



CBT RESEARCH NOTES IN ECONOMICS

Credit Rating Upgrade to “Investment” Level: Trends Before and After the Upgrade

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Abstract

This note analyses how selected financial and macroeconomic indicators of emerging economies upgraded to “Investment grade” in the period between 1990 and 2011 behave before and after the upgrade. Results reveal that upgraded countries experience capital inflows through both portfolio and credit channels; however, a particular trend cannot be depicted for foreign direct investment. While cost of external debt falls significantly following the upgrade, the average maturity of debt does not portray a significant change. Domestic currency appreciates significantly with respect to the reference group both before and after the upgrade. Total external debt, which formerly declines mostly due to reduction in public debt, displays an upward trend in the post-upgrade period. Meanwhile, current account deteriorates in most of the cases. The surge in foreign credit reflects on domestic credit market, as domestic credit to private sector accelerates and cost of domestic lending falls. Finally, despite higher post-upgrade absolute growth rates, relative growth performances in pre- and post-upgrade periods do not differ statistically significantly.

Özet

Bu notta 1990 yılından itibaren kredi notu “yatırım yapılabilir” seviyeye yükseltilen ülkelerde finansal ve makroekonomik göstergelerin not artırımının öncesi ve sonrasındaki eğilimleri incelenmektedir. Analiz sonuçları, kredi notu yatırım yapılabilir seviyeye yükseltilen ülkelerin portföy yatırımları ve kredi kanallarıyla yabancı sermayeye ulaşım imkanının arttığına, ne var ki doğrudan yabancı yatırımlarında belirgin bir eğilim değişiminin olmadığına işaret etmektedir. Not artışı sonrası yurt dışından borçlanma maliyeti düşerken, borçlanmanın vadesinde anlamlı bir değişim kaydedilmemektedir. Kur, not artışından önce değer kazanma eğilimine girmekte ve bu eğilim not artışı sonrasında da devam etmektedir. Diğer taraftan yurt dışı finansmana ulaşımın kolaylaşmasıyla, not artırımını öncesinde düşüş eğiliminde olan toplam dış borç not artırımını sonrasında tekrar artmakta, cari dengede ise bozulma gözlenmektedir. Yurt dışı kredi imkanının artması yurt içi kredi piyasalarına da yansımakta, özel sektöre açılan krediler ivmelenirken kredi faizleri düşmektedir. Öte yandan, not artışı sonrası mutlak büyüme hızı not artışı öncesi seviyelerin üzerinde gerçekleşirken, görece büyüme performanslarında istatistiksel olarak anlamlı bir değişimden bahsedilememektedir.

1. Introduction:

Turkey's long-term foreign currency credit rating is expected to be upgraded to "investment grade" level (IG) in the short to medium term. This highlights the implications of such an upgrade on the Turkish economy as a central issue for market participants, policy makers and also the academia. One way to approach this issue is to refer to past research and experiences. Despite the vast quantity of papers focusing on credit ratings, literature shrinks down significantly when it is the broad based reflections of the rating upgrade to IG at the focal point. In this context, Kanlı and Barlas (2011), which could be deemed as an initial attempt to fill the above-mentioned gap in the literature on credit ratings, examine the pre and post-upgrade trends of both financial and macroeconomic indicators in emerging economies by gathering together all relevant cases since 1990. This note summarizes the findings of Kanlı and Barlas (2011) and illustrates how selected financial and macroeconomic indicators of emerging economies which are upgraded to IG in the period between 1990 and 2011 behave before and after the upgrade.

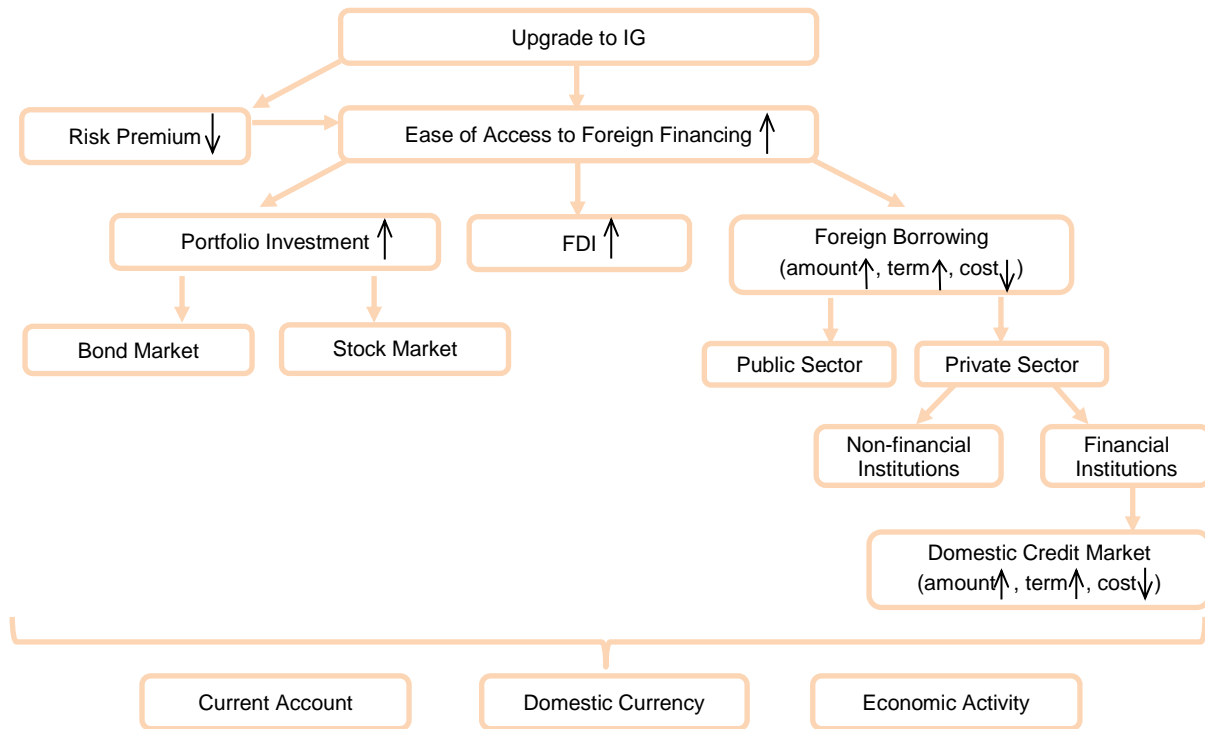
A simplified transmission mechanism through which a rating upgrade to IG is presumed to impact the economy is exhibited in Figure 1. As seen in the figure, an upgrade to IG is expected to directly boost foreign portfolio inflows as a result of the reduction in perceived riskiness of the country and the expansion of investor base. However, note that prospects of an upgrade might take its toll on portfolio inflows and affect prices of financial assets positively well before the upgrade occurs. Additionally, improvement in investors' perceptions has the potency to reinforce capital inflows in the form of foreign direct investment (FDI).

Another pronounced repercussion of the upgrade would be a pickup in foreign borrowing which would induce higher external indebtedness. Moreover, acceleration in foreign borrowing of public and private sector could be accompanied by reduction in the cost and lengthening in the maturity of foreign borrowing. Besides, easier and less costly access of the domestic financial sector to international credit markets might facilitate the acceleration of domestic credit supply, reduce the cost of alternative domestic funding, lead to competition for supplying credit and hence shrink interest rate margins.

Overall, capital inflows accompanied by reduced risk premium and improvement in expectations regarding the economic outlook could cause appreciation in domestic currency. This, together with a possible pickup in domestic demand, could deteriorate the current account. At this point, the very first question coming to mind is "is rating upgrade to IG an undesirable event". The answer is "absolutely no". On the contrary, an upgrade is highly essential for an emerging market which requires foreign savings, as the upgrade is assumed to contribute to the quality of foreign financing. However, one should note that it could bring together some challenges for macro financial stability as well. In this respect, the current global outlook and the

idiosyncratic features of the Turkish economy necessitates the closely monitoring of the pre and post-upgrade process and keeping wide range of macro prudential measures at the disposal of the CBT.

Figure 1. Simplified Transmission Mechanism of Rating Upgrade to the Economy



2. Credit Ratings and Cases Included in the Analysis:

Credit rating agencies evaluate the capacity of countries and firms to fulfil their financial liabilities, in other words their credit riskiness, and assign credit ratings accordingly on the scale ranging from “zero risk” prime rate to “default” level. “Investment grade” comprises grades higher than or equal to BBB-, BBB- and Baa3 according to Standard&Poor's (S&P), Fitch's and Moody's scaling, respectively (Table 1).

Table 1. Ratings Scale of Leading Credit Rating Agencies

	S&P	Fitch	Moody's
Prime	AAA	AAA	Aaa
	AA+	AA+	Aa1
High Grade	AA	AA	Aa2
	AA-	AA-	Aa3
	A+	A+	A1
Investment Grade	A	A	A2
	A-	A-	A3
	BBB+	BBB+	Baa1
Lower Medium Grade	BBB	BBB	Baa2
	BBB-	BBB-	Baa3
	BB+	BB+	Ba1
Non-Investment Grade - Speculative	BB	BB	Ba2
	BB-	BB-	Ba3
	Lower Grades down to Default		

Table 2 reports the 20 country cases included in the analysis in which the long-term foreign currency rating is upgraded to IG between 1990 and 2011.¹ The date of the first upgrade by any of the three agencies is taken as the reference date for that country and shown as colored in the table. On the other hand, some cases are excluded at some parts of the analysis due to data unavailability.²

Table 2. Dates for Rating Upgrades to IG[†]

	S&P	Fitch	Moody's
Poland	Apr.96	Jun.96	
Hungary	Oct.96		Dec.96
Uruguay	Jun.97	Jan.97	Jun.97
South Africa	Feb.00	Jun.00	
Mexico	Feb.02	Jan.02	Mar.00
Lithuania		May.01	Nov.02
Croatia		Jun.01	
Slovakia	Oct.01	Nov.02	Nov.01
Bahrain			Jul.02
Kazakhstan	May.04	Oct.04	Sep.02
Russia	Jan.05	Nov.04	Oct.03
India	Jan.07	Jul.06	Jan.04
Bulgaria	Jun.04	Jul.04	Mar.06
Romania	Sep.05	Oct.04	Oct.06
Colombia	Jun.07		
Peru	Jul.08	Apr.08	Dec.09
Brazil	Apr.08	May.08	Sep.09
Morocco	Mar.10		
Panama	May.10	Mar.10	Jun.10
Azerbaijan		May.10	

[†] Colored areas designate the reference dates for the upgrades.
Source: Bloomberg.

3. Methodology:

A two-stage methodology is adopted in order to analyse the pre and post-upgrade trends in selected macroeconomic and financial indicators. First, the aggregated courses selected indicators follow before and after the upgrade are presented. Second, the significance of trends and shifts in trends of aggregated data is tested by means of non-parametric Wilcoxon Signed Rank test.³ Hypotheses tested and results of the tests are reported in Table A in the Appendix.

The analysis of the financial variables focuses on “relative” trends with respect to a reference group of countries, rather than “absolute” trends. The reference group is selected according to geographic region for each case.⁴ Criteria such as size and financial openness of economies and exchange rate regime are also taken into account for the choice of reference countries. Focusing on “relative” patterns allows extracting the impact of global risk appetite, a dominant driver of financial markets, from patterns the financial variables of upgraded countries pursue. Aggregated “relative” patterns of financial indicators could be depicted with the notation below:

$$X_t = \frac{\sum_{i=1}^N (x_t^i - G_t^i)}{N}$$

¹ Croatia, Slovakia and Colombia were upgraded to IG one more time before the dates reported in Table 2; however, downgraded to speculative level in a short span of time.

² Morocco, Panama and Azerbaijan which were upgraded to IG in 2010 could not be included in parts of the analysis that require longer term post-upgrade data.

³ The Wilcoxon signed-rank test is a non-parametric statistical hypothesis test used when comparing two related samples, matched samples, or repeated measurements on a single sample in cases where sample size is limited or the distribution can not be assumed to be normal.

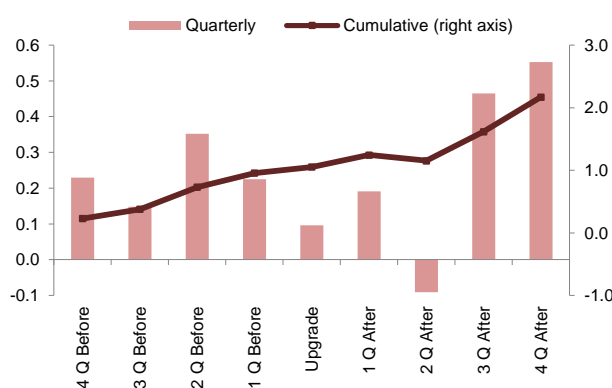
⁴ Emerging markets in America, Central and Eastern Europe (plus Russia and South Africa), Asia and Middle East constitute the four reference groups.

Here, X_t represents the aggregate value of the financial variable under scope, x_t^i the value of the variable for country i and G_t^i is the average of countries in the reference group of country i at time t . N is the number of upgrade cases used in the calculation of the variable X_t . To be clearer, while the expression in the numerator of equation (1) shows how much a financial variable of a country diverges from the average of the reference group, X_t is the average of divergences of countries which are upgraded to IG.⁵

4. Results

An upgrade to IG is expected to directly boost foreign portfolio inflows. Figure 2 depicts the pattern average “relative” portfolio flow as a percentage of GDP follows for four quarters before and after the quarter the upgrade occurs in. It should boldly be underlined that Figure 2 does not depict the average of portfolio flows as a percentage of GDP but instead, “relative” portfolio flows as a percentage of GDP. As exhibited in the figure, portfolio inflows/outflows are remarkably higher/lower than the reference group on average for countries subject to upgrade. “Relative” outperformance of portfolio flows starts before the upgrade, might be reflecting the market expectations of the upgrade and continue in the post-upgrade period. One might rightfully argue that the positive pre-upgrade portfolio performance might be a result of all factors which eventually led to the upgrade. However, as mentioned before, this note does not explicitly assert a causality relationship between trends and upgrades. These patterns are also found to be statistically significant as reported in Table A in the Appendix.

Figure 2. “Relative” Portfolio Investment* (% of GDP)

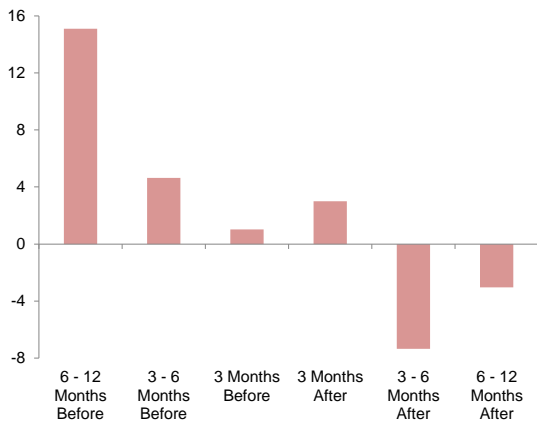


*Average of “relative” portfolio flows with respect to reference groups.
Source: IMF, authors’ calculations.

⁵ For example, Brazil was upgraded to IG just five months before the onset of the global financial crisis in 2008. In this respect, I would have concluded that a massive portfolio outflow followed the upgrade if the analysis had been conducted in nominal terms. However, portfolio flows out of Brazil were markedly limited in that period with respect to other emerging markets in Latin America. By other words, once the impact of the global financial crisis excluded, the “relative” portfolio performance of Brazil following the upgrade was quite high.

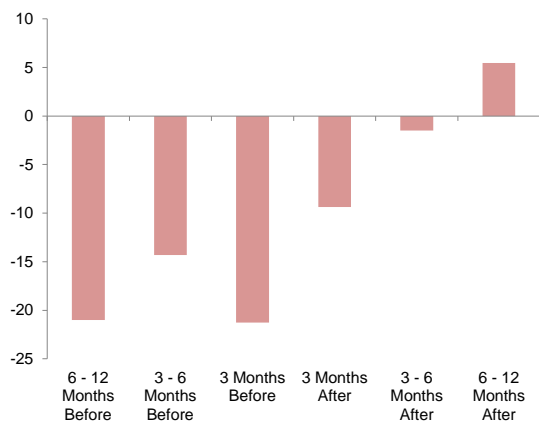
In line with relative portfolio investments, stock indices of upgraded countries perform well above the reference groups' and risk premium indicators of these countries follow a relatively downward course prior to the upgrade (Figures 3 and 4). However, markedly favourable performances of stock indices and the risk premiums disappear with the upgrade and they move in tandem with their regional peers afterwards. These patterns, which also prove to be statistically significant (Table A in the Appendix), again signal the pricing of upgrades in the market before the occurrence.

Figure 3. "Relative" Stock Exchange Index Performance (%)*



*Average of "relative" stock performances with respect to reference groups. Source: IMF, authors' calculations.

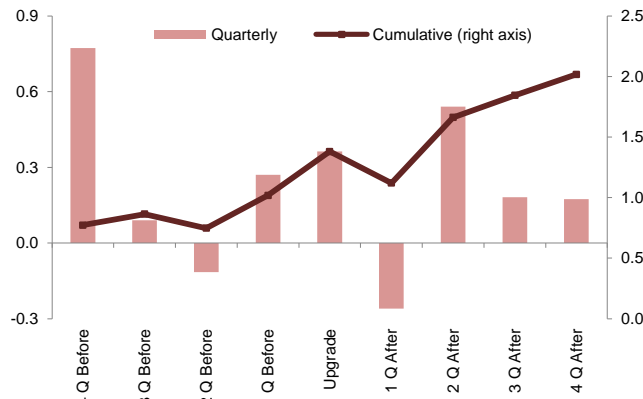
Figure 4. "Relative" Bond Spread* Performance (basis points)**



*EMBI Global country indices reported by JP Morgan. **Average of "relative" bond spread performances with respect to reference groups. Source: IMF, authors' calculations.

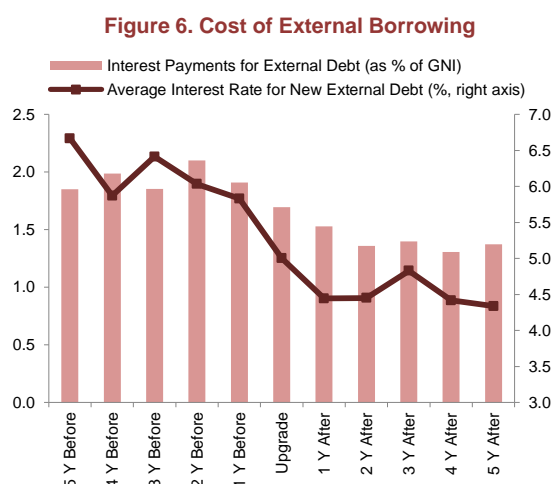
On the other hand, "relative" FDI to GDP ratios in upgraded countries do not portray a statistically significant deviation from that of the reference groups although aggregate data points to a relatively positive pattern (Figure 5 and Table A in the Appendix).

Figure 5. "Relative" FDI Flows* (% of GDP)

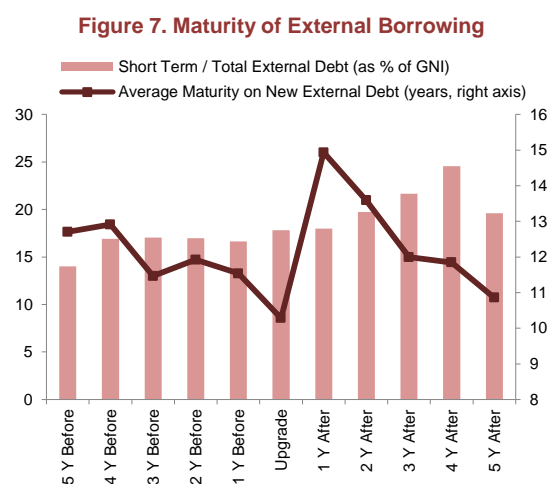


*Average of "relative" foreign investments (as % of GDP) with respect to reference groups. Source: IMF, authors' calculations.

Rating upgrade allows for a wider pool of global capital, and enables both public and private sectors to access to international capital markets. Thus, they are expected to more easily access to lower-cost and longer-term foreign financing. As a matter of fact, total interest payments as ratio of gross national income (GNI) decline statistically significantly for upgraded countries (Figure 6). However, the ratio of short term external debt to total external debt and average maturity on new external public debt do not possess a statistically significant change with the upgrade (Figure 7).



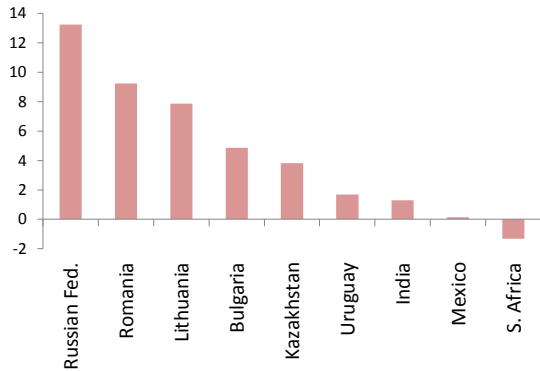
Source: World Bank, authors' calculations.



Source: World Bank, authors' calculations.

Easier access to lower-cost international credit markets takes its toll on foreign indebtedness of the financial sector and external debt of banks, which already has an upward trend, accelerates with the upgrade (Figure 8). Surge in foreign credit reflects upon the domestic credit market as banks transfer new external credit to domestic credit. Consequently, domestic credit extended to private sector by domestic banks accelerates (Figure 9). These trends are also statistically significant as reported in the Appendix. Decline in domestic loan rates as a result of cheaper and easier access of banks to foreign credit accompanies the acceleration in loans. The spread between loan and treasury rates shrinks, in part reflecting the increased competition among financial institutions to provide credit to the private sector and easier access of the non-financial private sector to alternative foreign funding (Figures 10 and 11).

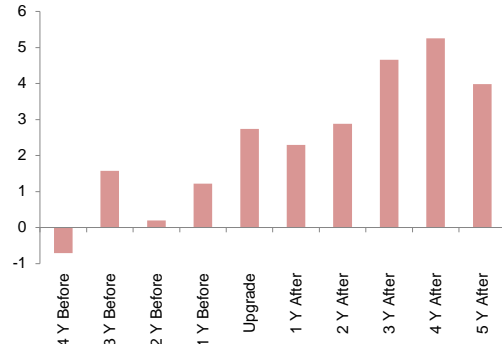
Figure 8. Acceleration in External Financing of Banks*



*(Change in External Debt of Financial Sector in the 5 Years Following the Upgrade) / Change in External Debt of Financial Sector in the 5 Years Prior to the Upgrade)

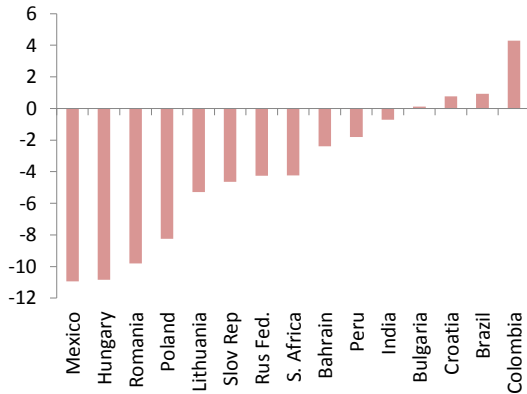
Source: World Bank, authors' calculations.

Figure 9. Annual Change in Domestic Credit Provided to the Private Sector (% of GDP)



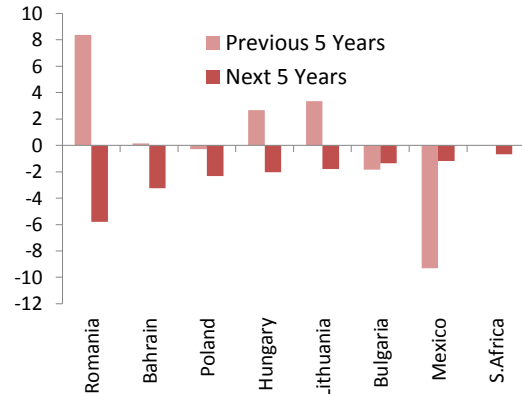
Source: World Bank, authors' calculations.

Figure 10. Change in Loan Rates in the year prior to the Upgrade and after the Upgrade (%)



Source: World Bank, authors' calculations.

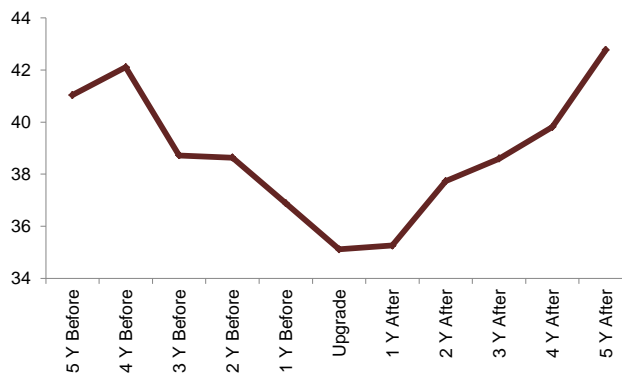
Figure 11. Change in Credit Spread*



* Difference between the credit rate and treasury bill rate
Source: World Bank, authors' calculations.

Another important reflection of the upgrade is on the external indebtedness of the country. Analysis indicates that total external debt, which formerly declines mostly due to the reduction in public debt, displays an upward trend following the upgrade, primarily driven by the private sector (Figure 12). Both pre and post upgrade trends are also found to be statistically significant.

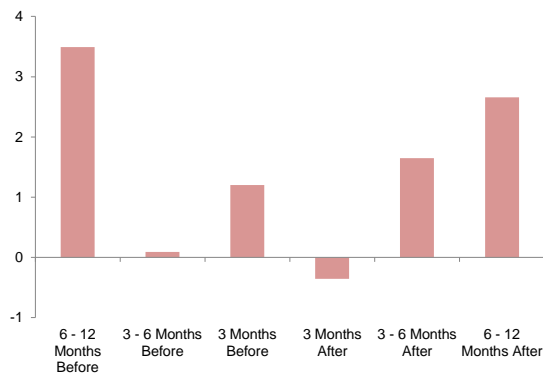
Figure 12. Total External Debt (% of GDP)



Source: World Bank, authors' calculations.

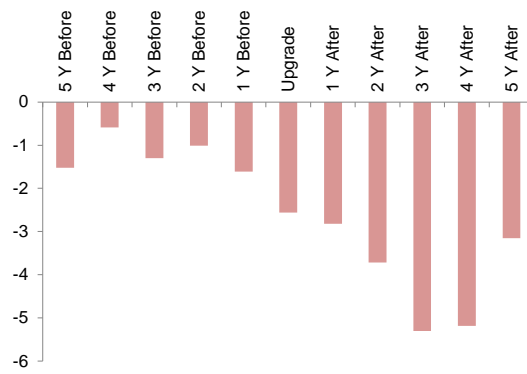
Improvement in risk premium and swell in capital inflows of different forms both before and after the upgrade, push the relative value of the upgraded country's currency up so that the exchange rate appreciates significantly with respect to the reference group. The relative appreciation prior to the upgrade continues also in the aftermath of the upgrade (Figure 13). Meanwhile, buoyant domestic demand conditions and appreciation of the currency lead to a deterioration of the current account⁶ (Figure 14).

Figure 13. "Relative" Currency Performance* (against USD, %)



*Average of "relative" currency appreciations with respect to reference groups.
Source: Bloomberg, authors' calculations.

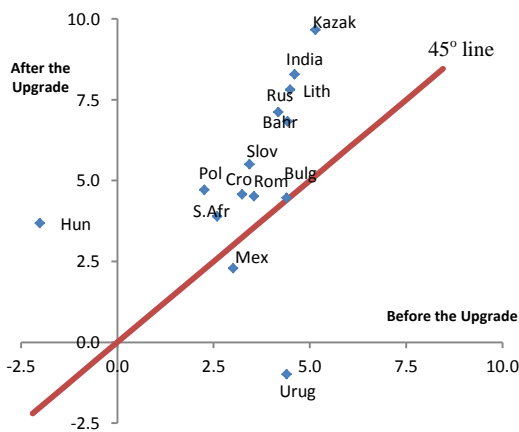
Figure 14. Current Account (% of GDP)



Source: World Bank, authors' calculations.

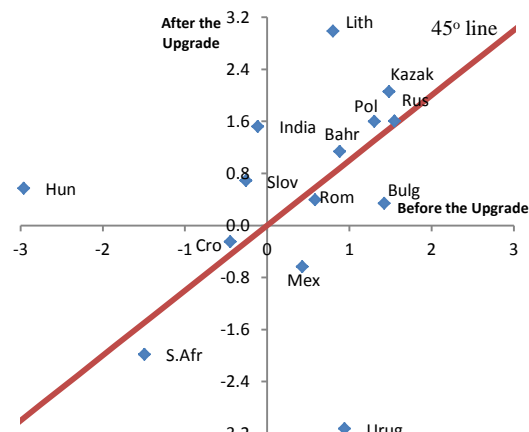
Finally, upgraded countries grow at significantly higher rates in the five years after the upgrade with respect to the five years prior to the upgrade (Figure 15). On the other hand, despite 9 out of 14 countries' relative growth with respect to regional growth picks up in the post-upgrade period (Figure 16), a shift in relative growth performance of upgraded countries cannot be claimed statistically.

Figure 15. Average GDP Growth in the 5 Years Before and After The Upgrade (%)



Source: World Bank, authors' calculations.

Figure 16. Average "Relative" GDP Growth in the 5 Years Before and After The Upgrade (%)



Source: World Bank, authors' calculations.

⁶ The only countries with no deterioration in their current accounts are Russia, Bahrain and Mexico that are oil exporters.

5. Conclusions

This note illustrates how selected financial and macroeconomic indicators of emerging economies upgraded to “Investment grade” in the period between 1990 and 2011 behave before and after the upgrade by taking Kanlı and Barlas (2011) as reference. Results reveal that upgraded countries experience capital inflows through both portfolio and credit channels; however, a particular trend cannot be depicted for foreign direct investment. Upgraded countries perform better than their peer groups in terms of luring portfolio investments both before and after the upgrade. In line with relative portfolio investments, stock markets and risk premiums of these countries outperform their regional average. However, markedly favourable performances disappear with the upgrade and they move in tandem with their regional peers afterwards. While cost of external debt falls significantly following the upgrade, the average maturity of debt does not portray a significant change.

Easier access to lower-cost international credit markets takes its toll on external indebtedness of the financial sector as external debt of banks which already has an upward trend prior to the upgrade picks up with the upgrade. Surge in foreign credit reflects upon the domestic credit market as banks transfer new external credit to domestic credit. Consequently, domestic credit extended to private sector by domestic banks accelerates, accompanied by decline in domestic loan rates as a result of cheaper and easier access of banks to foreign credit. The spread between loan and treasury rates shrinks, in part reflecting the increased competition among financial institutions to provide credit to the private sector and easier access of the non-financial private sector to alternative foreign funding.

Overall, analysis indicates that total external debt, which formerly declines mostly due to reduction in public debt, displays an upward trend in the post-upgrade period, primarily driven by the private sector. On the other hand, domestic currency appreciates significantly with respect to the reference group both before and after the upgrade. Meanwhile, current account deteriorates in bulk of the cases, arguably reflecting buoyant domestic demand conditions and appreciation of the currency. Finally, although upgraded countries grow at significantly higher rates in the post-upgrade period with respect to the pre-upgrade period, relative growth performances do not statistically differ between periods.

As for Turkey, although the impressive improvement in the Turkish economy has largely been reflected on foreign financing conditions of private and public sector, an upgrade to investment grade could further facilitate access to lower-cost and longer-term foreign financing. However, one should note that it could bring together some challenges for macro financial stability as well. In this respect, the current global outlook and the idiosyncratic features of the Turkish economy necessitates the closely monitoring of the pre and post-upgrade process and keeping wide range

of macro prudential measures at the disposal of the CBT to mitigate possible adverse repercussions on macro financial stability.

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Appendix

Table A. Results of Hypothesis Testing Using Wilcoxon Signed-Rank Tests

	Number of Obs.	Test statistic	P value
H ₀ : Portfolio investment/GDP ratio of the upgraded country is equal to the reference group average in the year before the upgrade. H _A : Portfolio investment/GDP ratio of the upgraded country is higher than the reference group average in the year before the upgrade.	12	1,922	0,045
H ₀ : Portfolio investment/GDP ratio of the upgraded country is equal to the reference group average in the year after the upgrade. H _A : Portfolio investment/GDP ratio of the upgraded country is higher than the reference group average in the year after the upgrade.	12	2,942	0,003
H ₀ : Stock index performance of the upgraded country is equal to the reference group average in the year before the upgrade. H _A : Stock index performance of the upgraded country is higher than the reference group average in the year before the upgrade.	13	2,516	0,012
H ₀ : Stock index performance of the upgraded country is equal to the reference group average in the year after the upgrade. H _A : Stock index performance of the upgraded country is higher than the reference group average in the year after the upgrade.	13	1,607	0,108
H ₀ : FDI/GDP ratio of the upgraded country is equal to the reference group average in the year before the upgrade. H _A : FDI/GDP ratio of the upgraded country is higher than the reference group average in the year before the upgrade.	11	0,311	0,756
H ₀ : FDI/GDP ratio of the upgraded country is equal to the reference group average in the year after the upgrade. H _A : FDI/GDP ratio of the upgraded country is higher than the reference group average in the year after the upgrade.	11	0,400	0,689
H ₀ : Total external debt /GDP ratio is the same in the upgrade year as the average of the previous five years. H _A : Total external debt /GDP ratio is lower in the upgrade year than the average of the previous five years.	17	2,25	0,025
H ₀ : Total external debt /GDP ratio is the same in the upgrade year as the average of the next five years. H _A : Total external debt /GDP ratio is lower in the upgrade year than the average of the next five years.	17	2,08	0,037
H ₀ : Interest payments/GDP ratio is the same in the five years after the upgrade as the year before the upgrade. H _A : Interest payments/GDP ratio is lower in the five years after the upgrade than the year before the upgrade.	10	2,548	0,011
H ₀ : Average interest rate of new external public debt is the same before and after the upgrade H _A : Average interest rate of new external public debt after the upgrade is lower than the rate before the upgrade	12	3,020	0,003
H ₀ : Share of short term external debt in total external debt in the five years after the upgrade is the same as the year before the upgrade. H _A : Share of short term external debt in total external debt in the five years after the upgrade is lower than the year before the upgrade.	10	0,612	0,541
H ₀ : Average maturity of new external public debt in the five years after the upgrade is the same as the year before the upgrade. H _A : Average maturity of new external public debt in the five years after the upgrade is lower than the year before the upgrade.	10	0,102	0,919
H ₀ : % increase in domestic credit is the same in the five years before and after the upgrade. H _A : % increase in domestic credit is higher in the five years after the upgrade is higher than the five years before the upgrade.	17	2,840	0,004
H ₀ : Loan rate is the same before and after the upgrade. H _A : Loan rate is lower after the upgrade than before the upgrade.	16	3,387	0,001

Table A cont. Results of Hypothesis Testing Using Wilcoxon Signed-Rank Tests

	Number of Obs.	Test statistic	P value
H ₀ : Credit spread between loan and treasury rates is the same before and after the upgrade. H _A : Credit spread between loan and treasury rates is lower after the upgrade than before the upgrade.	7	2,282	0,023
H ₀ : Domestic currency performance of the upgraded country is equal to the reference group average in the year before the upgrade. H _A : Domestic currency performance of the upgraded country is higher than the reference group average in the year before the upgrade.	16	1,784	0,074 [†]
H ₀ : Domestic currency performance of the upgraded country is equal to the reference group average in the year after the upgrade. H _A : Domestic currency performance of the upgraded country is higher than the reference group average in the year after the upgrade.	16	1,836	0,066 [†]
H ₀ : Current Account/GDP is the same before and after the upgrade. H _A : Current Account/GDP is lower after the upgrade than before the upgrade.	17	2,04	0,040
H ₀ : GDP growth is the same before and after the upgrade. H _A : GDP growth is higher after the upgrade than before the upgrade.	14	2,009	0,045
H ₀ : Relative GDP growth is the same before and after the upgrade. H _A : Relative GDP growth is higher after the upgrade than before the upgrade.	14	0,377	0,706

[†] In both of the tests, domestic currency performance beats the average performance of the peer group in 12 out of 16 cases, which implies statistical significance in 90 percent confidence level.

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