

Monetary policy frameworks since Bretton Woods, across the world and its regions

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Abstract

The Comprehensive Monetary Policy Framework (CMPF) project, which considers de jure and de facto, domestic (money, inflation) and external (exchange rate), monetary policy targets, has now classified 179 countries/currency areas from 1974 to 2017. This means that it is now possible to track the evolution of monetary policy frameworks across the world and its regions. This paper outlines the methodology of the classification, presents the broad trends at global, regional and sub-regional levels, discusses the economic performance associated with different frameworks and the policy implications thereof, and identifies scope for further work.

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I certify that I have the right to deposit the contribution with MPRA.

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1 Introduction

The Comprehensive Monetary Policy Framework project, which classifies countries' monetary policy frameworks on the basis of both domestic (money, inflation) and external (exchange rate) targets, and both de jure announcements and de facto attainments of targets, is now largely complete. The aim of the project has been to produce a resource for researchers undertaking empirical analysis of monetary and macroeconomic issues, whether that involved identifying the trends over time in different groups or regions of countries, or examining the operation and effects of particular frameworks such as inflation targeting, or just taking account of the impact of different frameworks in investigations of, say, the effects of the global financial crisis. The monetary policy frameworks (MPFs) of 179 countries and/or currency areas have now been classified from 1974 to 2017. That means that, for the first time, it is possible to track their evolution across the world and its regions, as is done below.

When the project started, there were two detailed classifications of exchange rate regimes available, by Reinhart and Rogoff (2004, see also Ilzetki, Reinhart and Rogoff, 2019) and Levy Yeyati and Sturzenegger (2005, see also their 2016), both of which emphasised de facto rather than de jure arrangements following the distinction made by Calvo and Reinhart (2002) between what countries say and what they do. But there was at that time no such detailed classification of monetary policy arrangements, little emphasis on de facto as opposed to de jure monetary policy targets and no classification which covered both domestic and exchange rate arrangements.¹ The Comprehensive Monetary Policy Framework (CMPF) project (Cobham, 2021; working paper version 2018) was designed to fill these gaps by bringing together de facto as well as de jure information on both domestic (money, inflation) and external (exchange rate) targets.

The classification was published (at <https://monetaryframeworks.org/>) first for a sample of 60 advanced and emerging economies. Since then, the Middle East and North Africa, Latin America, Asia, Africa, and most recently the Caribbean, Other Europe (Albania and countries which came out of the USSR and Yugoslavia in the early 1990s) and Caucasus and Central Asia (other countries from the USSR) have been included. The classification is therefore now essentially complete: it covers 179 countries/currency areas, that is nearly all countries/currency areas with population above 250,000,² for the 44 years 1974-2017 (and it will be updated in due course).

This paper explains briefly how the classification works, reports on the trends it reveals, first for the world as a whole and then for a set of regional groupings of countries, considers the economic performance associated with different frameworks and the relevant policy implications, and discusses the scope for further work using the classification. Section 2 outlines the classification. Section 3 presents the main trends revealed by the classification at the global level. Section 4 presents the main trends for different regions, provides a more detailed breakdown by countries and discusses key factors in policymakers' choices of MPFs. Section 5 outlines the results presented elsewhere for economic performance under different MPFs in advanced and emerging economies, and takes a preliminary look at the economic performance in the various regions and groups of developing and emerging economies. Section 6 concludes. An Appendix contrasts the CMPF classification with the rather different IAPOC (Independence and Accountability, Policy and Operational Strategy, and Communications) index recently developed by Unsal et al. (2022). The Data Appendix contains a range of tables on the incidence of different MPFs and on the economic performance associated with different MPFs, on the basis of which the various figures have been constructed.

2 The CMPF classification

The focus of the CMPF classification is on the objectives of monetary policy, and the contexts that condition those objectives and their pursuit. In the words of the original definition, “Monetary policy frameworks can be thought of as combinations of the objectives of the monetary authorities (including their understanding of the trade-offs between those objectives) and the set of constraints and conventions—the former more binding, the latter more matters of established usage—within which specific (conjunctural) monetary policy decisions are made. The constraints and conventions that are relevant here include the rules or disciplines to which the authorities are subject (voluntarily or involuntarily), the nature of the financial and monetary markets and institutions in existence, the understandings (on the parts of the monetary authorities and of the society) of key macroeconomic relationships, and the political environment within which the monetary authorities operate.” (Cobham, 2018, p6).

The classification proceeds, therefore, by asking (i) whether, in a given country/year, there was a specific target for some variable; (ii) if so, for what variable; (iii) whether the target was narrow or wide; and (iv) whether the target was met, using precise criteria for (iii) and (iv) (set out in Tables 2 and 3 of Cobham, 2021) such that targets can be ‘loose’ or ‘full’, depending on the nature of the targets specified and the degree of attainment.³ Where no such targets exist or any target is not attained the MPF is in most cases ‘discretion’, but the experience of implementing the classification suggested a useful distinction, which depends on the effectiveness of the instruments available to the monetary authorities as well as on the coherence and precision of their objectives, as between ‘unstructured’, ‘loosely structured’ and ‘well structured’ discretion.⁴ Figure 1 shows the algorithm for identifying these categories in the classification (together they amount to 62% of the categories for the whole period, and

between 63% and 69% for the years since 1999, when currency union membership amounted to another 14% to 18%).

Experience also suggested a distinction between an exchange rate ‘fix’, where the exchange rate is set within zero or very narrow margins by a monetary authority which dominates forex transactions, and an exchange rate ‘target’ where the authority tries to control the rate, within less narrow margins, in an autonomous forex market by adjusting its policy interest rate and by communicating its intentions and expectations as well as by sales or purchases of foreign exchange. The classification then differentiates between ‘pure’ exchange rate fixes where no actual monetary policy is implemented and ‘augmented’ fixes where some element of policy is in operation. The ‘full menu’ of MPFs is completed by the inclusion of multiple direct controls (the monetary arrangements in command economies), currency boards (also divided between pure and augmented⁵), currency union membership and use of another sovereign’s currency (dollarisation or euroisation). The latter two categories imply no national monetary policy framework and are omitted from the MPF aggregations discussed below where, instead, the MPFs of the currency unions themselves are included. Finally, on the principle that where further information is readily available from the investigation then it should be provided (even if it is not of enormous interest), the classification distinguishes between stationary and converging targets and between a range of different types of mixed targets (targets for two or more out of the three of exchange rate, money, and inflation).

The overall result is a set of 32 different possible MPFs, as set out in Table 1. This is clearly too many for most purposes, and it should be noted that three of them have zero incidence in this dataset: full converging exchange rate targeting, money with inflation targeting and inflation with money targeting. However, the project itself suggests two aggregations of MPFs

– by target variable, on the one hand, and by the degree of monetary control involved, on the other – and leaves it open to the user to implement any other preferred aggregation. As Table 2 shows, the target variable (TV) aggregation essentially puts together each of the different types of inflation or exchange rate or monetary or mixed targets into a single category of inflation or exchange rate or monetary or mixed targeting, and retains the three types of discretion. The degree of control (DOC) aggregation puts all ‘loose’ targeting (of whatever variable) and loosely structured discretion in a ‘substantial’ category and all ‘full’ targeting and well structured discretion in an ‘intensive’ category, and groups other MPFs into ‘rudimentary’ and ‘intermediate’.

The main sources for the classification are the Article IV reports from the IMF’s regular (mostly annual or biennial) consultations with its members (including Recent Economic Developments and Selected Issues papers as well as Staff Reports⁶), supplemented in some cases by central bank data, central bank papers and academic papers of various kinds. All sources have to be read critically, but experience confirms that the information required – on targets and outturns, on instruments and the financial markets required for their operations, and on policymakers’ preferences and arguments – can in most cases be obtained from these sources.⁷

The CMPF website <https://monetaryframeworks.org/> makes a wide range of information available and accessible. The ‘Classifications’ page allows the user to look at and/or download spreadsheets that list the MPF classification by country/year, in terms of the ‘full menu’ of 32 frameworks or the TV or DOC aggregations, for the whole (global) sample or for various groupings. The ‘Countries’ page provides links to tables for each country which explain in note form the targets and their attainment and hence the rationale for the classification, including –

especially for developing countries in the loosely structured discretion LSD category – significant detail on the instruments available (and the financial markets involved), together with relevant page references to the IMF and other sources. The ‘Visualisations’ page allows the user to bring up graphs of the MPFs for different groups of countries, for different aggregations of the MPFs, and weighted by number or GDP or population of countries.

3 The global trends

Tables 3-4 show the distribution of MPFs across the world, in terms of the full 32-category menu and the TV and DOC aggregations, using four subperiods: 1974-84 (post-Bretton Woods), 1985-98 (Great Moderation but pre-EMU), 1999-2007 (Great Moderation with EMU) and 2008-17 (Global Financial Crisis, GFC, and its aftermath). Figures 2 and 3 show the trends in MPFs on the TV and DOC aggregations. From Figure 2 it is clear that there has been a large decline over time in exchange rate fixing ERFix and exchange rate targeting ERTs, from around half of the countries to around a quarter, with the change concentrated in the 1970s and 1980s; there is a large rise in loosely structured discretion LSD to around 45% of countries, a rise also concentrated in the first half of the period; and there is a growth of inflation targeting ITs from the early 1990s to nearly a quarter of all countries. Multiple direct controls MDC and unstructured discretion UD are important up to some point in the 1990s but decline strongly thereafter. Monetary targeting MTs is never very important,⁸ while mixed targeting MixedTs is low-frequency, mainly undertaken by countries for short periods prior to adopting the euro (for which a number of different Maastricht criteria had to be fulfilled). Figure 3 shows sustained falls in rudimentary and intermediate, and sustained rises in substantial and intensive, MPFs. All these broad trends were previously identified in advanced and, though less strongly, in emerging economies by Cobham (2021), and it is now clear that they can be found at the

wider global level too, but as the next section shows there are important differences between regions.

An alternative perspective on these trends is shown in Table 5, which sets out the number of episodes and the average duration of each MPF for the TV and DOC aggregations, together with the incidence of each in various years.⁹ For the TV Aggregates, the MPFs with the largest number of episodes over the whole period are loosely structured discretion LSD, exchange rate fixing ERFix and unstructured discretion UD. Those with the highest average durations are currency union CU, exchange rate targeting ERTs, LSD, and ERFix, followed at some distance by multiple direct controls MDC, inflation targeting ITs (which became common only in the second half of the period) and use of another sovereign's currency UASC.¹⁰ However, the data in the righthand columns of the incidence in particular years shows the decline over time in LSD, the rises in ITs and CUs, and the fall and then stagnation in ERFix and ERTs. Among the DOC aggregates, the highest average duration is that of substantial MPFs followed by intensive, though the latter remain a relatively small proportion of the total, while rudimentary MPFs disappear and intermediate ones decline.

The figures presented so far relate to the number of countries, that is, they treat, say, the US and Malta, or China and Vanuatu, equally, but it might sometimes be more important to know what proportions of world economic activity or of population were covered by which MPF. Figure 4 shows the trends in the TV aggregation weighted by GDP. As expected (since inflation targeting is more common in advanced and emerging economies), the share of ITs from the mid-1990s is much higher, at over 70% in the last decade or so, while the share of LSD is around a quarter or less from 1996, when the US moved from LSD to become a 'loose' inflation targeter on the CMPF classification. Figure 5 shows the trends weighted by population: with

India under LSD for most of the period and China since 1994, the share of LSD is much higher and that of ITs much lower, even after India adopted inflation targeting in 2014.

Comparable graphs for the DOC aggregation show that intensive MPFs have been much more important in GDP than in population terms, while rudimentary and intermediate MPFs are more important in population terms.¹¹

4 Regions and groups

Figures 6-11 graph the unweighted incidence of TV and DOC MPFs in six regionally based groupings of countries: the Middle East and North Africa (MENA), Latin America, Asia (excluding advanced countries), Africa, the Caribbean, and Other Europe plus Caucasus and Central Asia (OECCA), with figure (a) showing the TV aggregation and figure (b) the DOC aggregation.¹² The basic data by subperiod can be found in Tables A2-9 in the Data Appendix, first for comparison in the advanced and emerging economies (as presented in Cobham, 2021), and then in in each of the six regions.

In terms of the TV aggregation, Latin America and MENA represent in some respects the opposite ends of a spectrum: the former has a substantial move towards inflation targeting ITs, while in the latter the largest element is exchange rate pegs (with a movement over time from fixes ERFix to targets ERTs) and ITs is attempted, with short-lived success, only by Turkey. In between these two Africa has a dominant element of loosely structured discretion LSD, together with a lot of ERFix and a very small amount of ITs. Asia has a bit more ITs, less ERFix and a lot of LSD. The Caribbean is dominated by ERFix and ERTs, with ITs only in one country towards the end of the period. Finally, the OECCA group (where the large green X area indicates that nearly all of these were not separate countries before 1991) has a lot of

discretion, some ERFix and ERTs, some use of another sovereign's currency UASC and some ITs.

In terms of the DOC aggregation, in all groups there is a move away from rudimentary and intermediate towards substantial and intensive MPFs. By the end of the period Latin America has MPFs that are 50% substantial and 20% intensive; MENA 42% and 37%; Africa 68% and 3%; Asia 75% and 13%; Caribbean 71% and 29%; and OECCA 87% and 0%.

We now turn to a more detailed examination of developments in each region, in which we try to identify sub-regional patterns in which groups of countries have moved in the same way over time. We focus here on the TV aggregation.

Middle East and North Africa

At the start of the period all the Gulf countries but also Iraq, Jordan, Libya and Morocco – 10 out of 18 countries – were pegging their exchange rates in one way or another. Over time the six Gulf countries (except for Oman which continued to fix) plus Jordan and (after a period of LSD) Morocco moved from fixing to targeting their exchange rates, and Lebanon joined in from 1993. Algeria, Egypt and Syria, and later Iraq, had episodes of multiple direct controls MDC, typically followed by years of unstructured discretion UD and then loosely structured discretion LSD. Sudan started with UD and moved to LSD, while Iran started with LSD, moved to UD from 1980 and then back to LSD in 1999. Overall, LSD became roughly as frequent as ERFix plus ERTs. The only country which tried inflation targeting ITs was Turkey, but it twice ceased to attain its targets and was reclassified as LSD.¹³

Latin America

Most Latin American countries were doing ERFix at the beginning of the period, as they had done in the Bretton Woods years, while some – particularly the larger countries – were operating under UD. In the first half of the 1980s a number of countries moved from ERFix to UD, which peaked in 1984-5, after which many countries began to switch from UD to LSD. The latter became and remained the most frequent category until 2011 when it was overtaken by ITs. Chile had embarked on ITs in 1991, very early by international standards, and it was joined from the late 1990s by Mexico, Colombia, Peru and Brazil, and later by Guatemala, Paraguay and Costa Rica. Thus most of the larger economies other than Argentina (which went from UD via eleven years of currency board before moving to LSD) and some of the smaller economies ended up in the ITs category, while other smaller economies fixed their exchange rates (Belize, Nicaragua) or dollarised (Ecuador, El Salvador; Panama had dollarised long before) or used a variety of instruments to pursue a variety of objectives in LSD (Bolivia, Guyana, Honduras, Suriname and Uruguay). Venezuela (also a relatively large economy) unusually reverted in 2010 from LSD to UD.

Asia

At the beginning 8 out of the then total of 20 countries were fixing their exchange rates, but that dropped over the next decade as they moved mainly to LSD; Brunei continued to fix and was joined by Vanuatu, Bhutan and (after an interval of LSD) the Maldives. There was little ERTs. ITs was undertaken from 2000 by Thailand, joined later by the Philippines and Indonesia, and later still by India. MDC was used in the 1970s and 1980s by China, Mongolia, Myanmar, Vietnam and Laos, followed (in some cases after a period of UD) by LSD. The latter was the commonest category from 1978 onwards and accounted for half or more of the MPFs in Asia from 1985 onwards, covering the larger economies such as Bangladesh, China and Pakistan (and Indonesia and India before they moved to ITs), but also many smaller countries.

Taiwan undertook loose monetary targeting from 1993. Timor-Leste used the USD as its currency from its independence in 2002. Malaysia is the only country in the entire sample that is classified as well structured discretion WSD, as from 2006.

Africa

At the beginning of the period African monetary frameworks were dominated by ERFix: that was the MPF in a wide range of countries from Burundi to Zambia. Eswatini and Lesotho (and later Namibia) fixed their currencies to the South African rand, the CFA monetary unions of central and west Africa (Central African Economic and Monetary Community, CAEMC, and West African Economic and Monetary Union, WAEMU) fixed to the French franc (and later the euro), and other countries fixed to the GBP or the USD or the SDR. By the mid-1980s the number of ERFixes had fallen from the mid-20s to the low teens (out of around 40 countries or currency areas with separate MPFs), and it remained around 10 for the rest of the period, as most former British colonies and some other countries moved from ERFix to LSD, which became the most frequent category from the mid-1980s, while a few other countries joined or rejoined the CFA monetary unions. There were a few examples of MDC in the first decade, but after that only Ethiopia continued to use direct controls. There are some examples of UD, mainly in countries that were moving away from MDC or suffered conflicts or crises of different kinds. And there is one (pure) currency board, in Djibouti from its independence in 1977. Inflation targeting was pursued in South Africa from 2003, and in Uganda from 2013.¹⁴

Caribbean

At the beginning of the period all six countries included in the classification¹⁵ were fixing their exchange rates, while the East Caribbean Currency Union (ECCU) was operating a (pure) currency board. Initially most of them and by 1976 all of them were anchored on the USD.

Bahamas and Barbados continued to fix throughout. Jamaica moved early to LSD and tried a variety of exchange rate arrangements before embarking on gradual monetary reforms which led eventually to preparations for inflation targeting. The Dominican Republic had a comparable but briefer period of LSD before embarking on ITs in 2012. The ECCU's currency board became 'augmented' as it began to operate a somewhat more active and development-oriented monetary policy. Trinidad and Tobago moved to LSD but then back to loose exchange rate targeting. Haiti's ERFix became unsustainable under the impact of central bank financing of government deficits, political instability and natural disasters.

Other Europe, Caucasus and Central Asia

Albania used direct controls up till 1989, while all the other countries in this grouping were within the USSR or Yugoslavia. Political change came to Albania in 1990, and – with independence – to most of the others in 1991 or 1992. All of these countries had a few years of UD. By the mid-1990s most were in LSD, and most stayed there. Bosnia & Hercegovina and, later, Turkmenistan moved to fixing their exchange rates, while North Macedonia and, for some years, Ukraine targeted their exchange rates. Montenegro and Kosovo, which became independent rather later, used the Deutsche mark and then the euro. Albania moved to ITs in 2000, followed later by Serbia and Armenia and, briefly, Moldova.

How should we understand these different trends? Cobham and Song (2020) investigated the choice of MPF for advanced and emerging economies, but no such examination of developing economies has yet been published. In its absence, however, some comments can be made. First, for the earlier part of the period history, in the form of the Bretton Woods system, matters, and for Africa, in particular, the colonial heritage is important: many countries continued to operate for at least the first few years after independence the currency boards or other peg arrangements

introduced by their colonial rulers, which could be seen as minimising operating costs but restricting economic policy. Former UK colonies tended to move quite quickly away from those arrangements, but France agreed some Africanisation and some minor easing of the reserve requirements, and most of its former colonies stayed with the revised arrangements (Masson and Pattillo, 2005, pp21-4). Second, the factor that has been most strongly emphasised in the literature on the choice of exchange rate regime (e.g. Juhn and Mauro, 2002; Levy Yeyati, Sturzenegger and Reggio, 2010) is that of size: small countries are more likely to peg and larger more likely to float in some form. This looks relevant for many Caribbean and Pacific islands, in particular, but also for a range of smaller countries in other regions, while the decision to use another sovereign's currency is also likely to be related to size. Third, Meissner and Oomes (2009) and Cobham and Song (2020) have emphasised the concentration of a country's trade on a single currency bloc as a reason for pegging (to it), and for many developing countries that concentration reflects the colonial experience.¹⁶ Fourth, Cobham and Song (2020) have emphasised the importance of financial market development, with particular emphasis on government bond markets that allow non-monetary financing of fiscal deficits and on interbank money markets that make it possible for the monetary authorities to operate largely through interest rates rather than direct monetary instruments (and these issues come through strongly in the IMF reports and in the details on the country pages of the website).¹⁷ Fifth, unstructured discretion UD is associated on the one hand with autocratic and military regimes which intervene heavily in the economy but do not have the detailed planning mechanisms characteristic of Soviet-type arrangements (which are classified as MDC), and on the other hand with political instability and conflict. Finally, the issue of political arrangements is also worth mentioning – Cobham (2022), for example, has related the lack of ITs in the MENA countries, in contrast to Latin America, to the much lower level of democracy in MENA.¹⁸ These are, of course, not the only factors to be considered, and clearly there is plenty of scope

for a wide-ranging econometric analysis which would aim to identify the factors underlying the differences between regions and between countries.

5 Economic performance

A full assessment of economic performance under different MPFs in advanced and emerging economies is available in Cobham, Macmillan, Mason and Song (2022), which reports the results of unconditional analysis, straightforward conditional analysis and conditional analysis allowing for endogeneity of MPFs.¹⁹ Overall, they find that multiple direct controls MDC, exchange rate fixing ERFix and unstructured discretion UD are poor on inflation, but MDC and ERFix are surprisingly good on growth; exchange rate targeting ERTs has a mixed record; inflation targeting ITs is mostly associated with lower inflation and higher growth; and loosely structured discretion LSD is mostly good on inflation and growth, though not always better than ITs.

In principle it is important to undertake a conditional analysis which controls for the effect on economic performance of factors such as monetary growth, openness, central bank independence and education, and it is important to consider whether there might be endogeneity issues where economic performance determines MPF rather than the other way round. However, two key points that come out of the Cobham et al. (2022) assessment for advanced and emerging economies are, first, that the results of the conditional are not in fact much different from those of the unconditional analysis; and second, that there do not seem to be major endogeneity issues.²⁰

It is possible, maybe even probable, that there are differences in economic performance between the regional groupings which are related to differences in control variables rather than MPFs. However, in the absence (so far) of a more complete assessment of economic

performance in different regions under different MPFs, it is worth looking at the unconditional analysis. Tables A10-18 in the Data Appendix show the inflation and growth associated on average with each aggregated MPF in the global, advanced, emerging and different regional groupings.²¹ Here we concentrate on performance under exchange rate fixing ERFix, exchange rate targeting ERTs, inflation targeting ITs and loosely structured discretion LSD which are overall the most frequent frameworks, and on the last two subperiods, 1999-2007 (pre-GFC) and 2008-17 (post-GFC), as shown in Figures 12-15.

On inflation, at the global level ERFix is sometimes better and sometimes worse than ERTs, ITs are in the same ballpark as ERFix and ERTs before the GFC but better than them after it, and LSD is associated with much higher inflation than the other three MPFs considered here. The last comparison holds for the emerging and all of the regional groupings except for the Middle East and North Africa in the pre-GFC subperiod, where the incidence of ITs is limited to one country over three years: Turkey 2003-5.²² However, for the advanced country sample, LSD was associated with lower inflation than ITs pre- GFC; this no doubt reflects the fact that LSD is a wide category and some countries operate that framework to control inflation as tightly and as closely as countries using ITs. The one grouping where ITs clearly outperform the other MPFs in both subperiods is Latin America.

On growth, while differences between MPFs are typically smaller, at the global level LSD is associated with higher growth, followed by ITs, in both subperiods, but experience in the smaller groupings is more mixed, with advanced LSD countries doing poorly post-GFC and ITs doing better than LSD in Latin America, Africa and Asia pre-GFC but not post-GFC. ERFix and ERTs in most cases fare a little worse than ITs pre-GFC and more so post-GFC.

Figures 16-19 show the corresponding standard deviations rather than averages of inflation and growth. On inflation, it is striking that the volatility under LSD is much the highest in almost all cases, and the volatility under ITs is typically the lowest. On growth, volatility under ITs is again mostly the lowest. The exceptions are concentrated in the advanced economies, where it seems likely that policy is conducted, in terms of both objectives and instruments, in ways that are much closer to inflation targeting.²³

It seems clear that no simple story can be told about the differences in economic performance under the four main MPFs considered here. That conclusion echoes the more comprehensive assessment for advanced and emerging economies by Cobham et al. (2022), which also notes the general improvements in performance over time (which arguably outweigh the differences between some of the MPFs). It should be emphasised that the MPF is the context within which specific conjunctural monetary policy decisions are taken, but it does not completely determine those decisions: similar decisions can be taken from within different MPFs while different decisions can be taken from within the same MPF. This is also consistent with the findings of, for example, Ball (2010) and Cobham and Song (2021) that there are at best minimal improvements in performance to be obtained from the adoption of inflation targeting. There is clearly a need for a wide-ranging econometric analysis which takes account of a range of control variables and of the issue of endogeneity. But in the meantime policymakers looking to improve economic performance in their countries need to focus on their own decision-making processes as well as on the average performance under different MPFs. They should also consider how the specific characteristics of their countries such as size, trade concentration and financial development may have led other similar countries to choose some particular MPF, and whether or not that might be appropriate for them as well.

6 Conclusion

The Comprehensive Monetary Policy Frameworks project now covers 179 countries/currency areas, essentially the whole world, from 1974 to 2017 (and will be updated in due course). It provides a fine classification which can be aggregated along several different dimensions into fewer but broader groups of MPFs, together with country details which provide a full and transparent explanation of the individual country classification decisions. It has been designed as a freely available and accessible resource for researchers. It can be used to show the trends over time at global or regional levels, or to control for differences in monetary policy in investigations of the effects of, for example, the GFC or Covid. There is also scope for further work on topics such as the choice of MPFs in different countries and different regions, and economic performance under different MPFs, which would have important policy implications.

Appendix: The IAPOC approach

While the CMPF classification is focused, as above, on the objectives of monetary policy and how they are pursued, a new IAPOC (Independence and Accountability, Policy and Operational Strategy, and Communications) index developed by Unsal, Papageorgiou and Garbers (2022) offers a multi-dimensional characterisation of monetary policy frameworks with a rather different focus: “A monetary policy framework (MPF) comprises the structures in place that enable and guide the conduct of monetary policy. This encompasses both the legal basis – which shapes independence and accountability – and the design, implementation, and communication practices of monetary policy. A monetary policy framework is much broader in scope than a monetary policy regime which is a specific configuration of select elements of the MPF. For example, an inflation-targeting regime is understood to involve price stability as the primary objective, a numerical inflation target, and the use of a short-term interest rate as the policy tool. However, the MPF within which an inflation-targeting regime operates includes numerous other (design, implementation, and communication) elements, as well as legal foundations, which are all key to monetary policymaking and may all differ across countries.”

The IAPOC index (on a scale from 0 to 1) is constructed from largely binary answers to 225 questions divided between the three ‘pillars’ (IA, PO and C), which are criss-crossed by three ‘axioms’ (perhaps better thought of as ‘themes’) identified as Transparency, Coherence and Consistency. The data is gathered mainly from central bank websites, although this means that it is harder to go back in time, and has been put together so far for a sample of 50 countries (13 advanced, 26 emerging and 11 low-income developing countries) for 2007, 2010, 2013, 2016 and 2018.²⁴

A simple initial way of contrasting the IAPOC and CMPF approaches is to say that the IAPOC approach focuses more on *how* monetary policy is conducted whereas the CMPF classification is more interested in *what* monetary policy is conducted. For example, the IAPOC index has questions about whether price stability is (one of) the goals of monetary policy and about whether there is, by law, a numerical monetary policy target, but no question about what that target refers to, whereas the CMPF classification starts from identification of the relevant target. The IAPOC index also has questions about who sets the target(s) and how they are revised, but no questions about whether the targets are attained. On the other hand, the IAPOC approach puts much more emphasis on central bank legal independence and accountability, whereas for the CMPF classification these are part of the background context that conditions the actual monetary policy, and in some cases more attention is paid in the CMPF case to the role of the government. In the same vein the IAPOC approach puts more emphasis on the communication of monetary policy for its own sake, whereas in CMPF communication feeds into the degree of sustained attainment of targets and hence into whether targeting is ‘loose’ or ‘full’: in that sense the degree of monetary control aggregation in CMPF is a little closer to IAPOC, but only a little.

Overall, it is clear that the two approaches should be regarded as complementary rather than competing: they focus largely on different aspects of monetary policymaking. In addition, they may contribute to improvements in policymaking on different dimensions: the IAPOC index “helps uncover common challenges in improving Policy and Operational Strategy” (Unsal et al., 2022, p20) in emerging and low-income countries, whereas the CMPF classification provides the basis for comparisons of economic performance in terms of inflation and growth between different frameworks (e.g. Cobham, Macmillan, Mason and Song, 2022).

Notes

¹ The IMF had begun to identify domestic monetary policy targets alongside exchange rate regimes in its Annual Reports on Exchange Arrangements and Exchange Restrictions, but the domestic element remained limited and largely de jure.

² The exceptions, which should be covered in the near future, are the USSR 1974-91, Yugoslavia 1974-91, Cuba and North Korea (good sources for the last two are difficult to come by). Countries with populations below 250,000 mostly either use another sovereign's currency or peg their exchange rates in some way.

³ The criteria are 'generous' in that they allow for brief and small over- or undershoots of the targets, and in the case of inflation targeting larger misses where expectations remain anchored. Where there is no formal published target but it is widely understood that some target exists and is seriously pursued, then loose targeting is identified. For example, the US is classified as a loose inflation targeter from 1996 to 2011 because it had and broadly attained a clear goal of price stability, and in many respects behaved like a standard inflation targeter. The European Central Bank is similarly classified as a loose inflation targeter.

⁴ In practice the two end-categories are easier to pinpoint, and a large number of intermediate loosely structured discretion (LSD) cases are identified. In the near future a triage of these cases will be implemented to differentiate between situations where monetary instruments are entirely direct, where they are partly indirect and where they are entirely indirect.

⁵ In that case the distinction has much in common with that made by Wolf et al. (2008, chapter 2) between 'early' and 'modern' currency boards.

⁶ For a single country over the 44 year period typically sections of around 60 different reports need to be consulted.

⁷ It is also worth noting that the IMF's analysis and recommendations are, in the later years at least, country-specific rather than 'one size fits all', and that, again more in the later years, a surprising number of countries have felt able to disagree, sometimes quite sharply and repeatedly, with those recommendations.

⁸ This is typically not because countries did not attempt it but because they did not succeed in attaining the targets consistently. The UK, for example, is not classified as a monetary targeter in any period for this reason. It is striking that countries targeting inflation have hit their targets much more consistently than those trying to target money.

⁹ Data on duration for the full menu of MPFs can be found in Table A1 of the Data Appendix.

¹⁰ This ignores the high duration of Xs, which are due mainly to the significant number of countries which did not exist until the dissolution of the USSR and Yugoslavia, plus latecomers to independence South Sudan and Timor-Leste.

¹¹ Such graphs can be easily generated from the visualisations page on the website, at <https://monetaryframeworks.org/visualisations/>.

¹² Because the dividing line between emerging and developing countries is largely arbitrary (and time-dependent), the regional groupings include countries already covered in the emerging economies category (but not those from the advanced category).

¹³ Egypt, Morocco and Tunisia all talked about inflation targeting but never took the plunge.

¹⁴ Ghana set formal but 'lite' inflation targets from 2007, but failed to attain them consistently.

¹⁵ A number of other Caribbean countries are too small (population less than 250,000) to be included, but the East Caribbean Currency Union meets the criterion when each of its members' populations are aggregated together.

¹⁶ Dummy variables for previous and existing colonial relationships are typically very significant in gravity models of trade, e.g. Rose (2000).

¹⁷ There is a possible endogeneity issue here: the lack of these financial markets could prevent a country from moving to indirect monetary instruments and related MPFs, but it could also be that a country which did not wish (for other reasons) to move to such MPFs could choose not to establish such markets.

¹⁸ The argument is that inflation targeting typically requires efforts to influence inflation expectations, which in turn require accountability on the part of the central bank. Latin America experienced a major move towards democracy in the second half of the 1980s/early 1990s. It also had a big rise in central bank independence (CBI) in the early 1990s, but Cobham and Song (2020) in their analysis of advanced and emerging economies did not find CBI significant (though that may reflect some endogeneity, with the move to ITs requiring a rise in CBI).

¹⁹ The working paper version (Cobham et al., 2021) also reports the results of panel regressions weighted by real GDP and population, whose results are generally consistent with those for unweighted regressions.

²⁰ Cobham et al. (2022) found that when they used predictions of countries' MPFs, constructed on the basis of the analysis of countries' choices of MPFs in Cobham and Song (2020), rather than the actual MPFs, the economic performance results were in nearly all cases much the same.

²¹ Data for consumer price inflation and growth of GDP per capita from World Development Indicators.

²² Turkey had inflation targets in the years before and after but missed them, with the result that it is not then classified as an inflation targeter. It is also classified as an inflation targeter for the years 2009-13, after which it again misses its targets repeatedly.

²³ This reinforces the case for the forthcoming triage of LSD cases mentioned in note 4.

²⁴ Unsal et al. use the current IMF World Economic Outlook classification of countries, such that a number of their emerging economies are ones regarded as developing in the CMPF classification, which uses an earlier identification from Laurens et al. (2009).

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Table 1: The categories of the classification (full menu)

	full name	acronym	definition
1	Multiple direct controls	MDC	multiple exchange rates and/or controls on direct lending, interest rates, etc
2	Pure exchange rate fix	PERF	exchange rate fixed purely by intervention, no monetary instruments in use
3	Augmented exchange rate fix	AERF	exchange rate fixed by intervention, some basic monetary instruments in use
4	Pure currency board	PCB	domestic currency 100% backed by foreign currency, no monetary instruments in use
5	Augmented currency board	ACB	domestic currency 100% backed by foreign currency, basic monetary instruments in use
6	Loose converging exchange rate targeting	LCERT	converging narrow targets not well hit or wider targets attained
7	Loose exchange rate targeting	LERT	narrow stationary targets not well hit or wider targets attained
8	Full converging exchange rate targeting	FCERT	narrow announced converging targets typically attained
9	Full exchange rate targeting	FERT	narrow announced stationary targets typically attained
10	Loose converging monetary targeting	LCMT	converging narrow targets not well hit or wider targets attained
11	Loose monetary targeting	LMT	narrow stationary targets not well hit or wider targets attained
12	Full converging monetary targeting	FCMT	narrow announced converging targets typically attained
13	Full monetary targeting	FMT	narrow announced stationary targets typically attained
14	Loose converging inflation targeting	LCIT	converging narrow targets not well hit or wider targets attained
15	Loose inflation targeting	LIT	narrow stationary targets not well hit or wider targets attained
16	Full converging inflation targeting	FCIT	narrow announced converging targets typically attained
17	Full inflation targeting	FIT	narrow announced stationary targets typically attained
18	Monetary with exchange rate targeting	MwERT	monetary targets and exchange rate fixes or targets, monetary dominant
19	Exchange rate with monetary targeting	ERwMT	monetary targets and exchange rate fixes or targets, exchange rate dominant
20	Monetary plus exchange rate targeting	M&ERT	monetary targets and exchange rate fixes or targets, primacy unclear
21	Monetary with inflation targeting	MwIT	monetary and inflation targets, monetary dominant
22	Inflation with monetary targeting	IwMT	monetary and inflation targets, inflation dominant
23	Monetary plus inflation targeting	M&IT	monetary and inflation targets, primacy unclear
24	Inflation with exchange rate targeting	IwERT	inflation targets and exchange rate (fixes or) targets, inflation dominant
25	Exchange rate with inflation targeting	ERwIT	inflation targets and exchange rate (fixes or) targets, exchange rate dominant
26	Inflation plus exchange rate targeting	I&ERT	inflation targets and exchange rate (fixes or) targets, primacy unclear
27	Exchange rate, monetary, inflation targeting	ER&M&IT	three full targets (or fixes), whichever dominant
28	Unstructured discretion	UD	ineffective set of instruments <i>and</i> incoherent mix of objectives
29	Loosely structured discretion	LSD	instruments not effective <i>or</i> objectives not coherent <i>or</i> both only partly so
30	Well structured discretion	WSD	full and effective set of monetary instruments and coherent set of objectives
31	Use of another sovereign's currency	UASC	dollarisation or euroisation
32	Currency union membership	CU	currency union

Source: Cobham (2021).

Table 2: Two useful aggregations

by target variable:	frameworks	Numbers
direct controls, MDC	MDC	1
exchange rate fixing, ERFix	PERF, AERF, PCB	2,3,4
exchange rate targeting, ERTs	ACB, FERT, FCERT, LERT, LCERT	5-9
monetary targeting, MTs	FMT, FCMT, LMT, LCMT	10-13
inflation targeting, ITs	FIT, FCIT, LIT, LCIT	14-17
mixed targets, MixedTs	MwERT, ERwMT, M&ERT, MwIT, IwMT, M&IT, IwERT, ERwIT, I&ERT, ER&M&IT	18-27
unstructured discretion, UD	UD	28
loosely structured discretion, LSD	LSD	29
well structured discretion, WSD	WSD	30
by degree of monetary control		
rudimentary	MDC, PERF	1,2
intermediate	AERF, PCB, UD	3,4,28
substantial	ACB, all LC*T, all FC*T, all L*T, all mixes, LSD	5-8, 10-12,14-16,18-27,29
intensive	FERT, FMT, FIT, WSD	9,13,17,30

Source: Cobham (2021).

Table 3: Global incidence of frameworks by category and period, full menu

	1974-2017		1974-84		1985-1998		1999-2007		2008-2017	
	no.	%	no.	%	no.	%	no.	%	no.	%
X	624		359		246		15		4	
MDC	220	3.03	152	9.44	64	2.83	4	0.25	0	0.00
PERF	8	0.11	8	0.50	0	0.00	0	0.00	0	0.00
AERF	1054	14.53	493	30.62	241	10.66	144	9.02	176	9.85
PCB	160	2.21	46	2.86	43	1.90	36	2.26	35	1.96
ACB	171	2.36	21	1.30	57	2.52	48	3.01	45	2.52
LCERT	29	0.40	7	0.43	19	0.84	3	0.19	0	0.00
LERT	308	4.25	95	5.90	103	4.56	59	3.70	51	2.86
FCERT	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
FERT	335	4.62	26	1.61	126	5.58	97	6.08	86	4.82
LCMT	24	0.33	11	0.68	9	0.40	4	0.25	0	0.00
LMT	51	0.70	21	1.30	15	0.66	5	0.31	10	0.56
FCMT	14	0.19	10	0.62	4	0.18	0	0.00	0	0.00
FMT	11	0.15	3	0.19	8	0.35	0	0.00	0	0.00
LCIT	77	1.06	0	0.00	12	0.53	36	2.26	29	1.62
LIT	240	3.31	0	0.00	24	1.06	78	4.89	138	7.73
FCIT	9	0.12	0	0.00	0	0.00	7	0.44	2	0.11
FIT	277	3.82	0	0.00	31	1.37	85	5.33	161	9.01
MwERT	39	0.54	22	1.37	14	0.62	3	0.19	0	0.00
ERwMT	16	0.22	0	0.00	14	0.62	2	0.13	0	0.00
M&ERT	15	0.21	2	0.12	13	0.58	0	0.00	0	0.00
MwIT	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
IwMT	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
M&IT	2	0.03	0	0.00	2	0.09	0	0.00	0	0.00
IwERT	14	0.19	0	0.00	4	0.18	2	0.13	8	0.45
ERwIT	6	0.08	0	0.00	3	0.13	3	0.19	0	0.00
I&ERT	8	0.11	0	0.00	4	0.18	3	0.19	1	0.06
ER&M&IT	2	0.03	0	0.00	2	0.09	0	0.00	0	0.00
UD	692	9.54	248	15.40	343	15.18	61	3.82	40	2.24
LSD	2399	33.08	267	16.58	881	38.98	636	39.85	615	34.43
WSD	12	0.17	0	0.00	0	0.00	2	0.13	10	0.56
UASC	208	2.87	56	3.48	41	1.81	45	2.82	66	3.70
CU	851	11.73	122	7.58	183	8.10	233	14.60	313	17.53
totals	7252	100	1610	100	2260	100	1596	100	1786	100

Note: percentages are of total minus the Xs, which are cases where the country does not (yet) exist as a separate entity. Source: author's calculations.

Table 4: Global incidence of TV and DOC frameworks, by period

TV	1974-2017		1974-84		1985-1998		1999-2007		2008-2017	
	no.	%	no.	%	no.	%	no.	%	no.	%
MDC	220	3.55	152	10.61	64	3.14	4	0.30	0	0.00
ER fix	1222	19.73	547	38.20	284	13.95	180	13.66	211	15.00
ERTs	843	13.61	149	10.41	305	14.98	207	15.71	182	12.94
MTs	100	1.61	45	3.14	36	1.77	9	0.68	10	0.71
ITs	603	9.74	0	0.00	67	3.29	206	15.63	330	23.45
Mixed Ts	102	1.65	24	1.68	56	2.75	13	0.99	9	0.64
UD	692	11.17	248	17.32	343	16.85	61	4.63	40	2.84
LSD	2399	38.74	267	18.65	881	43.27	636	48.25	615	43.71
WSD	12	0.19	0	0.00	0	0.00	2	0.15	10	0.71
totals	6193	100.00	1432	100.00	2036	100.00	1318	100.00	1407	100.00
DOC										
rudimentary	228	3.68	160	11.17	64	3.14	4	0.30	0	0.00
intermediate	1906	30.78	787	54.96	627	30.80	241	18.29	251	17.84
substantial	3424	55.29	456	31.84	1180	57.96	889	67.45	899	63.89
intensive	635	10.25	29	2.03	165	8.10	184	13.96	257	18.27
totals	6193	100	1432	100	2036	100	1318	100	1407	100

Note: percentages are of the total minus the sum of the Xs (cases where the country does not (yet) exist as a separate entity) plus the UASCs and the CUs (where the country has no specific national monetary policy framework). Source: author's calculations.

Table 5: Global duration and incidence of TV and DOC frameworks

TV	episodes	duration	average duration	1974	1986	1998	2007	2017
MDC	17	220	12.94	13	12	1	0	0
ER fix	78	1222	15.67	59	22	19	21	20
ERTs	44	843	19.16	14	16	30	21	16
MTs	10	100	10.00	1	4	1	1	1
ITs	45	603	13.40	0	1	12	27	38
Mixed Ts	12	102	8.50	0	3	6	1	0
UD	75	692	9.23	17	25	15	3	6
LSD	134	2399	17.90	16	50	74	70	58
WSD	1	12	12.00	0	0	0	1	1
DOC								
rudimentary	20	228	11.40	14	12	1	0	0
intermediate	139	1906	13.71	75	47	34	24	26
substantial	150	3424	22.83	28	68	105	97	87
intensive	44	635	14.43	3	6	18	24	27
no national framework								
X	40	624	15.60	40	30	5	1	0
UASC	16	208	13.00	8	3	2	6	6
CU	33	851	25.79	11	13	14	27	33

Note: average duration equals duration divided by episodes. Source: author's calculations.

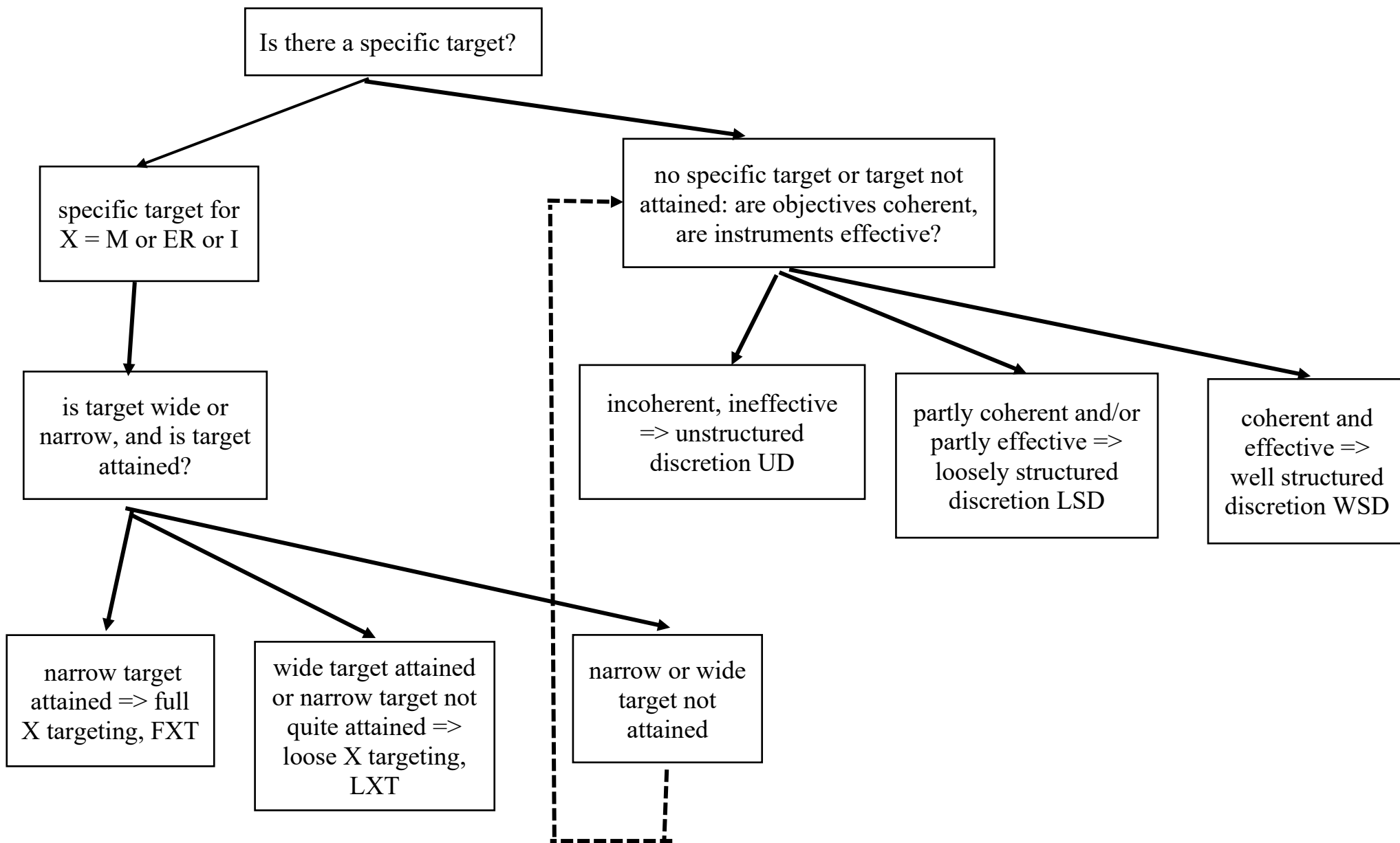


Figure 1: Algorithm for the classification of the main MPFs

Figure 2: Target variable aggregation, whole world

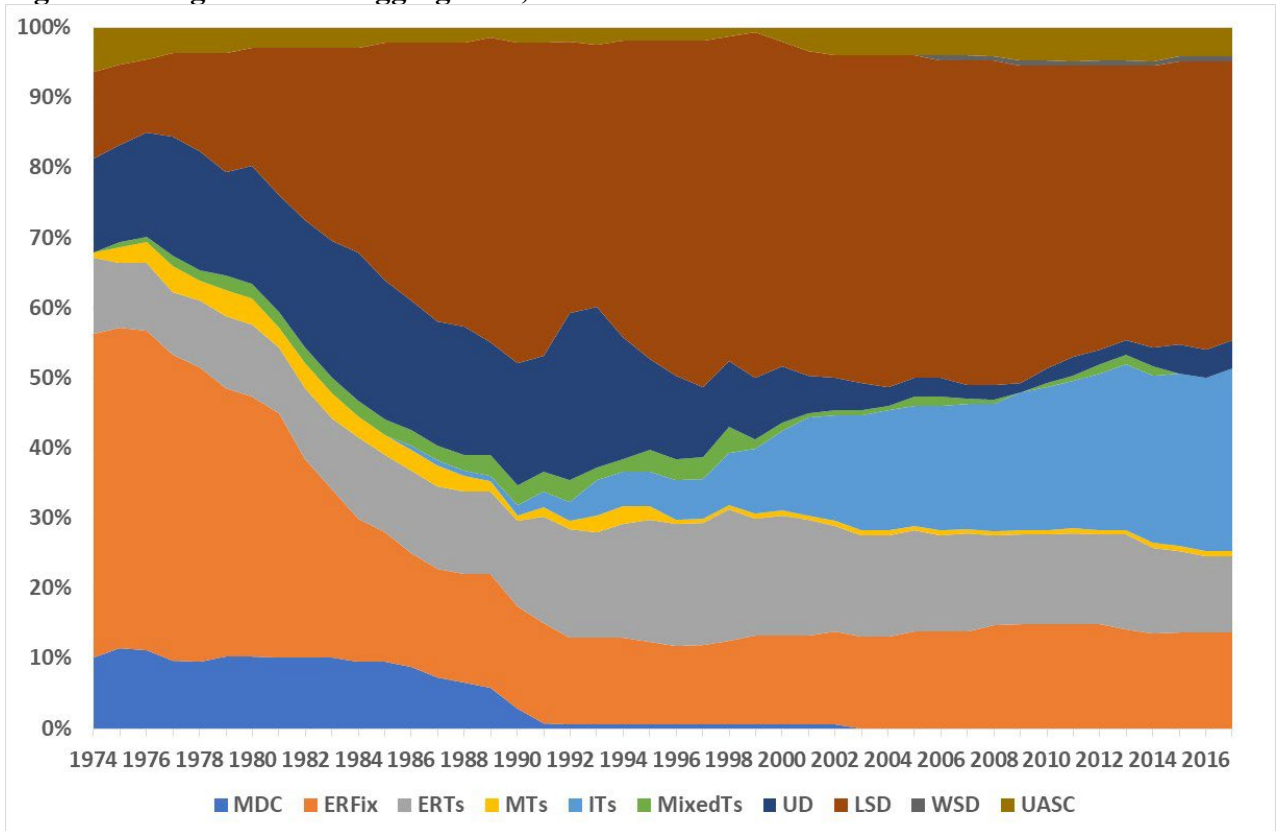


Figure 3: Degree of control aggregation, whole world

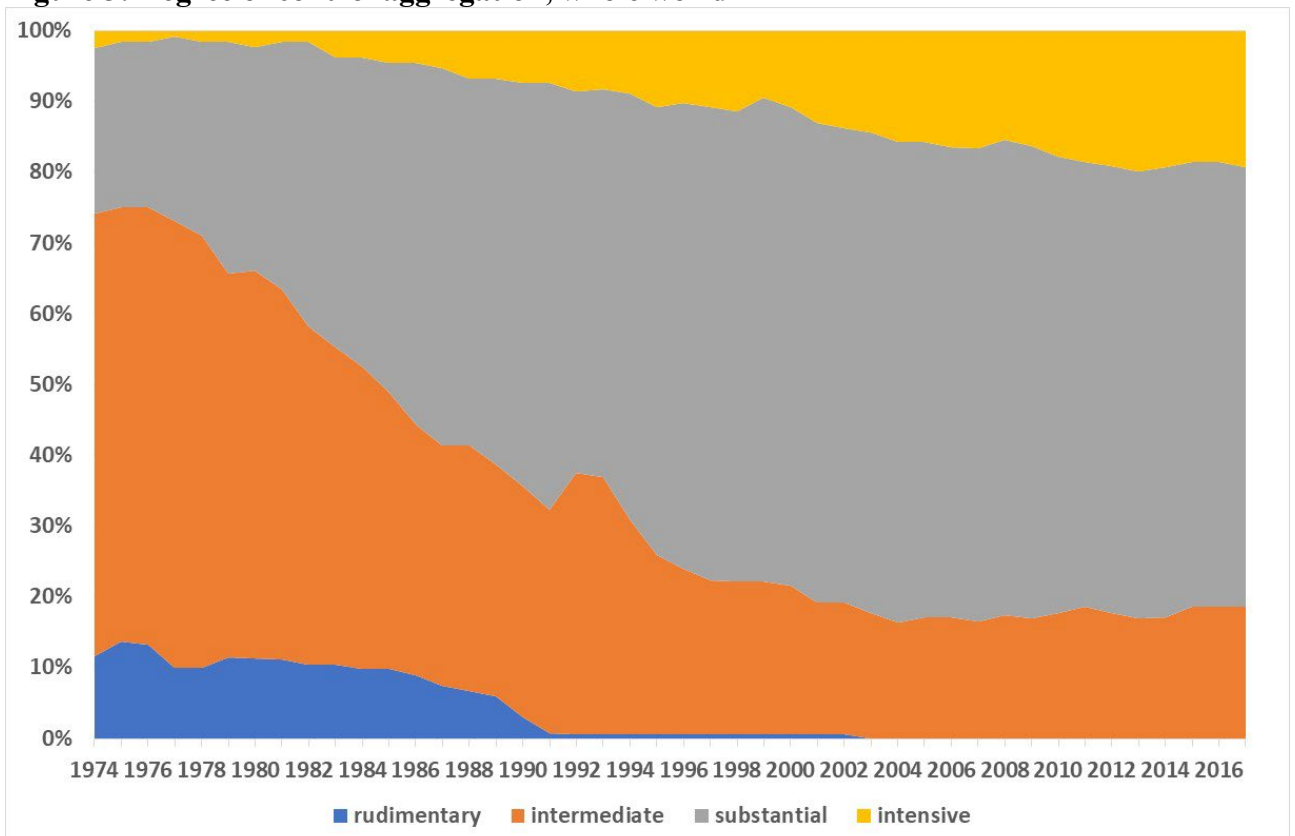


Figure 4: Target variable aggregation, whole world, weighted by GDP

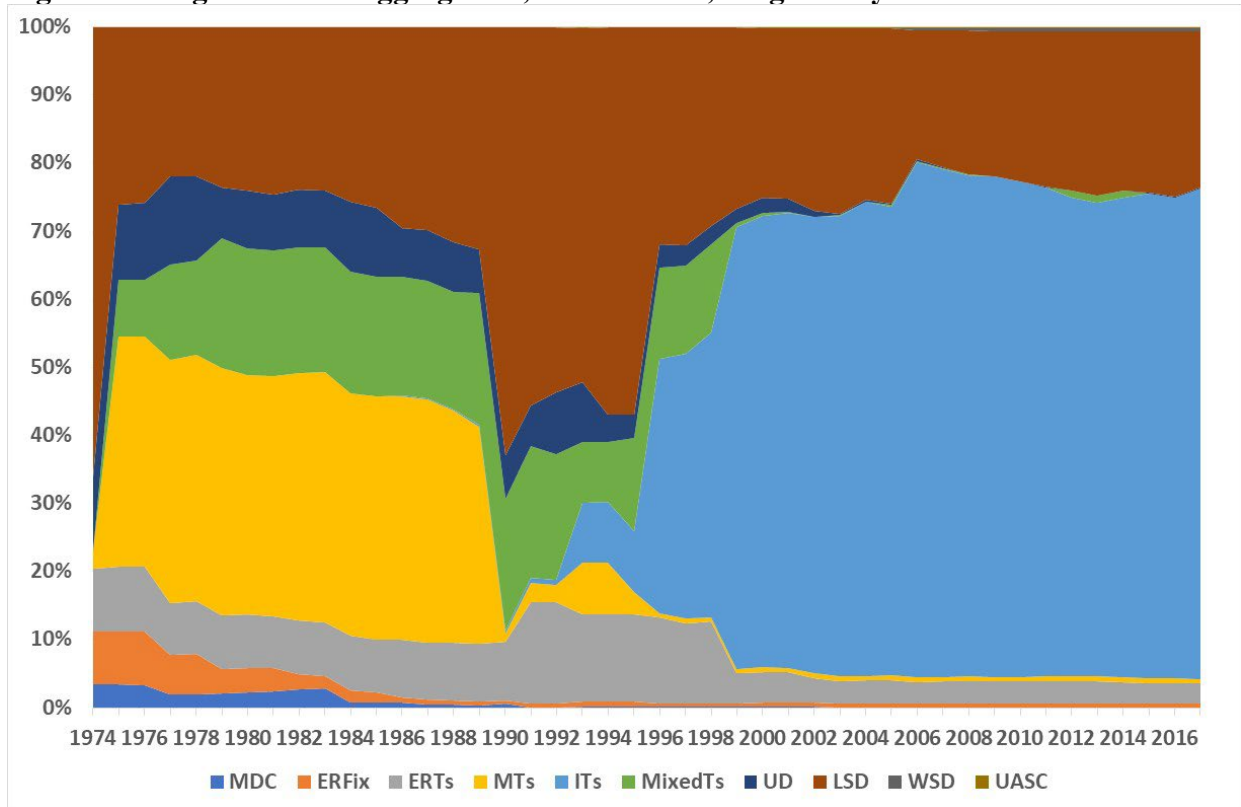


Figure 5: Target variable aggregation, whole world, weighted by population

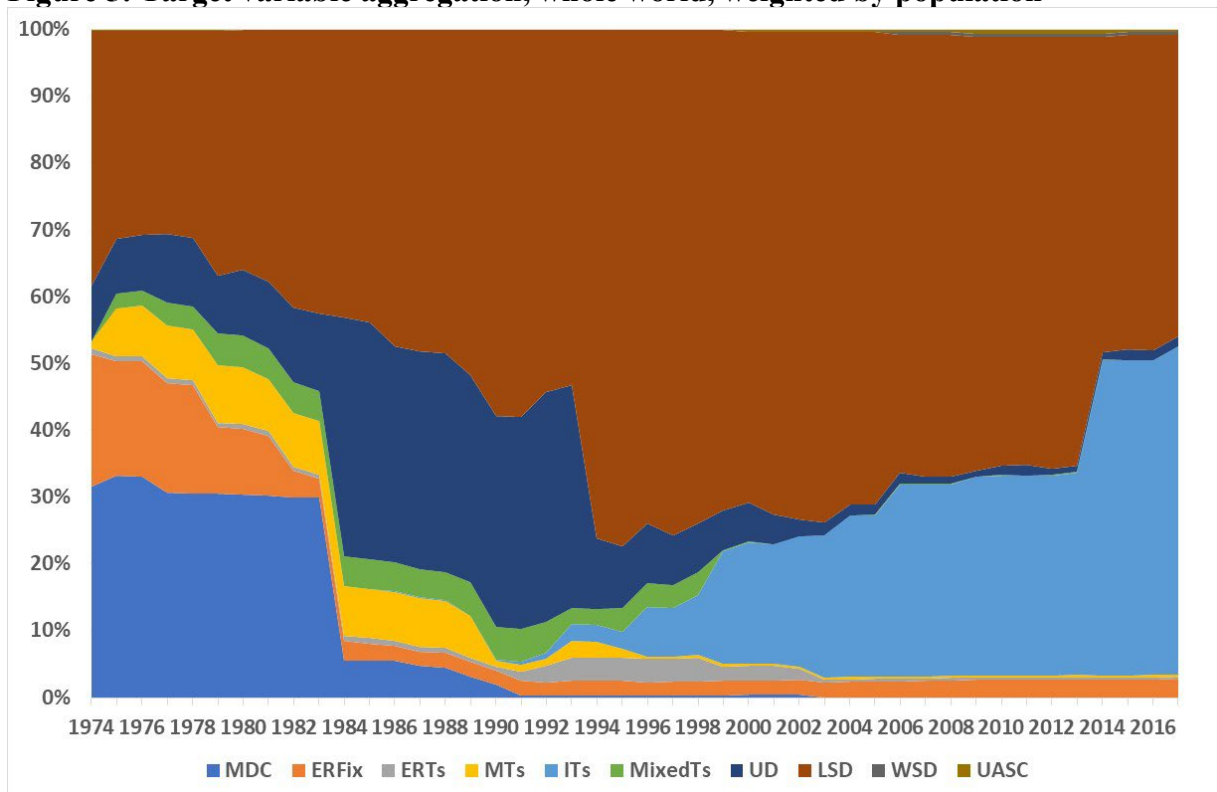


Figure 6(a): Target variable aggregation for Middle East and North Africa

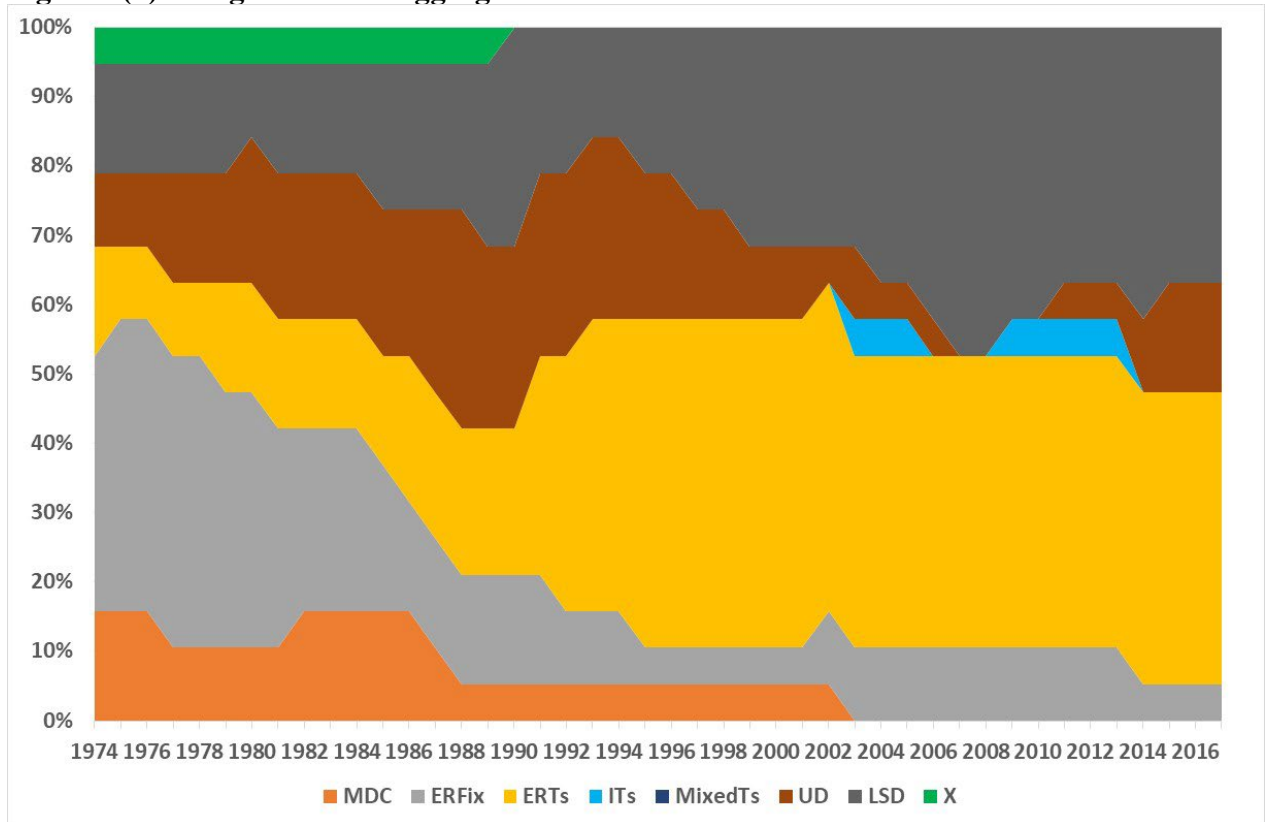


Figure 6(b): Degree of control aggregation for Middle East and North Africa

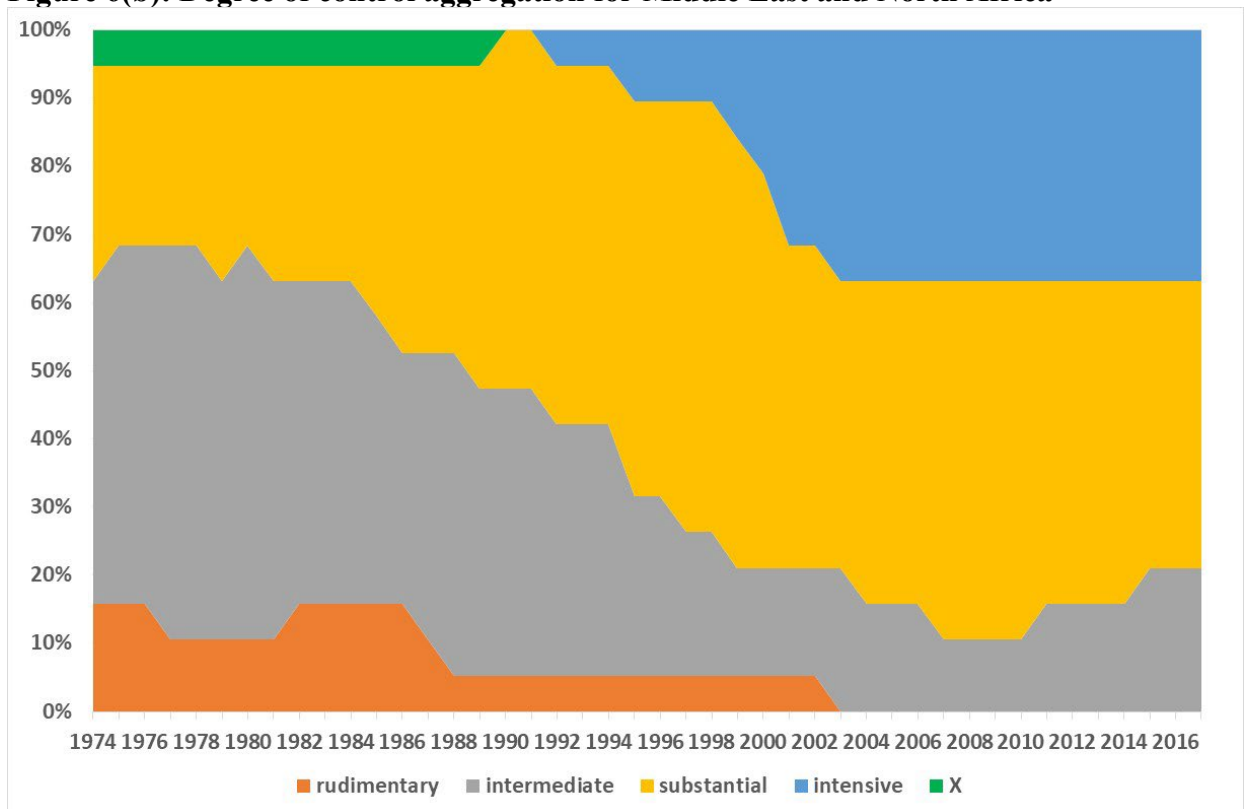


Figure 7(a): Target variable aggregation for Latin America

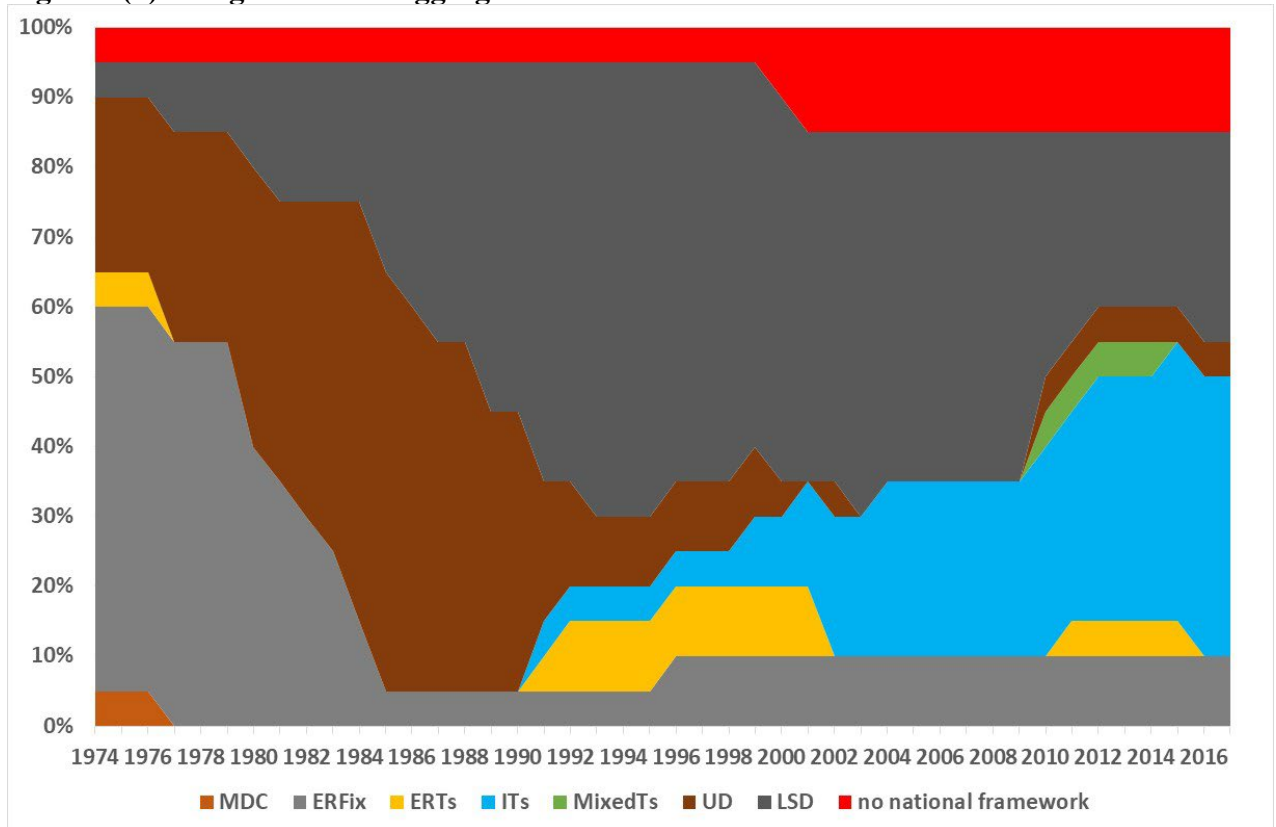


Figure 7(b): Degree of control aggregation for Latin America

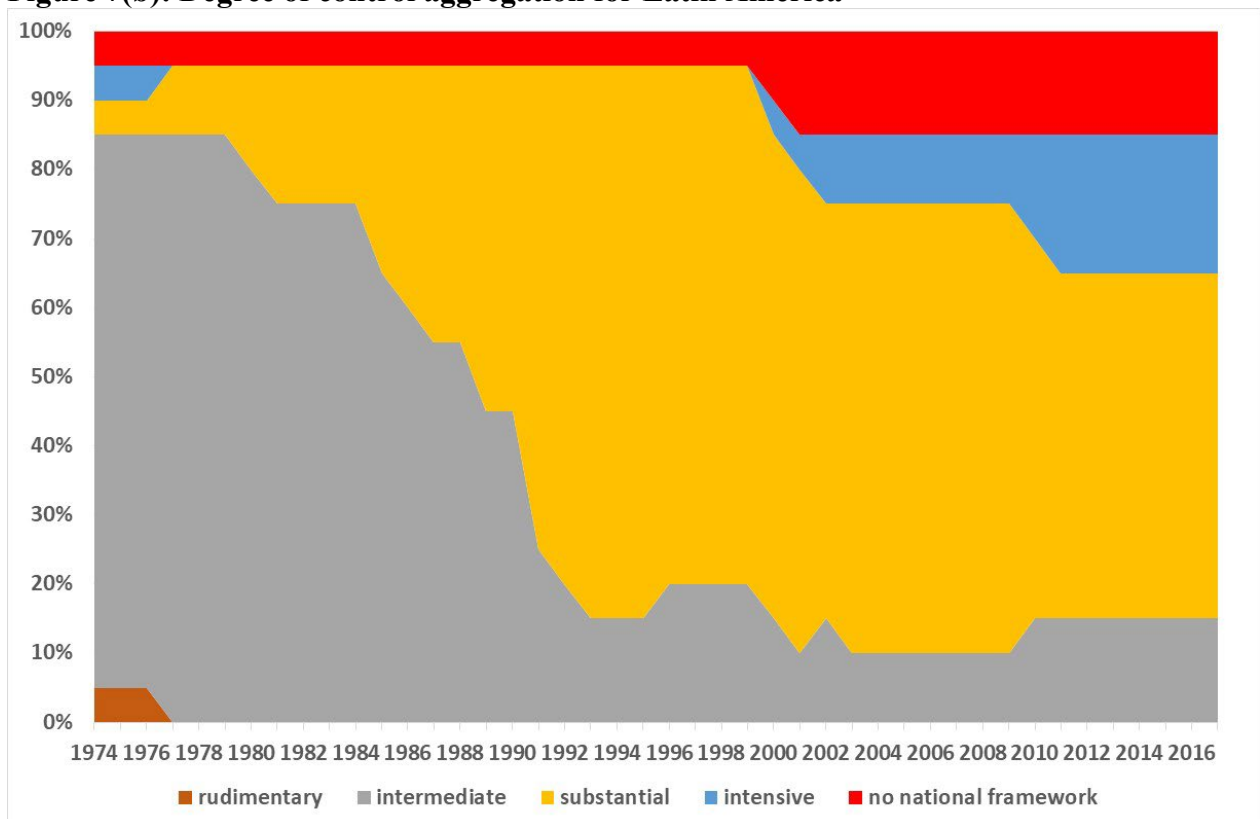


Figure 8(a): Target variable aggregation for Africa

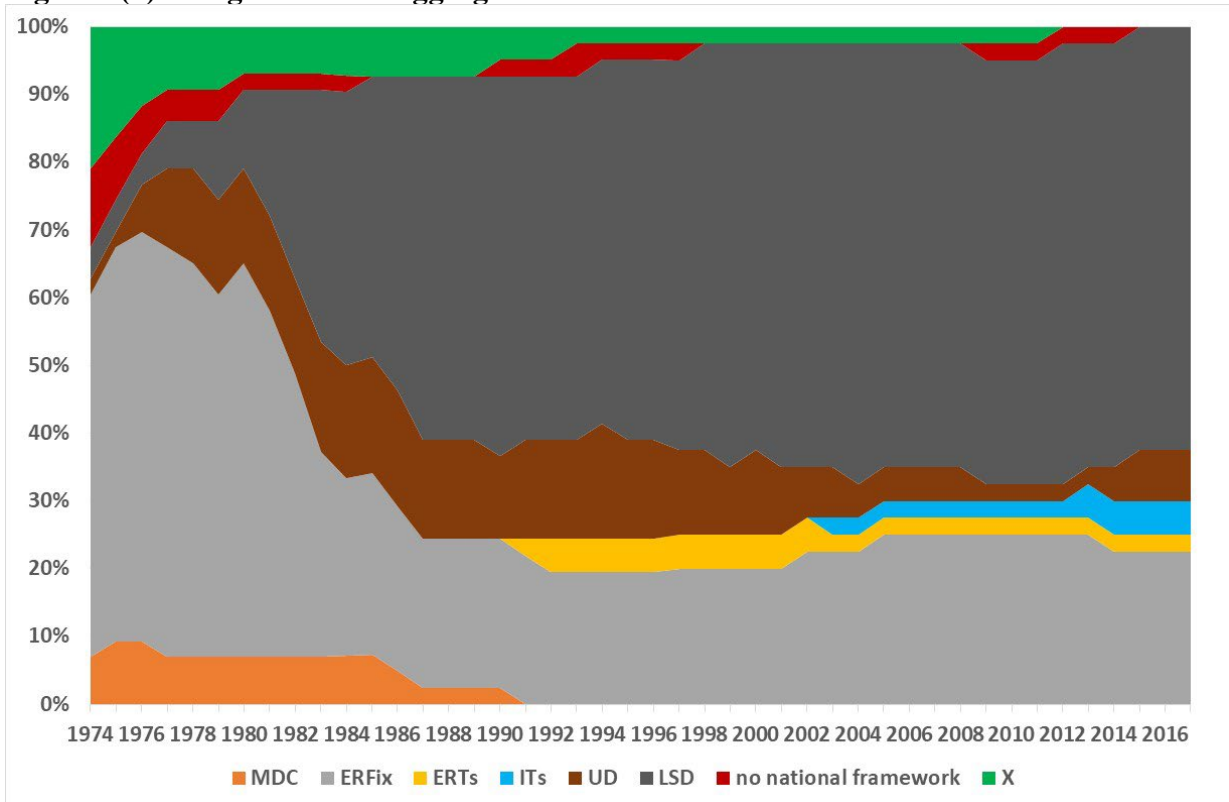


Figure 8(b): Degree of control aggregation for Africa

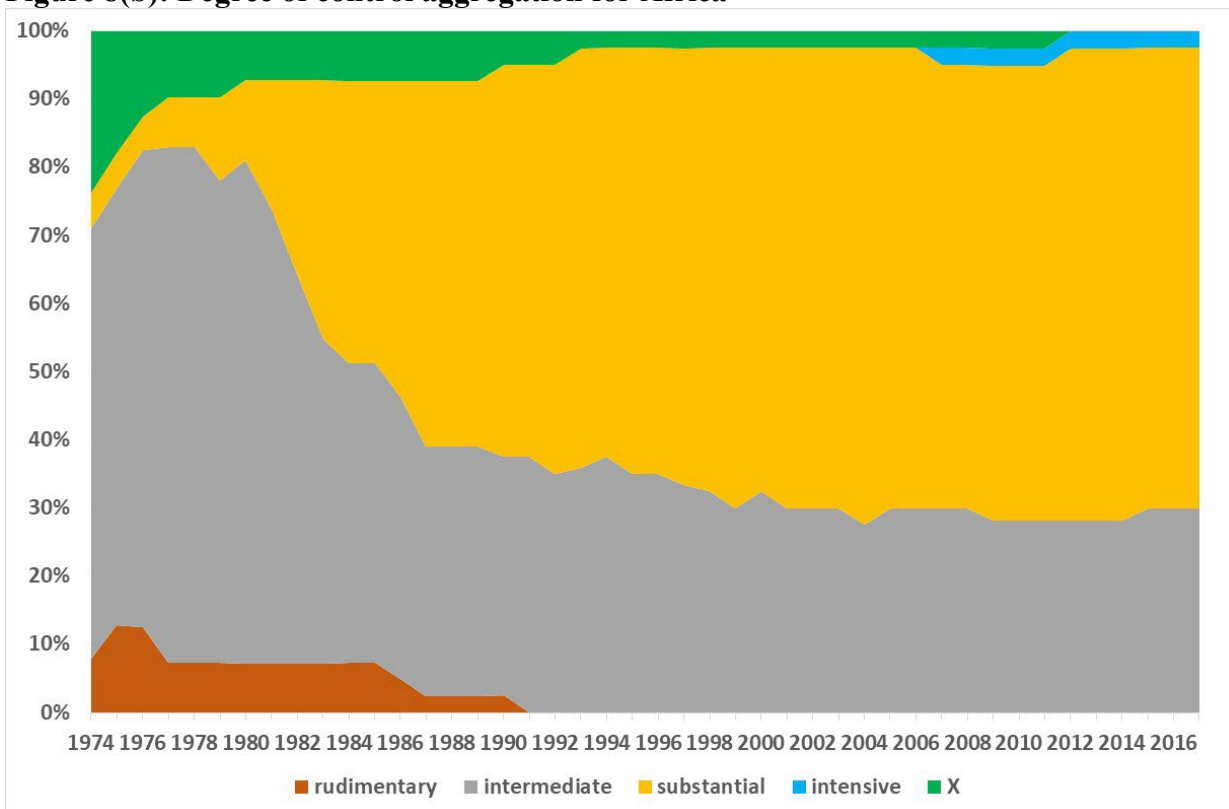


Figure 9(a): Target variable aggregation for Asia

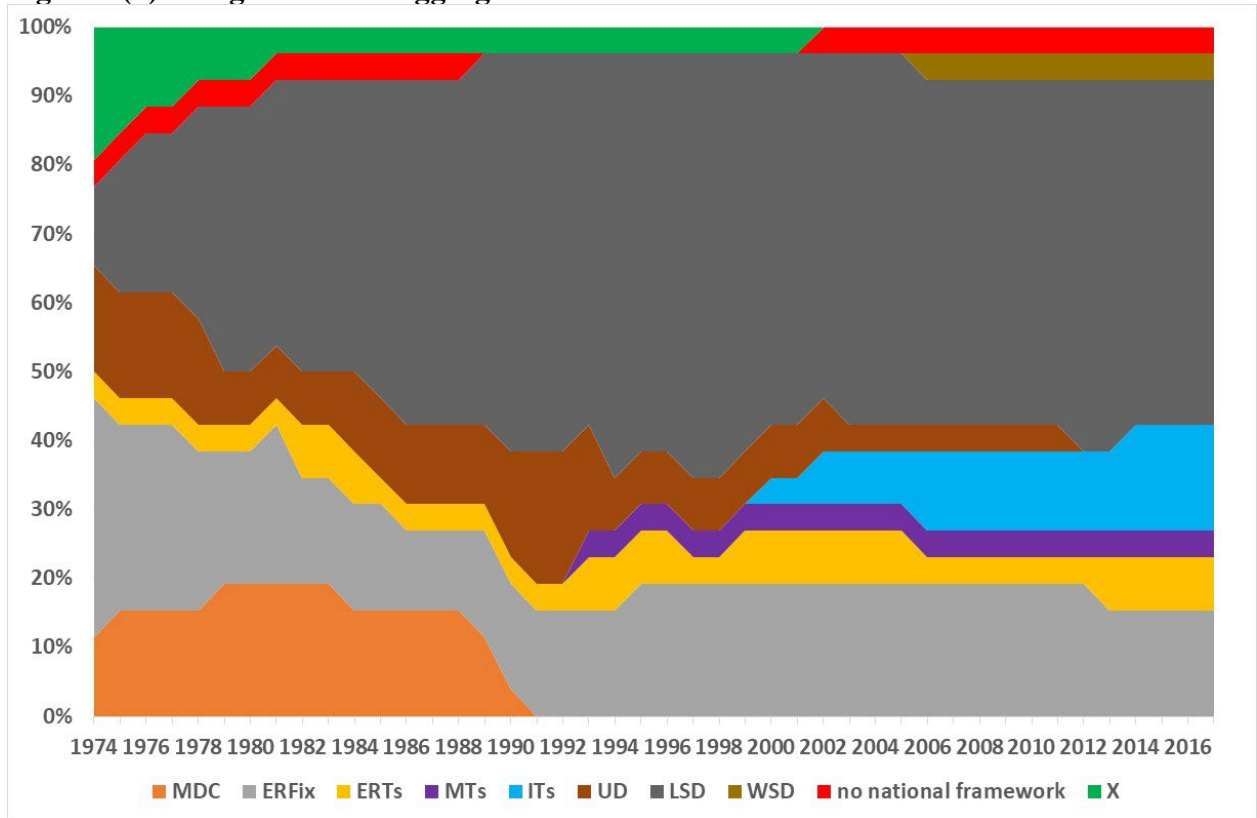


Figure 9(b): Degree of control aggregation for Asia

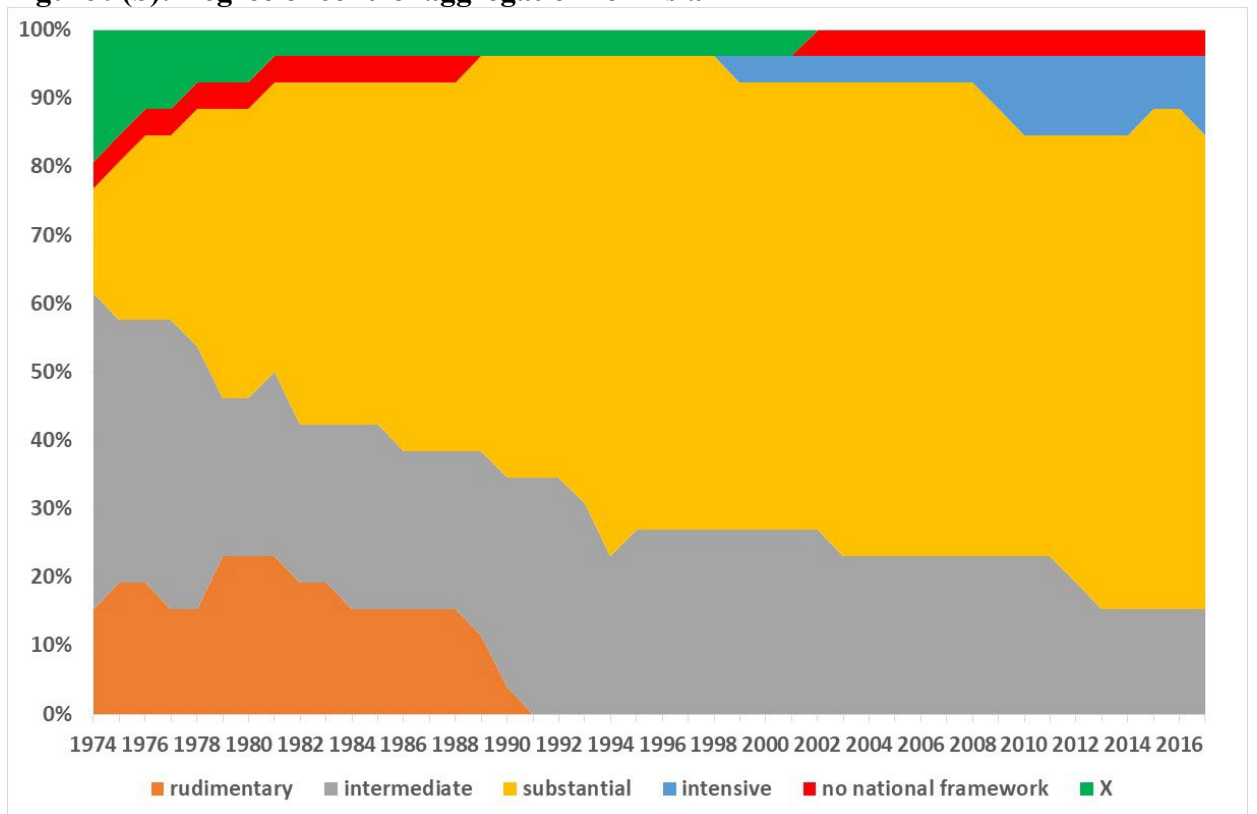


Figure 10(a): Target variable aggregation for Caribbean

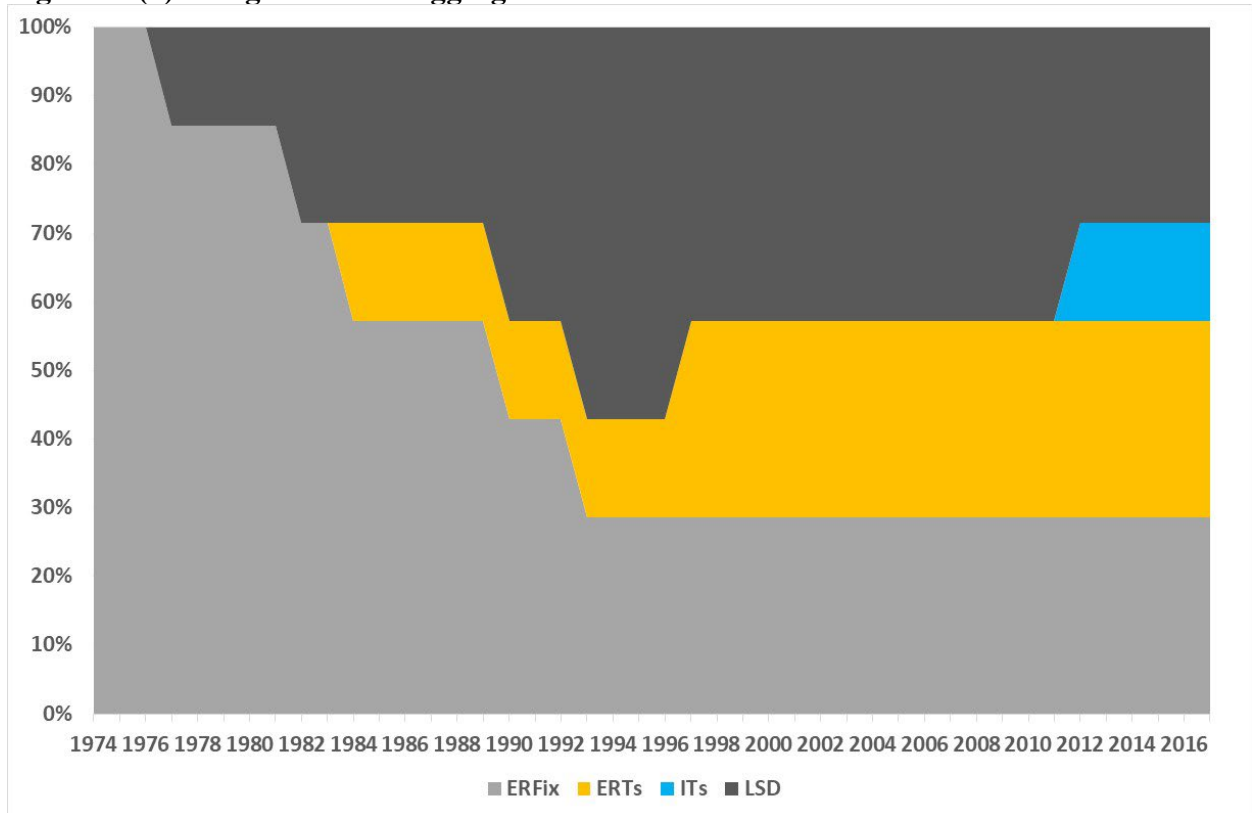


Figure 10(b): Degree of control aggregation for Caribbean

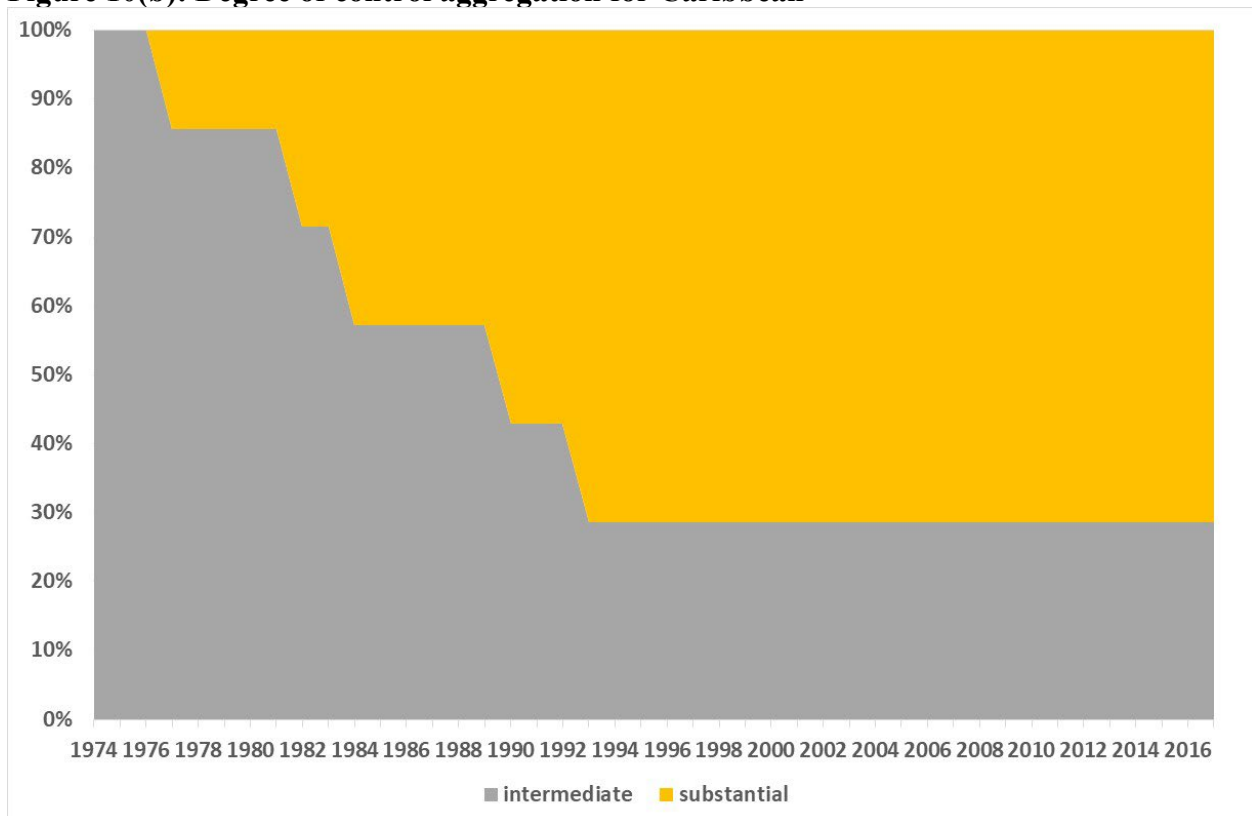


Figure 11(a): Target variable aggregation for Other Europe, Caucasus and Central Asia

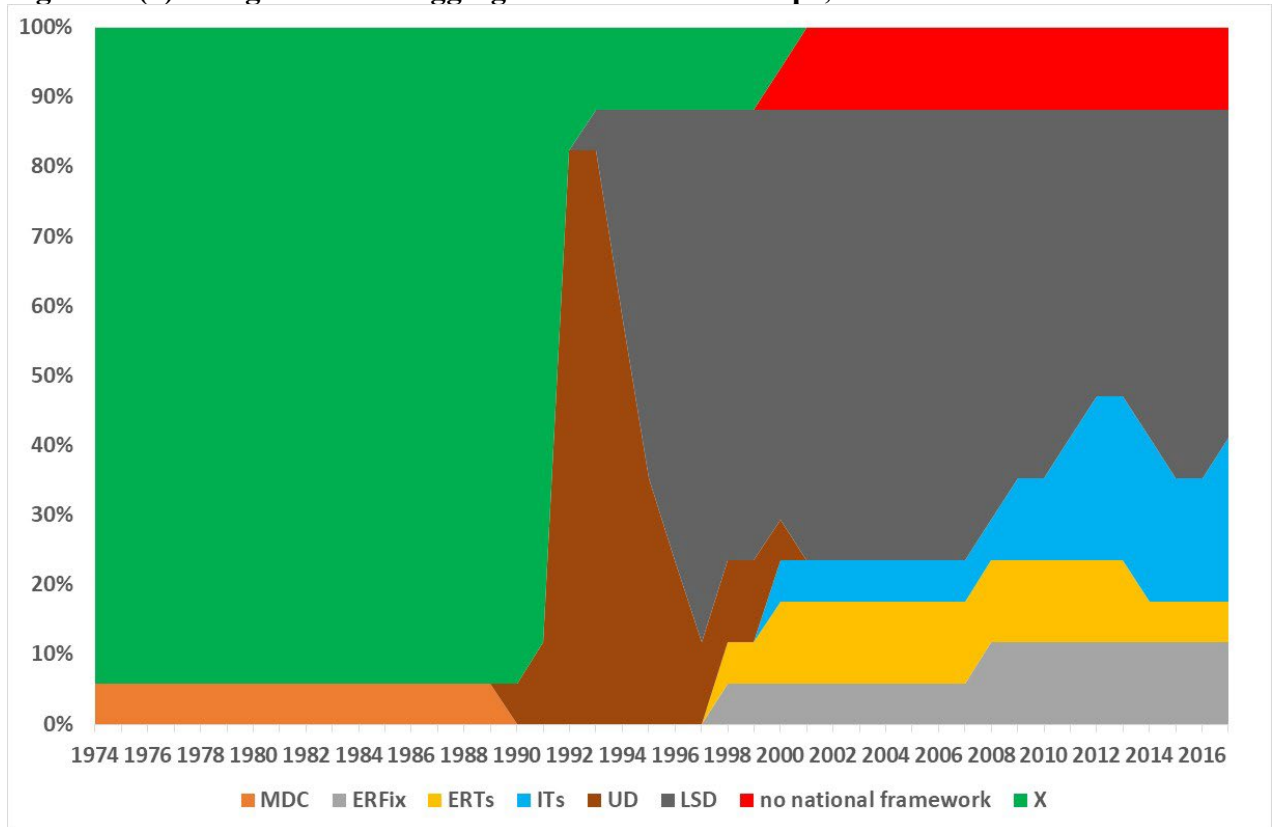


Figure 11(b): Degree of control aggregation for Other Europe, Caucasus and Central Asia

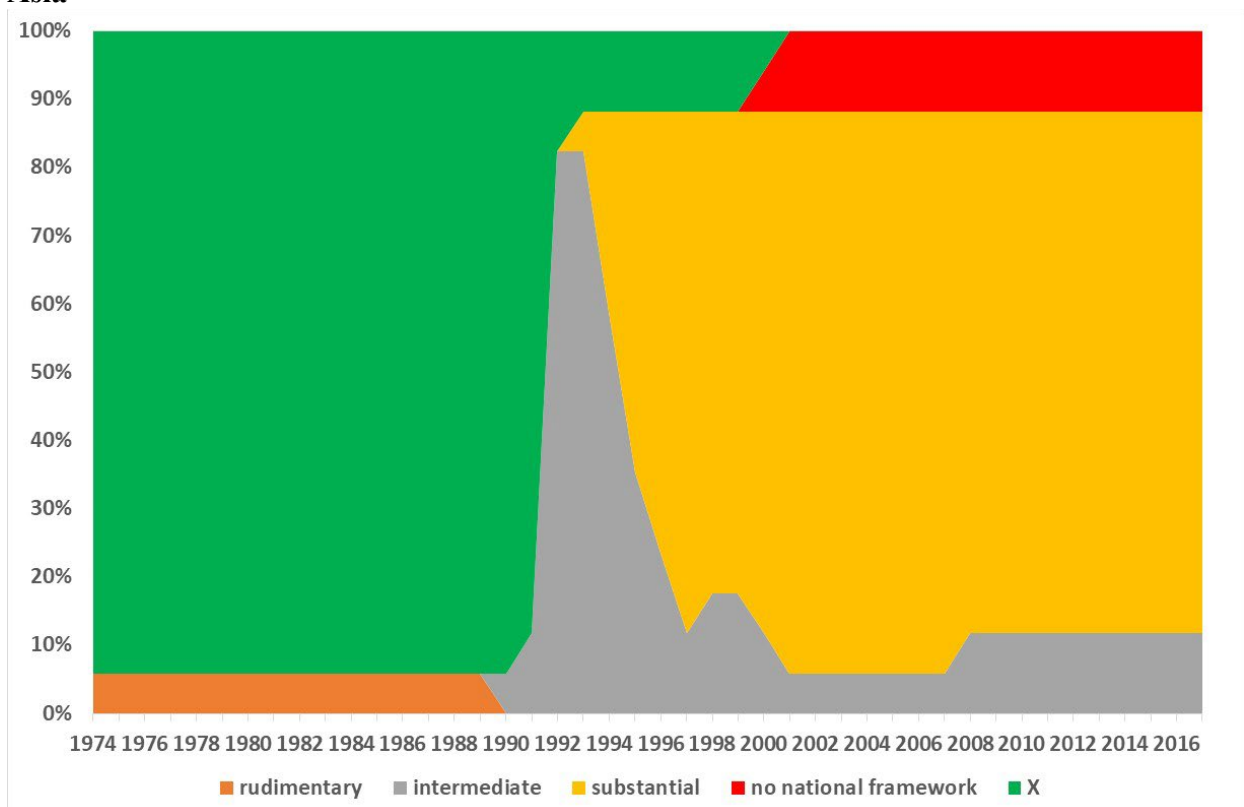


Figure 12: Inflation 1999-2007 by main framework and grouping: average

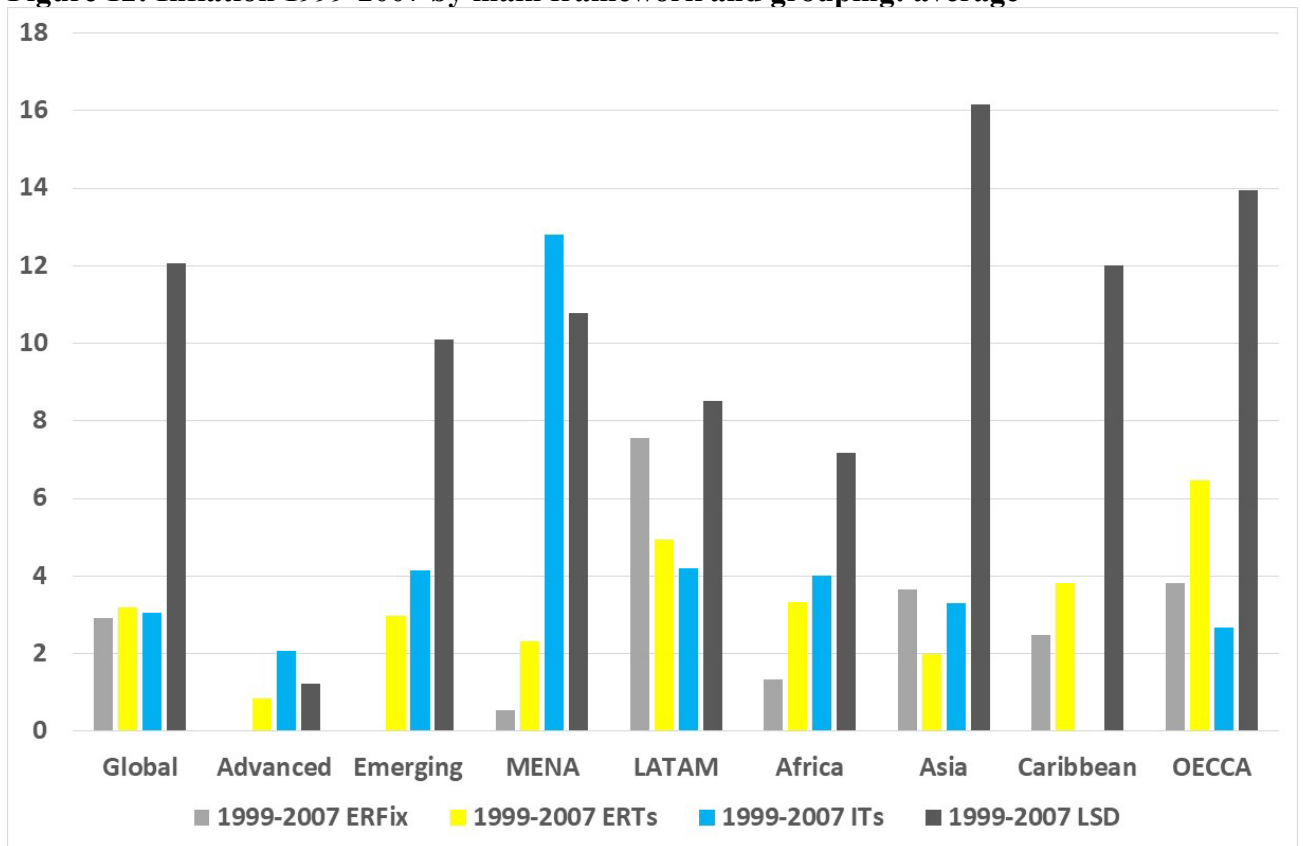


Figure 13: Inflation 2008-17 by main framework and grouping: average

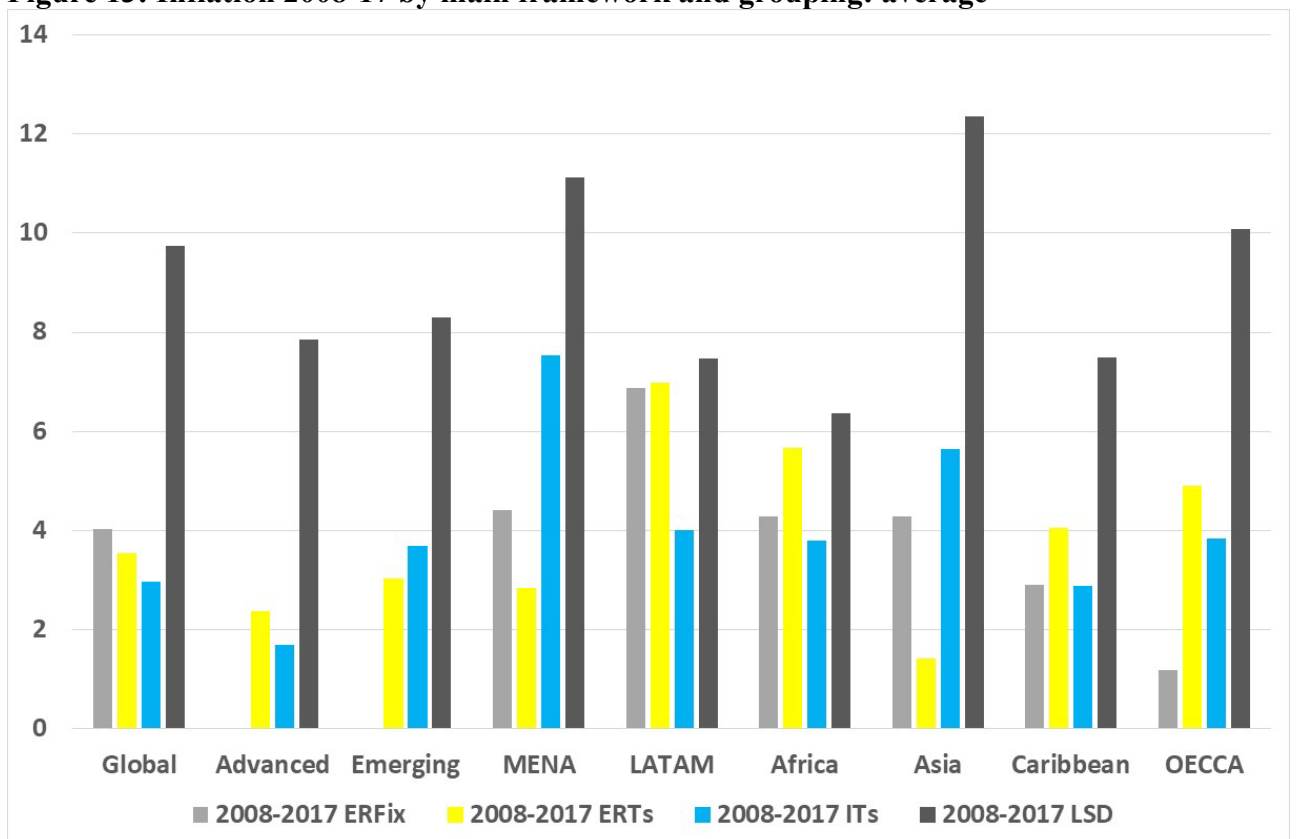


Figure 14: Growth 1999-2007 by main framework and grouping: average

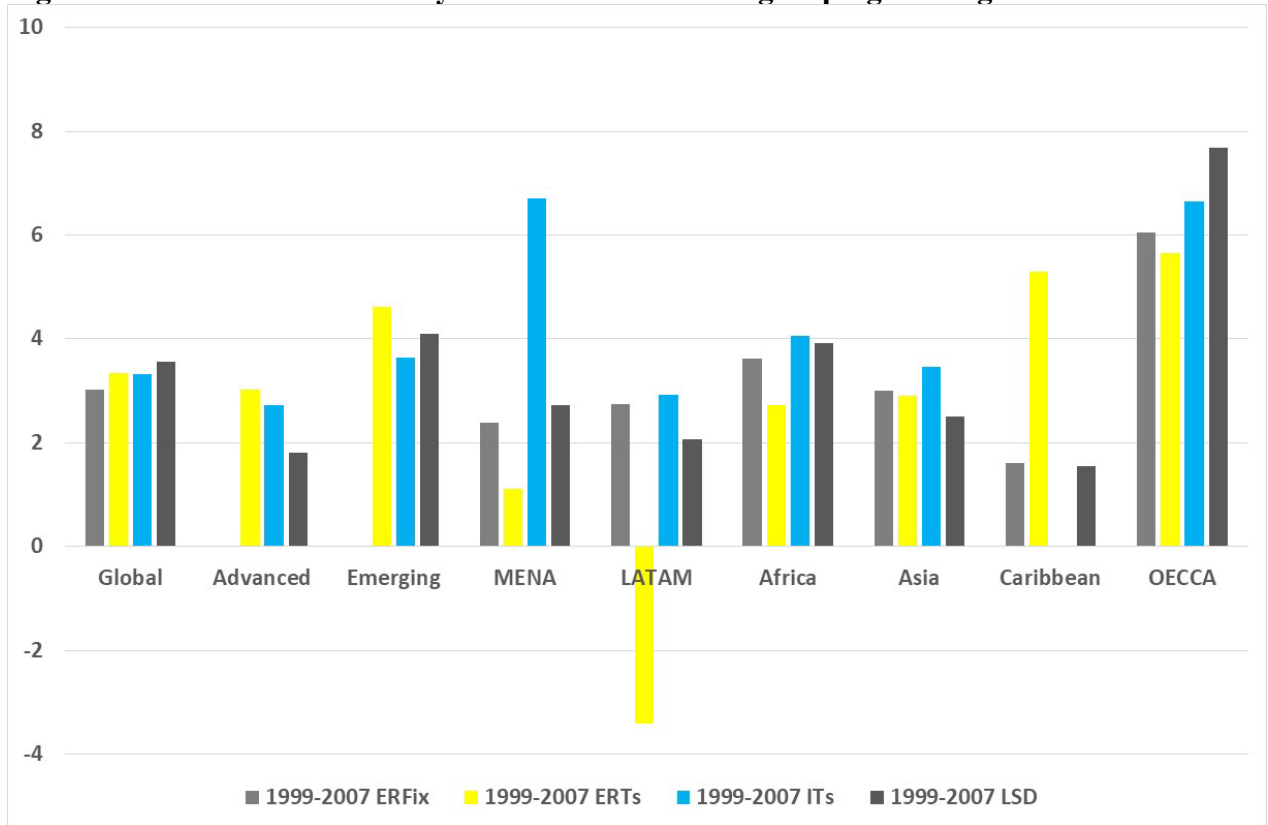


Figure 15: Growth 2008-17 by main framework and grouping: average

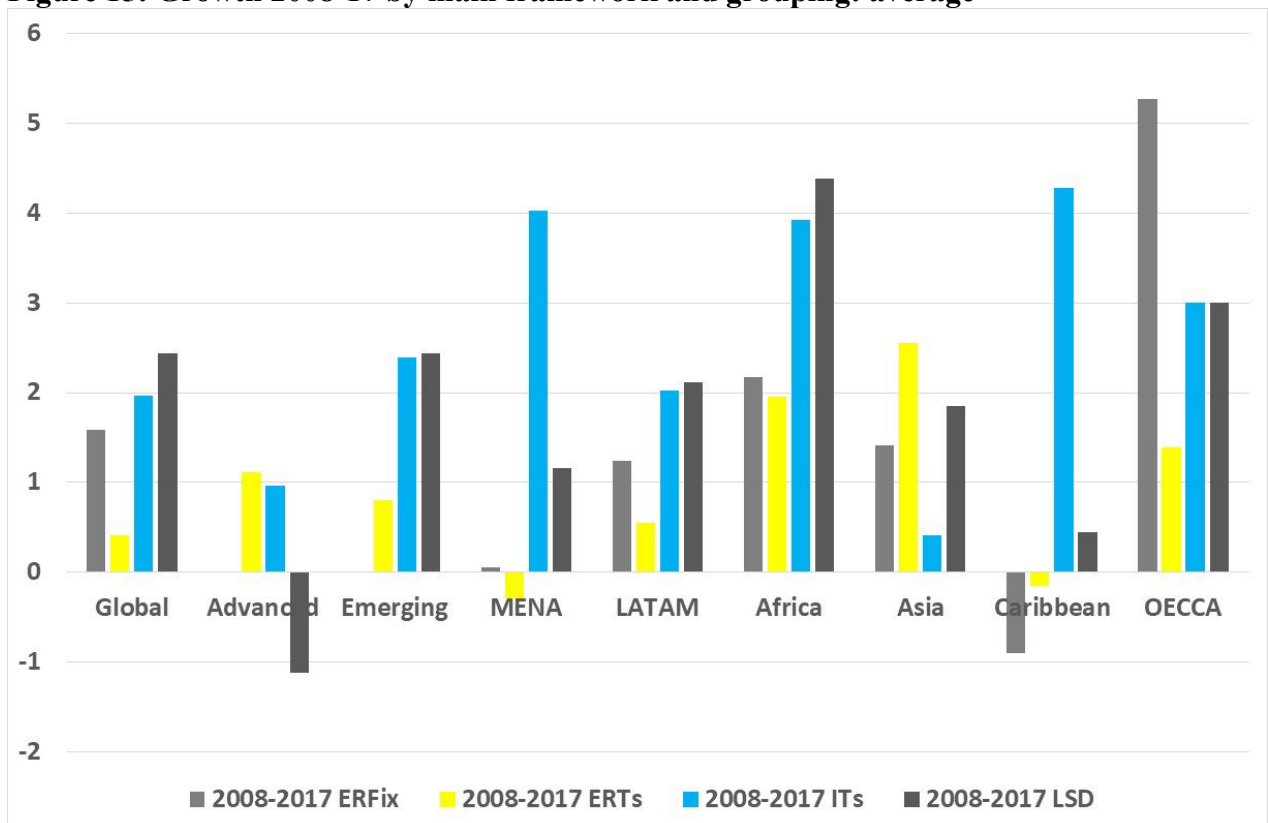


Figure 16: Inflation 1999-2007 by main framework and grouping: standard deviation

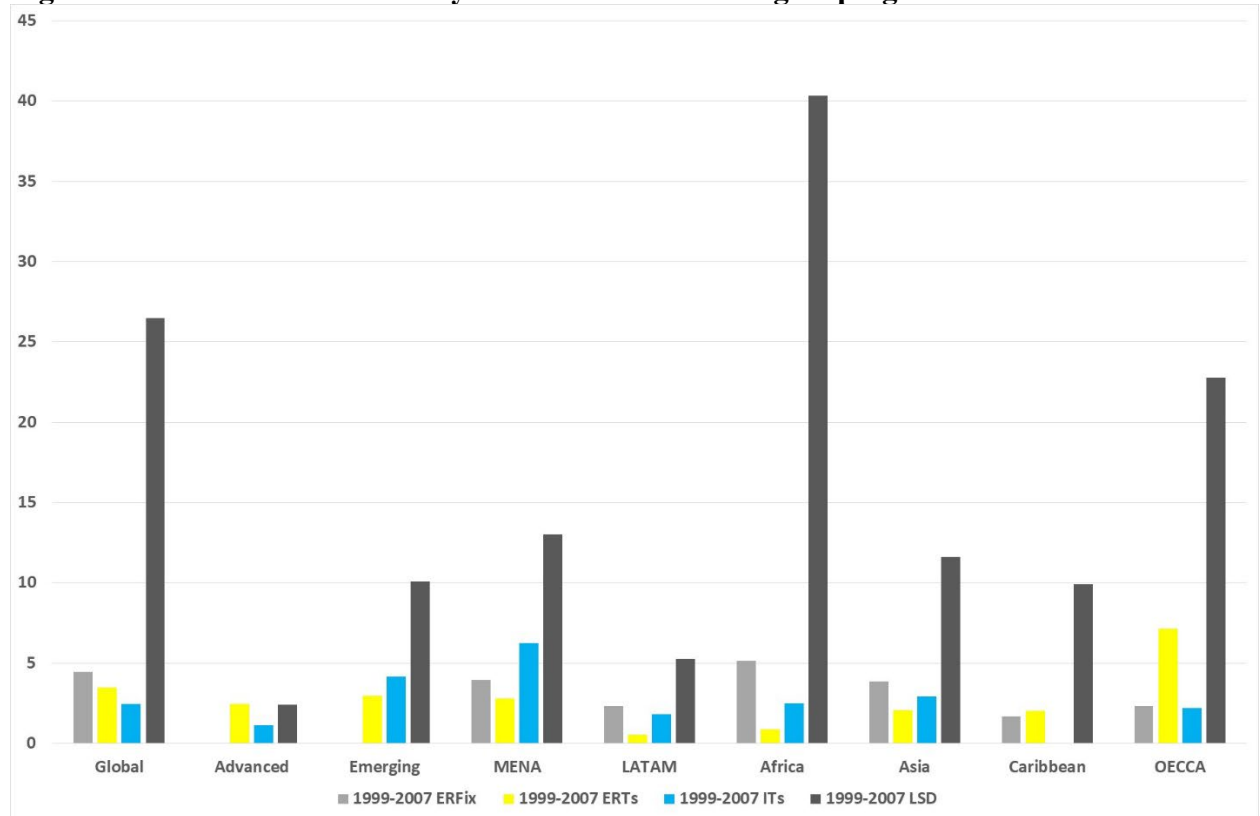


Figure 17: Inflation 2008-17 by main framework and grouping: standard deviation

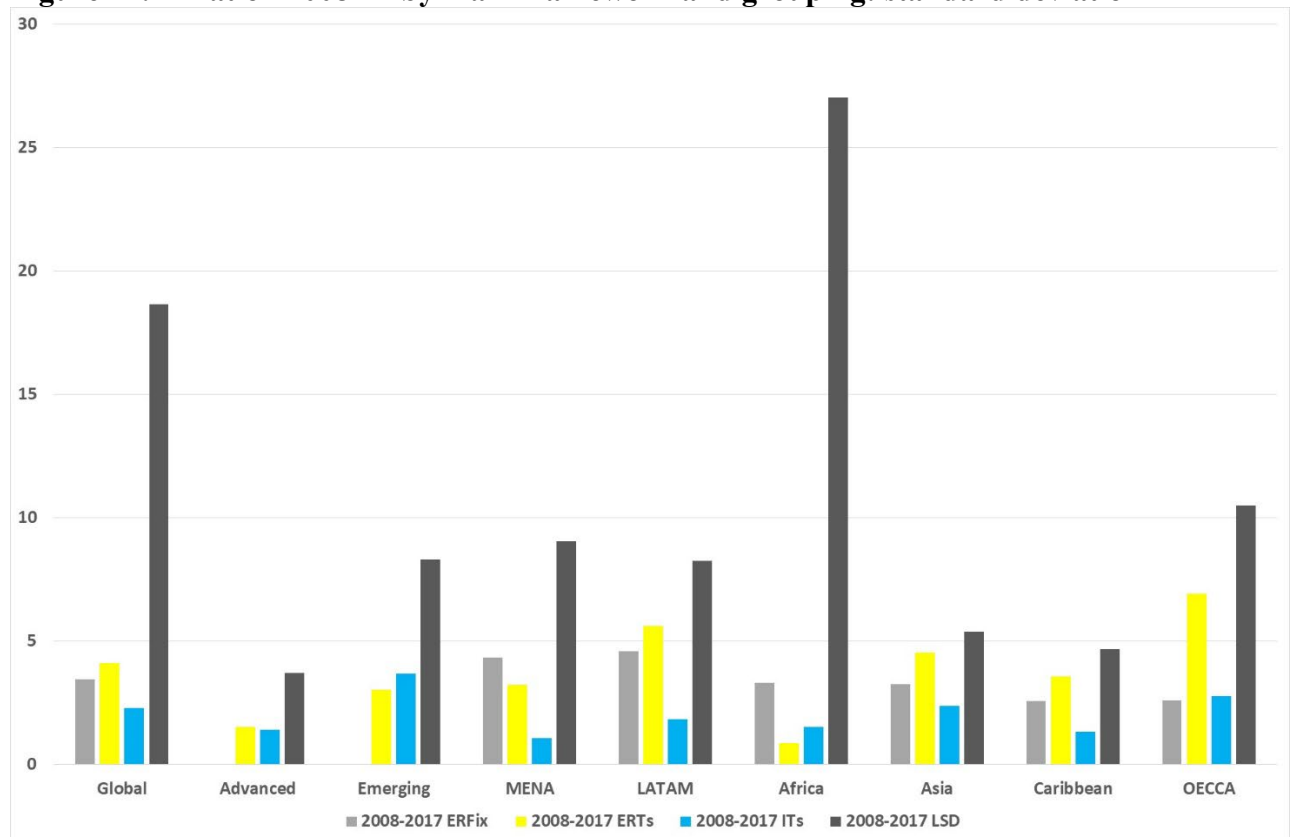


Figure 18: Growth 1999-2007 by main framework and grouping: standard deviation

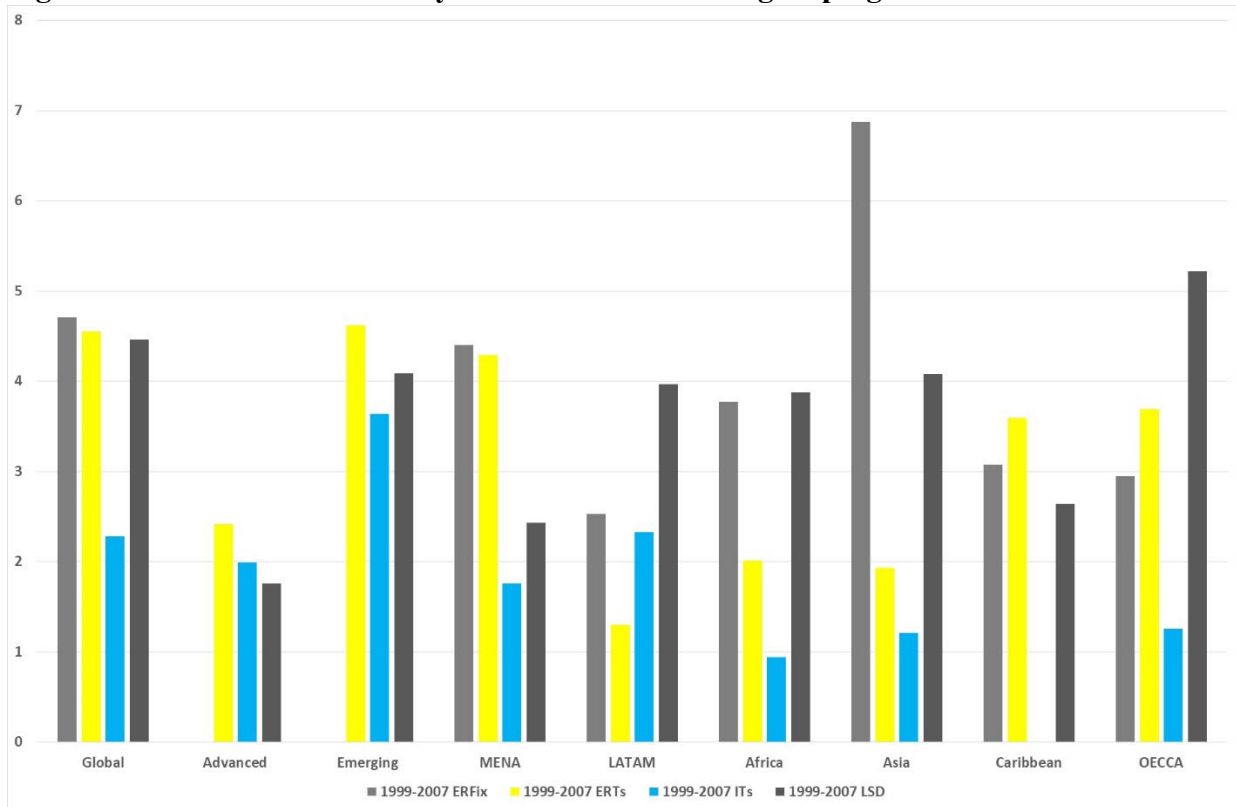
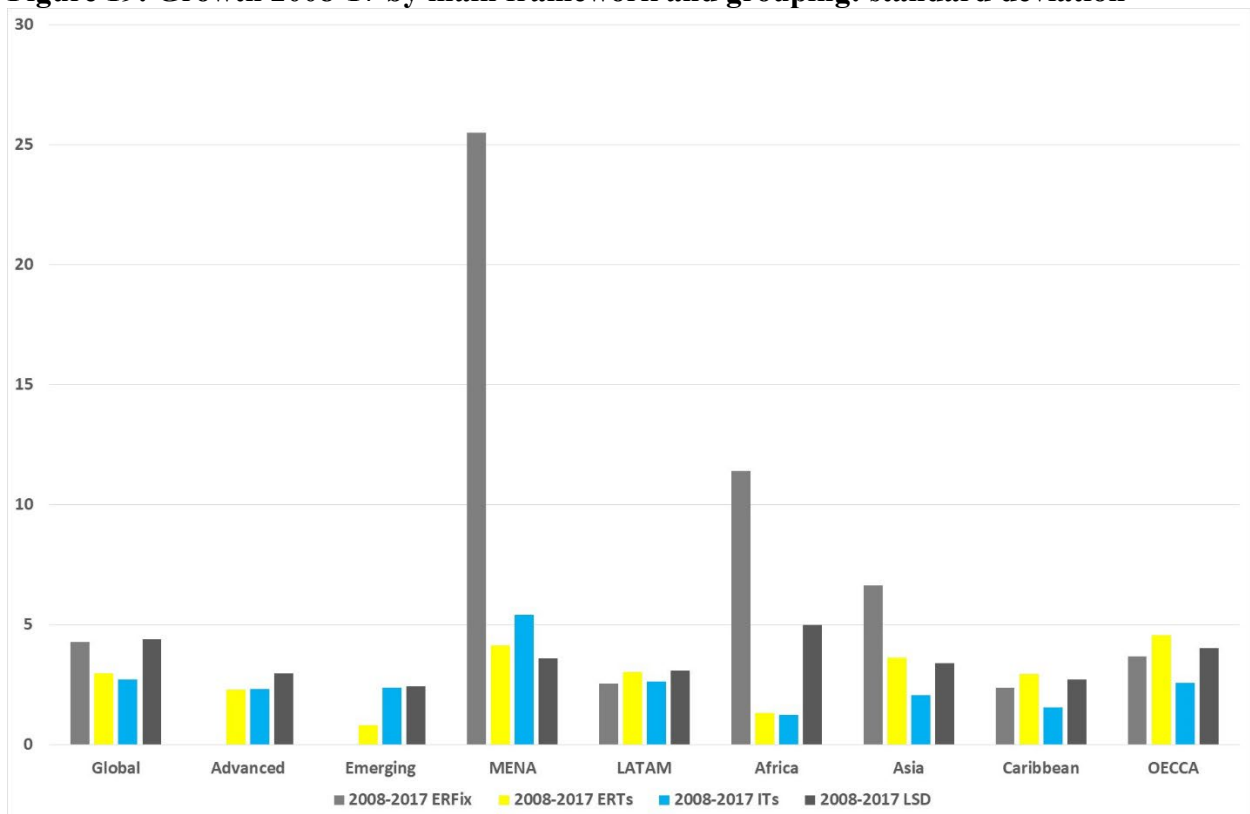


Figure 19: Growth 2008-17 by main framework and grouping: standard deviation



Data Appendix

Table A1: Global duration and incidence of TV and DOC frameworks, full menu

TV	episodes	duration	average duration	1974	1986	1998	2007	2017
X	40	624	15.60	40	30	5	1	0
MDC	17	220	12.94	13	12	1	0	0
PERF	3	8	2.67	1	0	0	0	0
AERF	72	1054	14.64	53	19	15	17	17
PCB	8	160	20.00	5	3	4	4	3
ACB	11	171	15.55	3	3	6	5	4
LCERT	3	29	9.67	0	1	2	0	0
LERT	28	309	11.04	8	6	10	5	4
FCERT	0	0		0	0	0	0	0
FERT	23	334	14.52	3	6	12	11	8
LCMT	3	24	8.00	0	1	1	0	0
LMT	8	51	6.38	1	2	0	1	1
FCMT	2	14	7.00	0	1	0	0	0
FMT	2	11	5.50	0	0	0	0	0
LCIT	13	77	5.92	0	0	4	2	2
LIT	29	240	8.28	0	1	2	12	18
FCIT	1	9	9.00	0	0	0	1	0
FIT	20	277	13.85	0	0	6	12	18
MwERT	6	39	6.50	0	1	2	0	0
ERwMT	4	16	4.00	0	1	1	0	0
M&ERT	3	15	5.00	0	1	0	0	0
MwIT	0	0		0	0	0	0	0
IwMT	0	0		0	0	0	0	0
M&IT	1	2	2.00	0	0	0	0	0
IwERT	5	14	2.80	0	0	1	0	0
ERwIT	2	6	3.00	0	0	0	0	0
I&ERT	2	8	4.00	0	0	1	1	0
ER&M&IT	1	2	2.00	0	0	1	0	0
UD	75	692	9.23	17	25	15	3	6
LSD	134	2399	17.90	16	50	74	70	58
WSD	1	12	12.00	0	0	0	1	1
UASC	16	208	13.00	8	3	2	6	6
CU	33	851	25.79	11	13	14	27	33

Note: average duration is duration divided by episodes. Source: author's calculations.

Table A2: Incidence of TV and DOC frameworks, advanced economies, by period

	1974-2017		1974-84		1985-1998		1999-2007		2008-2017	
	no.	%	no.	%	no.	%	no.	%	no.	%
MDC	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ER fix	8	0.88	8	2.91	0	0.00	0	0.00	0	0.00
ER targets	278	30.48	102	37.09	136	38.86	20	14.60	20	13.33
MTs	75	8.22	45	16.36	30	8.57	0	0.00	0	0.00
ITs	280	30.70	0	0.00	55	15.71	103	75.18	122	81.33
mixed Ts	79	8.66	24	8.73	50	14.29	2	1.46	3	2.00
UD	57	6.25	51	18.55	6	1.71	0	0.00	0	0.00
LSD	135	14.80	45	16.36	73	20.86	12	8.76	5	3.33
WSD	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
totals	912	100	275	100	350	100	137	100	150	100
rudimentary	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
intermediate	65	7.13	59	21.45	6	1.71	0	0.00	0	0.00
substantial	522	57.24	190	69.09	206	58.86	67	48.91	59	39.33
intensive	325	35.64	26	9.45	138	39.43	70	51.09	91	60.67
totals	912	100	275	100	350	100	137	100	150	100

Note: percentages are of the total minus the sum of the Xs (cases where the country does not (yet) exist as a separate entity) plus the UASCs and the CUs (where the country has no specific national monetary policy framework). Source: Cobham (2021).

Table A3: Incidence of TV and DOC frameworks, emerging economies, by period

	1974-2017		1974-84		1985-1998		1999-2007		2008-2017	
	no.	%	no.	%	no.	%	no.	%	no.	%
MDC	70	5.60	57	20.73	13	3.23	0	0.00	0	0.00
ER fix	96	7.68	75	27.27	21	5.22	0	0.00	0	0.00
ER targets	223	17.84	17	6.18	74	18.41	86	29.05	46	16.61
MTs	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ITs	239	19.12	0	0.00	12	2.99	88	29.73	139	50.18
mixed Ts	18	1.44	0	0.00	6	1.49	11	3.72	1	0.36
UD	175	14.00	77	28.00	84	20.90	6	2.03	8	2.89
LSD	417	33.36	49	17.82	192	47.76	103	34.80	73	26.35
WSD	12	0.96	0	0.00	0	0.00	2	0.68	10	3.61
totals										
rudimentary	70	5.60	57	20.73	13	3.23	0	0.00	0	0.00
intermediate	271	21.68	152	55.27	105	26.12	6	2.03	8	2.89
substantial	709	56.72	63	22.91	265	65.92	220	74.32	161	58.12
intensive	200	16.00	3	1.09	19	4.73	70	23.65	108	38.99
totals	1250	100	275	100	402	100	296	100	277	100

Note: percentages are of the total minus the sum of the Xs (cases where the country does not (yet) exist as a separate entity) plus the UASCs and the CUs (where the country has no specific national monetary policy framework). Source: Cobham (2021).

Table A4: Incidence TV and DOC MPFs, Middle East and North Africa, by period

TV	1974-2017		1974-84		1985-1998		1999-2007		2008-2017	
	no.	%	no.	%	no.	%	no.	%	no.	%
MDC	51	6.22	28	14.14	19	7.28	4	2.34	0	0.00
ER fix	137	16.71	74	37.37	32	12.26	15	8.77	16	8.42
ER targets	273	33.29	29	14.65	88	33.72	76	44.44	80	42.11
MTs	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ITs	8	0.98	0	0.00	0	0.00	3	1.75	5	2.63
mixed Ts	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
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
WSD	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
totals	836	100	209	100	266	100	171	100	190	100
DOC										
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	0.00	11	4.21	54	31.58	70	36.84
totals	820	100	198	100	261	100	171	100	190	100

Note: percentages are of the total minus the sum of the Xs (cases where the country does not (yet) exist as a separate entity) plus the UASCs and the CUs (where the country has no specific national monetary policy framework). Source: author's calculations.

Table A5: Incidence of TV and DOC frameworks, Latin America, by period

TV	1974-2017		1974-84		1985-1998		1999-2007		2008-2017	
	no.	%	no.	%	no.	%	no.	%	no.	%
MDC	3	0.37	3	1.44	0	0.00	0	0.00	0	0.00
ER fix	150	18.73	95	45.45	17	6.39	18	11.54	20	11.76
ER targets	29	3.62	3	1.44	15	5.64	6	3.85	5	2.94
MTs	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ITs	110	13.73	0	0.00	8	3.01	35	22.44	67	39.41
mixed Ts	5	0.62	0	0.00	0	0.00	0	0.00	5	2.94
UD	170	21.22	80	38.28	78	29.32	4	2.56	8	4.71
LSD	334	41.70	28	13.40	148	55.64	93	59.62	65	38.24
WSD	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
totals	801	100	209	100	266	100	156	100	170	100
DOC										
rudimentary	3	0.37	3	1.44	0	0.00	0	0.00	0	0.00
intermediate	320	39.95	175	83.73	95	35.71	22	14.10	28	16.47
substantial	426	53.18	28	13.40	171	64.29	120	76.92	107	62.94
intensive	52	6.49	3	1.44	0	0.00	14	8.97	35	20.59
totals	801	100	209	100	266	100	156	100	170	100

Note: percentages are of the total minus the sum of the Xs (cases where the country does not (yet) exist as a separate entity) plus the UASCs and the CUs (where the country has no specific national monetary policy framework). Source: author's calculations.

Table A6: Incidence of TV and DOC frameworks, Asia, by period

TV	1974-2017		1974-84		1985-1998		1999-2007		2008-2017	
	no.	%	no.	%	no.	%	no.	%	no.	%
MDC	68	6.62	48	20.08	20	6.02	0	0.00	0	0.00
ER fix	167	16.26	53	22.18	43	12.95	36	16.67	35	14.58
ER targets	63	6.13	14	5.86	18	5.42	16	7.41	15	6.25
MTs	25	2.43	0	0.00	6	1.81	9	4.17	10	4.17
ITs	50	4.87	0	0.00	0	0.00	16	7.41	34	14.17
mixed Ts	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
UD	93	9.06	33	13.81	43	12.95	13	6.02	4	1.67
LSD	549	53.46	91	38.08	202	60.84	124	57.41	132	55.00
WSD	12	1.17	0	0.00	0	0.00	2	0.93	10	4.17
totals	1027	100	239	100	332	100	216	100	240	100
DOC										
rudimentary	71	6.91	51	21.34	20	6.02	0	0.00	0	0.00
intermediate	257	25.02	83	34.73	86	25.90	49	22.69	39	16.25
substantial	665	64.75	105	43.93	226	68.07	158	73.15	176	73.33
intensive	34	3.31	0	0.00	0	0.00	9	4.17	25	10.42
totals	1027	100	239	100	332	100	216	100	240	100

Note: percentages are of the total minus the sum of the Xs (cases where the country does not (yet) exist as a separate entity) plus the UASCs and the CUs (where the country has no specific national monetary policy framework). Source: author's calculations.

Table A7: Incidence of TV and DOC frameworks, Africa, by period

TV	1974-2017		1974-84		1985-1998		1999-2007		2008-2017	
	no.	%	no.	%	no.	%	no.	%	no.	%
MDC	44	2.62	35	8.73	9	1.68	0	0.00	0	0.00
ER fix	536	31.94	237	59.10	122	22.76	81	23.08	96	24.62
ER targets	38	2.26	0	0.00	15	2.80	13	3.70	10	2.56
MTs	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ITs	20	1.19	0	0.00	0	0.00	5	1.42	15	3.85
mixed Ts	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
UD	183	10.91	54	13.47	84	15.67	27	7.69	18	4.62
LSD	857	51.07	75	18.70	306	57.09	225	64.10	251	64.36
WSD	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
totals	1678	100	401	100	536	100	351	100	390	100
DOC										
rudimentary	46	2.74	37	9.23	9	1.68	0	0.00	0	0.00
intermediate	717	42.73	289	72.07	206	38.43	108	30.77	114	29.23
substantial	904	53.87	75	18.70	321	59.89	242	68.95	266	68.21
intensive	11	0.66	0	0.00	0	0.00	1	0.28	10	2.56
totals	1678	100	401	100	536	100	351	100	390	100

Note: percentages are of the total minus the sum of the Xs (cases where the country does not (yet) exist as a separate entity) plus the UASCs and the CUs (where the country has no specific national monetary policy framework). Source: author's calculations.

Table A8: Incidence of TV and DOC frameworks, Caribbean, by period

	1974-2017		1974-84		1985-1998		1999-2007		2008-2017	
	no.	%	no.	%	no.	%	no.	%	no.	%
TV										
MDC	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ER fix	144	46.75	65	84.42	41	41.84	18	28.57	20	28.57
ER targets	55	17.86	1	1.30	16	16.33	18	28.57	20	28.57
MTs	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ITs	6	1.95	0	0.00	0	0.00	0	0.00	6	8.57
mixed Ts	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
UD	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
LSD	103	33.44	11	14.29	41	41.84	27	42.86	24	34.29
WSD	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
totals	308	100	77	100	98	100	63	100	70	100
DOC										
rudimentary	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
intermediate	144	46.75	65	84.42	41	41.84	18	28.57	20	28.57
substantial	164	53.25	12	15.58	57	58.16	45	71.43	50	71.43
intensive	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
totals	308	100	77	100	98	100	63	100	70	100

Note: percentages are of the total minus the sum of the Xs (cases where the country does not (yet) exist as a separate entity) plus the UASCs and the CUs (where the country has no specific national monetary policy framework). Source: author's calculations.

Table A9: Incidence of TV and DOC frameworks, OECCA, by period

	1974-2017		1974-84		1985-1998		1999-2007		2008-2017	
	no.	%	no.	%	no.	%	no.	%	no.	%
TV										
MDC	16	3.92	11	100.00	5	4.46	0	0.00	0	0.00
ER fix	30	7.35	0	0.00	1	0.89	9	6.67	20	13.33
ER targets	34	8.33	0	0.00	1	0.89	17	12.59	16	10.67
MTs	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ITs	38	9.31	0	0.00	0	0.00	8	5.93	30	20.00
mixed Ts	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
UD	58	14.22	0	0.00	55	49.11	3	2.22	0	0.00
LSD	232	56.86	0	0.00	50	44.64	98	72.59	84	56.00
WSD	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
totals	408	100	11	100	112	100	135	100	150	100
DOC										
rudimentary	16	3.92	11	100.00	5	4.46	0	0.00	0	0.00
intermediate	88	21.57	0	0.00	56	50.00	12	8.89	20	13.33
substantial	304	74.51	0	0.00	51	45.54	123	91.11	130	86.67
intensive	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
totals	408	100	11	100	112	100	135	100	150	100

Note: percentages are of the total minus the sum of the Xs (cases where the country does not (yet) exist as a separate entity) plus the UASCs and the CUs (where the country has no specific national monetary policy framework). Source: author's calculations.

Table A10: Economic performance by aggregated framework and period, global

	1974-84		1985-98		1999-2007		2008-2017	
	inflatn	growth	inflatn	growth	inflatn	growth	inflatn	growth
MDC	9.13	2.72	53.68	2.11	13.31	3.85	..	..
ERfix	13.40	1.55	5.97	1.73	2.93	3.02	4.04	1.59
ERtargets	9.41	2.36	6.26	2.80	3.18	3.34	3.54	0.41
MTs	10.51	2.08	4.24	4.31	0.80	4.61	1.05	2.68
ITs	..	..	3.49	3.03	3.05	3.32	2.98	1.97
MixedTs	9.35	2.14	4.67	2.41	4.67	4.87	3.16	2.45
UD	56.44	0.88	455.29	-2.40	55.70	0.51	39.64	-1.78
LSD	16.07	0.79	36.28	1.83	12.06	3.56	9.74	2.44
WSD	..	..	..	..	2.82	3.88	2.58	3.18
DOC								
rudimentary	9.13	2.72	53.68	2.11	13.31	3.85	..	..
intermediate	25.74	1.36	233.72	-0.36	13.20	2.49	6.99	1.13
substantial	13.28	1.45	28.37	2.14	9.48	3.62	7.80	2.18
intensive	8.73	1.42	3.42	2.55	2.44	2.92	2.43	1.34
UASC	9.38	3.10	2.20	4.25	6.65	1.99	3.18	3.56
all MPFs	18.52	1.47	75.14	1.43	7.93	3.13	5.67	1.72

Notes: the final row shows average inflation and growth under all frameworks, including UASC; .. indicates no cases of this MPF or no data available. Source: author's calculations.

Table A11: Economic performance by aggregated framework and period, advanced economies

	1974-84		1985-98		1999-2007		2008-2017	
	inflatn	growth	inflatn	growth	inflatn	growth	inflatn	growth
MDC	..	..	..	..	..	..	..	..
ERfix	16.66	4.55	..	..	..	..	..	..
ERtargets	10.14	2.19	4.12	2.60	0.84	3.02	2.38	1.12
MTs	10.50	4.47	4.55	4.08	..	..	..	..
ITs	..	..	1.96	2.58	2.07	2.72	1.69	0.96
MixedTs	9.35	2.15	3.93	2.38	2.90	3.09	-0.31	0.61
UD	24.25	0.51	17.72	0.97	..	..	..	..
LSD	8.89	0.54	6.13	1.93	1.23	1.80	7.85	-1.12
WSD	..	..	..	..	..	..	..	..
no nat MPF	7.49	2.86	2.18	4.13	2.36	2.44	1.37	0.18
rudimentary	..	..	..	..	..	..	..	..
intermediate	23.09	1.86	17.72	0.97	..	..	..	..
substantial	10.16	1.74	5.07	2.55	1.51	2.70	2.17	0.97
intensive	7.61	0.93	2.93	2.55	2.14	2.69	1.80	0.87
all MPFs	12.25	2.40	4.36	2.58	2.06	2.58	1.69	0.59

Note: the all frameworks row shows the average inflation and growth under all frameworks, including no national framework. Source: Cobham et al. (2022).

Table A12: Economic performance by aggregated framework and period, emerging economies

	1974-84		1985-98		1999-2007		2008-2017	
	inflatn	growth	inflatn	growth	inflatn	growth	inflatn	growth
MDC	32.29	4.18	4.41	4.30	..	..	..	..
ERfix	10.67	4.55	4.11	4.25	..	..	..	..
ERtargets	7.77	3.98	12.63	4.27	2.96	4.62	3.03	0.80
MTs	..	..	..	..	..	..	..	..
ITs	..	..	10.42	4.45	4.15	3.64	3.69	2.39
MixedTs	..	..	10.74	3.29	5.00	5.25	4.60	5.54
UD	91.07	1.35	342.66	0.15	40.89	2.19	79.26	-0.31
LSD	17.29	1.84	78.73	2.01	10.09	4.09	8.31	2.44
WSD	..	..	..	..	2.82	5.54	2.58	2.81
no nat MPF	..	..	..	..	3.61	6.35	1.43	1.87
rudimentary	32.29	4.18	4.41	4.30	..	..	..	..
intermediate	49.20	2.92	277.03	1.12	40.89	2.19	79.26	-0.31
substantial	14.68	2.40	60.92	2.64	6.97	4.11	6.06	2.19
intensive	18.23	2.23	7.56	3.49	2.67	4.34	2.73	2.11
all MPFs	37.75	2.88	112.15	2.25	6.63	4.13	5.77	2.07

Note: the all frameworks row shows the average inflation and growth under all frameworks, including no national framework. Source: Cobham et al. (2022).

Table A13: Economic performance by aggregated framework and period, Middle East and North Africa

	1974-84		1985-98		1999-2007		2008-2017	
	inflatn	growth	inflatn	growth	inflatn	growth	inflatn	growth
TV								
MDC	10.61	2.54	112.73	4.86	13.31	3.85	..	..
ERfix	9.90	3.13	2.31	1.12	0.56	2.38	4.42	0.06
ERtargets	7.62	-1.34	3.35	0.75	2.31	1.10	2.85	-0.28
MTs	..	..	..	..	..	..	..	..
ITs	..	..	..	..	12.79	6.70	7.53	4.03
MixedTs	..	..	..	..	..	..	..	..
UD	26.37	1.61	31.17	1.38	11.90	1.01	20.73	-6.83
LSD	12.59	0.79	25.20	1.64	10.79	2.72	11.13	1.16
WSD	..	..	..	..	..	..	..	..
DOC								
rudimentary	10.61	2.54	112.73	4.86	13.31	3.85	..	..
intermediate	16.30	2.50	24.68	1.30	6.00	1.80	6.23	-3.16
substantial	9.57	0.15	13.12	1.29	8.57	2.51	10.16	0.77
intensive	..	..	1.08	-0.08	2.61	1.05	2.66	0.21
UASC	..	..	..	..	..	..	..	..
all MPFs	13.99	2.01	23.36	1.54	6.85	1.96	6.84	-0.06

Notes: the final row shows average inflation and growth under all frameworks, including UASC; .. indicates no cases of this MPF or no data available. Source: author's calculations.

Table A14: Economic performance by aggregated framework and period, Latin America

TV	1974-84		1985-98		1999-2007		2008-2017	
	inflatn	growth	inflatn	growth	inflatn	growth	inflatn	growth
MDC	..	-0.41	..	..	..	..	..	..
ERfix	11.96	0.75	..	3.56	7.56	2.74	6.88	1.24
ERtargets	18.18	2.41	38.36	4.34	4.93	-3.42	6.98	0.55
MTs	..	..	..	..	..	..	..	..
ITs	..	..	11.03	5.63	4.20	2.92	4.02	2.03
MixedTs	..	..	..	..	..	..	4.96	2.92
UD	90.76	0.44	480.94	-0.38	70.14	-5.04	79.26	-0.25
LSD	30.10	-0.16	101.93	1.60	8.51	2.06	7.47	2.12
WSD	..	..	..	..	..	..	..	..
DOC								
rudimentary	..	-0.41	..	..	..	..	..	..
intermediate	50.68	0.61	480.94	0.33	24.62	1.32	36.68	0.94
substantial	30.10	-0.16	93.79	2.03	7.75	1.76	6.33	1.87
intensive	18.18	2.41	..	..	2.58	4.41	3.56	2.59
UASC	6.54	1.74	0.87	1.32	8.53	2.46	3.08	2.69
all MPFs	43.35	0.58	189.02	1.41	8.62	2.01	8.14	2.00

Notes: the final row shows average inflation and growth under all frameworks, including UASC; .. indicates no cases of this MPF or no data available. Source: author's calculations.

Table A15: Economic performance by aggregated framework and period, Asia (excluding advanced countries)

TV	1974-84		1985-98		1999-2007		2008-2017	
	inflatn	growth	inflatn	growth	inflatn	growth	inflatn	growth
MDC	8.59	4.14	24.24	0.12	..	..	..	..
ERfix	11.46	2.81	5.39	1.13	1.33	3.62	4.30	2.17
ERtargets	5.53	4.36	5.53	5.52	3.33	2.73	5.66	1.96
MTs	..	..	2.66	5.28	0.80	4.61	1.05	2.68
ITs	..	..	..	..	4.01	4.06	3.81	3.93
MixedTs	..	..	..	..	..	..	..	..
UD	..	13.69	34.73	4.27	22.44	11.30	10.25	9.02
LSD	10.68	1.36	9.79	2.53	7.19	3.91	6.37	4.38
WSD	..	..	..	..	2.82	3.88	2.58	3.18
DOC								
rudimentary	8.59	4.14	24.24	0.12	..	..	..	..
intermediate	11.46	3.06	12.62	2.00	4.85	4.90	4.78	2.73
substantial	9.91	1.78	9.24	2.85	6.34	3.87	5.80	4.02
intensive	..	..	..	..	2.07	3.44	2.80	3.68
UASC	11.22	5.60	7.07	8.95	5.15	-2.19	5.33	3.34
all MPFs	10.22	2.38	10.31	2.55	5.78	3.98	5.30	3.72

Notes: the final row shows average inflation and growth under all frameworks, including UASC; .. indicates no cases of this MPF or no data available. Source: author's calculations.

Table A16: Economic performance by aggregated framework and period, Africa

TV	1974-84		1985-98		1999-2007		2008-2017	
	inflatn	growth	inflatn	growth	inflatn	growth	inflatn	growth
MDC	10.18	2.59	6.22	-0.80	..	..	..	..
ERfix	16.68	0.40	7.83	2.01	3.66	3.00	4.29	1.41
ERtargets	..	..	6.82	2.13	1.98	2.91	1.41	2.55
MTs	..	..	..	..	..	..	..	..
ITs	..	..	..	..	3.29	3.45	5.65	0.41
MixedTs	..	..	..	..	..	..	..	..
UD	19.60	0.33	964.80	-2.62	116.32	-6.49	-1.03	0.70
LSD	22.83	0.40	21.62	1.00	16.15	2.50	12.37	1.86
WSD	..	..	..	..	..	..	..	..
DOC								
rudimentary	10.18	2.59	6.22	-0.80	..	..	..	..
intermediate	17.01	0.39	331.51	0.38	14.04	1.37	4.10	1.32
substantial	22.83	0.40	20.75	1.05	15.06	2.54	11.99	1.77
intensive	..	..	..	..	2.04	2.32	1.41	2.55
UASC	14.25	5.17	..	6.88	..	..	2.33	9.45
all MPFs	17.67	0.56	128.60	1.37	14.75	2.60	9.79	1.60

Notes: the final row shows average inflation and growth under all frameworks, including UASC; .. indicates no cases of this MPF or no data available. Source: author's calculations.

Table A17: Economic performance by aggregated framework and period, Caribbean

TV	1974-84		1985-98		1999-2007		2008-2017	
	inflatn	growth	inflatn	growth	inflatn	growth	inflatn	growth
MDC	..	..	..	..	..	..	..	..
ERfix	11.92	1.55	4.38	-0.19	2.48	1.60	2.91	-0.90
ERtargets	2.90	6.24	3.10	4.52	3.82	5.29	4.04	-0.16
MTs	..	..	..	..	..	..	..	..
ITs	..	..	..	..	..	..	2.88	4.28
MixedTs	..	..	..	..	..	..	..	..
UD	..	..	..	..	..	..	..	..
LSD	17.69	-1.34	21.14	1.35	12.00	1.55	7.49	0.45
WSD	..	..	..	..	..	..	..	..
DOC								
rudimentary	..	..	..	..	..	..	..	..
intermediate	11.92	1.55	4.38	-0.19	2.48	1.60	2.91	-0.90
substantial	16.46	-0.71	16.08	2.24	8.72	3.05	5.56	0.67
intensive	..	..	..	..	..	..	..	..
UASC	..	..	..	..	..	..	..	..
all MPFs	12.63	1.19	11.18	1.22	6.94	2.63	4.80	0.22

Notes: the final row shows average inflation and growth under all frameworks, including UASC; .. indicates no cases of this MPF or no data available. Source: author's calculations.

Table A18: Economic performance by aggregated framework and period, Other Europe plus Caucasus and Central Asia

TV	1974-84		1985-98		1999-2007		2008-2017	
	inflatn	growth	inflatn	growth	inflatn	growth	inflatn	growth
MDC	..	0.03	..	0.85	..	..	..	..
ERfix	15.65	3.81	6.04	1.20	5.28
ERtargets	0.54	2.83	6.46	5.65	4.90	1.39
MTs
ITs	2.67	6.64	3.85	3.01
MixedTs
UD	935.47	-11.34	135.75	0.41	..	..
LSD	107.08	4.33	13.96	7.68	10.09	3.01
WSD
DOC								
rudimentary	..	0.03	..	0.85	..	..	..	..
intermediate	935.47	-10.78	82.98	4.63	1.20	5.28
substantial	104.28	4.30	11.84	7.33	7.82	2.81
intensive
UASC	1.25	3.95	2.46	3.18
all MPFs	..	3.78	400.12	-2.48	14.29	6.80	6.65	3.14

Notes: the final row shows average inflation and growth under all frameworks, including UASC; .. indicates no cases of this MPF or no data available. Source: author's calculations.