

Emerging Country Sovereign Bonds: A Sustainable Investment?

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Executive Summary

Emerging countries are basically nations whose economic performance still clearly lags behind highly developed countries, but whose economies are rapidly making up ground. The economic and social development of emerging countries is crucial for maintaining the world's future environmental and social equilibrium. Countries with forward-looking policies to contain environmental and social risks promise a more predictable and more solidly underpinned development of public finance. Given this backdrop, it makes sense for investors in sovereign bonds – especially those with an interest in sustainability – to consider bonds issued by the governments of emerging countries as well, and at the same time to favour nations who seek to curb social and environmental impacts in their pursuit of economic growth and social advancement.

For the past five years Bank Sarasin has included government bonds in its array of fixed-income instruments rated against sustainability criteria. It recently extended the spectrum to include a large circle of countries with a medium credit rating that qualify as emerging countries in the widest sense. The present report describes the methods used to establish the sustainability rating of these countries and reports on the results of our assessment.

According to the generally accepted description used by the United Nations, a sustainable country is one whose economic and commercial growth proves to be financially, environmentally and socially sustainable in the long run – an ideal state that has still not been reached by any nation, according to the experts.

We are therefore not in a position to judge a country's absolute sustainability, but we are able to determine whether one country comes closer to the sustainability ideal, in relative terms, than others. Here we make a distinction between two dimensions. First, we examine the country's actual impact on its natural environment and the strain on its society (sustainability level). Second, we consider how efficiently the country translates the use of natural and social resources into economic performance and subsequently into quality of life for its population (sustainability efficiency). A high degree of sustainability efficiency is an important prerequisite for effectively severing the traditional link between economic and social progress on the one hand and environmental impact on the other.

Our research shows that emerging countries have less of an environmental impact (primarily because their economic output is much lower) than the group of developed countries, but are also far less efficient in their use of resources. Furthermore, although many emerging countries make less of an environmental impact, this tends to be at the expense of a very high level of social strain, in the worst cases going so far as to threaten the livelihood of large sections of the population. Their efficiency in using economic and social resources for providing quality of life is also generally not as high as in developed nations.

But our research also reveals some interesting differences within the group of emerging countries. It does identify nations which are already in a position to contain social strain, thanks to a reasonable level of sustainability efficiency, and particularly to a relatively high level of efficiency in their political and social institutions. They thereby reach average sustainability ratings in a cross-

comparison of all countries, as is true for a number of East European transitional economies. In addition, these countries also promise an environmentally and socially benign development for the future which in turn facilitates a smooth and efficient management of public expenditure. They therefore enjoy attractive credit ratings that make them interesting candidates for capital investment.

As things stand, Asia's emerging countries score less favourably on the sustainability scale. Although those with strong economies look promising when it comes to sustainability efficiency, they also present high social risks, such as totalitarian or autocratic governments, corruption and a precarious human rights situation in China and Malaysia. These shortcomings not only undermine their sustainability position, but may also constitute sufficient reason for them to be affected (depending on the investor's preference) by certain exclusion criteria. One such criterion would be the exclusion of countries that enforce capital punishment.

Investing in sovereign bonds of emerging countries: a way to encourage sustainable development?

Attractive risk premium

The low yields available on fixed-income securities in recent years have fuelled interest in bonds with higher risk premiums. In the case of sovereign bonds, those issued by developing or emerging countries currently make for an attractive investment – particularly as a complement to existing portfolios – because these countries have to pay a higher risk premium when raising capital due to the uncertainties surrounding the early stages of their economic development. This consideration is equally relevant for investors who consciously include social and environmental criteria in their investment decisions. The question they face, therefore, is whether investment in sovereign bonds of emerging countries can, and should, be guided by environmental and social considerations¹.

Growing importance of emerging countries for global sustainable development

In fact the future direction taken by emerging countries really is vitally important for the future prosperity of the human race:

As far as quality of life goes, large sections of their populations, and therefore of the world population as a whole, are struggling to secure an existence, as is witnessed by the strong discrepancies between conditions in emerging and developed nations. The ability to address these imbalances is crucial for social cohesion and for the quality of life of the entire human race. This makes it a central theme for sustainable development. For this reason alone, it seems fundamentally a good idea for anyone interested in sustainable development to consider investing in these countries and thereby helping their economies to catch up with highly developed nations.

Economic growth is a top priority for emerging countries ...

Although emerging countries understandably give economic growth top priority, the question is whether they manage to allow disadvantaged sections of the population to participate in the new economic prosperity and thereby avoid social tensions internally and conflicts in external relations with other countries.

... but must be environmentally and socially compatible

In addition, economic growth tends to go hand in hand with increased consumption of resources, as is clearly illustrated by China's booming economy. Everything points to the fact that civilisation is already putting more demands on the Earth's ecosystem than it is able to cope with in the long run. The bulk of the world's environmental impact does still come mainly from highly developed nations, which therefore urgently need to uncouple the link between economic growth and environmental impact. But in future our global environmental balance will depend just as heavily on the rate at which emerging countries consume natural resources and whether they manage to reconcile the urgently needed improvements in the quality of life on the one hand with the extra environmental burden imposed by rapid growth on the other.

¹ Since 1999 Bank Sarasin has provided an environmental and social rating for the group of "safe" bonds issued by industrialised nations, see the current version in the report "Sustainability of sovereign bonds? Approach and results of Sarasin's country evaluation", January 2004.

Sovereign bonds from more sustainable countries help to safeguard the future ...

... and present less of a financial risk

It therefore seems wise for investors interested in global sustainability to make their capital available to those emerging countries which take the most socially and environmentally responsible approach to economic growth.

Focusing on countries with a good sustainability record also makes financial sense in the longer term, since countries that seek to keep their environmental and social risks under control allow public budgets to grow in a more stable and robust way.

Recent examples, such as Argentina, show how social inequality and political mismanagement can have serious economic implications, putting public coffers under such strain that the government eventually defaults on its debt. Many investors holding the sovereign bonds of these countries have faced huge losses.

Environmental risks can also put enormous pressure on public budgets. In China, for example, the environmental situation is becoming increasingly precarious as the economy continues to boom. The huge rise in energy demand, which is being met chiefly by coal, is causing atrocious air pollution, and the increase in industrial and residential water consumption has led to water contamination and water shortages. In the long run, the state will therefore have to finance massive infrastructure investments in the areas of waste water treatment and drinking water preparation plants.

These types of environmental and social risks are usually long term in nature and so far have not been fully factored into the credit ratings of the countries in question. Giving preference to sustainable countries – or excluding those with particularly high environmental and social risks – can therefore help to contain the financial risks of investing in government bonds from emerging countries.

Approach to assessing the sustainability of emerging countries

Basic concept for rating countries already exists

For the past five years Bank Sarasin has included government bonds in its universe of bond investments rated against sustainability criteria, but initially restricted the investment universe to top-quality issuers (core OECD countries). It has since gradually extended this spectrum to include a wider circle of countries with a medium credit rating that qualify as emerging countries in the widest sense. The present report describes the methods used to assess the sustainability of these countries and reports on the results of this assessment.

Two-dimensional approach

Sarasin assesses the sustainability of emerging countries in basically the same way as for developed nations, using a two-dimensional approach:

- ◆ Assessment of the current environmental and social impact (sustainability level)

Assessing the environmental and social impact

Here, using a grid with a total of eight criteria, we record the consumption of resources and the environmental impact per head of population, and also the frequency and depth of personal hardship and social marginalisation in the country. This gives an up-to-date picture of the environmental and social impacts, and in fact provides a grouping of countries into different impact classes.

- ◆ Assessment of the efficiency of natural resource consumption and how this is translated into quality of life (sustainability efficiency)

Assessing how efficiently resource use translates into quality of life

Here we examine a total of 11 efficiency criteria. First we measure economic performance per unit of resource consumption or environmental impact, and in doing so assess how carefully or efficiently a country manages its natural resources. We also assess, using a comprehensive range of criteria, how efficiently the available economic performance is translated into quality of life. The efficiency rating gives a picture of the efforts a country is making to sever the traditional link between the quality of life of its citizens on the one hand, and resource consumption and environmental impact on the other. Quality of life is defined by a set of seven criteria ranging from educational opportunities through to public health and a country's foreign relations. We deliberately avoid taking GDP per head of population as a yardstick for quality of life. Although from a sustainability perspective this statistic has an important instrumental function, it is not a target in itself.

Adapting the basic concept to conditions in emerging countries

This basic concept has been tailored to the specific conditions in emerging countries, both for practical and methodological reasons. On the one hand the selection of sustainability indicators has been adapted to the available database. When assessing environmental impact and eco-efficiency, for example, we were unable to analyse waste and recycling statistics. On the other hand we did include other indicators that are important for determining the differences in sustainability between emerging countries. This is particularly the case when recording social impacts: In contrast with the assessment of developed countries, where the entire population basically has access to a secure existence and infrastructure, our assessment of emerging countries also took into account the threat to individuals' personal well-being as a result of starvation and poor medical care, as well as social marginali-

Sustainability rated relative to other countries

sation caused by lack of access to education and communication. This enabled us to produce a comprehensive picture of social stress factors.²

In the country comparison, the indicators are assessed on the basis of an individual country's positioning between the best and worst performing country for this particular indicator.

The comparison includes all the emerging nations which, as a result of their financial standing, are suitable candidates for investment³, as well as all the highly developed countries. To this end, developed countries were assessed on the basis of the same indicators and criteria that were used to evaluate emerging countries.⁴

An important point to remember here is that no indicator may be interpreted in isolation. Each country can only be assessed in the overall context of the interdependent data available at the time of collation. The result of the assessment therefore provides a summary statement about the relative environmental and social sustainability of a country's entire economic and social system compared with other countries in the peer group.

So far no country has achieved absolute sustainability

It is impossible to make a precise statement as to whether a particular country has achieved the level of absolute sustainability, or how close it is to achieving such a state: Although there have already been attempts to determine whether a country goes beyond the level of natural resource consumption that the global ecosystem would be able to replace in the long run (as is most likely the case in all developed countries and many emerging economies, according to the experts)⁵, so far no country has been able to exhibit an environmentally sustainable level of consumption that is also socially acceptable in the long run. Moreover, the ecological and social future of each country is closely related to its global context: whether its current state is sustainable depends on global developments. Islands of sustainability are inconceivable. Improving the sustainability of countries is therefore a global undertaking. So far we can only estimate which countries currently manage to optimise their position between the conflicting social and environmental variables more effectively and deliberately than their peers, in order to give their people a better quality of life in the long run.

Identifying countries with a better sustainability profile

To summarise: the two-dimensional rating approach allows us to identify those emerging countries which our comparison shows as achieving a good balance between current environmental impacts and social deficits on the one hand, and efficiency in the use of natural resources and the improvement of future quality of life on the other.

² Details of the rating method are provided in Annex 2.

³ See Annex 1.

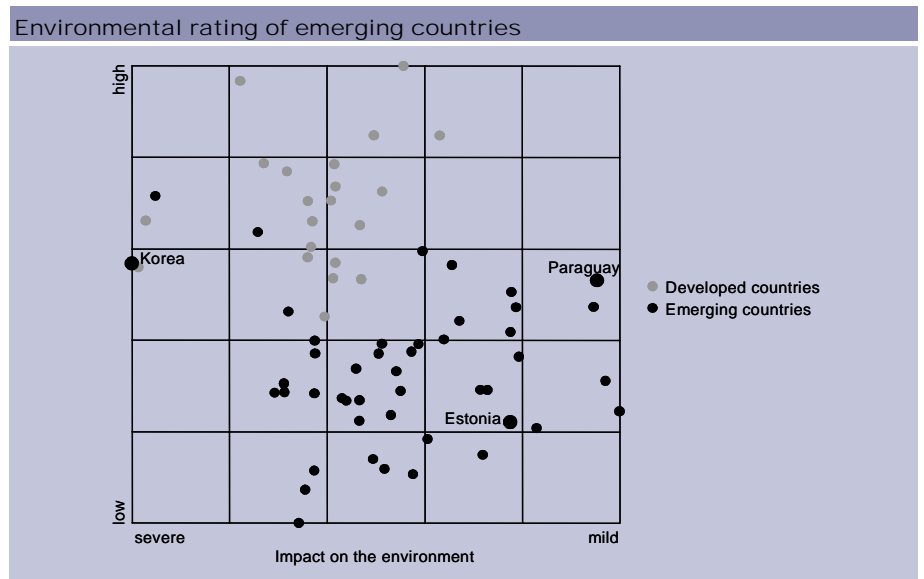
⁴ When selecting securities with a strong sustainability rating among developed countries, these countries have to be measured against much stricter criteria and differentiated more precisely. This has already been done in the existing OECD country rating referred to earlier, which Sarasin manages separately.

⁵ More information on the concept of a country's "ecological footprint" – which attempts to quantify human demand on nature – can be found on the website www.ecofoot.net.

Overview of results for the emerging countries as a group

Environmental profile

When comparing countries purely on the basis of their use of natural resources and their environmental efficiency, the picture described earlier is confirmed:

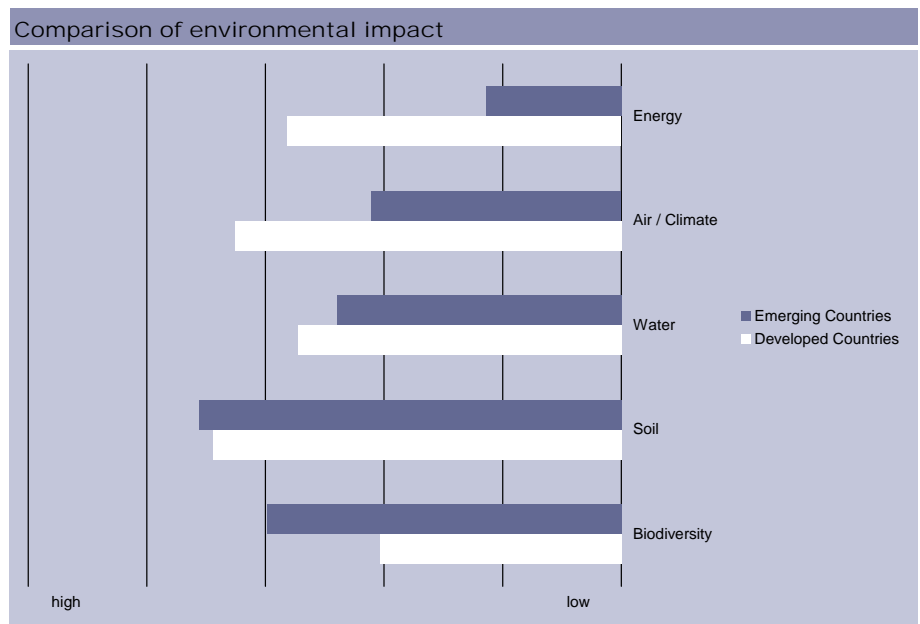


Source: Sarasin calculations

Emerging countries generally are less eco-efficient than developed countries

Compared with the developed countries (grey dots), the emerging countries (black dots) generally have less of an environmental impact, but are far less skilled at efficiently translating their resources into economic performance (eco-efficiency).

While efficiency of resource use is significantly lower across all categories of environmental impact (energy use, emissions, water use and pollution and land use), the level of environmental impact is different in each category:



Source: Sarasin calculations

Absolute environmental impact is generally milder than average

The level of per capita energy consumption and, closely related to this, air pollution, is significantly lower in emerging countries than in developed countries. Water use also tends to be lower in the group of emerging countries, even though it includes some very dry countries in the Middle East. By contrast, land use patterns vary substantially in both groups. In each group there are both sparsely populated countries with economies that use land in an extensive manner, as well as densely urbanised countries that rely on intensive farming. Finally, biodiversity is under greater threat in emerging countries. The number of species at risk is comparatively higher and deforestation is concentrated almost exclusively in this group of countries.

Major differences in the environmental profiles of individual emerging countries

Within the group of emerging countries there are substantial differences that are closely related to population density on the one hand, and to the state of their economic development and social conditions on the other:

Korea

- ◆ Korea's farmland is heavily populated and intensively cultivated. It has a highly developed industrial sector. The distribution of income is fairly even compared with its peer group; per capita income and level of consumption are relatively high. Korea's production and consumption therefore have a particularly strong environmental impact. On the other hand, it already uses natural resources just as efficiently as a number of developed countries.

Paraguay

- ◆ By contrast, the far less densely populated Paraguay, whose per capita GDP is only about a third of Korea's and whose level of consumption is still being curbed by an extremely uneven distribution of income, has a comparatively mild impact on the environment. Its economic performance per environmental unit (eco-efficiency) is currently on a par with Korea, mainly because it generates much of its income from extensive farming.

Estonia

- ♦ Estonia, which has twice as much farmland available per capita than Paraguay, is an industrial nation in terms of its structure, and is having to deal with a legacy of substantial environmental problems. Thanks to advancing environmental protection measures in the areas of energy supply and waste water treatment, Estonia's environmental impact is already better than average, but its use of natural resources is still far less efficient than in highly developed nations.

As these examples illustrate, the differences between emerging countries lie not only in their level of environmental impact but also in their eco-efficiency.

Relatively mild environmental impact in emerging countries can be synonymous with low social sustainability

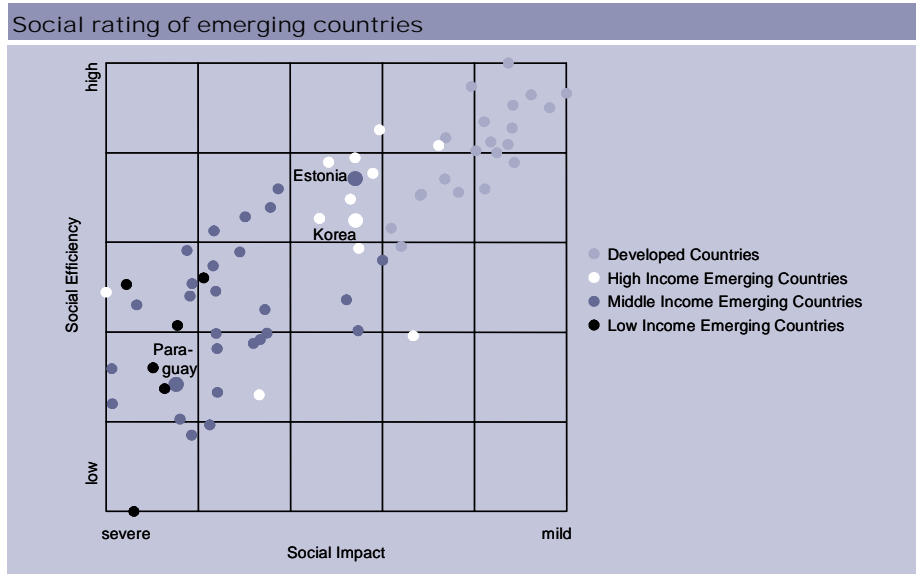
From a sustainability perspective, however, the environmental profile of emerging countries always has to be viewed in conjunction with social conditions. In countries whose relatively mild environmental impact is due to a lower level of economic activity, there is a major risk that this is not being efficiently translated into quality of life, with high social strain in the form of social marginalisation and of subsistence threats facing broad sections of the population as a consequence – a scenario that would not be sustainable overall and in addition holds out little hope of improvement for the future.

Social profile

Higher per capita income generally implies lower social strain

A comparison of countries purely on the basis of social criteria confirms the link between economic output and social impact, as well as social efficiency: In relative terms, developed countries score best in both dimensions. Most of the emerging countries with a comparatively high per capita income⁶ also tend to be positioned in the efficient, low impact category – in total contrast to emerging countries with lower per capita incomes.

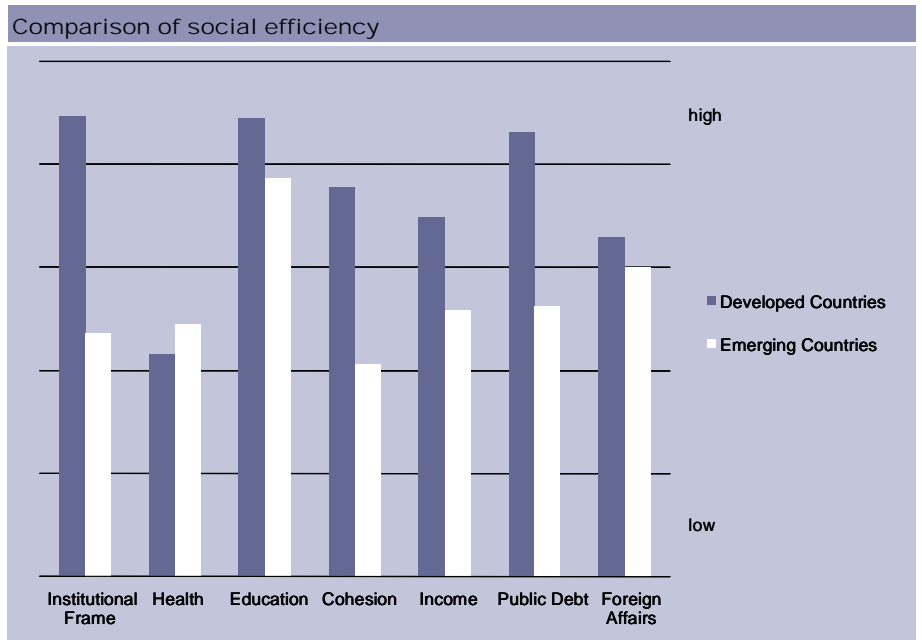
⁶ Emerging countries which, according to the World Bank's income classification system, still fall into the group with high incomes in terms of purchasing power parity. In the middle income category, the World Bank distinguishes between countries with "higher middle" and "lower middle" income, which we refer to here as middle or low income emerging countries. Those classified by the World Bank as low income countries are not included in our country selection because of their poor credit rating and lack of data, see Annex 1.



Source: Sarasin calculations

Variations in comparative social efficiency

The gap between emerging countries and developed countries in the area of social impact is significant in all three categories: personal stress, social marginalisation and violation of human rights. When assessing social efficiency, the picture varies according to category:



Source: Sarasin calculations

Education and health rating on a par with developed countries

Here the lead of the developed nations over the emerging countries is not uncontested in all cases: In the area of foreign affairs, the spectrum in both groups ranges from countries which are economically and politically well integrated and open to consensus, to rather isolated nations with aggressive instruments of power. In the areas of education and especially health, there are a number of examples of particularly high efficiency among the emerging countries of Latin America, Asia and Europe. By contrast, emerging countries significantly lag the developed world in three social criteria that are particularly symptomatic of their situation:

Emerging countries still score poorly in the criteria institutions, social cohesion and debt management

First, in the efficiency of their social and political institutions, which play an important and often decisive role in shaping the future of a developing country. Second, in social cohesion as a measure of efficiency in resolving the social conflicts that are often unavoidable when a country is developing at a rapid pace. Third, emerging countries as a group are affected by a comparatively poor performance in the management of their public debt and their overall external debt, which can restrict the economic and social choices left open for future generations.

Taken as a whole, both the dimensions “social impact” and “social efficiency” are thus clearly correlated with the level of economic development of individual countries. The less developed an economy, the greater the social impact and the lower the social efficiency tend to be.

Wide variation also in the social profiles of individual emerging countries

When establishing the sustainability rating, however, the aim is precisely to identify those countries that manage to break free of the dominant inverted correlation between environmental and social sustainability and which thus minimise the social risk associated with their given environmental profile. A quick look at three of the countries shows that this risk *can* be relevant, but does not have to be:

Paraguay

- ◆ In Paraguay the level of social efficiency is actually comparatively low because of stark differences in income, poor social cohesion and poor checks on power in what is formally a democratic system. This is coupled with heavy strain on the population caused by widespread poverty, illiteracy and poor access to the social infrastructure. Paraguay’s strengths described earlier in its environmental profile are therefore offset by significant weaknesses in the area of social sustainability. The country’s poor social efficiency acts as a drag on prospects for a socially compatible economic progress in the future and also leaves little hope that economic growth will be managed in an environmentally responsible way.

Korea

- ◆ Korea presents a completely different picture. The reliability and efficiency of its democratic institutions and the social cohesion of its population are in line with the international average. Its education and health systems are more efficient than the global average. Although the country is going through a phase of unstable foreign relations in view of the tensions with its northern sister nation and of its transition from a developing country importing capital to a mature capital export country, Korea still has a far higher level of social

efficiency overall than Paraguay, for example. Furthermore, social strain from personal stress and social marginalisation caused by extreme poverty is now relatively rare in Korea. At the same time, the lack of equal opportunities for women and the restriction of human rights (death penalty) still have a strong negative impact on society. High environmental impacts on the one hand, coupled with relatively prominent overall social strain on the other, therefore spoil the country's overall sustainability rating in comparative terms. But Korea's good standing in environmental and social efficiency provides hope that its relative position may improve in future.

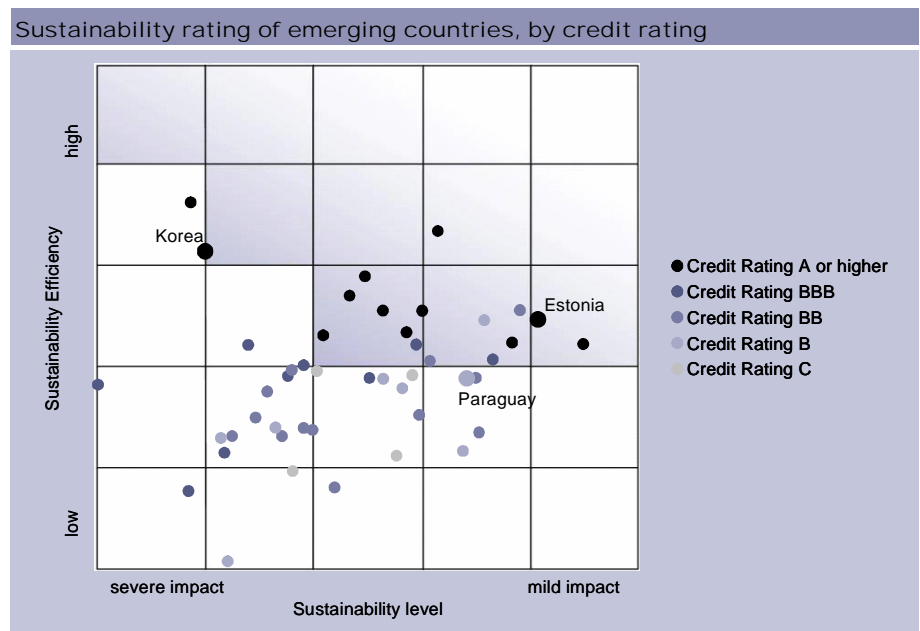
Estonia

- ◆ Despite seeing its economy contract in the nineties after it turned its back on the socialist system, Estonia has since been comparatively successful in keeping social strain in check and defending traditions such as the integration of women into the workforce. Social efficiency is better than average, which not only applies to the traditionally good health and education systems, but also to sensitive categories such as political institutions and the management of public and external debt. The social sustainability rating thus supports the positive image of Estonia's environmental sustainability position. The country therefore has a good sustainability rating overall. The record of above-average social efficiency also raises expectations that the relationship between economic performance, environmental impact and quality of life could develop favourably in future.

Overall sustainability performance

Combining environmental and social ratings to determine the sustainability position

By combining the environmental and social rating we are able to select countries with comparatively high sustainability profiles, based on their position in the Sarasin matrix reproduced below. The shaded area indicates the range of ratings that are eligible for Sarasin sustainability funds: Sustainability efficiency must be at least average. Countries with a lower than average sustainability level are also taken into consideration provided their efficiency is proportionally higher than average, since there is a fair chance they will be able to reduce their social strain and limit their environmental impact level in future.



Source: Sarasin calculations

As already mentioned, Korea (high absolute environmental impact) and Paraguay (high social impact with low social efficiency) are not included in this Sarasin investment universe for quite different reasons. Estonia, on the other hand, is a country that Sarasin would be prepared to invest in.

Countries with good credit ratings are generally positioned in the sustainable area

The country positions in the matrix are also marked to display their respective financial credit rating⁷. Here we can see that the emerging countries with good credit ratings ('A' or better) generally have a better sustainability position, and almost all of them lie above the Sarasin sustainability threshold. Emerging countries with medium credit ratings (BBB to B), on the other hand, are scattered above and below this threshold.

Sustainable selection options within each credit rating category

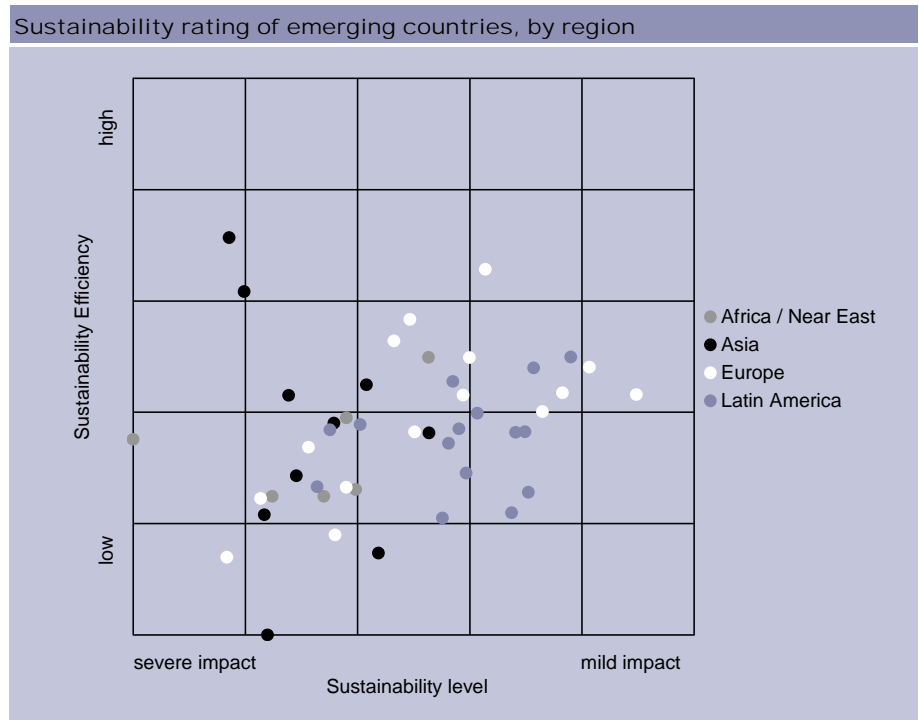
At the same time, however, it is also clear that Paraguay is one of the countries with the best sustainability ratings in its own credit rating category (BB). For investors who wish to select countries from a defined credit rating category, Paraguay is therefore on the shortlist with only one other country in the same credit rating category exceeding its environmental and social impact rating, as well as its social and eco-efficiency record at the moment.

Some of the emerging countries popular with investors actually score poorly on sustainability

A number of emerging countries that appeal to investors due to size (in terms of liquidity in the bond market), or to economic dynamics, including Mexico, Russia, Brazil, China, South Africa, Romania and Turkey, are not positioned in the area that corresponds to a good sustainability rating. Because of widespread inefficiency in their political and social institutions, large sections of their populations are currently missing out on the benefits of their admittedly rapid economic growth, while environmental hazard control and protection policies are neglected, causing fresh social tensions combined with extra consumption- and production-related strain on the environment as a result.

⁷ Standard & Poor's rating for long-term government bonds denominated in foreign currency, status 18.3.2005, see Annex 1.

When assessing sustainability, emerging countries from different regions of the world show characteristic differences:



Source: Sarasin calculations

In Europe, EU accession states lead the way in sustainability

Of all the European states, it is mainly the Central European and Baltic countries, all consciously working to integrate existing European standards in the areas of environmental policy, institutional framework and social achievements, which boast better than average sustainability ratings.

In Latin America, smaller countries have efficient institutions

Some of the smaller Latin American countries, such as Costa Rica (known as “the Switzerland of Central America”), are also well positioned on the sustainability matrix, partly thanks to the mild impact of the economy on natural resources (whose levels are still high per head of population), and also due to the higher than average efficiency of their institutions.

In Asia: preference for countries that manage to control social impacts

In Asia, sustainability efficiency is only above average in countries with strongly performing economies. But since these countries also tend to have a severe environmental and social impact (Korea, Singapore), they are all positioned in an area of the matrix that is not particularly sustainable. Poor human rights records, marginalisation through extreme poverty, discrimination against women and the inefficiency of political processes are the dominant factors (in different combinations) influencing the sustainability rating of the emerging countries in Asia.

In Africa and the Middle East, only conflict-torn Israel manages to achieve an average sustainability rating

The small group of countries in Africa and the Middle East which are actually financially strong enough to meet the minimum credit rating for the investment universe studied all have lower than average sustainability ratings, with the exception of Israel. They suffer from relative inefficiency, as well as significant environmental and social impacts.

Other exclusion criteria for particularly unwelcome aspects

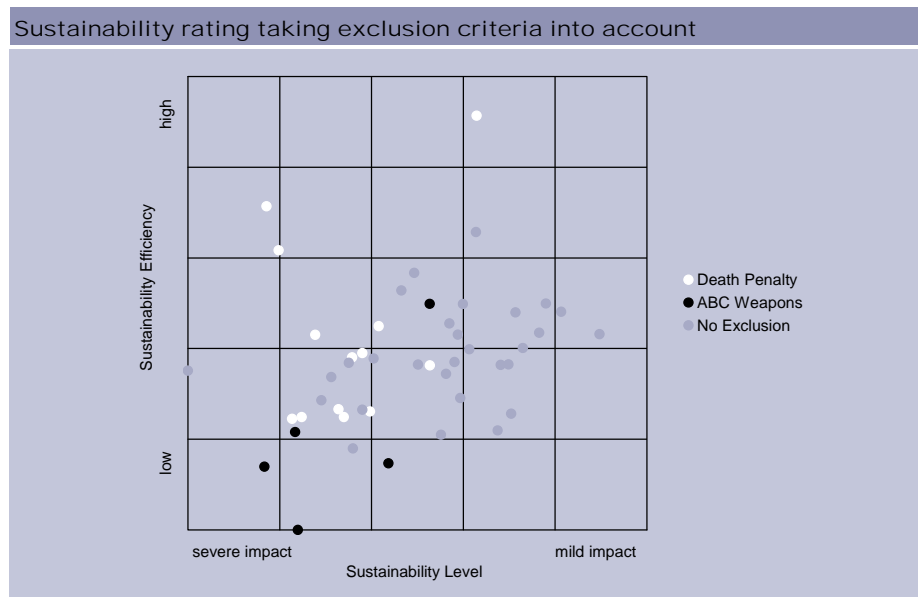
In practice, exclusion criteria are often applied to sustainable investments, in order to prevent an investment in what would be, by our own standards, plainly

undesirable activities. Sarasin has analysed the following potential exclusion criteria, defined them in precise terms and examined them for the group of emerging countries studied in this report⁸:

Numerous exclusion criteria come to mind

- ◆ ABC weapons
- ◆ Death penalty
- ◆ Nuclear power
- ◆ Violation of human rights
- ◆ Suppression of religious freedom
- ◆ State repression

Certain countries may therefore be excluded when it comes to selecting sovereign bonds issued by countries that impose the death penalty and have enforced it in the last three years, or countries, such as Israel, that are known (according to reputable sources) to have definitely (or with a high degree of probability) stockpiled atomic, biological or chemical weapons. If we apply this type of negative selection on top of the sustainability rating, the following picture emerges⁹:



Source: Sarasin calculations

⁸ When picking sovereign bonds for Sarasin investment products, we apply the first three exclusion criteria listed here.

⁹ With some of the countries affected, such as China, the two criteria are accumulative.



Exclusion criteria mainly affect emerging countries with poor sustainability ratings

As the figure shows, the emerging countries excluded from the investment universe would mainly be those which in comparative terms already have a poor sustainability position on the matrix on the basis of the positive rating criteria¹⁰.

However, in some cases the exclusion criteria also affect individual countries that attain a good overall performance when measured against positive sustainability criteria.

¹⁰ This is partly because the extreme types of conduct that can result in exclusion are already accounted for by the assessment of the positive sustainability criteria, in a weighted form. Thus checking for ABC weapons is also part of the assessment of the efficiency criterion "foreign affairs", while assessing the attitude to the death penalty falls under the "human rights" criterion (see Annex 2). The same applies to the four other exclusion criteria listed above.

Sustainability profiles of selected countries

Sarasin records the results of its sustainability analysis in a country profile that depicts and briefly comments on the country's position in the sustainability matrix, as well as on its profile in terms of sustainability level and efficiency criteria, compared with the average of all the countries considered. In what follows we provide profiles for three very different countries, all of them currently popular with investors:

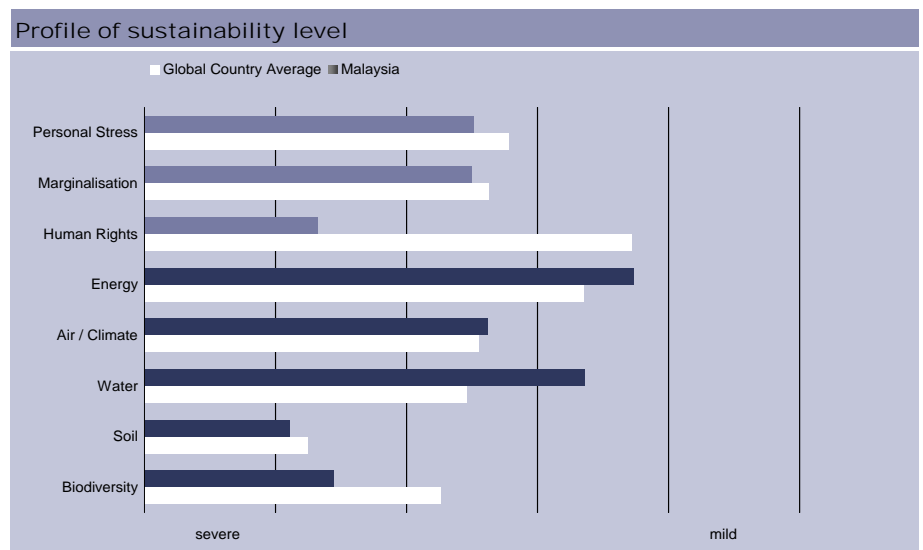
We start with Malaysia, a country that credit rating agencies class as suitable for investment and one which currently enjoys an average sustainability rating, but also falls foul of one exclusion criterion. Our second choice is Poland, whose long-term bonds are no longer classed as speculative investments by rating agencies and whose sustainability rating is already average. Finally Brazil, whose government bonds are receiving much interest on capital markets – despite the fact that their credit rating clearly makes them a speculative play – but which scores rather poorly on sustainability.

Malaysia

Country data 2003/2004	
Area:	329 750 sq km
Population:	23.5 million
Age Structure: Proportion >64 / <15:	4.5 % / 33.3 %
GDP (Purchasing Power Parity Basis):	9 000 USD per capita
Sectoral Structure: Agriculture / Industry / Services	7.3 % / 33.5 % / 59.1 % of GDP
Public Debt:	45.5 % of GDP
Credit Rating* according to Standard & Poor's:	A minus
* Long-term foreign currency denominated sovereign debt rating as of March 18, 2005	

Institutional framework

Malaysia is a federal constitutional monarchy. The head of state is elected from the hereditary rulers of the federal states, but mainly has a ceremonial role. The federal states are represented in the upper house of parliament. State power is concentrated in the hands of the majority leader in the elections for the lower house of parliament. Since 1957 this has been the dominant coalition, National Front. The policy pursued by prime minister Dr. Mahatir (1981-2003), which was economically beneficial but politically autocratic and repressive, is being mitigated since 1999 as the – partly fundamentalist Islamic – opposition is gaining strength on a regional basis.

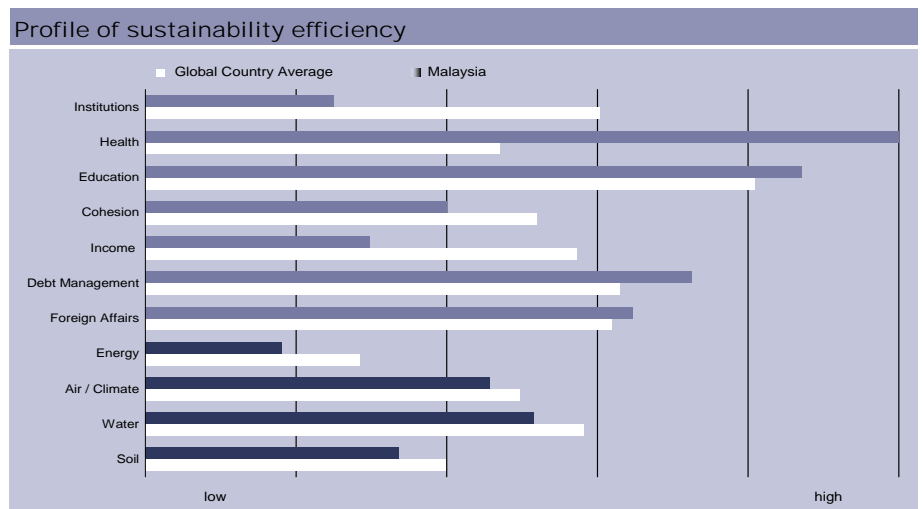


Source: Sarasin calculations

Malaysia has not ratified international human rights conventions, and contravenes them in the areas of policing, maximum penalty (see under exclusion clauses) and the penal system, as well as in the suppression of freedom of expression and freedom of assembly.

Although Malaysia has sizeable nature reserves, every year over 1% of the tropical forest is destroyed, with severe consequences for biodiversity, such as the destruction of the orang-utan's habitat in North Borneo.

Thanks to greater exploitation of natural gas from oil fields, electricity demand is satisfied with a comparatively mild environmental impact. Water usage only consumes 2% of supplies every year.



Source: Sarasin calculations

Among countries of similar economic strength, Malaysia sets the standard for cost efficiency in healthcare.

Social cohesion is comparatively weak due to uneven distribution of income, widespread poverty and ethnic tension, compounded by a traditionally repressive style of government.

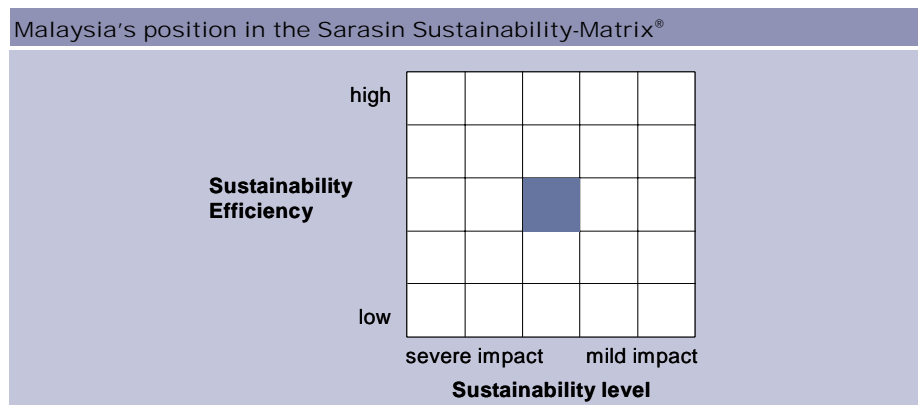
Rapid industrialisation, road building programmes, the traditional mining of mineral resources and the intensification of agricultural production have so far gone hand in hand with decreasing efficiency in the use of energy, water and land.

Exclusion criteria

The death penalty is imposed and executed.

Conclusion

With rapid industrialisation and booming consumption, Malaysia is placing growing demands on the ecosystem. But compared to other countries Malaysia's per capita use of natural resources is still only modest, although deforestation in particular is threatening biodiversity in an alarming way. The country's efficiency in translating natural resource consumption into economic output is still below average at the moment, partly for structural reasons. The high social efficiency in individual categories means that Malaysia merits an average sustainability rating at present, despite institutional risks for shaping future development.



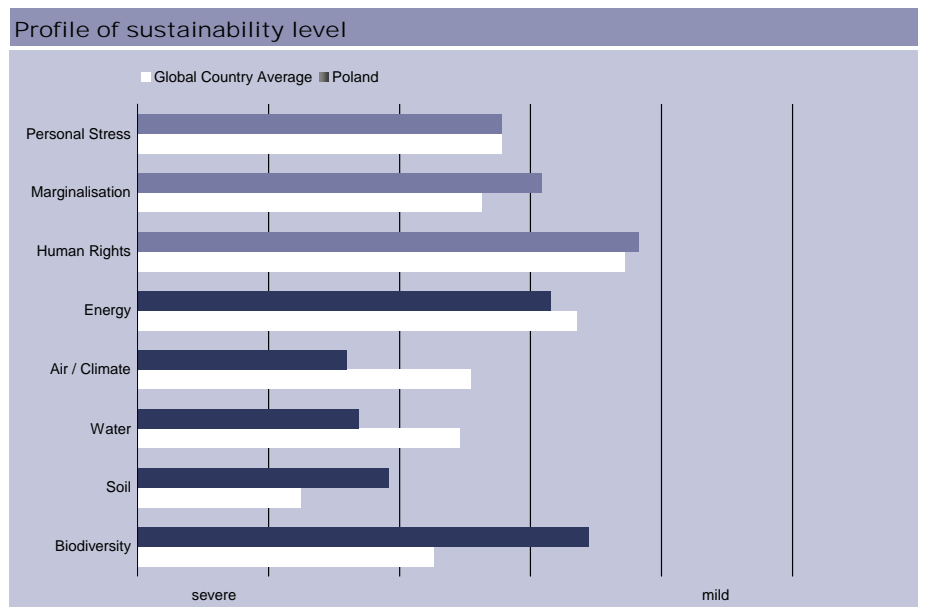
Source: Sarasin calculations

Poland

Country data 2004/2005	
Area:	312 685 sq km
Population:	38.6 million
Age Structure: Proportion >64 / <15:	13.0% / 16.7%
GDP (Purchasing Power Parity Basis):	12 000 USD per capita
Sectoral Structure: Agriculture / Industry / Services	2.9 % / 31.3 % / 65.9 % of GDP
Public Debt:	49.9 % of GDP
Credit Rating* according to Standard & Poor's:	BBB plus
* Long-term foreign currency denominated sovereign debt rating as of March 18, 2005	

Institutional framework

Poland is a democratic republic, whose provinces are represented in the upper chamber of parliament. The president is directly elected and appoints the prime minister. Poland has a constitutional court. Important decisions are voted on in referenda. The political parties are fragmented and in a state of flux. The pro-European path (in favour of NATO and EU membership) taken by the dominant camps of the Solidarnosc movement and the ex-communists has prompted a limited nationalist, Eurosceptic counter-movement. Recently there have been signs of credible resistance to the spreading corruption in business and politics.

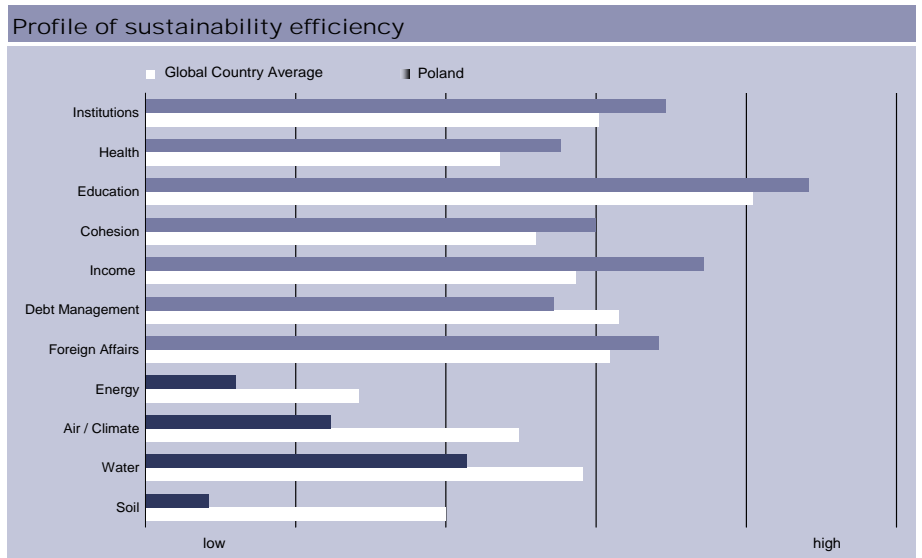


Source: Sarasin calculations

Although social marginalisation as a result of unemployment has increased in Poland, it needs to be put into perspective by comparison with other countries, since other forms of social exclusion (poor access to education and communication, discrimination against women) do not apply.

Despite significant progress, Poland's record in combating air and water pollution is still below average.

The extension of nature reserves and the extensive use of land to date have helped to preserve biodiversity.



Source: Sarasin calculations

As a former communist country, Poland has a relatively flat distribution of income.

The Roman Catholic Church and the trade union movement are firmly anchored in Polish society thanks to their role in the country's liberation from communist rule in 1989, and despite the challenges of the transition to a democracy still help to maintain social cohesion.

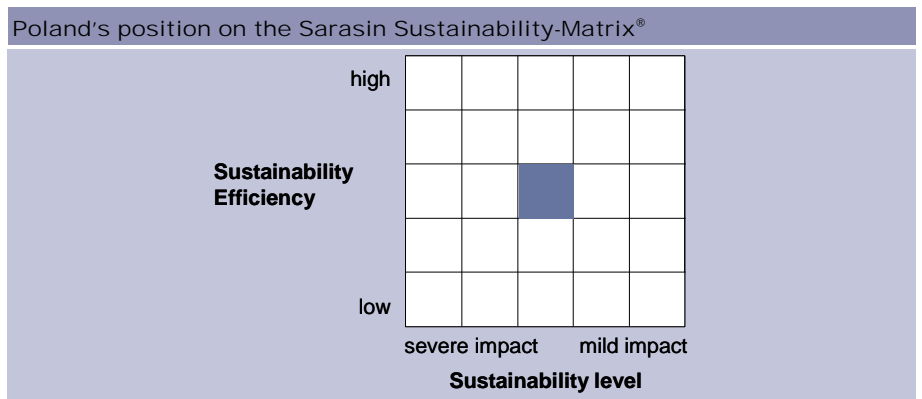
Due to brownfield hazards in industry and the energy sector, as well as to its antiquated farming technology the eco-efficiency of Poland's economy still remains comparatively low.

Exclusion criteria

No country exclusion criteria apply.

Conclusion

Despite the introduction of EU standards, Poland's environmental impact is currently as high as that of Western European countries. At the same time it is far less efficient at translating this into economic performance. Overall, Poland is positioned in the middle of the Sustainability Matrix, mainly because of its above-average social efficiency compared with its peers. The future development of its position will depend heavily on how well it consolidates its institutional efficiency.



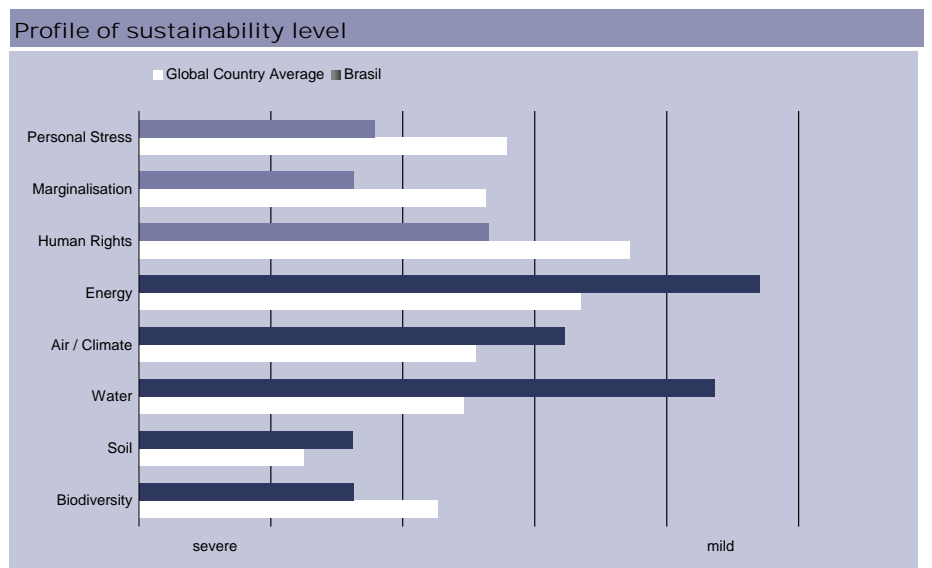
Source: Sarasin calculations

Brazil

Country data 2003/2004	
Area:	8 511 965 sq km
Population:	184.1 million
Age Structure: Proportion >64 / <15:	5.8 % / 26.6 %
GDP (Purchasing Power Parity Basis):	7 600 USD per capita
Sectoral Structure: Agriculture / Industry / Services	10.2 % / 38.7 % / 51.2 % of GDP
Public Debt:	58.5 % of GDP
Credit Rating* according to Standard & Poor's *	BB minus
* Long-term foreign currency denominated sovereign debt rating as of March 18, 2005	

Institutional framework

Brazil is a federal republic with 26 states, represented in the upper house with three seats each. Voting is compulsory for citizens aged 18 to 70; members of the military service are not entitled to vote. The president is directly elected and appoints and leads the government. His power base is restricted by intensive lobbying from among the country's political elite, which is split into many different camps, and by the still important role of the military. The persisting stark social inequalities, the widespread corruption and the lack of direct democratic constitutional elements could jeopardise the success of the economic reforms implemented over the last seven years.

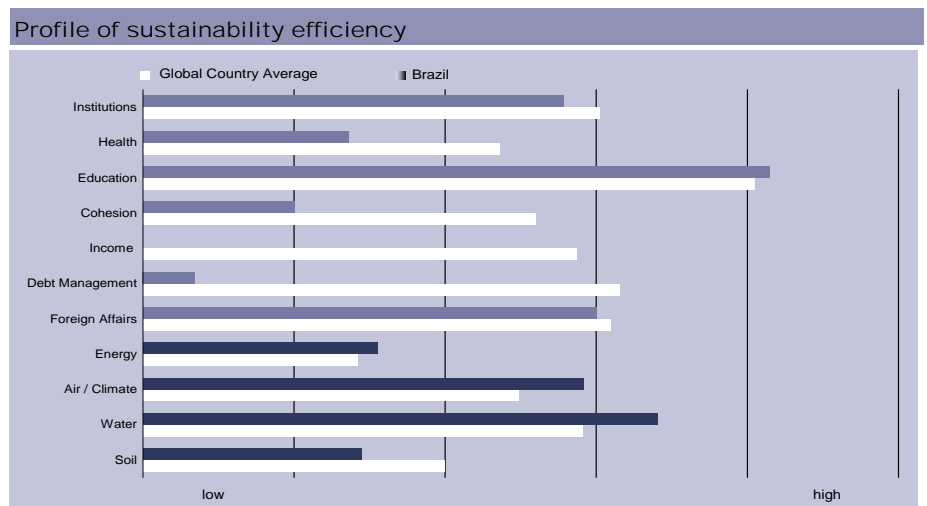


Source: Sarasin calculations

The main causes of individual stress in Brazil are crime and corruption. Furthermore, despite recent improvements leading to a decent start in education, large groups of the population are marginalised through illiteracy and poverty, while women are discriminated against in public life.

Violations of human rights in policing and in the penal system, especially against activists in the impoverished and the indigenous population, are common and still tend to largely unpunished.

Brazil's economic development is still only producing a mild environmental impact, but is posing an acute threat to flora and fauna.



Source: Sarasin calculations

Compared with other countries, Brazil shows the most extreme discrepancies in the distribution of income. This affects social cohesion rather more than the profound ethnic diversity of Brazil’s population.

Hope for improvement comes from the efficiency of the education system, while the country’s public health system barely reaches the poorest sections of the population.

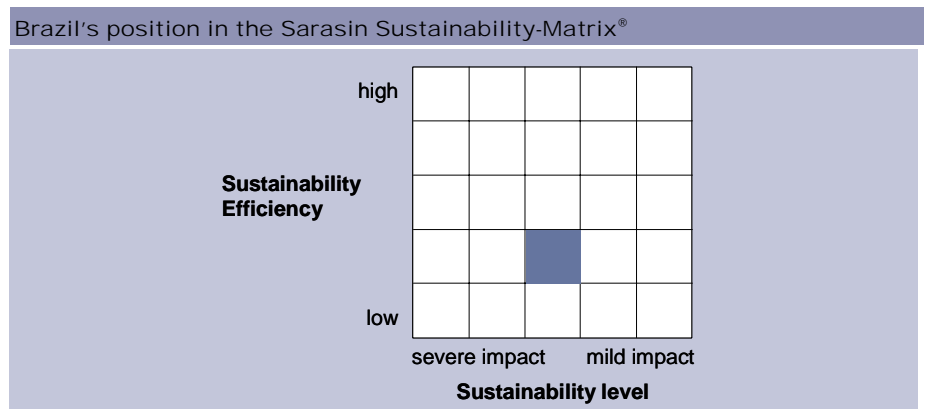
Brazil’s high level of public and foreign debt restricts the ability of future generations to shape the country’s development.

Exclusion criteria

No country exclusion criteria apply.

Conclusion

As a newly industrialised country, Brazil is making increasing demands on the ecosystem, but its impact is still below average for the time being. The country’s efficiency in translating the consumption of natural resources into economic performance is already above average on balance, apart from the ruthless acquisition of land. By contrast, Brazil scores poorly on social efficiency mainly because of the delay in tackling the huge discrepancies in the distribution of income. Brazil is therefore given a comparatively low sustainability rating overall, mainly because of its poor social rating.



Source: Sarasin calculations

Annex 1

Definition of the investment universe

Our decision about which countries to include in the comparative analysis of the sustainability of emerging countries was based on the following considerations:

Pre-selection

Since investors generally tend to avoid highly speculative investments, and when making a shortlist rely heavily on the financial ratings given by the major credit rating agencies, we decided to use the list of all countries given a "Foreign Currency Debt Long-Term Sovereign Rating" from the leading rating agencies. We then narrowed down this list to those countries judged to have at least a medium speculative risk according to the agencies Moody's Investor Service, Standard & Poors' and Fitch. This produced an initial list of 114 countries.

Narrowing down by relevance

The next step was to exclude offshore centres and other small countries whose sovereign bonds are not very liquid due to lack of market volume. This ruled out another 39 countries.

Narrowing down by data availability

We did not attempt to come up with ratings for countries with very little available data (criterion: data missing for a third or more of the relevant indicators in the World Bank database). This excluded another 18 countries with rather small economies.

Inclusion of highly developed countries

As mentioned at the start, highly developed countries were included in the country comparison of sustainability ratings, using the criteria that are relevant for emerging countries. This may initially seem an unorthodox approach, but makes sense for a number of reasons:

- ◆ Fair environmental rating: Only by including highly developed countries is it possible to highlight that many emerging countries have a far lower environmental impact per capita than highly developed nations, but at the same time still have a long way to go when it comes to catching up on eco-efficiency.
- ◆ Appropriately targeted social rating: On the other hand, only by including developed countries are we able to show how far behind current standards some emerging countries still are when it comes to safeguarding their citizens' existence and to translating natural resource consumption into quality of life (see the list of social efficiency criteria: level of consumption and per capita income are not included, and are not therefore used as yardsticks). The inclusion of highly developed countries measured *by emerging economy criteria* therefore introduces a social development perspective.
- ◆ Measurement against what is already feasible: A global comparison is needed for the overall result to show which sustainability class the countries fall into in the global effort to secure an existence for their people *and* to sever the traditional link between environmental impact and quality of life. To put it another way: only a global comparison is capable of revealing the gap between a

country's sustainability position and the potential position that is already achievable today.

On this basis, our universe of included countries is as follows:

Developed countries			
	Moody's*	Standard & Poor's*	Fitch*
Australia	Aaa	AAA	AA+
Austria	Aaa	AAA	AAA
Canada	Aaa	AAA	AAA
Denmark	Aaa	AAA	AAA
Finland	Aaa	AAA	AAA
France	Aaa	AAA	AAA
Germany	Aaa	AAA	AAA
Ireland	Aaa	AAA	AAA
Netherlands	Aaa	AAA	AAA
Norway	Aaa	AAA	AAA
Spain	Aaa	AAA	AAA
Sweden	Aaa	AAA	AAA
Switzerland	Aaa	AAA	AAA
United Kingdom	Aaa	AAA	AAA
United States of America	Aaa	AAA	AAA
New Zealand	Aaa	AA+	AA+
Belgium	Aa1	AA+	AA
Portugal	Aa2	AA	AA
Japan	Aaa	AA-	AA
Italy	Aa2	AA-	AA
Greece	A1	A	A

Emerging countries			
	Moody's *	Standard & Poor's *	Fitch *
Singapore	Aaa	AAA	AAA
Slovenia	Aa3	AA-	AA-
Chile	Baa1	A	A-
Estonia	A1	A	A
Czech Republic	A1	A-	A-
Hungary	A1	A-	A-
Israel	A2	A-	A-
Latvia	A2	A-	A-
Lithuania	A3	A-	A-
Malaysia	A3	A-	A-
Slovakia	A2	A-	A-
South Korea	A3	A-	A
China	A2	BBB+	A-
Poland	A2	BBB+	BBB+
Thailand	Baa1	BBB+	BBB
Croatia	Baa3	BBB	BBB-
Mexico	Baa1	BBB	BBB-
South Africa	Baa1	BBB	BBB
Tunisia	Baa2	BBB	BBB
Bulgaria	Ba1	BBB-	BBB-
Russia	Baa3	BBB-	BBB-
Egypt	Ba1	BB+	BB+
India	Baa3	BB+	BB+
Romania	Ba3	BB+	BBB-
Colombia	Ba2	BB	BB
Costa Rica	Ba1	BB	BB

Continued on next page

Emerging countries (cont.)			
	Moody's *	Standard & Poor's *	Fitch *
Jordan	Ba2	BB	n/a
Morocco	Ba1	BB	n/a
Panama	Ba1	BB	BB+
Peru	Ba3	BB	BB
Brazil	B1	BB-	BB-
Philippines	B1	BB-	BB
Turkey	B1	BB-	BB-
Vietnam	B1	BB-	BB-
Indonesia	B2	B+	BB-
Pakistan	B2	B+	n/a
Ukraine	B1	B+	BB-
Jamaica	B1	B	n/a
Uruguay	B3	B	B
Bolivia	B3	B-	B-
Ecuador	Caa1	B-	B-
Paraguay	Caa1	B-	n/a
Argentina	Caa1	SD	D
Dominican Republic	B3	SD	CCC+ *-
Venezuela	B2	SD	B+
Moldova	Caa1	n/a	B-

* Long-term foreign currency denominated sovereign debt rating as of March 18, 2005
Source: Bloomberg

Annex 2

Outline of the country rating procedure

Definition of sustainability criteria

The objective of providing an assessment along the lines of the basic concept is met by analysing the information for the criteria listed below.

Selection of indicators

To assess each criterion, we produce a fixed grid of numeric and qualitative indicators. Their choice is based on whether they describe the criteria thoroughly, are readily available, reliable and are defined consistently to ensure comparability across all countries. For qualitative information, recognised standard sources¹¹ are used wherever possible. The database provides new values partly on an annual and partly on a less frequent basis.

Assessment

All indicator values entered are standardised within the country group on a scale from 0 (the weakest country in terms of sustainability) to 5 (the strongest). When assessing qualitative information we use a scale of five scores, ranging from 0.5 to 4.5.

Weighting

The standardised indicator values are then aggregated to assess each individual criterion. In doing so, we deviate from the principle of equal weighting where appropriate. The criteria are then aggregated in turn to produce sectoral evaluations of the sustainability level and sustainability efficiency respectively. Here the principle of equal weighting of the environmental and social aspect applies when working out both the overall impact and the overall efficiency result.

¹¹ The main sources are the databases of the United Nations, the World Bank and the IMF, as well as internationally recognised research and human rights institutions.

Sustainability level	
Criteria	Description
Social Impact	
Personal Stress	Escapism (suicide, addiction), crime, malnutrition, exclusion from medical facilities
Marginalisation	Poverty, unemployment, exclusion of women, exclusion from access to education and communication
Human Rights	Violations of human rights according to reputable international observer groups
Environmental Impact	
Energy	Energy use, evaluation of power generation sources
Air / Climate	Emissions of CO ₂ , NO _x , SO _x
Water	Withdrawals in relation to internal water resources, water pollution caused
Soil	Population density, irrigation, fertilizer use
Biodiversity	Threatened species, protected areas and rate of deforestation

Sustainability efficiency	
Criteria	Description
Social Efficiency	
Institutions	Structure and efficiency of institutions according to reputable observers
Health	Life expectancy and infant mortality in relation to health expenditure and to the level of per capita income
Education	Primary school enrolment and youth literacy in relation to education expenditure and to the size of gross domestic product.
Cohesion	Cohesion across society in view of perceived social diversity, according to standard sources.
Income	Income distribution indicators
Debt Management	Indicators assessing public and external indebtedness in terms of carrying capacity
Foreign Affairs	External economic integration, military expenditure, armaments and arms exports, international political integration
Eco-Efficiency	
Energy	GDP per unit of energy use
Air / Climate	GDP per unit of emissions
Water	GDP per unit of water withdrawn and of water pollution caused
Soil	Agricultural value added per unit of cropland and of fertilizer consumed

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Financial Institutions	The Sustainability of Public Financial Institutions. Klaus Kämpf, March 2005
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