

Is Globalization Risky?

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Summary

Contrary to the common idea that globalized countries may be more risky these days, we found out that the more a country is globalized the less it is exposed to risk in terms of financial instability. Having already learnt from past experiences, countries with more mature, developed and sophisticated financial systems tend to be more protected against challenges from globalization. Looking at the dynamics of globalization, the transition from a low level to a higher level of globalization, countries, especially in Asia, are trying to catch up with the more established. This effort, however, is accompanied by increased volatilities in their stock exchanges: We found that countries which have made significant progress on globalization issues in recent years, tend to be more exposed to increasing risks.

The strong linkage between low level of globalization and high risk needs to be addressed and carefully governed by all market participants. Methodologies which control and manage risks and regulatory requirements on risk management standards are available. While we can assume that more and more countries will become equally globalized, internationally harmonized regulations need to be provided by legal authorities and implemented by market participants in order to visualize and mitigate risks and support sustainable market activities. Risk management instruments must be implemented with the same pace as the continuous increase in globalization and financial market complexity.

However, ongoing globalization also generates new challenges for mature and more globalized countries. In a globalized world, countries themselves must become more responsive to economic risks. We propose three initiatives for all nations: 1. Enhance and harmonize the application of existing regulations 2. Establish domestic *Governmental Risk Management Practices* and 3. Establish a *Global Risk Committee* to co-ordinate each other nations' risk portfolios on a global basis. Methodologies to measure and mitigate domestic and global risks need to be developed and appropriate guidelines and regulations reflecting the needs of all interweaved economies must be established. This kind of globally co-ordinated *Governmental Risk Management* is a necessary mean in a globalized world to improve stability and sustainable wealth.

1. Introduction

Globalization is the compression of time and space, increased perception of world's unification and interweaving of national economies; as well as the global diffusion of practices, technologies and values.² Globalization means that from now on no activity in our world is locally limited, but all inventions, victories and catastrophes can affect the whole world and we all have to realign and reorganize our lives, actions, our organizations and

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² Manfred Prisching: Die Globalisierte Welt, Working Paper, University of Graz, p1.

institutions along a 'local-global' axis.³ Increasing international trade, money transfer and investments as well as off-shoring of production and services are the effects of globalization. Modern communication technologies have made more information available than ever. They are the key enablers of globalization. Along with the achievement of globalization there is also the *process* of globalization which produces changes and challenges for everyone. Countries that have switched from communistic to capitalistic economic systems are adding more speed to the worldwide process of change and globalization. However, changes are often coupled with uncertainties which can subsequently produce risks in terms of financial instability.

It can be expected that a high level of globalization is accompanied by a high level of standard, regulation, and hence certainty, in other words, little room for financial risks and instability. On the other hand, the *process* of globalization is often coupled with changes, uncertainties, errors and steep learning curves, which in turn create financial risks and instability when opening up for new technologies, methodologies and practices.

Therefore a simple question arises: Is globalization risky? As a response, we would like to explore the relationship between *globalization* and *financial instability* together with a more in depth discussion on the *process* of globalization and its effects on financial instability.

In recent years evidences have been found, suggesting that globalization is a key driver in helping emerging economies to apply knowledge, regulations and standards observed from their Western counterparts in order to become more mature, reliable and hence stable. Pazarbaşıoğlu *et al.* (2007) find that globalization efforts may have resulted in higher stability reflected by decreasing bond spreads in emerging countries, less cross-border capital flow volatility and decreasing volatilities of bonds, equities and foreign exchange rates in various countries.⁴ Moreover, in 2004 the now U.S. Federal Reserve Chairman Ben Bernanke already titled the increasing stability of financial markets 'as the great moderation' which was possibly caused by the many positive effects of globalization.⁵

A stable economic development is one of the cornerstones of the strong and well-functioning capitalistic system. We expect that there is a major difference in terms of risk between countries with mature capitalistic systems and countries that are in the process of catching-up or building their own economic systems by adopting or creating new standards and regulations. The process of catching-up with experience to conduct an economy however, takes time. Meanwhile, countries with less mature economic systems are expected to be subject to higher risk. The more risk a country faces the less stability is provided by the system for all participants within, and the more money is potentially wasted. So, the question we would like to ask is: Does the *ongoing process* of globalization make financial systems risky?

³ Ulrich Beck: Was ist Globalisierung: Irrtümer des Globalismus, Antworten auf Globalisierung. Frankfurt am Main, 1997, p. 30.

⁴ Ceyla Pazarbaşıoğlu, Mangal Goswami, and Jack Ree: The Changing Face of Investors, in: Finance & Development, Volume 44, Number 11, March 2007.

⁵ "The increased depth and sophistication of financial markets, deregulation in many industries, the shift away from manufacturing toward services, and increased openness to trade and international capital flows are other examples of structural changes that may have increased macroeconomic flexibility and stability." Ben S. Bernanke (2004): The Great Moderation, The Federal Reserve Board, At the meetings of the Eastern Economic Association, Washington, DC, February 20, 2004.

2. Data Sample and Preparation

To determine the level of globalization we have used the KOF Index of Globalization, which measures several dimensions on a yearly basis for 122 countries over the period between 1970 and 2005. The overall Globalization Index (GI) is derived as a weighted average from three main dimensions namely 1. Economic, 2. Social, and 3. Political, and five sub-indices such as 1. Economic Flows, 2. Economic Restrictions, 3. Data on Information Flows, 4. Data on Personal Contact, and 5. Data on Cultural Proximity.⁶

Risk has been measured by the volatility of a representative stock market index of one country. We initially calculated the yearly averages and standard deviations based on the daily closing prices. We then derived Values at Risk (VaR) on a 99.9% confidence level assuming a normal distribution of the closing prices. The final risk for each country in each year was finally computed by dividing VaR by the yearly average of closing prices. This has helped to eliminate the effects of different currencies, inflation levels, number of shares in the indices, and other index-specific characteristics. The final Risk Indicator (RI) is standardized and can thus provide a more accurate comparison of the levels of financial risk in each country studied.

The final set of data contains the KOF Index of Globalization (GI) from 1994 to 2005, and the yearly Risk Indicator (RI) from 1998 to 2008 for all 26 countries.⁷ The number of countries has been limited by the historical data available from a representative stock price index.⁸

3. Findings

Diagram.1 shows the historical development of the Average Globalization Index and Risk Indicator across all countries.

Average Globalization increases during all time periods but with a slowing-down in recent years. Many countries have started their processes of globalization already some decades ago, so we must admit that this process of change have slowed down in recent years and may develop dynamics on a certain level but may not increase anymore in the future.

The development of Average Risk across all countries is, however, more volatile. The peaks appeared in 1998, 2002 and 2003 can be rationalised by the phases of rise and fall of the new economy. From 2004 the global relative Risk Indicator becomes stable on a lower level, which has been observed by other authors as some kind of moderation as mentioned in the

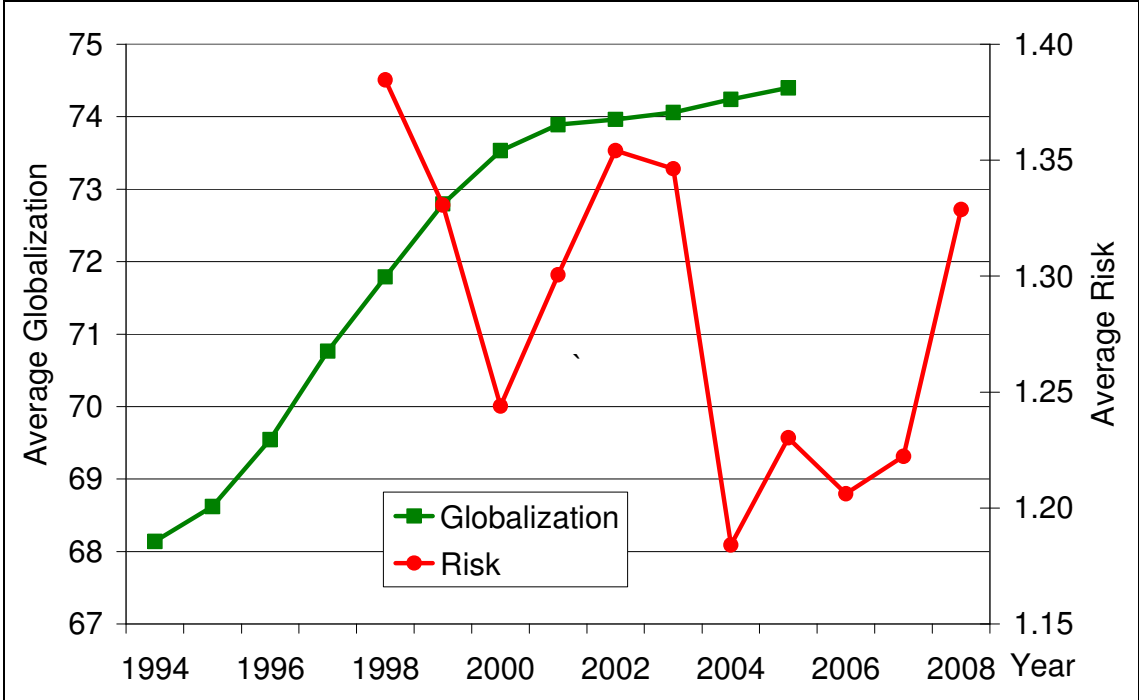
⁶ Axel Dreher (2006): Does Globalization Affect Growth? Evidence from a new Index of Globalization, *Applied Economics* 38, 10: 1091-1110. Updated in Dreher, Axel, Noel Gaston and Pim Martens (2008), *Measuring Globalization – Gauging its Consequences* (New York: Springer).

⁷ Country (Index): Argentina (Merval), Australia (All Ordinaries), Austria (ATX), Belgium (BEL-20), Brazil (Bovespa), Canada (S&P/TSX Composite Index), China (Shanghai Composite), Denmark (OMX Copenhagen 20), Egypt (CMA Gen.), France (CAC 40), Germany (DAX), India (BSE 30), Indonesia (Jakarta Composite), Israel (TA-100), Italy (MIBTEL), (Japan (Nikkei 225), Malaysia (KLSE Komposite), Mexico (IPC), Netherlands (AEX), Norway (Total Share), Portugal (PSI 20), Singapore (Strait Times), South Korea (Seoul Composite), Sweden (OMX Stockholm 30), United Kingdom (FTSE 100), and United States (S&P 500).

⁸ 14 yearly standard deviations were missing for a few countries in the years from 1998 to 2000 due to non-existent stock market index at that time. In 2008 closing prices were taken from the beginning of the year until October 10th.

introduction. The sudden increase in risk starting in 2007 reflects the current global financial crisis.

Diagram.1: Average Globalization and Risk across all Countries



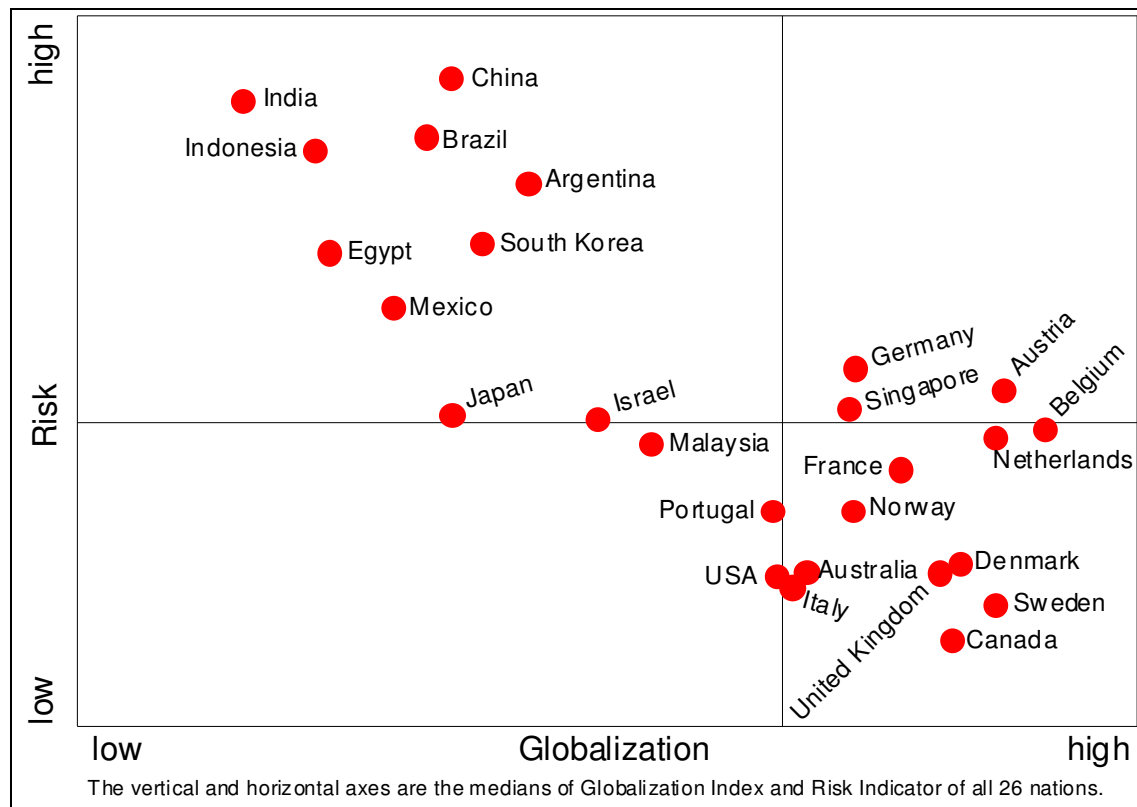
In order to explore the relationship between Globalization and Risk for each country, we have applied a weighted average to summarize countries’ past efforts in becoming globalized into one figure, and the corresponding risk of the observed time period respectively.⁹ Weighted Average of Globalization Index and Risk Indicator for each country are shown in the diagram below.

Countries with high level of globalization are much less exposed to risk than countries which have only reached a low level of globalization. Diagram.2 implies that there is a strong and negative correlation between the level of globalization and the level of risk.¹⁰ The finding can be understood by the idea that countries with higher level of globalization tend to have more mature economic systems than their younger counterparts by having well-established regulations and sophisticated financial instruments.

⁹ Globalization Index (GI) was available for 12 years for each country. The GI for 1994 was weighted by 1. The GI for 2005 was weighted 12 times. Risk Indicator (RI) was available for 11 years for each country. Hence, the RI from 1998 was weighted by 1 and the RI for 2008 was weighted 11 times. Globalization Index was found to be highly intra-correlated: Even with a time lag of 5 years, the average intra-correlation of GI is still +0.975. We concluded that the globalization index from 1994 to 2005 can reflect the current but unknown status of globalization until 2008. This decision is also driven by very stable correlations between GI from a specific year with RI from all other years which were very stable across all years. Results are shown in appendix 1.

¹⁰ The correlation of weighted average GIs and RIs is -0.788, what is highly significant with a two-tailed probability of rejection of only 0.0003%.

Diagram.2: Weighted Average of Globalization and Risk



Countries with a low level of globalization tend to be more risky. This group comprises countries from Asia and South America, who are well-known for their high growth rates, and the lack of regulatory establishments, which are critical for providing a safe and stable economic environment for all market participants. Kose *et al.* (2007) argues that more developed countries have more stable financial markets because of greater developments and size, whereas less developed countries often suffer from 'sudden changes in the direction of capital flows which tend to induce or exacerbate boom-bust cycles' and crisis.¹¹

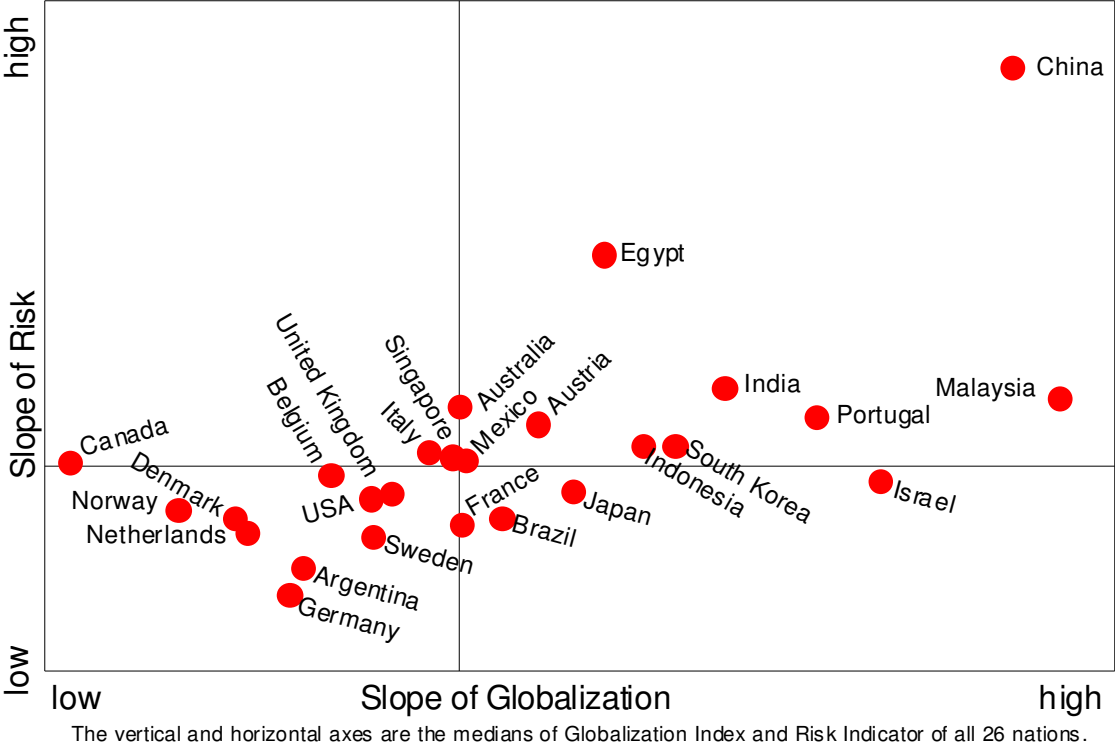
Countries from Asia, South America and Africa tend to be less globalized and more risky than countries from Europe and North America who have been categorized into the groups of globalized and less risky countries. This is due to that countries in Europe and North America are believed to have better guidance, regulations, and well applied risk management tools to avoid surprises and sudden changes leading to higher volatilities and risk.

From the above discussion, globalization to certain extent can have a reduction effect on the level of risk. However, the force of globalization can also turn the other way. During the process of opening-up the economy, risks may appear due to the fact that new capitalistic methodologies tend to be faster applied than understood and controlled. One could expect that opening-up to the world and amending business standards also involve higher volatilities. The higher the speed of globalization, the more risk is involved since standards for a well-conducted economy may not follow its rate of growth as quickly. The high speed at the same time may also generate opportunities for speculation, uncertainty and risk.

¹¹ M. Ayhan Kose, Eswar Prasad, Kenneth Rogoff, and Shang-Jin Wei: Financial Globalization: Beyond the Blame Game, in: Finance & Development, Volume 44, Number 11, March 2007.

We have discovered a number of supporting evidences by closely examining the slopes of Globalization Index and Risk Indicator curves. The slope of Globalization Index is strongly positively correlated with the average Risk Indicator, and even more strongly correlated with the slope of Risk Indicator.¹² It can be concluded that the more a country strives for globalization, the more risks are been added on. The relationship is shown in Diagram.3 below.

Diagram.3: Slope of Globalization and Risk



The higher the increase of Globalization Index, the more the Risk Indicator is facing upward pressure. Again, a large number of Asian countries are in the area of increasing level of globalization and risk. Countries from South America with low level of globalization are making little progress towards globalization and are therefore facing less pressure from increasing risks. This finding supports the idea that the speed by which a country is approaching towards globalization is critical for the level of risk involved in and the stability of its financial market.

China as an important country is the leader in terms of the progress made towards globalization and the level of increased risk caused. China’s progress towards becoming a global economy is unique, but one may not oversee the possible costs of instability by facing high level and increasing risk already today. As a result, in order to achieve higher efficiency in risk management and sustain stability and growth, more sophisticated and advanced regulations must be pushed forward and implemented in a timely manner.

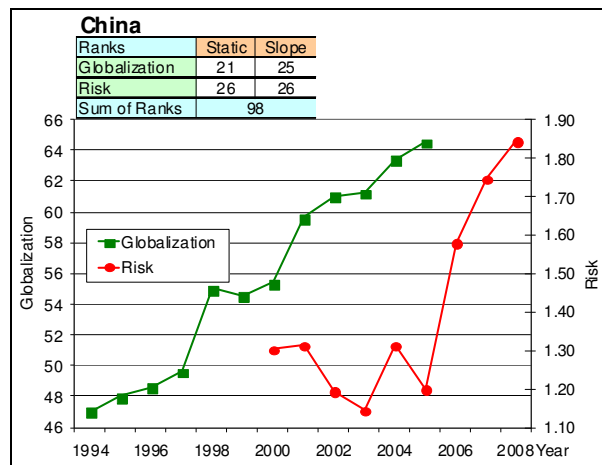
In the final part of this analysis, we have ranked all 26 countries observed in relation to the levels of their Weighted Average of Globalization and Risk and the Slope of these Indicators

¹² Correlation of slopes of GIs and RIs is highly significant +0.627 with a two-tailed probability of rejection of 0.080%.

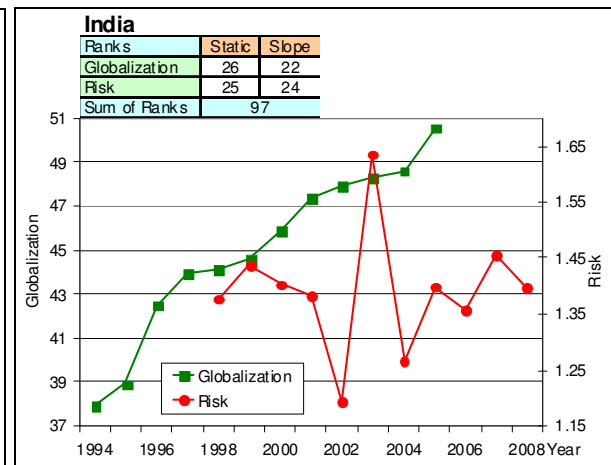
respectively.¹³ All 26 countries are listed according to the sum of their rankings, starting with the highest number first, which represents the lowest level of globalization, the highest amount of risk and the highest increase of globalization and risk.

The countries with the highest rankings by Globalization and Risk are China and India. Both countries are globalized on a relatively lower level but facing relatively higher level of risk. However, in the Chinese case, the Risk Indicator has dramatically increased in recent years, whereas its Indian counterpart's latest development has produced a decreasing Risk Indicator.

Country 1: China

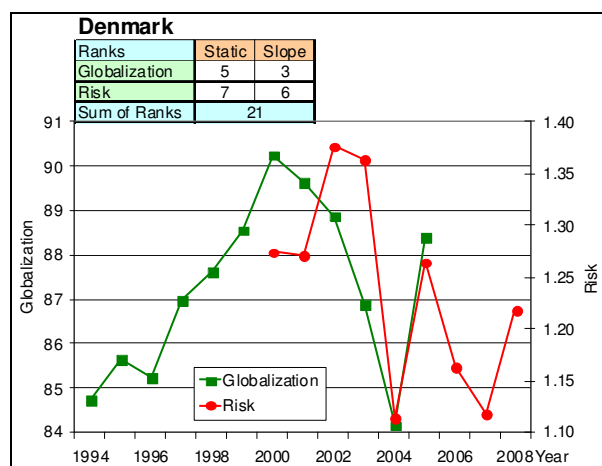


Country 2: India

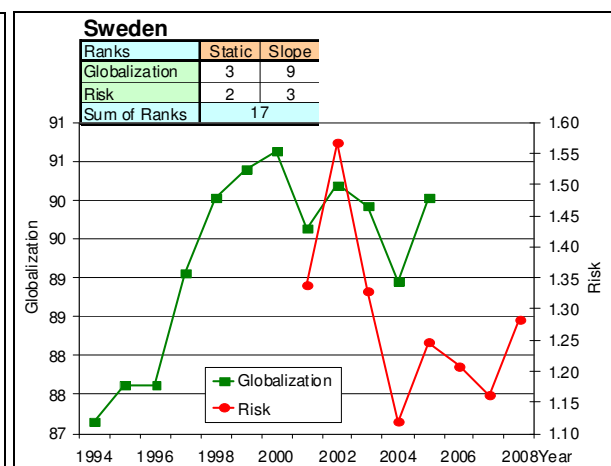


The two countries with the lowest rankings are two Scandinavian countries, namely, Denmark and Sweden. Both countries are operating on a very high level of globalization with very stable financial systems, and are also showing a high degree of sustainability against the possible risks caused by globalization.

Country 25: Denmark



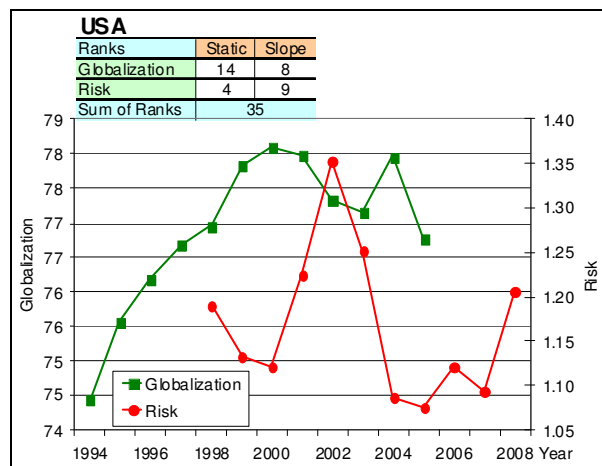
Country 26: Sweden



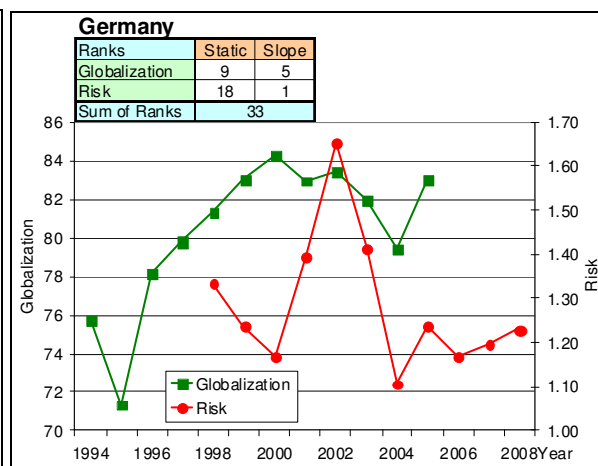
¹³ The country with the lowest weighted average GI receives a ranking of 26, the country with the highest GI has a ranking of 1. The country with the highest weighted average RI, slope of GI, and RI receives rankings of 26, the lowest RI, slope of GI, and RI will be ranked by 1.

Moreover, taking two examples from North America (the U.S.) and Europe (Germany), both countries have overall rankings towards the lower end of the table, reflecting high levels of globalization, low levels of Risk and flatter GI and RI curves. However, while the U.S. operating on a lower level of globalization than Germany, the latter has a relatively higher Risk level. This suggests that the relationship between the level of Globalization and Risk is meant to be a general finding indicating how well financial risk is controlled and conducted by different countries based on their knowledge, experience and willingness to draft and apply regulations within a corridor of freedom.

Country 18: USA



Country 20: Germany



The remaining 22 countries' Globalization and Risk profiles can be found in the Appendix of this report.

4. Conclusion

Clear evidences have been found regarding the strong correlation between Globalization and Risk:

- Countries operating on a high level of globalization are less exposed to risk. These countries tend to locate in the regions of North America and Western Europe.
- Countries operating on a low level of globalization are more risky in terms of financial market instability. These countries tend to be from the regions of Asia and South America.
- Countries striving for globalization are facing increased financial risks.

The findings can be rationalised by the observation that countries from North America and Western Europe normally have more mature economies by having more experiences and regulations on how to conduct and behave appropriately. Taking this into account, the confidence of market participants to invest is expected to be higher and the knowledge of what has to be done in certain situations is more thorough.

Countries from Asia and South America, who operate on a relatively lower level of globalization, tend to receive less confidence from market participants, who may have

produced more risks which may lead to further damage to the market. Countries, who are striving towards globalization such as China and India, are facing highly increased level of risk. Meaning that although the opening-up towards globalization can create opportunities for trade and business development, the potential damage to the economy in terms of increased market risk should be carefully judged. When more opportunities for trade and business are allowed, the regulations and standards for risk management must catch up as timely as possible in order to properly conduct the fast changing economic system.

The above context has discovered a strong and negative correlation between Globalization and Risk. This relationship is derived from a combination of the desperation for globalization and the lack of adequate regulations on how to conduct the advanced and sophisticated financial systems. Therefore, more emphasis should be dedicated to the harmonization of regulations in all countries in order to make the global economy as a collective entity a safer environment for all participants. The followings tasks should be prioritised by countries who are in the intensive process of globalization:

- Establish transparent and authoritative risk management regulations and standards for all financial market participants.
- Implement and apply regulations and standards in accordance with development of financial markets.

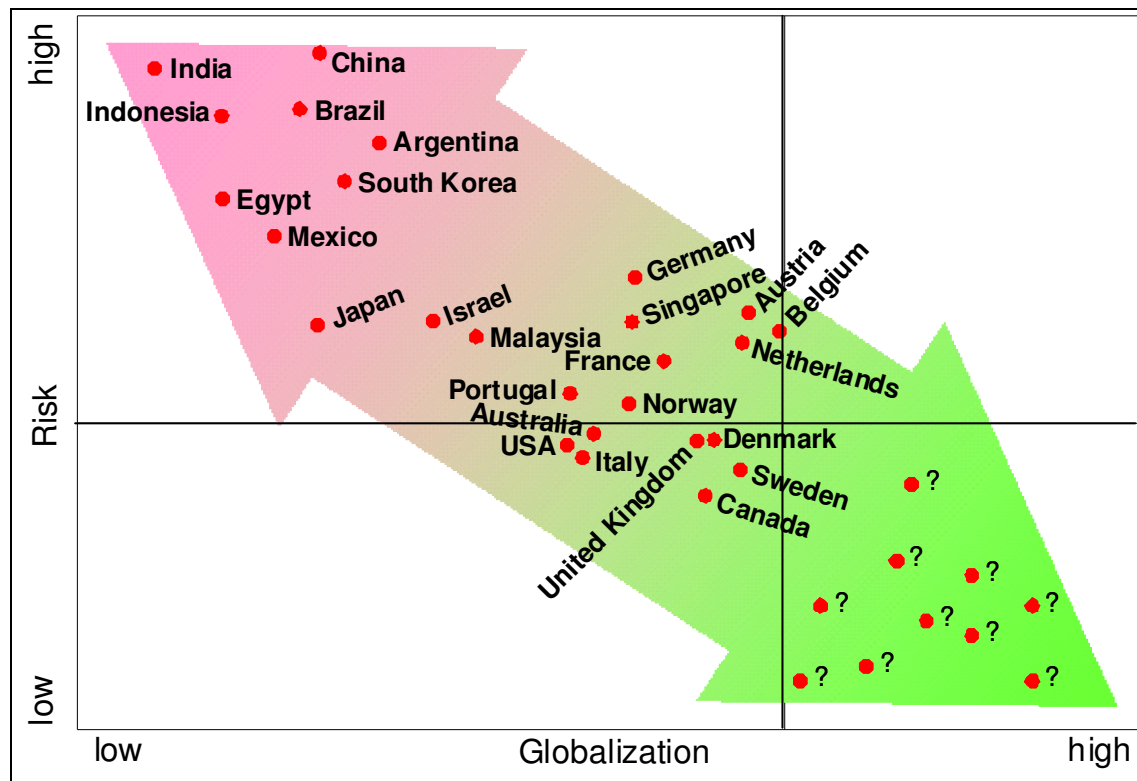
The critical issue on improving stability focuses on the level of speed and intensity by which countries dedicate towards globalization by implementing new standards and regulations of financial risk management.

5. Outlook

World's GDP per capita has shown an exponential growth since the industrial revolution until today.¹⁴ Especially during the past 10 years globalization has reached new levels of interweaved activities in businesses and financial markets. We believe that the risk which emerged together with globalization has not been fully understood or sometimes even ignored. Adequate risk management standards have been proven to be weak not only in emerging countries but also in the developed world. The lack of acceptance of proper risk management has led to the financial crisis that we are experiencing today. The current financial crisis will hopefully initiate corrections of our understanding of globalization and risk. This is illustrated by Diagram.4: The realization of our *real* level of globalization has been largely undermined prior to the crisis. This leads to corrections of our perception of globalization and hence higher risk. Consequently, the challenge for all countries is to evolve further by moving back into the quadrant of high level of globalization and low level of risk. But how can this be done? In the following we propose three initiatives.

¹⁴ Angus Maddison: The World Economy: A Millennial Perspective. Paris: OECD, 2001.

Diagram 4: Who will cope with new challenges of globalization?



Initiative 1:

Improvement on current regulations and standards for risk management

Every nation needs to review and improve its current regulation framework on risk management to ensure that risks are being properly managed within each financial entity. The regulations need to be clear and authoritative. Regulators need to work very closely with all financial entities by adopting a continuous communication approach. Besides the countrywide implementation of Basel II rules, new challenges such as risk management on liquidity, complex financial products, securitization, and internal capital adequacy assessment have come up. However, recent developments in the U.S. have shown just how much attitude must be adjusted initially in order to achieve more acceptance for proper risk management in the future. Risk management presently is less a question of developing adequate solutions but the right attitude to apply what is available.

Initiative 2:

Establish Governmental Risk Management (GRM)

Financial institutions have been regulated to implement proper risk management tools based on standards such as Basel II and other risk management amendments. However, little has been done to understand and control risks from a national perspective. Following the general idea of neoclassical view, responsibilities, including those of financial risk should be delegated to individual market participants. Consequently, during the past decade financial institutions have established risk management systems for their own interest. However what they are not capable of is to manage the risk of the entire nation. Governments therefore must play a much more important role in managing risks in a globalized world. They should

establish their own risk management guidelines in order to govern national specific risks adequately.

Each government needs to manage the following risks at least

- **Credit risk**, which deals with the estimation of losses from defaults in and across industries. The exposure is the value of the companies within an industry.
- **Market Risk**, which deals with the volatilities of diverse economic parameters such as GDP, inflation, loan, stock, and money market prices, etc.
- **Operational Risk**, which deals with the issues on legal and technological safety and crime statistics, etc. from a governmental perspective.
- **Concentration Risk**, which covers possible risks due to uncontrolled and unlimited globalized business. Concentrations will not affect the economy in good times. However, during crisis, concentration will make the economy suffer extremely severely as we learnt from real-world cases. One bank may default because of investing too much capital in one type of high risk investment product. However, the government should be aware of the degree of concentration across the financial industry. Government should have the option to limit the amount of business carried out by financial institutions by issuing business licenses.
- **Strategic and Reputational Risk**, which help to better understand possible changes in economic instability caused by changes in political systems or confidence from other countries regarding future economic developments. Management of strategic and reputational risks can help to insure that governments are acting more responsibly in terms of its relationships with other countries, and the costs to the economy for not doing so are fully considered.

The management tasks comprise at least the following tasks:

1. Measure and monitor risk in all above aspects and perform stress tests to better understand the relationships among risks and what could happen under certain conditions,
2. Adjust existing and develop new regulations to conduct the risk portfolio of the country.

Managing the above risks systematically is an area that countries must improve considerably in order to support domestic and international stability and wealth creation. In order to manage the nationwide risks on a global basis, we recommend international co-ordination through the Global Risk Committee.

Initiative3:

Establish a Global Risk Committee

The committee should include members with a wide range of backgrounds such as government officials, regulators, and technical experts, etc.

The goals of the Global Risk Committee is to

- monitor the global development of risk within and across all nations,
- make suggestions about how to mitigate global risk, and
- assist Basel Committee to further improve and harmonize regulations on risk management.

Traditionally, each country is only responsible for its own economy by avoiding unreasonable risk-taking practices which often result in more frequent and severe economic cycles. However, in a globalized world, all countries are not only responsible for their own well-beings but also need to take a more international approach in order to achieve a mutual benefit such as a stable global economy. In conclusion we need to manage risks more effectively and efficiently by putting more effort into monitoring both nationwide and global risks instead of simply hoping that nothing will go wrong.

Appendix 1

Table 1: Correlation of GI and RI for each year

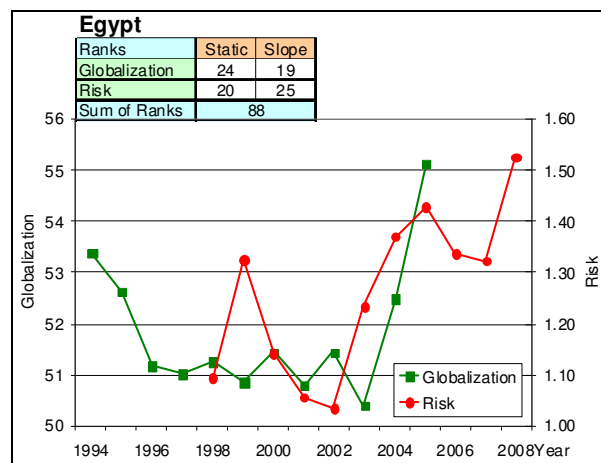
Correlations	Risk											
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	
Globalization	1994	-0.278	-0.741	-0.670	-0.145	0.452	-0.465	-0.519	-0.294	-0.609	-0.738	-0.408
	1995	-0.287	-0.747	-0.690	-0.136	0.429	-0.447	-0.488	-0.321	-0.580	-0.748	-0.400
	1996	-0.256	-0.744	-0.688	-0.111	0.461	-0.435	-0.504	-0.353	-0.589	-0.727	-0.387
	1997	-0.245	-0.737	-0.678	-0.092	0.475	-0.431	-0.526	-0.367	-0.601	-0.728	-0.391
	1998	-0.235	-0.731	-0.668	-0.085	0.485	-0.450	-0.521	-0.367	-0.578	-0.697	-0.353
	1999	-0.219	-0.721	-0.637	-0.067	0.514	-0.440	-0.561	-0.347	-0.630	-0.714	-0.393
	2000	-0.251	-0.737	-0.646	-0.080	0.499	-0.463	-0.569	-0.346	-0.626	-0.714	-0.392
	2001	-0.228	-0.699	-0.639	-0.099	0.465	-0.478	-0.584	-0.364	-0.615	-0.675	-0.366
	2002	-0.213	-0.700	-0.647	-0.092	0.461	-0.483	-0.589	-0.368	-0.616	-0.676	-0.361
	2003	-0.189	-0.686	-0.631	-0.113	0.445	-0.498	-0.600	-0.391	-0.614	-0.673	-0.355
	2004	-0.179	-0.687	-0.623	-0.110	0.426	-0.543	-0.605	-0.438	-0.609	-0.659	-0.314
	2005	-0.210	-0.703	-0.640	-0.128	0.470	-0.525	-0.593	-0.401	-0.573	-0.642	-0.293
Average		-0.232	-0.719	-0.655	-0.105	0.465	-0.471	-0.555	-0.363	-0.603	-0.699	-0.368

N = 25, 1-tailed t-test probability < 0.1%/1% for abs(r) >= 0.588/0.462

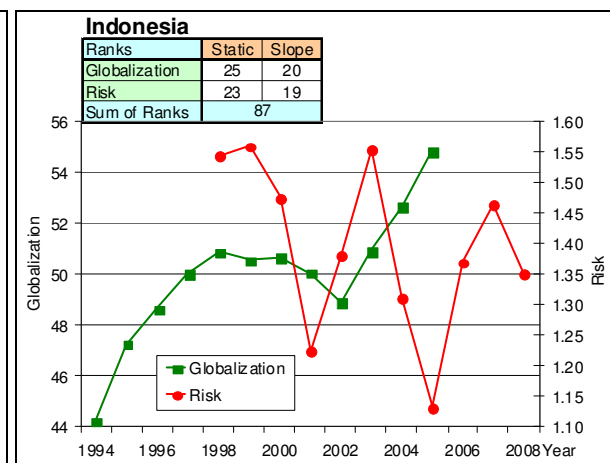
Appendix 2

Footprint of globalization and risk of remaining 24 countries in the sample

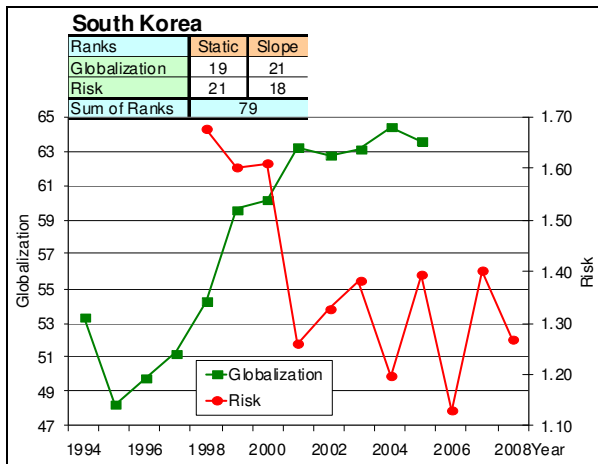
Country 3: Egypt



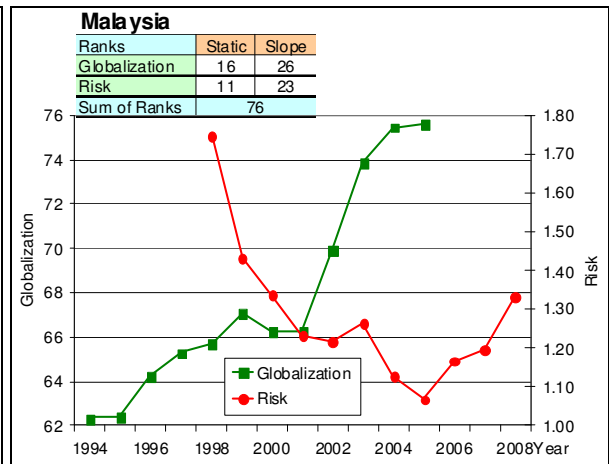
Country 4: Indonesia



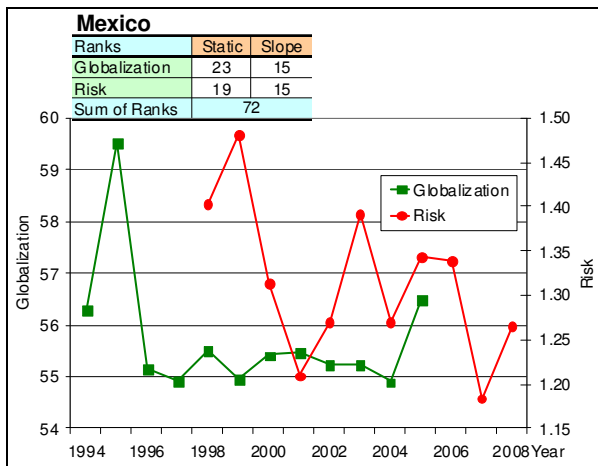
Country 5: South Korea



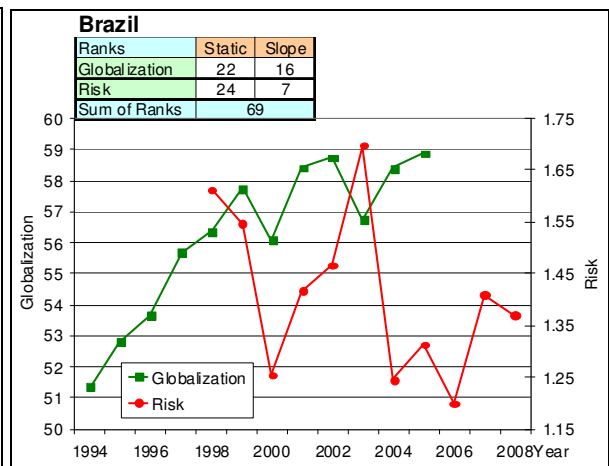
Country 6: Malaysia



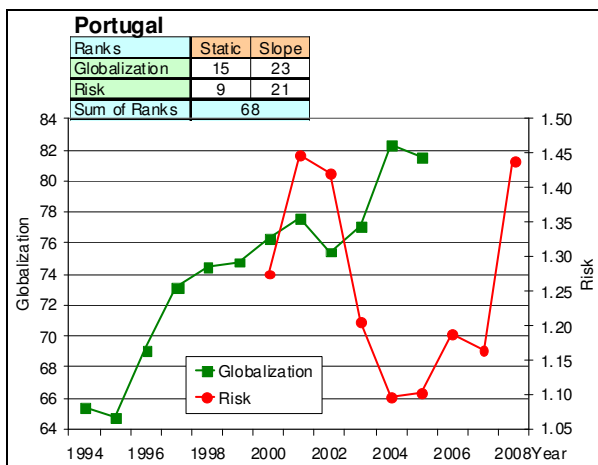
Country 7: Mexico



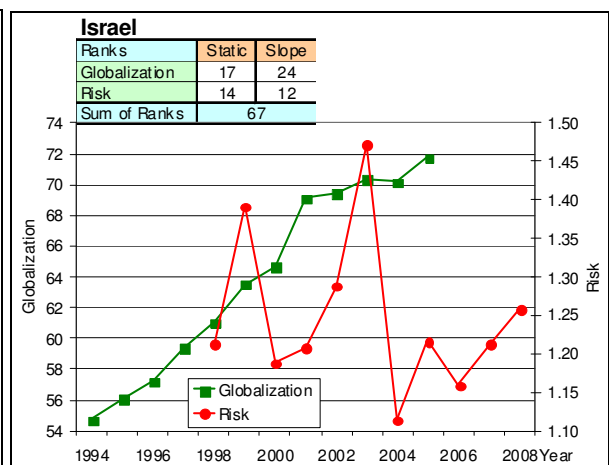
Country 8: Brazil



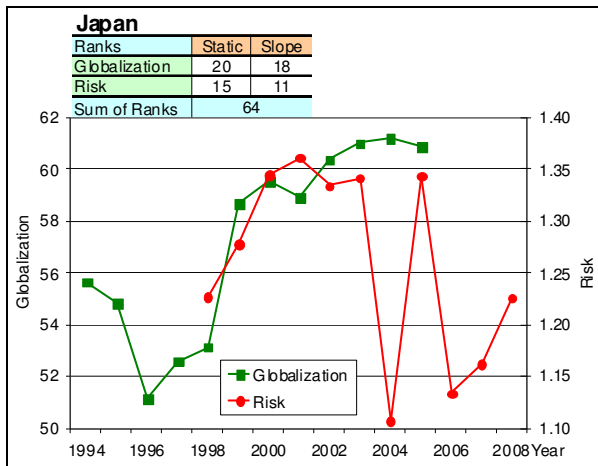
Country 9: Portugal



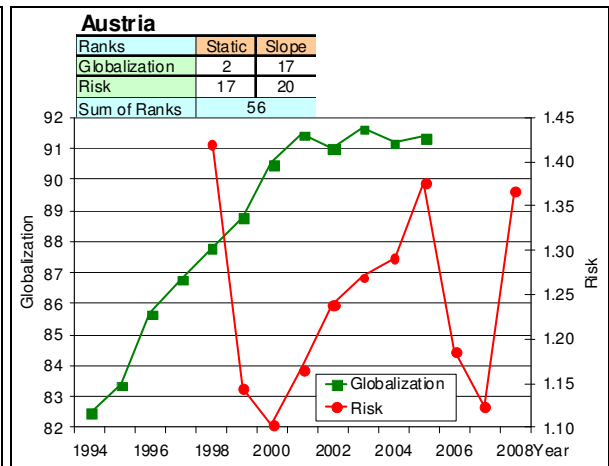
Country 10: Israel



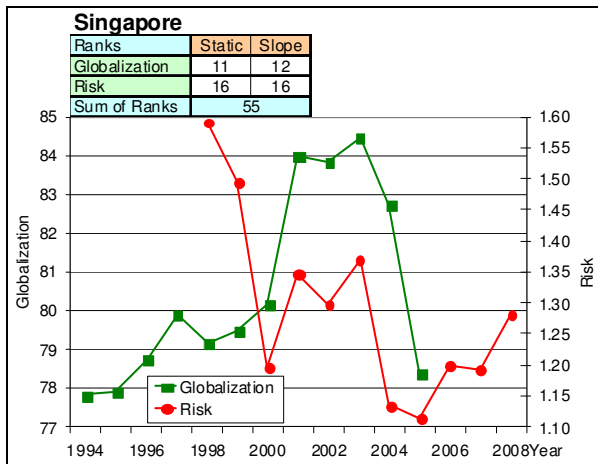
Country 11: Japan



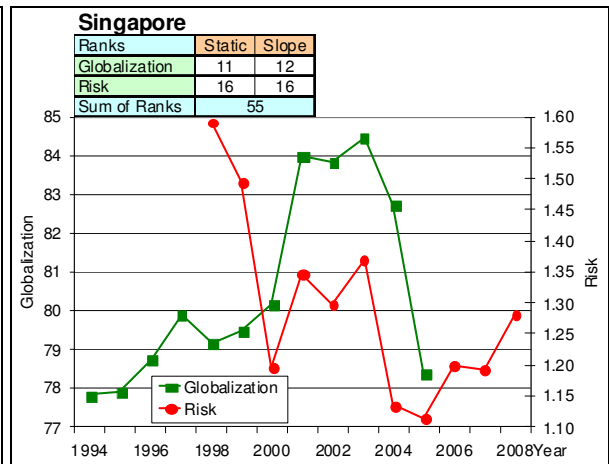
Country 12: Austria



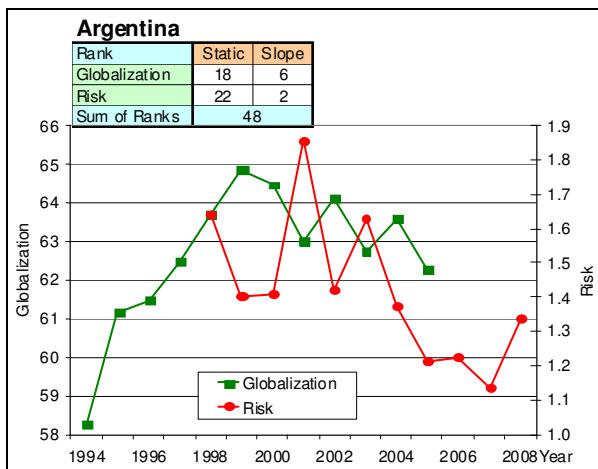
Country 13: Singapore



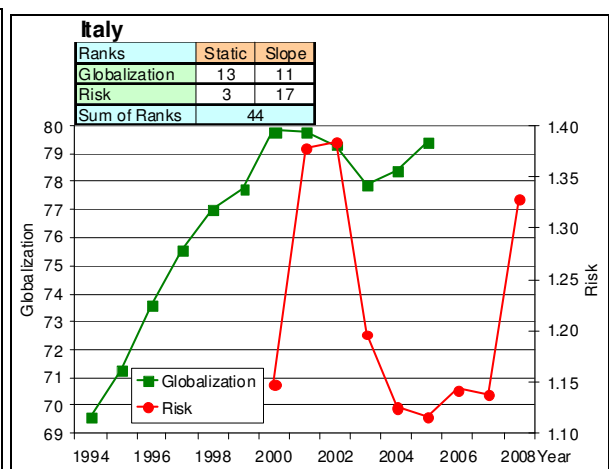
Country 14: Australia



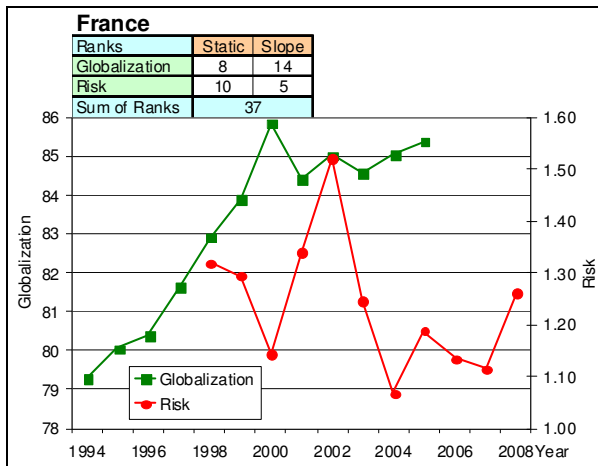
Country 15: Argentina



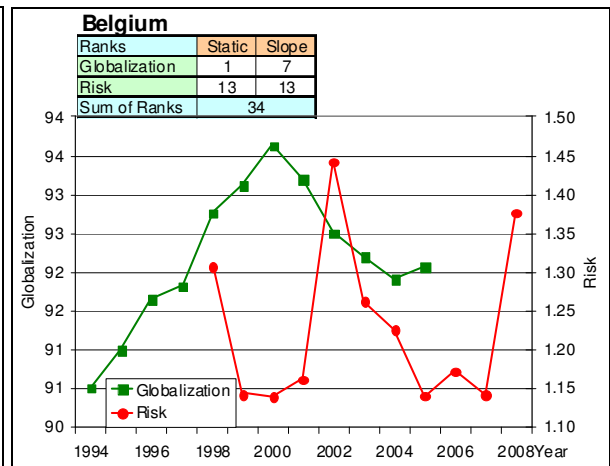
Country 16: Italy



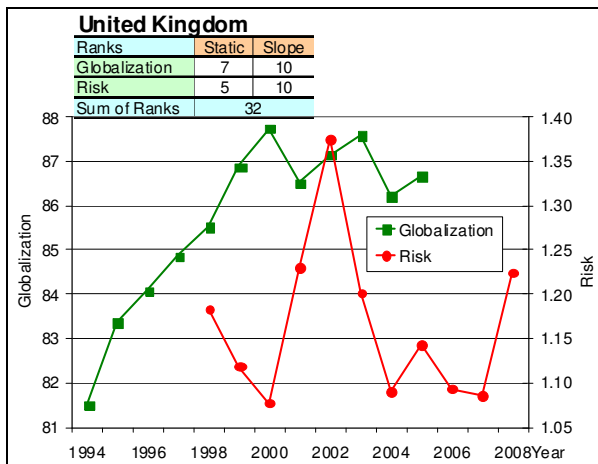
Country 17: France



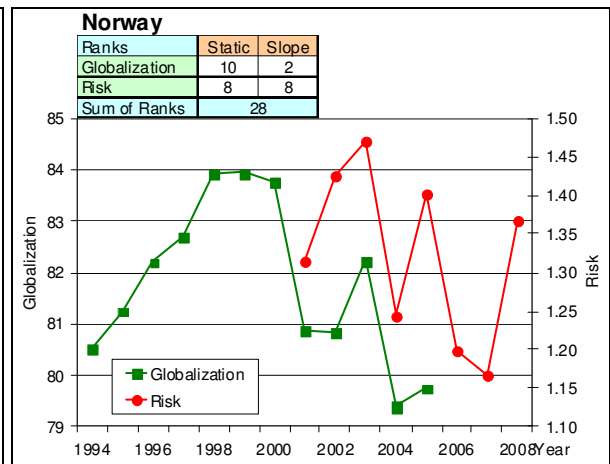
Country 19: Belgium



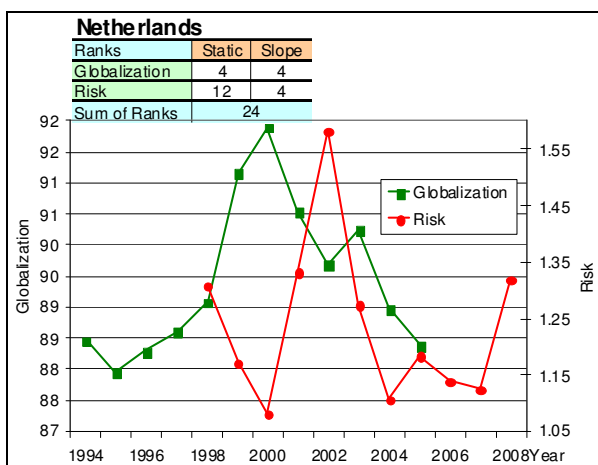
Country 21: United Kingdom



Country 22: Norway



Country 23: Netherlands



Country 24: Canada

