the focus there was on reindustrialization whereas in Greece progress first needs to be made with industrialization. The eastern German states, and also some eastern European countries, already had an industrial tradition and thus had access to extensive knowledge, significant qualified industrial labor force potential, and an industry-oriented infrastructure, particularly in higher education. The Greek economy possesses nothing of the kind. The manufacturing industry, like other branches of the economy, is driven to a great extent by small enterprises. The employment structure with its high self-employment rate is more typical of emerging markets. The preconditions for the necessary industrialization are, therefore, not exactly in place.

Over the last decade, on average, aggregate financial assistance flowing from the EU into Greece amounted to over two percent of economic output. This assistance was provided by EU programs concentrating on redistribution, or, in the case of individual industries, on preserving existing structures—from both a regional and social point of view. It has gradually become clear

that Greece, like a number of other countries, needs a growth policy as a matter of priority.

Greece will continue to be a problem child for Europe for some time. On the one hand, the country carries an enormous debt burden which must be rapidly reduced. On the other hand, Greece needs to expand those parts of its economic base that would strengthen its position in the international division of labor and this involves a protracted process. A significant reduction in the cost and price levels in Greece in comparison with other countries would certainly help the situation. In any event, a sustainable growth concept is essential for Greece. This is something that can only be developed and implemented by the country's national government. The international community will gradually become the country's only creditor, and Greece will be reliant on long-term drip-feeding and external support.

**Karl Brenke** is a Research Associate at DIW Berlin | [kbrenke@web.de](mailto:kbrenke@web.de)

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DIW Berlin—Deutsches Institut  
für Wirtschaftsforschung e.V.  
Mohrenstraße 58, 10117 Berlin  
T +49 30 897 89 -0  
F +49 30 897 89 -200

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