

Comparison with other debt crisis countries suggests the Turkish lira may have bottomed, if the central bank tackles inflation. Europe's exposure to Turkey is not enormous (except for Spain).

So, Turkey, where did it all go wrong? With GDP growth of 7.4% in 2017 and a limited debt burden (total non-financial sector debt was 113% of GDP in 2017, less than half the global norm), it could be argued this crisis should not have happened. Admittedly, the sanctions imposed by the US have not helped, nor have the steel and aluminium tariffs, but exports to the US (\$8.6bn) were only 1% of GDP (\$850bn) in 2017.

We think the problem is a current account deficit that has been in the 5%-10% range of GDP since 2010 (see **Figure 1**). This has several implications: first, it puts downward pressure on the currency (**Figure 10** in the appendix shows that the Turkish lira has never been so weak, when measured in CPI-adjusted terms against a broad basket of currencies) and, second, it implies that Turkey is taking on an ever-increasing amount of debt with other countries (**Figure 11** shows how Turkey's net international investment position has continued to deteriorate over recent years – note the comparison with the US).

In turn, the weakening of the currency has a number of implications: first, on the positive side, it should render Turkey more competitive (**Figure 10** suggests that sharp declines in the currency have sometimes led to an improvement in the current account balance, while **Figure 12** suggests the relationship with GDP growth can go in both directions); second, it raises the cost of imports and, thereby, the rate of inflation (we

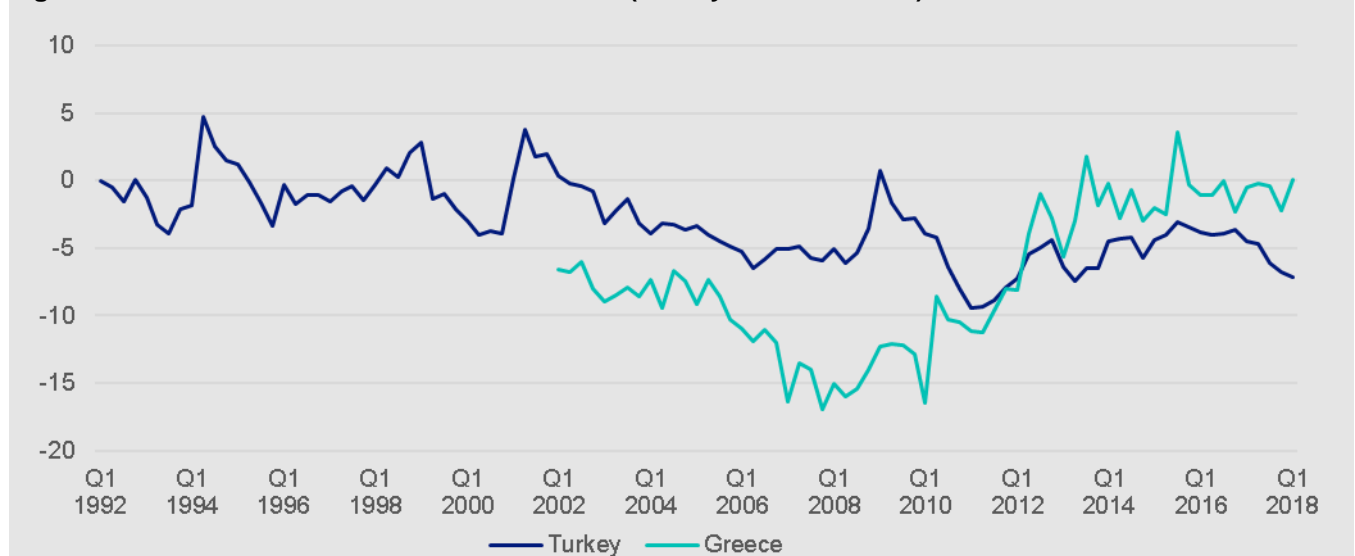
think **Figure 13** suggests inflation could rise above 20% as a result of the recent currency depreciation); third, the central bank is likely to react by tightening policy (see **Figure 14**) and, finally, the cost of servicing debt rises (especially debt denominated in foreign currencies).

Before getting to the bad news, remember that Turkey's debt burden is modest compared to developed world norms. Its external debt was "only" 45% of GDP in 2016 (according to Oxford Economics) but this no doubt increased in 2017 (we reckon to 45.7%, as external debt was up 11.2% and GDP increased by 9.2% in USD). This is low compared to 97% for the US, 151% for China, 262% for Switzerland and 304% for the UK (all as of 2016 and all gross debt).

Figure 15 shows that the cost of servicing Turkey's external debt had risen in 2016 (as a percent of export revenues), having fallen in 2015. Unfortunately, the World Bank data set is annual and has not been updated to 2017. As of 2016, Turkey's ability to finance its external debt was no worse than it has been over the last decade, though it does find itself in the company of Brazil and Argentina (rather than China), which is an uncomfortable place to be.

Given that the Turkish lira has lost 58% of its value versus the US dollar since mid-2016 (as of the low on August 13), it seems reasonable to assume Turkey's ability to finance its debt has worsened. **Figure 16** shows that the bulk of Turkey's external debt is denominated in foreign currencies (94% in 2018 Q1) and around two-thirds of the debt is denominated in US dollars (World Bank data).

Figure 1 – Current account balance as % of GDP (Turkey versus Greece)



Note: from 1992 Q1 to 2018 Q1.
Source: OECD, Datastream and Invesco

It is difficult to know by how much the financing of Turkey's debt will become more difficult. Simplistically, if the Turkish lira halves, its external debt burden doubles (expressed in lira) and its debt/GDP ratio virtually doubles (though higher inflation helps on that front). However, to the extent that Turkey was servicing its debt out of export earnings, and if most of the trade is in currencies other than the lira, those export earnings will also double (when expressed in lira). If all the preceding assumptions are valid, the financing burden will not rise as much as might be feared, though bond yields have risen sharply, which will increase the cost of new debt. Luckily, debt issuance is unlikely to surge, as the average maturity on new external debt in 2016 was almost 12 years and had been higher for a decade – see **Figure 17**).

In the absence of up to date debt servicing data, we can use Turkey's international reserves as a canary in the mine. **Figure 18** shows that reserves have been on the wane since 2014 with a noticeable decline in recent months (the latest data is for June and further declines may have occurred in July and August). Nevertheless, official reserves are still close to \$100bn, which is a reasonable amount, although there has recently been a dip in the number of months of imports covered by those reserves (from 6.9 months in August 2016 to 4.3 months in June 2018 – see **Figure 19**).

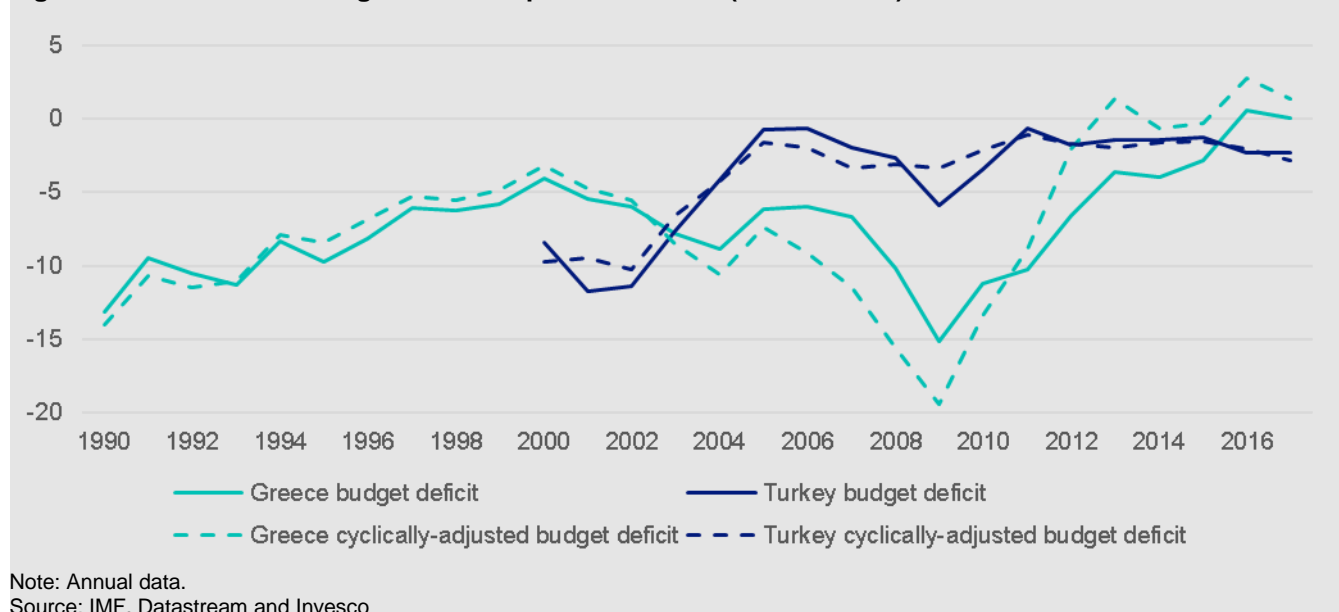
So, though Turkey's debt burden is slight compared to many other countries, the collapse in its currency and rise in interest rates could potentially make life difficult, though only if these conditions persist for some time. Of course, in these circumstances events seem to take on a life of their own and Greece is a good example of how things can spiral downward. Indeed, many

references are being made to Greece, so it may be worth spending a bit of time comparing the two cases.

First, Turkey is a \$850bn economy (in 2017), compared to only \$200bn for Greece (the latter economy was \$350bn in 2008). So, Turkey is a far bigger beast. Second, as can be seen from **Figure 1**, though Turkey has a large current account deficit, it is nowhere near that of Greece in the run up to its own crisis (it reached 17% of GDP at the end of 2007). Third, **Figure 2** shows that Turkey's government finances are in much better shape (deficit/GDP was 2.3% in 2017) than were those of Greece in the run-up to the Greek crisis (the deficit/GDP ratio went from 6.7% in 2007 to 10.2% in 2008 and peaked at 15.1% in 2009). Fourth, the debt burden faced by the Turkish government (28% of GDP in 2017) is much lower than the 100%-plus faced by the Greek government prior to the financial crisis (and certainly lower than it is now -- see **Figure 20**). Finally, Greece did not have its own currency at the time of the crisis and was locked into a euro that had been strengthening in the run-up to the global financial crisis. The Turkish lira, on the other hand, is flexible (perhaps too flexible!) and **Figure 21** shows the contrast in the movement of real currency values (and therefore competitiveness).

The decline in the Turkish lira may have negative consequences (inflation and higher external debt servicing costs) but it also affords the Turkish economy an escape valve (via net trade). Turkey also has fiscal freedoms that Greece did not enjoy: its public finances are in better shape and it does not have the EU/IMF imposing austerity (though that could change if IMF help is needed). So, Turkey has more fiscal and monetary freedom than did Greece.

Figure 2 – Government budget deficit as percent of GDP (1990 to 2017)



Let's imagine the worst and assume that Turkey has a serious recession. Which economies are the most exposed? EU countries supplied around one-third of Turkey's \$234bn of imports in 2017. Those exports to Turkey were around 0.5% of EU GDP, so the direct exposure to a weakening Turkish economy is not big (the same conclusion applies to the euro area).

When it comes to individual countries, China is the biggest supplier to Turkey (US\$23bn in 2017 or 0.2% of Chinese GDP), followed by Germany (\$21.3bn, 0.6%) and Russia (\$19.5bn, 1.3%). **Figure 22** suggests it is the suppliers of energy (Russia, Iran, UAE) that tend to have the largest exposures to Turkey (exports/GDP), though the demand for energy may be less elastic than for other products. The only other countries (among those shown) for which exports to Turkey exceeded 1% of GDP in 2017 were Switzerland and Vietnam.

Economic exposure is one thing but financial exposure is another. One of the concerns during the Greek crisis was how default would impact the banking systems of other countries and similar concerns have been raised about Turkey. **Figure 23** shows that the Spanish banking system appears to be the most exposed to Turkey, with claims on the latter adding up to \$80bn in 2018 Q1 (according to BIS data). That is 6.2% of Spanish GDP, which suggests a full-blown Turkish financial crisis would cause pain in Spain! French banks are next in line but their exposure is the equivalent of only 1.3% of French GDP (enough to be painful but not life-threatening).

Unfortunately, data is no longer available for Canada, the Netherlands or Switzerland but the data we do have accounts for 90% of the \$223bn of claims on Turkey

(so there would appear to be no other country with big exposures). Interestingly, Switzerland was the most exposed to Greece when banking exposures peaked in 2009 Q3 (see **Figure 24**). French banks were equally exposed but when compared to the respective GDP's, Switzerland was clearly in a more precarious position (14.5% of GDP versus 1.4%), which makes one wonder about the role of the Swiss franc as a so-called "safe-haven" during the Greek crisis. Comparing the two charts, it appears that European banks are now less exposed to Turkey than they then were to Greece, despite the Turkish economy being much larger.

Of course, it is difficult to know how the Turkish crisis will play out. We have seen several debt crises in recent decades (Latin American debt crisis in the early 1980s, Mexican "Tequila" and Asian crises of the mid-1990s and the Russian crisis of 1998) and **Figures 25 to 33** are an attempt to establish whether the situation in Turkey is comparable. For instance, **Figure 3** below shows the current account balance in the respective countries just prior to the start of their crises, along with the change in the balance over the previous five years (to see if there was a deterioration). For the most part, debt crises seem to occur when a current account deficit is present, the exception being Russia in 1998. *This is one black mark against Turkey, though there has been no deterioration in recent years.*

Looking at the other comparative charts, Turkey's external debt burden (debt/GNI) at 48% is at the upper end of the range observed in debt crisis countries just prior to their crises (the Turkish data is for 2016 and, as explained earlier, may have worsened since then). So, *this is a second black mark against Turkey (and is a consequence of consistent current account deficits).*

Figure 3 – Current account balances prior to previous debt crises

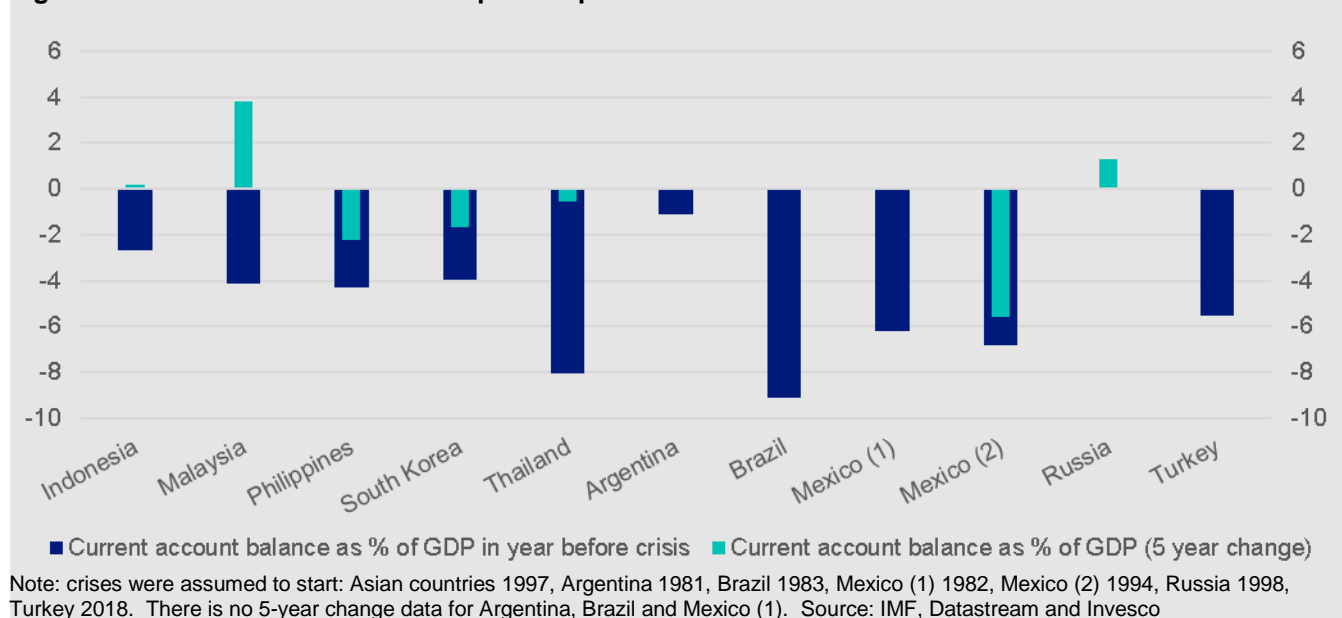


Figure 27 suggests that short term debt (as a share of external debt) is a feature of debt crises -- all other debt crisis countries have experienced a rise in the short-term debt ratio in the years prior to the crisis. *Turkey earns a positive mark on this score, as its short-term debt ratio (24%) declined in the years to 2016 (we do not yet know what happened in 2017 but, as explained earlier, it tends to issue debt with long maturities, so this may not have been a problem.... until now).*

When it comes to the cost of servicing the external debt, **Figure 28** suggests that Turkey is in the middle of the debt-crisis pack. To be honest, though, the only cases where the debt service to export ratio was higher were the Latin American countries just prior to their 1980s debt crises (unfortunately, the data history is not long enough to know whether their debt service costs were rising in previous years). As we shall see when considering currency movements, those are not good bedfellows. *A further black mark against Turkey is that the debt service ratio has been rising in recent years, though this was not a consistent symptom across debt crisis countries (based on the data we have).*

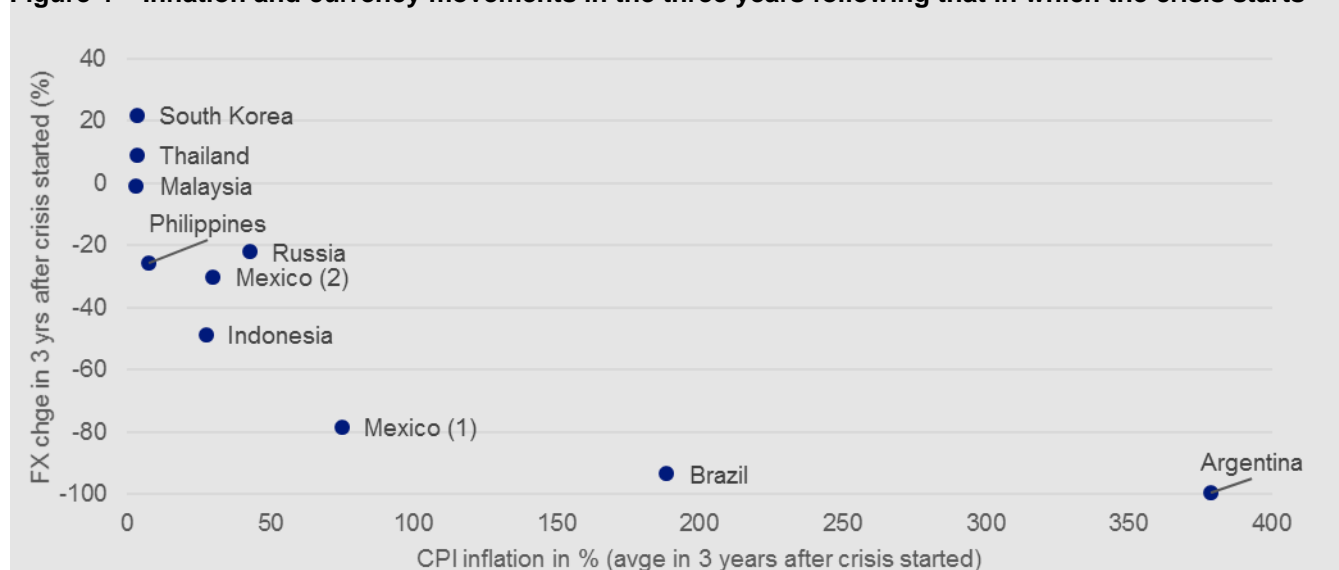
As discussed previously, it is hard to know if Turkey's debt service ratios will worsen because of its currency depreciation (debt servicing may be in other currencies but so are a lot of the export revenues). Indeed, the history of other debt crisis countries shows no consistent tendency for the debt service ratio to rise once the crisis unfolds. Interestingly, even the cases of Indonesia (weakest currency during Asian crisis) and the Lat Am countries during the 1980s (except Argentina) witnessed a decline in these ratios.

It might be thought that shrinking international reserves would be a sign of trouble ahead of a debt crisis but **Figures 29** and **30** suggest this is not usually the case (nor is it consistently a problem during and after the crisis). Turkey appears to have been in a relatively comfortable position compared to the other debt crisis countries, especially looking at reserves expressed as the number of months of imports. However, it must be remembered that this World Bank data is only up to 2016 and, as we saw earlier, Turkey's reserves have been falling recently (see **Figure 18**). *So, Turkey earns a mixed score on this one.*

Taken together, the above balance in favour of black marks suggests Turkey deserves to be in its current predicament (in the context of emerging market crises). So, has the lira fallen enough? Not surprisingly, the evidence is mixed (see **Figures 31** to **33**). The year-to-date decline in the Turkish lira (to the low of August 13) is of a similar magnitude to what happened to the Asian currencies in 1997 (except Indonesia) and to the Mexican peso in 1994/5. However, it is nowhere near what happened to those of Indonesia in 1997, Russia in 1998 and the Lat Am countries in the early 1980s.

Which of those previous crises is likely to be a template for what happens next? **Figure 4** gives a clue, in that once the initial dust has settled the performance of debt crisis currencies has been inversely related to subsequent inflation (as might be expected, more inflation has been associated with weaker currencies). Those countries able to limit their inflation have seen their currencies stabilise or even recover. Those that have not, have seen further depreciation.

Figure 4 – Inflation and currency movements in the three years following that in which the crisis starts



Note: crises were assumed to start in: Asian countries 1997, Argentina 1981, Brazil 1983, Mexico (1) 1982, Mexico (2) 1994, Russia 1998. Inflation rate is averaged over the three years starting in the one after the crisis started. FX changes are versus US dollar and measured over three years starting 12 months after the onset of the crisis. The past is no guarantee of future results. Source: IMF, Datastream and Invesco

To put things into context, Turkish CPI inflation was 16% in July (see **Figure 13**) and seems likely to go above 20% (in our opinion). If it stays that elevated it would put Turkey in the same category as Indonesia (28%) and Mexico in the mid-1990s (30%). **Figure 4** shows that the subsequent three-year currency declines (versus USD) suffered by Indonesia and Mexico were 49% and 30%, respectively (Mexico (2) is the relevant episode).

So, if Turkey's central bank does not get a grip on inflation (probably by forcing recession), history suggests that more currency weakness could follow. However, just to complicate things, we have assumed the Turkish crisis started in January 2018, by which time the lira had already declined by 35% in the previous two years (versus USD). On the other hand, the Indonesian and Mexican currencies had been relatively stable in the two years prior to their crises (the 1994 Mexican crisis, that is).

It could be that markets had been gradually pricing in this problem over recent years, in which case the lira may already have bottomed (it has enjoyed a strong rebound over recent days). Ultimately, it is difficult to know when a currency will bottom, especially when inflation is so high (the currency should trend down in such circumstances, if starting from fair value). **Figure 10** shows that the real value of the lira recently touched multi-decade lows, suggesting to us that it is starting below fair value, which could afford it the possibility of stability over the coming years. We suspect the worst is over.

However, the problems may just be beginning for the Turkish economy. **Figure 34** suggests that trade sanctions have already taken their toll on export volumes, with a steady deceleration over the last year (they were down 5% in the year to June). The decline in business sentiment has been matched by the deceleration in industrial production, with year-on-year growth falling from above 10% at the end of 2017 to 3% in June. Further trade sanctions, rising interest rates and higher inflation are negative factors but the depreciation of the lira should eventually provide stimulus via net exports.

The uncertainty has already depressed the stock market. Despite the decline in the currency, the Datastream Turkey index is down 28% in local currency terms since peaking at end-January 2018 (as of 16 August 2018). The price/earnings ratio (PE) on that index is now 7.1, which takes it back to financial crisis

lows (the average since the start of 2010 is 10.9 – see **Figure 35**). Of course, earnings are likely to be negatively impacted by a domestic recession, so the PE may exaggerate how cheap stocks are. We would expect a recovery in bonds before stocks.

Talking of bonds, with 10-year yields at 20% there could be an interesting opportunity, especially if the central bank takes stronger action against inflation (and yes, we did nominate Turkish bonds as one of our favourites at the start of the year!). In **Figure 36** we compare the real yield on Turkish government debt with that on the debt of other governments. Assuming inflation averages 15% over the next 10 years (it averaged 8.5% over the last 10 years), we calculate the forward looking real yield on Turkish debt to be just above 5%. That is better than what is available in most other major economies (and with a lower debt burden) but the ride could be bumpy. Recession in Turkey would suit bonds more than equities (we believe).

In conclusion, if Turkey were a developed nation with a stock of credibility, its debt situation would look quite healthy. However, it is not, and its persistently high current account deficit has made it vulnerable to a classic emerging market crisis. We do not believe it should be compared to Greece but it does find itself in a similar situation to many countries that have experienced debt crises over recent decades. As is often the case, political and diplomatic factors have exacerbated the situation.

The lira has enjoyed a bounce over recent days and is up 25% from recent lows versus the dollar. Its future path depends to a large extent on the actions of the central bank. The history of other debt crises suggests that once the initial crisis is over, high inflation is associated with further currency losses. We suspect the worst may be over for the lira but will only be convinced if the central bank takes action to squeeze inflation out of the system. We believe that such a scenario would be good for bonds but that the accompanying recession would handicap equities.

The economic exposure of the rest of Europe to Turkey is not enormous but the financial exposures are highest in Spain and France. Though it is hard to know what type of exposure has been taken, recession in Turkey and/or default could cause problems for the banks of those nations, especially the former.

Unless stated otherwise, all data as of 16 August 2018.

Figure 5 – Asset class total returns

Data as at 16/08/2018	Index	Current Level/Ry	Total Return (USD, %)					Total Return (Local Currency, %)				
			1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Equities												
World	MSCI	511	-1.9	-0.4	1.6	1.4	10.2	-1.4	0.3	2.3	3.4	11.6
Emerging Markets	MSCI	1022	-5.3	-4.3	-3.8	-10.0	-1.0	-4.0	-2.8	-2.4	-5.0	3.0
US	MSCI	2708	-0.4	1.6	4.7	7.7	17.4	-0.4	1.6	4.7	7.7	17.4
Europe	MSCI	1667	-3.7	-3.1	-1.8	-4.5	1.2	-2.4	-0.5	0.7	0.8	3.9
Europe ex-UK	MSCI	1960	-3.9	-3.0	-1.0	-4.3	0.0	-2.5	-0.8	1.1	0.6	3.3
UK	MSCI	1157	-3.3	-3.5	-3.8	-4.8	4.3	-2.2	0.3	-0.2	1.2	5.5
Japan	MSCI	3270	-2.6	-0.9	-1.9	-3.7	7.2	-2.7	-2.3	-1.9	-5.3	7.2
Government Bonds												
World	BofA-ML	1.39	-0.3	-1.0	-1.2	-1.8	-1.1	0.2	-0.4	-0.3	-0.3	-0.1
Emerging Markets	JPM	7.17	-3.2	-3.7	-2.4	-9.2	-8.2	-0.9	-0.7	-0.4	0.1	2.5
US (10y)	Datastream	2.88	0.6	-0.1	0.1	-2.9	-3.6	0.6	-0.1	0.1	-2.9	-3.6
Europe	BofA-ML	0.93	-1.5	-3.3	-3.0	-5.2	-1.9	0.1	-0.7	-0.6	0.0	0.7
Europe ex-UK (EMU, 10y)	Datastream	0.32	-0.9	-2.1	-1.9	-2.8	0.0	0.6	0.6	0.6	2.5	2.8
UK (10y)	Datastream	1.28	-0.5	-3.2	-3.0	-5.6	-1.0	0.6	0.6	0.6	0.3	0.2
Japan (10y)	Datastream	0.10	0.3	0.9	-0.5	1.4	-0.1	0.1	-0.6	-0.6	-0.3	-0.1
IG Corporate Bonds												
Global	BofA-ML	3.16	-0.3	-0.4	0.2	-2.9	-1.0	0.2	0.4	1.0	-1.2	0.0
US	BofA-ML	4.00	0.3	0.5	1.2	-2.0	-0.5	0.3	0.5	1.2	-2.0	-0.5
Europe	BofA-ML	1.01	-1.5	-2.4	-1.8	-5.1	-2.0	0.0	0.3	0.6	0.1	0.6
UK	BofA-ML	2.71	-0.7	-3.0	-2.6	-6.4	-1.0	0.4	0.9	1.1	-0.5	0.1
Japan	BofA-ML	0.36	0.2	1.3	-0.2	1.8	0.3	0.1	-0.2	-0.2	0.1	0.2
HY Corporate Bonds												
Global	BofA-ML	6.36	-0.6	-0.1	0.6	-0.9	1.4	-0.4	0.5	1.1	0.1	1.9
US	BofA-ML	6.55	-0.2	0.9	1.4	1.5	3.3	-0.2	0.9	1.4	1.5	3.3
Europe	BofA-ML	3.73	-1.9	-2.5	-1.0	-5.4	-1.6	-0.3	0.2	1.5	-0.2	1.1
Cash (Overnight LIBOR)												
US		1.91	0.0	0.2	0.3	1.1	1.5	0.0	0.2	0.3	1.1	1.5
Euro Area		-0.44	-1.3	-2.9	-2.7	-5.4	-3.8	0.0	0.0	-0.1	-0.3	-0.4
UK		0.70	-0.8	-3.9	-3.6	-5.6	-0.9	0.0	0.0	0.1	0.3	0.4
Japan		-0.06	0.2	1.3	-0.2	1.6	-0.7	0.0	0.0	0.0	0.0	0.0
Real Estate (REITs)												
Global	FTSE	1842	-0.6	0.0	0.2	0.2	5.4	1.0	2.8	2.7	5.6	8.3
Emerging Markets	FTSE	2084	-4.2	-3.5	-4.4	-10.9	1.4	-2.7	-0.8	-2.0	-6.1	4.2
US	FTSE	2980	1.4	2.4	2.7	4.4	6.7	1.4	2.4	2.7	4.4	6.7
Europe ex-UK	FTSE	3534	-2.1	-1.6	0.0	0.0	8.4	-0.5	1.2	2.5	5.4	11.4
UK	FTSE	1400	-3.1	-5.9	-6.3	-7.7	3.0	-2.0	-2.1	-2.8	-1.8	4.2
Japan	FTSE	2493	-1.2	-2.5	-4.0	3.5	4.8	-1.3	-3.9	-4.0	1.7	4.7
Commodities												
All	GSCI	2636	-1.6	-0.1	-6.6	3.1	20.8	-	-	-	-	-
Energy	GSCI	508	-1.3	-0.4	-8.2	9.9	40.5	-	-	-	-	-
Industrial Metals	GSCI	1238	-3.9	-2.6	-9.4	-14.6	-7.3	-	-	-	-	-
Precious Metals	GSCI	1405	-3.1	-5.3	-6.5	-10.9	-9.2	-	-	-	-	-
Agricultural Goods	GSCI	370	-2.9	4.3	0.9	-2.4	-3.6	-	-	-	-	-
Currencies (vs USD)*												
EUR		1.14	-1.3	-2.8	-2.6	-5.2	-3.3	-	-	-	-	-
JPY		110.90	0.2	1.3	-0.2	1.6	-0.6	-	-	-	-	-
GBP		1.27	-1.1	-3.8	-3.6	-5.9	-1.1	-	-	-	-	-
CHF		1.00	-0.3	0.0	-0.6	-2.3	-3.1	-	-	-	-	-
CNY		6.88	-0.9	-2.8	-3.8	-5.5	-2.8	-	-	-	-	-

Notes: *The currency section is organised so that in all cases the numbers show the movement in the mentioned currency versus USD (+ve indicates appreciation, -ve indicates depreciation). Past performance is no guarantee of future results. Please see appendix for definitions, methodology and disclaimers.

Source: Datastream and Invesco

Figure 6 – Equity sector total returns relative to local market (%)

Data as at 16/08/2018	US					Europe				
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Oil & Gas	-2.8	-5.5	-8.9	-5.3	1.3	-1.7	-1.0	-2.8	9.4	18.3
Materials	-2.2	-1.7	-4.5	-9.8	-7.5	-1.9	-2.6	-5.1	-3.2	4.0
Basic Resources	-7.7	-13.3	-16.8	-21.5	-16.9	-3.6	-3.9	-9.7	-6.6	3.7
Chemicals	-1.6	0.7	-2.0	-6.8	-4.1	-0.5	-1.6	-1.0	-0.2	3.9
Industrials	0.4	1.5	1.0	-6.2	-5.4	0.0	-0.5	0.0	1.3	3.0
Construction & Materials	-0.2	0.0	-2.0	-11.7	-10.7	0.1	-1.7	-2.2	-4.1	-5.6
Industrial Goods & Services	0.3	1.0	0.5	-6.1	-5.3	0.0	-0.2	0.5	2.7	5.4
Consumer Discretionary	-0.8	-2.1	-1.8	6.7	7.8	0.0	-1.7	-1.1	-0.9	1.7
Automobiles & Parts	-3.5	-8.2	-10.9	-17.9	-13.8	-2.2	-3.1	-2.0	-10.0	-0.6
Media	-0.2	-1.7	-1.2	-5.6	-14.9	2.1	0.1	2.1	7.2	5.6
Retail	0.1	-0.6	0.3	17.3	24.3	-0.4	-3.6	-3.2	5.1	3.0
Travel & Leisure	1.4	1.2	0.7	-10.8	-10.0	1.1	-2.4	-2.0	-4.6	-1.7
Consumer Staples	2.6	2.5	1.4	-9.7	-14.4	1.7	2.9	3.0	1.4	-0.5
Food & Beverages	0.7	0.0	-1.1	-9.2	-14.7	2.2	2.3	3.3	0.9	0.0
Personal & Household Goods	1.4	1.2	-0.7	-11.8	-17.1	1.3	3.3	2.9	1.8	-0.7
Healthcare	1.2	2.8	3.9	3.1	-0.7	0.6	2.3	4.2	5.8	2.6
Financials	-0.4	0.7	1.0	-5.6	-2.6	-0.7	-0.2	-1.1	-6.5	-8.7
Banks	-0.8	1.3	2.3	-4.5	1.2	-1.9	-1.4	-2.4	-11.8	-15.2
Financial Services	-0.3	-1.2	-2.5	-9.8	-5.2	0.5	-0.6	-1.6	0.4	0.3
Insurance	0.1	-0.3	-0.1	-9.6	-14.0	0.6	2.2	1.7	0.3	-0.8
Real Estate	1.4	0.7	-1.9	-3.6	-8.9	1.3	0.3	-0.2	1.3	4.1
Technology	-0.7	-1.1	0.2	8.2	10.1	0.7	-1.4	-0.7	7.5	8.6
Telecommunications	2.9	3.3	2.6	-8.4	-11.3	-0.4	0.0	-0.3	-8.7	-13.7
Utilities	2.3	1.7	-0.3	-2.5	-12.3	1.2	-1.9	-0.4	2.2	-3.7

Notes: *showing annualised returns. We use a sector classification created by merging the two main systems used by Standard & Poor's (S&P) for the US and STOXX for Europe. We have decided to classify our 10 top level industries using categories that most closely resemble the Global Industry Classification Standard (GICS) and at the level below that (super sectors) we are using the Industry Classification Benchmark (ICB). The former is used for the S&P 500 index and the latter for the STOXX 600, our benchmark indices. The two systems overlap in most cases and the only material difference seems to be in the consumer sectors. Therefore, we define consumer staples as the aggregate of personal & household goods and food & beverage, while consumer discretionary includes automobiles & parts, media, retail and travel & leisure. For the rest, we assume 100% overlap for the corresponding top-level sectors. Past performance is no guarantee of future results.

Source: Datastream and Invesco

Figure 7a – US factor index total returns (%)

Data as at 16/08/2018	Absolute					Relative to Market				
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Growth	0.0	1.7	5.0	11.0	25.0	0.4	0.0	0.2	3.2	6.5
Low volatility	0.3	2.2	4.7	7.7	12.3	0.6	0.5	-0.1	0.1	-4.3
Price momentum	-1.1	0.1	2.8	8.8	18.7	-0.7	-1.5	-1.9	1.1	1.2
Quality	0.2	3.4	5.4	7.1	21.0	0.6	1.6	0.6	-0.4	3.2
Size	-0.6	1.2	2.3	7.3	17.9	-0.2	-0.5	-2.4	-0.3	0.5
Value	-0.6	0.7	2.3	2.2	11.7	-0.3	-1.0	-2.4	-5.0	-4.8
Market	-0.4	1.7	4.8	7.6	17.3					
Market - Equal-Weighted	-0.2	1.3	3.4	5.2	15.1					

Notes: All indices are subsets of the S&P 500 index, they are rebalanced monthly, use data in US dollars and are equal-weighted. Growth includes stocks in the top third based on both their 5-year sales per share trend and their internal growth rate (the product of the 5-year average return on equity and the retention ratio); Low volatility includes stocks in the bottom quintile based on the standard deviation of their daily returns in the previous three months; Price momentum includes stocks in the top quintile based on their performance in the previous 12 months; Quality includes stocks in the top third based on both their return on invested capital and their EBIT to EV ratio (earnings before interest and taxes to enterprise value); Size includes stocks in the bottom quintile based on their market value in US dollars. Value includes stocks in the bottom quintile based on their price to book value ratios. The market represents the S&P 500 index. Past performance is no guarantee of future results.

Source: Datastream and Invesco

Figure 7b – European factor index total returns relative to market (%)

Data as at 16/08/2018	Absolute					Relative to Market				
	1w	1m	QTD	YTD	12m	1w	1m	QTD	YTD	12m
Growth	-1.4	-0.6	0.0	4.5	11.4	0.8	-0.2	-0.7	3.6	7.0
Low volatility	-1.1	-0.2	1.6	4.9	10.6	1.1	0.2	0.9	4.0	6.3
Price momentum	-1.8	-0.8	1.2	4.0	9.4	0.4	-0.3	0.5	3.1	5.1
Quality	-2.0	-1.9	-1.3	-2.8	1.6	0.2	-1.5	-2.0	-3.6	-2.4
Size	-2.0	-1.3	-0.7	0.3	7.2	0.1	-0.9	-1.4	-0.5	3.0
Value	-3.3	-0.5	-0.2	-2.0	2.1	-1.2	-0.1	-0.9	-2.9	-1.9
Market	-2.1	-0.4	0.7	0.9	4.1					
Market - Equal-Weighted	-2.1	-0.9	0.2	1.9	6.2					

Notes: All indices are subsets of the STOXX 600 index, they are rebalanced monthly, use data in euros and are equal-weighted. Growth includes stocks in the top third based on both their 5-year sales per share trend and their internal growth rate (the product of the 5-year average return on equity and the retention ratio); Low volatility includes stocks in the bottom quintile based on the standard deviation of their daily returns in the previous three months; Price momentum includes stocks in the top quintile based on their performance in the previous 12 months; Quality includes stocks in the top third based on both their return on invested capital and their EBIT to EV ratio (earnings before interest and taxes to enterprise value); Size includes stocks in the bottom quintile based on their market value in euros; Value includes stocks in the bottom quintile based on their price to book value ratios. The market represents the STOXX 600 index. Past performance is no guarantee of future results.

Source: Datastream and Invesco

Figure 8 – Model asset allocation

	Neutral	Policy Range	Allocation	Position vs Neutral	Hedged	Currency
Cash	5%	0-10%	10%			
Cash	2.5%		10%			
Gold	2.5%		0%			
Bonds	45%	10-80%	44%			
Government	30%	10-50%	21%			
US	10%		14%			
Europe ex-UK (Eurozone)	8%		2%			
UK	2%		2%			
Japan	8%		0%			
Emerging Markets	2%		3%			
Corporate IG	10%	0-20%	18%			
US Dollar	5%		10%			
Euro	3%		4%			
Sterling	1%		2%			
Japanese Yen	1%		2%			
Corporate HY	5%	0-10%	5%			
US Dollar	4%		5%			
Euro	1%		0%			
Equities	45%	20-70%	40%			
US	25%		8%			
Europe ex-UK	7%		13%			
UK	4%		3%			
Japan	4%		7%			
Emerging Markets	5%		9%			
Real Estate	3%	0-6%	6%			
US	1%		2%			
Europe ex-UK	1%		2%			
UK	0.5%		0%			
Japan	0.5%		1%			
Emerging Markets	0%		1%			
Commodities	2%	0-4%	0%			
Energy	1%		0%			
Industrial Metals	0.3%		0%			
Precious Metals	0.3%		0%			
Agriculture	0.3%		0%			
Total	100%		100%			
Currency Exposure						
USD	49%		43%			
EUR	21%		23%			
GBP	8%		8%			
JPY	14%		11%			
EM	7%		14%			
Total	100%		100%			

Notes: This is a theoretical portfolio and is for illustrative purposes only. See the latest [The Big Picture](#) document for more details. It does not represent an actual portfolio and is not a recommendation of any investment or trading strategy.

Source: Invesco

Figure 9 – Model sector allocations

	US		Europe		Preferred Region
	Neutral	Invesco	Neutral	Invesco	
Oil & Gas	6.2%	Overweight	6.8%	Neutral ↓	US
Materials	2.1%	Underweight	7.0%	Underweight	Europe
Basic Resources	0.4%	Neutral	3.5%	Neutral	Europe
Chemicals	1.7%	Underweight	3.5%	Underweight	Europe
Industrials	11.8%	Underweight	13.9%	Overweight	Europe
Construction & Materials	0.5%	Underweight	2.8%	Underweight ↓	Europe
Industrial Goods & Services	11.3%	Underweight	11.0%	Overweight	Europe
Consumer Discretionary	15.3%	Underweight ↓	10.8%	Overweight	Europe
Automobiles & Parts	0.7%	Underweight ↓	3.3%	Overweight ↑	Europe
Media	2.4%	Overweight	2.3%	Underweight	US
Retail	9.6%	Underweight ↓	3.5%	Neutral ↓	Europe
Travel & Leisure	2.7%	Overweight	1.8%	Overweight	US
Consumer Staples	7.5%	Overweight ↑	16.6%	Neutral	US
Food & Beverage	3.2%	Overweight	6.9%	Neutral ↓	US
Personal & Household Goods	4.3%	Overweight ↑	9.7%	Neutral ↑	US
Healthcare	12.8%	Overweight	11.7%	Neutral	US
Financials	18.3%	Underweight	20.5%	Overweight ↑	Europe
Banks	6.1%	Underweight	11.3%	Overweight ↑	Europe
Financial Services	6.0%	Underweight	2.2%	Overweight	Europe
Insurance	3.4%	Neutral ↑	5.2%	Neutral	Europe
Real Estate	2.8%	Overweight	1.8%	Neutral	US
Technology	21.2%	Neutral	4.8%	Underweight	US
Telecommunications	1.9%	Overweight	3.5%	Overweight ↑	US
Utilities	2.8%	Underweight	4.6%	Underweight	US

Notes: These are theoretical allocations which are for illustrative purposes only. They do not represent an actual portfolio and are not a recommendation of any investment or trading strategy. See the latest [Strategic Sector Selector](#) for more details.

Source: Datastream and Invesco

Appendix

Figure 10 – Turkey current account and real effective lira (1980 Q1 to 2018 Q3)

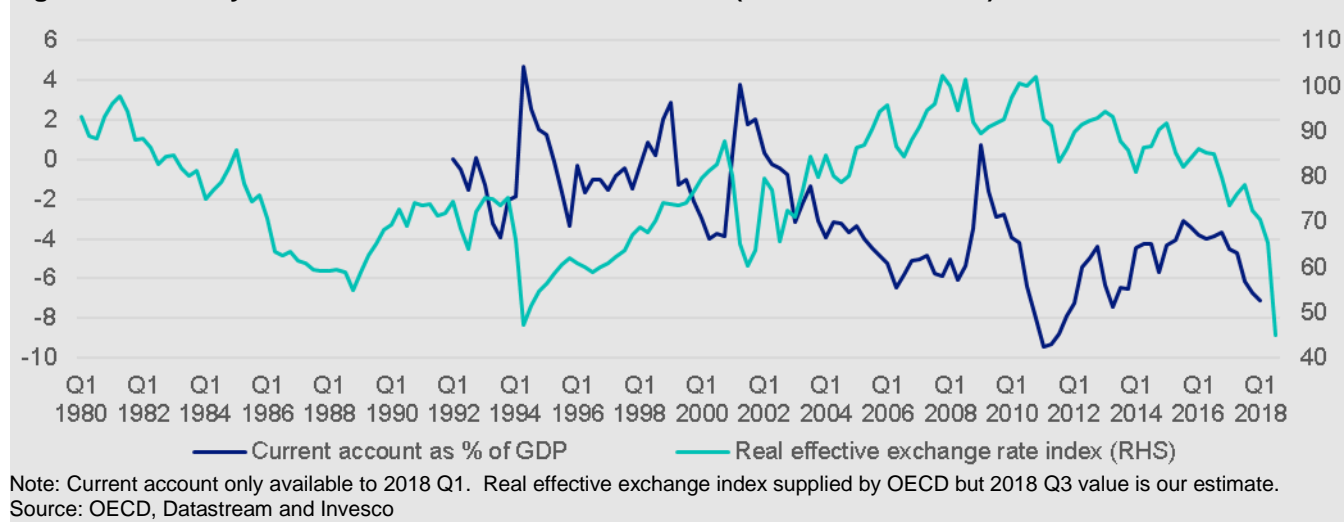


Figure 11 – Net international investment position as percent of GDP (1980 to 2017)

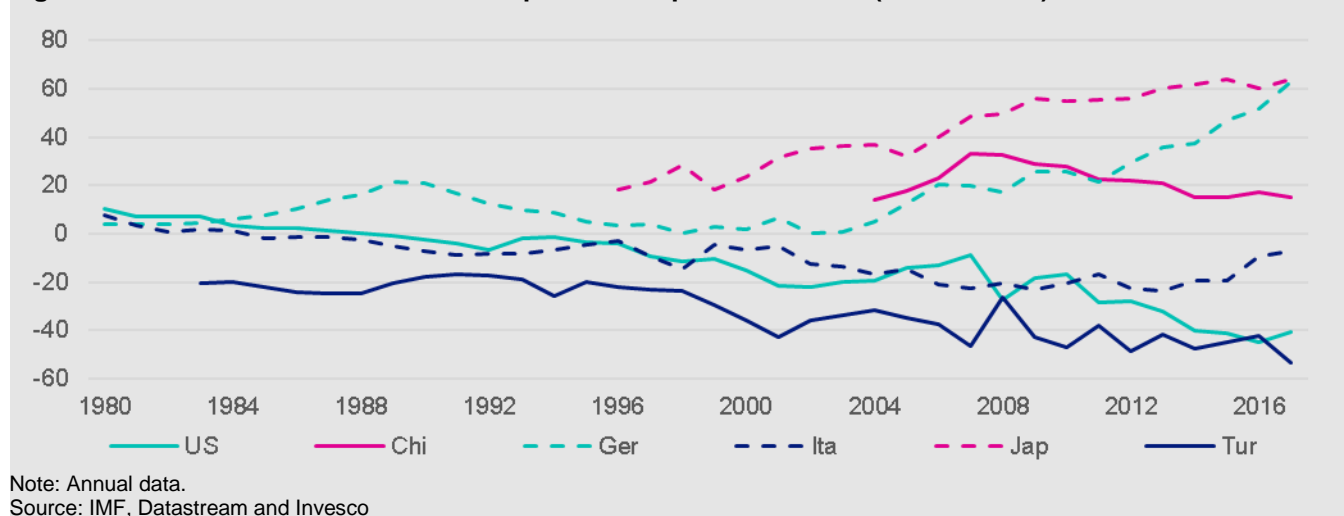


Figure 12 – Turkey GDP growth and real effective exchange rate (1980 to 2018)

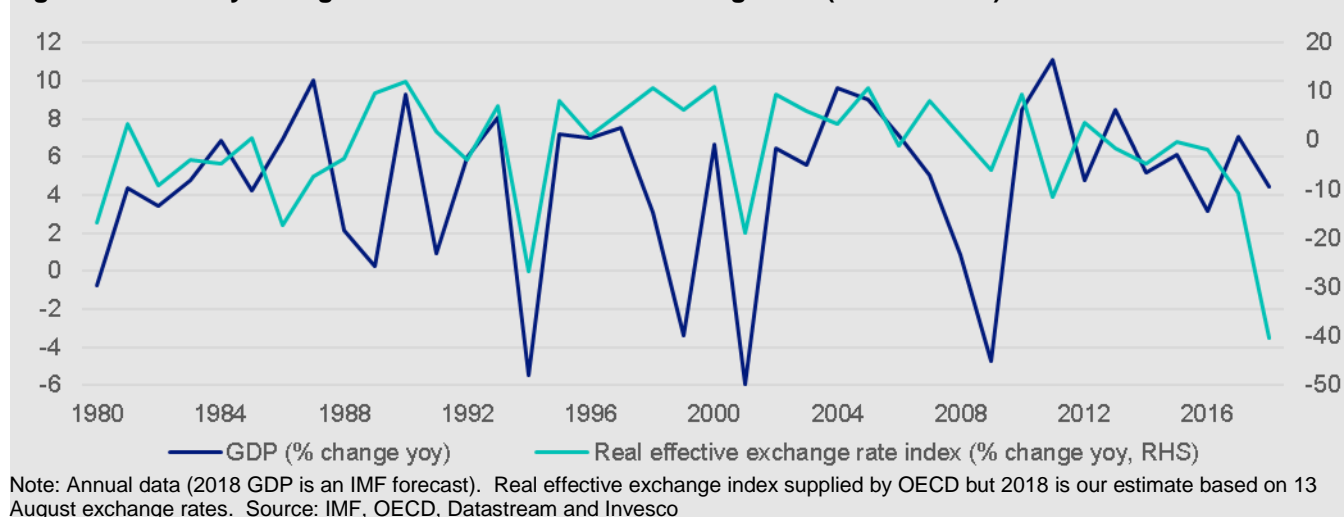
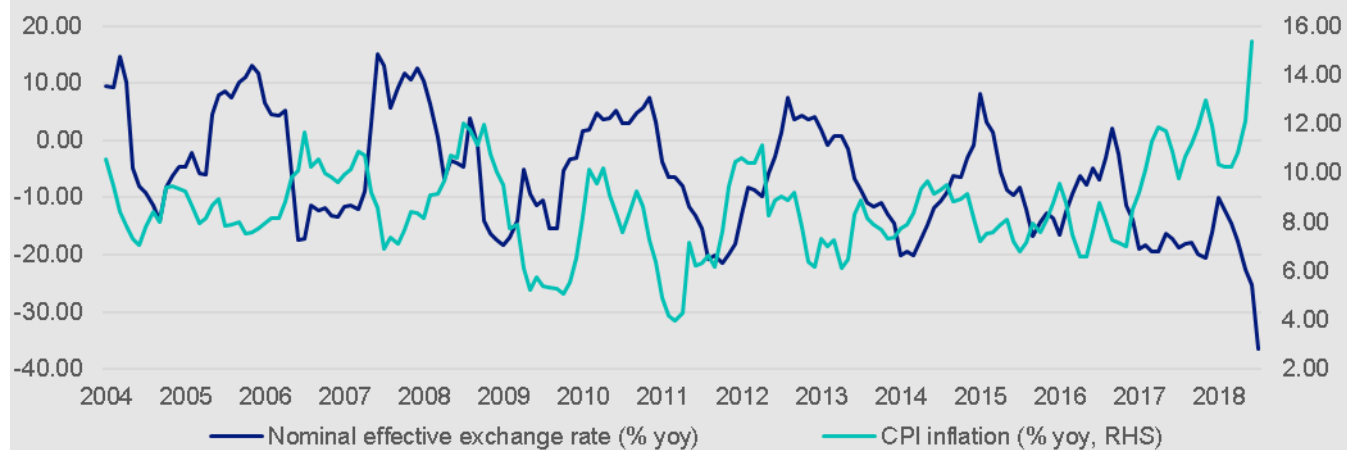
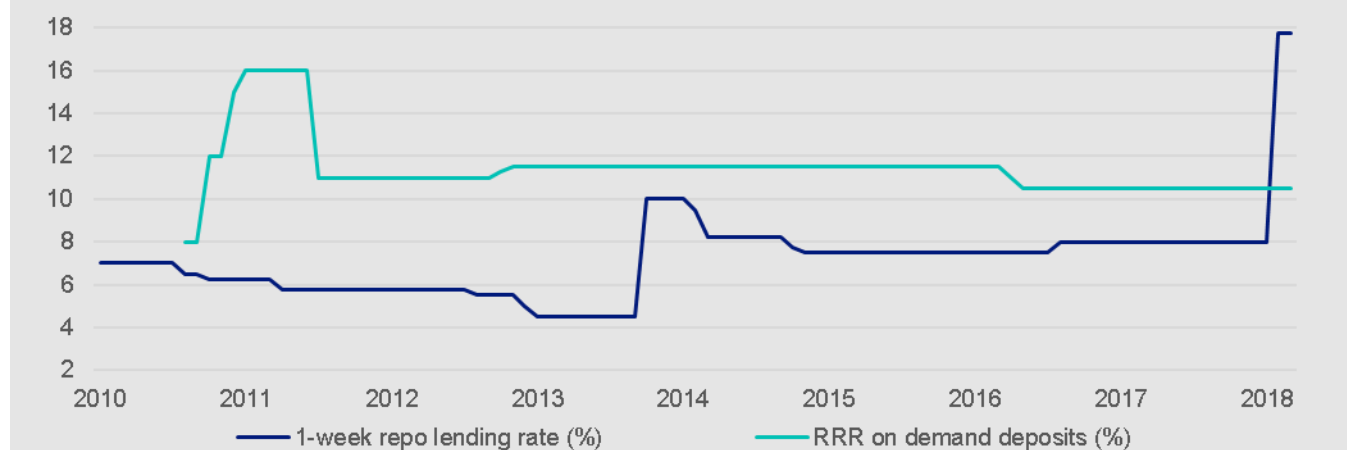


Figure 13 – Turkey nominal effective exchange rate and CPI inflation (Jan 2004-Jul 2018)



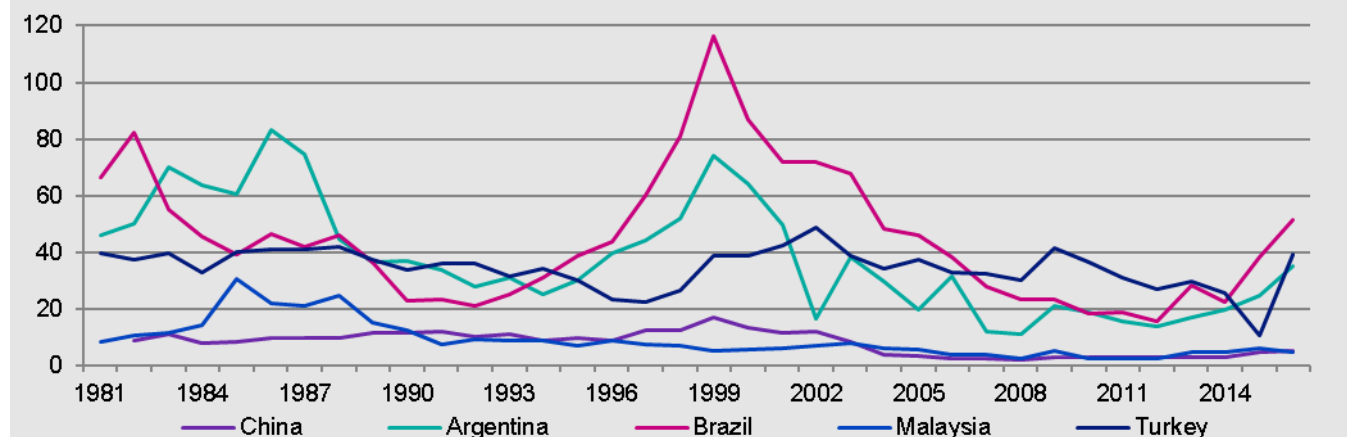
Note: Monthly data (up to June 2018 for CPI and July 2018 for exchange rate, with July 2018 being our estimate).
 Source: BIS, OECD, Datastream and Invesco

Figure 14 – Turkey policy rate and reserve requirement ratio (May 2010-July 2018)



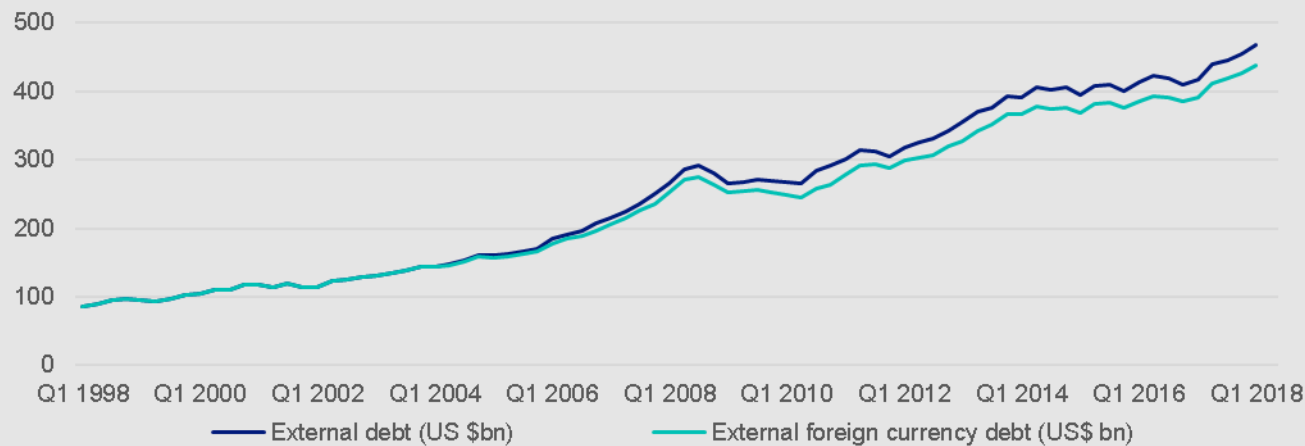
Note: RRR = reserve requirement ratio
 Source: Central Bank of Turkey, Datastream and Invesco

Figure 15 – External debt servicing as a percent of exports of goods & services (1981 to 2016)



Source: World Bank, Datastream and Invesco

Figure 16 – Turkey external debt (1998 Q1 to 2018 Q1)



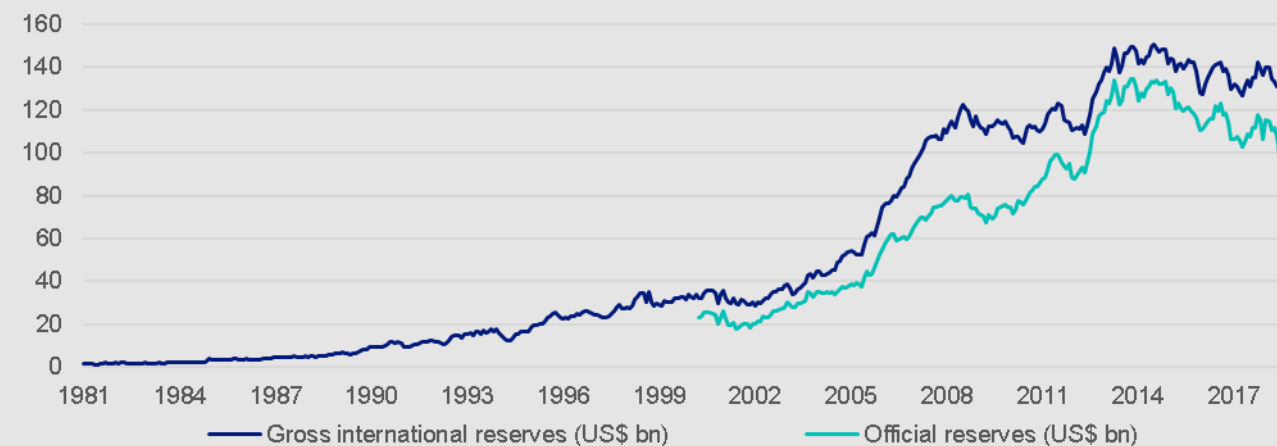
Note: Real effective sterling index is adjusted for CPI differentials, as provided by the OECD.
 Source: World Bank, Datastream and Invesco

Figure 17 – Turkey average maturity of new external debt commitments (1970-2016)



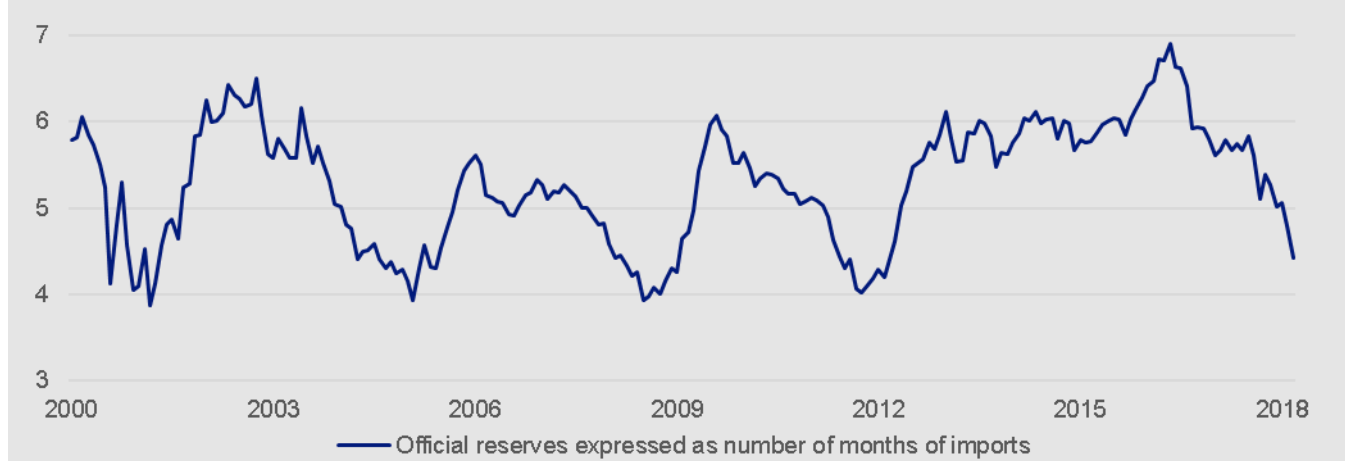
Source: World Bank, Datastream and Invesco

Figure 18 – Turkey international reserves (Jan 1981 to Jun 2018)



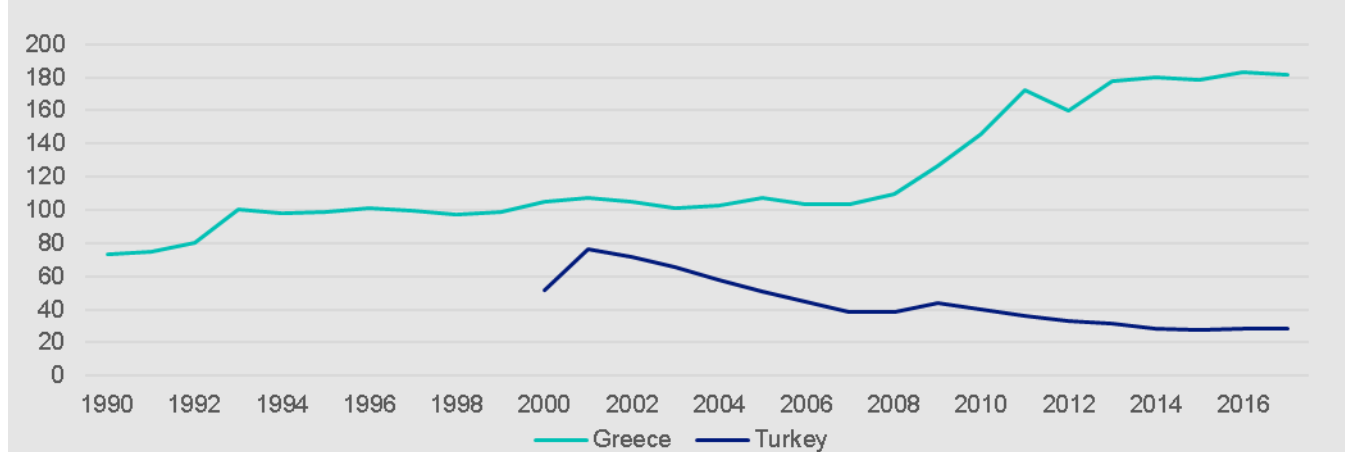
Note: Monthly data (gross reserves to May 2018 and official reserves to June 2018)
 Source: Central Bank of Turkey, Datastream and Invesco

Figure 19 – Turkey official international reserves as number of months of imports (Apr 2000 to Jun 2018)



Note: reserves are compared to the monthly average of imports over the previous 12 months.
 Source: Central Bank of Turkey, OECD, Datastream and Invesco

Figure 20 – Gross government debt to GDP ratios in percent (1990 to 2017)



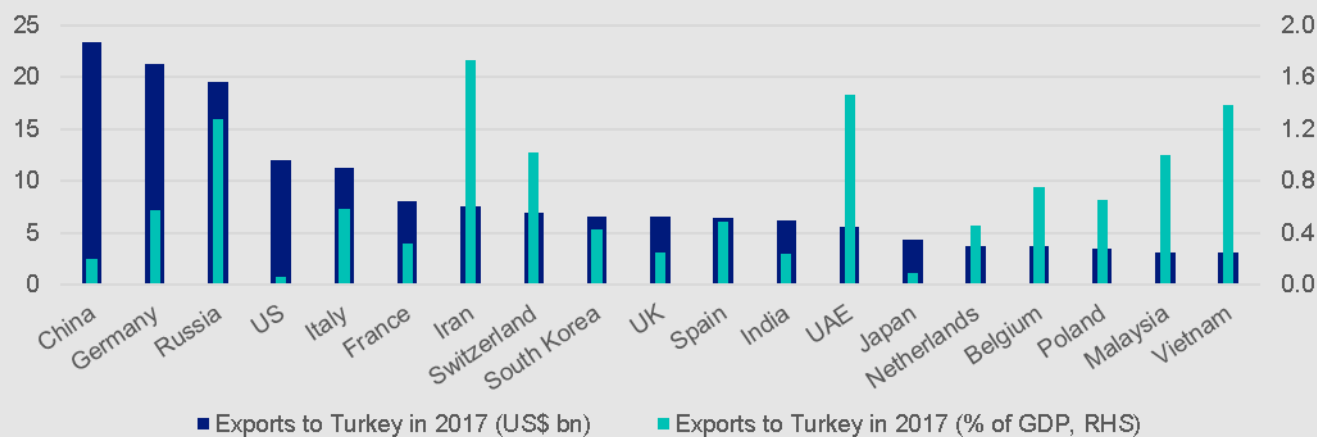
Note: Annual data.
 Source: IMF, Datastream and Invesco

Figure 21 – Real effective exchange rates (1990 Q1 to 2018 Q1)



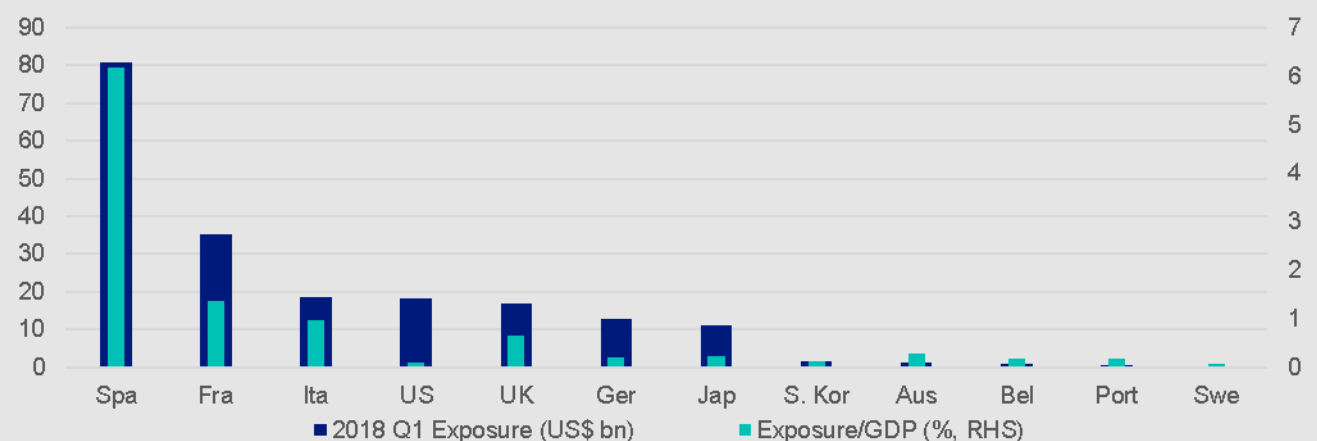
Note: Quarterly data showing trade weighted exchange rates, adjusted for CPI inflation differentials. Greece data is up to 2018 Q2. Turkey's is up to 2018 Q3, with the final quarter being our estimate based on recent currency movements.
 Source: OECD, Datastream and Invesco

Figure 22 – Turkey’s major trading partners in 2017



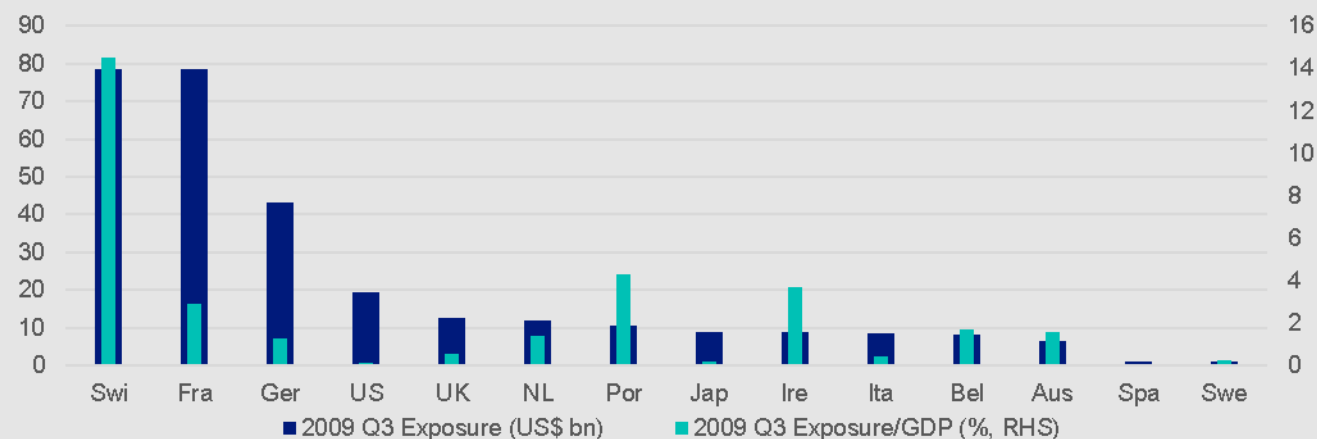
Note: based on IMF data for the origin of Turkey’s imports.
Source: IMF, Datastream and Invesco

Figure 23 – Banking claims on Turkey in 2018 Q1



Note: based on BIS banking data. Data is no longer available for Canada, the Netherlands and Switzerland.
Source: BIS, IMF, OECD, World Bank, Datastream and Invesco

Figure 24 – Banking claims on Greece in 2009 Q3



Note: based on BIS banking data.
Source: BIS, IMF, OECD, World Bank, Datastream and Invesco

Figure 25 – Current account balance prior to previous debt crises

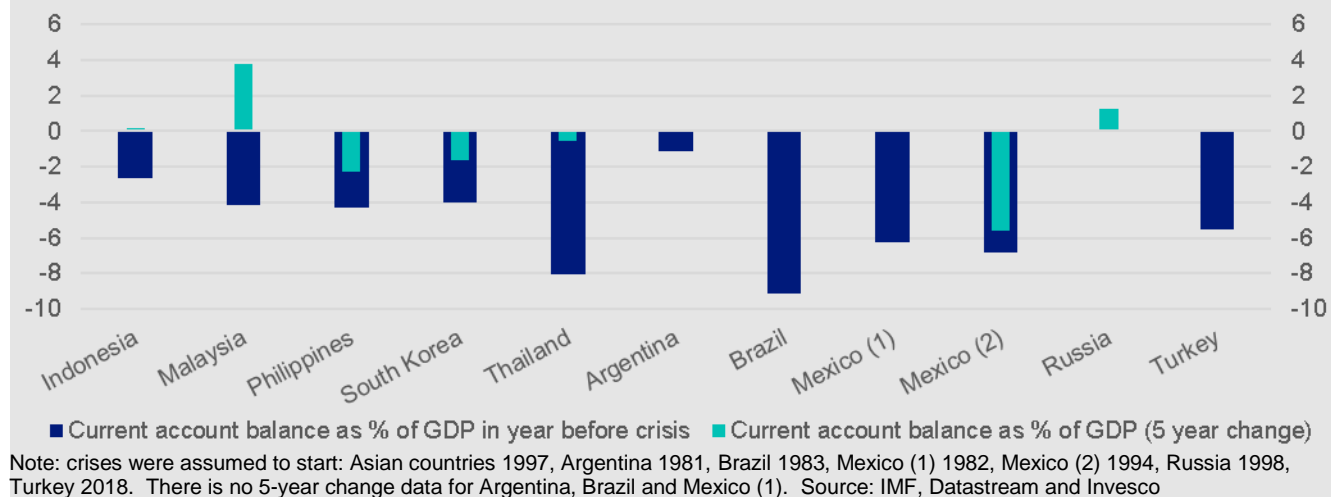


Figure 26 – External debt prior to previous debt crises

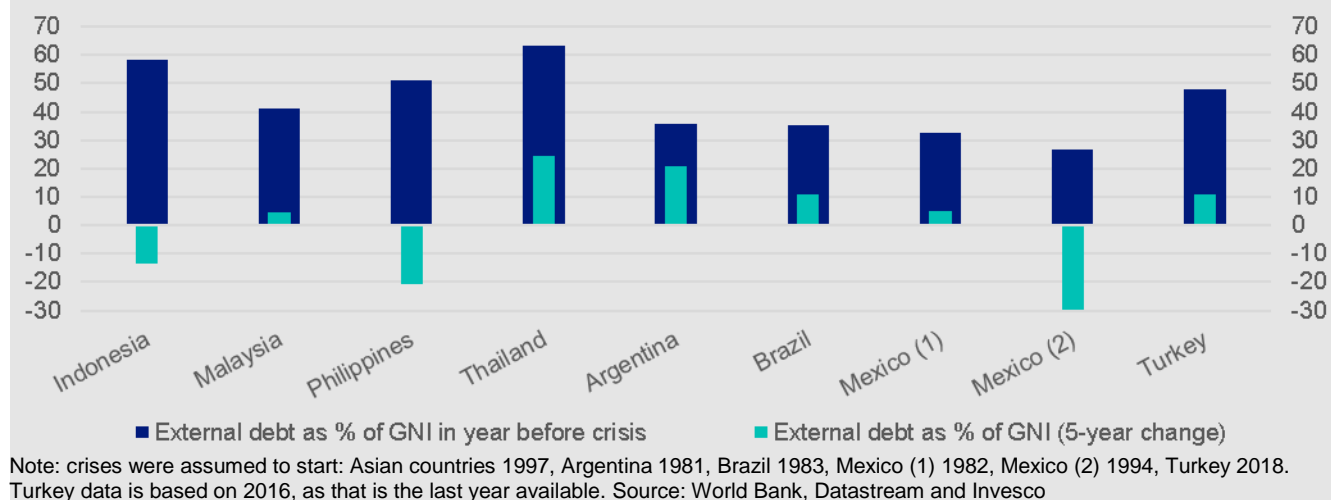


Figure 27 – Short-term debt as percent of external debt prior to previous debt crises

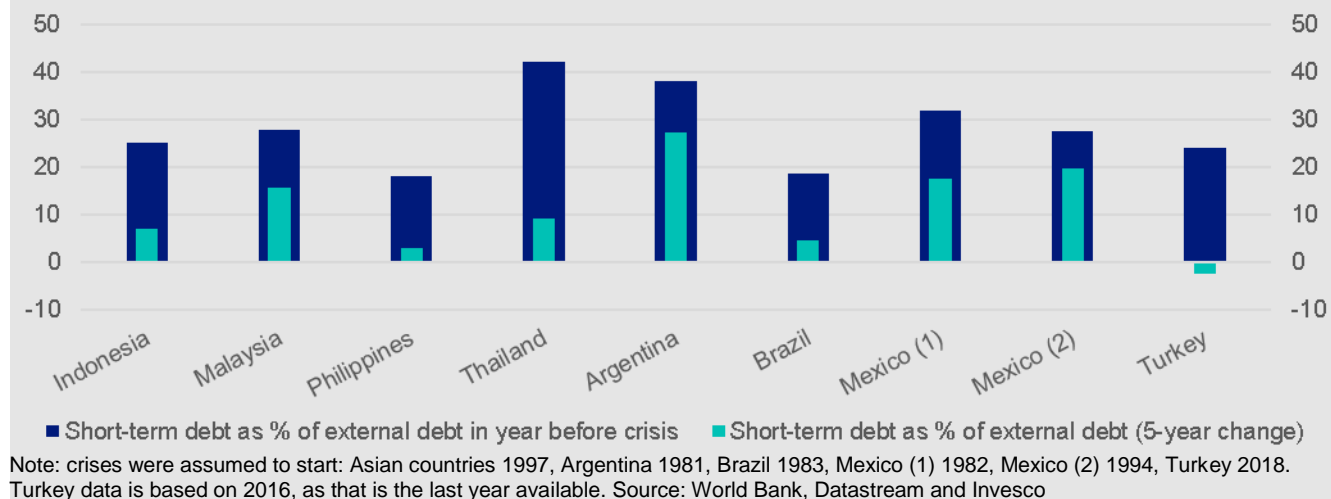
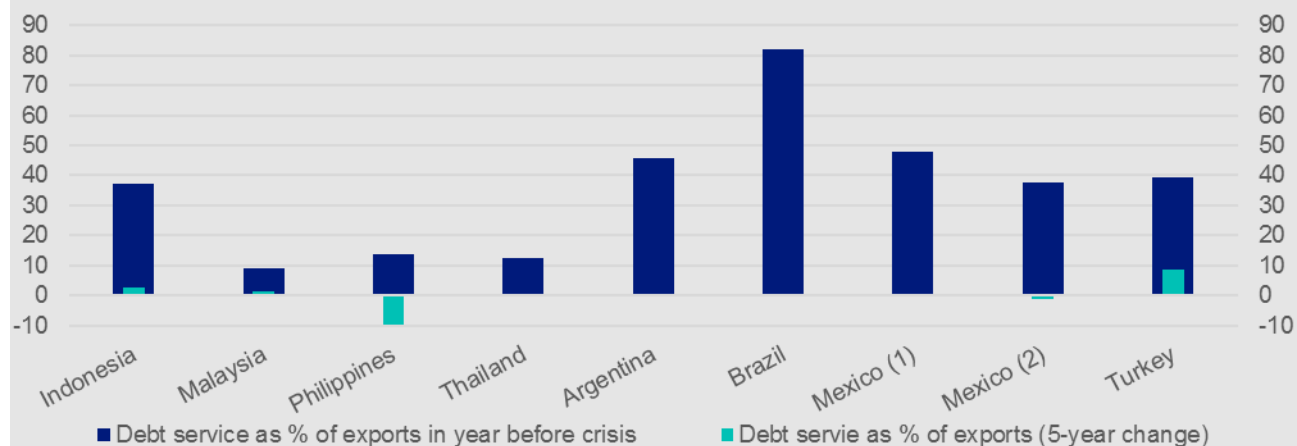
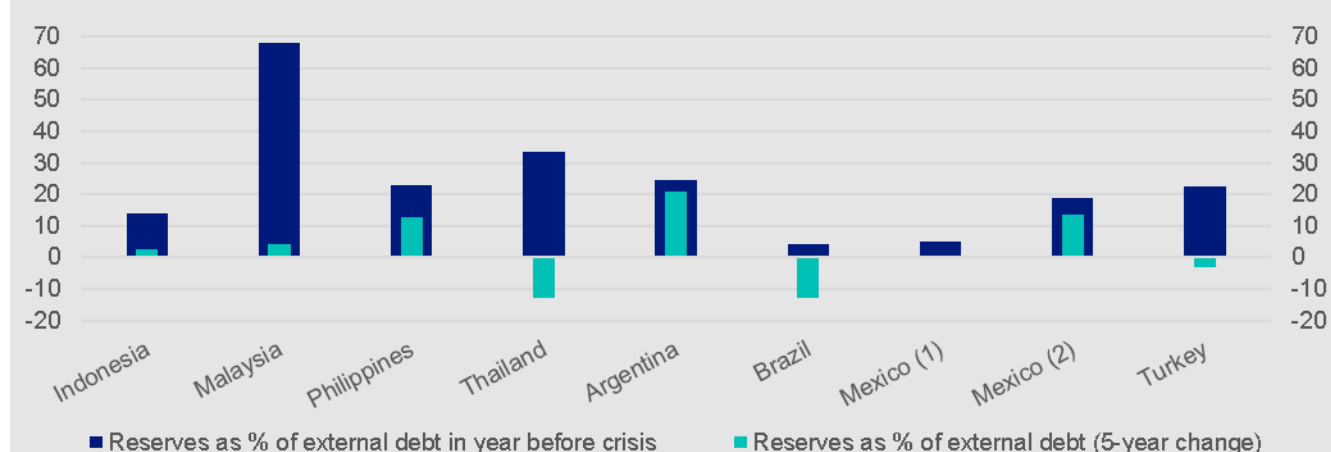


Figure 28 – External debt service costs as percent of exports prior to previous debt crises



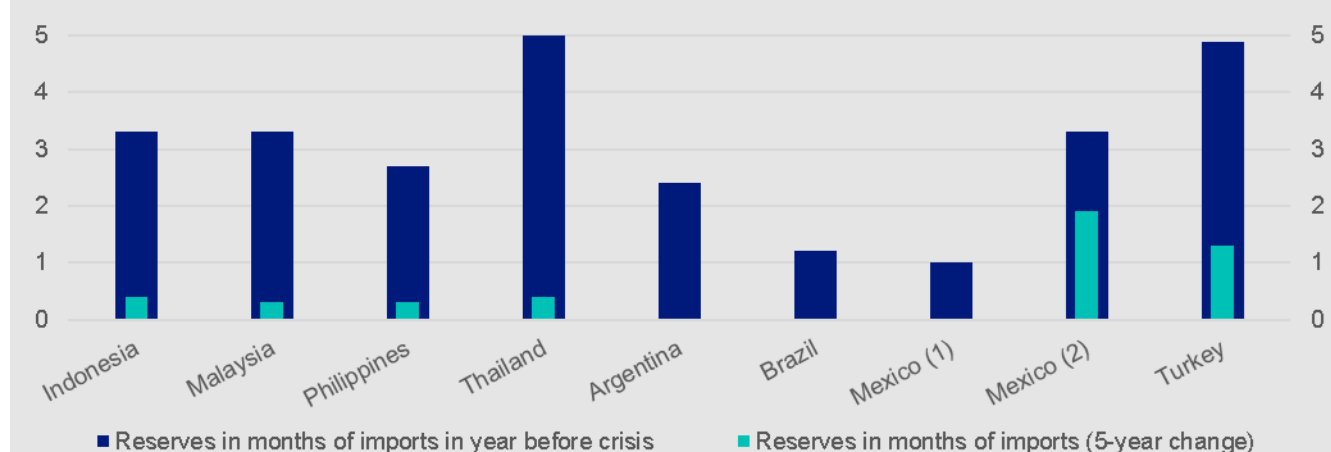
Note: crises were assumed to start: Asian countries 1997, Argentina 1981, Brazil 1983, Mexico (1) 1982, Mexico (2) 1994, Turkey 2018. Turkey data is based on 2016, as that is the last year available. There is no 5-year change data for Argentina, Brazil and Mexico (1). Exports of goods and services. Source: World Bank, Datastream and Invesco

Figure 29 – International reserves as percent of external debt prior to previous debt crises



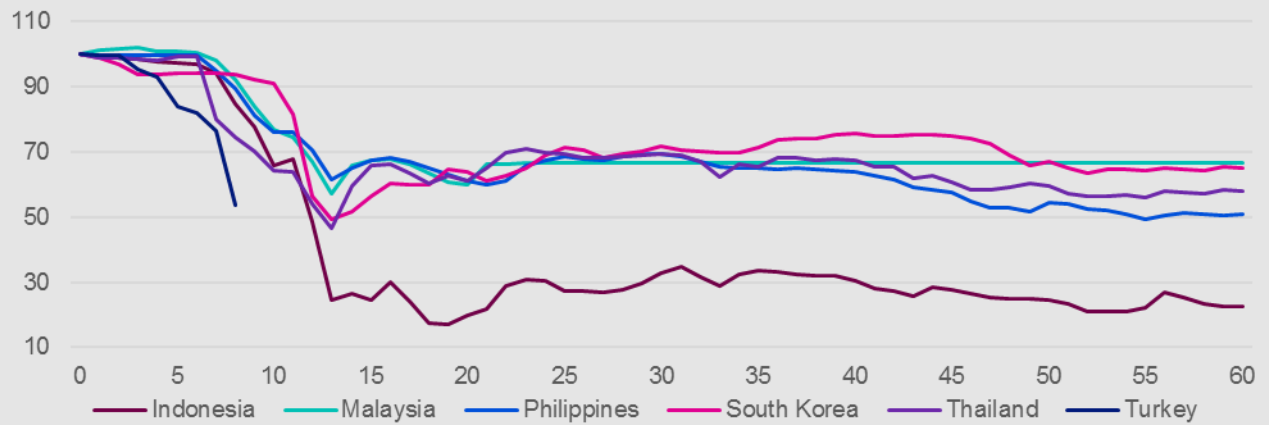
Note: crises were assumed to start: Asian countries 1997, Argentina 1981, Brazil 1983, Mexico (1) 1982, Mexico (2) 1994, Turkey 2018. Turkey data is based on 2016, as that is the last year available. Source: World Bank, Datastream and Invesco

Figure 30 – International reserves in months of imports prior to previous debt crises



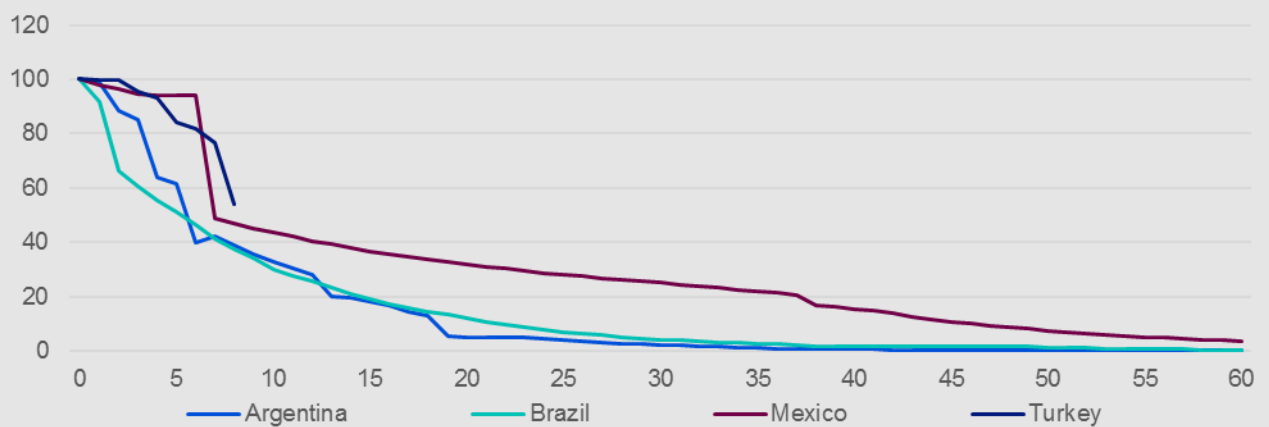
Note: crises were assumed to start: Asian countries 1997, Argentina 1981, Brazil 1983, Mexico (1) 1982, Mexico (2) 1994, Turkey 2018. Turkey data is based on 2016, as that is the last year available. There is no 5-year change data for Argentina, Brazil and Mexico (1). Source: World Bank, Datastream and Invesco

Figure 31 – USD per currency unit after the start of debt crises (Turkey compared to Asian countries)



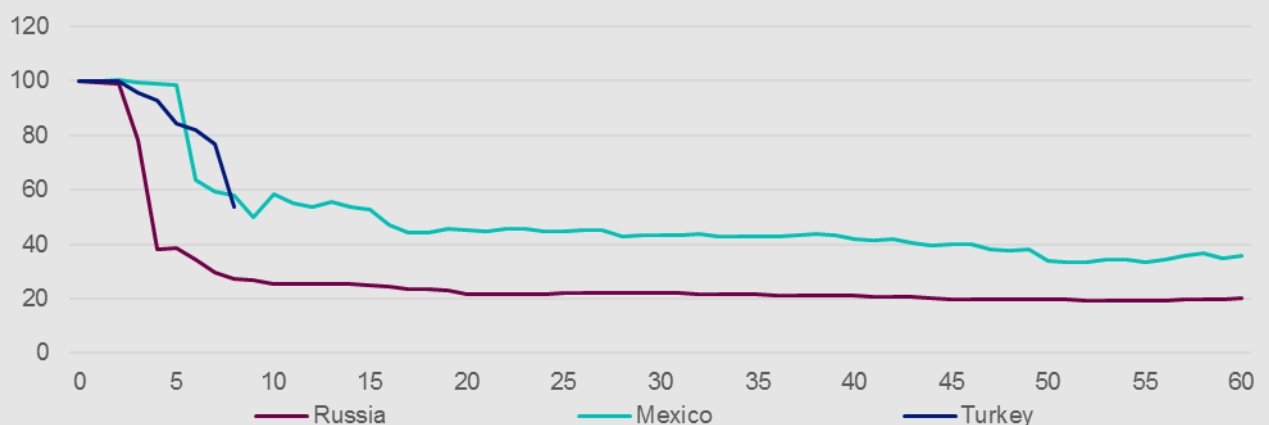
Note: monthly data. X-axis measures number of months after start of crisis. Crises were assumed to start: Asian countries Jan 1997, Turkey Jan 2018. Turkey August 2018 data is as of the low reached on August 13. Past performance is no guarantee of future results. Source: IMF, Datastream and Invesco

Figure 32 – USD per currency unit after the start of debt crises (Turkey vs Lat Am debt crisis countries)



Note: monthly data. X-axis measures number of months after start of crisis. Crises were assumed to start: Argentina Jan 1981, Brazil Jan 1983, Mexico Jan 1982, Turkey Jan 2018. Turkey August 2018 data is as of the low reached on August 13. Past performance is no guarantee of future results. Source: IMF, Datastream and Invesco.

Figure 33 – USD per currency unit after the start of debt crises (Turkey vs Mexico and Russia)



Note: monthly data. X-axis measures number of months after start of crisis. Crises were assumed to start: Mexico Jul 1994, Russia Jun 1998 and Turkey Jan 2018. Turkey August 2018 data is as of the low reached on August 13. Past performance is no guarantee of future results. Source: IMF, Datastream and Invesco.

Figure 34 – Turkey: indicators of economic activity (Jan 2011 to Jul 2018)

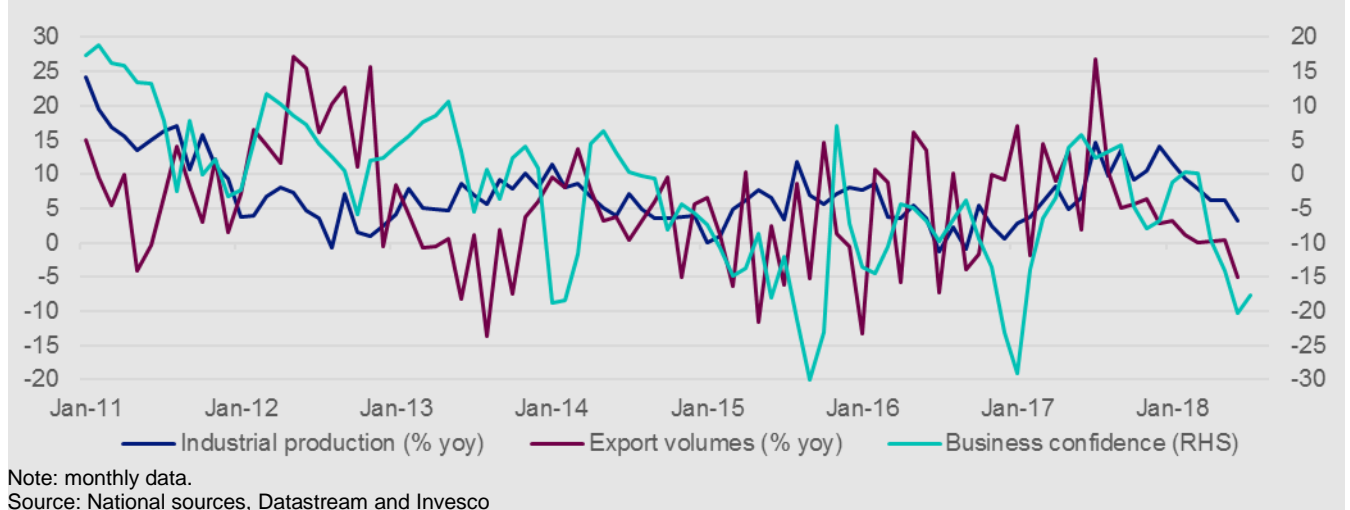


Figure 35 – Turkey price/earnings ratio based on Datastream index (Apr 1990 to Aug 2018)

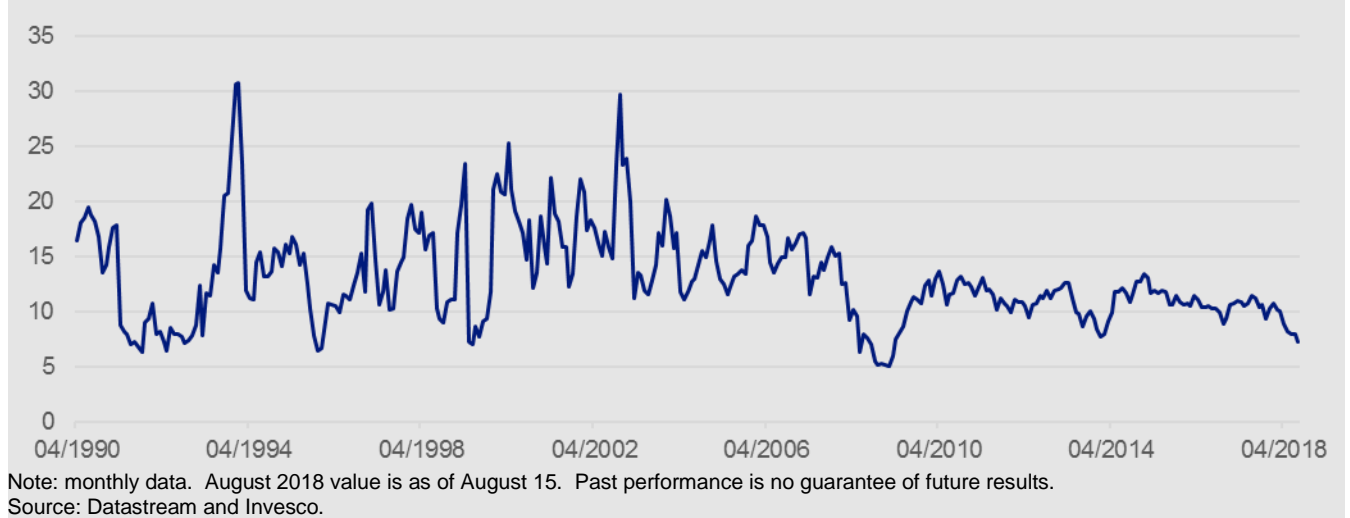
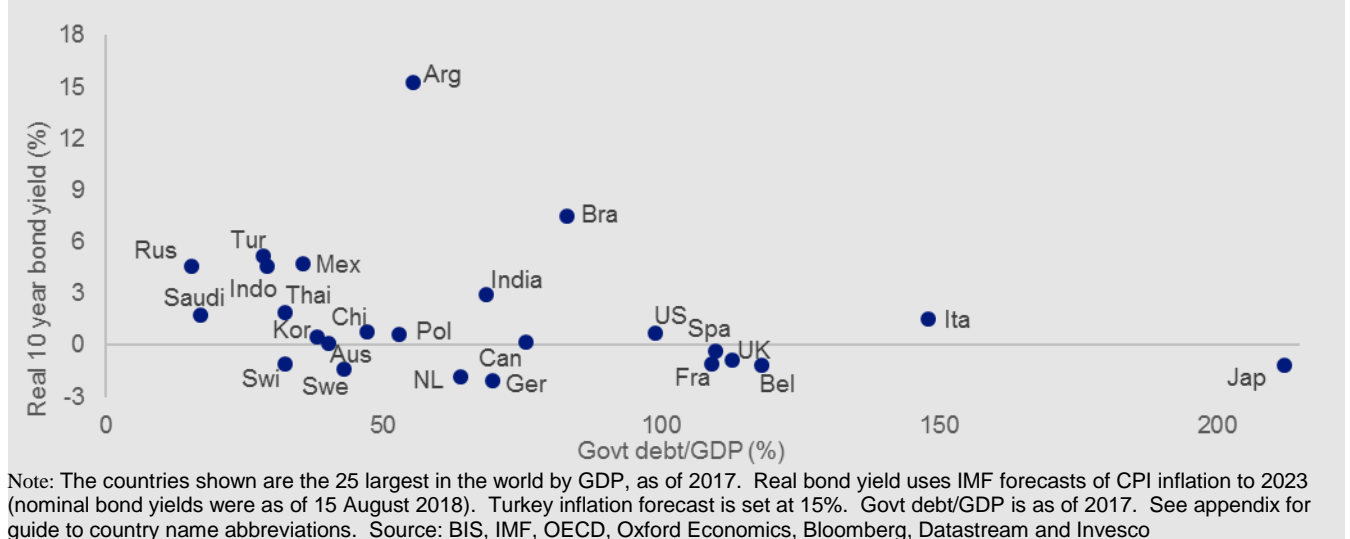


Figure 36 – Government debt/GDP and real 10 year bond yields



Abbreviations for country names in Figure 36

Aus = Australia
 Arg = Argentina
 Bel = Belgium
 Bra = Brazil
 Can = Canada
 Chi = China
 Fra = France
 Ger = Germany
 India = India
 Indo = Indonesia
 Ita = Italy
 Jap = Japan
 Kor = South Korea
 Mex = Mexico
 NL = Netherlands
 Pol = Poland
 Rus = Russia
 Saudi = Saudi Arabia
 Spa = Spain
 Swe = Sweden
 Swi = Switzerland
 Tur = Turkey
 UK = United Kingdom
 US = United States of America

Definitions of data and benchmarks (for Figure 5)

Sources: we source data from Datastream unless otherwise indicated.

Cash: returns are based on a proprietary index calculated using the Intercontinental Exchange Benchmark Administration overnight LIBOR (London Interbank Offer Rate). The global rate is the average of the euro, British pound, US dollar and Japanese yen rates. The series started on 1st January 2001 with a value of 100.

Gold: London bullion market spot price in USD/troy ounce.

Government bonds: Current levels, yields and total returns use Datastream benchmark 10-year yields for the US, Eurozone, Japan and the UK, and the Bank of America Merrill Lynch government bond total return index for the World and Europe. The emerging markets yields and returns are based on the JP Morgan emerging markets global composite government bond index.

Corporate investment grade (IG) bonds: Bank of America Merrill Lynch investment grade corporate bond total return indices.

Corporate high yield (HY) bonds: Bank of America Merrill Lynch high yield total return indices

Equities: We use MSCI benchmark gross total return indices for all regions.

Commodities: Goldman Sachs Commodity total return indices

Real estate: FTSE EPRA/NAREIT total return indices

Currencies: Global Trade Information Services spot rates

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