

Full Length Research Paper

Financial power analysis of countries: Transmitters (adsorbents), setters and unresistants

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Accepted 7 April, 2011

In this study, it has been intended to conduct a performance evaluation of several countries throughout the world with respect to the ongoing process of financial integration. The initially determined 14 variables pertaining to the analyzed countries have been separated into various independent factors by the assistance of principal components analysis. The correlations among these interdependent variables within the scope of the study must be eliminated. Furthermore, it is a desirable situation to carry out an analysis with fewer but independent variables instead of dealing with numerous correlated variables. Many of the multivariate analysis methods are based on the principle of eliminating this correlation among the variables. The principal components analysis and factor analysis are the leading choices among such methods. The database of this study has been compiled from time-series observations of 14 different variables belonging to a total of 48 countries consisting of both developed and emerging markets for the period of 2000 to 2007. The distributions of these data have been analyzed for each year and hence, an evaluation of the countries “setting (originating) capital flows”, “transmitting capital flows” and “terminating capital flows” have been conducted. In advance of this evaluation, the concepts of setting, transmission and termination of capital inflows has been explained through the studies conducted by the integration variables.

Key words: Model, economic, financial integration, market integration power.

INTRODUCTION

The two most important pillars of international financial integration process are the financial system and international capital flows. There is an integrated network between international capital flows and the financial system. If the international financial markets are defined as the global marketplace that has been formed as an outcome of the states and corporations seeking to obtain finance from markets abroad for various reasons, or rather invest their saving through the individuals and institutions abroad for those same reasons; the requirement for intensive monitoring of such transactions, capital transfers, certain financial instruments such as hedge funds that are essential to the transmission of capital flows, and finally specific indicators like country risk premiums is clearly observed.

The markets in each country are directly interconnected

to the market transactions in another country. Consequently, each arising financial fluctuation bears a direct impact on all countries worldwide. Governments are endeavoring to enhance their maneuverability to eliminate the associated risks by various packages of financial measures. The underlying reason for the market integration to such an extent should be described as the world becoming more outward-oriented as a result of developing information technologies. The expansion of financial derivative instruments, which have often been held accountable for giving rise to the financial crisis in 2008, and a great variety of financial instruments being traded in the global markets before an evaluation has been made to understand how they would interact with each other are two of the most important consequences brought by the recent technological revolution and the

Table 1. Four periods of capital mobility by Obstfeld and Taylor.

Period	Description
1860-1914	continuously increasing capital openness with countries adopting the gold standard and expanding trade relations
1914-1945	global economic destruction due to two world wars and depression leading to nationalism and isolationism
1945-1971	Bretton Woods agreement facilitated expansion of trade and recovery of capital markets due to the fixed exchange rate agreed upon
1971-2002	Floating exchange rates and economic volatility with rapidly expanding cross-border capital flows

free movement of all available information. The variety in financial instruments has led to diversification in a bunch of global financial indicators and the investors began to have difficulty in analyzing which direction they should follow due to continuous updating of several market or country based indicators like iTraxx and VIX at every time frame. The soaring liquidity has led to straying from objective decision making and has instead yielded to a slew of local or regional subjective judgments. Although what should have taken place was the combination of exchange rates and various international indicators formed in the organized markets constituted from multinational enterprises to culminate in a global oriented and objective decision making mechanism as well as leading to the creation of national gauges such as country risks, inflation rates and unemployment levels that guide local-objective decisions in tandem; these local-objective decisions have been replaced by subjective decisions around the world. This situation has in turn led to the specific risks taken by a limited group of investors to pose a danger for all countries.

The fact that the buying and selling transactions between the related domestic market participants and foreign market players providing connection to overseas markets have gone out of control, transferring large sums of money have inextricably complicated the scope of identification and quantification of risk factors with respect to all financial instruments. Even though it is seemingly a positive development that the barriers between international markets have disappeared, it has redefined the older concept of "organized markets with clear boundaries and rules formed by a set of financial instruments" as "organized markets with indeterminate boundaries and rules". At this juncture, the stability of even national macroeconomic parameters has become vulnerable to instantaneous off-shore investments by companies with international financial strength. On the other hand, the fact that the US dollar has become the most heavily traded currency in Euro-money markets has become a factor escalating the influence of economic policies of USA over the rest of the world as a historical outcome. The unrestrained growth of the total volume of transactions in the Euro-money market, led by those involving USD, has resulted in the failure to obtain accurate data.

In recent years, since the variety of assets actively

traded in financial markets have rapidly increased and the monetary volume induced by this diversity has exponentially run up, the calculating the option premium of financial derivatives with underlying financial instruments has become quite arduous. Securities with long maturities have increasingly become subject to short term trading, for example the 30-year government bonds have attained liquid status due to their flow variables with shorter terms than those of monthly deposits.

Albeit Obstfeld and Rogoff (1996) having suggested that an economic entity may achieve significant returns on an internationally diversified portfolio which also includes the emerging markets, different studies exist as well which propose that profits could be secured only if the correlation between the developed and emerging markets is taken into consideration (Grilli and Roubini, 1993).

Even though French and Poterba (1991) have observed that most of the investors keep the larger part of their portfolios in their home markets, meaning that they are domestic oriented, it can be concluded that despite the validity of their study with respect to 20th century markets, their observations no longer apply to today's world (De Santis and Bruno, 2001).

APPROACHES AND STUDIES ON THE SUBJECT

Lothian (2001) has been into the details of financial integration's history and separated the process into 3 distinct major periods as 1690 to 1789, 1875 to 1914 and 1975 to 1998 (Table 1). The first period had ended with the French Revolution and the following one had been terminated by the outbreak of the World War I. The last period could be referred to as the first one that was finalized by a financial crisis. Moving from the recognition that the first trade and finance market in history was Amsterdam, it is known that the very first case of financial integration on records has taken place between London and Amsterdam (Eagly and Smith, 1976). Paris had also joined this union of integration in 1815 and the last round of the first period was signified by the US entering the integration process in 1830.

Fundamentally, there are two different approaches to measuring the degree of financial integration. In the price

based measurements approach, the emphasis is given to the requirement that in an integrated market model, similar financial instruments should be priced similarly. In the quantity based measurement, foreign capital inflows could be compensated only short term relapses in the financing of total domestic investments (Feldstein and Horioka, 1980). This study, conducted by the researches that started off from the interactions between savings and investments has brought an original point of view towards integration measurements tests.

These capital inflows also give an idea of the degree of liberalization regarding entrance to that particular market and the total value of portfolios embarked in the domestic market. Generally, both liberalization of portfolio inflows and small transition fees charged on foreign financial instruments have supported capital inflows to companies or countries, paved the way to emergence of sounder investment opportunities and thus facilitated the market integration (Stulz, 1999).

Bohn and Tesar (1996), as well as Froot et al. (2001) have stated that international portfolio inflows move in the direction of lagging estimations of expected returns. This observation fuels the internationally acting investors' temptation to follow a particular trend. Feldman (1986) and Levich (1987) have elaborated on 3 distinct approaches to financial integration, namely the legal approach, quantity approach and price approach. Although, the soundest ones among them are the quantity and prices approaches, a perfect global market could only be spoken off at the reciprocal equilibrium point with respect to prices. In the Montiel (1994) classification, international macroeconomic indicators and gross capital inflows and applicability of arbitrage conditions are all critical to the identification of the parameters of financial integration. On the other hand, at the opposite side of Feldman's interest rate approach, a study had been conducted by Kennen (1976), suggesting that the evaluation of national interest rates is bound to fail in the long run regarding the measurement of degree of integration. However, it has been conceded that measurement of integration via national interest rates could be beneficial to momentary measurements in the short run. Additionally, Kennen was joined by Allen in a study which has tested whether the effects of regional shifts in the prices of financial instruments on asset prices in other regions is dependent on the substitutability among the instruments (Allen and Kennen, 1980). The interest parity tests by Obstfeld (1995) initiates from the interactions in the euro-money markets of New York and London. Edwards and Khan (1985) have built interest parity and developed a financial integration test based on the open interest parity. Following the developments in money markets, Frankel (1992) has devised a financial foreign-source dependency test employing a similar Fischer equation which takes the country risk premium as an input as well. If the microeconomic models are reviewed, it could be

observed that the most commonly encountered models are International Capital Assets Pricing Model, developed within the scope of portfolio theory, and the International Arbitrage Pricing Model developed by Ross based on the Arbitrage Pricing Model (Ross, 1976; Solnik, 1983; Adler and Duma, 1983). According to Siegel (2005), if the markets have fully

integrated and the their industrial growth rates are in line, the regional and global price/earnings ratios should also move in the same direction and the growth opportunities in the integrated industries should constitute of the same information and parameters. Hawkins (2003) has discussed the effects of monetary policies set forth by the central banks over globalization in consideration of a data set encompassing both the developed and developing countries.

Evans and Hnatkovska (2005) have conducted a study on a dynamic general equilibrium model dependant on the state of production, portfolio preferences and the inherent market conditions. In the period of integration, it is considered that one of the foundational structures is the trading and capital flows between Eastern Asia and Western Europe and America (Cheung et al., 2006; Shin and Hyun, 2005; Park and Bae, 2002). Inflows of cash have been directed towards Eastern Asia especially after China came into prominence among the Eastern Asia countries. (Chung et. al. 2006). Besides, since the concerns with respect to Japanese economy failing to adequately assert itself in Chinese markets, considering the rapid growth of China which has not materialized, Japan is currently the leading country regarding the total size of investments by USA and the degree of integration with it (Watanabe, 2004). Barrell and Choy (2003) have investigated the capital inflows between Europe and Eastern Asian countries in their study.

DATA SOURCES AND METHODOLOGY

Variables and descriptions

"Growth rate of reserve money" is related to financial integration and power. In economics, reserve money, or, in the UK, narrow money is a term relating to the money supply, the amount of money in the economy. The reserve money consists of coins, paper money both as bank vault cash and as currency circulating in the public, and commercial banks' reserves with the central banks. This is highly liquid.

In economics, "money supply" or money stock, is the total amount of money available in an economy at a particular point in time (Johnson, 2004). There are several ways to define "money," but standard measures usually include currency in circulation and demand deposits. (Brunner, 1987; Deardorff, 2000). Money supply data are recorded and published, usually by the government or the central bank of the country. Public and private-sector analysts have long monitored changes in money supply because of its possible effects on the price level, inflation and the business cycle.

That relation between money and prices is historically associated with the quantity theory of money. There is strong empirical evidence of a direct relation between long-term price inflation and

money-supply growth. These underlie the current reliance on monetary policy as a means of controlling inflation (Friedman, 1987). This causal chain is however, contentious, with some heterodox economists arguing that the money supply is endogenous and that the sources of inflation must be found in the distributional structure of the economy. M2 is also a key economic indicator used to forecast inflation (Taylor, 2004).

Another variable, "interest rates percentage per annum" is also important for this analysis. Interest rates targets are also a vital tool of monetary policy and are taken into account when dealing with variables like investment, inflation, and unemployment. Interest rates are the main determinant of investment on a macroeconomic scale. Broadly speaking, if interest rates increase across the board, then investment decreases, causing a fall in national income. "Annual percentage change in consumer price" is inflation and effects international monetary integration. "Foreign direct investment" (FDI) is a measure of foreign ownership of productive assets, such as factories, mines and land. Increasing foreign investment can be used as one measure of growing economic globalization. For countries power, using FDI's as "inward" and "outward" separately seem to be an asset. As in Aizenman and Marion (2004) and IMF (2003), international reserves are defined as "international gold reserves" (Aizenman and Marion, 2004).

"Exports as percentage of imports", "share of trade volume in world trade" in percentage, "exports growth rate" US \$ prices in percentage, "exports to GDP ratio" and "imports to GDP ratio" are the dominant and central components of our model. These indicators measure a countries integration and power in the world economy. They represent the weight of one country in total world trade and power ranking in its economy, a measure of the degree of dependence of domestic producers on foreign markets and their trade orientation for exports and the degree of reliance of domestic demand on foreign supply of goods and services for imports. For example, the sum of export-to-GDP-ratio and imports-to-GDP ratio is called the "trade openness ratio". However, the term openness to international competition may be somewhat misleading. In fact, a low ratio for a country does not necessarily imply high (tariff or non-tariff) obstacles to foreign trade, but may be due to some factors especially size and geographic remoteness from potential trading partners. For example, it is generally the case that exports and imports play a smaller role in large economies than they do in small economies. It should be noted that this indicator may also be expressed as average of exports and imports (not as the sum of both).

For businesses that trade abroad, they face the problem of "exchange rates". The demand and supply of currencies on the foreign exchange markets - all the businesses, banks and individuals who are looking to buy and sell different currencies - is constantly changing. As a result, changes in exchange rates affect the demand for both imports and exports because they change the apparent price of both imports and exports. For countries trading abroad, this has a significant effect on them.

Factor analysis and factor scoring

Factor analysis is used to uncover the latent structure (dimensions) of a set of variables and reduces attribute space from a larger number of variables to a smaller number of factors (Kim, 1978). It attempts to explain the correlations between the observations in terms of the underlying factors, which are not directly observable. In earlier cases it is used by psychologists is a tool under statistics which the earliest publication is generally obtained from Spearman (1904). Thurstone worked on the theory of factor analysis and on its application in the field of psychology (Thurstone, 1931). Many authors have also used factor analysis mostly in the psychology

(Flanagan, 1935; Fleishman, 1956; Guilford, 1956). The practical calculation of factor analysis was made possible by the Hotelling iterative method of obtaining principal components (Hotelling, 1933). The relatively recent development of high-speed computers now makes it feasible and practical to use one of the more recently developed methods of factor analysis for quite large numbers of variables (Scott, 1966).

There are many methods like Bartlett's, Anderson-Rubin's used to obtain regression scores. In addition to this, in this research, we use Thurstone's scoring method. Thurstone (1935) used a least squares regression approach to predict factor scores. Regression factor scores are the prediction of the location of each individual on the factor or component. In the regression equation; selected independent variables are the standardized observed values of the items in the estimated factors or components. These predictor variables are weighted by regression coefficients, which are obtained by multiplying the inverse of the observed variable correlation matrix by the matrix of factor loadings and, in the case of oblique factors, the factor correlation matrix. The factor scores are the dependent variables in the regression equation. Under this process, the computed factor scores are standardized to a mean of zero; however, the standard deviation of the distribution of factor scores will be 1 by using principal component method in factor analysis and will be the squared multiple correlation between factors and variables (typically used as the communality estimates shown in statistical appendix) if principal axis methods are used (Tabachnick and Fidell, 2001). In this research, regression based factor scores are obtained from SPSS statistical software package.

RESULTS AND DISCUSSION

Here, a duplicate of the classification of Benton (1976) resembling capital inflows has been designed. The existence of 3 classes could be mentioned regarding the classification of financier countries. The primary financier countries are those organizing the issue of new securities, which are also labeled as "flow setters". The markets of these countries engage in the reissuance of financial instruments derived from their liabilities back to the securities markets after profitably investing the proceeds into their assets from the initial sales of securities. The list of intermediary financiers consist of those countries who use their assets to purchase the primary market securities from the flow setter countries that have issued such securities in the first place, and securitize the capital gains or losses derived from this purchasing/selling transactions from their liabilities to issue fresh financial instruments in the secondary markets. These countries may also participate in the issuance of securities in the primary markets. These countries are categorized as "flow transmitters or adsorbents" on account of their active role in circulation of international capital. Lastly, the classification of terminal financier countries applies to those countries commercializing the accumulated capital from the capital inflows as secondary market securities in their assets and reissue securities from their liabilities, in addition to having a structurally deficit giving market. Such countries are labeled as "flow unresistants" (Figure 1 and 2). Furthermore, these countries are more exposed

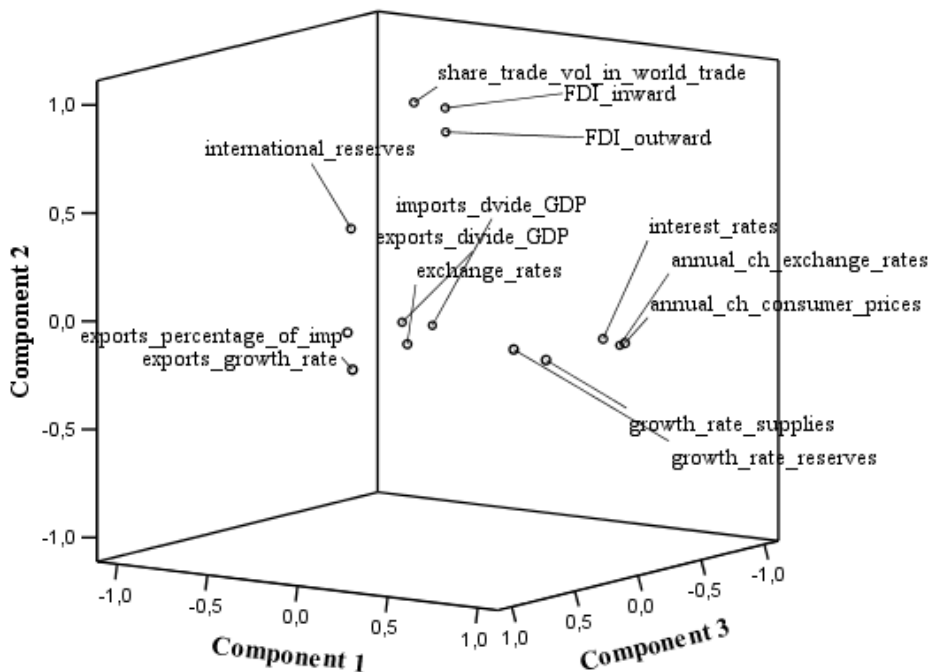


Figure 1. Component plot in rotated space with un-normalized data.

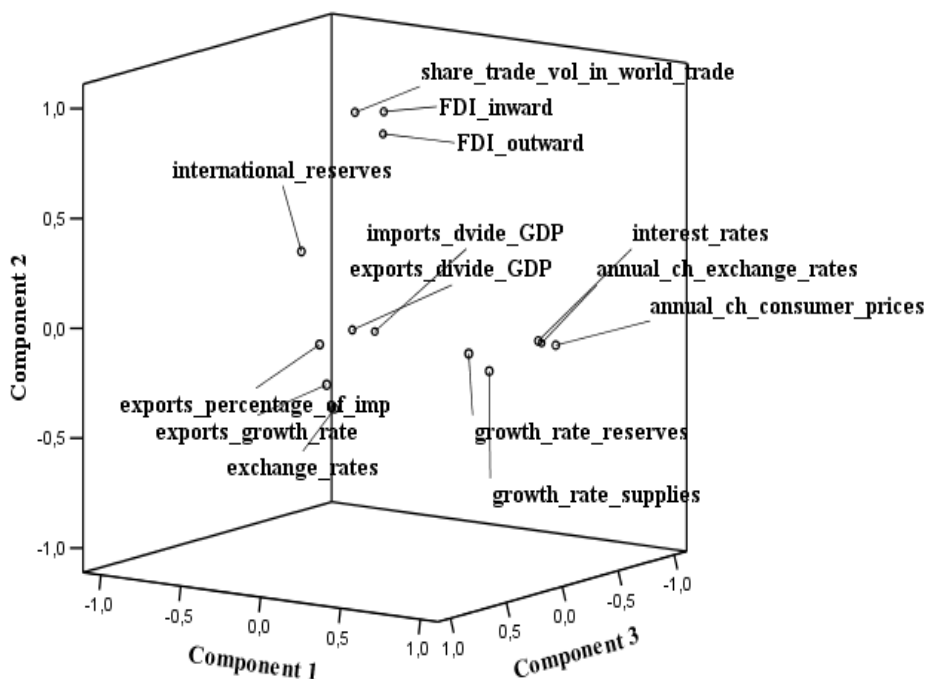


Figure 2. Component plot in rotated space with normalized data.

to speculative attacks compared to those in the other categories (Table 4).

At this point, questions like which countries originate

capital inflows, which are capital transmitters and which remain open to capital inflows need to be answered first. Afterwards, which ones among these countries have fully

Table 2. Grouping countries included in the model.

Type of economy	Country
Advanced economies	Germany, Austria, Denmark, Finland, France, Netherlands, UK, Ireland, Spain, Sweden, Italy, Portugal, Greece, USA, Israel, Japan, Canada, China
Other advanced European economies	GCASC, Iceland, Switzerland, Malta, Slovenia
Other industrialized Asian economies	Australia, South Korea, Hong Kong, Singapore, New Zealand
Emerging and developing economies	Bulgaria, Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland, Croatia, Turkey, Egypt, Argentina, Brazil, Indonesia, South Africa, Malaysia, Mexico, Pakistan, Russia, Saudi Arabia, Thailand

Table 3. Grouping variables in the analysis.

Grouping variable
Growth Rate of Reserve Money % (/100)
Growth Rate of Money Supply (M2) % (/100)
Interest Rates % Per Annum (/100)
Annual Changes in Exchange Rates Against \$/100
Annual % Ch. In Consumer Prices (/100)
Exports as % of Imports (/100)
Exports/GDP % (/100)
Imports/GDP % (/100)
Share of trade volume in world trade % (/100)
International Reserves-Gold quadrillion \$ (billion/1000)
Exports Growth Rate US \$ prices % (/100)
FDI Inward quadrillion US \$ billions/1000
FDI Outward quadrillions \$ billions/1000
Exchange rates

integrated with the global markets should be found out. The parameters to be utilized during such research efforts stand out as a totally different topic on its own.

In the model, factor analyses of the 14 variables denoted in Table 3 have been carried out. The purpose of the analyses is to determine the variables to be used and to find out which of initiation, unresistance (reception daha doğru bir tanımlama olur kanımca), and transmission effects would be explained by the selected set of variables. With this object in mind, a data set has been compiled from 48 countries (Table 2) for each of the 14 variables (Table 3) for the 8 year period of 2000 to 2007. The ratio based data are stated in decimals system and the monetary figures are expressed in terms of 1 trillion US dollar for easier comparison.

Factor analyses were launched on the 14 variables from 48 sets of data and as a result, 3 principal components have been obtained (Tables 5, 6 and 7). The factor loads and regression factor scores have been computed under the assumption that 3 factor calculations will be held for all three components. (Table 8a and 8b) In

the analysis, the first factor scores column has been generated by using the growth rate of reserve money, growth rate of money supply and interest rate per annum variables pertaining to the observed countries.

This column has been deemed adequate for explanation of the 1st component. The second factor column comprises of the variables of annual change in exchange rates against US dollar, annual changes in consumer prices and interest rates per annum and the 2nd component has been determined by the assistance of these variables. Eventually, the 3rd factor scores column was created by using the share of trade volume in world trade, foreign direct investments-inward and foreign direct investments-outward figures. This data in this column was also found to be sufficient to explain the 3rd component.

The final situation after the completion of these stages could be summarized as follows:

1. Among the factor variables, growth rate of reserve money, growth rate of money supply and interest rate per

Table 4. Summary of variables.

Factor	Explained variable	Demonstrative variable (used to define explained variable in factor analysis)
1	Unresistant countries and unresistance scores	Growth rate of reserve money, growth rate of money supply and interest rate per annum
2	Transmitter countries (adsorbents) and transmission scores	Annual change in exchange rates against \$, annual changes in consumer prices ve interest rates per annum.
3	Setter countries and set scores	Share of trade volume in world trade foreign direct investments-inward and foreign direct investments-outward.

Table 5. Communalities of unnormalized data.

Data	Initial	Extraction
Growth rate reserves	1.000	0.587
Growth rate supplies	1.000	0.653
Exchange rates	1.000	0.172
Interest rates	1.000	0.742
Annual ch. exchange rates	1.000	0.750
Annual ch. cons. prices	1.000	0.875
Exports % of imports	1.000	0.468
Exports / GDP	1.000	0.966
Imports / GDP	1.000	0.965
Share trade vol in world trade	1.000	0.938
International reserves	1.000	0.371
Exports growth rate	1.000	0.716
FDI inward	1.000	0.859
FDI outward	1.000	0.678

annum could be actively used in determination of unresistant countries.

2. Annual change in exchange rates against US dollar, annual changes in consumer prices and interest rates per annum could be actively used in determination of transmitter countries (adsorbents).

3. Share of trade volume in world trade, foreign direct investments-inward and foreign direct investments-outward could be actively used in determination of setter countries.

In order to conduct these evaluations, the starting point was determined to be the influences of these countries on the global financial system and the size of their financial reserves as well.

Conclusion

As a result of the study, it has been found out that the developed economies belong into the category of flow setters. (Empirical Results section Graphs 1-24) Despite

possessing high levels of financial power, it has also been observed that these countries begin to lose some of that power in periods of financial crisis, as evidenced by material decreases in their set scores. On the other hand, both transmission and unresistance characteristics of developing countries have been investigated. In a given year, developing countries with high transmission and high unresistance scores are included in the class of economies achieving to circum-vent the negative financial impacts they were exposed to. In contrast, the countries with high unresistance and low transmission scores during the same year belong to the same category with countries that have given financial deficits and failed to absorb the undesired inflows to their markets.

For example, it is seen that within year 2000 (with reference to Graphs 1-3), it has been observed that Russia's unresistance and transmission scores are quite high. The appropriate interpretation should go as follows; these two scores in a position to balance each other out in the face of financial storms, come from the flow setter countries. If the situation here was indeed similar to a

Table 6. KMO and Bartlett's Test with unnormalized data.

Kaiser-Meyer-Olkin measure of sampling adequacy	Bartlett's Test of sphericity		
	Approx. chi-square	df	Sig.
0.456	489.248	91	0.000

Table 7. Communalities of normalized data.

Data	Initial	Extraction
Growth rate reserves	1.000	0.580
Growth rate supplies	1.000	0.670
Exchange rates	1.000	0.356
Interest rates	1.000	0.736
Annual ch. exchange rates	1.000	0.737
Annual ch. cons. prices	1.000	0.869
Exports % of imports	1.000	0.422
Exports / GDP	1.000	0.967
Imports / GDP	1.000	0.951
Share trade vol in world trade	1.000	0.925
International reserves	1.000	0.412
Exports growth rate	1.000	0.694
FDI inward	1.000	0.864
FDI outward	1.000	0.689

Table 8a. Factor scores of each country

Country	2000			2001			2002			2003		
	Growth Rate Reserve_Growth Rate Supply_Interest Rate	Change in Exchange R. Change in ConsumerPr. Interest Rates	Share Trade Vol. In World_FDI Inward_FDI Outward	Growth Rate Reserve_Growth Rate Supply_Interest Rate	Change in Exchange R. Change in ConsumerPr. Interest Rates	Share Trade Vol. In World_FDI Inward_FDI Outward	Growth Rate Reserve_Growth Rate Supply_Interest Rate	Change in Exchange R. Change in ConsumerPr. Interest Rates	Share Trade Vol. In World_FDI Inward_FDI Outward	Growth Rate Reserve_Growth Rate Supply_Interest Rate	Change in Exchange R. Change in ConsumerPr. Interest Rates	Share Trade Vol. In World_FDI Inward_FDI Outward
Germany	-0.50281	-0.0895	2.31696	-0.74469	-0.28598	1.41719	-0.62068	-0.37111	1.95053	-0.5303	-0.60325	1.6633
Austria	-0.22369	-0.43546	4.78443	-0.88559	-0.26732	-0.32799	-0.51834	-0.356	-0.38602	-0.99731	-0.57737	-0.19879

Table 8a. Contd.

Denmark	-0.36843	-0.53953	-0.45338	-0.59661	-0.25187	-0.15564	-0.54682	-0.31271	-0.30542	-0.50538	-0.48547	-0.47746
Finland	-0.29919	0.00629	-0.3224	-0.06979	-0.24866	-0.35118	0.86675	-0.34089	-0.27913	-0.82776	-0.57737	-0.53856
France	-0.79501	-0.06036	-0.33916	-0.75361	-0.29064	1.914	0.65872	-0.34593	1.81598	-0.3701	-0.48495	2.0495
Netherlands	2.85177	0.38643	-0.22244	-0.78002	-0.13672	1.21718	-0.00124	-0.25021	0.80933	-0.24918	-0.48495	1.08324
UK	0.60156	0.26844	-0.56806	-0.36047	-0.25448	1.57125	-0.59347	-0.33401	1.32739	-0.16788	-0.24492	1.45345
Ireland	0.06421	-0.17232	-0.4851	-0.19879	-0.18803	-0.27464	-0.22396	-0.20487	0.27841	0.79716	-0.30012	0.17128
Spain	-0.10167	-0.82333	0.20933	-0.44312	-0.244	0.53222	-0.45561	-0.26029	0.98953	-0.12569	-0.39253	0.84185
Sweden	-1.68586	0.02133	-0.06304	-0.02642	-0.10747	-0.20074	-0.76088	-0.31801	-0.06237	-0.73598	-0.41761	-0.03229
Italy	0.85975	0.18803	-0.5011	-0.66055	-0.26732	0.4052	-0.74036	-0.31066	0.46014	-0.7261	-0.42334	0.4993
Portugal	0.5256	0.00024	-0.57566	-0.45983	-0.16962	-0.35842	-0.61646	-0.25525	-0.53795	-0.47089	-0.37371	-0.30789
Greece	-1.20863	-0.0118	-0.2711	-2.0861	-1.82072	-0.52344	-0.79899	-0.24517	-0.58752	-0.96271	-0.36173	-0.59516
GCASC	-0.77389	-0.07007	1.61935	-0.03645	-0.28894	-0.57501	0.40742	-0.29376	-0.60894	-1.14058	-0.16645	-0.64941
Iceland	0.47528	-0.63004	-0.1219	-0.02598	0.59698	-0.58441	0.52288	0.04862	-0.63215	-0.2279	-0.20618	-0.66803
Switzerland	-0.09549	-0.01866	-0.5748	-0.3948	-0.43689	-0.01964	-0.92401	-0.53856	-0.16598	-0.51639	-0.76105	0.24385
Malta	0.5022	0.306	-0.51398	-0.30795	-0.23844	-0.58758	-0.08454	-0.25166	-0.64778	-0.60304	-0.32752	-0.64693
Slovenia	0.64114	0.05521	-0.56563	0.91651	0.35154	-0.56856	0.01533	0.20279	-0.58469	-0.30252	0.26645	-0.64568
USA	-0.58432	-0.04579	0.81874	-0.34392	-0.3154	5.26386	-0.66192	-0.37847	5.02426	-0.80096	-0.19876	4.81248
Israel	-0.30059	-0.86121	0.71336	-0.09132	-0.09675	-0.47606	-0.56922	0.30616	-0.5302	-0.90322	0.20122	-0.48304
Japan	-0.05131	-0.32929	2.55879	-0.90807	-0.43441	0.76153	-0.93617	-0.54765	0.81316	-0.93315	-0.74636	0.73844
Canada	0.3573	0.0999	-0.2421	2.16299	-0.24853	0.80546	-0.80548	-0.29406	0.7671	-1.03802	-0.2338	0.41391
Australia	-0.23358	0.01249	0.39187	0.02631	-0.00019	-0.18431	-0.56373	-0.22525	-0.02362	0.01841	-0.17692	-0.05551
S. Korea	0.05023	-0.4307	-0.45516	0.00708	0.03481	-0.20155	0.07045	-0.21473	-0.19235	-0.35647	0.10678	-0.13665
Hong Kong	-0.54829	-0.28802	0.03913	-0.66264	-0.57741	0.29335	-0.87803	-0.67574	0.27156	-0.41256	-0.80685	0.23489
Singapore	-1.30642	-0.26401	0.06692	-0.49261	-0.43222	0.16342	-1.21383	-0.51982	-0.17264	-0.6299	-0.50624	-0.026
New Zealand	-0.30491	-0.03122	0.10881	-0.24423	-0.12725	-0.5848	-0.25823	-0.26211	-0.57022	-0.14987	-0.36293	-0.57836
Bulgaria	0.05941	0.2301	-0.57822	0.38256	-0.09206	-0.57245	-0.09873	-0.17198	-0.61127	0.70168	-0.41543	-0.61283
Czech Rep.	-1.0047	-1.19296	0.57192	-0.3555	-0.28669	-0.44434	0.09455	-0.50613	-0.37994	-0.68944	-0.72571	-0.52584
Estonia	-0.34407	-0.51339	0.77435	-0.26263	-0.11506	-0.57794	-0.36406	-0.28778	-0.62701	-0.02487	-0.56344	-0.64946
Latvia	0.49944	-0.46355	-0.57822	0.10324	-0.20872	-0.58777	0.63526	-0.31148	-0.63136	0.60572	-0.13694	-0.67057
Lithuania	-0.04324	-0.69724	-0.57414	-0.06742	-0.40292	-0.57836	0.39578	-0.53297	-0.61389	0.69382	-0.92216	-0.66548
Hungary	0.15072	0.73028	-0.49717	-0.16441	0.21057	-0.4701	0.30785	-0.04209	-0.4997	0.37498	0.65019	-0.51318
Poland	-0.351	-0.70159	-0.35359	1.43169	0.06827	-0.42465	-1.18884	-0.16476	-0.44541	-0.71627	-0.22608	-0.42739
Croatia	-0.30385	-0.19396	-0.57618	0.94643	-0.27817	-0.55778	0.05176	-0.42801	-0.59553	0.14176	-0.55603	-0.60884
Turkey	-0.53752	-0.07696	-0.0869	5.03403	6.14257	-0.46827	3.95949	4.17613	-0.5235	2.71836	4.68541	-0.51511
Argentina	0.43516	-0.21264	-0.55338	-0.08361	0.04276	-0.51642	3.59657	4.73256	-0.57225	3.10121	1.6553	-0.58683
Brazil	0.09734	-0.00487	-0.56424	0.86671	0.93439	-0.20708	0.36252	1.01518	-0.14682	1.51628	3.13157	-0.28083

Table 8a. Contd.

China	0.32092	0.67176	-0.42996	-0.23595	-0.47766	0.65375	0.01311	-0.48872	1.14128	0.58822	-0.24094	1.67848
Indonesia	-0.58925	-0.01924	-0.41364	0.54384	0.94397	-0.53607	-0.08648	0.66434	-0.53267	0.32429	0.95403	-0.59419
South Africa	2.52969	0.92249	-0.38152	0.3603	0.44356	-0.48967	0.65527	0.65142	-0.55358	-0.41225	0.30846	-0.58431
Malaysia	-0.29598	-0.64435	-0.45948	-0.42797	-0.39544	-0.41831	-0.32705	-0.30288	-0.36408	0.17858	-0.14601	-0.41207
Mexico	-0.93945	-0.74915	-0.11101	0.22946	-0.05975	0.20574	0.14469	-0.07999	0.20331	0.07489	0.4787	0.12968
Egypt	0.69765	0.83984	-0.56493	0.25315	0.14174	-0.56677	0.29189	0.14629	-0.60824	1.81714	1.23461	-0.65891
Pakistan	-0.68889	-0.48872	-0.42795	0.34645	0.20884	-0.57043	0.36763	-0.19954	-0.60434	0.46852	-0.10226	-0.64904
Russia	4.01439	6.08575	-0.48435	0.62586	0.66366	-0.35922	1.93853	0.56073	-0.32574	3.04315	1.22813	-0.10119
S.Arabia	-0.68709	0.11147	-0.54443	-0.57592	-0.48958	-0.48661	0.08693	-0.42713	-0.49138	-0.47681	-0.33186	-0.53081
Thailand	-0.56467	0.12387	-0.51962	-0.48963	-0.24835	-0.39796	-0.60627	-0.4538	-0.4383	-0.16064	-0.31363	-0.38704

Table 8b. Factor scores of each country

2004			2005			2006			2007			Country
Growth Rate Reserve_Growth Rate Supply Interest Rate	Change in Exchange R_Change in ConsumerPr_ Interest Rates	Share Trade Vol. In World_FDI Inward_FDI Outward	Growth Rate Reserve_Growth Rate Supply_Interest Rate	Change in Exchange R_Change in ConsumerPr_ Interest Rates	Share Trade Vol. In World_FDI Inward_FDI Outward	Growth Rate Reserve_Growth Rate Supply_Interest Rate	Change in Exchange R_Change in ConsumerPr_ Interest Rates	Share Trade Vol. In World_FDI Inward_FDI Outward	Growth Rate Reserve_Growth Rate Supply_Interest Rate	Change in Exchange R_Change in ConsumerPr_ Interest Rates	Share Trade Vol. In World_FDI Inward_FDI Outward	
-0.66199	-0.65225	0.71908	-0.69152	-0.61842	2.0609	-0.731	-0.54139	1.89513	-0.29309	-0.47304	1.85479	Germany
-0.15956	-0.60792	-0.27014	-0.00377	-0.58995	-0.22669	-0.60891	-0.55853	-0.36572	-0.26625	-0.49417	-0.13382	Austria
-0.52252	-0.79178	-0.71049	-0.08645	-0.65391	-0.20341	-0.74825	-0.52357	-0.45232	-0.42912	-0.59986	-0.41016	Denmark
0.73977	-1.02903	-0.45052	-0.73793	-0.77496	-0.47853	-0.70998	-0.62706	-0.50384	-0.15929	-0.621	-0.49205	Finland
-0.55026	-0.54143	1.05863	-0.74319	-0.61842	2.47526	-0.78809	-0.52426	1.66412	-0.30803	-0.621	2.21942	France
-0.50351	-0.7409	0.19799	-0.25397	-0.67512	2.06357	-0.82775	-0.55834	0.25577	0.41509	-0.621	0.63485	Netherlands
0.08374	-0.53953	1.67058	-0.28755	-0.3194	3.18305	-0.4278	-0.26063	1.98398	-0.18332	-0.25153	2.85345	UK
-0.15333	-0.54143	-0.46027	0.09323	-0.57572	-0.75876	-0.03561	-0.38718	-0.47256	-0.3564	-0.34621	-0.25652	Ireland
-0.06306	-0.36411	0.64779	0.26834	-0.40942	0.50943	0.13088	-0.23297	0.7613	0.0154	-0.36735	0.6601	Spain
-0.98958	-0.8308	-0.04158	-0.72461	-1.00924	-0.0433	-0.67675	-0.72554	-0.10883	-0.55925	-0.71913	-0.1683	Sweden
-0.53985	-0.54143	0.38945	-0.61957	-0.57572	0.65541	-0.45016	-0.47285	0.55334	0.18095	-0.53645	0.6097	Italy
-0.53673	-0.4971	-0.40798	-0.29986	-0.58995	-0.53307	-0.96876	-0.33578	-0.44331	-0.41776	-0.4519	-0.54642	Portugal
-0.69869	-0.38628	-0.48088	-0.37094	-0.39072	-0.60394	-0.50714	-0.28437	-0.53242	-0.16559	-0.32507	-0.58906	Greece
-0.49087	-0.43775	-0.5437	-0.01885	-0.30141	-0.65639	0.11191	-0.4575	-0.64139	-0.42432	-0.6407	-0.6617	GCASC
2.77993	0.22901	-0.53379	0.67865	1.59919	-0.55309	3.0178	2.42061	-0.58085	4.72595	1.79982	-0.59526	Iceland

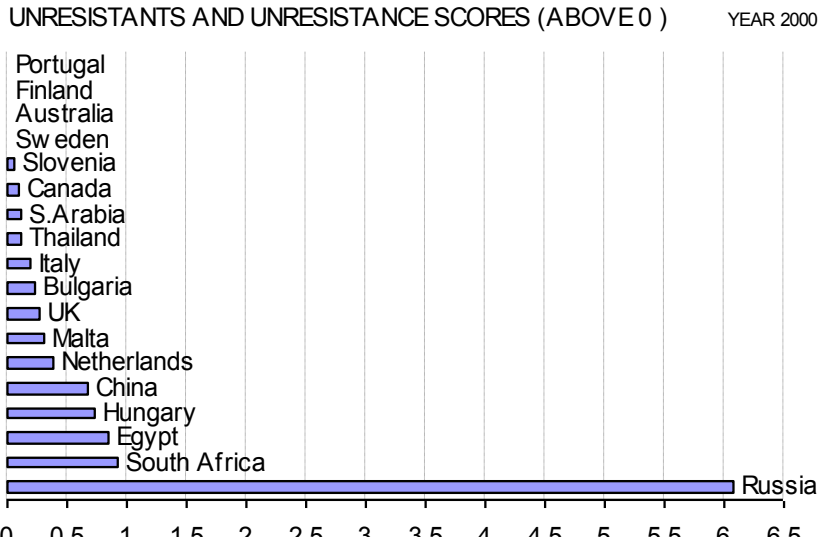
Table 8b. Contd.

-1.20359	-0.99764	-0.13181	-1.06976	-0.94947	0.15767	-1.00717	-0.75491	0.36123	-0.9101	-1.06681	0.07267	Switzerland
-1.0742	-0.3588	-0.56007	-0.90151	-0.50189	-0.67055	-0.7391	-0.45384	-0.64606	-0.43791	-0.87939	-0.67591	Malta
1.12708	0.1634	-0.52768	-0.68205	-0.34868	-0.63919	-0.63672	-0.33874	-0.62579	2.0386	-0.35841	-0.63839	Slovenia
-0.75581	-0.01092	5.72614	-0.62081	-0.23269	2.815	-0.46212	0.03762	5.03958	-0.35312	-0.17583	4.26955	USA
-0.65354	0.00404	-0.44369	-0.49891	-0.00443	-0.52179	-0.73901	-0.1028	-0.35534	-0.70615	-0.41051	-0.52333	Israel
-1.31748	-1.1863	0.54458	-1.51837	-1.4229	0.72442	-1.81557	-0.79859	0.41942	-1.32728	-1.57258	0.52932	Japan
-0.66555	-0.51665	0.25466	-0.67583	0.10076	0.55178	-0.36947	-0.77637	0.67198	-1.96267	-0.46419	0.79482	Canada
0.11526	-0.24846	0.22502	-0.28542	0.29125	-1.34909	-0.05757	0.29926	-0.09222	0.85199	-0.06411	-0.24165	Australia
-1.09028	0.25517	-0.01948	-0.6517	0.61908	-0.11728	-0.46292	-0.7252	-0.16277	-0.76794	-0.27741	-0.1981	S. Korea
-0.87781	-0.89352	0.74221	-1.34626	-0.89767	0.52174	-0.37528	-0.50253	0.505	-0.30636	-0.85677	0.39348	Hong Kong
-0.82112	-0.54774	0.11101	-1.00603	-0.95114	-0.09218	-0.37799	-1.27653	-0.03724	-0.72045	-1.15766	-0.15539	Singapore
-0.57415	-0.25604	-0.5018	1.73922	0.68371	-0.64056	2.62462	0.92724	-0.5583	-0.30078	0.14104	-0.6224	New Zealand
1.33884	0.42272	-0.50131	0.31778	0.08332	-0.60884	0.5303	0.42148	-0.57781	0.69453	0.5416	-0.60142	Bulgaria
-1.01318	-0.51835	-0.38036	-1.0373	-0.1934	-0.42011	-0.99215	-1.01908	-0.48681	-0.80962	-0.8751	-0.48803	Czech Rep.
0.37384	-0.36804	-0.54322	1.61974	-0.32261	-0.62675	0.59847	-0.12916	-0.62867	-0.38964	0.4478	-0.64764	Estonia
1.16364	0.67509	-0.55166	1.85681	-0.26346	-0.66244	1.76569	0.32704	-0.63992	-0.13543	1.47555	-0.65801	Latvia
0.75501	-0.90247	-0.54065	1.0809	-0.47506	-0.64593	0.18221	-0.20329	-0.6281	0.30266	0.45419	-0.64884	Lithuania
0.5228	1.31878	-0.40288	0.66533	0.16728	-0.4628	-0.39198	0.84203	-0.48487	-0.30208	1.13832	-0.52648	Hungary
-0.40924	0.11281	-0.23035	0.09696	0.49497	-0.36148	-0.37651	-1.03412	-0.27693	-0.54426	-0.6693	-0.38351	Poland
-0.18275	-0.68824	-0.53229	-0.26112	-0.37449	-0.63729	-0.2041	-0.55241	-0.61561	-0.37057	-0.68017	-0.63065	Croatia
3.39897	3.82288	-0.39929	3.74959	3.3016	-0.402	2.67436	3.98273	-0.34861	1.5327	3.65967	-0.37611	Turkey
0.75981	0.54793	-0.45828	-0.06289	0.75268	-0.54972	0.85192	1.89599	-0.55635	0.72509	1.52621	-0.58808	Argentina
1.67367	2.35253	-0.08665	1.68177	3.76958	-0.31704	1.101	0.53178	-0.12208	0.7443	0.87177	-0.25772	Brazil
0.09701	0.33995	1.29246	-0.23227	-0.54901	1.44667	0.14109	-0.80965	1.19777	0.07816	0.02814	1.15086	China
-0.00486	1.60514	-0.41885	1.07158	0.67966	-0.42098	0.91478	2.11126	-0.49178	0.55137	0.97834	-0.50446	Indonesia
0.49086	-0.47993	-0.47187	-0.09616	0.27053	-0.50303	0.54386	1.02241	-0.53055	0.6653	1.36793	-0.54291	South Africa
0.35427	-0.11451	-0.30568	-0.52888	-0.33635	-0.40233	-0.27652	-0.39415	-0.38707	-0.32785	-0.72898	-0.40135	Malaysia
-0.12017	0.8346	0.1194	-0.30771	0.14798	-0.0052	-0.54878	-0.13669	-0.14019	-0.49065	-0.29942	-0.17478	Mexico
0.31157	2.30848	-0.51216	1.19328	1.66523	-0.58499	0.48932	0.25112	-0.54881	0.2523	1.67261	-0.56846	Egypt
0.6953	0.60548	-0.52996	0.32181	0.89831	-0.62678	0.49699	1.41131	-0.60196	0.55627	1.54144	-0.62409	Pakistan
1.81944	1.74456	-0.00053	1.27153	1.31823	-0.07999	1.49635	0.71136	0.09748	1.3813	1.08629	0.23022	Russia
0.20024	-0.51456	-0.4095	-0.17519	-0.61575	-0.34969	0.3092	-0.4396	-0.32969	0.00129	-0.38955	-0.27821	S.Arabia
-0.68781	-0.23869	-0.33966	-0.91016	-0.30199	-0.40968	-0.66759	-0.25559	-0.43133	-0.98799	-0.73612	-0.46401	Thailand

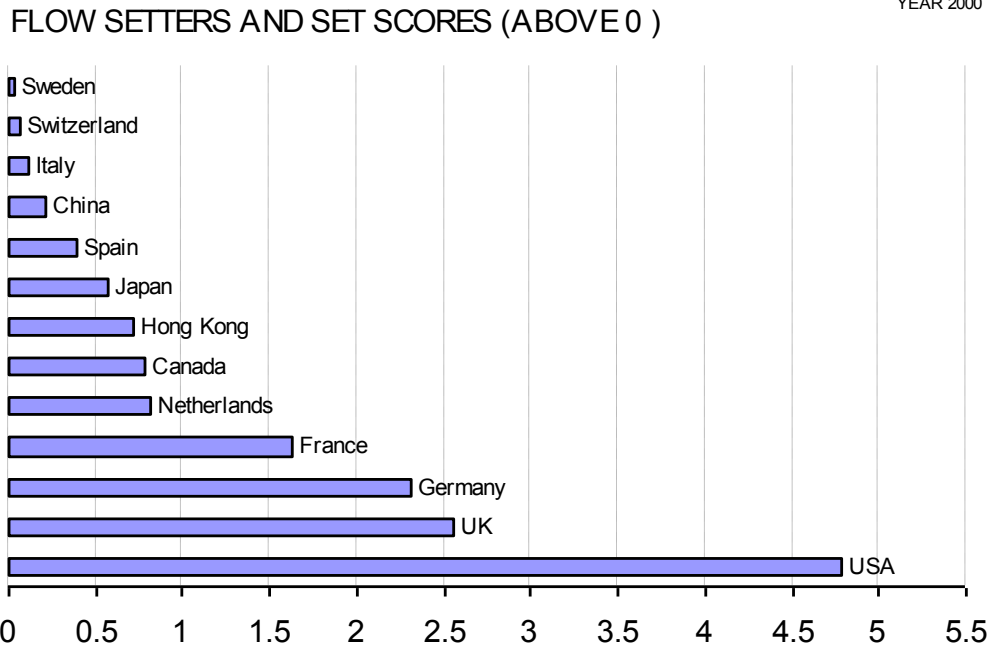
country with high unresistance and petty trans-
mission scores, it could be argued that Russia

did not present adequate power to cope with the
incoming capital flows and was teetering on the

edge of financial fragility. In another example,
Turkey presents a case with high unresistance

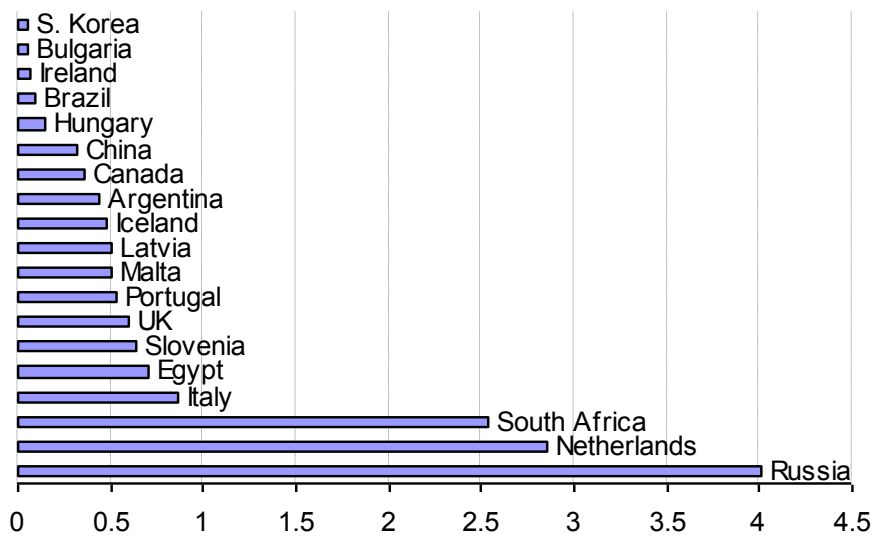


Graph 1. Unresistant countries of 2000 and their unresistance scores. In 2000, Russia was the leader among the countries that made usage of the accumulated capital from previous capital inflows as secondary market securities among their assets. In the analysis pertaining to this particular year, the underlying reason for Russia heading this specific group was that this year has coincided with the initiation of the exit from the huge crisis endured by various emerging markets in the second half the 90s. The Russian market, which had managed a swift departure from the crisis and found itself in a sweet spot of financial rejuvenation, still continued to carry on those same risks after the crises had ended.



Graph 2. Setter countries (setters) of the year 2000 and their set scores. As emphasized in Graph 3, 13 countries, notably USA, the UK, Germany and France, have been included in the category of flow setter countries. This particular group is headed by USA, which is currently the largest the economy in the world. Among the strongest economies in the global capital world, the UK, Germany and France offered a similar outlook 2000, followed by Netherlands, Canada and Hong Kong.

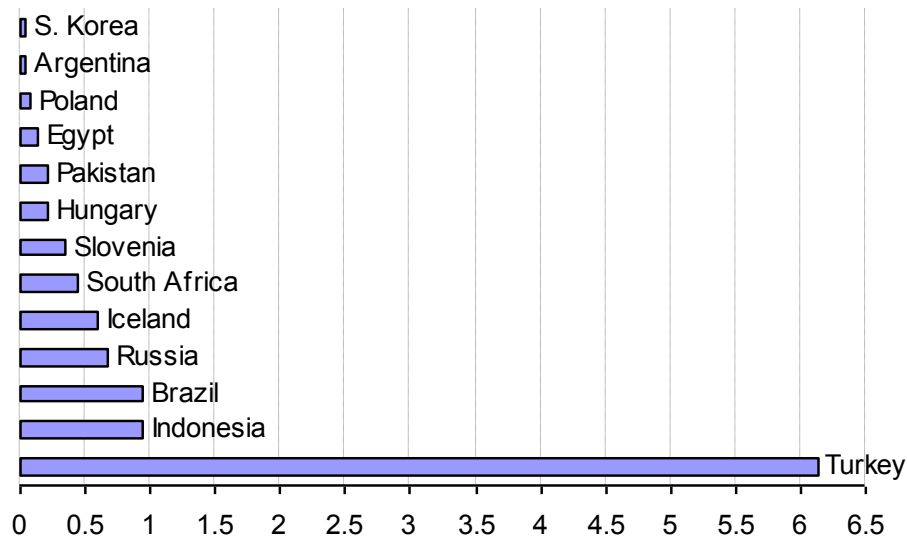
TRANSMITTERS AND TRANSMISSION SCORES (ABOVE 0) YEAR 2000



Graph 3. Transmitter countries (transmitters or adsorbents) of the year 2000 and their transmission scores.

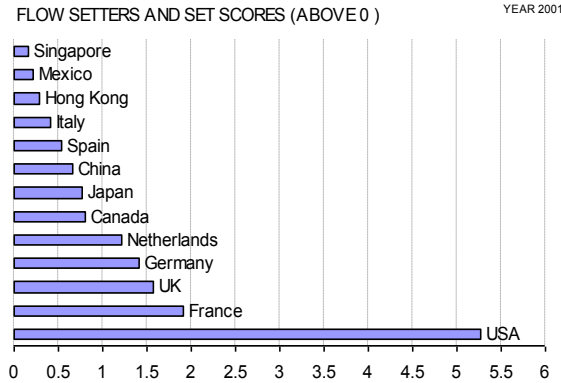
In the rankings for year 2000, Russia, Netherlands and South Africa were the leading markets in terms of drawing capital inflows. The inflows into these countries proceeded their way by leaving these countries after returns have been attained on the underlying investments.

UNRESISTANTS AND UNRESISTANCE SCORES (ABOVE 0) YEAR 2001

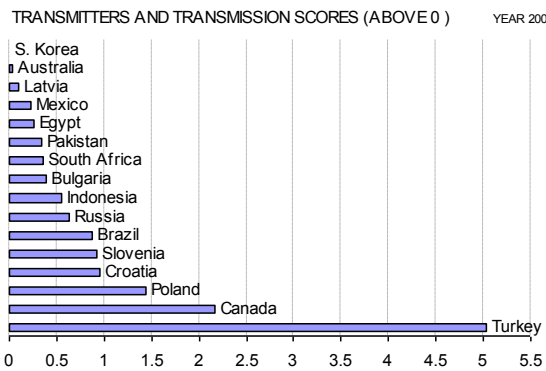


Graph 4. Unresistants of 2001 and unresistance scores.

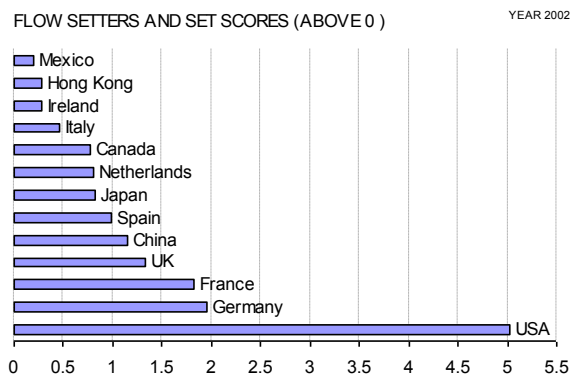
In year 2001, Turkey is by far the leading country among the risky markets which keep the accumulated capital from transmission of capital inflows as secondary market securities in their assets and reissue securities from their liabilities. The fact that Turkey headed this particular category as per the analysis pertaining to this year could be attributed to the strong financial fluctuations in the money and capital markets in Turkey during 2001. As a consequence, the associated unresistance score tended out to be very high.



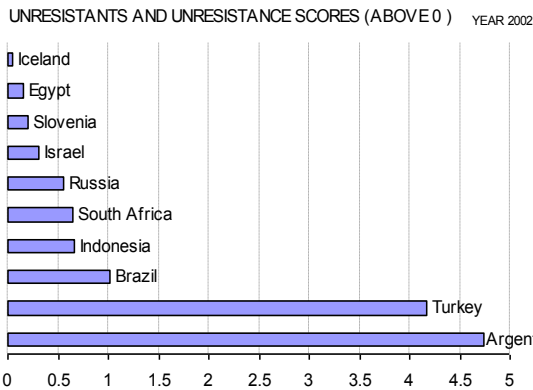
Graph 5. Setters of 2001 and set scores. 13 countries, headed by USA and followed by France, the UK and Germany, belong into the category of flow setter countries.



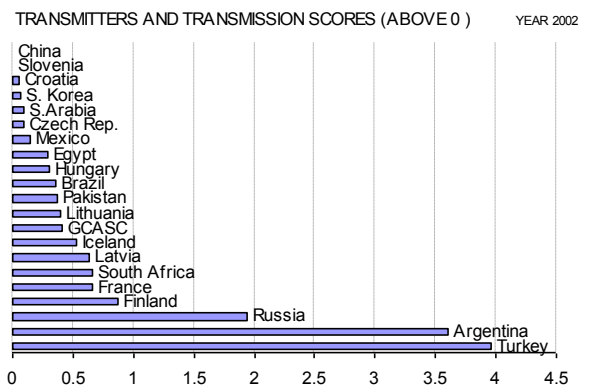
Graph 6. Transmitters (adsorbents) of 2001 and transmission scores. As per the rankings for year 2000, Turkey, Canada and Poland are the flow adsorbent countries. The inflows into these countries proceeded their way by exiting these countries after returns have been attained on the underlying investments.



Graph 8. Setters of 2002 and set scores. 13 countries, particularly USA, Germany, France, the UK and China belong into the category of flow setter countries. In this group, USA, France and Germany have committed to investments within a year bearing a direct impact on both flow setter and transmitter countries.

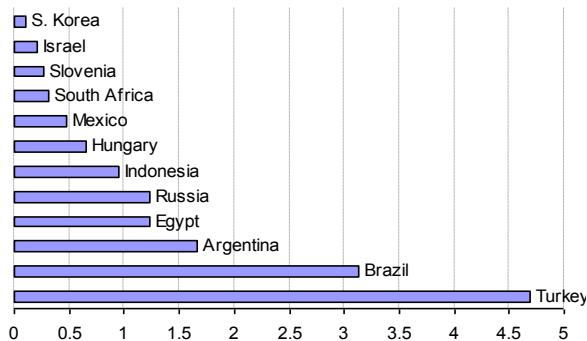


Graph 7. Irrresistants of 2002 and unresistance scores. In 2002, Argentina and Turkey were the leading countries with respect to financial deficits and negative impacts of capital inflows.



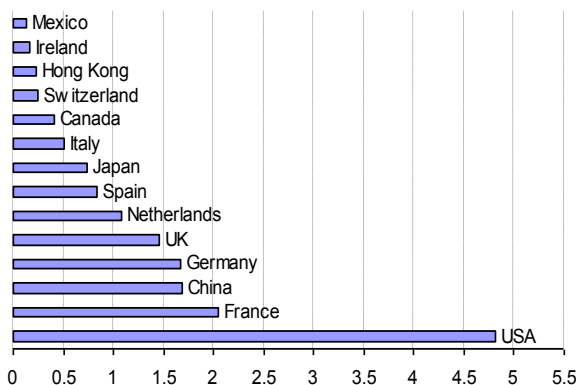
Graph 9. Transmitters (adsorbents) of 2002 and transmission scores. Argentina, Turkey, Russia and Finland were the adsorbents during year 2002.

UNRESISTANTS AND UNRESISTANCE SCORES (ABOVE 0) YEAR 2003



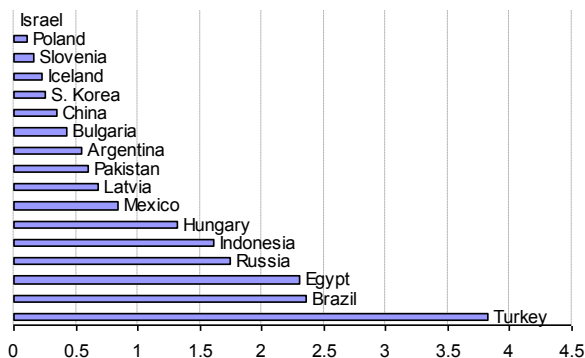
Graph10. Unresistants of 2003 and unresistance scores. Turkey, Brazil and Argentina are the main countries suffering difficulties in coping with the instantaneous fluctuations brought by the money and capital markets.

FLOW SETTERS AND SET SCORES (ABOVE 0) YEAR 2003



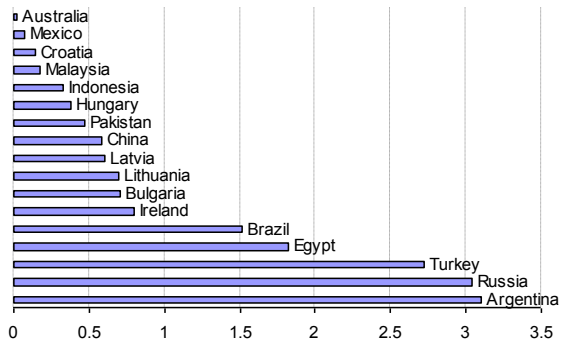
Graph 11. Setters of 2003 and set scores. In this year, China has joined the group of USA, France and Germany. China is the leading country with respect to total influence over the unresistant countries.

UNRESISTANTS AND UNRESISTANCE SCORES (ABOVE 0) YEAR 2004



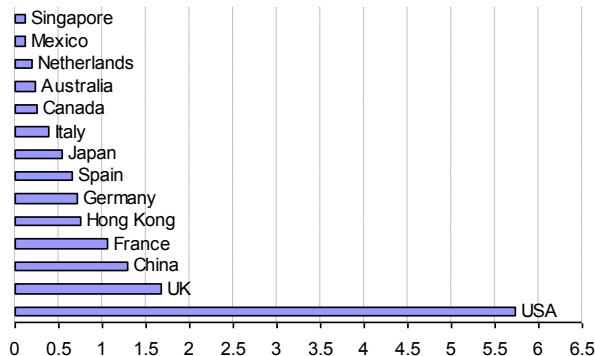
Graph 13. Unresistants of 2004 and unresistance scores. Turkey, Brazil and Egypt are the main countries suffering difficulties in coping with the instantaneous fluctuations brought by the money and capital markets.

TRANSMITTERS AND TRANSMISSION SCORES (ABOVE 0) YEAR 2003

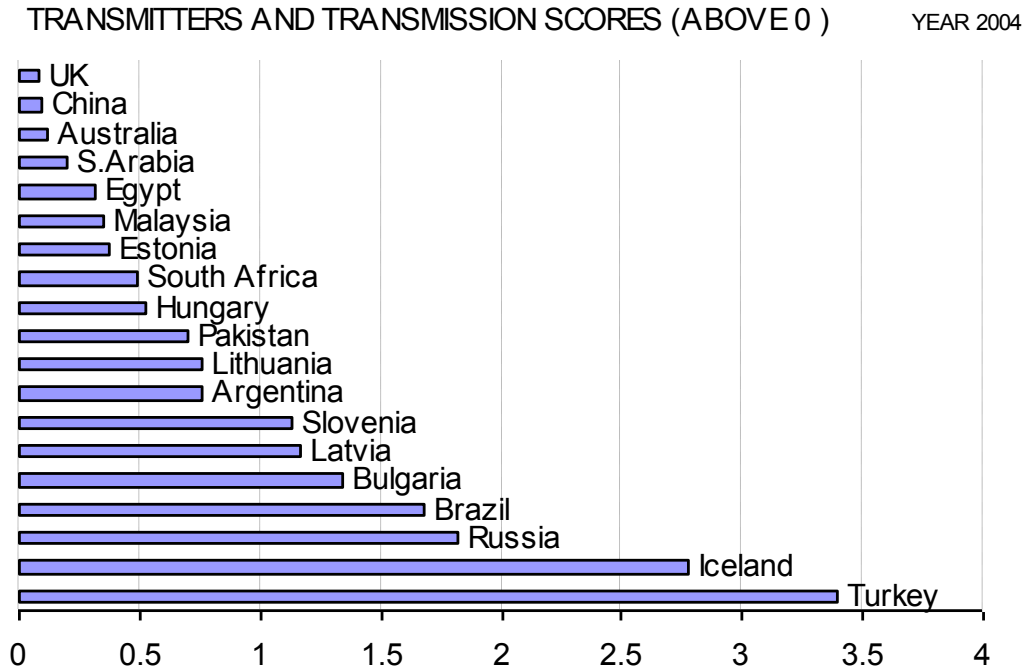


Graph 12. Transmitters (adsorbents) of 2003 and transmission scores. Argentina, Russia, Turkey, Egypt and Brazil are the leading countries in terms of drawing and transmission of monetary and capital markets investments from developed economies.

FLOW SETTERS AND SET SCORES (ABOVE 0) YEAR 2004

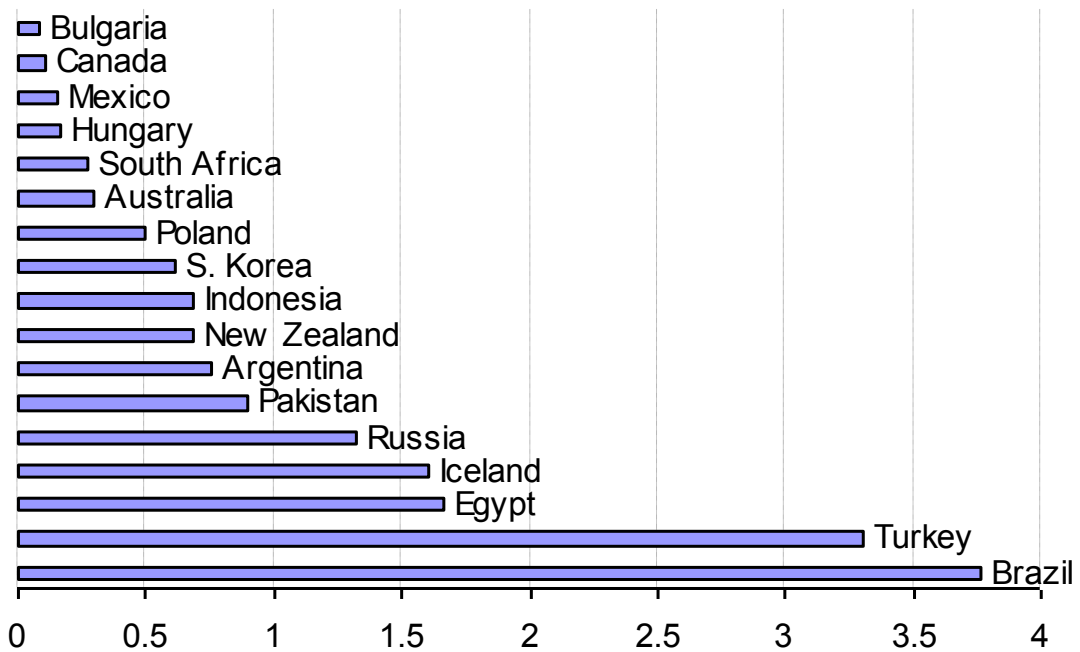


Graph 14. Setters of 2004 and set scores. Headed by USA, France, the UK and China, 14 countries belong into the category of flow setter markets. Here, it is seen that Germany has been left behind relative to the other years.



Graph 15. Transmitters (adsorbents) of 2004 and transmission scores. Turkey, Iceland, Russia, Brazil are the leading countries in terms of drawing and transmission of monetary and capital markets investments from developed economies.

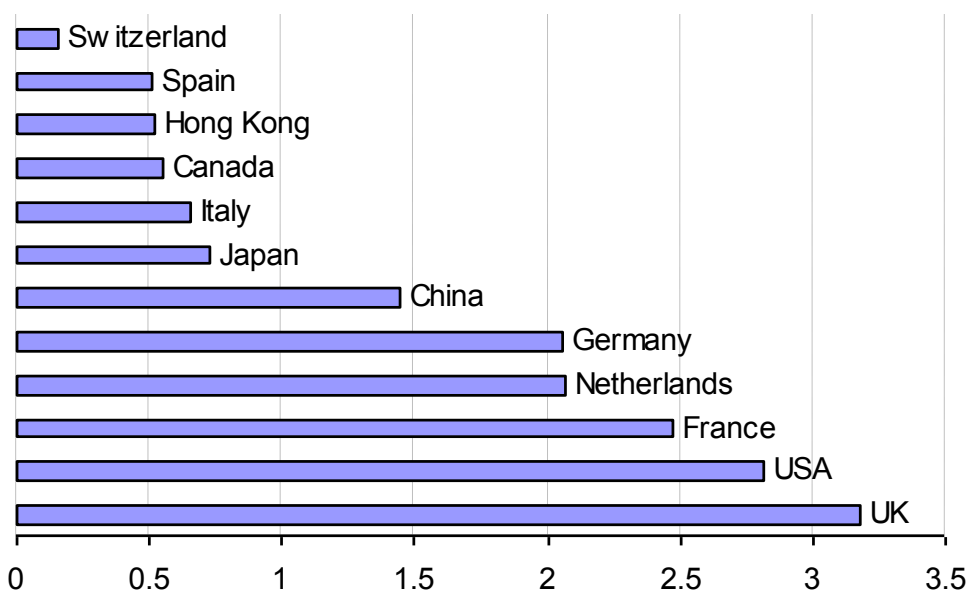
UNRESISTANTS AND UNRESISTANCE SCORES (ABOVE 0) YEAR 2005



Graph 16. Unresistants of 2005 and unresistance scores. Turkey, Brazil and Egypt are the main countries suffering difficulties in coping with the instantaneous fluctuations brought by the money and capital markets.

FLOW SETTERS AND SET SCORES (ABOVE 0)

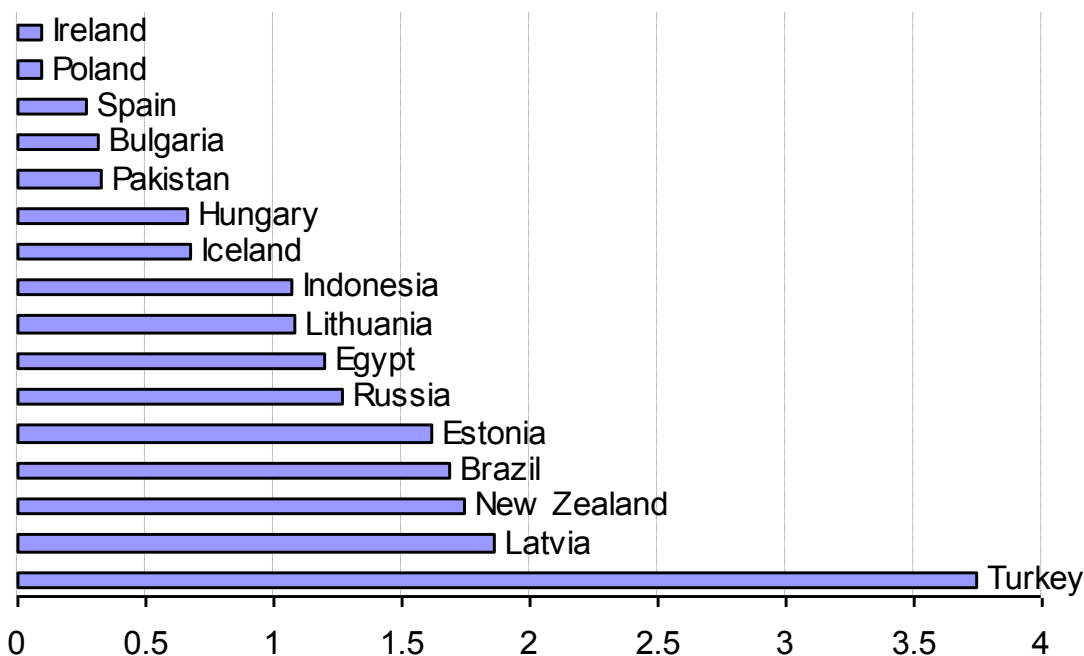
YEAR 2005



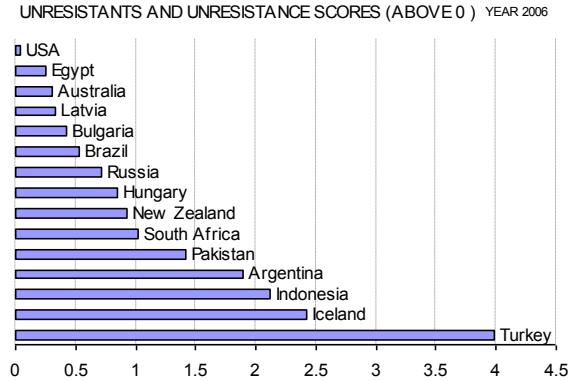
Graph 17. Setters of 2005 and set scores. Headed by the UK, USA, France and Netherlands, 12 countries belong into the category of flow setter markets. Here, it is seen that USA has been left behind relative to the other years. Moreover, Netherlands have claimed the top ranking among the countries attaining an increase in financial power.

TRANSMITTERS AND TRANSMISSION SCORES (ABOVE 0)

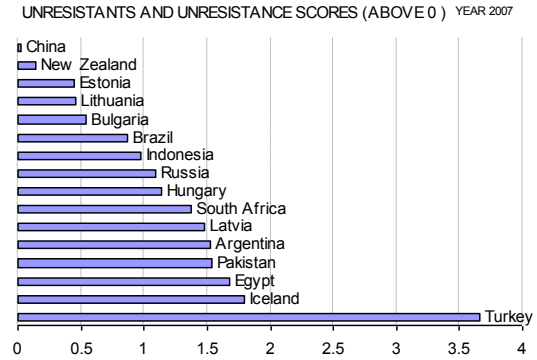
YEAR 2005



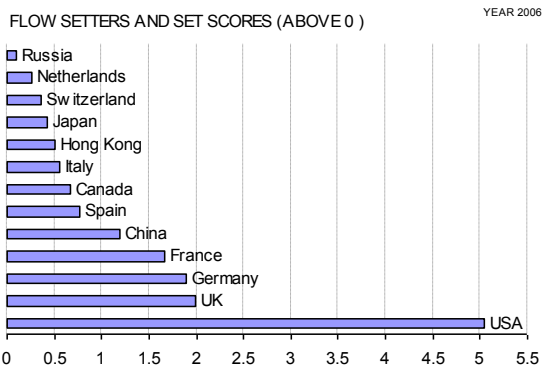
Graph 18. Transmitters (adsorbents) of 2005 and transmission scores. Turkey, Latvia, New Zealand and Brazil are the leading countries in terms of drawing and transmission of monetary and capital markets investments from developed economies.



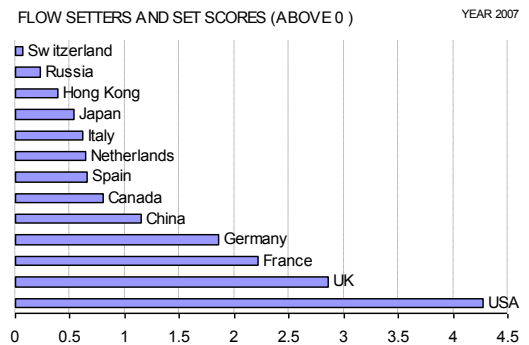
Graph 19 Unresistants of 2006 and unresistance scores. Turkey, Iceland and Indonesia are the main countries suffering difficulties in coping with the instantaneous fluctuations brought by the money and capital markets.



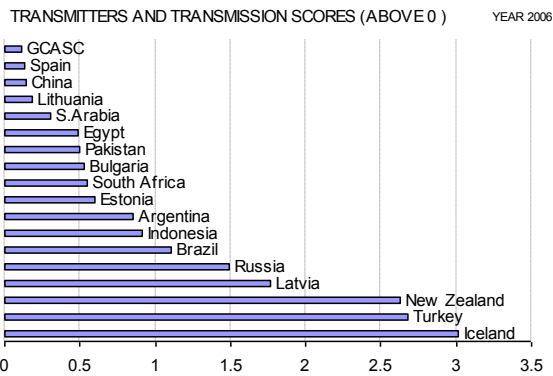
Graph 22. Unresistants of 2007 and unresistance scores. In 2007, Turkey is the leading countries with respect to the level of unresistance score, which exceeds by far even that of 2nd placed Iceland's. As specified below, Turkey's transmission score turned out to be lower, which indicates demise in her financial power.



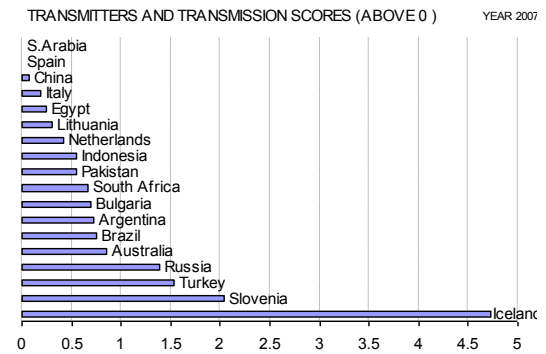
Graph 20. Setters of 2006 and set scores. Headed by USA, the UK, Germany and France, 13 countries belong into the category of flow setter markets. Here, it is seen that USA significantly increased its power score.



Graph 23. Setters of 2007 and set scores. Headed by USA, France, the UK, Germany and China, 13 countries belong into the category of flow setter markets



Graph 21. Transmitters (adsorbents) of 2006 and transmission scores. Turkey, Iceland, New Zealand and Latvia are the leading countries in terms of drawing and transmission of monetary and capital markets investments from developed economies. In this year, a notable increase in the transmission score of Russia has been observed.



Graph 24. Transmitters (adsorbents) of 2007 and transmission scores. Despite its high unresistance score, Iceland has been removed from the category of risk countries owing to its high transmission score. Besides, Slovenia, Russia and Turkey rose to the category of high transmission score countries.

yet low transmission scores. This situation is a sign of the decreasing financial power of Turkey.

The arguments suggested in this study could be supplemented with the generalized propositions given thus:

$\forall n$ different countries;

$\exists n$; unresistance score $>$ transmission score \Rightarrow
indication of financial fragility

$\exists n$; unresistance score $<$ transmission score \Rightarrow
indication of overcoming any financial fragility

A summary of the classification of the countries analyzed in the study with respect to their scores could be made as follows: Flow setter countries: USA, the UK, France, Germany and China, as well the other members of the most powerful developed economies. The most powerful economies among developing countries are Turkey, Argentina, Russia and Brazil.

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