Monetary policy frameworks in the Middle East and North Africa: how do they compare with other groupings?

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Abstract
This paper presents a classification of the monetary policy frameworks (MPFs) of 19 MENA countries from 1974 to 2017. It identifies the key trends in the region, and contrasts them with the trends among three other groups: advanced countries, emerging countries and Latin American countries. It considers likely reasons for the MPF choices of MENA governments, and notes the economic performance associated in the region and elsewhere with different MPFs. It examines how these MPF choices relate to trends in central bank independence and transparency, and in democracy and governance. Finally it brings these elements together in an argument that a move to democracy in the MENA countries could open the way to monetary policy frameworks that would offer improved economic performance.

Keywords: monetary policy framework, exchange rate targeting, inflation targeting discretion, central bank independence, transparency, autocracy, democracy, accountability

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Research on Middle East and North Africa (MENA) countries has tended to focus heavily on trade, economic growth and labour market issues, while relatively little attention has been paid to macroeconomic issues and even less to the monetary policy frameworks (MPFs) of these countries. This paper tries to correct the balance a little. Section 1 presents a full classification of MENA countries' MPFs from 1974 to 2017, identifies the main characteristics of the MENA countries both in cross-section and over time, and distinguishes two broad groups within MENA. Section 2 compares the MENA countries' MPFs with those of the advanced and emerging country groupings classified in Cobham (2019) and with 20 Latin American countries (using a comparable preliminary classification). Section 3 considers the likely reasons for MENA countries' choices of MPFs, using the Appendix to draw on the analysis of the determinants of MPF choices by advanced and emerging economies presented in Cobham and Song (2019). Section 4 shows the economic performance associated with different MPFs in MENA, with comparisons to other groupings. Section 5 considers important institutional and financial market developments in MENA in terms of central bank independence and transparency, government bond and interbank money markets. Section 6 discusses the relationships between MPFs and governance. Section 7 concludes.

1 MENA countries' monetary policy frameworks

The classification used, which is set out in detail in Cobham (2019) and available at www.monetaryframeworks.org for advanced, emerging and now MENA economies, covers both external (exchange rate) and domestic (money, inflation) targets, and considers both announcements of targets and their attainment. It includes separate categories for two types each of exchange rate fix and currency board, for the use of another sovereign's currency

(dollarisation), for membership of a currency union, and for three different types of discretion.[1] It also distinguishes between 'loose' and 'full' targeting, on the basis of specific criteria for e.g. the width of target bands, and it assesses whether the targets are attained, on the basis of other specific criteria. The full menu has 32 different MPFs, but they can usefully be aggregated, first, by target variable including the types of discretion, or secondly, by the degree of monetary control provided by the MPF.

For the MENA countries[2] there are only 11 different MPFs in use over the period – in particular, there are no monetary target MPFs, no dollarisation or currency unions and no mixed targets. Table 1 sets out these 11, and shows how they are put together in the two different aggregations mentioned above. Figures 1, 2 and 3 then show the percentage of countries in each category on the full menu, the target variable aggregation and the degree of control aggregation, while Table 2 shows the incidence of the MPFs in each presentation by category and subperiod, using the periodisation in Cobham (2019): 1974-84, 1985-1998 (Great Moderation pre-EMU), 1999-2007 (Great Moderation plus EMU) and 2008-17 (GFC and its aftermath)

From Figure 1 the most common MPF at the beginning of the period (1974) was the augmented exchange rate fix, AERF (where 'augmented' indicates that some limited monetary policy was in use, alongside the exchange rate fix), followed by loosely structured discretion, LSD, with significant elements of unstructured discretion, UD, and multiple direct controls (the MPF of a command economy), MDC. Over time, however, AERF is replaced by loose and then full exchange rate targeting, LERT then FERT, MDC disappears and UD largely so, while LSD

[1] An exchange rate fix is defined as a situation where the central bank dominates foreign exchange transactions (usually with a very narrow spread) and there is no autonomous forex market. The types of discretion (no specified quantitative targets) are distinguished by reference to both objectives and instruments, with the latter shedding light on whether a country could pursue conventional targets if it wished to.
[2] The countries included here in MENA are Algeria, Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, Turkey, UAE and Yemen.

becomes more important. Loose and loose converging inflation targeting, LIT and LCIT, are always relatively rare, and there are no cases of full inflation targeting – in fact only one MENA country has tried inflation targeting, Turkey, which did so poorly in attaining its targets that it is classified as LSD instead for 2006-8 and 2014-17.

Figure 2 presents the target variable aggregation where different types of exchange rate (or inflation) targeting are aggregated together (see Table 1). Here for the early years the dominant MPF is exchange rate fixing, ERFix, but that is much less important from the 1990s. On the other hand exchange rate targeting, ERTs, becomes much more important, accounting for nearly half of all MPFs. While UD and MDC largely disappear, LSD also becomes more prominent. On the degree of control aggregation in Figure 3, rudimentary MPFs disappear and intermediate – the most common in the 1970s and 1980s – loses out, in favour of substantial, which peaks at over 50% but ends up as the most common type of MPF with over 40%, and intensive, which develops later but hits 37% in the last decade or so of the period.[3]

An alternative way of viewing the classifications is to distinguish different groups which have common trends in their MPFs. First, we can put together the Gulf Cooperation Countries – Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the UAE – which all fixed their exchange rates or operated currency boards in the early years of the period, and in most cases moved to exchange rate targeting, initially de facto (categorised as 'loose') and later de jure (and 'full').[4] We can add to this group three other countries which emphasised their exchange rates throughout the period and moved to FERT by the 2000s: Jordan, Lebanon and Morocco.

[3] The conflicts of 2011-2017 mean that that Syria and Yemen go from LSD to UD and from substantial to intermediate.

[4] Oman continued to fix its exchange rate, while Kuwait pegged to an undisclosed basket (LERT), then pegged to the US dollar (FERT) for a while before reverting to the basket. See IMF (1974) for the currency board and related arrangements in these countries in earlier years.

Second, we can identify a number of countries which had initial periods of MDC or UD, and then turned to LSD, notably Algeria, Egypt, Sudan and Syria. Elements of this trajectory can also be found in Iraq (despite the US occupation), Libya and Yemen (from 1990); in Iran from 1980; in Turkey before 2003; and in Tunisia which had already arrived at LSD by 1974. Some of these countries tried or at least planned to go beyond LSD: Egypt, Morocco and Tunisia have all talked about adopting inflation targeting, but have not so far realised this, while Turkey did adopt inflation targeting but had recurring difficulties in attaining its targets.

2 Some comparisons

How do these characteristics compare with other groupings? In what follows we focus mainly on the sample of 33 emerging countries classified in Cobham (2019), with briefer references to the trends among advanced economies, and we also consider a preliminary classification of 20 'Latin American' countries.[5] The latter grouping can be thought of as a natural comparator for at least some of the MENA countries: although few of the former are oil-producers of the GCC kind, many of them share with the second group of MENA countries identified in the previous section a past of dictatorships and/or military governments with nationalist and/or 'socialist' ideologies.

Figures 4 and 5 show the incidence of MPFs in the emerging countries on the target variable and degree of control aggregations. Figures 6 and 7 show the incidence in the Latin American

[5] These 'Latin American' countries are (South America) Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela; (Central America) Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama; and (North America) Mexico. The grouping is essentially geographical rather than cultural or historical: Belize, Guyana and Suriname are mostly identified as Caribbean rather than Latin American. It should be noted that the emerging economy grouping includes Argentina, Brazil, Chile, Peru, Venezuela and Mexico, from the Latin American grouping, and Egypt, Jordan, Morocco and Turkey from the MENA grouping, so there is some overlap.

sample. Tables 3 and 4 provide information for these groupings comparable to that in Table 2. Other MPFs here include mixed targets (combinations of money, exchange rate and/or inflation targets), well structured discretion (WSD, Malaysia only, for 2006-17), pure currency boards (PCB) and use of another sovereign's currency (UASC, dollarisation).

On the target variable aggregation, both the emerging and Latin American groupings have high proportions of unstructured discretion and exchange rate fixing in the earlier years, while direct controls are also important for emerging economies. Over time these all largely disappear, to be replaced mainly by exchange rate targeting, loosely structured discretion and inflation targeting; inflation targeting is more prominent and exchange rate targeting much less so in the Latin American sample; there is also an element of 'no national framework' which covers both membership of EMU for some emerging economies and dollarisation for some Latin American countries. In addition it is worth noting that among advanced economies there is an even stronger shift over time towards inflation targeting (see Cobham, 2019, or the graphs generated from the Visualisations page at www.monetaryframeworks.org). Among the MENA countries, however, there is almost no take-up of inflation targeting, and exchange rate targeting and loosely structured discretion are the dominant categories in the second half of the period.

On the degree of control aggregation, among both emerging and Latin American groupings the dominant category in the early years is intermediate, and this gives way to substantial and intensive; the same shift, faster and deeper, can also be found among the advanced economies. The MENA countries have more rudimentary MPFs to start with but show a similar trend, however it is less rapid and less deep.

When these two perspectives are put together, what we can conclude is, firstly, that among the MENA countries exchange rate targeting remains far more important than elsewhere; some of that as seen above is the oil-producing GCC countries but some of it is other small economies (Jordan, Lebanon and Morocco). Secondly, the move towards inflation targeting in advanced, emerging and even to some extent developing countries (as in the Latin American sample) is essentially absent from the MENA countries. Thirdly, the trends on the degree of control aggregation are more similar. However, that reflects a movement towards full exchange rate targeting among MENA countries but a movement towards full inflation targeting among Latin American and emerging economies.

3 MENA countries' choices of MPFs

These idiosyncratic trends in MENA countries' MPFs raise the question of whether they have different MPFs because their economies are different, or because they have some different preferences and make different choices. One way of examining this is to draw on the analysis of Cobham and Song (2019), which studies the MPF choices of the advanced and emerging economies from 1983 to 2014. Appendix 1 to this paper, by Mengdi Song, uses the parameter estimates from that paper to predict the MPF choices of MENA countries. It turns out that – apart from the four MENA emerging economies also included in the Cobham and Song sample – the model is quite poor at predicting the MENA MPFs. It is possible that the model lacks some crucial independent variables which are relevant for all developing countries, including MENA ones. But it seems likely that the MENA countries are making decisions on a different, idiosyncratic, basis.

In particular, the model predicts that all the GCC countries and Lebanon would have Mixed targets rather than ERTs (but predicts correctly that Jordan and Morocco would go for

exchange rate targeting). Mixed targets are combinations of money, exchange rate and/or inflation targets, typically used by medium-sized economies in Europe in the 1980s and 1990s, countries which were large enough to have quite diversified trade (and therefore no obvious single potential anchor currency against which to peg their currencies) but open and small enough to feel much more vulnerable to financial market (especially exchange rate) swings than larger economies such as the US or India. Mixed targets were also used later by a number of smaller emerging economies in the run-up to their admission to the European Monetary Union (for which they had to qualify under the multi-dimensional Maastricht criteria). A number of other MENA countries are also predicted to choose Mixed targets in some years. As Appendix 1 points out, this predicted preference for Mixed targets may stem from their earlier experiences of higher inflation and their low capital openness.[6] But in general the reasons why they have made the choices they have are less clear.

The predictions for the degree of control MPFs chosen by the MENA countries are slightly better, but the model repeatedly predicts intermediate MPFs when the countries are operating substantial ones. An additional key factor in these predictions is the low financial markets depth of many of the MENA countries. But here also the reasons for the different choices made by the MENA countries are not obvious.

4 Economic performance under different MPFs

A standard and useful exercise is to examine the economic performance associated with different MPFs. A full examination of this question would require an econometric analysis

[6] It is also worth noting the trade network variable (which measures the concentration of a country's trade on the currency bloc of a potential anchor currency): of the ERTs countries Bahrain, Jordan, Lebanon, Oman and the UAE in most years have levels of trade with the USD bloc that could be expected (on the basis of comparisons with European countries) to be associated with ERTs, but Kuwait, Morocco, Qatar and Saudi Arabia do not; on other hand among the non-ERTs MENA countries Libya, Tunisia and maybe Yemen do have such a level.

which takes account of a range of control variables, but some preliminary insights can be gained from Table 5 which shows the average levels of inflation (CPI) and growth (of GDP per head) in the MENA countries for each MPF, using the same subperiods as before.[7] The final row in Table 5 shows the average performance of these countries in each subperiod whatever the framework. By convention good performance on inflation is denoted by low inflation (low but not necessarily below 2%), while higher growth is considered better performance. It should be noted that there are some gaps in the data on countries in all three groupings considered here, particularly for inflation in the earlier years.

In terms of the target variable aggregation, for the period as a whole as shown in the two columns on the right, exchange rate targeting (ERTs) does best on inflation but worst on growth, and this also holds for most of the subperiods (exchange rate fixing, ERFix, has lower inflation and higher growth during the two middle subperiods, i.e. the Great Moderation). Inflation targeting (ITs) does poorly on inflation but well on growth, but the only cases of ITs are the brief periods when Turkey managed to attain its (loose) inflation targets before, according to the classification, reverting to LSD. Direct controls (MDC) and unstructured discretion (UD) do consistently very badly on inflation, but MDC does well on growth in the earlier subperiods. Loosely structured discretion (LSD) does badly on inflation but better than average on growth. In terms of the degree of control variables, rudimentary MPFs (in this case, MDC) do very badly on inflation but well on growth, while MPFs with higher degrees of control tend to do systematically better on inflation but less well on growth.

[7] Work by Cobham, Macmillan and Mason (2019) on the advanced and emerging economies finds that the results from an unconditional analysis of the kind presented here are not so different from those from a conditional analysis. Data for inflation and growth are from World Development Indicators.

Table 6 provides the same information for the 33 emerging economies previously considered. Here ERTs does well on growth except for the final subperiod, as well as on inflation. ITs does best on inflation, with the exception of well structured discretion (Malaysia, 2006-17, only) and no national framework (countries which had adopted the euro), and on growth it does above average and above ERTs for two of the three subperiods where it (ITs) exists. Mixed targets also do well in the small number of cases involved (countries pursuing multiple targets in order to ensure they qualified for entry to the Euro Area). In the degree of control aggregation rudimentary MPFs do badly on inflation but well on growth, while intermediate do very badly on inflation and worse than average on growth, and substantial and intensive generally do better.

Table 7 provides the same data for the Latin American sample. Here ITs unequivocally outperforms the other MPFs, with consistently lower inflation and higher growth.[8] ERTs has a mixed record on growth. UD does very poorly on inflation where no data exist for MDC, and both do very badly on inflation. LSD shows a strong improvement in the third and fourth subperiods but cannot compete with ITs. And MPFs with higher degrees of control show consistently better performance on both dimensions.

There are, of course, issues about causality, and it is not clear that the adoption of ITs, for example, in a particular country would improve inflation and growth. However, what these data indicate is that there are MPFs that could be adopted by MENA countries (subject to the development of the financial infrastructure), which in other countries have been associated with better economic performance.

[8] There is a partial exception for 'no national framework' which here refers to dollarised Ecuador, El Salvador and Panama, in the second (Panama only) and fourth subperiods, while mixed targeting does better than ITs on growth but worse on inflation in the fourth subperiod.

5 More on institutions and markets

This section examines in more detail crucial aspects of the infrastructure of monetary policy, which form part of the underpinning of the MPF classification. First, it reports on central banks' independence and transparency, which affect both the ability of policymakers to identify goals such as price stability and, via the role of communication, their ability to pursue such goals (Blinder et al., 2008), and provides some proxy measures of central bank technical expertise. Second, it discusses the evolution of the main markets which influence the range of MPFs from which a country can choose: government bond markets which (when there is a significant presence of nonbanks) enable monetary policy to be insulated from fiscal deficits, so averting fiscal dominance and making it possible to choose MPFs with higher degrees of monetary control; and interbank money markets, which (when they are active and liquid) ensure that the central bank's policy rate is carried through to the real economy so that the interest rate (with its greater flexibility) can perform the role of key monetary policy instrument, which is crucial for MPFs such as ITs.

Figures 8, 9 and 10 show Garriga's (2016) scores for central bank independence (CBI) in the MENA exchange rate targeters, the other MENA countries, and the averages for different MENA and Latin American groups (with Germany as a benchmark), respectively. Two features stand out: first, the MENA countries have average levels of CBI at the beginning of the period that are relatively low, under 0.4 (on a 0-1 scale); second, very few of the MENA countries register any change over the period – only Morocco and Qatar in the first group, only Tunisia and Turkey with large changes in the second. By contrast, the Latin American countries start from similar positions but record significant changes in the late 1980s or early 1990s, with their averages rising from 0.32-0.41 to 0.61-0.67.

Figures 11, 12 and 13 show Dincer and Eichengreen's scores for central bank transparency from 1998 to 2014, on a scale from 0 to 15, for the same groups (with the Euro Area as the benchmark in Figure 13). The patterns are broadly comparable: low levels of transparency in MENA with averages below 4 and large changes only for Tunisia and Turkey, but a much more diverse picture for Latin America with the average rising from around 4 (Mexico and South America) and 2 (Central America) to 5-6 and 4-5, before falling back, particularly Central America.[9]

What this means is that MENA central banks have had and continue to have (unless there have been sharp changes since 2012 to CBI and since 2014 to transparency) low levels of independence – meaning weak ability to decide their own goals without reference to politicians' desires and to set their instruments so as to pursue them – and low levels of transparency – meaning weak ability to act upon expectations in the pursuit of their goals. Table 8 shows the latest data available for independence and transparency for each central bank, together with three proxy measures of technical expertise – the publication of regular monetary policy bulletins or reports, research papers and forecasts – as previously used in Cobham (2011).[10] Overall, the MENA central banks look very weak on expertise as well as independence and transparency, e.g. as compared to Colombia, a South American non-emerging economy also shown in the table. This matters, because these institutional factors limit the MPFs MENA countries can choose.

[9] The data for Central America are available for Belize, El Salvador and Guatemala only, and the fall is entirely due to Guatemala.

[10] A better measure of expertise would be the number of trained economists employed in central banks (who would write the monetary bulletins and research papers and generate the forecasts). Such data are not available, but anecdotal evidence suggests that – with the exceptions of Turkey, and of Egypt and Morocco which have expanded their use of economists in recent years – MENA central banks tend to employ only small numbers of economists.

The development of financial markets in MENA countries in ways that feed into monetary policy choices is more difficult to identify. Creane et al. (2004) report that interbank markets were active only in Bahrain, Egypt, Jordan, Oman and the UAE at that time (the early 2000s), while there was significant secondary market activity in government securities only in Bahrain.[11] From the Individual country details at www.rieme.org it seems clear that, of the two countries not covered by Creane et al., Turkey also had an interbank market and a significant government bond market (since at least the early 1990s) but Iraq did not. Table 9 draws on those country details and the sources lying behind them to identify when countries changed from using mainly direct monetary instruments such as credit ceilings and interest rate controls to a transitional or evolving stage (typically involving some interest rate liberalisation, the ending of credit controls and initial issues of Treasury bills and government bonds) and then to relying mainly on indirect monetary instruments – essentially open market operations in money and bond markets to set interest rates (eventually within some sort of corridor). By the end of the period only Bahrain, Egypt, Jordan, Kuwait, Morocco and Turkey were using mainly indirect instruments. However, even in most of these cases the money and bond markets were not well- or long-established and secondary activity was strictly limited. Thus the MENA countries have typically not developed the markets which could have allowed them to adopt MPFs which offer higher degrees of monetary control or, in particular, any kind of inflation targeting.

6 Monetary policy frameworks and political arrangements

[11] See also Rocha et al. (2011, ch. 9) for more (and more up to date) detail for Egypt, Jordan, Lebanon, Morocco and Tunisia, on the one hand, and the GCC countries on the other.

In the analysis by Cobham and Song (2019) of the determinants of countries' MPF choices, discussed in section 3, it was shown that inflation targets and intensive control MPFs were more likely in more democratic regimes, as measured in the Polity IV dataset,[12] where the scale goes from -10 to +10, where -10 to -6 indicates autocracy, -5 to +5 'anocracy' and 6 to 10 democracy. As Figure 14 shows, political arrangements in the MENA countries have changed relatively little over the period, and remain overwhelmingly undemocratic (less than 0) while those in the Latin American groups became largely democratic in the 1980s or early 1990s (with a continuing average of +7 to +8). Further light can be shed on the relationship between governance and MPFs by examining the average *polity2* score associated with each MPF, as in Tables 10 and 11.

The final row of Table 10 shows the average *polity2* score for the MENA countries by subperiod, negative throughout with a small improvement only over time, while the other rows show the scores associated with each MPF/subperiod. It turns out that among the MENA countries the target variable MPF associated with the least undemocratic governance is LSD (except for ITs with its very few cases, all in Turkey), followed by UD, while the degree of control variable MPF associated with the least undemocratic governance is substantial control. MDC, ERFix and rudimentary are perhaps unsurprisingly associated with the lowest scores, followed by ERTs and intermediate.

Table 11 provides the same information for the Latin American sample. Here the average *polity2* score is both much higher and rising more strongly (at least to the third subperiod). More striking is that among the target variable MPFs it is ITs that is associated with the most democratic governance (apart from MixedTs which is Costa Rica for a few years only),

[12] See Jaggers and Marshall (2009) and www.systemicpeace.org/polity/polity4x.htm.

followed by LSD, with MDC, ERFix and UD at the bottom. Among the degree of control MPFs, intensive is associated with the most democratic governance, followed by substantial, and then, well behind, intermediate and rudimentary.

7 Discussion and conclusions

The paper started by examining directly the nature of and trends in the monetary policy frameworks of MENA countries. It showed in terms of target variables that in the 1970s the most prominent MPFs were exchange rate fixes, multiple direct controls and unstructured discretion, but these gave way over time to exchange rate targeting and loosely structured discretion. In terms of the degree of control, MENA countries' MPFs initially were mainly intermediate control MPFs but by 1990 the most common MPFs were substantial control and that has continued. Moreover, MENA countries can roughly be divided into two groups, first the GCC countries plus Jordan, Lebanon and Morocco who have all put the emphasis on exchange rate targeting, and second the others who started with UD or MDC but graduated to LSD without – with the temporary exception of Turkey – going beyond that to inflation targeting. In terms of the degree of control the first group have moved towards intensive control, but only in the form of full exchange rate targeting, while the second remain in substantial control MPFs.

Section 2 provided some comparisons, first with 33 emerging economies and then with a sample of Latin American countries. While these groupings' MPFs were not so different in the early years, with high incidence of UD and ERFix and some MDC, they show much stronger change over the period with ERTs taking over from ERFix but losing out to LSD and to ITs (shifts which have been even stronger among advanced economies). They have also moved more clearly towards substantial and intensive control frameworks. Section 3, drawing on

Appendix 1, suggested that MENA countries' choices of MPFs seem to be different from those made by advanced and emerging economies, though it is not clear why.

Section 4 examined the economic performance (in terms of inflation and growth per head) associated with different MPFs in the different groupings. It showed that in the MENA countries ERTs and intensive control are associated with the best performance on inflation and the worst on growth, while among the emerging economy and Latin American groupings the lowest inflation and the highest growth are typically found under ITs. For these groupings inflation under ITs was slightly higher than inflation under ERTs in the MENA countries, but growth in the emerging and Latin American ITs countries was much better. Performance under LSD was also much better in these two groups in the last two subperiods than in the MENA countries.

Section 5 looked in more detail at the monetary policy infrastructure underpinning different MPFs. First, it showed that while the Latin American countries have made enormous changes over the period towards greater central bank independence and greater central bank transparency, most MENA countries have had little or no such change, and levels of independence and transparency remain very low. In addition the MENA central banks score very low on technical expertise. Second, it showed that the development of the financial markets which allow a wider choice of monetary policy framework has been slow in the MENA countries, and makes them in effect unable to choose MPFs such as inflation targeting. Moreover, with respect to the rather wide category of loosely structured discretion, it can be argued that the ability to operate monetary policy mainly through indirect instruments provides a distinction between what might be called 'LSD by default' and 'LSD by choice': the former represents cases where the monetary authorities do not (yet) have the capacity to pursue

specific quantitative targets, even if they wish to, whereas in the latter they have that capacity but choose instead to pursue a mix of targets which are not (at least publicly) quantified. Countries like India, for example, have had very long periods of LSD, but their monetary arrangements have evolved significantly within that, from the former to the latter (see the Individual country details for India at www.monetaryframeworks.org). In contrast the MENA countries operating LSD, with the exception of Turkey, Egypt and perhaps Tunisia, remain in the 'LSD by default' category.

Finally, Section 6 showed that the political arrangements of the MENA countries have changed remarkably little over the period, particularly compared to the Latin American sample. In addition, it turns out that the MPF associated with the most democratic political arrangements is ITs, followed by LSD.

Can these points be linked in a coherent argument? The answer is surely yes, if autocracy is taken as an exogenous starting point, determined elsewhere by the factors discussed in Elbadawi and Makdisi (2011; see also their 2017). Autocrats typically want to centralise all power in their own hands, so they do not like alternative, competing, power centres such as independent central banks. For the same reasons they do not like powerful autonomous financial markets which could limit their room for manoeuvre.[13] And they tend not to favour monetary policy frameworks which constrain their discretion.[14] Moreover, autocrats do not like to be held accountable, and accountability depends fundamentally on central bank transparency. Influencing expectations is an important aspect of modern central banking which

[13] 'Strong' leaders in democratic societies typically do not care for independent central banks or financial markets either, as is obvious from the reluctance of some western European countries to accept central bank independence, or, indeed, from recent attacks from US President Trump on the Federal Reserve.
[14] ERTs as operated by the GCC countries, in particular, retain elements of exchange rate fixing in the form of very narrow spreads and very high central bank control of the forex markets (on the back of government control of oil revenues), so the constraint on discretion involved here is less than might be thought.

can help the control of inflation and lower the unemployment cost of that control. Realising that influence requires central banks to explain what they have done in the past and why, what they are doing now and why, and what they would do and why under different circumstances in the future. But that in turn requires them to accept that outsiders have the right to criticise their actions and their thinking, and to accept that they need to respond to and engage with such criticism.[15] We can therefore argue that the political arrangements in (most of) the MENA countries have both directly been inimical to the adoption of 'constrained discretion' MPFs such as inflation targeting or 'LSD by choice', and indirectly pushed against the development of the institutions and markets which would make the adoption of such MPFs possible, thereby leading to the choice of ERTs and 'LSD by default', instead.[16] What that means is that the political arrangements have precluded the better economic performance which might be possible with different monetary policy frameworks (and different economic arrangements more widely).

In conclusion, the introduction of democracy in the MENA countries, with in particular more accountability, could in principle and over time enable the adoption of different monetary policy frameworks that hold out the prospect of clear improvements in economic performance which cannot be realised under the existing political arrangements.

[15] It is arguable that, at a more general level, it is the lack of accountability even more than the lack of democracy which is (politically, socially and economically) damaging in so many MENA countries.
[16] There are of course some costs involved in inflation targeting (or, indeed, 'LSD by choice') which need to be weighed against the benefits (Cobham, 2011), but it is also worth stressing that ERTs are clearly a sub-optimal monetary arrangement in which the pegging country is subject to shocks affecting and originating in the anchor country (with which its business cycle may be imperfectly synchronised) and has only limited ability to use monetary policy for its own purposes.

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Appendix 1: Predictions of MENA countries' MPF choices

by Mengdi Song

1 Methodology and Data

The results from Cobham and Song (2019) are used here to predict the choice of MPFs for the MENA countries, that is, to identify what MPFs these countries would choose if they behaved in the same way as other countries. Cobham and Song (2019) investigated the determinants of advanced and emerging countries' choices of monetary policy framework (MPF) for the period 1983-2014. They used a brief narrative focused on groupings of countries making similar choices to motivate an econometric analysis which also draws on previous work on the determinants of exchange rate regimes. Precise data descriptions and sources are presented in table A.1. A multinomial logit model is employed to predict the probability of a country doing a certain MPF. If a country has the highest predicted probability for doing some particular MPF, this MPF is referred to as the predicted choice of MPF. Here, the parameter estimates from Cobham and Song (2019) are used to predict the MPF choice of the MENA countries. The underlying assumption is that the MENA countries have the same considerations and put the same weight on determinants as advanced and emerging economies (with the emerging economy dummy included for all the MENA countries). The predictions are made both in terms of the target variable aggregation, where ERTs is the default category and the analysis predicts the likelihood of discretion (D, which combines UD, LSD and WSD), Mixed targets and inflation targeting (ITs); and in terms of the degree of control aggregation, where intermediate (inter) control is the default category and the analysis predicts the likelihood of substantial (subst) and intensive (intens) control MPFs.

Table A.1 Data description and sources (From Cobham and Song (2019))

Variable name	Measure	Calculation	Source

l_economy	Economic size	$\frac{1}{2}\left(\frac{GDP_i}{GDP_{all}}+\frac{Population_i}{Population_{all}}\right)>5\%$	WDI series
m_economy	Economic size	$5\%\geq\frac{1}{2}\left(\frac{GDP_i}{GDP_{all}}+\frac{Population_i}{Population_{all}}\right)>2\%$	
s_economy	Economic size (Default category)	$2\%\geq\left(\frac{GDP_i}{GDP_{all}}+\frac{Population_i}{Population_{all}}\right)>1\%$	
vs_economy	Economic size	$\left(\frac{GDP_i}{GDP_{all}}+\frac{Population_i}{Population_{all}}\right)\leq 1\%$	
tradeopen_avg	Trade openness	(import+export)/GDP	WDI series
anchor_network_gdp	Strength of anchor network	Largest ratio of country' trade with each of the main anchor blocs	Direction of Trade(IMF), CEPII
fuel_exporter	Fuel exporter	Dummy variable = 1 for countries with fuel exports equal to more than 20% of their total merchandise exports	WDI series
inf_avg_d10	Past inflation	Dummy variable = 1 for countries with historical peak inflation higher than 10%.	WDI series, IFS
inf_avg_d20	Past inflation	Dummy variable = 1 for countries with historical peak inflation higher than 20%.	
fmd_avg	Financial market depth	Index measure	Svirydzenka (2016)
caopen_avg	Capital account openness	Index measure	Chinn & Ito (2008)
cbi_weighted_avg	Central bank independence	Index measure	Garriga (2016)
polity_avg	Political institution	Index measure	Jaggers & Marshall (2009)
emerging	Emerging economy	Dummy variable for emerging economies	Cobham (2018)

Table A.2 shows the direction and significance level of the various coefficients from Cobham and Song (2019).

Table A.2 Main results from Cobham and Song (2019)

	D	Mixed	ITs	substantial	intensive
very small economy	-***	-***	-***	-**	-**
medium economy	-*	+	-*	+	-**
large economy	+	+	+	-	-***
trade openness	+*	+	+***	-	-
anchor network / GDP	-***	-	-***	-	-
past inflation 10%	+	-*	-***	+***	+***
past inflation 20%	+***	+***	+***	-	-***
financial markets depth	+***	+	+***	+***	+***
capital account openness	-***	-***	+	+***	+***
central bank independence	+	+	-	-	-
polity	-	+***	+***	-***	-
emerging	+***	-*	+*	-***	-***

fuel_exporter	+***	-	-	-**	-***

Notes: */**/*** indicate significance at the 10%/5%/1% levels.

2 Predictions

The data availability is poor for developing economies, and hence the coverage of predictions here is incomplete. Figures A.1 and A.2 show the trends of chosen and predicted MPFs for each aggregation. The solid lines show the number of countries choosing a particular MPF in a given year and the dashed lines show the numbers predicted. The predictions and the actual choices diverge sharply.

For the target variable aggregation, many MENA countries are predicted to do Mixed MPFs, but most of them choose ERT and D. This could be due to the fact that many countries have historical inflation higher than 20% and low capital account openness. Among MENA countries, Turkey is the only one to have adopted IT, and the model successfully predicts the adoption of IT by Turkey.

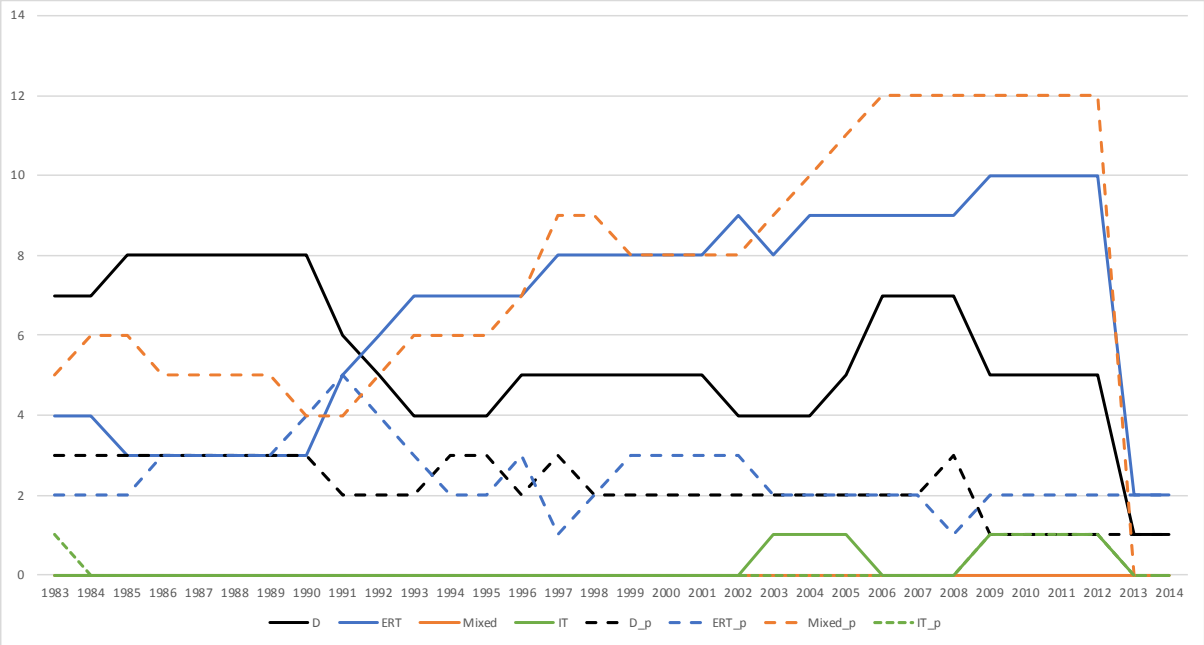


Figure A.1 Predicted versus actual, by target variable

For the degree of control aggregation, many MENA countries are predicted to do inter MPFs. This could be due to the fact that many of these countries are very small economies, with historical inflation higher than 20%, low financial market depth and low capital account openness, as well as being non-advanced economies and fuel exporters. In reality, most MENA economies choose subst MPFs, and intens MPFs have also grown in popularity since the 2000s.

Overall, the MENA economies are predicted to do mixed MPFs with inter level of monetary control, but the popular choices are ERT or D MPFs with intens or subst degree of monetary control. It is clear that the MENA economies must have had different considerations in mind when choosing their MPFs from the countries considered in Cobham and Song (2019).

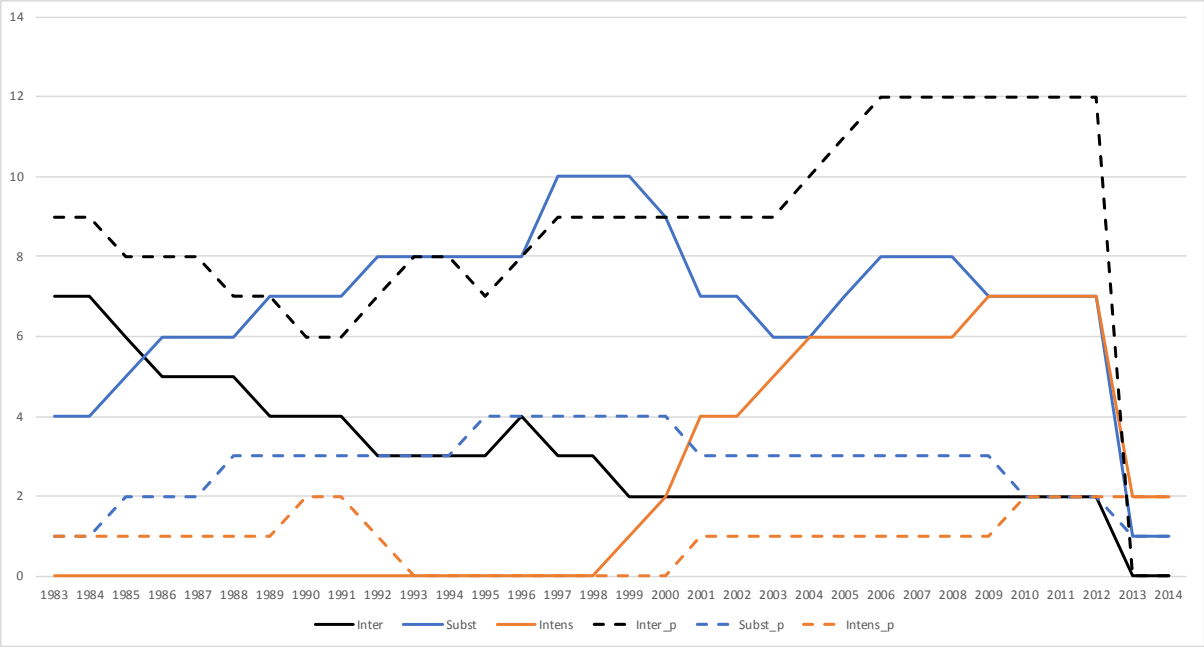


Figure A.2 Predicted versus actual, by degree of control

It is now possible to examine in more detail how well the model can explain countries' choices of MPFs and where the predictions are in error. Figure A.3 shows the percentage of accurate predictions over the years and the average. The model performs poorly with an average accuracy of 41%, but better prediction for the degree of control than for the target variable

aggregation. For the years 2013 and 2014, the accuracy is abnormally high, but that is due to the low number of observations in these two years. Cobham and Song (2019) able to predict three quarters of countries' choices of MPF for advanced and emerging economies, and there was no obvious systematic pattern in the errors. However, here for the MENA economies the accuracy is significantly lower.

Figure A.4 shows the proportion of correct predictions by country. For some countries, the model can predict their degrees of monetary control but not the target variables, and for others the opposite. Since Egypt, Jordan, Morocco and Turkey are in Cobham and Song (2019) as well, the predictions for these countries are in-sample predictions and the accuracy is higher. For out-of-sample predictions, the model performs poorly for the MENA countries.

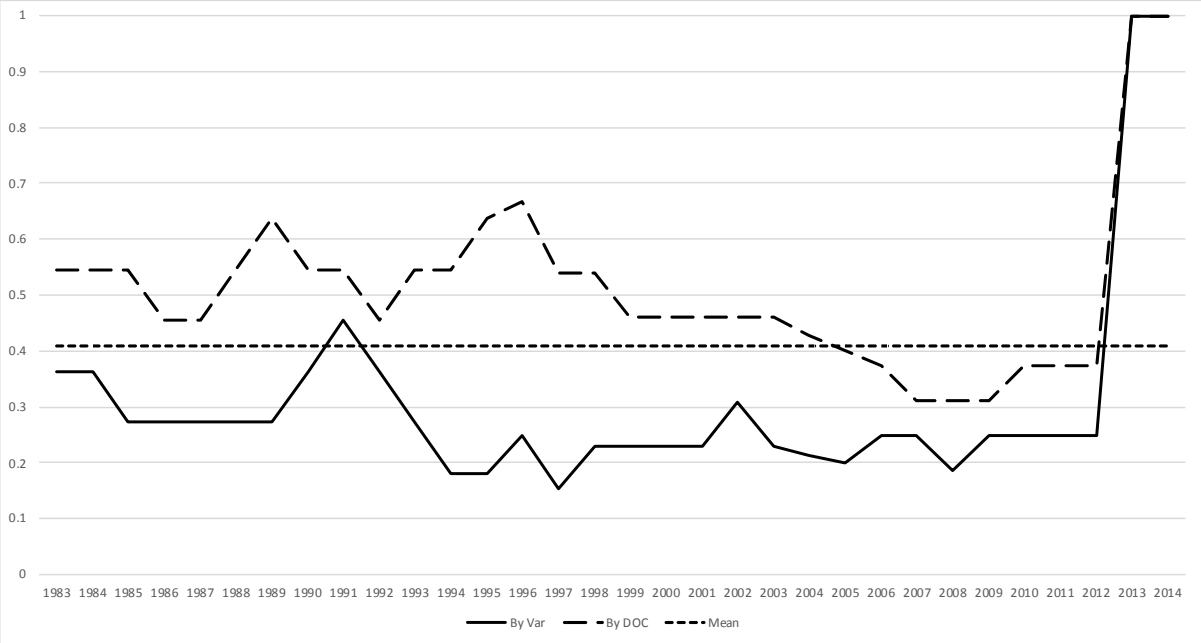


Figure A.3 Prediction accuracy by year

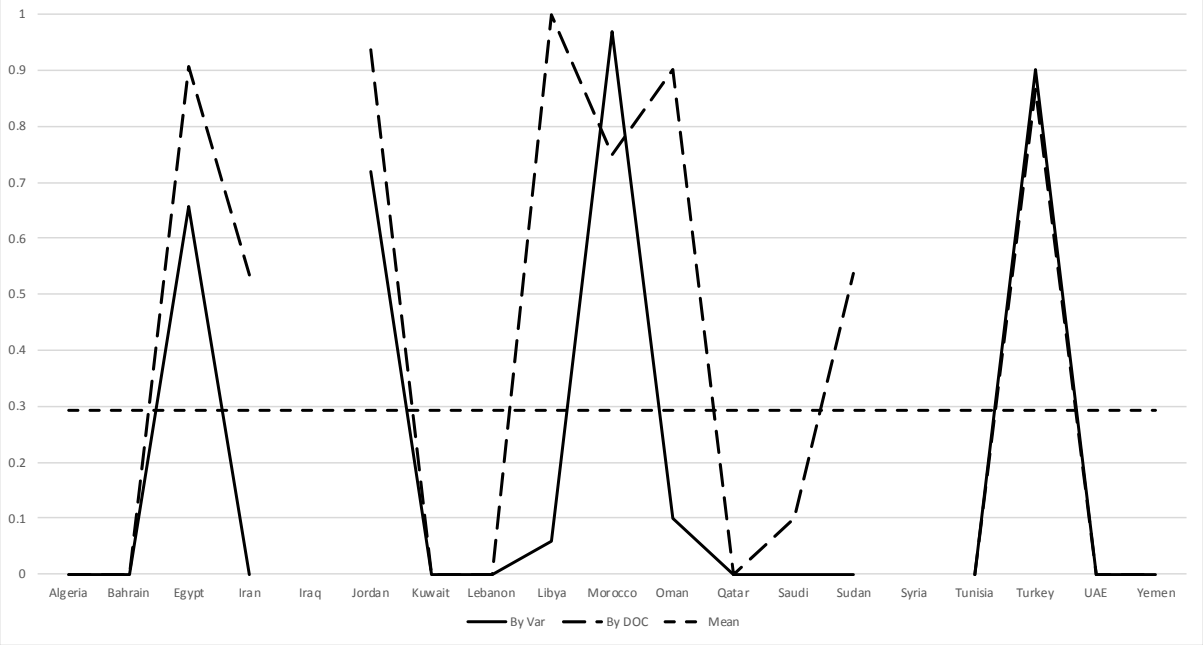


Figure A.4 Prediction accuracy by country

Table 1: Categories used in classification of MENA MPFs

monetary policy framework, full menu	**target variable aggregation category**	**degree of control aggregation category**
multiple direct controls MDC	MDC	rudimentary
augmented exchange rate fix AERF	exchange rate fixes ERFix	intermediate
pure currency board PCB	ERFix	intermediate
unstructured discretion UD	UD	intermediate
augmented currency board ACB	exchange rate targets ERTs	substantial
loose exchange rate targeting LERT	ERTs	substantial
loose converging exchange rate targeting LCERT	ERTs	substantial
loose inflation targeting LIT	inflation targets ITs	substantial
loose converging inflation targeting LCIT	ITs	substantial
loosely structured discretion LSD	LSD	substantial
full exchange rate targeting FERT	ERTs	intensive

Note: for full definitions and other categories see www.monetaryframeworks.org or Cobham (2019).

Table 2: Incidence of MPFs in MENA countries by category and period

	1974-2017		1974-84		1985-1998		1999-2007		2008-2017	
MPF	no.	%	no.	%	no.	%	no.	%	no.	%
full menu										
X	16		11		5					
MDC	51	6.22	28	14.14	19	7.28	4	2.34	0	0.00
AERF	131	15.98	68	34.34	32	12.26	15	8.77	16	8.42
PCB	6	0.73	6	3.03	0	0	0	0	0	0
ACB	22	2.68	14	7.07	8	3.07	0	0	0	0
UD	124	15.12	35	17.68	63	24.14	12	7.02	14	7.37
LERT	110	13.41	15	7.58	63	24.14	22	12.87	10	5.26
LCERT	6	0.73	0	0	6	2.30	0	0	0	0
LIT	5	0.61	0	0	0	0	0	0	5	2.63
LCIT	3	0.37	0	0	0	0	3	1.75	0	0
LSD	227	27.68	32	16.16	59	22.61	61	35.67	75	39.47
FERT	135	16.46	0	0.00	11	4.21	54	31.58	70	36.84
total	836	100	209	100	266	100	171	100	190	100
target variable aggregation										
MDC	51	6.22	28	14.14	19	7.28	4	2.34	0	0
ERFix	137	16.71	74	37.37	32	12.26	15	8.77	16	8.42
ERTs	273	33.29	29	14.65	88	33.72	76	44.44	80	42.11
ITs	8	0.98	0	0	0	0	3	1.75	5	2.63
UD	124	15.12	35	17.68	63	24.14	12	7.02	14	7.37
LSD	227	27.68	32	16.16	59	22.61	61	35.67	75	39.47
degree of control aggregation										
rudimentary	51	6.22	28	14.14	19	7.28	4	2.34	0	0.00
intermediate	261	31.83	109	55.05	95	36.40	27	15.79	30	15.79
substantial	373	45.49	61	30.81	136	52.11	86	50.29	90	47.37
intensive	135	16.46	0	0	11	4.21	54	31.58	70	36.84

Note: percentages are of total minus the Xs, which are cases where the country does not (yet) exist as a separate entity (here, Yemen before 1990).

Table 3: Incidence of MPFs in emerging economies by category and period

	1974-2017		1974-84		1985-1998		1999-2007		2008-2017	
MPF	no.	%	no.	%	no.	%	no.	%	no.	%
full menu										
X	148		88		60		0		0	
MDC	70	5.37	57	20.73	13	3.23	0	0	0	0
AERF	96	7.36	75	27.27	21	5.22	0	0	0	0
ACB	71	5.44	0	0	21	5.22	30	10.10	20	6.06
LERT	60	4.60	14	5.09	34	8.46	12	4.04	0	0.00
FERT	92	7.06	3	1.09	19	4.73	44	14.81	26	7.88
LCIT	63	4.83	0	0	12	2.99	33	11.11	18	5.45
LIT	80	6.13	0	0	0	0	31	10.44	49	14.85
FIT	96	7.36	0	0	0	0	24	8.08	72	21.82
MwERT	4	0.31	0	0	1	0.25	3	1.01	0	0.00
IwERT	4	0.31	0	0	2	0.50	2	0.67	0	0.00
ERwIT	6	0.46	0	0	3	0.75	3	1.01	0	0.00
I&ERT	4	0.31	0	0	0	0	3	1.01	1	0.30
UD	175	13.42	77	28.00	84	20.90	6	2.02	8	2.42
LSD	417	31.98	49	17.82	192	47.76	103	34.68	73	22.12
WSD	12	0.92	0	0	0	0	2	0.67	10	3.03
CU	54	4.14	0	0	0	0	1	0.34	53	16.06
total	1452	100	363	100	462	100	297	100	330	100
target variable aggregation										
direct controls	70	5.37	57	20.73	13	3.23	0	0	0	0
ERFix	96	7.36	75	27.27	21	5.22	0	0	0	0
ERTs	223	17.10	17	6.18	74	18.41	86	28.96	46	13.94
ITs	239	18.33	0	0	12	2.99	88	29.63	139	42.12
mixed targets	18	1.38	0	0	6	1.49	11	3.70	1	0.30
UD	175	13.42	77	28.00	84	20.90	6	2.02	8	2.42
LSD	417	31.98	49	17.82	192	47.76	103	34.68	73	22.12
WSD	12	0.92	0	0	0	0	2	0.67	10	3.03
no nat MPF	54	4.14	0	0	0	0	1	0.34	53	16.06
degree of control aggregation										
rudimentary	70	5.37	57	20.73	13	3.23	0	0	0	0
intermediate	271	20.78	152	55.27	105	26.12	6	2.02	8	2.42
substantial	709	54.37	63	22.91	265	65.92	220	74.07	161	48.79
intensive	200	15.34	3	1.09	19	4.73	70	23.57	108	32.73
no nat MPF	54	4.14	0	0	0	0	1	0.34	53	16.06

Table 4: Incidence of MPFs in Latin American sample by category and period

	1974-2017		1974-84		1985-1998		1999-2007		2008-2017	
MPF	no.	%	no.	%	no.	%	no.	%	no.	%
full menu										
MDC	3	0.34	3	1.36	0	0	0	0	0	0
AERF	147	16.70	92	41.82	17	6.07	18	10	20	10
PCB	3	0.34	3	1.36	0	0	0	0	0	0
ACB	11	1.25	0	0	8	2.86	3	1.67	0	0
UD	209	23.75	91	41.36	93	33.21	14	7.78	11	5.5
LERT	5	0.57	0	0	0	0	0	0	5	2.5
LIT	41	4.66	0	0	0	0	8	4.44	33	16.5
LCIT	14	1.59	0	0	8	2.86	6	3.33	0	0
IwERT	5	0.57	0	0	0	0	0	0	5	2.5
LSD	302	34.32	17	7.73	140	50	86	47.78	59	29.5
UASC	79	8.98	11	5.00	14	5	24	13.33	30	15
FERT	3	0.34	3	1.36	0	0	0	0	0	0
FIT	58	6.59	0	0	0	0	21	11.67	37	18.5
total	880	100	220	100	280	100	180	100	200	100
target variable aggregation										
MDC	3	0.34	3	1.36	0	0	0	0	0	0
ERFix	150	17.05	95	43.18	17	6.07	18	10	20	10
ERTs	19	2.16	3	1.36	8	2.86	3	1.67	5	2.50
ITs	113	12.84	0	0	8	2.86	35	19.44	70	35.00
MixTs	5	0.57	0	0	0	0.00	0	0.00	5	2.50
UD	209	23.75	91	41.36	93	33.21	14	7.78	11	5.50
LSD	302	34.32	17	7.73	140	50.00	86	47.78	59	29.50
no nat MPF	79	8.98	11	5	14	5.00	24	13.33	30	15.00
degree of control aggregation										
rudimentary	3	0.34	3	1.36	0	0	0	0	0	0
intermediate	359	40.80	186	84.55	110	39.29	32	17.78	31	15.50
substantial	378	42.95	17	7.73	156	55.71	103	57.22	102	51.00
intensive	61	6.93	3	1.36	0	0	21	11.67	37	18.50
no nat MPF	79	8.98	11	5	14	5	24	13.33	30	15.00

Table 5: Economic performance under different MPFs, MENA countries

	1974-84		1985-98		1999-2007		2008-17		1974-2017	
MPF	inflation	growth	inflation	growth	inflation	growth	inflation	growth	inflation	growth
MDC	10.61	2.66	98.85	3.78	13.31	0.61			42.47	3.31
ERFix	9.90	3.42	2.58	1.22	0.56	2.27	4.42	2.36	6.51	2.55
ERTs	7.62	-4.68	3.29	0.94	2.31	1.18	2.85	-0.38	3.23	0.12
ITs					12.79	6.60	7.53	4.10	9.51	5.04
UD	26.37	1.46	30.98	1.04	11.90	2.09	20.73	-7.81	27.39	0.83
LSD	12.59	0.63	24.97	1.92	11.17	2.84	10.53	1.69	14.69	1.97
rudimentary	10.61	2.66	98.85	3.78	13.31	0.61			42.47	3.31
intermediate	16.30	2.61	23.88	1.10	6.00	2.19	6.23	-0.73	17.39	1.69
substantial	9.57	-1.96	12.92	1.51	8.83	2.61	9.64	1.20	10.68	1.27
intensive			1.08	-0.01	2.61	1.13	2.66	0.10	2.58	0.50
all MPFs	13.99	1.40	23.43	1.62	7.00	2.02	6.53	0.53	13.45	1.40

Table 6: Economic performance under different MPFs, emerging economies

	1974-84		1985-98		1999-2007		2008-17		1974-2017	
MPF	inflation	growth	inflation	growth	inflation	growth	inflation	growth	inflation	growth
MDC	32.29	4.18	4.41	4.30	..	..	..	..	0.00	0.00
ERFix	10.67	4.55	4.11	4.25	..	..	..	..	..	..
ERTs	7.77	3.98	12.63	4.27	2.96	4.62	3.03	0.80	6.52	3.64
ITs	..	..	10.42	4.45	4.15	3.64	4.21	2.25	4.20	2.95
Mixed Ts	..	..	10.74	3.29	5.00	5.25	4.60	5.54	6.89	4.61
UD	91.07	1.35	342.66	0.15	40.89	2.19	79.26	-0.31	212.14	0.80
LSD	17.29	1.84	78.73	2.01	10.09	4.09	8.31	2.44	42.98	2.58
WSD	..	..	..	..	2.82	5.54	2.58	2.81	2.62	3.26
no nat MPF	..	..	..	..	3.61	6.35	1.43	1.87	1.47	1.95
rudimentary	32.29	4.18	4.41	4.30	..	..	..	..	26.89	4.20
intermediate	49.20	2.92	277.03	1.12	40.89	2.19	79.26	-0.31	137.38	2.18
substantial	14.68	2.40	60.92	2.64	6.97	4.11	6.06	2.19	27.84	2.98
intensive	18.23	2.23	7.56	3.49	2.67	4.34	2.73	2.11	3.40	3.02
all MPFs	37.75	2.88	112.15	2.25	6.63	4.13	5.77	2.07	45.27	2.78

Table 7: Economic performance under different MPFs, Latin American sample

	1974-84		1985-98		1999-2007		2008-17		1974-2017	
MPF	inflation	growth	inflation	growth	inflation	growth	inflation	growth	inflation	growth
MDC		-0.41								-0.41
ERFix	11.96	0.74	4.07	3.22	7.56	2.76	6.88	1.28	10.85	1.37
ERTs	18.18	2.41		3.42		-3.93	6.98	0.55	11.18	1.76
ITs			11.03	4.26	4.20	2.92	4.12	2.08	4.63	2.60
MixedTs							4.96	2.75	4.96	2.75
UD	79.86	0.56	364.23	-0.04	26.15	-0.02	57.63	0.94	208.36	0.36
LSD	34.45	-1.36	105.09	1.43	7.74	1.87	7.56	1.99	56.00	1.60
nonat	6.54	1.74	0.92	1.30	8.54	2.46	3.08	2.70	4.83	2.25
rude		-0.41								-0.41
inter	48.32	0.65	355.44	0.51	19.06	1.54	32.25	1.18	144.73	0.79
subst	34.45	-1.36	99.39	1.70	7.28	1.63	6.32	1.84	45.87	1.69
intens	18.18	2.41			3.73	3.98	3.67	2.49	4.40	3.00
all MPFs	43.34	0.56	189.02	1.44	8.62	2.00	8.14	2.00	71.31	1.46

Table 8: Independence, transparency and proxies for expertise, MENA central banks

	central bank independence 2012	central bank transparency 2014	monthly/quarterly monetary policy or inflation reports 2018	research papers published 2014-18	forecasts published 2018
	[1]	[2]	[3]	[4]	[5]
Algeria	0.49	n/a	none	0	none
Bahrain	0.50	4	none	0	none
Egypt	0.52	4	yes	0	inflation (fan)
Iran	0.51	4	none	0	none
Iraq	0.70	2	none	0	none
Jordan	0.51	2.5	none	0	none
Kuwait	0.40	2.5	none	0	none
Lebanon	0.36	1.5	none	0	none
Libya	0.31	2	none	0	none
Morocco	0.62	n/a	yes	5	growth, inflation (fans)
Oman	0.50	3	none	0	none
Qatar	0.51	3.5	none	0	none
Saudi Arabia	0.42	2	none	9	none
Sudan	0.22	3	none	0	none
Syria	0.40	0.5	*	*	*
Tunisia	0.57	6	none	1	none
Turkey	0.86	10	yes	20	growth, inflation
UAE	0.54	3	yes**	0	inflation**
Yemen	0.54	2	none	0	none
Colombia	0.73	6.5	yes	27	growth, inflation (fans)

Notes: [3]: *analytical* reports which discuss reasons for past developments and decisions and likely future developments, rather than statistical bulletins with descriptive material only; [4]: *analytical* research papers, not descriptive notes; [5]: forecasts of more than 1 or 2 quarters ahead (fan indicates fanchart forecasts). * Central Bank of Syria website could not be accessed. ** UAE central bank has a quarterly economic review with limited monetary policy content but a basic forecast of inflation for the next calendar year.

Sources: [1]: Garriga (20) and associated dataset; [2]: Dincer and Eichengreen (20) and associated dataset; [3]-[5]: searches of central bank websites carried out on 26.07.19.

Table 9: The development of monetary instruments in MENA countries

	transition from mainly direct instruments to evolving	transition from evolving to mainly indirect instruments	key sources
Algeria	1989	--	RED 1991 pp23-4; RED 1994 pp29-32; SI 2014 pp3-15
Bahrain	1990	1995	RED 1992 pp30-32; RED 1996 pp34-5
Egypt	1991	2005	RED 1992 pp33-4, Selim (2011, pp245-6)
Iran	2015	--	SI 2017 pp11-15; SI 2018 pp3-9
Iraq	--	--	
Jordan	1996	2000	SI 1998 pp82-3, 96-102; Maziad (2011, pp93-7)
Kuwait	1988	1993	RED 1990 pp37-9; RED 1992 pp24; RED 1994 pp35-8
Lebanon	1993	--	SI 1997 p59; SR 1997 pp18-19; SR 1999 pp26-7; SR 2016 pp11, 21-3
Libya	2008	--	SR 2009 p11; SR 2011 pp12
Morocco	1991	1995	RED 1991 chIV; SI 1996 section I.5; RED 2000 chV
Oman	1991	--	RED 1988 p26-8; RED 1994 pp38-40; SI 2011 pp18-27
Qatar	2000	--	SR 2002 pp13-15; SI Dec 2012 pp22-7
Saudi	1985	--	RED 1985 p42; RED 1990 pp38-42; SI 2016 pp25-30
Sudan	1999	--	RED 2001 pp34-6; SI 2013 pp2-11
Syria	--	--	SI 2006 pp30-35; SR 2010 p12
Tunisia	1988	--	*Tunisia: Recent Experience in Structural Adjustment* (1990), pp3-10; SR 2008 pp9-10; *SR 2015 p19*
Turkey	1986	1989	RED 1988 pp21-2; RED 1990 pp103-5; RED 1993 pp21-2
UAE	1987	--	RED 1988 p31; RED 1994 pp35-6; SR 2018 p15
Yemen	1996	--	RED 1997 pp33-4; SI 2003 pp32-4; SR 2013 pp17, 43-4

Table 10: Monetary policy frameworks and governance, MENA countries

MPF	1974-84	1985-98	1999-2007	2008-17	1974-2017
MDC	-8.75	-9.00	-9.00		-8.86
ERFix	-9.15	-9.05	-7.80	-6.31	-8.64
ERTs	-8.72	-7.32	-6.08	-5.66	-6.62
ITs			7.00	8.20	7.75
UD	-2.74	-4.64	-4.83	-4.36	-4.15
LSD	-5.38	-2.40	-2.05	-0.96	-2.21
rudimentary	-8.75	-9.00	-9.00		-8.86
intermediate	-7.09	-6.21	-6.48	-5.40	-6.51
substantial	-6.97	-5.09	-2.85	-1.12	-3.89
intensive		-8.36	-5.94	-5.47	-5.90
all MPFs	-7.29	-6.10	-4.86	-3.44	-5.52

Note: numbers represent average polity2 scores of countries in each subperiod/classification category, where -10 = autocracy and + 10 full democracy.

Table 11: Monetary policy frameworks and governance, Latin American sample

MPF	1974-84	1985-98	1999-2007	2008-17	1974-2017
MDC	1.00				1.00
ERFix	0.11	1.20	4.06	4.20	1.27
ERTs	-6.00	7.00	8.00	5.00	4.58
ITs		8.00	8.26	8.47	8.37
MixedTs				10.00	10.00
UD	-2.20	4.27	6.57	1.73	1.69
LSD	1.53	5.92	7.65	7.44	6.48
nonat	-6.18	3.40	7.42	7.30	4.89
rude	1.00				1.00
inter	-1.02	3.79	5.16	3.32	1.52
subst	1.53	6.08	7.71	7.75	6.78
intens	-6.00		8.43	8.54	7.79
all MPFs	-1.19	5.55	7.68	7.52	4.76

Note: numbers represent average polity2 scores of countries in each subperiod/classification category, where -10 = autocracy and + 10 full democracy.

Figure 1: Incidence of MPFs in MENA countries, full menu

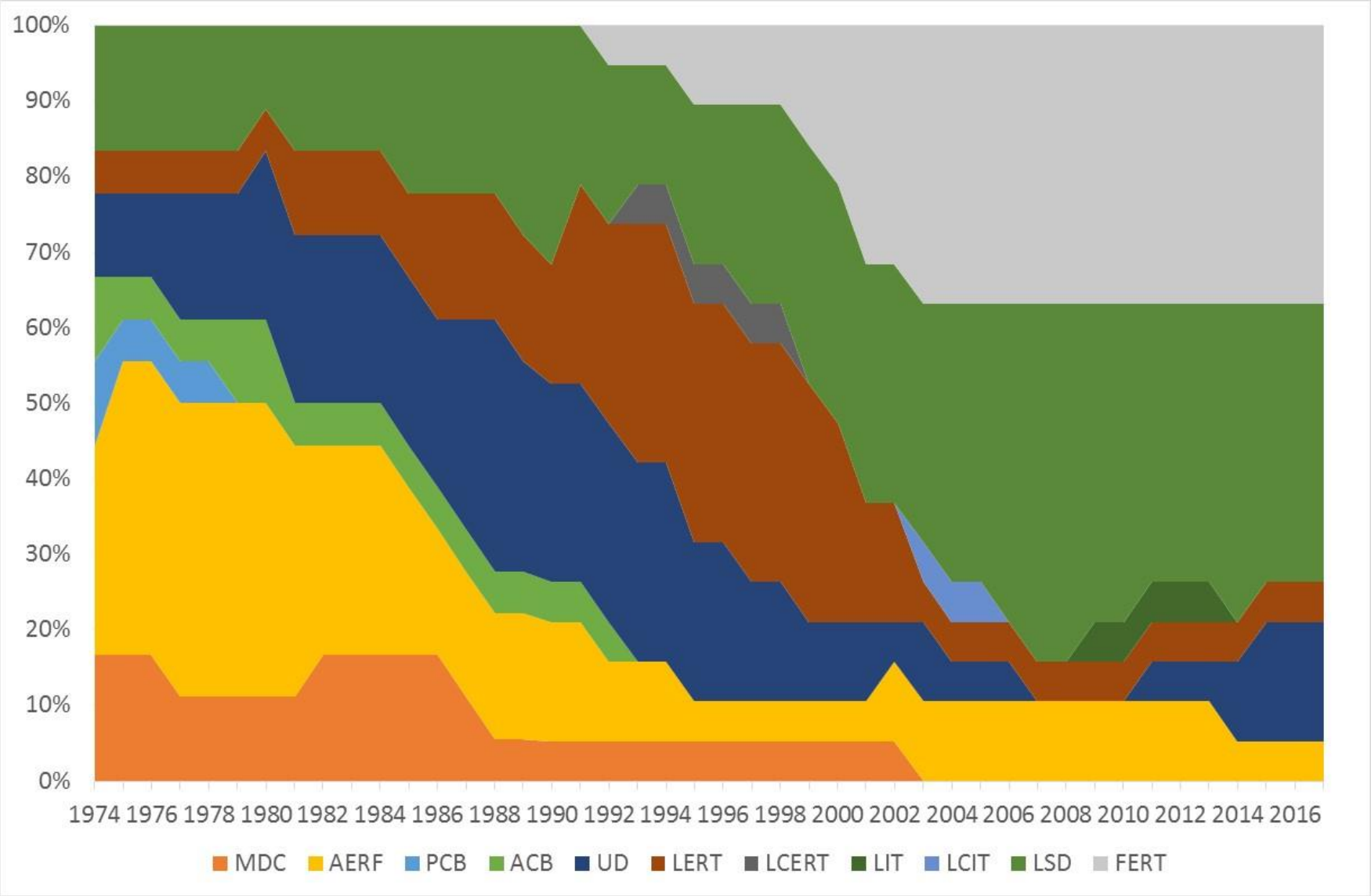
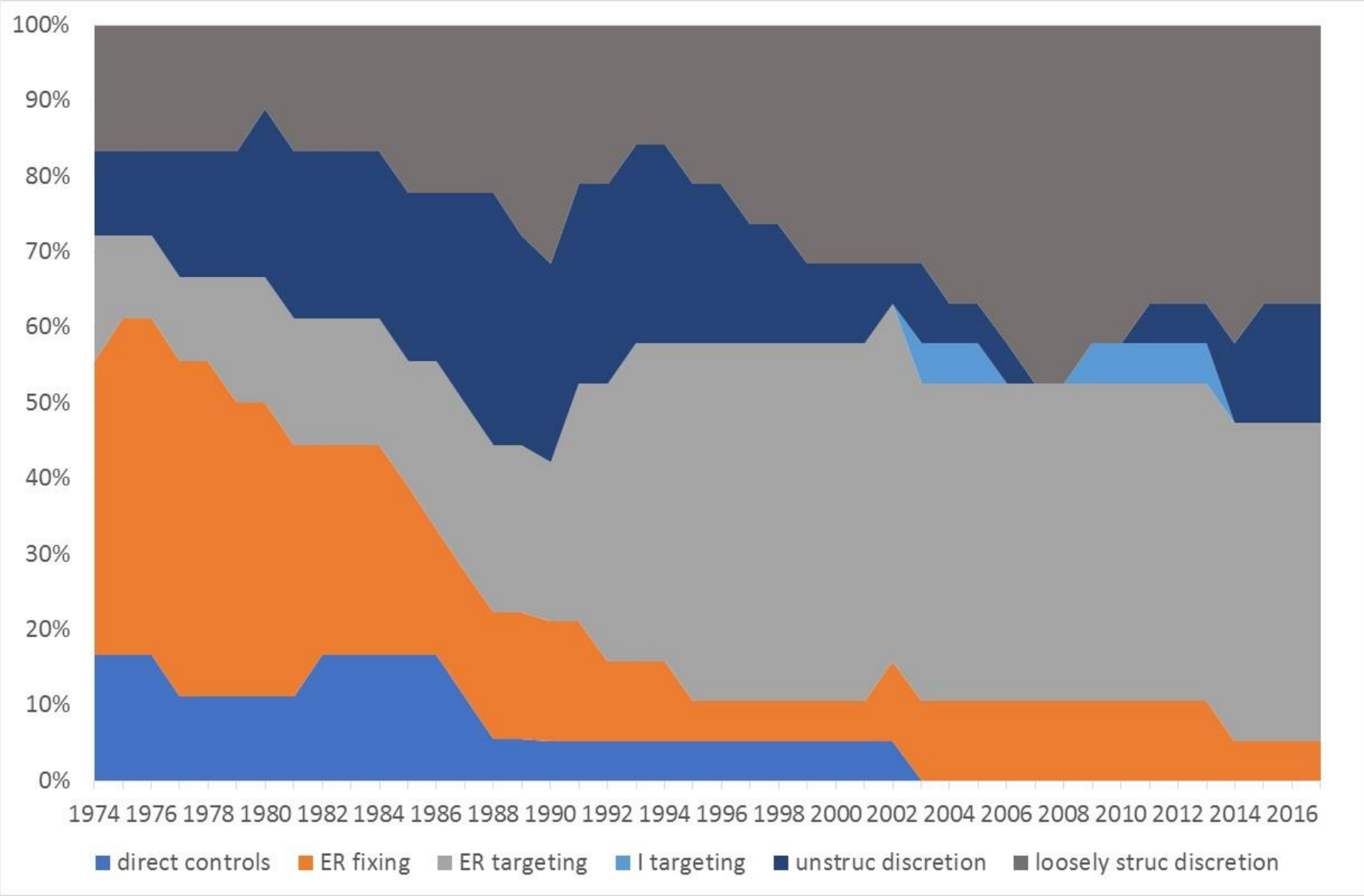


Figure 2: Incidence of MPFs in MENA countries, target variable aggregation



Figures 3: Incidence of MPFs in MENA countries, degree of control aggregation

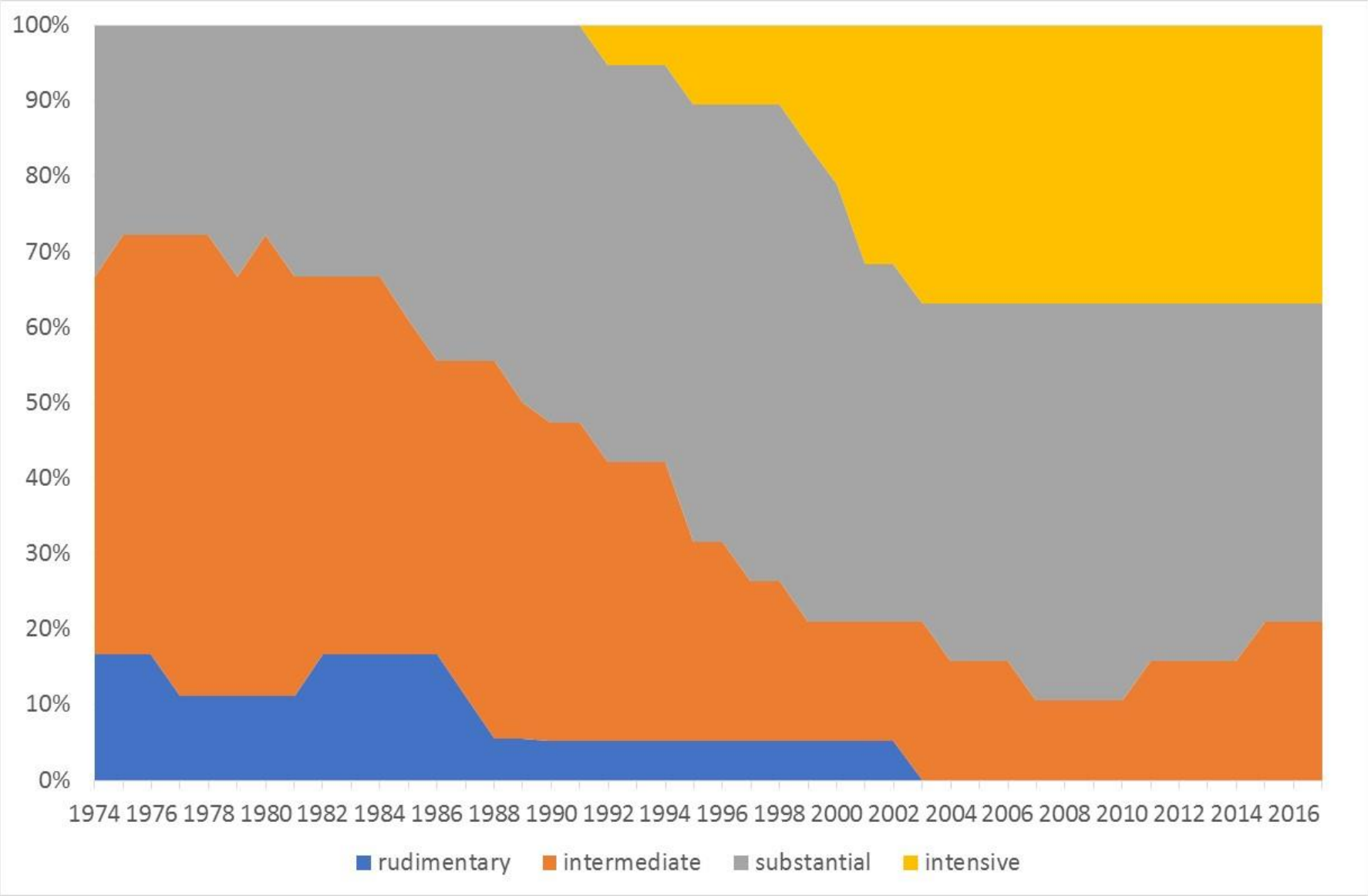


Figure 4: Incidence of MPFs in emerging economies, target variable aggregation

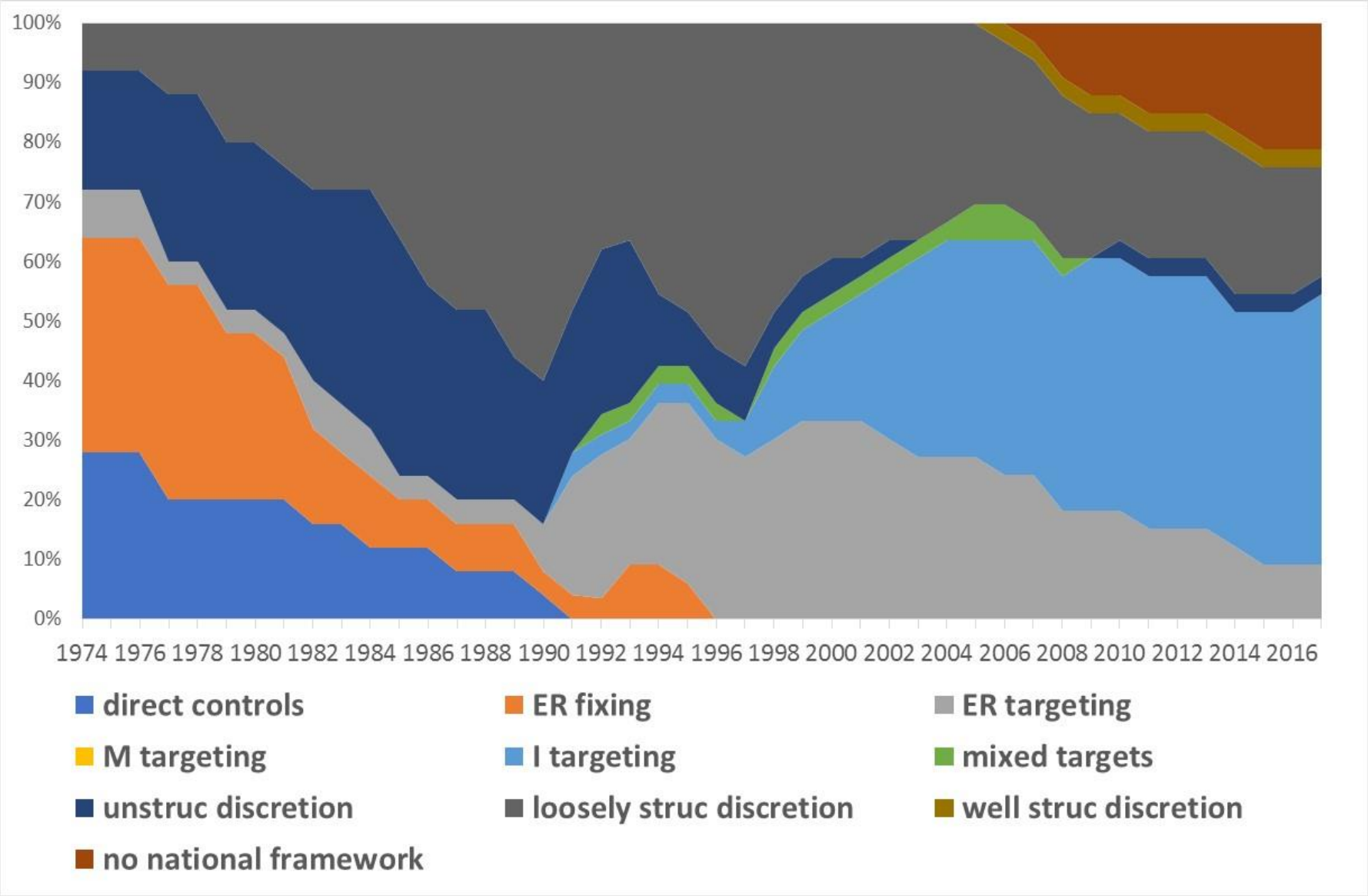


Figure 5: Incidence of MPFs in emerging economies, degree of control aggregation

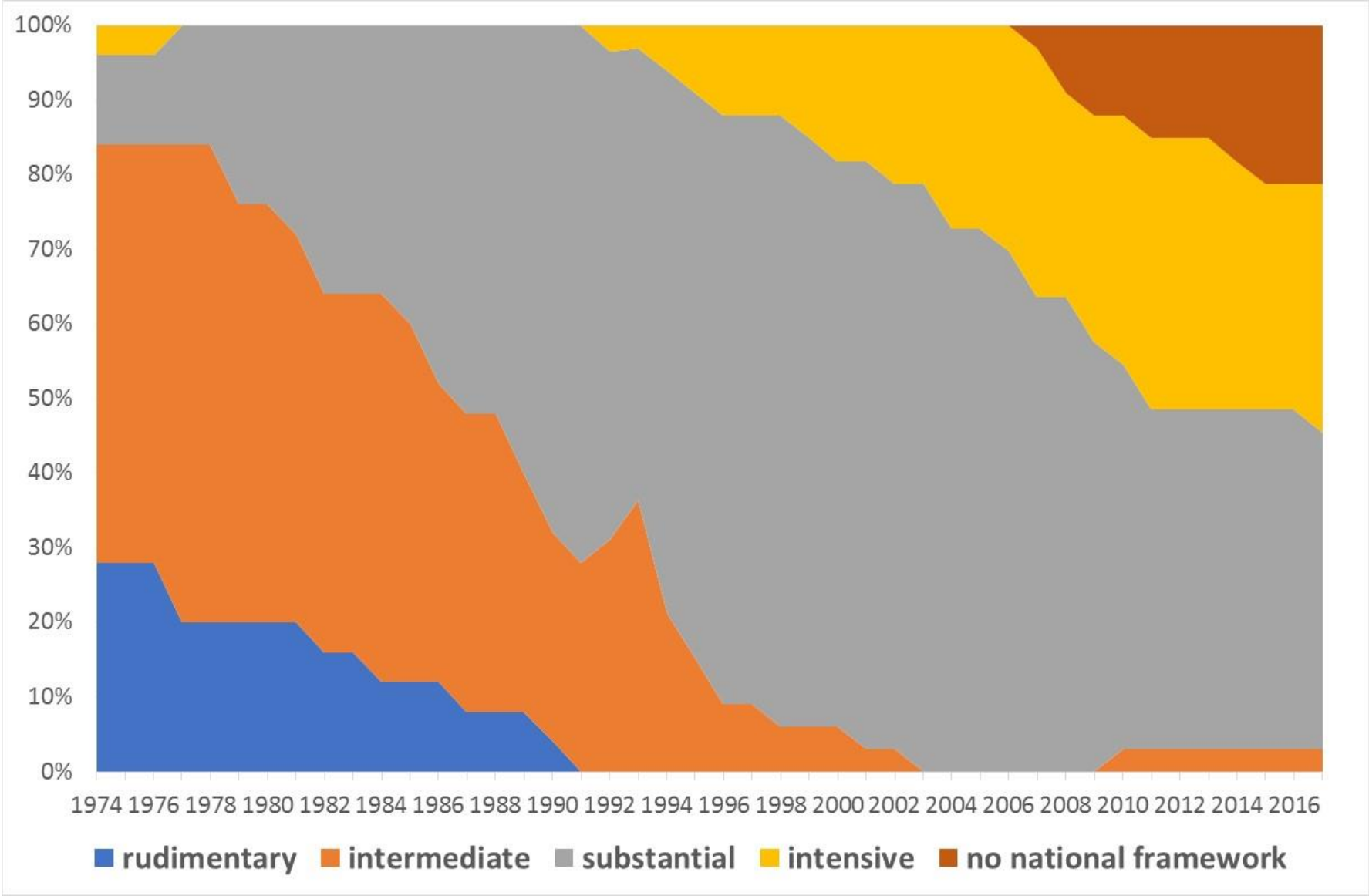


Figure 6: Incidence of MPFs in Latin American sample, target variable aggregation

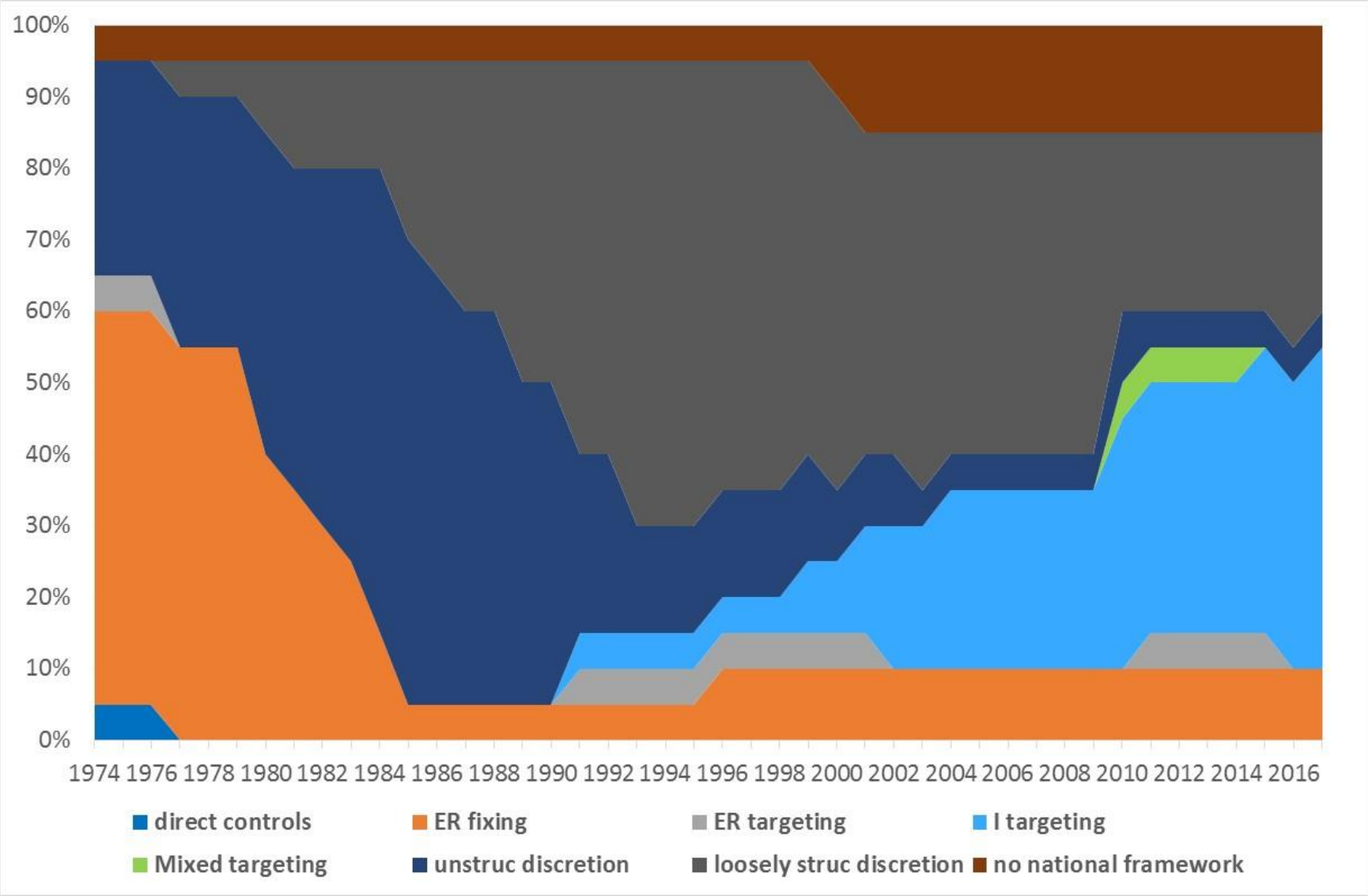


Figure 7: Incidence of MPFs in Latin American sample, degree of control aggregation

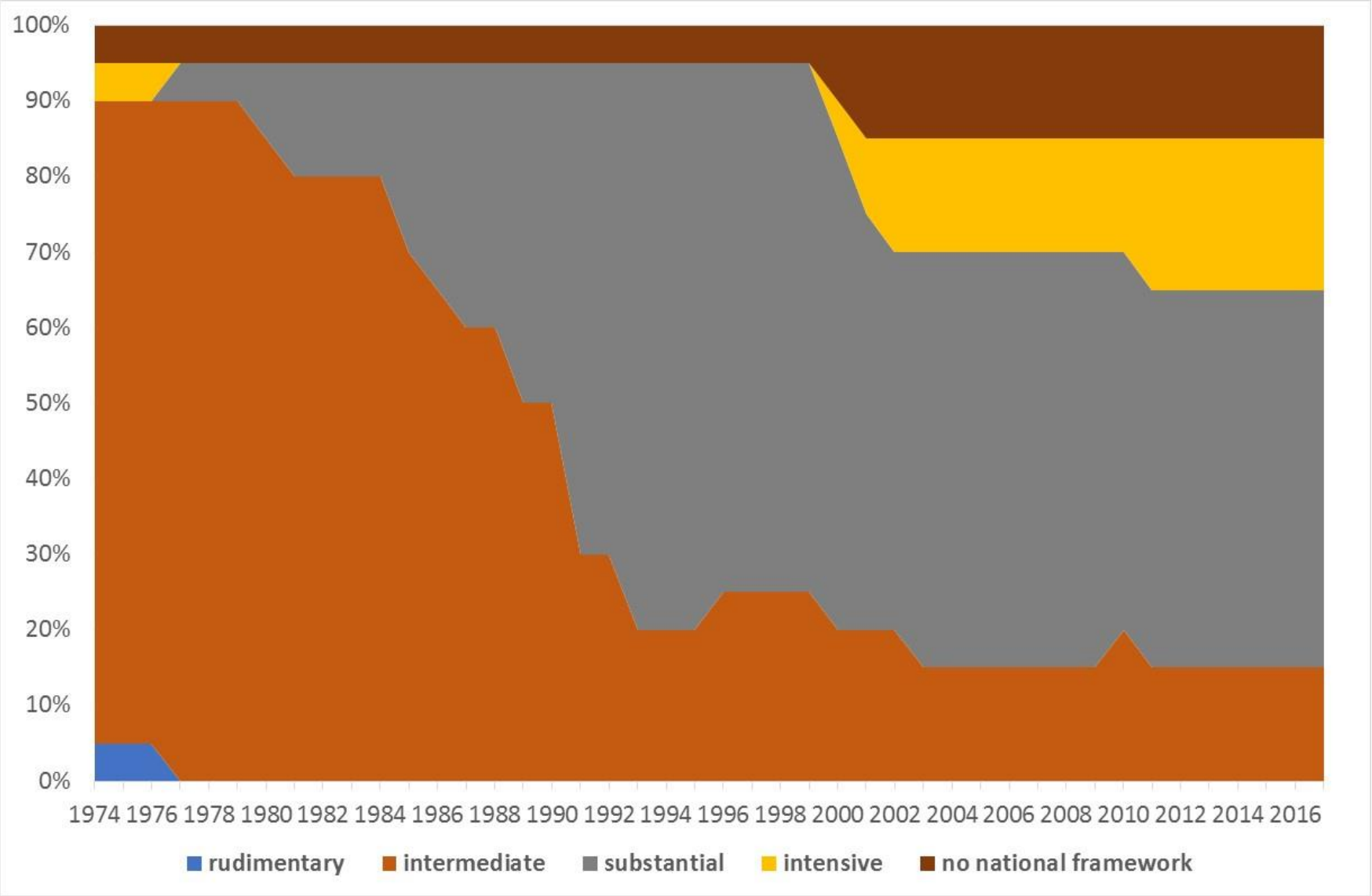


Figure 8: Central bank independence in MENA ERTs countries

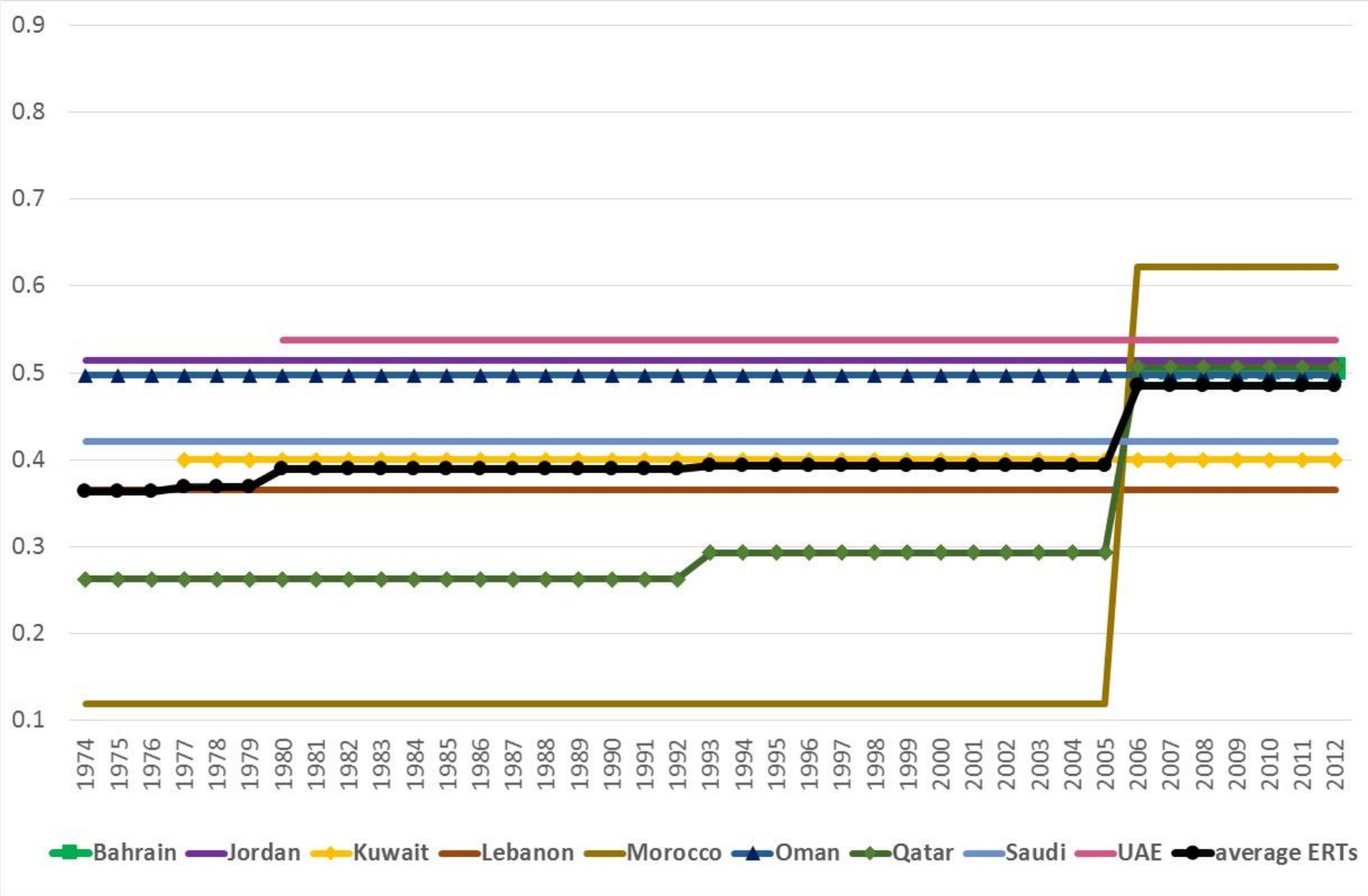


Figure 9: Central bank independence in MENA countries with other MPFs

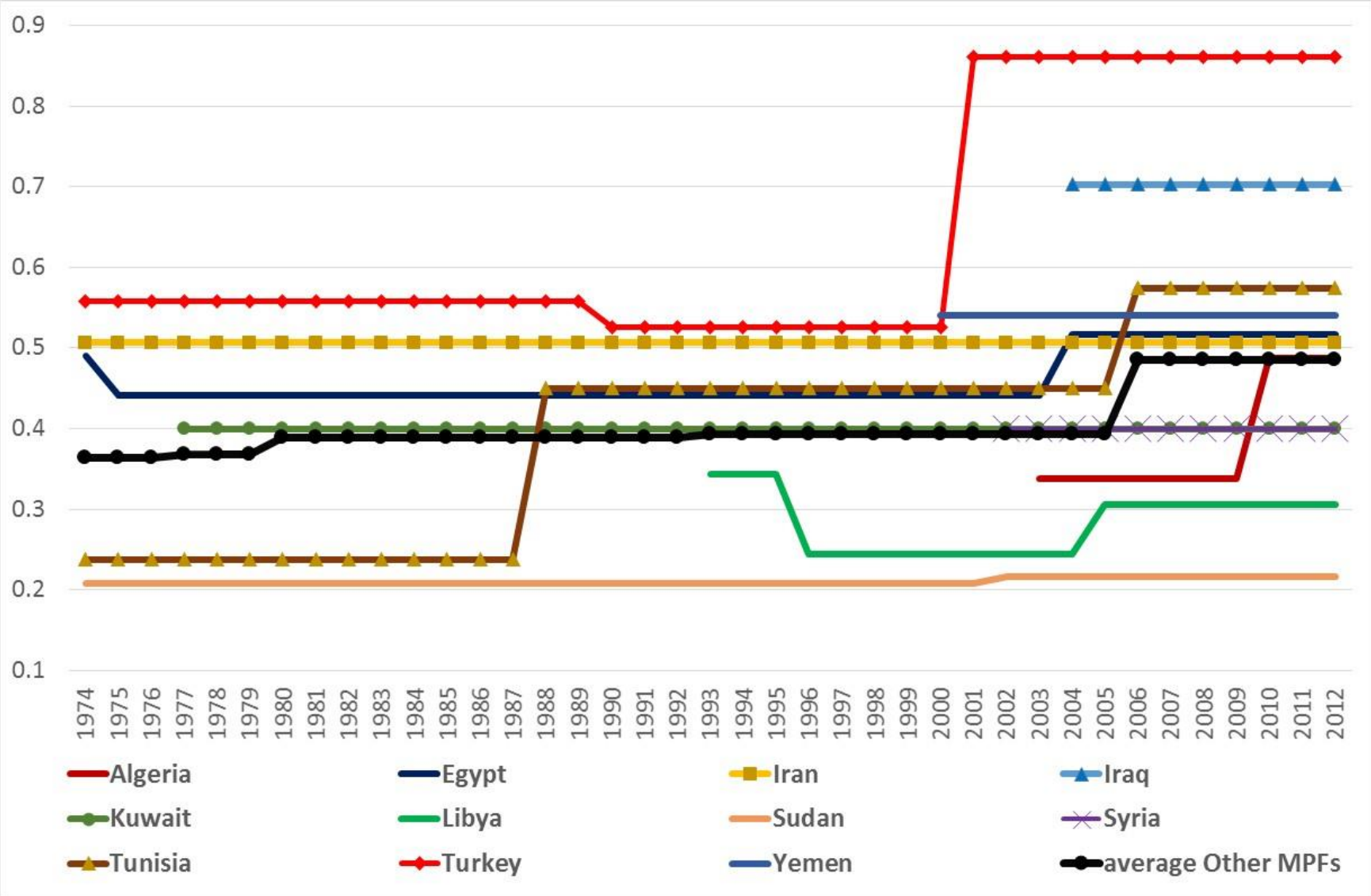


Figure 10: Central bank independence in MENA and Latin American groups

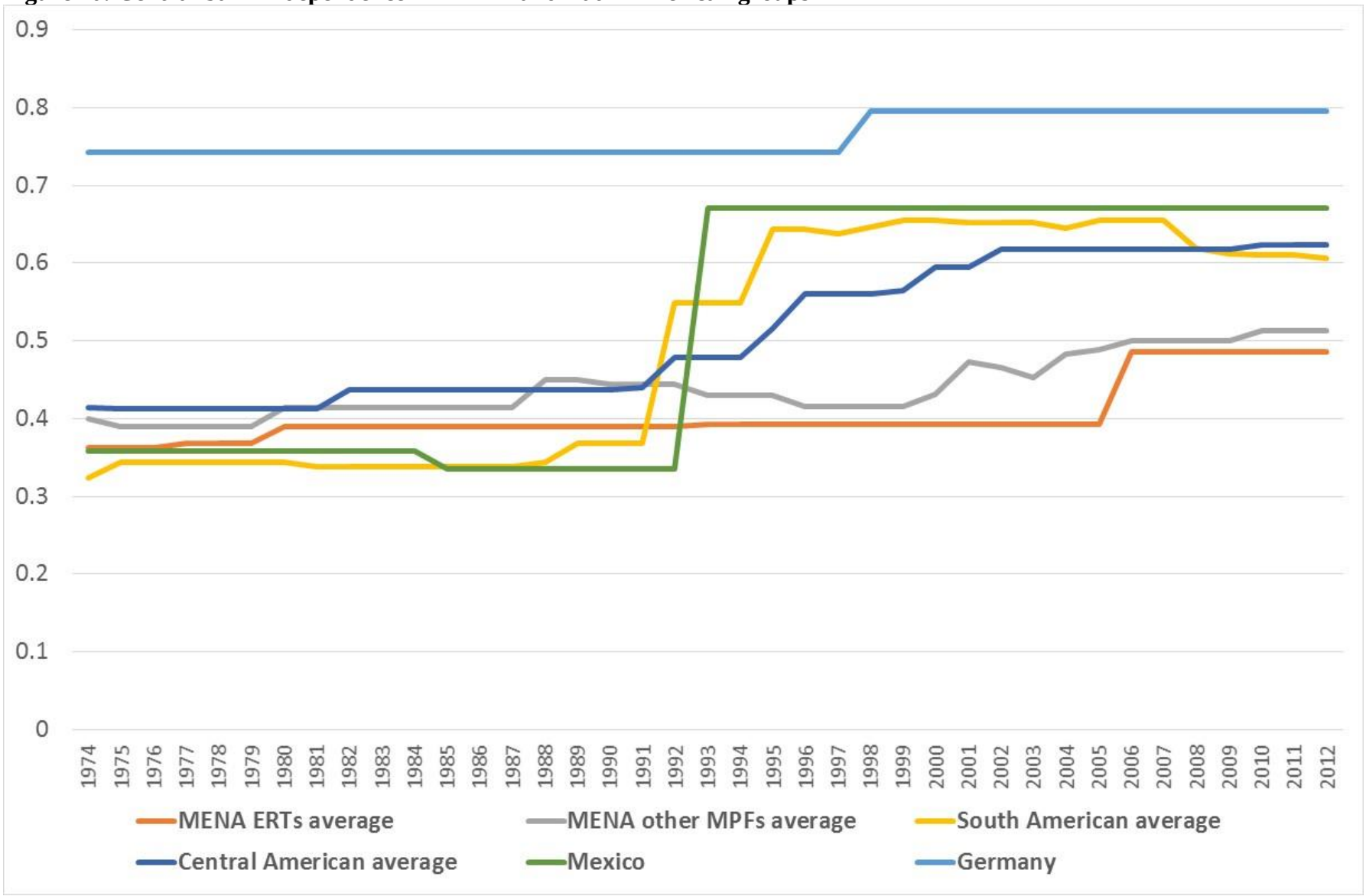


Figure 11: Central bank transparency in MENA ERTs countries

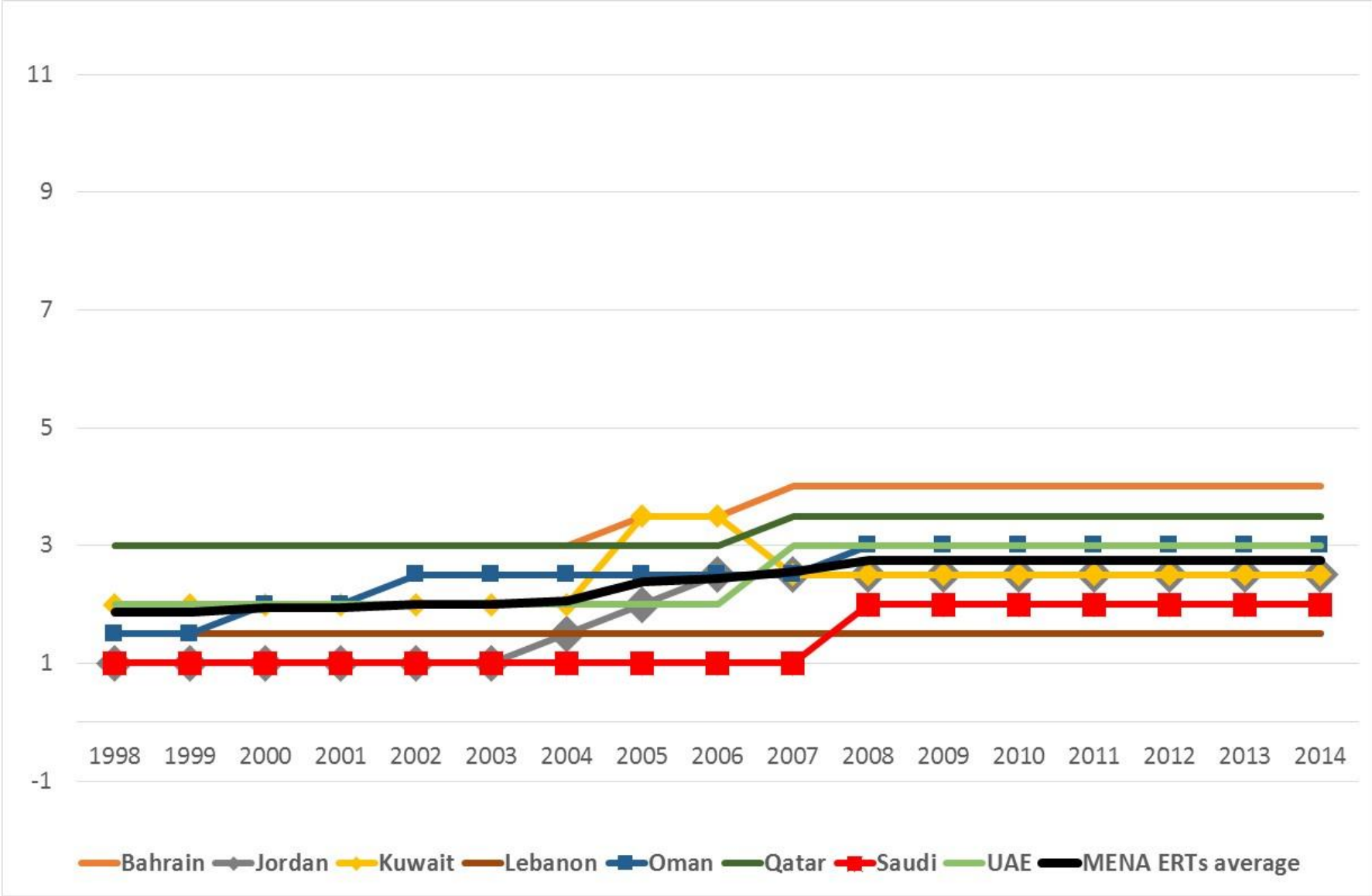


Figure 12: Central bank transparency in MENA countries with other MPFs

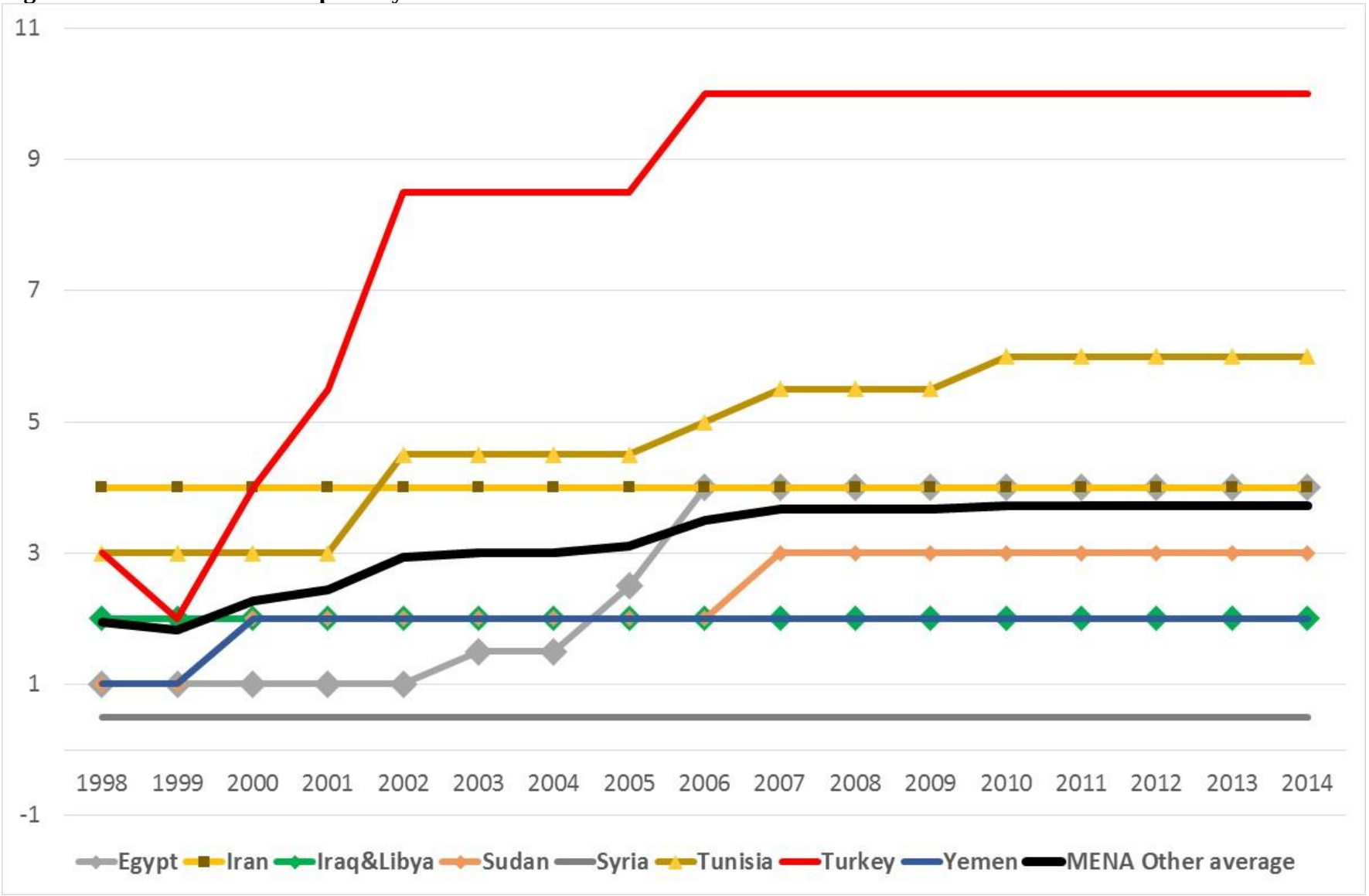


Figure 13: Central bank transparency in MENA and Latin American groups

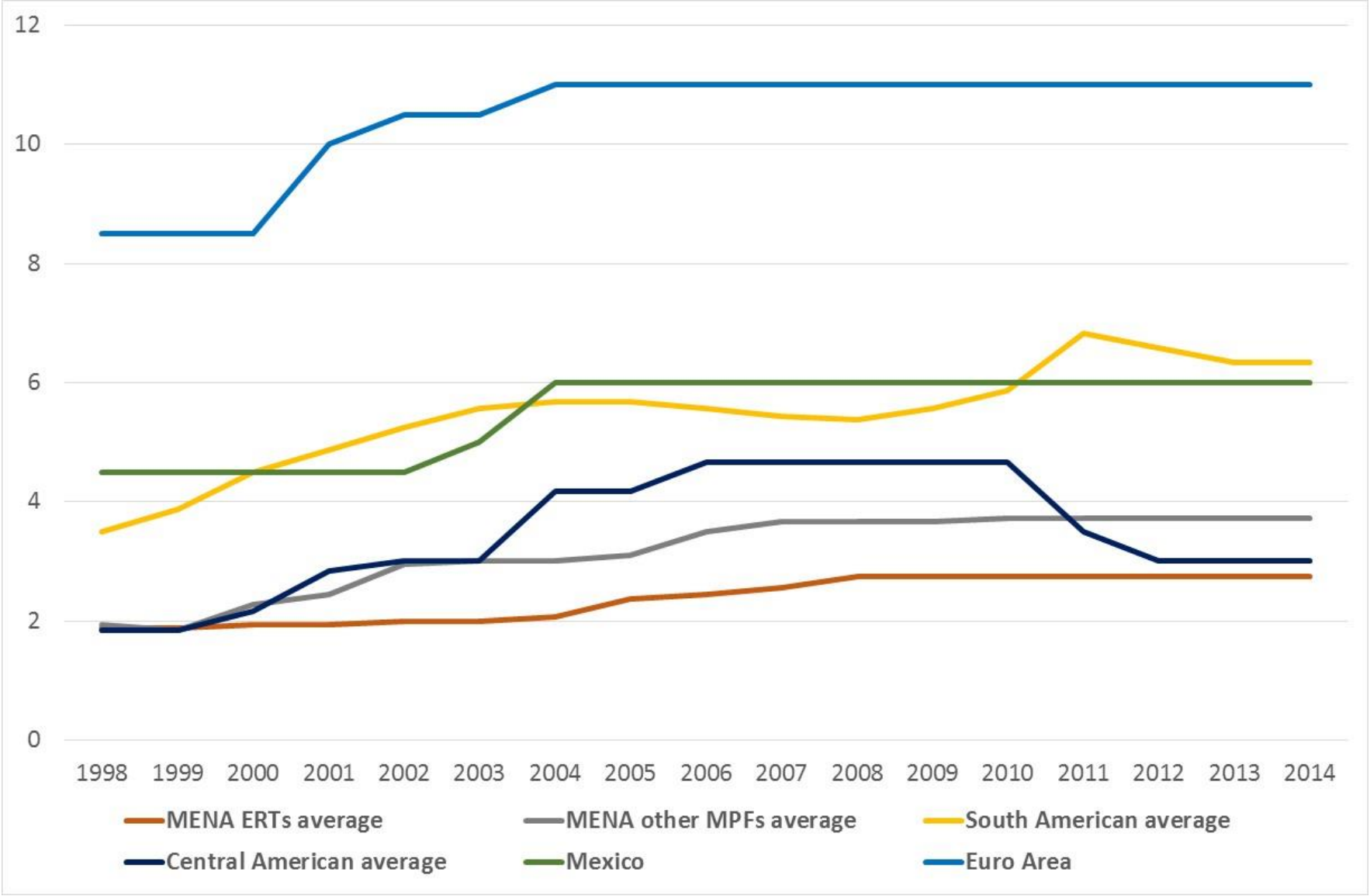


Figure 14: Average polity2 scores for MENA and Latin American groups