Centrum für Europäische Politik

cep**Study**

CEP Default Index

Creditworthiness Trends in Euro Countries

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Key Issues

The problem

- The euro zone currently finds itself in an existential crisis. The increasingly dramatic rescue measures that have been taken to save over-indebted euro states from insolvency have failed, without exception, to calm the situation.
- This is due to a serious error of judgement on the part of politics and the financial markets on the real roots of the crisis. The cause for the crisis is mainly seen in the member states' debt levels. However, this explanation is clearly too simple.
- The real problem is the erosion of the creditworthiness of the affected economies *overall*: having increasingly lost their competitiveness, over the years they have spent more on imports than they have earned through exports. The resulting current account deficits were funded through foreign credits.
- In order to pay back the credits, the economies had to earn more than they spent. In other words, they have to achieve current account surpluses. Due to a lack of competitiveness this is not possible. The result is an erosion of creditworthiness.
- The government is just the largest debtor in an economy. However, for a reliable evaluation of creditworthiness, not only the government budget must be examined but also the total economic situation.

CEP Default Index

- The CEP Default Index measures the development of the individual countries' capability to pay back foreign credits – in other words, their creditworthiness.
- The Index assesses the net lending or net borrowing of the total economy (NTE) and the resources used to increase the physical capital stock for a certain period. Economies are sub-divided into four risk categories.
- Countries with current account surpluses export capital and thus are net lenders. As they do not need any foreign credits, they are not at risk of insolvency (risk category 1).
- Countries with current account deficits need foreign capital and therefore are net borrowers. To determine their medium-term creditworthiness, it is vital to know whether or not they are using the borrowed capital to increase their capital stock or for consumption. In the first case additional value is created which can be used to pay back external credits. In the latter, however, external credits are simply eliminated through consumption.
- A positive value on the CEP Default Index indicates that net additions to the physical capital stock exceed the net borrowings. In this case, it is not possible to say in general if the creditworthiness of an economy is under threat (risk category 2).
- A negative value on the CEP Default Index indicates that the net borrowings exceed the net additions to the physical capital stock. Therefore the country concerned consumes not only 100% of the domestic income but also a part of the net borrowings on top of that. Such a trend threatens solvency (risk category 3).
- A CEP Default Index that is negative for three or more years means that the solvency risk has become firmly established (risk category 4).

- For the individual euro countries the following applies:

Ranking	Country	CEP Default Index 2010	Net borrowing or net lending of the total economy 2010	Assessment	Trend
Category 1: Countries with positive CEP Default Index and positive NTE					
1	Estonia	+12.3	+ 9.6		
2	Luxembourg	+10.7	+ 7.3		
3	Germany	+ 7.8	+ 5.2		
4	Netherlands	+ 7.8	+ 6.0		
5	Austria	+ 6.9	+ 3.4		
6	Belgium	+ 4.8	+ 2.6		
7	Finland	+ 4.4	+ 2.9		
Category 2: Countries with positive CEP Default Index and negative NTE					
8	Slovenia	+ 3.4	– 1.1		
9	Slovakia	+ 0.7	– 0.6		
10	Ireland	+ 0.5	– 0.8		
Category 3: Countries with negative CEP Default Index last year					
11	France	– 0.6	– 3.8		
12	Spain	– 1.6	– 9.2		
13	Italy	– 2.5	– 4.3		
Category 4: Countries with negative CEP Default Index in the last three years					
14	Malta	– 0.6	– 3.1		
15	Cyprus	– 4.4	– 9.4		
16	Portugal	– 7.5	– 8.4		
17	Greece	– 11.6	– 10.1		

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1 Euro Crisis

For some time now, the euro zone has been hit by one crisis after another. It began on 20 October 2009, when the newly elected Greek government drastically revised its budget deficit upwards. Despite the promise to quickly reduce the deficit, the rating agencies Fitch and Standard & Poor's downgraded Greece's rating from A- to BBB+. Financial markets started losing confidence in Greece's solvency and credit default swaps for Greek government bonds became more expensive. Back then, the German government categorically refused to provide financial aid to Greece. Once it became clear, however, that Greece would only be able to refinance itself with an interest rate on the capital market that the government could not pay, the Euro Group declared on 25 March 2010 that if necessary, bilateral credits would be granted to Greece in order to stop the alleged speculations against the country. The hope was that this would calm the markets so that the risk premiums for Greek government bonds would drop and Greece would not have to make use of financial aid. However, when this desired effect did not happen – in fact, risk premiums rose even further – the Greek government applied for the disbursement of financial aid on 23 April 2010. On 2 May, the International Monetary Fund, the European Central Bank, the EU Commission, the Euro Group and the Greek government agreed upon the extent, duration and conditions of the rescue package for Greece. Thereby, the Greek government is to receive – bilaterally directly from the other euro states and the IMF – credits to the amount of 110 million euro by 30 June 2013. The intention of the rescue package was to allow Greece to return to the capital market in 2012. Moreover, it was agreed that the aid funds will only be paid out if Greece complies with the saving targets stipulated under the rescue package. The German Bundestag adopted the corresponding law on 8 May 2010.

As the heads of states and governments feared that the crisis in Greece would spill over into other euro states, in the night of 8 to 9 May 2010 they agreed to set up a 750 billion euro safety net which was formally adopted by the ministers of finance on 10 May 2010. The safety net consists of credit lines from the International Monetary Fund (250 billion euro), the European Union (60 billion euro) and the euro states (440 billion euro), and it is to expire on 30 June 2013. This safety net was also justified with the claim that speculations must and would be stopped and therefore would not be made use of. Both claims proved false. On 21 November 2010, Ireland was the first country to apply for aid from the safety net and received 85 billion euro. Once again it was argued that speculations on the financial markets would now cease and that no further country would require help. And once again the predicted easing of the markets failed to materialise. Moreover, it quickly became clear that the effective credit volume was much lower than had previously been expected. This led to concerns about whether the safety net could actually fulfil its function to ease the markets, especially as increasingly doubts were being raised as to the solvency of Portugal and Spain, and in some cases of Italy and Belgium, too. It also became clear that the debt crisis would not be overcome by 30 June 2013. Therefore, on 16 December 2010, the euro states agreed to establish an even larger and permanent safety net: the European stability mechanism. Its key features were adopted on 24 March 2011; it is to provide for an effective credit volume of 750 billion euro as of July 2013.

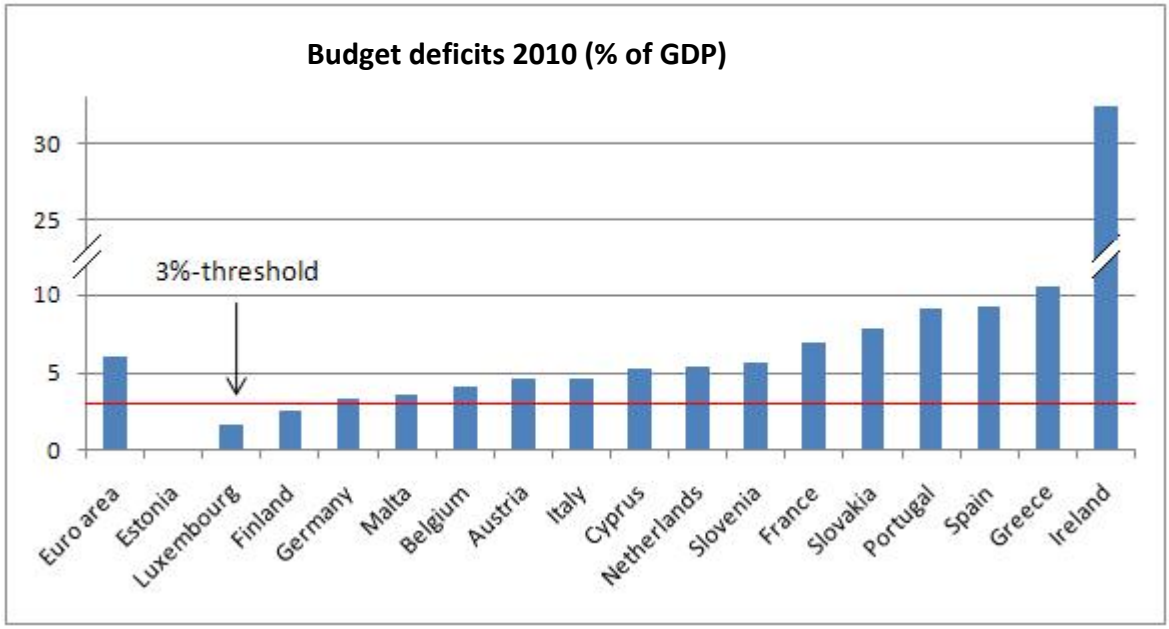
On 6 April 2011, Portugal followed Ireland in applying for financial aid from the preliminary euro safety net; on 8 May 2011, 78 billion euro were granted. At the same time, it became clear that Greece had failed to comply with the stipulated savings measures and would also not be able return to the capital market in 2012. Therefore, on 24 June 2011, a second rescue package to the sum of 120 billion euro was agreed upon for Greece.

The trend of events described above shows that the euro states have put together ever larger packages and that more and more states have been granted financial aid, but without the effects predicted by the politicians, namely the calming of the financial markets and the reduced risk premiums for government bonds, ever materialising.

Assuming that the politicians did not make their forecasts and promises against their better judgement, one cannot help but ask how they could have been so systematically and so dramatically so wrong.

The reason for the European debt crisis is generally considered to be the over-indebtedness of state budgets. State indebtedness is indeed a problem, but this does not affect only Greece, Ireland and Portugal. For instance, in 2010 only Finland, Luxemburg and Estonia succeeded in keeping their national deficit below the threshold of 3% of the gross domestic product (GDP), the benchmark stipulated by the Stability and Growth Pact (cp. Figure 1). The point is that the deficit of those euro states whose solvency is at stake is extremely high. Ireland, in particular, goes beyond all bounds with a deficit of 32.4% of GDP. Yet also the government deficits of Greece (10.5%), Spain (9.2%) and Portugal (9.1%) exceed the 3% threshold more than threefold.

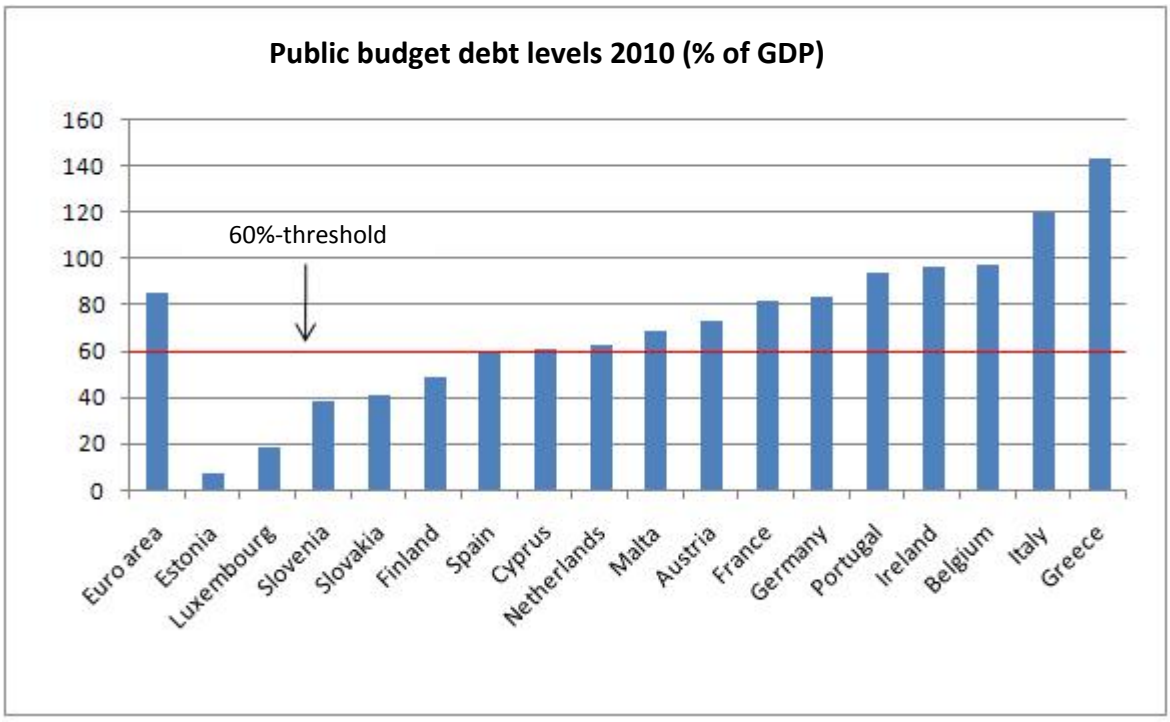
Fig. 1 Budget deficits in the euro zone member states



Source: Eurostat Database.

With regard to the debt level, the situation is a little bit different: Although in 2010 only five euro zone countries remained below the threshold set by the Stability and Growth Pact of 60% of GDP, namely Finland (48.4%), Slovakia (41.0%), Slovenia (38.0%), Luxembourg (18.4%) and Estonia (6.6%) (cp. Fig. 2). However, as well as Greece (142.8%), Ireland (96.2%) and Portugal (93.0%), Belgium (96.8%) and Italy (119.0%) also have debt levels of almost or even more than 100% of GDP. To date, both states have only had to pay very small risk premiums on their government bonds as the financial markets still rate them as being solvent. Spain, however, which has a relatively low debt level at 60.1%, must currently pay a higher risk premium than Belgium, France and Germany, despite the fact that these states are more heavily in debt.

Fig. 2 Public budget debt levels in the euro zone member states



Source: Eurostat Database.

It is almost incomprehensible why when evaluating the solvency of euro states, short-term considerations of new indebtedness are given priority over long-term considerations of total indebtedness. However, this is not the ultimate cause of the numerous systematic and dramatic misjudgements made by politicians with regard to the impact of their rescue actions.

The fundamental cause for these misjudgements is that awareness of crisis phenomena – both in politics and the public, even in the financial markets – is, to put it mildly, generally seriously limited.

Firstly, the erosion of the creditworthiness of government budgets is due to not only irresponsible borrowing by national governments and parliaments but also to the fact that the states concerned have lost the ability to finance themselves sufficiently through the taxation of the national economies. The generally held belief in the past that states have unlimited creditworthiness is based on the assumption that by virtue of their powers of taxation they could make available almost any amount of money from citizens and companies with which to pay back foreign state credits. Today this correlation fails when economies themselves face severe problems. A state which suddenly loses its source of taxation due to a lack of prosperity in the economy no longer has access to those securities which in the past sufficed for private and international creditors to rate them as being creditworthy.

Secondly, state indebtedness in the countries affected is usually accompanied by increasing foreign indebtedness, even in large parts of the private economy especially banks. This private capital demand is, in particular, the consequence of current account deficits financed through borrowings abroad. Continuing current account deficits require more and more credit borrowings from abroad and thus lead to an indebtedness of the national economy that grows further from year to year. The foreign credits can only be paid back if an economy succeeds in generating profits. This requires current account surpluses. Most of the countries affected are not able to do so.

Both phenomena, which hardly figure at all in the debate among politicians, have their origin in massive real economy distortions, which result in increasing structural loss of competitiveness of the affected economies.

In order to assess which state will stay solvent on the private capital market and for how long, and which state has already lost its creditworthiness – such as Greece, Portugal and Ireland – and will return to the capital market, it is indispensible to take into account not only the state budget but also the aggregate economic situation, namely the economy as a whole. This is the only approach which provides information as to how the solvency of the single euro states will develop in the country examined.

2 Function of the CEP Default Index

The CEP Default Index measures the development of creditworthiness on the basis of aggregate economic trends in individual euro states. It describes for which economies the risk of insolvency is growing and for which it is decreasing.

Creditworthiness means the ability of an economy to pay back foreign credits duly, i.e. to pay the interests and repayment in due time.

In contrast to the existing public debate, not only the deficits of state budgets are to be taken into account; instead, they are more embedded in the larger context of the economies' performance as a whole. The aim of the CEP Default Index is to make it possible to issue concrete statements on whether the solvency of a euro country is increasing or decreasing.

3 Structure of the CEP Default Index

An economy is solvent if the interests and repayment of foreign credits are paid back in due time. This definition forms the basis of the CEP Default Index. The CEP assumes that net borrowing should not be used for consumer expenditure but to increase the physical capital stock. In other words, foreign credits should be used for capital formation, from whose additional value creation the credit's interests and repayment can be paid back.

The CEP Default Index compares two values: the net lending or net borrowing of the total economy (NTE), which represents the capital requirements of an economy and the resources used to increase the physical capital stock, that is capital formation (I^c):

$$\text{CEP Default Index} = \text{NTE} + I^c$$

For the sake of comparability between the individual euro states, all values are indicated as a percentage of gross domestic product (GDP).

After a detailed examination of the two components of the Index (3.1 and 3.2), there follows an explanation as to why it makes sense to reduce the Index to these two flows (3.3). Then the solution to a statistical problem is presented (3.4), the risk categories of the Index are explained (3.5) and the connection to government indebtedness is established (3.6). Finally, for the countries affected, possible solutions are outlined for how to regain creditworthiness (3.7).

3.1 Net lending or net borrowing of the total economy (NTE)

For the overall economy, the same rules apply as for private households: if you spend more than you earn, you have to take out a loan. If you apply this rule to macroeconomic categories, this means that if within an economy the demand for consumer and investment goods and services exceeds those available under domestic production, the excess demand must be covered by imports. In such a case, the imports of an economy exceed the exports. The economy concerned then uses the savings of another economy which does not fully use its own total economic output to meet the domestic demand. The precondition for covering the excess demand for goods and services through import surplus is that the economy is able to borrow foreign capital to finance excess demands.

The imports and exports of goods are included in the trade account, those of services in the service account. Both are components of the current account. Further elements of the current account are the income account and the current transfers account. The income account includes income from the export of production factors (labour and capital) and expenditure on the import of factor services. This is the remuneration for domestic production factors which were deployed abroad and/or the remuneration of foreign production factors which are deployed inland. This includes capital income as well as wages and salaries of border workers. The current transfers account covers contributions to international organisations, e.g. the Member States' contributions to the EU budget and migrants' remittances to their home countries. When these two accounts are balanced, the import surplus of goods and services leads to a current account deficit and thus to a corresponding demand for foreign capital.

Although the current account deficit mainly corresponds to the capital demand satisfied abroad, it is not completely identical; capital transfers such as donations and debt relief must be included here. The inclusion of the capital transfers leads to the net lending or net borrowing of the total economy (NTE).

The NTE can be calculated as follows[1]:

exports of goods and services
– imports of goods and services
+ revenues from exports of production factors
– expenses for the import of production factors
+ current capital transfers from abroad
– current capital transfers to foreign countries
= current account balance
+ one-off capital transfers from abroad
– one-off capital transfers to foreign countries
= net lending or net borrowing of the total economy (NTE)

As the one-off capital transfers are normally very low, the following approximate rule-of-thumb applies: countries with current account deficits are net borrowers, countries with current account surpluses are net lenders.

[1] Cp. Deutsche Bundesbank, Balance of Asset Transfers, www.bundesbank.de/bildung/bildung_glossar_b.php.

The NTE is a flow measuring changes in an economy's foreign indebtedness. It does not provide any information on the exact size of the debt.

National accounts and the European Statistical Office Eurostat calculate the NTE differently[2]: net capital formations are deducted from the available income that is not consumed within the pertaining period, i.e. the real saving. The balance is then cleared from the rendered and the received capital transfers, and the acquisition less disposal of non-financial non-produced assets.[3] The result is also the net lending or net borrowing of the total economy (NTE):

savings

– net capital formations

+ received capital transfers

– rendered capital transfers

– acquisition less disposal of non-financial non-produced assets

= net lending or net borrowing of the total economy (NTE)

The CEP Default Index is based on the calculation method of the European Statistical Office Eurostat, because their empirical data were also used.

The current account is of crucial importance: economies with a current account deficit depend on foreign capital in order to finance it. They have a negative NTE, i.e. they are net borrowers. In such a case, the NTE measures the volume of foreign capital that flows into an economy from abroad and thus finances its current account deficit upon the deduction of the one-off capital transfer. Economies providing other economies with capital have a positive NTE e.g. they are net lenders.

Overall economic net lending increases the solvency of an economy, as the international investment position increases. Economies with a structurally positive NTE are therefore not directly jeopardised by insolvency.[4] On the contrary, they have so much capital they can even make it available to other economies.

This also has a positive impact on the solvency of the government as a debtor. The correlation between the NTE and the solvency of a state becomes clear where the NTE is split into the government's net lending or net borrowing and the net lending or net borrowing of the private sector. While the government is net borrowing in almost all economies, the private sector is net lending – at least in countries not threatened by insolvency. In such a constellation, a positive NTE means that the foreign borrowing of a government is overcompensated for by the capital exports of the private sector. In the case of a positive NTE, private sector of a country can finance the deficit of a state. In this event, the government does not depend on international capital markets to finance its budget deficit. This grants high creditworthiness even to an extremely indebted state, for by virtue of its powers of taxation it can tax the income of the citizens and hence obtain liquidities to pay its debts.

For net borrowing economies the said correlations naturally do not apply. If the domestic demand for goods and services exceed domestic production – meaning more is imported than exported –

[2] Due to statistical inaccuracies, both calculation methods might lead to slight deviations in some countries.
[3] These positions correspond to the one-off asset transfers in the above calculation on current accounts. Differing values are a result of statistical inaccuracies.
[4] An indirect threat might be the result of domestic banks granting large volume credits to foreign countries which become defaulted, thereby putting the domestic banking system at risk of collapsing.

then such an economy runs up debts with other economies. Thus a net borrowing economy uses foreign savings in order to cover its own demand for goods and services.

Consequently, for economies with a negative NTE, even a positive net lending of the private sector is not enough to cover the government's deficit. In an economy with a negative NTE, the government depends on foreign capital.

In the case of a net borrowing, it is questionable whether not only the government but also the whole economy can be deemed creditworthy. This mainly depends on whether net borrowings are used for consumption expenditure or for investments. Only the latter increases the GDP which can be used to pay back foreign credits. Therefore, the CEP Default Index compares the NTE of the evaluated economy with its investment behaviour.

3.2 Capacity increasing investments (I^c)

3.2.1 General issues: use of capital imports

Net borrowing countries finance a part of their demand for goods and services with foreign savings. If this is only a temporary, short-term phenomenon and the NTE becomes positive afterwards, then foreign investors do not have to worry about the solvency of the economy. In the case of a long-term net borrowing, however, it is important what the borrowed capital is spent for. This can be divided into three large categories:

Foreign direct investments. In this case, the foreign investor invests directly in the home market, for instance by buying or building a factory. Thus the investor creates a productive countervalue intended to return the capital invested; this is the investor's entrepreneurial risk. Therefore, direct investments have no direct impact on whether or not an economy is creditworthy. This category includes the acquisition of foreign shares and corporate bonds as well as portfolio investments.

(1) **Capital formation financed through foreign credits.** In this case, foreign investors grant credits to domestic debtors – e.g. the domestic state, bank or company – which the domestic debtor uses for an investment project. Investments can increase the capital stock of an economy and thus improve its efficiency and productivity. If this subsequently leads to such growth in production potential that the credit can be covered, then the creditworthiness of the economy is not affected by a net borrowing; in the long term it can even have a strengthening effect.

In particular, emerging and recovering economies often show a huge net borrowing, due to in highly active investments activities through foreign credits. For these economies it is likely that the net borrowing is only temporary and does not put the creditworthiness of the economy at risk.

(2) **Domestic consumption financed through foreign credits.** In this case, foreign credits are not invested but used for consumption purposes. This means that domestic capital stock is not increased and no growth is created to cover the credit. On the contrary, the goods paid for from credits are eliminated through consumption.

The NTE does not differentiate between these three categories of foreign capital use. This is further aggravated by the fact that apart from direct investors, foreign investors are usually not informed whether their credit is being used for capital stock enhancing (e.g. capital formation) or consumption purposes. Statistical surveys do not provide such information either.

Differentiating between capital formation expenditure and consumption expenditure is, however, of key relevance to the question of whether an economy is creditworthy and will remain so or if it is capable of regaining its creditworthiness. For foreign credits that are used to increase the capital stock can create the conditions to cover their costs while those used for consumption cannot. Here the CEP Default Index can provide some orientation: it presents the perspective that an economy with a negative NTE can create in the medium-term by means of its investments the revenue with which to pay back foreign credits.

3.2.2 Specific issues: impact of investments on the GDP

Without taking into account capital formation, net borrowing does not provide any conclusions as to the future solvency of an economy; therefore, it is necessary that the CEP Default Index includes capital formation. However, not all capital formation increase production potential and hence the GDP. One needs to differentiate between capacity enhancing capital formation and those which do not lead to a higher GDP. The European Statistical Office Eurostat divides capital formation in three categories:

- changes in inventories
- acquisition less disposals of valuables
- fixed capital formation

First and foremost, changes in inventories comprise voluntary and involuntary changes to the inventories of companies. Changes to the inventories of companies do not have an impact on capital stock and therefore do not affect the capacity of an economy. In other words, they do not create any growth. Consequently, changes in inventories financed through net borrowing do not create the preconditions for interest payments and repayment of foreign credits. Something similar applies to the second category acquisition less disposals of valuables. This item records the acquisition and sale of non-financial asset goods which do not serve production or consumption but primarily capital formation. This includes in particular the acquisition of gemstones, precious metals, antiques and other art objects. Also changes in this position do not have an impact on the GDP growth of an economy. Therefore, neither modifications to the changes in inventories nor to the acquisition less disposals of valuables are taken into account in the CEP Default Index.

The third category, the fixed capital formation, records the acquisition and sale of fixed assets through domestic producers. The European Statistical Office Eurostat divides them into six sub-categories:

(1) housing

(2) products of agriculture, forestry and fiheries

(3) metal products and machines

(4) vehicles

(5) other construction works

(6) other products

Sub-category (1) comprises buildings used exclusively or mainly for living purposes.[5] Sub-category (2) includes livestock and crop plants necessary for production. Sub-category (3) comprises metal products and machines and sub-category (4) comprises commercial vehicles used in the

[5] Cp. Circa, Europäisches System der Volkswirtschaftlichen Gesamtrechnung, in particular Chapter 3 and the annexes 7.1 and IV.

production process for more than one year. Sub-categories 3 and 4 are designated as equipment investments. Sub-category (5) comprises factory, business and administration buildings, warehouses, roads and tunnels. Sub-category (6) comprises intangible fixed assets such as software, entertainment and licenses.

Increased housing stock does not affect the capacity of an economy, although it does belong to the capital stock. Therefore, they are not taken into account for the investment definition underlying the CEP Default Index. In addition, the exclusion of investments in housing serves to prevent bubbles on the residential property markets from distorting the index.

The remaining fixed capital formations are appropriate for increasing the capacity and hence the GDP of an economy. The capacity enhancing capital formation underlying the CEP Default Index is as follows:

capital formation

– changes in inventories

– acquisition less disposals of valuables

– fixed capital formation in housing

= capacity enhancing capital formation (I^c)

All capital formation values are net items resulting from gross items after deducting value depreciation. They indicate whether the capital formation will lead to GDP growth.

For simplicity's sake, hereafter those parts of the national income not used for capacity enhancing capital formation will be referred to as *consumption expenditure in the wider sense.* They comprise consumption expenditure in the regular sense, changes in inventories, net entries of valuables and housing construction.

It therefore follows that an economy should only have as much foreign credits as the accompanying net borrowing compares with capacity enhancing investments. For only with such capital formation can the economic performance of an economy be enhanced, so that interests and the repayment of the external credit can be financed without reducing the economic asset.

3.3 Limitations to flows of the net lending or net borrowing of the total economy and to capacity enhancing capital formation

The CEP Default Index examines the creditworthiness trend of the last decade. In other words, it maps flows. In so doing, with the NTE and capacity enhancing capital formations its focus is strictly on the two key determining factors relating to the solvency of an economy.

Ostensibly, one could see in this the disadvantage that no further possible determining factors for solvency are included, and that statements regarding the credit solvency *trend* over time are given but not regarding the solvency *status* of an economy.

However, a closer look proves that this is not true. For not including various hard and soft potential determining factors renders obsolete the otherwise essential – by definition arbitrary – weighting of these factors, as must be carried out by rating agencies. Apart from that, the inclusion of numerous determinants for creditworthiness does not ensure reliable conclusions regarding the solvency of debtors, or at least not early enough, as recent history has shown.

Flows, on the other hand, describe the trend over time. Thus the Index can measure whether an economy is progressing towards insolvency or if it is moving away from it with the help of radical structural reforms.

Besides, it is not the stock that serves as the main basis for direct or indirect taxation but the flows. This hold particularly true for private assets: the government is entitled only to tax profits, not the substance. In a democratic society, the taxation of savings is not enforceable. Last but not least, it is almost impossible to determine the value of public assets serving to reduce the debt burden; apart from that, it is questionable whether one could sell public assets at all in a democratic society.

3.4 Best-case assumptions for the countries examined by the CEP Default Index

The CEP Default Index compares the net lending or net borrowing of the total economy (NTE) with the capacity enhancing capital formation (I^C) of an economy:

$$\text{CEP Default Index} = \text{NTE} + I^c$$

From official statistics, empirical values for NTE and volumes of capacity enhancing capital formation can be calculated. However, to what extent the capital formation volume is funded by domestic income and to what extent by capital imports cannot be determined. This question is important, as with foreign credits used for capacity enhancing capital formation, fixed assets are created with which interest and credits can be paid back, given a reasonable rate of return on investment. On the other hand, with foreign credits used for consumption expenditure, no value is created that might contribute to the repayment of interest and credits. In such a case, other resources must be used to repay the external credit.

In order to avoid unreliable estimations, the CEP Default Index assumes a best-case scenario to the benefit of the examined economy: the calculation is based on the assumption that domestic investments is primarily funded by net lending, while domestic income is primarily used for consumption expenditure. In other words, the implication is that foreign credits create maximum value creation which can be used for their repayment.

This leads to a systematic distortion: the Index makes the economy look much healthier than it actually is, for it assumes that foreign credits are used to create new production capacities whose additional value creation serves to repay interest and credit to a maximum extent.

3.5 Risk categories of the CEP Default Index

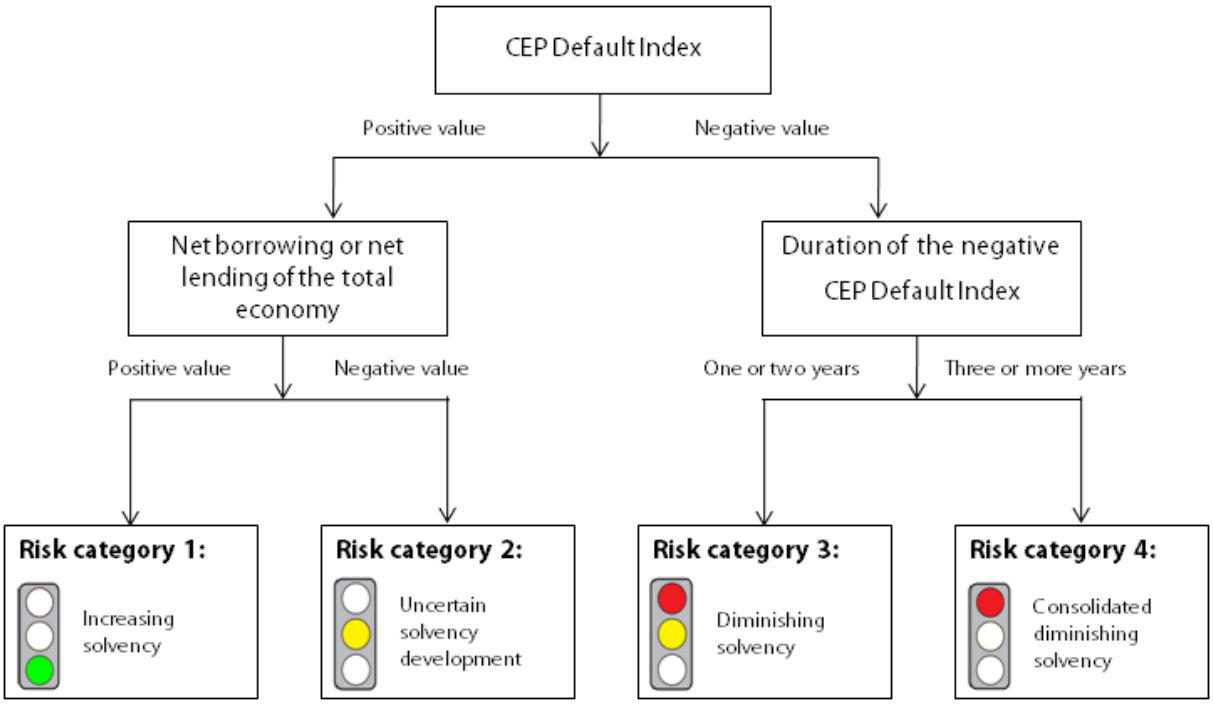
The CEP Default Index compares a country's annual capacity enhancing capital formation with the NTE by analysing whether the capacity enhancing capital formation exceeds the net borrowings (positive value) or remains below it (negative value). In other words, it describes mathematically the maximum extent which foreign credits are used for capacity enhancing capital formation.

The less a capital import surplus is covered by capacity enhancing capital formation and the longer such a condition endures, the greater the risk that the observed country cannot repay its foreign credits on time.

Within a closed economy, the Index corresponds to the volume of capacity enhancing capital formation, for the NTE equals zero. In an open economy, however, the CEP Default Index can and will assume values which deviate from the volume of capacity enhancing capital formations.

A negative Index means that the net capital import of an economy exceeds the level of capacity enhancing capital formations. Hence, more than 100% of the income generated within a country is being consumed; the excess consumption is funded through foreign credits which are not balanced by the creation of new values. Not only the income created within a country but also part of the net capital import is being consumed. The economy is living beyond its means.

The observed economies are sub-divided into four risk categories according to whether or not and to which extent their solvency is increasing or diminishing. This depends on whether the CEP Default Index is positive or negative. In the first case, it is also examined whether the NTE is positive (3.5.1) or negative (3.5.2). In the second case, it is also examined whether negative Index values have occurred over one or maximum two years (3.5.3), or if they have already existed for three or more years (3.5.4).



3.5.1 Risk category 1: Solvency of an economy increasing

Under category 1, not only the CEP Default Index is positive but countries are also net lenders. In this case, its creditworthiness cannot be challenged as the economy sets up foreign claims or pays back foreign liabilities.

In theory, such an economy is therefore also capable of replacing foreign credits; the government does not depend on foreign investors. In the end, this applies irrespective of the government debt volume.

An example for that is Belgium, which has a very high government debt but, at the same time, also a positive NTE (s. 5.2.1). Doubts regarding the solvency of the Belgium state would only be realistic if the state broke apart politically and could not pay back its foreign debts. The economic data, however, give no grounds for doubts as to their solvency.

Net lending countries are categorised under category 1 “increasing solvency”.

3.5.2 Risk category 2: Solvency trend uncertain

Countries classified under category 2, are net borrowers but the CEP Default Index is positive. If a country is a net borrower, capital import surpluses exist. Decisive for such a constellation, in which the domestic economy is indebted abroad, is for what the capital import surpluses are being used. The positive value of the CEP Default Index in this risk category means that the level of capacity enhancing capital formations exceeds the volume of capital import surpluses.

How to evaluate such a value in terms of the insolvency risk can be demonstrated by the theoretical case that the Index equals zero. In this case, the net volume of capital imports is identical with the total amount of capacity enhancing capital formation which lead to an increased production potential and allow for additional value creation to pay back credits.

Given the – rather unrealistic – assumption that all domestic income is funded from abroad (meaning that the total domestic income is consumed), the capital formation would just suffice to cover the foreign credits.

In the case of a return on investment, which in the average equals the foreign capital interest[6], all of the value creation generated through capital formation is needed to pay back foreign credits. There is no room left to boost prosperity or to reinvest in the domestic economy.

An Index value of zero is more problematic than it might seem, for it means that all the additional value creation created by the private sector and resulting from capital formation funded by domestic capital must be absorbed in order to make them available to foreign creditors. The state could only afford to do this through 100% taxation, but in a constitutional market-economy system this is almost impossible to enforce.

In the case of a positive Index value near zero, this diagnosis does not really change. Even then one can assume that the economy is not capable of paying back credits with the value creation of new investments within a given period. Hence, a (slightly) positive value does not represent the all-clear for the creditworthiness of an economy.

An example of this constellation is the current situation in Ireland (s. 5.2.2). The CEP Default Index for Ireland in 2010 is still slightly positive, so that formally Ireland is to be assigned to risk category 2. Nonetheless, the country lost the confidence of international capital investors and needed help in the form of a rescue package from euro states, the EU and the IMF.

It is not possible to say in general as of which positive value creditworthiness can be guaranteed. Not least, this depends on how high the net borrowing is and to which extent foreign credits are used for consumption expenditure. In particular it is the latter that cannot be easily identified. Where economies have a positive Index value and are net borrowers at the same time, the CEP Default Index will not issue statements as to the creditworthiness trend of the economy under examination. Hence, net borrowing economies with a positive Index value fall under category 2, "uncertain solvency development".

Irrespective of this, in individual cases it is possible to identify at least some indicators of the direction in which a country is heading by means of the Index's development and the investment ratio over time.

[6] Reliable empirical data on total economic return naturally do not exist. The assumption of a return that corresponds to the borrowing costs average is not groundless. For firstly, the major part of capital formation – mainly that of the state – does not generate any return of its own with which credits could be paid back. Secondly, not all capital formations meet the statutory return targets. Thirdly, debt interests are extremely high (especially for economies threatened by insolvency), so that the capital formation return would have to be very high in order to meet the target.

3.5.3 Risk category 3: Diminishing economic solvency

If the CEP Index develops a negative value, the net borrowing exceeds the volume of capacity enhancing capital formation. This necessarily means that mathematically speaking, along with the total national income at least one part of capital imports is spent on consumption expenditure.

For not even in the – theoretically unrealistic – assumption of the best-case-scenario that all domestic capital formation is funded from abroad does the capital formation volume reach the foreign credit volume. Even in such an extreme case, in which the total domestic income is spent on consumption expenditure, parts of capital imports are also consumed and are therefore not available for capacity enhancing from which interest and foreign credit payments could be funded.

For the economy concerned, the reality will look even worse: it is very likely that parts of the domestic income are used for capital formation so that the share of capital imports used for capital formation is even smaller.

By way of an example, if the CEP Default Index of an economy is minus one (–1% of the GDP) and its net borrowing amounts to 3% of the GDP, then – even under the assumption that the total capital formation is funded from abroad – more than a third (or even more) of net borrowing is spent on consumption.

Consumption expenditure is characterised by the fact that it does not create any value which might be used to repay credits. Observing a separate period only, means that there is no creditworthiness.

Assuming that the aggregate return of all effected – private and public – capital formations on a statistical average equals the foreign borrowing costs, then the economy is not capable of repaying the credits through the value created by the capital formation.

An economy with negative Index values has a considerable need for structural reforms, in order to avoid losing its creditworthiness completely; this is all the more true if the negative value is the result of many years of downward movement. Countries whose CEP Default Index has been negative for one or two years only belong to category 3, “diminishing solvency”.

3.5.4 Risk category 4: Consolidated diminishing solvency

An Index value that is negative only once will normally not result in a loss of creditworthiness, provided the economy concerned has built up enough capital in the years before on which it can rely for some time. A downward trend in the development of Index values which has led to a longer phase of constantly negative values can indeed challenge creditworthiness. The longer a CEP Default Index is negative or equals zero, the greater the risk of insolvency.

One cannot say exactly how many years of negative values are to be viewed as critical. For the CEP Default Index a threshold of three years was defined: if the Index has negative values for three subsequent years, then one can expect a continuation and consolidation of the trend.

In such a case, structural reforms are urgently needed, for experience has shown that it takes many years for reforms to have an impact on the economic trend and to lead to a clear increase in capacity enhancing capital formation. The period of three years was also chosen because an Index value of zero or slightly above zero does not necessarily mean that the economy concerned has no payment issues. Such a statement is only possible where the country is a net lender.

Countries with a CEP Default Index which has been negative for three years therefore belong to category 4: “consolidated diminishing solvency”.

3.6 CEP Default Index and state indebtedness

The CEP Default Index measures the creditworthiness of an economy as a whole. Therefore, it is not limited to the restrictive question of whether "only" the government is insolvent.

In principal, the loss of creditworthiness in an economy naturally leads to the government, the largest debtor of a country, losing creditworthiness. For creditworthiness is lost when a country is not capable of reducing its net borrowing in the medium term due to its net borrowing volume exceeding the capacity enhancing capital formation, which results in the continued decrease of the international investment position.

If the economy is not able to generate current account surpluses, the government has no direct influence on this. However, such surpluses are necessary in order to pay back foreign credits and in order to remain creditworthy or to become so again. Therefore, it is of secondary interest whether foreign indebtedness is caused by the government or the private sector.

A negative CEP Default Index is therefore – in the case of structural consolidation over several years – an indication that a state is under threat of loss of creditworthiness or that this has already happened.

Indirectly and in the medium to long term a state has indeed the possibility to impact the creditworthiness of an economy: through structural reforms, it can create the preconditions for future growth to repay foreign credits. Such reforms enable not only existing domestic companies to become more competitive on international markets but also increase its attractiveness as a business location for foreign investors.

These correlations do not necessarily apply vice versa. If a country is a net borrower, a state can become insolvent despite having a positive CEP Default Index. For foreign creditors it may not be sufficient that a government has hopes of stopping the net borrowing in the medium term if in the meantime it appears to be spending excessively on consumption, instead of saving it to pay back foreign credits.

An important feature of the Index is that should the net borrowing be reduced, as a result of a reduced state budget deficit and a reduced new net indebtedness abroad, it can establish exactly if the reduction in state expenditure has been achieved through reduced consumption or through lower capital formation. Where there is a reduction in consumption expenditure, the Index increases; where the reduction is in capital formation expenditure, the Index does not change.

3.7 Ways out of insolvency

The basic cause of a loss of creditworthiness is that the pertaining economies lost their competitiveness. This, in turn, is due to excessively high unit labour costs and not enough innovative activities, in combination with over-regulation and too much red tape. These findings are not new. In the past this problem was of course solved through currency devaluation. In the euro zone this is no longer possible.

The sale of state property and a partial debt relief do little to solve the real problem, the economy's loss of competitiveness. Both constitute one-off actions which cannot be repeated indefinitely.

For instance, the sale of property to foreign investors represents one-off capital transfers to foreign countries (3.1), which would only reduce the net borrowing for that year. A year later and the effect would already have vanished. Apart from that, nobody knows what the realisable value of assets, in particular state-owned assets, really is in an economy threatened by insolvency.

Debt relief would only help an economy if it was so comprehensive that by being relieved of foreign credit repayment the net borrowing could be eliminated and as a result the country would generate annual net lending. However, this seems unrealistic.

In the case of Greece, not even total debt relief would help. In 2010, Greek public deficit would still have been at 4.9% of GDP, so that new foreign credits would have been needed immediately. In the absence of creditworthiness this would not have been possible.

Therefore, there are only three possible solutions, all entailing painful adjustment processes, though affecting different parties in different economies:

(1) A radical and immediate reduction of unit labour costs and regulation;

(2) Exiting the euro zone and reintroducing a national currency and de-evaluation;

(3) Permanent alimentation through financial compensation between the euro states

To obtain some idea of just how much is involved, if you add together the creditworthiness gaps of the economies currently threatened by insolvency, we are talking about a total of 108 billion euro for 2010 alone.

4 Database

The CEP Default Index is mainly based on the official statistical data of Eurostat. A few data not provided by Eurostat were taken from the Ameco database of the European Commission or were estimated. This would lead to marginal deviations, if at all, as the estimated positions entering the Index are of negligible significance. The following table shows the database for the values used.

Table 1 Database

Countries		Period	Database
Gross domestic product			
All countries		2001–2010	Eurostat
Capital formation			
All countries		2001–2010	Eurostat
Fixed capital formation			
All countries		2001–2010	Eurostat
Fixed capital formation: housing			
All countries		2001–2010	Eurostat
except:	Belgium	2001–2010	Ameco
	France, Ireland	2010	
	USA	2001–2009	
		2010	Value of 2009
Value depreciation			
All countries		2001–2010	Eurostat
except:	Luxembourg	2010	Ameco
Net saving			
All countries		2001–2010	Eurostat
except:	total Euro zone	2008–2010	Ameco
	Luxembourg, Malta	2001–2010	
Acquisition less disposal of non-financial non-produced assets			
All countries		2001–2010	Eurostat
except:	Luxembourg, Malta, USA	2001–2010	Zero (Estimate)
Balance of asset transfers compared to the whole world			
All countries		2001–2010	Eurostat
except:	total Euro zone	2008–2010	Ameco
	Malta, USA	2001–2010	
	Luxembourg	2002–2010	
		2001	Zero (Estimate)
Data Status: 28 June 2011			

5 Results

Chapter 5.1 contains an overview of the creditworthiness of all euro zone countries in 2010 and a development trend derived from the empirical data of the CEP Default Index from 2001 to 2010.

Chapter 5.2 provides an overview of the trend in individual euro zone countries. The countries are analysed according to their position in their respective risk category. Of the countries not in danger of insolvency in risk category 1, only Germany and Belgium, whose solvency is only occasionally discussed, are commented on. The statements given here can be applied to the other countries of risk category 1 analogously.

By way of comparison, chapter 5.3 contains results for the euro zone, the United Kingdom and for the USA. The data of the euro zone were collected from the values of each country which was in the year concerned a member of the monetary union.

5.1 Overview of the results in 2010

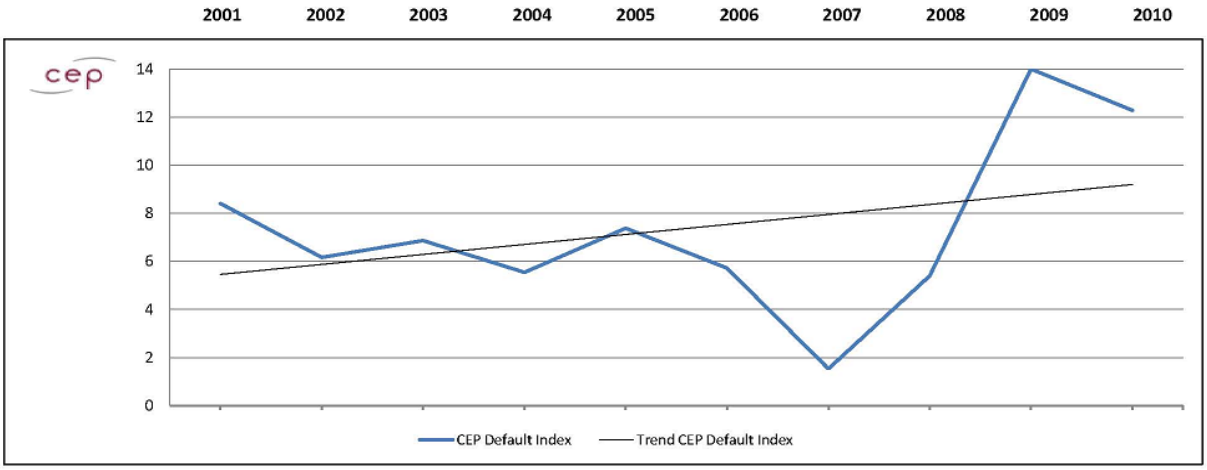
Ranking	Country	CEP Default Index 2010	Net borrowing or net lending of the total economy 2010	Assessment	Trend
Category 1: Countries with positive CEP Default Index and positive NTE					
1	Estonia	+12.3	+ 9.6		
2	Luxembourg	+10.7	+ 7.3		
3	Germany	+ 7.8	+ 5.2		
4	Netherlands	+ 7.8	+ 6.0		
5	Austria	+ 6.9	+ 3.4		
6	Belgium	+ 4.8	+ 2.6		
7	Finland	+ 4.4	+ 2.9		
Category 2: Countries with positive CEP Default Index and negative NTE					
8	Slovenia	+ 3.4	– 1.1		
9	Slovakia	+ 0.7	– 0.6		
10	Ireland	+ 0.5	– 0.8		
Category 3: Countries with negative CEP Default Index last year					
11	France	– 0.6	– 3.8		
12	Spain	– 1.6	– 9.2		
13	Italy	– 2.5	– 4.3		
Category 4: Countries with negative CEP Default Index in the last three years					
14	Malta	– 0.6	– 3.1		
15	Cyprus	– 4.4	– 9.4		
16	Portugal	– 7.5	– 8.4		
17	Greece	– 11.6	– 10.1		

5.2 Single Results of Euro Countries

5.2.1 Risk category 1

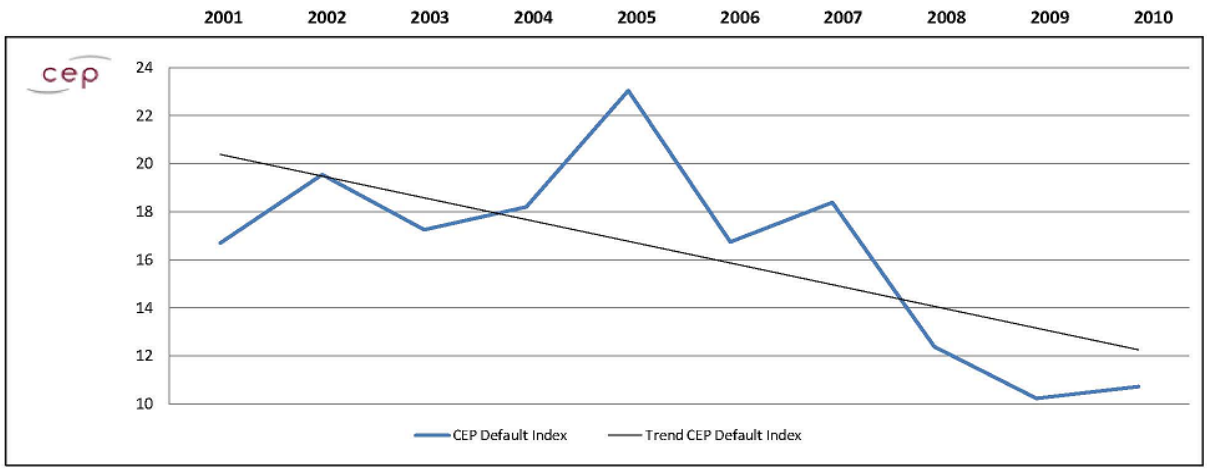
Estonia

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	-4.8	-9.9	-10.7	-10.7	-9.4	-13.6	-16.6	-7.7	9.1	9.6
I^C	13.2	16.1	17.6	16.2	16.8	19.3	18.1	13.1	4.9	2.7
CEP Default Index	**8.4**	**6.2**	**6.9**	**5.5**	**7.4**	**5.7**	**1.5**	**5.4**	**14.0**	**12.3**
Risk category	2	2	2	2	2	2	2	2	1	1



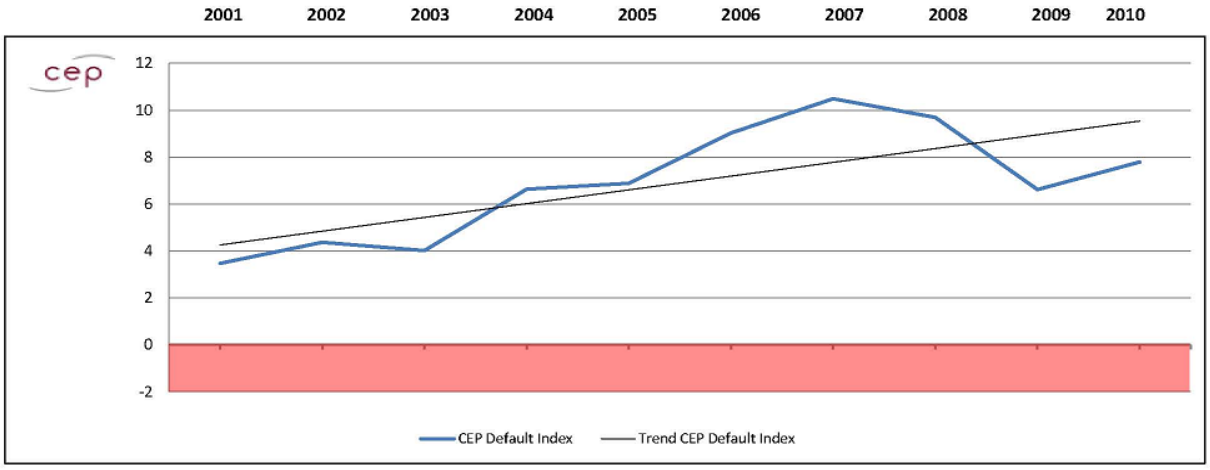
Luxembourg

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	8.8	10.1	7.6	9.5	14.7	9.5	9.8	4.7	6.1	7.3
I^C	7.9	9.4	9.6	8.7	8.4	7.2	8.6	7.7	4.1	3.4
CEP Default Index	**16.7**	**19.5**	**17.3**	**18.2**	**23.0**	**16.7**	**18.4**	**12.4**	**10.2**	**10.7**
Risk category	1	1	1	1	1	1	1	1	1	1



Germany

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	0.0	2.1	2.0	4.8	5.2	6.6	7.7	6.7	5.0	5.2
I^c	3.5	2.3	2.0	1.8	1.7	2.4	2.8	3.0	1.6	2.6
CEP Default Index	**3.5**	**4.4**	**4.0**	**6.6**	**6.9**	**9.0**	**10.5**	**9.7**	**6.6**	**7.8**
Risk category	1	1	1	1	1	1	1	1	1	1



Commentary

Net lending or net borrowing of the total economy (NTE): Germany has had capital export surpluses since 2002. Since 2005, it has provided capital to the amount of 5% of GDP to other economies and thus funded their current account deficits.

Capacity enhancing capital formation (I^c): Until 2009, its investment ratio was below the euro countries' average; in 2010, this changed.

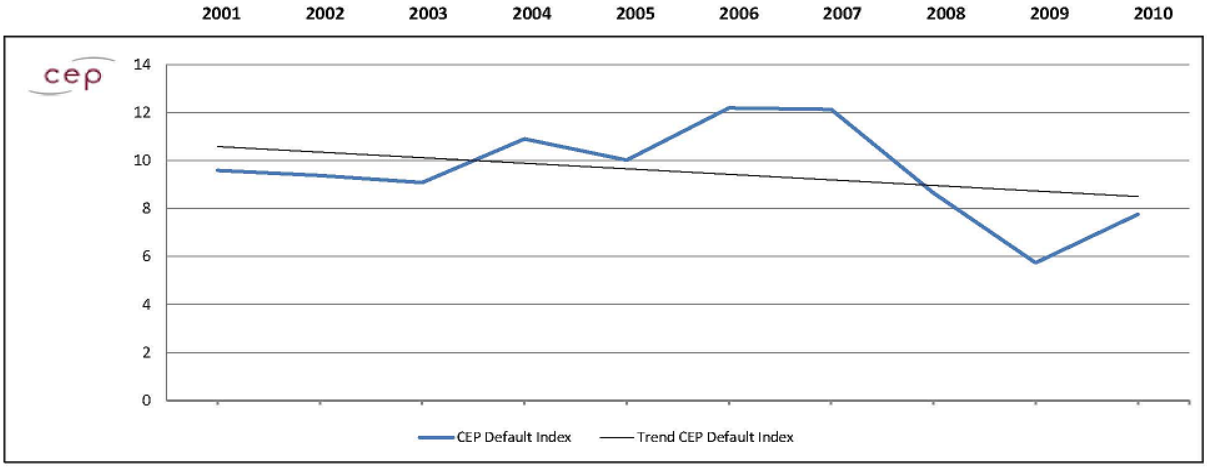
CEP Default Index: The CEP Default Index had risen by 2007 to a two-digit value, then it fell slightly but rose again in 2010.

Risk category 1: Germany's solvency increased continually throughout that period.

Outlook: Germany's solvency will continue to grow as long as the country generates current account surpluses and therewith capital export surpluses. A negative current account is not foreseeable for Germany. An indirect threat to solvency, at least of the German state, might result from their granting increasingly large credits and credit guarantees to euro zone countries threatened by insolvency.

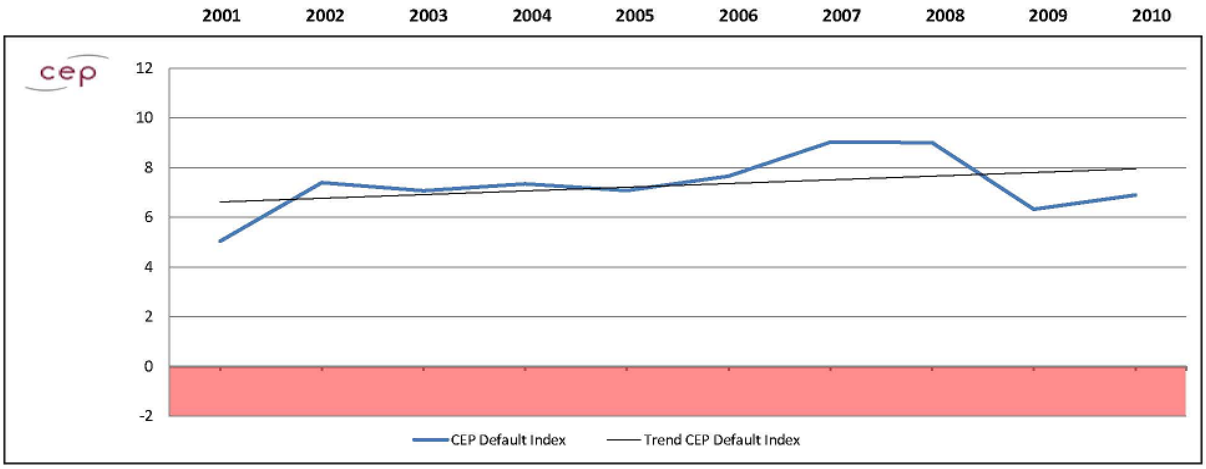
Netherlands

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	5.0	5.8	5.9	8.3	7.2	8.7	8.3	4.4	3.2	6.0
I^C	4.6	3.6	3.2	2.6	2.8	3.5	3.8	4.3	2.5	1.8
CEP Default Index	**9.6**	**9.4**	**9.1**	**10.9**	**10.0**	**12.2**	**12.1**	**8.7**	**5.7**	**7.8**
Risk category	1	1	1	1	1	1	1	1	1	1



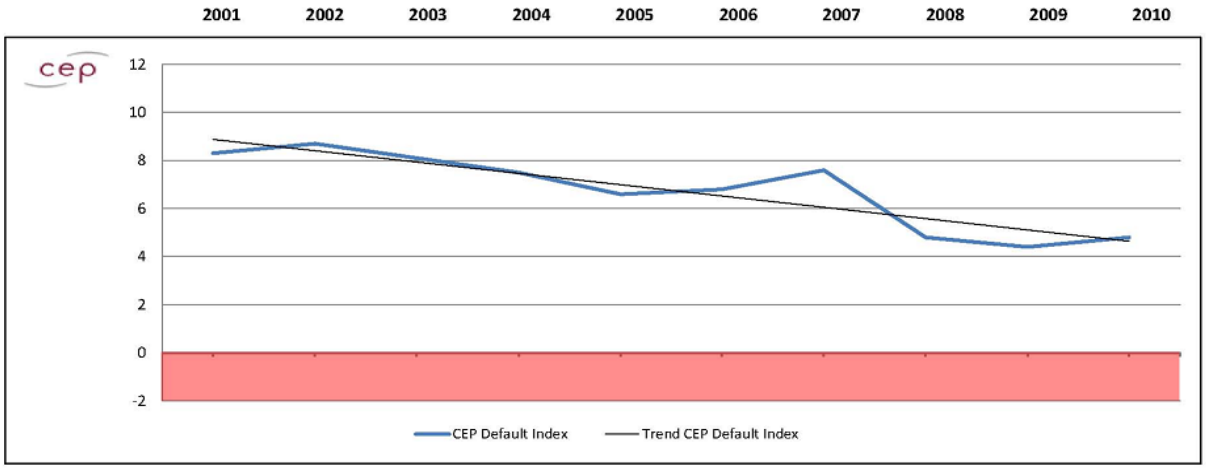
Austria

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	-1.1	2.5	1.6	2.2	2.1	2.9	4.0	3.6	2.5	3.4
I^C	6.1	4.9	5.5	5.2	5.0	4.8	5.0	5.4	3.8	3.5
CEP Default Index	**5.0**	**7.4**	**7.1**	**7.4**	**7.1**	**7.7**	**9.0**	**9.0**	**6.3**	**6.9**
Risk category	2	1	1	1	1	1	1	1	1	1



Belgium

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	4.1	5.8	5.6	4.4	3.1	3.4	3.6	0.7	1.6	2.6
I^C	4.2	2.9	2.5	3.1	3.5	3.4	4.0	4.1	2.8	2.2
CEP Default Index	**8.3**	**8.7**	**8.1**	**7.5**	**6.6**	**6.8**	**7.6**	**4.8**	**4.4**	**4.8**
Risk category	1	1	1	1	1	1	1	1	1	1



Commentary

Net lending or net borrowing of the total economy (NTE): Since 2001, Belgium has steadily exported net capital. In 2010, the Belgium economy provided capital to the amount of 2.6% of GDP to countries with current account deficits.

Capacity enhancing capital formation (I^C): In 2009, the investment ratio of Belgium was below the euro zone average. As elsewhere in Europe, it dropped during the financial crisis. Compared to other euro states the fall was, however, relatively low.

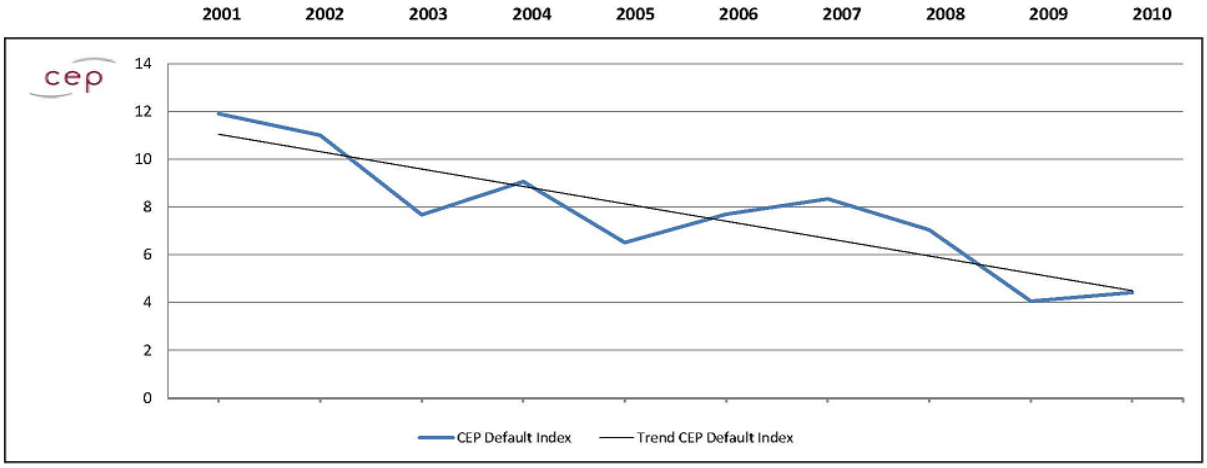
CEP Default Index: Its Index has only positive values with a relative maximum of 7,6% of GDP in 2007. Since then, it has dropped, but it still lies within a high positive range.

Risk category 1: The solvency of the Belgian economy has decreased. However, in view of the economic data, concerns about the country's solvency are unfounded.

Outlook: Doubts as to the economic stability of the country are also not necessary for the near future. At most, it could be feared that the Belgian state breaks apart and therefore fails to pay its foreign debts. However, this is a political issue and not an economic risk.

Finland

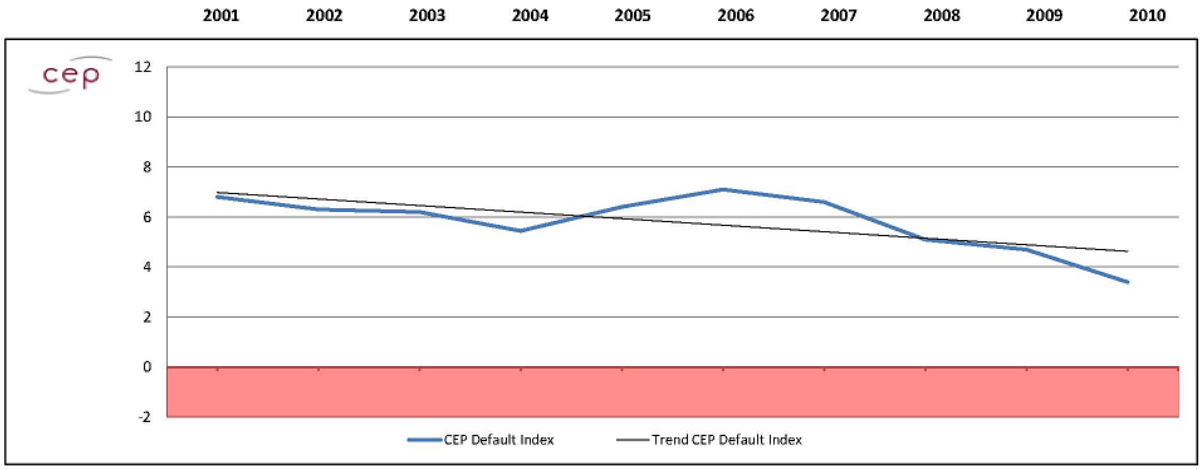
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	8.6	8.6	5.2	6.4	3.6	4.8	4.3	3.1	2.3	2.9
I^C	3.3	2.4	2.5	2.7	2.9	2.9	4.0	3.9	1.8	1.5
CEP Default Index	**11.9**	**11.0**	**7.7**	**9.1**	**6.5**	**7.7**	**8.3**	**7.0**	**4.1**	**4.4**
Risk category	1	1	1	1	1	1	1	1	1	1



5.2.2 Risk category 2

Slovenia

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	-0.2	0.2	-1.5	-3.0	-2.2	-2.8	-4.6	-6.6	-1.5	-1.1
I^C	7.0	6.1	7.7	8.4	8.6	9.9	11.2	11.7	6.2	4.5
CEP Default Index	**6.8**	**6.3**	**6.2**	**5.4**	**6.4**	**7.1**	**6.6**	**5.1**	**4.7**	**3.4**
Risk category	2	1	2	2	2	2	2	2	2	2



Commentary

Net lending or net borrowing of the total economy (NTE): Since 2003, Slovenia has had capital import surpluses, with the country indebting itself abroad in order to fund its current account deficits. In 2009 and 2010, however, it reduced its net borrowing significantly.

Capacity enhancing capital formation (I^c): Slovenia's investment ratio has been well above the euro zone average since 2001.

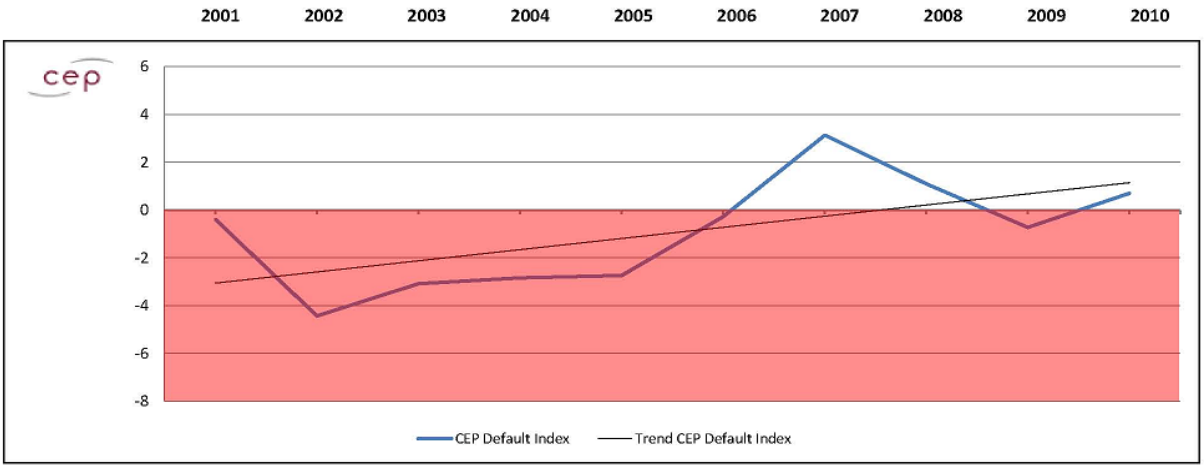
CEP Default Index: The Index has only positive values. Slovenia's capital expenditure is above the net borrowing, though lately its Index values have dropped significantly.

Risk category 2: Apart from 2002, when Slovenia's foreign indebtedness decreased, the solvency trend of the country has been uncertain. Due to its high investment ratio in the past, however, it cannot yet be concluded that Slovenia's creditworthiness is under threat, but the further trend of the CEP Default Index needs to be observed.

Outlook: The trend line is slightly negative. If the country is not to be pulled into insolvency by other states, it should start enacting reforms to ensure that the relationship between capital formation and net borrowings are improved.

Slovakia

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	-7.3	-10.3	-6.8	-6.6	-9.2	-7.8	-5.2	-5.9	-2.2	-0.6
I^C	6.9	5.9	3.7	3.8	6.5	7.5	8.3	7.0	1.6	1.4
CEP Default Index	**-0.4**	**-4.4**	**-3.1**	**-2.8**	**-2.7**	**-0.3**	**3.1**	**1.1**	**-0.7**	**0.7**
Risk category	3	3	4	4	4	4	2	2	3	2



Commentary

Net lending or net borrowing of the total economy (NTE): Since 2001, Slovakia has been a net borrower. The country has taken foreign credits every year to cover its demand for goods and services. In 2009 and 2010, however, the net borrowing dropped significantly.

Capacity enhancing capital formation (I^C): Capital formation in Slovakia were above the euro zone average for many years, but in 2009 and 2010 they dropped significantly. Slovakia has been hit strongest by the financial crisis with its investment ratio declining by 77%.

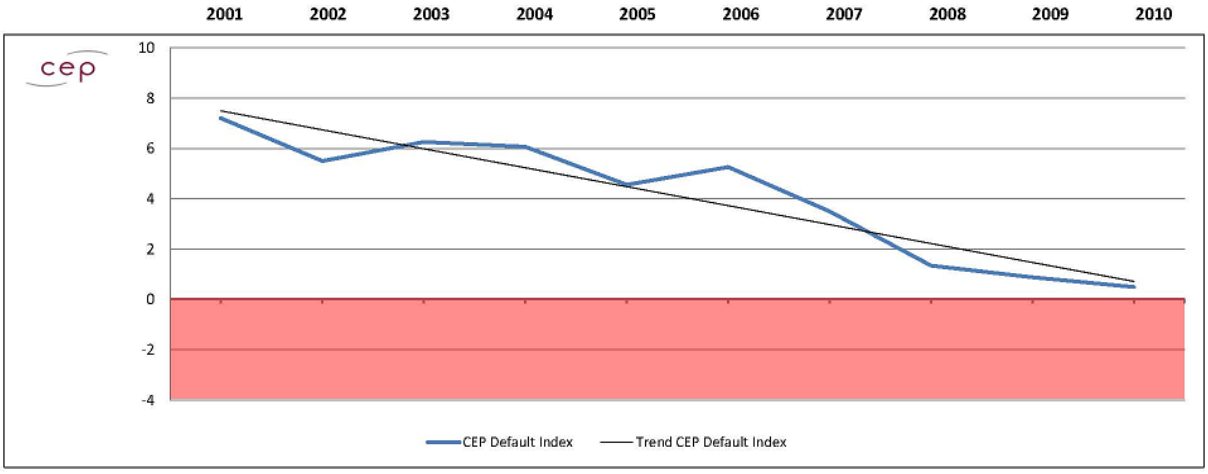
CEP Default Index: The CEP Index was continuously negative until 2006 as mathematically, a part of the foreign credits were consumed. After positive values in 2007 and 2008 and a slightly negative value in 2009, the Index just managed to reach the positive range in 2010.

Risk category 2: Slovakia's solvency deteriorated continually between 2001 and 2006; this changed in 2007. Apart from the recession year of 2009, the solvency trend is uncertain.

Outlook: The rising trend line shows that the net borrowing is falling. If this trend continues, Slovakia can start to reduce their foreign debts in the coming years.

Ireland

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	-0.4	-1.3	-0.4	-1.2	-3.5	-3.1	-5.6	-6.0	-3.4	-0.8
I^C	7.6	6.8	6.7	7.3	8.1	8.4	9.1	7.3	4.3	1.3
CEP Default Index	**7.2**	**5.5**	**6.3**	**6.1**	**4.6**	**5.3**	**3.5**	**1.3**	**0.9**	**0.5**
Risk category	2	2	2	2	2	2	2	2	2	2



Commentary

Net lending or net borrowing of the total economy (NTE): Since 2001, Ireland has had continual capital import surpluses, with very high values in 2007 and 2008. In 2009 and 2010, however, the financial deficits decreased significantly.

Capacity enhancing capital formation (I^c): For many years, Ireland had a very high investment ratio. From 2005 to 2007, Irish capital formation was almost twice as high as the euro zone average. In 2009, and even more so in 2010, the formation ratio dropped significantly.

CEP Default Index: Since 2006, the CEP Default Index has fallen continually, although it remained slightly positive in 2010. During the last years, the decline in investment ratio was even stronger than the dismantling of capital import surpluses.

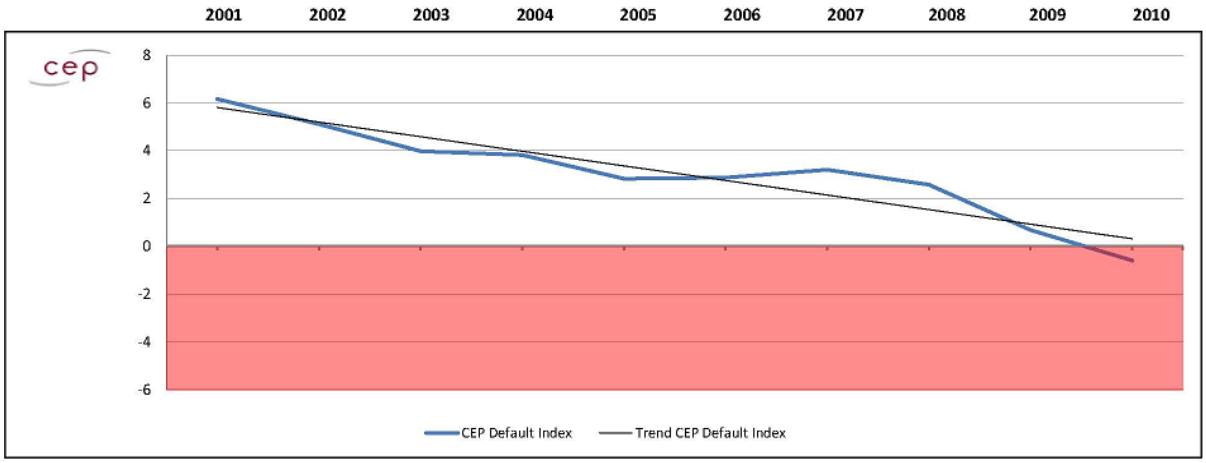
Risk category 2: Although Ireland still belongs to risk category 2 with regard to 2010, in general a reliable statement as to its creditworthiness trend is not possible. The fact that Ireland has meanwhile had to resort to financial aid from the rescue package of the euro states, the EU and IMF does show, however, that the country's creditworthiness is highly questionable. The clearly falling CEP Default Index and diminishing capital formation substantiate this finding.

Outlook: The trend is clearly negative. Without sweeping and quickly acting reforms, Ireland will slide down to risk category 3. It remains to be seen whether the structural reforms that have meanwhile been introduced will manage to avert this threat.

5.2.3 Risk category 3

France

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	1.7	1.3	0.2	-0.1	-1.4	-1.6	-1.9	-2.4	-2.9	-3.8
I^C	4.5	3.8	3.8	3.9	4.2	4.5	5.1	5.0	3.6	3.2
CEP Default Index	**6.2**	**5.1**	**4.0**	**3.8**	**2.8**	**2.9**	**3.2**	**2.6**	**0.7**	**-0.6**
Risk category	1	1	1	2	2	2	2	2	2	3



Commentary

Net lending or net borrowing of the total economy (NTE): While from 2001 to 2003 France was still a net lender and even formed foreign assets, in 2004 it became a net borrower and since then has become one of the largest debtors. In 2010, the netted capital requirements were already at 3.8% of GDP. This represents a new indebtedness of 74 billion euro.

Capacity enhancing capital formation (I^C): Until 2005, France's capital formation was on average 4% of GDP, increasing to 5% by 2008. Since then, it has dropped significantly, but it is still above the euro zone average.

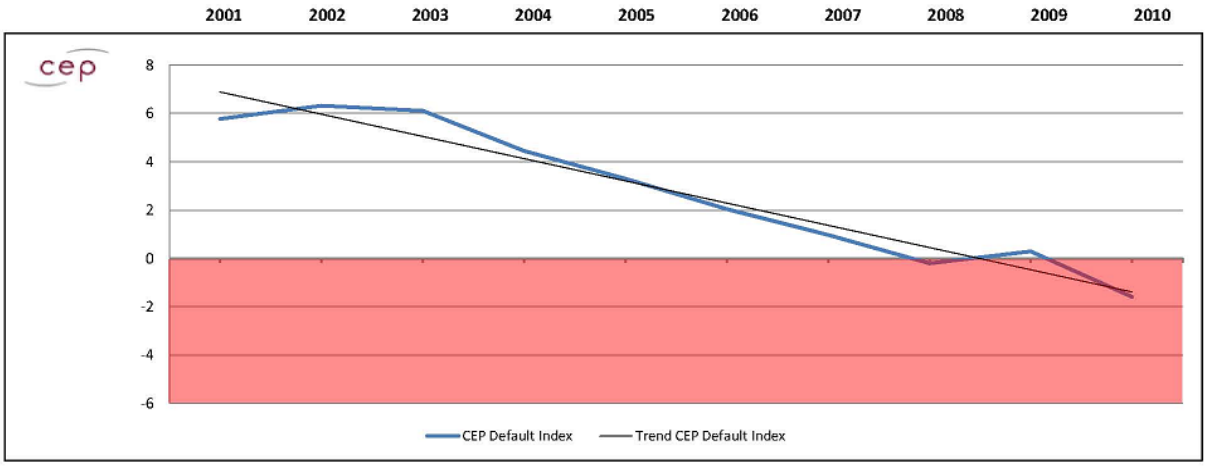
CEP Default Index: Apart from a period of stagnation in 2006 and 2007, the entire trend line shows a fall. In 2010, it dropped below zero for the first time. Hence, consumption expenditure exceeded the domestic income. The creditworthiness gap was 0.6% of GDP at 12 billion euro.

Risk category 3: France has slid into increasingly higher risk categories. After solvency kept increasing until 2003, it was then uncertain for a longer period of time and clearly sank in 2010. The Index's negative trend suggests that France's creditworthiness actually fell even earlier.

Outlook: Without a fundamental reform of the real economy, France is at risk of losing its creditworthiness.

Spain

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	-3.4	-2.6	-3.0	-4.8	-6.5	-8.4	-9.5	-9.2	-5.1	-9.2
I^C	9.2	8.9	9.1	9.2	9.8	10.4	10.5	9.0	5.4	7.6
CEP Default Index	**5.8**	**6.3**	**6.1**	**4.4**	**3.3**	**2.0**	**1.0**	**-0.2**	**0.3**	**-1.6**
Risk category	2	2	2	2	2	2	2	3	2	3



Commentary

Net lending or net borrowing of the total economy (NTE): Since 2001, Spain has been a net borrower. In order to fund its current account deficits, it has indebted itself more and more from year to year. In 2009, the net borrowing was reduced temporarily. In 2010, however, it was back at the same level as in 2008.

Capacity enhancing capital formation (I^c): The Spanish capital formation ratio is very high. Since 2001 is has been well above the euro zone average. In 2009 and 2010, however, it was below former values.

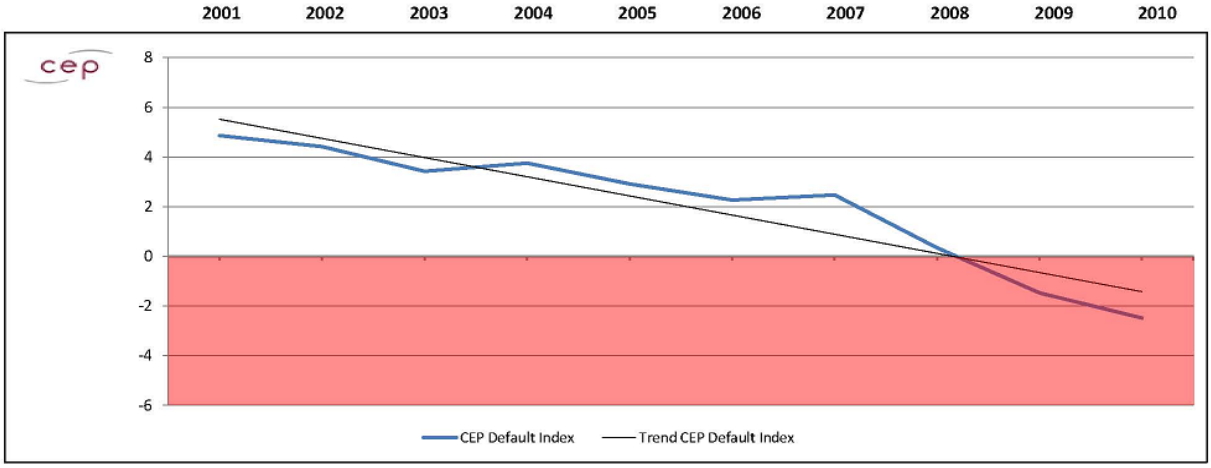
CEP Default Index: With one exception, the Index has been falling continuously since 2004: there has been more and more consumption, but an increasingly small share of the domestic income and the net borrowing has been used for capital formation. In 2008 and 2010, consumption expenditure even exceeded the domestic income. Thus, in mathematical terms, Spain has had to use its net borrowing for consumption. In 2010, the creditworthiness gap was 1.6% of GDP at 17 billion euro.

Risk category 3: Spain's solvency trend was uncertain for a long period of time, as the lending demand was offset against by capital formation which, at least mathematically, had to be used for foreign credits. At least in 2008 and 2010, Spain was living from its substance; it is in those years that its creditworthiness decreased. According to the negative Index trend, Spain's creditworthiness started to erode much earlier.

Outlook: Structural reforms are necessary to avert the falling trend of the CEP Default Index. If only half-hearted measures are taken, then Spain's solvency will be threatened substantially. Whether or not the adopted reforms will suffice remains to be seen.

Italy

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	0.4	-0.3	-0.7	-0.4	-1.1	-1.9	-1.7	-3.1	-3.0	-4.3
I^c	4.5	4.7	4.1	4.2	4.0	4.2	4.2	3.4	1.5	1.8
CEP Default Index	**4.9**	**4.4**	**3.4**	**3.8**	**2.9**	**2.3**	**2.5**	**0.3**	**-1.5**	**-2.5**
Risk category	1	2	2	2	2	2	2	2	3	3



Commentary

Net lending or net borrowing of the total economy (NTE): In 2001, Italy was still a net lender, so that the economy formed foreign assets. Since 2002, however, the current account deficits have had to be funded through foreign credits. The capital requirements have increased constantly each year, apart from in 2004, 2007 and 2009 when it stagnated.

Capacity enhancing capital formation (I^c): Until 2007, capital formation stood at 4% of GDP, or more. In 2008, it decreased significantly and more or less collapsed in 2009 with a drop of more than half.

CEP Default Index: Since 2001, the Index has continued to fall continuously, apart from in 2004 and 2007. For the first time in 2009 and again in 2010 a part of the net borrowings were not encountered by capital formation. Italy's creditworthiness gap of at least 1.5% of GDP at 22 billion euro in 2009 grew to at least 2.5% at 38 billion euro in 2010.

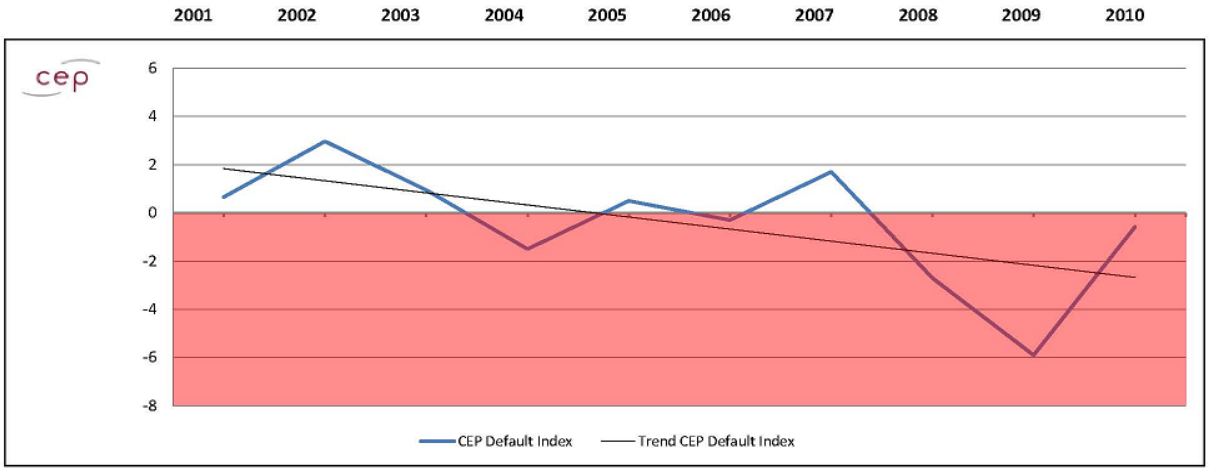
Risk category 3: While in 2001 solvency increased, as from 2002 the trend seemed uncertain. The systematically falling Index values in those years suggest diminishing creditworthiness. This is further substantiated by the clear figures since 2009: in 2009 and in 2010 even more so, the insolvency risk rose significantly.

Outlook: Without fundamental and rapid real economy reforms, the tendency towards diminishing solvency will consolidate further. In view of the postponement of such reforms, as agreed upon at the end of June 2011, to the period starting in 2013, Italy is at risk of sliding into risk category 4 where an increasing insolvency risk is consolidated.

5.2.4 Risk category 4

Malta

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	-3.7	2.5	-2.8	-5.2	-5.8	-6.3	-4.9	-5.6	-6.6	-3.1
I^c	4.4	0.4	3.7	3.7	6.3	6.0	6.6	2.9	0.7	2.5
CEP Default Index	**0.7**	**3.0**	**0.9**	**-1.5**	**0.5**	**-0.3**	**1.7**	**-2.7**	**-5.9**	**-0.6**
Risk category	2	1	2	3	2	3	2	3	3	4



Commentary

Net lending or net borrowing of the total economy (NTE): Since 2003, Malta has been a net borrower due to current account deficits. In 2009, the lowest level was reached. In 2010, however, the financial deficit was reduced by more than a half.

Capacity enhancing capital formation (I^c): From 2001 to 2004, capital formation was below the euro zone average. In 2005, when Malta joined the European exchange rate mechanism II, it increased in leaps and bounds. In 2008, when Malta accepted the euro, it dropped again and never really recovered.

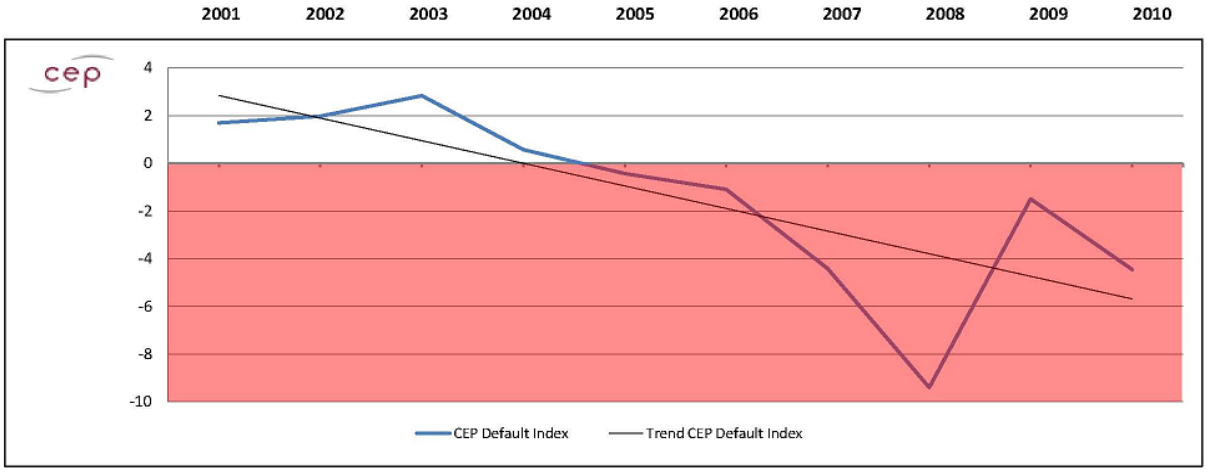
CEP Default Index: In 2003, the Index values were positive as at least mathematically Malta's capital import was offset against capital formation. In 2004 for the first time and since 2008 constantly, Malta has been using a part of its capital imports for consumptionIn 2009, almost the total capital import was consumed. In 2010, it was however possible to reduce the assumed minimum creditworthiness gap, which in 2009 was 5.9% of GDP at 346 million euro, to 0.6% of GDP at 36 million euro.

Risk category 4: For three years Malta has had a negative CEP Default Index. The diminishing solvency of the Maltese economy has therefore been consolidated.

Outlook: Despite a reduction in the creditworthiness gap in 2010, the statistical trend line continues to be negative. It remains to be seen whether the trend in the last year will prove to have been a turning point in the economic recovery of Malta.

Cyprus

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	-3.1	-3.5	-2.0	-4.9	-5.6	-7.1	-11.6	-17.0	-7.5	-9.4
I^C	4.8	5.5	4.8	5.5	5.2	6.0	7.2	7.6	6.0	5.0
CEP Default Index	**1.7**	**2.0**	**2.8**	**0.6**	**-0.4**	**-1.1**	**-4.4**	**-9.4**	**-1.5**	**-4.4**
Risk category	2	2	2	2	3	3	4	4	4	4



Commentary

Net lending or net borrowing of the total economy (NTE): Since 2001, Cyprus has consistently imported more capital than it exported. In 2008, when it joined the EU, the country had a financial deficit of 17% of GDP, a value that had and has never been reached before by any other euro country. Following a clear reduction in the financial deficit in 2009, it increased again in 2010. Since Cyprus became a member of the monetary union, its debt increased on average by 11.3% of GDP per year. This corresponds exactly to Greece's value since it joined the monetary union.

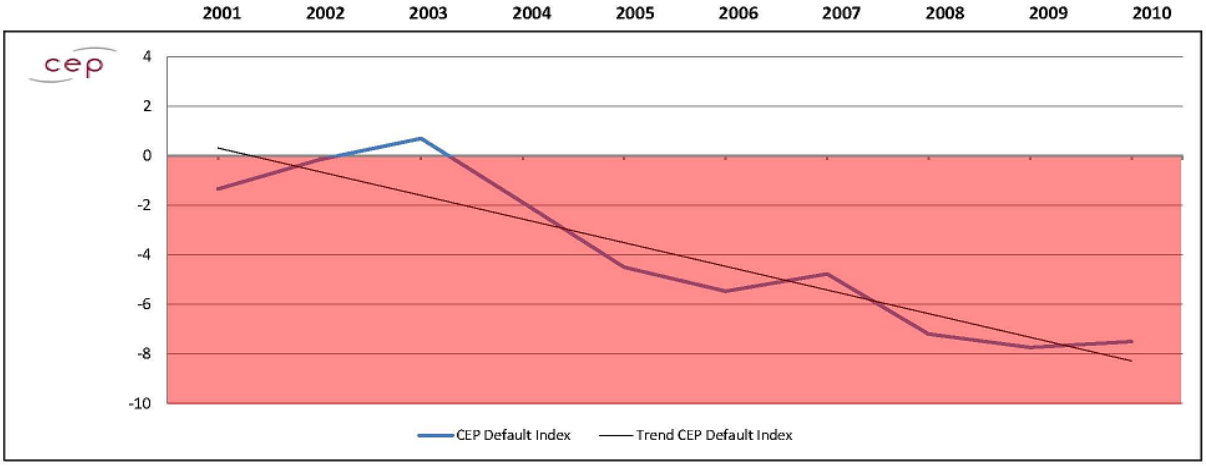
Capacity enhancing capital formation (I^c): Since 2002, Cyprus' capital formation ratio has been above the euro zone average. Even during the financial crisis it proved to be quite robust. The fall of 20% in 2009 was the lowest of all euro states.

CEP Default Index: Since 2005, when Cyprus joined the European exchange rate mechanism II, the Index values have been negative. Since then, consumption expenditure is above the domestic income. In 2008, foreign credits to the amount of 9.4% of GDP were used for consumption. On reducing the creditworthiness gap in 2009, in 2010 it rose to at least 4.4% of GDP at 776 million euro. Since adopting the euro, it has been on average 5.1% of GDP. Within the euro area, this value is exceeded only by Greece.

Risk category 4: Since 2005, Cyprus' solvency has decreased steadily. The country is in danger of sliding into insolvency unless substantial real economy reforms are carried out without delay.

Portugal

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	-9.1	-6.7	-4.4	-6.7	-8.9	-9.5	-9.0	-11.3	-9.6	-8.4
I^c	7.8	6.5	5.1	4.8	4.4	4.0	4.2	4.1	1.9	0.9
CEP Default Index	**-1.3**	**-0.2**	**0.7**	**-1.9**	**-4.5**	**-5.5**	**-4.8**	**-7.2**	**-7.7**	**-7.5**
Risk category	3	3	2	3	3	4	4	4	4	4



Commentary

Net lending or net borrowing of the total economy (NTE): Due to its current account deficits, since 2001 Portugal has had a substantial net borrowing demand. The net borrowing was, however, slightly reduced in 2009 and 2010.

Capacity enhancing capital formation (I^c): Since 2001, Portugal's capital formation ratio has fallen continuously, apart from a period of stagnation in 2007 and 2008. The decline was particularly strong in 2009 and 2010.

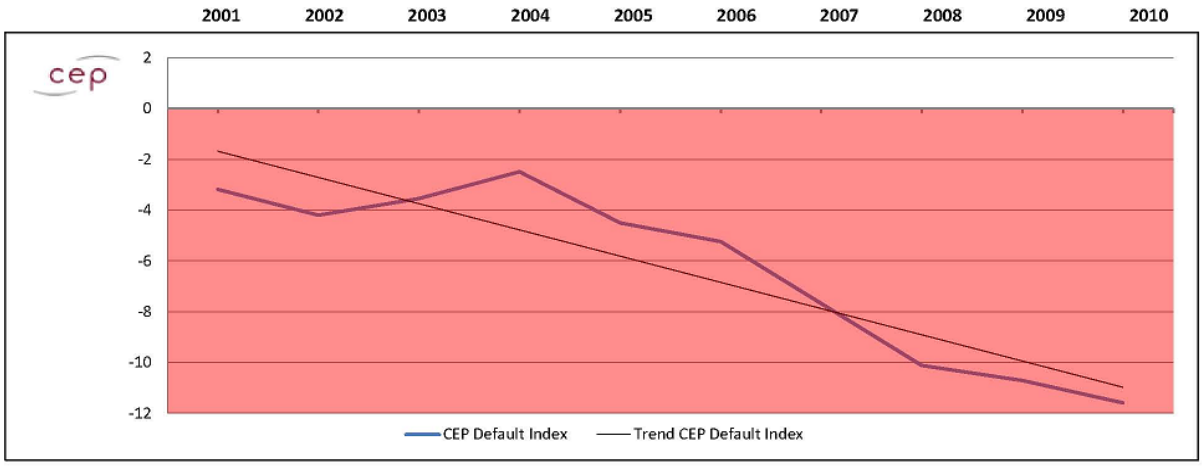
CEP Default Index: Apart from in 2003, Portugal demonstrates negative Index values. The slight reduction of the net borrowing in 2009 and 2010 was overcompensated through the decline in capital formation, so that even then the Index showed its lowest values. The creditworthiness gap was at least 7.5% of GDP in 2010 at 13 billion euro.

Risk category 4: The creditworthiness of Portugal has been continually declining since 2004. In 2011, this trend culminated when the country required financial aid from the rescue package of the euro states, the EU and the IMF in order not to become insolvent. In fact, the country is no longer creditworthy.

Outlook: Chances are low that Portugal will soon be creditworthy again in view of the latest developments. A precondition would be that the introduced reforms would cut consumption dramatically and thus make investments increase radically. The development of the capital formation ratio since 2009 is not very promising as regards the near future.

Greece

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	-10.1	-11.6	-10.8	-9.0	-9.4	-10.4	-13.4	-15.0	-12.9	-10.1
I^c	6.9	7.4	7.3	6.5	4.9	5.2	5.7	4.9	2.2	-1.5
CEP Default Index	**-3.2**	**-4.2**	**-3.5**	**-2.5**	**-4.5**	**-5.2**	**-7.7**	**-10.1**	**-10.7**	**-11.6**
Risk category	3	3	4	4	4	4	4	4	4	4



Commentary

Net lending or net borrowing of the total economy (NTE): Since 2001, Greece has continuously needed net borrowing – usually to the amount of 10% of GDP and more – in order to fund its current account deficits through foreign credits. However, the capital requirements, which in 2008 were 15% of GDP, were reduced to 10.1% in 2010, which is the value of 2001.

Capacity enhancing capital formation (I^c): From 2001 to 2008, capital formation was above the euro zone average. This changed in 2009 and in 2010, it was even negative for the first time; thus capital stock shrank. To date, this is unique within the euro zone.

CEP Default Index: The Index was always negative, with the tendency growing steadily since 2004. Consumption expenditure exceeded more and more the domestic income. In 2010, it even exceeded the total domestic income and total net borrowing by 1.5% of GDP. This consumption was funded through disinvestments. The decline in net borrowing after 2008 was overcompensated for through a drop in capital formation. In 2010, the creditworthiness gap was at least 11.6% of GDP at 27 billion euro.

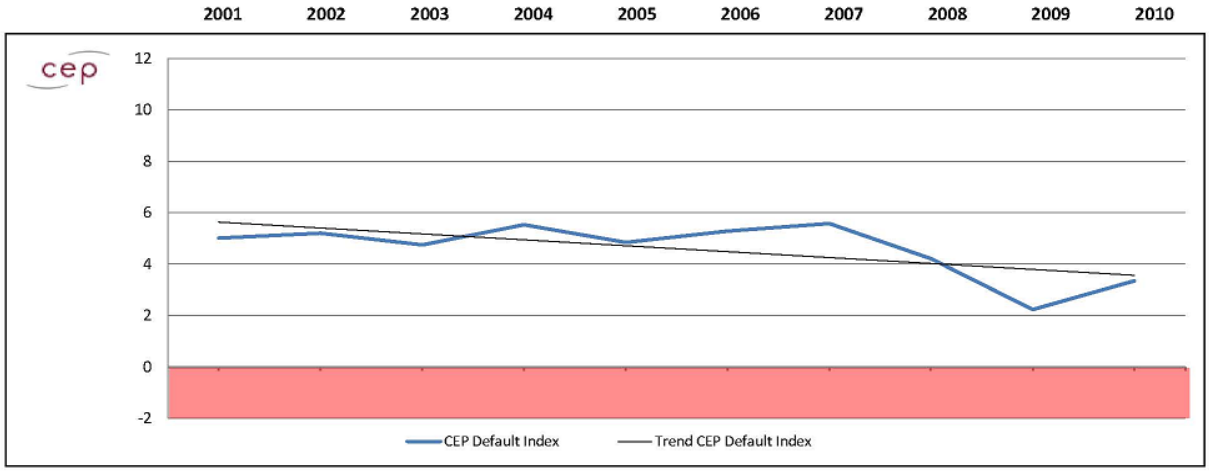
Risk category 4: Greece's solvency has not just been diminishing in the last three years but continuously since 2001. The country is not creditworthy.

Outlook: The chances that Greece will return into the positive Index area in the medium-term are minimal. Structural reforms would have to boost the economy dramatically, yet in 2010, the net capital formation ratio was even negative. The country is basically impoverished and any chances of a return to the capital market are currently not foreseeable.

5.3 Comparison results: Euro zone, United Kingdom and the USA

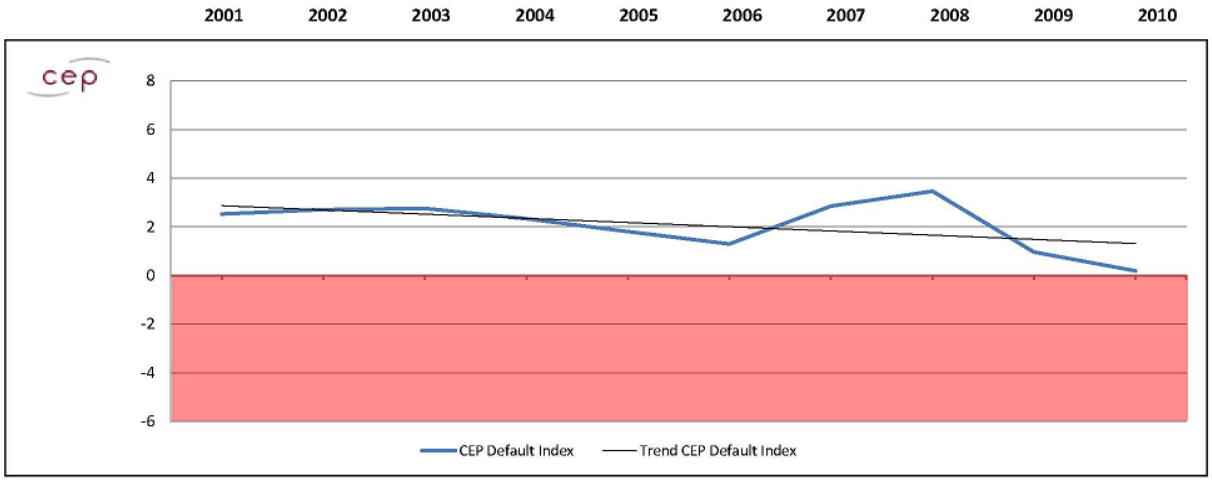
Euro zone

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	0.2	1.0	0.7	1.5	0.7	0.7	0.6	-0.5	-0.6	2.1
I^C	4.8	4.2	4.0	4.0	4.1	4.6	5.0	4.7	2.8	1.2
CEP Default Index	**5.0**	**5.2**	**4.7**	**5.5**	**4.8**	**5.3**	**5.6**	**4.2**	**2.2**	**3.3**
Risk category	1	1	1	1	1	1	1	2	1	1



United Kingdom

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	-2.0	-1.7	-1.5	-1.9	-2.6	-3.3	-2.4	-1.4	-1.6	-2.5
I^C	4.5	4.4	4.3	4.2	4.4	4.6	5.3	4.9	2.6	2.7
CEP Default Index	**2.5**	**2.7**	**2.8**	**2.3**	**1.8**	**1.3**	**2.9**	**3.5**	**1.0**	**0.2**
Risk category	2	2	2	2	2	2	2	2	2	2



USA

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NTE	-2.7	-4.0	-4.7	-5.1	-5.1	-4.3	-5.2	-5.5	-3.9	-4.4
I^C	5.7	4.7	4.6	5.0	5.3	5.5	5.2	4.5	2.1	2.3
CEP Default Index	**3.0**	**0.7**	**-0.1**	**-0.1**	**0.2**	**1.2**	**0.0**	**-1.0**	**-1.8**	**-2.1**
Risk category	2	2	3	3	2	2	2	3	3	4