

# **Patterns of Policy Integration and Administrative Coordination Reforms: A Comparative Empirical Analysis**

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**Abstract:**

*During the last decades, scholars have pointed to a process of “denationalization”, i.e., the delegation of competencies away from the center of the nation state – upwards, downwards, and sideward. At the same time, a transformation of the central state has been observed, which aims at strengthening its steering capacity by means of integrating sectoral public policies and by coordinating administrative units. Little systematic comparative evidence is available regarding this second phenomenon, and, above all, concerning its relationship with denationalization. We contribute to this line of research by presenting a comparative analysis of cross-sectoral reforms concerning public policies and public sector organizations, covering four policy fields, in thirteen countries over the period 1985-2010. Based on descriptive statistics and Bayesian change-point estimation, we show that policy integration and administrative coordination reforms configure a powerful trend, which however displays considerable variation across time, policy fields, and countries.*

## **Evidence for practice**

1. The emergence of new policy problems required to increase the integration and coordination of existing policies and administrations. This growing demand for integration and coordination occurred in a period of denationalization – partially as a response to it.
2. Although many policy challenges entail interdependent decision-making that requires international co-operation and collaboration with subnational and private actors, our results suggest that the nation state remains a focal point for the adjustment of public policies and administrative structures to specific policy challenges.
3. Overall, it appears that the development of policy instruments that cut across sectors provides momentum for administrative coordination reforms. Policymakers and civil servants should thus be aware that newly integrated policies are likely to generate a demand for changes in the relationships among public sectors organizations, especially regarding an increased coordination between administrative units.

## **Introduction**

The political institutions of nation states, which constitute the cornerstone of democratic policymaking, are considered durable and resilient (Pierson 2000; Mahoney and Rueschemeyer 2003). However, as much as any human artifact, they change over time. They typically do so through long-term processes of gradual transformation (Streeck and Thelen 2005) that can take many shapes and colors and have indeed been studied from different perspectives.

Over the last two decades or so, scholars have convincingly observed that the nation state is being “hollowed out” (Rhodes 1994), “unraveled” (Hooghe and Marks 2003), and “disaggregated” (Slaughter 2004). In this vein, several pieces of research have pointed to the pressures that comes from above, from below and from within, implying the relocation of political power beyond the boundaries of nation states’ central governments “upwards, downwards and sideward”, ultimately resulting in the “denationalization” and “decentering” of policymaking (Zürn 2000; Hooghe and Marks 2001; Jordana and Levi-Faur 2004; Abbott and Snidal 2009; Piattoni 2010).

This broad phenomenon has also been tackled by public administration and public policy research, for example by the scholarship on New Public Management (NPM) reforms (Hood 1995; McLaughlin et al. 2002). NPM entails the transformation of organizational structures and processes in public administrations through the adoption and implementation of private sector-oriented management principles and tools. These reforms typically involve the application of results-based management, competition between administrative units, and individual performance incentives (Pollitt and Bouckaert 2017). The creation of sector-specific agencies that enjoy a certain degree of autonomy from their political “principal” is another manifestation of this reform agenda (Maggetti and Verhoest 2014).

Nevertheless, governments have also engaged in reforms that have progressively rearranged the boundaries that demarcate the goals and instruments of specific policy programs and, respectively, the tasks of public sector organizations. These post-New Public Management (post-NPM) reforms have been labelled “joined-up government” (Bogdanor 2005) and “whole-of-government” (Christensen and Laegreid 2007), among others (Tosun and Lang 2017). A key goal of these post-NPM reforms is to counteract the fragmentation created by NPM reforms by adopting a more holistic approach, i.e., to cut across policy sectors (Christensen and Lægreid 2007c, 2007d; Bouckaert et al. 2010; Egeberg and Trondal 2016), thereby ultimately reinforcing the central government (Dahlström et al. 2011).

These reorganizations entail “policy integration”, intending to bundle existing policy goals and instruments across policy sectors, or to create them anew, so as to increase the effectiveness and the legitimacy of policy programs (Hou and Brewer 2010; Schaffrin et al. 2015), for instance in environmental policy (Jordan and Lenschow 2010). On the other hand, such reforms comprise “administrative coordination”, aiming at strengthening the collaboration between public sector organizations (Reiter and Klenk 2018, 18), to tame the downsides of NPM reforms (Richards and Kavanagh 2000). Although they respond to a similar problem, the policy- and organization-related dimensions are usually treated separately in existing research, which is largely based on in-depth case studies of these types of reforms (Trein et al. 2019).

To make sense of this apparently paradoxical co-occurrence of denationalization and re-centering, we embark in a comparative empirical analysis of reforms aiming at strengthening the steering capacity of the state. Beyond the specific context related to the analysis of post-NPM reforms, this study contributes to the wider literature on the transformation of the nation state. Precisely, we pose three research questions that aim at linking the transformation of the nation state with new public management and cross-sectoral policy and organizational reforms:

- 1) Does the process of re-centering public policies and governmental structures took place

sequentially as a reaction to the decentering and fragmentation of authority or is it a parallel, intertwined development? 2) What is the magnitude of this phenomenon at the macro level and in what manner did it unfold? 3) Can we identify systematic trajectories and variations with respect to policy-specific and country-specific factors and, if yes, how do they unfold? To tackle these questions, this article presents the results of a comparative empirical analysis of reforms in thirteen countries and four policy fields. The selected countries are Australia, Austria, Belgium, Canada, France, Germany, Italy, Netherlands, New Zealand, Sweden, Switzerland, the United Kingdom (UK), and the United States (US); we focus on environmental, migration, public health, and unemployment policy over the time period from 1980-2015.

Results show that the overall magnitude of reforms is remarkable: a powerful re-centering trend took place roughly at the same time of the processes of denationalization. What is more, distinguishing between policy integration and administrative coordination provides analytical leverage, as the two reform trajectories are related but they do not overlap. Finally, policy field- and country-specific factors shape the pace of reforms, whose highest frequency tends to occur in environmental policy and in countries with a centralized political system and an Anglo-Saxon administrative tradition.

### **Towards a comparative empirical analysis of post-NPM reforms**

In this article, we adopt a research strategy geared towards description and interpretation as fundamental building blocks of scientific understanding, which is particularly appropriate when the goal is to map a relatively uncharted territory (Gerring 2012). In line with this approach, we aim at answering to *what* and *in what manner* questions, namely by accounting for the varying empirical manifestations of the phenomenon of interest and by investigating the associations occurring between multidimensional components of this phenomenon. Therefore, our analysis is guided by broad theoretical expectations (but not specific hypotheses) about general

regularities and variations in our observations (Gerring 2012). In line with our exploratory approach, these expectations are sometimes directional and sometimes fully open-ended.

### **Policy vs. administrative dimension**

The first element that guides our analysis is the distinction between two dimensions: policy reforms and organizational reforms. Our approach builds on previous comparative studies of policy and administrative integration and/or coordination. Prior research has employed scales of coordination (Metcalf 1994; Jordan and Schout 2006; Braun 2008, 230-1; Bouckaert et al. 2010, 16). Instead, we use a dichotomic conceptualization that incorporates a distinction in kind (Sartori 1970) between the (1) policy dimension and the (2) administrative/organizational dimension of cross-sectoral reforms (Tosun and Lang 2017; Trein et al. 2019). This strategy allows us to analyze the sequencing of policy and organizational reforms cutting across policy sectors as an open empirical question. Precisely, we refer to policy integration and administrative coordination, which we define as follows:

1. *Policy integration* denotes the policy dimension of reforms that aim at achieving cross-cutting policy goals, i.e., policy instruments spanning across policy sectors or subsystems (we use the two terms as synonyms) in a larger policy field (Candel and Biesbroek 2016, 211-2; Jochim and May 2010). Decision makers usually enact policy integration reforms to deal with policy challenges that need comprehensive solutions that go beyond the scope of existing policy configurations (Peters 2015, 4). Empirical instances of policy integration are legislative changes that connect or combine existing laws, or new political strategies that embody future visions or plans that explicitly link various policy fields or subsystems (Trein 2017b).
2. *Administrative coordination* pertains to the administrative and organizational dimension of cross-sectoral policy reform. It concerns reforms that change the relations between



public sector organizations (Bouckaert et al. 2010, 36-40), namely with the goal to improve coordination (Christensen and Lægreid 2007c, 1059-60). Distinguishing amid the administrative and the policy dimension is important since public sector organizations tend to be particularly resistant to change (Pierson 1998, 552-3; Buchanan and Badham 2008), thus reform events are potentially rarer than for policy integration. Administrative coordination reforms entail creating procedures to avoid negative spill-overs and improving cooperation between administrative organizations. Examples are impact assessments, co-signing of legislative proposals, the establishment of transversal public sector agencies or units in charge of coordination (6 2004, 10; Bouckaert et al. 2010), or even the merger of administrative organizations or ministries (6 2004, 108; 6 et al. 2002, 29-34).

### **Complexity of policy problems**

The second element that guides our analysis is the assumption that patterns of policy integration and administrative coordination reforms vary according to the complexity of the policy problem (Head and Alford 2015; Peters 2017, 392; Christensen et al. 2019), which in turn determines the demand for coordination (Peters and Savoie 1996). Precisely, we focus on two dimensions of complexity. On the one hand, we expect that the intrinsic technical complexity of the policy field shapes the dynamics of policy integration and administrative coordination. We assume that “technical complexity is high when a policy problem requires the understanding of a specialist or expert, a professional appraisal more than a normative judgment” (Gormley Jr 1983, 89-90). Although technical decisions can also be based on normative criteria, and vice versa, it is fruitful for comparative policy analysis to distinguish between predominantly technical policies, for which the use of knowledge and expertise is prominent in the policy process, and less technical ones, which mostly require other political resources (Gormley Jr 1983, 90; Eshbaugh-Soha 2006).

On the other hand, we expect that reform trajectories vary according to the scope of policy integration and administrative coordination. Their scope varies depending on whether dealing with the policy problem requires the incorporation of policy instruments and organizational structures (Meyer and Rowan 1977) from a small number of relatively close sectors within a single policy field, or alternatively, it implies bringing together a multitude of policy instruments and organizational structures from sectors that span across policy fields (Jochim and May 2010). In the following, we discuss the pertinence of these distinctions for our argument.

*Table 1: Variation of integration and coordination complexity across policy fields*

		<i>Scope of integration and coordination</i>	
		<b>Within policy field</b>	<b>Across policy fields</b>
<i>Technical complexity</i>	<b>Lower</b>	Employment	Migration
	<b>Higher</b>	Health	Environment

The policy fields and the related problems requiring integration and coordination we chose for this analysis vary according to their technical complexity and the scope of integration and coordination (cf. Table 1). *Environmental policy* is a case of technical complexity as it involves the use of technical expertise on a wide range of environmental issues (Oreskes and Conway 2010). Furthermore, policy integration and administrative coordination concern incorporating environmental matters into other policy fields, or unhinging of competencies from different policy fields (energy, competition, transportation, housing, etc.) to integrate them into a coherent environmental policy field. Examples for policy integration are framework laws and strategies focusing on environmental, climate, or sustainability issues; an instance of administrative coordination is the establishment of a national ministry for environmental policy

or coordinating council for administrative policy implementation. In addition to touching upon multiple existing policy sectors, environmental policy spans from the local to the global level (Jordan and Lenschow 2010; Adelle and Russel 2013).

*Health policy* is a technically complex field that involves medical and public health research (Oreskes and Conway 2010). However, policy integration and administrative coordination remain largely within the wider policy field and focus on the link between health care and public health or even more specific measures, such as integrated care (Trein 2017a, 2018). In this article, we focus on policy integration reforms that integrate preventative and curative aspects of health policy, for example strategies targeting non-communicable diseases or the integration of screening measures in health care plans. Administrative coordination reforms are changes geared towards the strengthening of the coordination between the public sector organizations in charge of health care (e.g. public hospitals) and those in charge of public health (the ministry of health).

*Migration policy* typically relies less extensively on expert knowledge than environmental and health policy as it is treated as comparatively less technically complex. At the same time, policy integration and administrative coordination spans across other policy fields, such as border management, housing policy, education, and employment (Entzinger and Biezeveld 2003; Scholten et al. 2017). In this case, examples of policy integration reform are legislative changes that aim at promoting encompassing strategies related to immigrant inclusion, which could involve social housing and language training; administrative coordination reforms are measures aiming to coordinate administrative units from different ministries, which share the responsibility for the inclusion of immigrants.

*Unemployment policy* is a very important but quite well-delimited issue that does not percolate systematically into other policy fields. What is more, it is also a case of relatively

limited technical complexity, as “standard models” for dealing with the problem exist. We focus on reforms integrating and coordinating employment promotion services with cash transfers. One example related to policy integration concerns reforms that make the receipt of cash benefits conditional on participation in labor market activation measures. Instances of administrative coordination reforms are measures that stimulate cooperation of public sector organizations responsible for benefit payment with those in charge of labor market activation (Champion and Bonoli 2011; Aurich-Beerheide et al. 2015).

To ensure comparability amongst these different policy fields, we examine policy goals (environmental protection, improvement of public health, immigrant integration, and reduction of unemployment) (Howlett and Cashore 2009, 39). We compare reforms that aim to achieve these goals through a) an adjustment of substantive policy instruments and b) a reconfiguration of the relations between public sector organizations with respect to different sectoral elements that are relevant to integration in the policy field. This strategy allows us to examine different policy field-specific problems with an overall comparative approach.

### **Contextual factors**

*Time and sequences:* The third element guiding our analysis concerns the timing of reforms. We expect that post-new public management reforms should start appearing during the 1980s and 1990s (Christensen et al. 2007, 18) with a peak during the post-2000 period (Christensen and Læg Reid 2007b). We selected 1980 as the starting point because the trend toward New Public Management reforms conventionally began after this year (Hood 1991; McLaughlin et al. 2002). We also expect that the policy integration and administrative coordination reforms spread across different countries in our sample but that they appear in Anglo-Saxon countries first and later on in other European countries (Christensen and Læg Reid 2007c). Furthermore,

there could be a sequence of policy- and organization-related reforms, yet we do not have a precise expectation on the shape of this relationship.

*Administrative traditions:* The fourth element focuses on the variance between countries. In that regard, we expect differences between countries according to their administrative traditions and the degree of government centralization. Concerning administrative traditions, we formulate an open expectation, namely that there are differences in reforms patterns between countries with an Anglo-Saxon, Germanic, Napoleonic, and Scandinavian tradition (Painter and Peters 2010). Furthermore, we expect to find less national-level policy integration and administrative coordination reforms in decentralized states due to the autonomy of subnational and regional government regarding policymaking and implementation (Pollitt and Bouckaert 2017, 51-5). The countries that we include in our analysis – Australia, Austria, Belgium, Canada, France, Germany, Italy, the Netherlands, New Zealand, Sweden, Switzerland, the UK, and the US – vary across these two dimensions.

*Supranational authority (European Union):* The fifth element that guides our analysis concerns the European Union (EU). In this instance, we expect that there are differences between EU members and non-EU members concerning policy integration and administrative coordination reforms, due to the role played by the emerging European administrative space as a platform for cooperation (Levi-Faur 2011; Egeberg and Trondal 2016). This expectation complements the first one, as it implies that the intensity of such reforms should be higher in EU member states but at a later point in time compared to non-EU members. Again, there is variance according to this dimension in the countries included in our empirical analysis.

## **Data collection and analytical strategy**

To operationalize our conceptual framework, we created a new multilevel time series dataset of reform events that records events of policy change over time. We assembled information on

policy integration and administrative coordination reform instances in the four policy fields and thirteen countries as we expect variance according to the reasons mentioned above. Our analysis focuses on reform events producing a statutory change in policy integration and administrative coordination (Sarapuu et al. 2014, 263-4) about which information is reliably available through desk research and we could straightforwardly contact experts for support. This approach allows us to capture above all formal changes through policymaking but we purposely do not measure changes in implementation practices or the entire policy paradigm (Hall 1993). The dataset entails information on reforms for the period 1980 to 2014. A detailed discussion of the operationalization process and the data collection strategy can be found in the Supplementary Materials 1 document, which is available online.

To measure policy integration and administrative coordination reforms, we collected a data set of reform events, similar to policy diffusion and conflict research (Prorok and Huth 2015; Maggetti and Gilardi 2016). The dataset measures reforms with two binary variables (0/1) – one for policy integration and another one for administrative coordination – per policy field in a country and year, which results in a dataset with 1820 observations on the dependent variable.

To analyze our data, we proceed in three steps: First, we present descriptive results for policy integration and administrative coordination reform events, over time, on three levels: (1) overall reforms, (2) reforms per policy field, and (3) reforms per country. Second, we use Bayesian change-point analyses (Carlin et al. 1992) to determine objectively if there is a structural break in the reform frequency overall, at the level of policy fields, and over countries (Leemann 2015, 598; Carlin et al. 1992).

We estimate change point models for policy integration and administrative reforms overall, per policy field, and per country. We fit models that test for one change point, as we want to compare reform sequences between types of reforms (policy integration or administrative

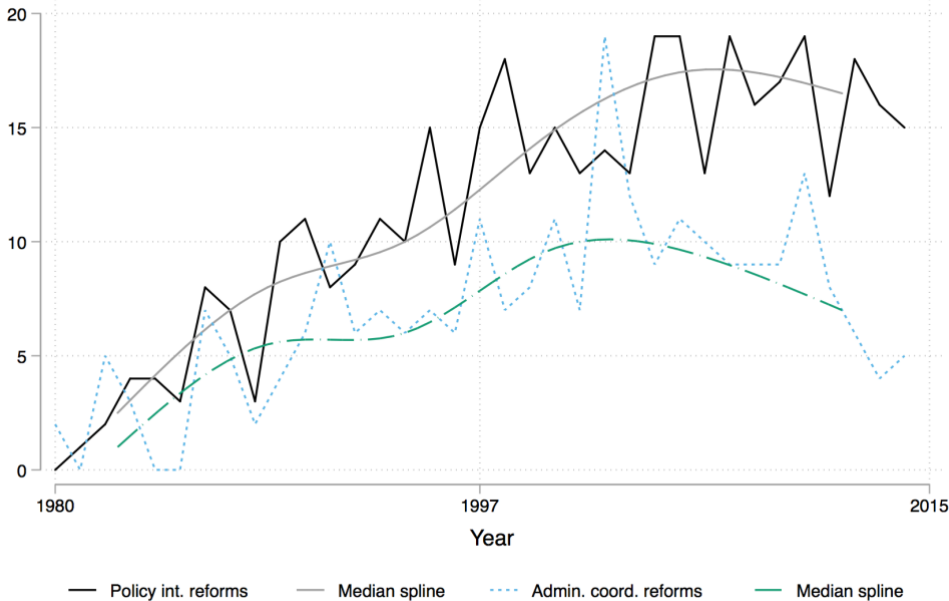
coordination), policy fields, and countries. Our interest is to compare sequences across reform types, policy fields and countries. If it is not possible to credibly estimate a model with one change point, we conclude that there is no single structural change but rather a more complex distribution of reforms over time.<sup>1)</sup> More information on the models can be found in the Supplementary Materials 1 and 2.

**Results of the empirical analysis**

**Reforms over time**

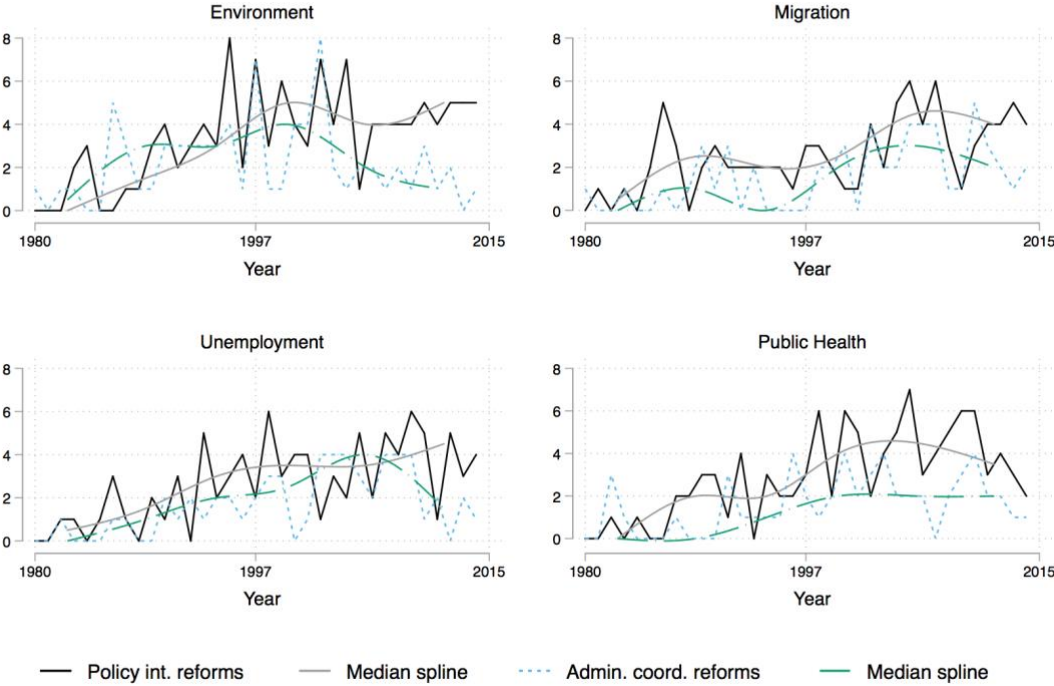
We start the presentation of the results with the overall frequency of policy integration and administrative coordination reforms over time. A simple description of the data shows that the two types of reform are slightly correlated (correlation coefficient: 0.13) but the results also reveal differences between the types of reforms (Figure 1).<sup>2)</sup> The dynamics of both reform types are similar in so far since after an onset of reforms during the 1980s, the number of reforms increased steeply, reached a peak in the mid-2000s, and declined afterwards.

*Figure 1: Policy integration and administrative reforms over time (overall)*



The two types of reforms coevolve differently, as the data suggests a much higher frequency of policy integration reforms than administrative coordination reforms. There is a steeper increase of the policy integration reform frequency compared to administrative coordination reforms; notably, administrative coordination reforms peak around 2000 and become less frequent afterwards. Policy integration reforms occur more often and reach the highest point a bit later than administrative coordination reforms.

Figure 2: Administrative coordination and policy integration reforms in different policy fields



There are interesting similarities and differences between policy fields concerning the frequency of policy integration and administrative coordination reforms. All four policy fields – environment, migration, public health, and unemployment – are similar insofar as there are more policy integration than administrative coordination reforms. Furthermore, we observe a tendency to have more reforms in the second half of the time series under observation, in all



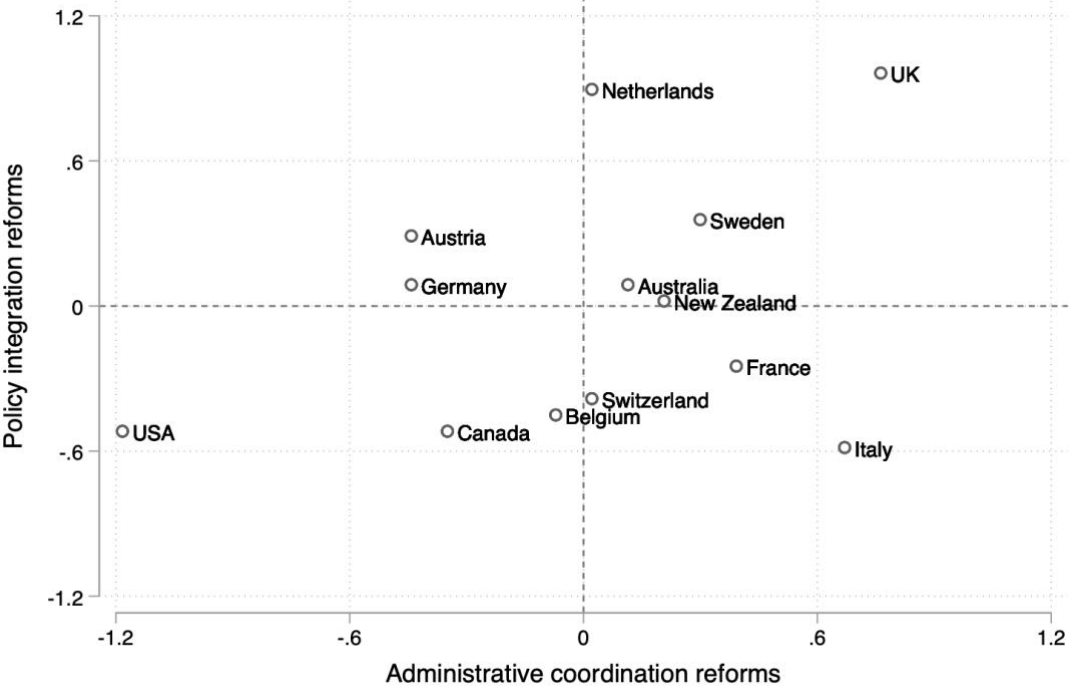
policy fields (after 1997) (Figure 2). The correlations of policy integration and administrative coordination reforms also vary between the different policy fields. The co-occurrence of both types of reforms are the highest in the field of migration policy (correlation: 0.22) and the lowest with respect to public health policy (correlation: 0.08).

On the other hand, there are differences between the four policy fields concerning policy integration and administrative coordination reform activities. Regarding environmental policy, we witness more overall reform intensity than in the other three policy fields and more administrative coordination reforms than policy integration reforms, notably prior to the early 1990s. Migration and public health show both much more policy integration reforms than administrative coordination reforms compared to environment and unemployment policy. On the other hand, the reform activity concerning unemployment is different as policy integration and administrative coordination types of reforms both increase in parallel but then evolve in a dissimilar way – policy integration reforms retained a similar frequency, whereas administrative coordination reforms reached a highpoint that goes beyond the frequency of policy integration reforms in the mid-2000s, and decrease significantly after that (Figure 2).

### **Variance between countries**

The third part of the descriptive analysis focuses on differences between countries while also accounting for reform types and policy fields. To effectively map the magnitude of these reforms, we standardize the reform count around the mean by two standard deviations per country and policy field, which ensures comparability of the data (Gelman 2008; King 1986). First, we take a look at the overall patterns of reform (Figure 3). The results allow us to delineate four country groups of policy integration and administrative coordination reforms; some countries belong clearly to one group, others are more in between.

Figure 3: Overall reforms of policy integration and administrative coordination

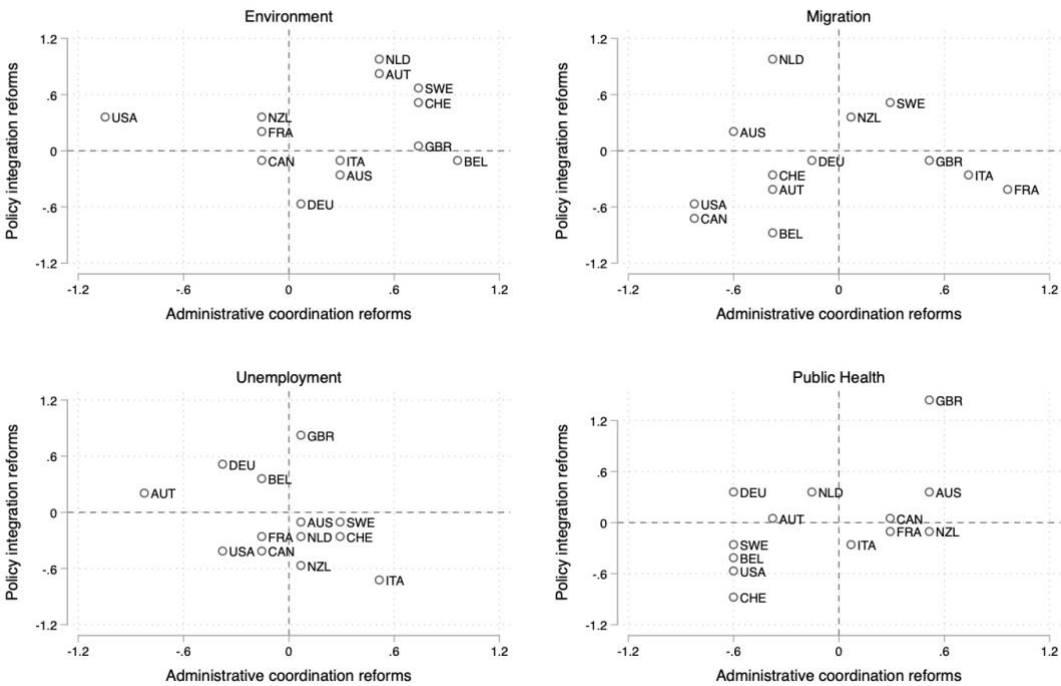


The first group comprises countries with a high frequency of policy integration and administrative coordination reforms (upper right quadrant, Figure 4), namely the UK and Sweden. The Netherlands score lower on the administrative coordination dimension but remain high on the policy integration score. Australia and New Zealand are formally in the group but remain close to the mean of the overall reform activity. The second group entails Austria and Germany, which have many policy integration reforms but few administrative coordination reforms (upper left quadrant, Figure 3). The third group gathers countries with few policy integration and few administrative coordination reforms (lower left quadrant, Figure 3), corresponding to Canada and the US. Belgium remains close to the mean of administrative coordination reforms but belongs clearly to the group of few policy integration reforms. The fourth group consists of countries that have experienced few policy integration reforms and many administrative coordination reforms (lower right quadrant, Figure 3). The most evident members of this group are France and Italy. Switzerland is situated at the margins of the group

close to the mean of few policy integration reforms but clearly part of the set of countries with few administrative coordination reforms.

Now, we turn to the comparison of policy fields. In environmental policy, countries have undergone more policy integration and administrative coordination reforms compared to other policy fields. Five countries are in the group with many policy integration and administrative coordination reforms in this field (upper right quadrant, upper left graph Figure 4). Particularly, Austria, the Netherlands, Sweden, and Switzerland are fully in this group. The UK has many administrative coordination reforms but is just located slightly above the mean for policy integration reforms.

Figure 4: Policy integration and administrative coordination reforms in countries and policy fields



The second group of countries are those with many policy integration but few administrative coordination reforms in environmental policy (upper left quadrant, upper left graph, Figure 4).

The countries in this group are France, New Zealand, and the US. There is only one country with few policy integration and few public administration reforms, Canada, but it is located close to the mean of policy integration and administrative coordination reforms (lower left quadrant, upper left graph, Figure 4). Countries with few policy integration reforms but many administrative coordination reforms, in environmental policy, are Australia, Belgium, Germany, and Italy (lower right quadrant, upper left graph, Figure 4).

Concerning migration policy, there is a different picture as most countries belong to the group with few policy integration and few administrative coordination reforms (lower left quadrant, upper right graph, Figure 4). These countries are Austria, Belgium, Canada, Germany, Switzerland, and the US. Germany is, however, close to the mean of policy integration and administrative coordination reforms. Contrariwise, the only two countries with many policy integration and administrative coordination reforms in the field of migration policy are New Zealand and Sweden (upper right quadrant, upper right graph, Figure 4). There are two countries with many policy integration but few administrative coordination reforms: Australia and the Netherlands (upper left quadrant, upper right graph, Figure 4). Three countries are in the group with few policy integration but many administrative coordination reforms, namely France, Italy, and the UK (lower right quadrant, upper right graph, Figure 4).

In the field of unemployment policy, the UK is the only country with many policy integration and administrative coordination reforms, although it is close to the mean of the administrative coordination reform measure (upper right quadrant, lower left graph, Figure 4). Austria, Belgium, and Germany experienced many policy integration reforms but few administrative coordination reforms (upper left quadrant, lower left graph, Figure 4). The rest of the countries cluster together below the mean of policy integration reforms and relatively close to the mean of administrative coordination reforms. On the one hand, Canada, France, and the US are in the group with few policy integration and administrative coordination reforms (lower right

quadrant, lower left graph, Figure 4). On the other, Austria, Italy, the Netherlands, New Zealand, Sweden and Switzerland belong to the group with few policy integration but many administrative coordination reforms (lower right quadrant, lower left graph, Figure 5). Italy is the only country that is fully in the group.

Finally, there is again a different picture regarding public health. Canada, Australia, and the UK display many policy integration and many administrative coordination reforms but these countries differ within this group since the UK is an outlier whereas Canada is close to the mean of policy integration reforms (upper right quadrant, lower right graph, Figure 4). Austria, Germany, and the Netherlands have experienced many policy integration and few administrative coordination reforms (upper left quadrant, lower right graph, Figure 4), although Austria is close to the mean of policy integration reforms. Belgium, Sweden, Switzerland, and the US have had few policy integration and many administrative coordination reforms (upper left quadrant, lower right graph, Figure 4). France, Italy, and New Zealand are in the group with few policy integration and many administrative coordination reforms (lower left quadrant, lower right graph, Figure 4).

### **Change Point Analysis**

We turn now to the second part of the analysis, which reports the results of the Bayesian change point estimates. The change point analysis returns an estimated change point in 1988 for policy integration, and in 1989 for administrative coordination reforms. The change point estimates are credible in a three-year (policy integration) and five-year (administrative coordination) interval, which is quite precise (cf. Table S3 in Supplementary Materials S1).<sup>3)</sup> These results indicate that there is a (quasi)parallel development of policy integration and administrative coordination reforms because both types of reform increase in frequency around the same year relative to the previous period (1988, 1989).

Concerning the differences between policy fields, the results of the change point analysis offer more insights on the sequencing of policy integration and administrative coordination reforms. We estimate one model for each policy field. Overall, the change points for policy integration and administrative coordination reforms are rather close to one another, which underlines the parallel trajectory of reforms concerning the cross-sectoral policy dimension as well as administrative-focused reforms that change the relations between organizational units (Table 2; Table S4).<sup>4)</sup>

*Table 2: Change point analysis per policy field*

Change point	Environment	Migration	Unemployment	Public health
Policy integration	<b>1989</b>	<b>1997</b>	<b>1992</b>	<b>1989</b>
Administrative coordination	<b>1986</b>	<b>1999</b>	<b>1991</b>	<b>1992</b>
<i>Sequence of structural changes</i>	<i>AC → PI</i>	<i>PI → AC</i>	<i>AC / PI</i>	<i>PI → AC</i>

Environmental policy is the only field, in which the sequence from few to many administrative coordination reforms changed prior to the reforms concerning policy integration. On the other hand, in the fields of migration and public health, the change from few to many policy integration reforms occurred prior to the change in administrative coordination reform. Concerning unemployment, the difference in change points is too marginal to be discernible, i.e., the administrative coordination and policy integration reform sequences changed in parallel to each other (Table 2; Table S4).

*Table 3: Change point analysis per country*

Country	Policy integration	Administrative coordination	<i>Sequence</i>
Australia	<b>1984</b>	<b>1998</b>	<i>PI → AC</i>
Austria	<b>1996</b>	<b>1993</b>	<i>AC → PI</i>
Belgium	<b>1990</b>	<b>1990</b>	<i>AC / PI</i>

Canada	<b>1988</b>	<b>1991</b>	<i>PI</i> → <i>AC</i>
France	<b>1997</b>	<b>2001</b>	<i>PI</i> → <i>AC</i>
Germany	<b>2000</b>	<b>2003</b>	<i>PI</i> → <i>AC</i> ( <i>AC</i> → <i>PI</i> )
Italy	<b>1986</b>	<b>1985</b>	<i>AC</i> / <i>PI</i>
Netherlands	<b>1996</b>	<b>2006</b>	<i>PI</i> → <i>AC</i> ( <i>AC</i> → <i>PI</i> )
New Zealand	<b>1998</b>	<b>1990</b>	<i>AC</i> → <i>PI</i>
Sweden	<b>1992</b>	<b>1996</b>	<i>PI</i> → <i>AC</i>
Switzerland	<b>1991</b>	<b>1986</b>	<i>AC</i> → <i>PI</i>
United Kingdom	<b>1985</b>	<b>1993</b>	<i>PI</i> → <i>AC</i>
United States	<b>1990</b>	<b>2001</b>	<i>PI</i> → <i>AC</i>

The change point analysis of reform activities in different countries returns even more interesting findings. We estimated one model per country (Table 3; Table S5).<sup>5</sup> The results of the analysis reveal remarkable similarities and differences between countries concerning the dynamics of policy integration and administrative integration. The most striking similarity is that in most countries the change point for policy integration reforms precedes the change point for administrative coordination reforms. Exceptions to this finding are Austria, New Zealand, and Switzerland where the change point for administrative coordination reforms is located before the one concerning policy integration reforms; Belgium and Italy are also interesting as in these two countries the change points for the two reform types are very close to one another. Nevertheless, we need to interpret these results carefully because the change point estimates for administrative coordination reforms have large credibility intervals for Austria and New Zealand (Table 3; Table S5). Furthermore, in Germany and the Netherlands, the change points for administrative coordination reforms have different interpretations; they are different from the other countries since the first period (t1) contains more administrative coordination reforms than the second period (t2), unlike the other countries and periods where the mean reform rate of the first period (prior to the change point) is always lower than the one after the change point.

## **Theoretical implications**

Our analysis makes five broader theoretical contributions that are specifically relevant for public administration and public policy scholarship but also provide insights to political research in a wider sense:

First of all, the overall magnitude of policy integration and administrative coordination reforms is worthy of attention. The dynamics of re-centering are pervasive across sectors and countries, indicating a powerful trend of reforms. Our results suggest that these reforms emerged almost in parallel to the onset of NPM reforms. Thus, post-NPM reforms (Pollitt and Bouckaert 2017, 217) are part of a larger wave of policy change that re-centers governance in the nation state (Christensen et al. 2007). These reforms are not only a reaction to some of the problems created by NPM reforms but coincide with policy changes aiming to reorganize political coordination structures to deal with new policy challenges (Christensen and Lægreid 2007a, 11). As such, they aim at dealing with the particular problems induced by NPM, while they also follow up from the processes of denationalization upwards, downwards and sideward (Zürn 2000), suggesting that these phenomena are more complex than what is usually thought. Our findings imply that denationalization and re-centering are actually intertwined and shall be considered as two sides of the same coin, whereby the devolution of powers from the central state creates the need and the momentum for re-organizing the relationships between policy sectors and among public sector organizations (see also Egeberg and Trondal 2018).

Secondly, our results indicate that it makes sense to distinguish between a policy and an organizational dimension of integration and coordination. Indeed, it appears that the trajectories of policy integration and administrative coordination reforms are related and overlap partially but they are not perfectly correlated; and they exhibit some discrepancies with concerning their frequency and timing. It is important to note that for most cases the change point for policy



integration reforms precedes the change point for administrative coordination reforms (with exception of the relatively new issue of environmental protection), implying that policy change tends to shape organizational reforms, and not the reverse (Christensen and Laegreid 2007). In other words, policy integration reforms tend to create a demand for more administrative coordination, resulting in the re-assertion of the central government (Christensen et al. 2007; Dahlström et al. 2011).

Thirdly, our findings point to variance between policy fields in line with the complexity of reforms, namely their technical complexity and scope. We witness more overall reform intensity in environmental policy – a technically complex, wide-ranging field – than in the other areas, and specifically more administrative coordination reforms in the early years, a result which may stem from the fact that this is a more recent policy field compared to the others, e.g. unemployment policy. These results suggest that policymakers pursue integration coordination reforms especially in policy fields presenting complex policy problems (Christensen et al. 2019). The concentrated or dispersed distribution of reform targets and their strength or weakness in term of resources and capacity resulting from differences in complexity may help in explaining these variations; further research is however required to explore the impact of these factors.

Fourth, with respect to variations across countries, the main findings suggest that reform activity is more intense in countries within the Anglo-Saxon administrative tradition. These countries were not only among the first to create post-NPM reforms (Christensen and Lægred 2007a, 11) but are also forerunners concerning policy integration reforms, especially Australia, Canada and the UK. Furthermore, our results indicate that the Netherlands, the UK, and Sweden are in the group with a high intensity of post-NPM reforms (Figure 4). This finding resonates with the literature, which argues that, “measured in terms of management tool use, Sweden, the United Kingdom and the Netherlands would seem to be the countries most committed to NPM

reforms (Jeannot and Bezes 2016, 225).” Our results suggest also that there are some differences between countries belonging to the Germanic and Napoleonic administrative traditions (Painter and Peters 2010). In Germany and Austria, policy integration reforms outweigh administrative coordination reforms, whereas this relationship is inverse in France and Italy. Countries with a Napoleonic state tradition, notably France, have a centralized and politicized bureaucracy (Dahlström et al. 2011, 13) that functions as a “general purpose elite for the state” (Ongaro 2009, 254). Therefore, the predominance of administrative coordination over policy integration reforms makes sense in these countries. Our results imply that the vertical centralization of the state structure (Pollitt and Bouckaert 2017, 54) plays a role regarding the intensity of post-NPM as well as policy integration and administrative coordination reforms in general. For example, the German government conducted administrative reforms at the lower level of government (Andrews et al. 2016, 277). The differences within the Anglo-Saxon group of countries – notably between the centralized UK on the one hand, and decentralized Canada, and the U.S. on the other, emphasize this point.

Fifth, the timing and sequencing of reforms varies considerably between countries. This also provides evidence concerning differences between administrative traditions. Notably, Anglo-Saxon countries have early change points for reform activity, especially concerning policy integration reforms, such as illustrated by Australia, Canada, and the UK, but not the U.S. Conversely, there are other countries with early change points of policy integration or administrative coordination reforms; notably Italy and Switzerland. These findings underline the importance of country-specific effects of timing (Pierson 2000) and reform intensity.

## **Conclusions**

This article provided systematic comparative evidence on the reassertion of the center of the nation state by means of integrating sectoral public policies and by coordinating administrative

units. We presented a comparative analysis of cross-sectoral policy and administrative reforms. Our descriptive statistics and Bayesian change-point estimations indicate that policy integration and administrative coordination reforms configure a powerful trend. These reforms took place roughly at the same time of the processes of denationalization upwards, downwards and sideward (Zürn 2000) – and more specifically following the spread of post-NPM reforms (Christensen and Lægreid 2007c), suggesting that denationalization and re-centering are actually intertwined phenomena. This overall trend displays considerable variation across time, policy fields, and countries. In particular, the highest frequency of reforms is found in environmental policy and in unitary Anglo-Saxon countries. With a broad comparative perspective focusing on the cross-national level, our study complements and extends existing research on municipal collaboration (Klok et al. 2018; Song et al. 2018) and environmental policy integration at the local level (Krause et al. 2019).

All in all, a systematic discussion of the determinants of these variations is beyond of the scope of this article. Further research needs to explore the interplay of various explanatory factors, such as administrative traditions, the degree of centralization of the state, and the timing of reform events. What is more, future scholarship should explore the role of additional variables such as partisan ideology (Jain and Sarkar 2018), as well as the extent to which intense policy integration and administrative coordination reforms will eventually result in paradigmatic changes (Hall 1993) as regards cross-sectoral governance. Finally, future research should study the implementation phase and find out whether policy integration and administrative coordination reforms actually achieve superior policy outcomes.

## Endnotes

1) We use the Bayesian estimator built into the Stata (bayesmh), which is based on the Metropolis-Hastings sampling algorithm. The models are based on a Poisson distribution and assume uniform priors.

2) The figures are based on: (Bischof 2017).

3) The Supplementary Material Part 2 contains the fit statistics for the Bayesian models. The number of the models in Supplementary Materials Part 2 corresponds to the numbering of the models in Supplementary Materials Part 1, Tables S3, S4, and S5.

4) The credibility intervals vary for the different estimates (cf. Table S4). We show the change point in black if the credibility interval is lower than ten years and in grey if it is higher than 10 years.

5) The credibility intervals vary for the different estimates (cf. Table S5). We show the change point in black if the credibility interval is lower than ten years and in grey if it is higher than 10 years.

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## Supplementary Materials Part 1: Coding and supplementary statistics

Title of the paper: *Patterns of Policy Integration and Administrative Coordination Reforms: A Comparative Empirical Analysis*

### **Method**

To measure policy integration and administrative coordination reforms, we collected a data set of reform events, similar to policy diffusion and conflict research (Prorok and Huth 2015; Maggetti and Gilardi 2016). The dataset measures reforms with two binary variables (0/1) – one for policy integration and another for administrative coordination – per policy field in a country and year, which results in a dataset with 1820 observations on the dependent variable (cf. Table S2). This measurement strategy displays whether there is a reform in a given sector and year but does not compare degrees of integration or coordination; we thus included solely reforms that were substantially relevant for our analytical approach, i.e., where we were sure that the reform fits the category of policy integration and administrative coordination reforms in the sense we discussed it conceptually. This approach allows us to measure the temporal and multilevel dynamics of the reforms under investigation, in accordance with the above-defined concepts of policy integration and administrative coordination and their application in the four policy fields. Consequently, our dataset contains reform activities per year nested in four fields and thirteen countries (Steenbergen and Jones 2002; Rohlfing 2008). We present the details of the operationalization for each policy field in the *Supplementary Material* documents to the article (cf. Table S2, Supplementary Materials Part 1). Some examples of the reforms that we entered in the dataset include the following:

1. **Environment:** *Policy integration:* the amendment to the German *Grundgesetz* that includes environmental protection in article 20a institutionalized the creation of an environmental policy field (OECD 2002). *Administrative coordination:* the establishment of a federal ministry for environmental protection, in Germany, is an instance of administrative coordination in environmental policy (Wurzel 2008).
2. **Migration:** *Policy integration:* the *Dutch Civic Integration Act* of 2007 created tighter language requirements for all immigrants. We use it as an example for policy integration because it links immigration, integration, and education measures (Van Meeteren et al. 2013). *Administrative coordination:* the creation of the Dutch *Ministry for Aliens Affairs and Integration*, in 2002 (Bruquetas-Callejo et al. 2011).
3. **Public Health:** *Policy integration:* in the field of public health, the 1992 UK *Health of the Nation Strategy* is an example for policy integration because it combined curative and preventative aspects of health policy (Trein 2018, 264). *Administrative coordination:* the UK *Health Development Agency* that was set up in 2000 is an instance of administrative coordination as it aimed to increase preventative elements in the National Health Service (Trein 2018, 264). One exception to our classification are “health in all policies” projects, which aim at a broad integration of public health goals in all other policies. Nevertheless, this is a very specific aspect of policy integration and administrative coordination reforms in health policy, and these reforms have also been included in our dataset (Kickbusch and Buckett 2010).
4. **Unemployment:** *Policy integration:* In the field of unemployment policy, the US *Middle Class Tax Relief and Job Creation Act* of 2012 is an instance of policy integration because it institutionalizes activation measures for unemployment benefit recipients (Dunn 2013, 14). *Administrative coordination:* The nationally decided and locally administrated change in unemployment benefits and training delivery, in

Germany, in 2004, is an instance of administrative coordination in the field of unemployment (Schiller 2016).

We present further details of the operationalization for each policy field in the Supplementary Material Part 1 (cf. Table S2; the full dataset will be released after publication). To collect the data, we followed these steps: (1) Survey of primary sources, secondary literature, edited books, and policy reports (for instance by international organizations or governments). (2) Creation of time series of reforms. (3) Data sheets validated by international experts. (4) Exclusion of reforms that are unclear in their substantial relevance for our analytical focus. The response rate of experts was very high (around 80 percent). For the few remaining data sheets that we could not directly verify through expert reviews, we conducted additional research to be sure that we did not miss relevant reform events or included reforms that were irrelevant for policy integration and administrative coordination. Our data come with some limitations. Firstly, we do not record all reforms in any given country and policy field but we conducted a survey of those reforms that appeared in the secondary literature and in policy reports and were added or confirmed through an expert review. The two steps – review of the secondary literature and expert consultation – provided nevertheless remarkably consistent results. Secondly, we only focus on national-level reforms for reasons of comparability and feasibility, even though we are aware that cross-sectoral reforms do also occur at the subnational level (Steurer and Clar 2015; Klok et al. 2018; Song et al. 2018). Thirdly, we do not code explicitly the rationale of reforms, for example whether integration and coordination of labor market activation and social benefits is predominantly a social investment approach supporting workers or rather a measure to reduce social benefits. A reform can contain both two goals and be ambiguous in this respect (Thelen 2014). Such an analysis would require a more fine-grained investigation than what we can offer at this stage and is beyond our research goals. Eventually, our research does not cover the implementation phase and whether more policy integration and administrative coordination

reforms do actually lead to better policy results. This limitation does not weaken our analysis as we examine policy outputs by looking at integration and coordination in a functional, goal-oriented and utilitarian, sense, i.e., at the re-centering/reassertion of policy sectors around specific issues (Christensen et al. 2007).

To analyze our data, we proceed in three steps, First, we present descriptive results for policy integration and administrative coordination reform events, over time, on three levels: (1) overall reforms, (2) reforms per policy field, and (3) reforms per country. Second, we use Bayesian change-point analyses (Carlin et al. 1992) to determine objectively if there is a structural break in the reform frequency overall, at the level of policy fields, and in countries. Bayesian change point models allow, "... us to describe the probability that the underlying data generating process changes based on the parameter estimates" (Leemann 2015, 598). To put it in our own words, we can estimate whether there are sequences of reform activities, which are separated by structural breaks, i.e., whether there are systematically more reform events before or after a specific year, in our time series (1980-2014). The models use a Poisson point process that is appropriate to our data, which is a count of reform events per year overall, in a policy field, or in a country (Carlin et al. 1992).

We estimate change point models for policy integration and administrative reforms overall, per policy field, and per country. We fit models that test for one change point, as we want to compare reform sequences between type of reform (policy integration or administrative coordination), policy fields, and countries. Our interest is to compare sequences across reform types, policy fields and countries. If it is not possible to credibly estimate a model with one change point, we conclude that that there is no single structural change but rather a more complex distribution of reforms over time.:

## Descriptive statistics, coding, and models

Table S1: Descriptive statistics for policy integration and administrative coordination reforms

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Policy integration reforms	1,820	.2192308	.413839	0	1
Administrative coordination reforms	1,820	.1340659	.3408168	0	1

Table S2: Operationalization of policy integration and administrative coordination across policy sectors (dependent variables)

Policy field	Policy integration	Administrative coordination
<p><i>Environment</i></p> <p>(Object of integration: creation of a field of environmental policy; no purely sectoral integration of environmental concerns in other policies)</p>	<ul style="list-style-type: none"> <li>- National strategies and action plans for the integration of sustainable development policies</li> <li>- Framework legislation that integrates environmental matters of various sectoral policies</li> <li>- Environmental (framework) legislation that integrates formerly disperse legislation and reduces fragmentation</li> <li>- Constitutional law on environmental protection:</li> <li>- Central legislation that leads to harmonization of sub-national policy (in federal systems)</li> <li>- Environmental planning at ministerial level</li> </ul>	<ul style="list-style-type: none"> <li>- Transversal bodies for environmental policy at the level of the central government, with competences for formulating national environmental policy and coordinating the implementation of national environmental strategies</li> <li>- Inter-sectoral ministerial councils or working groups for environmental policy, e.g. “green cabinets”</li> <li>- Increase of the Ministry of Environment’s responsibilities of transversal coordination of environmental policy</li> <li>- Intergovernmental agreements and units for environmental policy (in federal</li> </ul>

		<p>systems) that delimit the respective responsibilities</p> <ul style="list-style-type: none"> <li>- Joint federal and sub-national bodies for nation-wide harmonization and/or coordination</li> <li>- Reorganizations of the central government that lead to integration of the environmental portfolio:</li> <li>- Reorganization at the level of regulatory agencies that lead to integration of competences for environmental policy or that create coordinative capacities</li> <li>- Creation of a public service for the environment or of sustainability units in the public service</li> <li>- Strategies for the promotion of employment in the environmental sector</li> <li>- Reforms that harmonize or coordinate administrative procedures regarding e.g. departmental environmental reporting systems or the development of sustainability action plans</li> </ul>
<p><b>Migration</b> (Object of integration: integration and coordination of immigration)</p>	<ul style="list-style-type: none"> <li>- Integration or coordination of laws referring to temporary and permanent residence</li> <li>- National action plans or strategies for immigration and immigrant integration</li> <li>- Integration policy action plan</li> </ul>	<ul style="list-style-type: none"> <li>- Organization to integrate or coordinate different ministries and levels of government that are related to immigration and immigrant integration</li> <li>- Accumulating immigration and integration portfolios in one ministry</li> </ul>

<p>and immigrant integration policies and organizations, as well as mainstreaming of immigrant integration policies)</p>	<ul style="list-style-type: none"> <li>- Strategy to harmonize immigration and integration policies between sectors and levels of government</li> <li>- Labor market integration and education reforms that make further immigration benefits conditional on employment and education efforts of the applicant</li> </ul>	<ul style="list-style-type: none"> <li>- Creation of interdepartmental working groups</li> <li>- Councils to coordinate different ministries in the field</li> <li>- Commissioner for foreigners</li> <li>- Conditionality of immigration benefits for integration efforts</li> <li>- Organizations that bring together policymakers from different sectors and different levels of government at same time</li> </ul>
<p><b>Public health</b> (Object of integration and coordination of curative and preventative elements of health policy)</p>	<ul style="list-style-type: none"> <li>- Reforms that include preventive measures into health the services paid by the general health insurance, such as screening programs</li> <li>- Health promotion and legislation with a focus on the coordination and integration of prevention and cure – either in general or with a focus on specific diseases</li> <li>- General and specific national health strategies (e.g., cancer, diabetes, HIV, tobacco, nutrition, etc.)</li> <li>- Strategies that focus on health inequalities</li> <li>- Public health funds that allow organizations and levels of government to operate policy programs that coordinate or even integrate preventive and curative measures</li> </ul>	<ul style="list-style-type: none"> <li>- Network amongst hospitals with a particular focus on health promotion and prevention</li> <li>- National public health agency and ministry that includes sections for disease prevention and others that are responsible for curative aspects of health policy</li> <li>- Public organizations that coordinate the prevention and treatment of specific diseases and/or the policy advocacy for it</li> <li>- Establishment of institutions of health information</li> <li>- Inter-ministerial conferences and councils that coordinate preventative and curative aspects concerning certain diseases and/or risk factors, such as drugs, tobacco, cancer etc.</li> </ul>

<p><b><i>Unemployment</i></b> (Object of integration: integration and coordination of activation and benefit related policies)</p>	<ul style="list-style-type: none"> <li>- National strategies, action plans or reform packages that integrate active and passive labour market policies (e.g. “welfare to work” principle)</li> <li>- Employment policy reforms that introduce or enhance activation measures in employment policy</li> <li>- Reforms that integrate formerly separated social assistance and/or unemployment benefits, e.g. by creating an integrates system of income and employment benefits</li> <li>- Adoption of reforms that apply an activation approach to pension, family or invalidity policy</li> </ul>	<ul style="list-style-type: none"> <li>- Creation of transversal bodies for employment policy at the level of the central government</li> <li>- Creation of intergovernmental agreements or units (in federal systems) for nation-wide harmonization and/or coordination of employment policy</li> <li>- Reorganizations of the central government that lead to integration of employment portfolio by merging the ministries responsible for various sectors such as employment, social affairs, health, etc.</li> <li>- Reorganization of implementation administrations that lead to integration of active and passive employment policy and/or services for employment and social assistance:</li> <li>- Creation of one-stop shop service centers that offer comprehensive services related to social assistance, unemployment benefits, and job placement</li> <li>- Introduction of an individualized approach to employment assistance</li> <li>- Integration of administrative procedures for both unemployment and social security administrations such as unified electronic declarations or social identification cards</li> </ul>
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		- Procedures that enhance or institutionalize inter-agency collaboration between unemployment and social security administrations
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In the following analysis, we present the mean and the credibility interval for the change point analyses as well as the change point ratio, i.e., the rate of reforms before and after the change point. We put the change point estimates in black if the credibility interval is lower than years and in grey if it is above the ten year range.

Table S3: Change point estimates for reforms overall

	<b>Model 1 PI reforms overall</b>		<b>Model 2 AC reforms overall</b>	
	Mean	Equal-tailed [95% Cred. Interval]	Mean	Equal-tailed [95% Cred. Interval]
Change point	<b>1988.68</b>	<b>1988.021; 1991.563</b>	<b>1989.123</b>	<b>1985.145; 1990.968</b>
Change point ratio	<b>3.886992</b>	<b>2.664904; 5.601599</b>	<b>0.3247457</b>	<b>0.1567961; 0.4855151</b>

Table S4: Change point estimates in policy fields

	Mean	Equal-tailed [95% Cred. Interval]	Mean	Equal-tailed [95% Cred. Interval]
		<b>Model 3 PI reforms environment</b>		<b>Model 4 AC reforms environment</b>
Change point	<b>1988.832</b>	<b>1986.856; 1992.573</b>	<b>1985.565</b>	<b>1981.693; 1990.712</b>
Change point ratio	<b>0.2319790</b>	<b>0.0987619; 0.4382453</b>	<b>0.3402191</b>	<b>0.0713108; 0.8452686</b>
	<b>Model 4 PI reforms migration</b>		<b>Model 5 AC reforms migration</b>	
Change point	<b>1996.41</b>	<b>1983.547; 2004.777</b>	<b>1998.622</b>	<b>1991.516; 2003.804</b>
Change point ratio	<b>0.4068223</b>	<b>0.0851659; 0.6966697</b>	<b>0.3478884</b>	<b>0.1682653; 0.595772</b>

	<b>Model 6 PI reforms unemployment</b>		<b>Model 7 AC reforms unemployment</b>	
Change point	<b>1991.657</b>	<b>1985.747; 1995.463</b>	<b>1991.102</b>	<b>1985.948; 2000.523</b>
Change point ratio	<b>0.305005</b>	<b>0.1448183; 0.536739</b>	<b>0.2427823</b>	<b>0.0523292; 0.5563208</b>
	<b>Model 7 PI reforms public health</b>		<b>Model 8 AC reforms public health</b>	
Change point	<b>1989.006</b>	<b>1986.001; 1997.472</b>	<b>1992.417</b>	<b>1988.131; 1998.974</b>
Change point ratio	<b>0.1937913</b>	<b>0.0337355; 0.4587568</b>	<b>0.3298904</b>	<b>0.1092041; 0.6603963</b>

Table S5: Change point estimates in different countries

	Mean	Equal-tailed [95% Cred. Interval]	Mean	Equal-tailed [95% Cred. Interval]	
		<b>Model 11 PI reforms Australia</b>		<b>Model 12 AC reforms Australia</b>	
Change point	<b>1984.01</b>	<b>1983.013; 1988.663</b>	<b>1988.461</b>	<b>1987.443; 1988.98</b>	
Change point ratio	<b>0.0920413</b>	<b>0.0018629; 0.3904608</b>	<b>0.0361373</b>	<b>0.0009373; 0.1413488</b>	
		<b>Model 13 PI reforms Austria</b>		<b>Model 14 AC reforms Austria</b>	
Change point	<b>1996.497</b>	<b>1996.02; 1996.97</b>	<b>1993.198</b>	<b>1985.029; 2005.802</b>	
Change point ratio	<b>0.2263511</b>	<b>0.1402987; 0.3462127</b>	<b>0.2403007</b>	<b>0.0148142; 0.5129851</b>	
		<b>Model 15 PI reforms Belgium</b>		<b>Model 16 AC reforms Belgium</b>	
Change point	<b>1990.516</b>	<b>1990.012; 1990.973</b>	<b>1990.264</b>	<b>1987.385; 1992.605</b>	
Change point ratio	<b>0.0231214</b>	<b>0.0005429; 0.0792848</b>	<b>0.2560539</b>	<b>0.0873936; 0.5153542</b>	
		<b>Model 17 PI reforms Canada</b>		<b>Model 18 AC reforms Canada</b>	
Change point	<b>1988.461</b>	<b>1987.302; 1988.994</b>	<b>1991.408</b>	<b>1990.187; 1991.976</b>	
Change point ratio	<b>0.1619546</b>	<b>0.0520175; 0.3345606</b>	<b>0.0318699</b>	<b>0.0007904; 0.1267353</b>	
		<b>Model 19 PI reforms France</b>		<b>Model 20 CA reforms France</b>	
Change point	<b>1997.513</b>	<b>1997.015; 1997.977</b>	<b>2001.693</b>	<b>1997.036; 2005.251</b>	

Change point ratio	<b>0.1270663</b> <b>0.0680743; 0.2101841</b>	<b>0.4076678</b> <b>0.2478191; 0.6130514</b>
	<b>Model 21 PI reforms Germany</b>	<b>Model 22 AC reforms Germany</b>
Change point	<b>2000.171</b> <b>1998.406; 2001.956</b>	<b>2003.948</b> <b>1982.344; 2011.988</b>
Change point ratio	<b>0.3083142</b> <b>0.2111483; 0.4421475</b>	<b>17.65929</b> <b>0.160055; 94.56315</b>
	<b>Model 23 PI reforms Italy</b>	<b>Model 24 AC reforms Italy</b>
Change point	<b>1986.275</b> <b>1984.846; 1988.982</b>	<b>1985.838</b> <b>1982.029; 1996.612</b>
Change point ratio	<b>0.0884374</b> <b>0.0012463; 0.321816</b>	<b>0.2455122</b> <b>0.0096732; 0.6308424</b>
	<b>Model 25 PI reforms New Zealand</b>	<b>Model 26 AC reforms New Zealand</b>
Change point	<b>1998.008</b> <b>1996.674; 2001.581</b>	<b>1990.355</b> <b>1981.992; 2001.327</b>
Change point ratio	<b>0.294353</b> <b>0.185947; 0.4374334</b>	<b>0.3773636</b> <b>0.0133753; 0.7732216</b>
	<b>Model 27 PI reforms Netherlands</b>	<b>Model 28 AC reforms Netherlands</b>
Change point	<b>1996.273</b> <b>1980.475; 2009.901</b>	<b>2006.601</b> <b>1982.068; 2012.868</b>
Change point ratio	<b>0.49951</b> <b>0.1017079; 0.8495666</b>	<b>34.93808</b> <b>0.6081615; 163.5394</b>
	<b>Model 29 PI reforms Sweden</b>	<b>Model 30 AC reforms Sweden</b>
Change point	<b>1992.513</b> <b>1991.983; 1993.353</b>	<b>1996.62</b> <b>1995.121; 1998.33</b>
Change point ratio	<b>0.3521408</b> <b>0.2177849; 0.5373336</b>	<b>0.3314779</b> <b>0.1866236; 0.5285806</b>
	<b>Model 31 PI reforms Switzerland</b>	<b>Model 32 AC reforms Switzerland</b>
Change point	<b>1991.515</b> <b>1990.522; 1992.421</b>	<b>1986.435</b> <b>1985.385; 1986.974</b>
Change point ratio	<b>0.1913225</b> <b>0.0850247; 0.3443868</b>	<b>0.0486118</b> <b>0.0008284; 0.1928803</b>
	<b>Model 33 PI reforms UK</b>	<b>Model 34 AC reforms UK</b>
Change point	<b>1985.473</b> <b>1985.018; 1985.948</b>	<b>1993.881</b> <b>1992.602; 1998.251</b>
Change point ratio	<b>0.0263216</b> <b>0.0007708; 0.0936803</b>	<b>0.2887824</b> <b>0.1573705; 0.4628316</b>

	Model 35 PI reforms USA		Model 36 AC reforms USA	
Change point	1990.385	1988.185; 1995.234	2001.62	1995.578; 2008.57
Change point ratio	0.2902547	0.125141; 0.533262	0.1537796	0.0061423; 0.4000002

Figure S1: Reforms in the UK

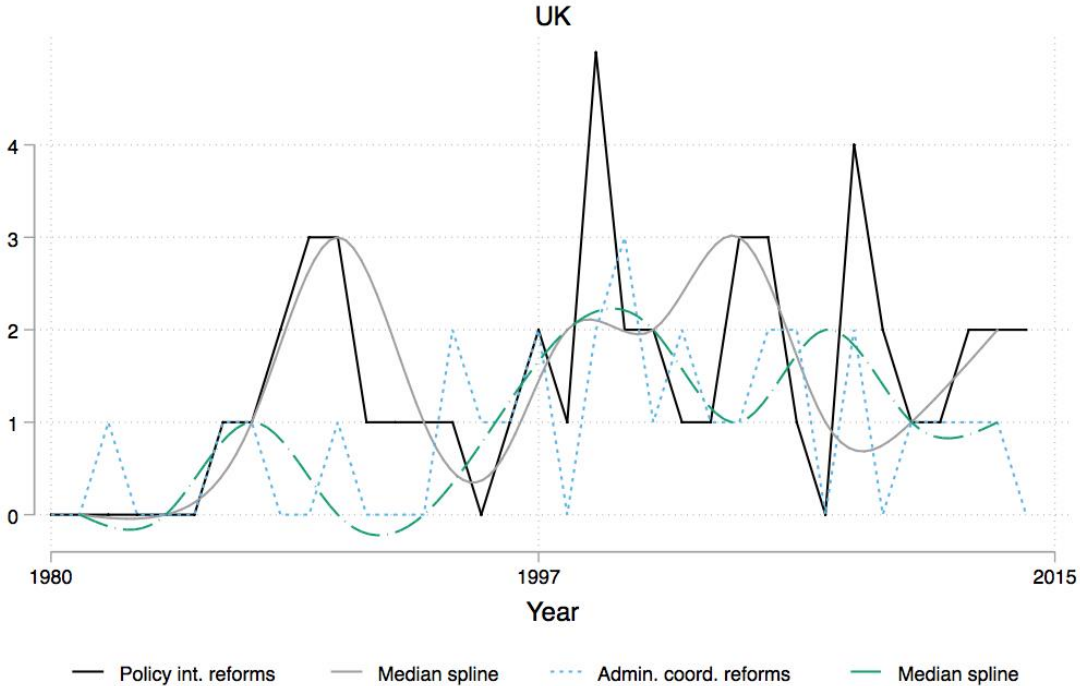


Figure S2: Reforms in Anglo-Saxon countries (non-UK)

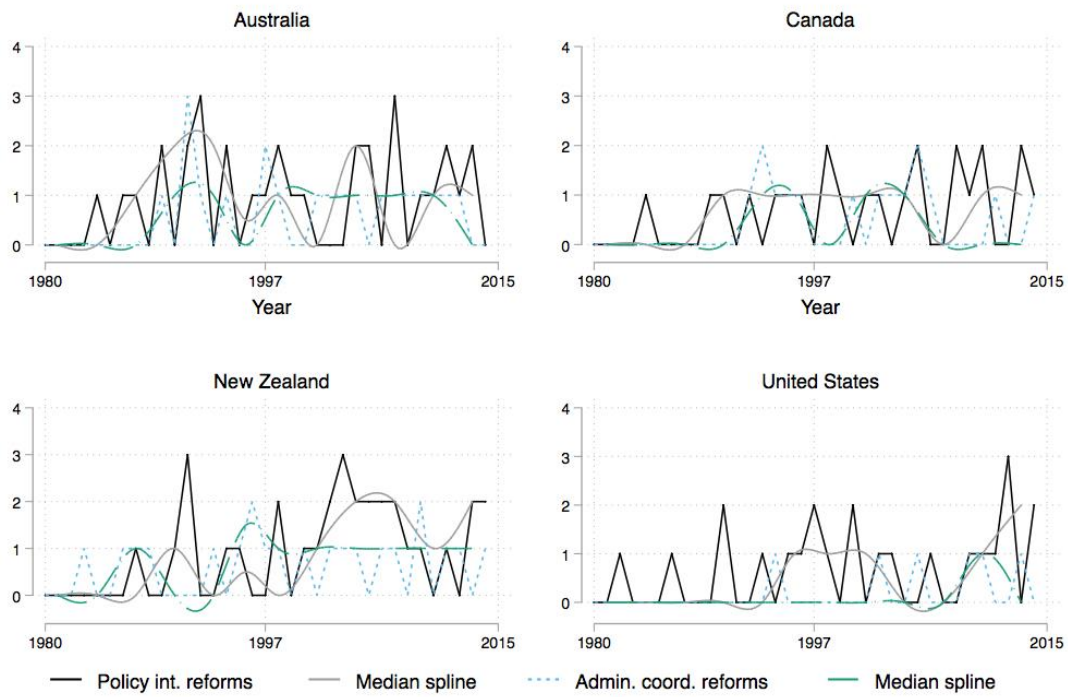


Figure S3: Reforms in federal and European countries

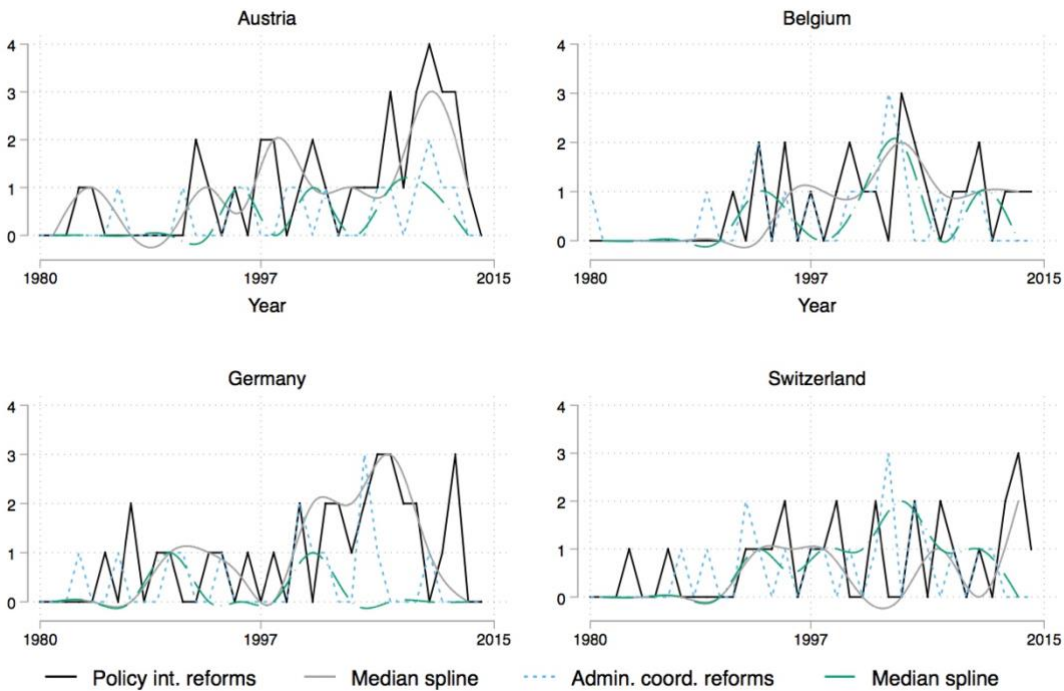
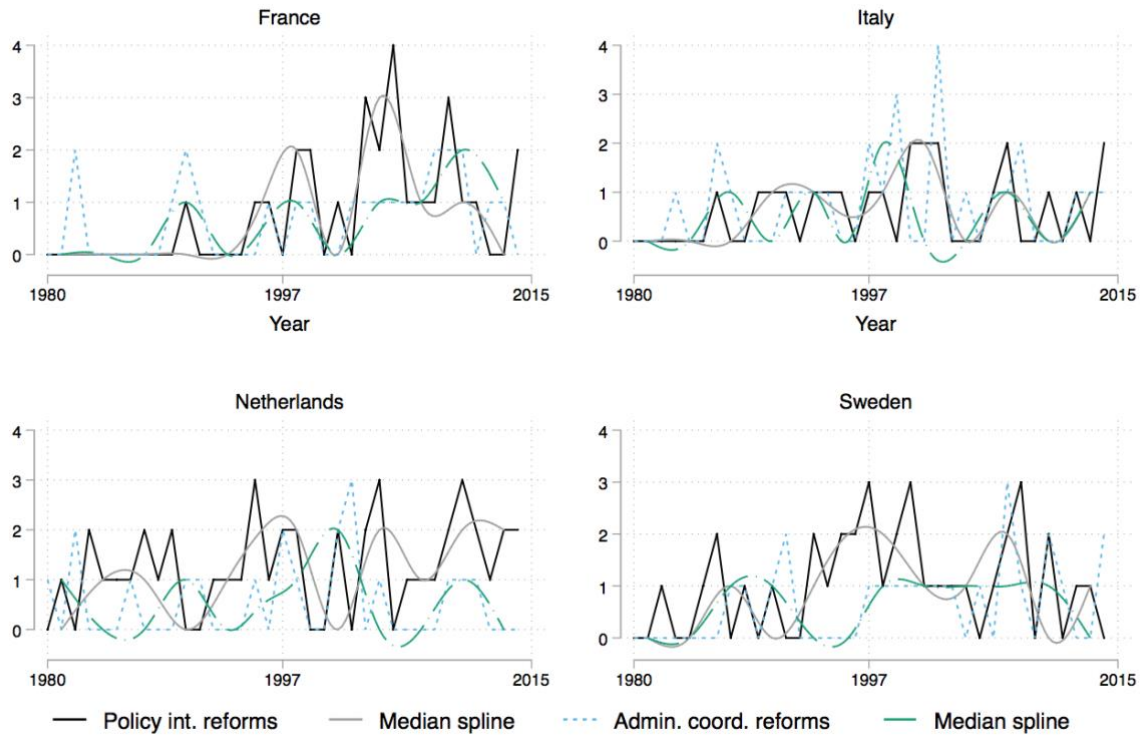


Figure S4: Reforms in unitary states in Europe



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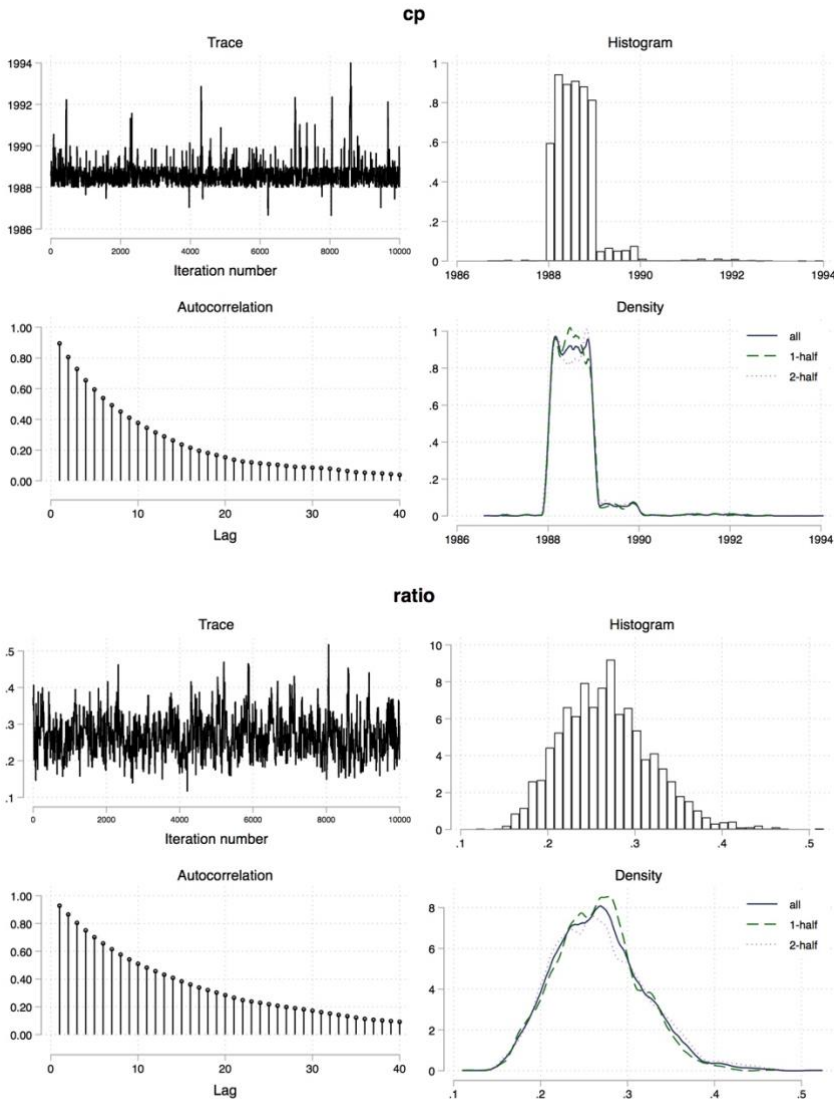
i We use the Bayesian estimator built into the Stata (bayesmh), which is based on the Metropolis-Hastings sampling algorithm. The models are based on a Poisson distribution and assume uniform priors.

# Supplementary Materials Part 2: Model Fit of Bayesian Estimates

Title of the paper: *Patterns of Policy Integration and Administrative Coordination Reforms: A Comparative Empirical Analysis*

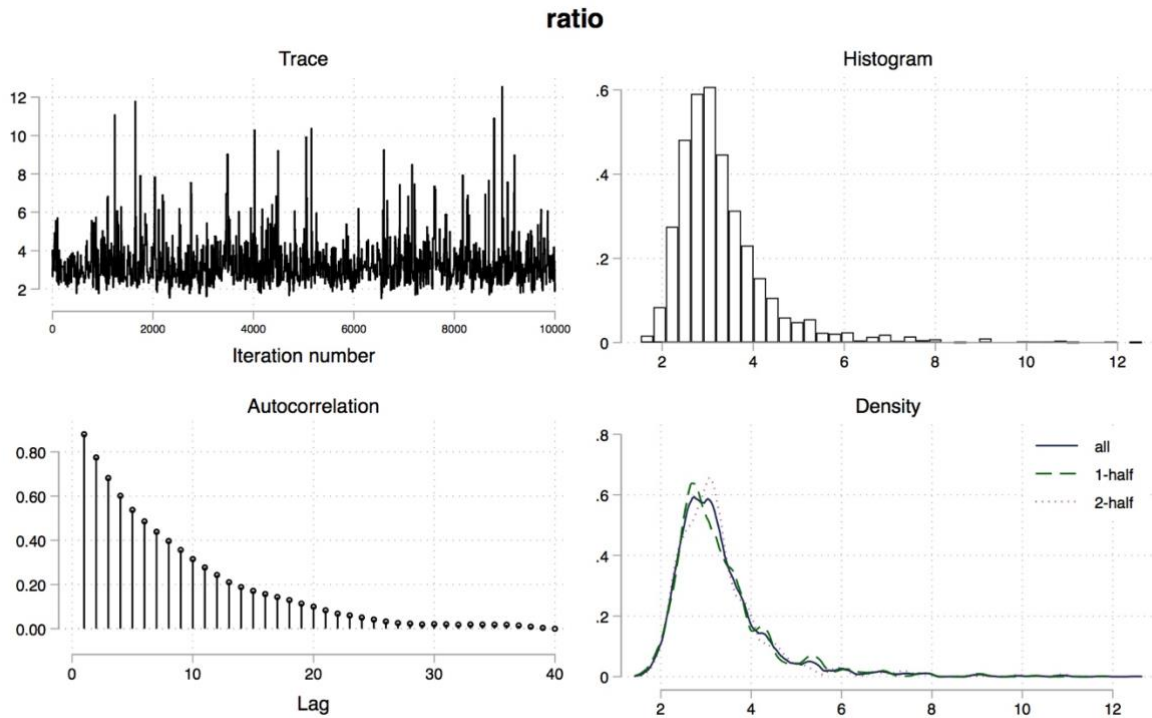
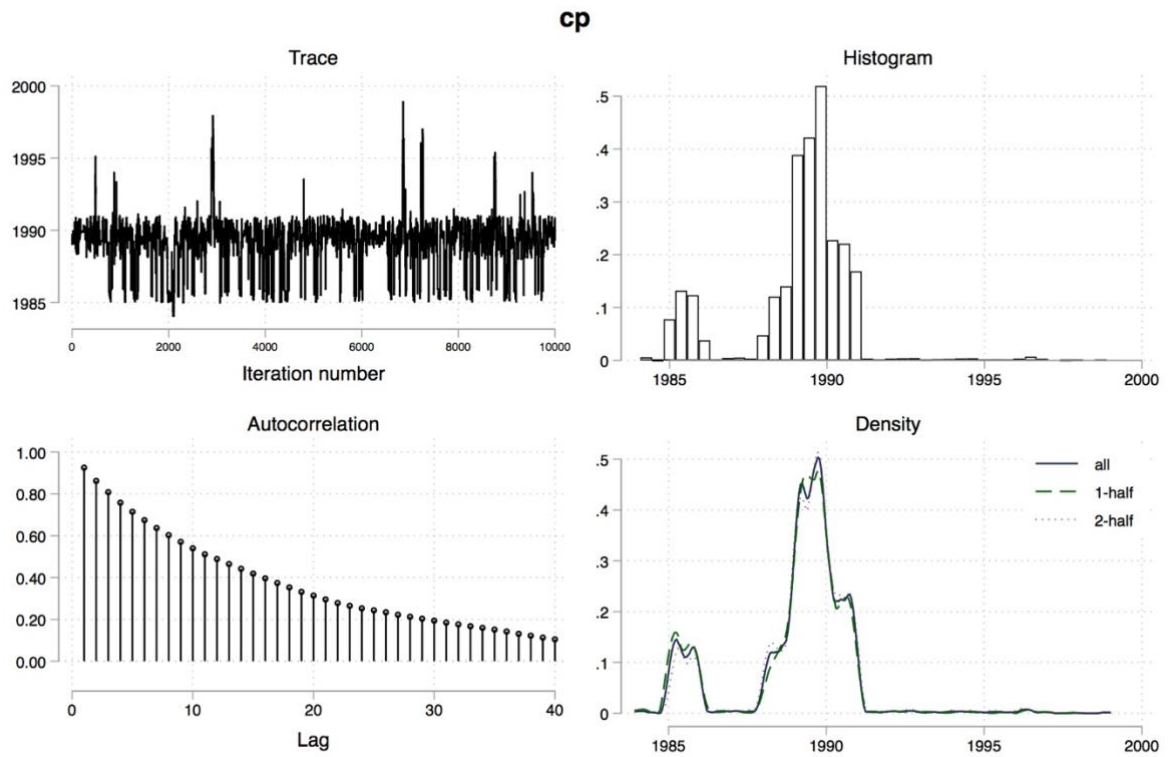
Model-fit statistics for Bayesian estimates. The number of the models corresponds to the number of the models in Supplementary Materials Part 1.

Figure 1: Model 1, Change point and estimated ratio of Period 1 and Period 2



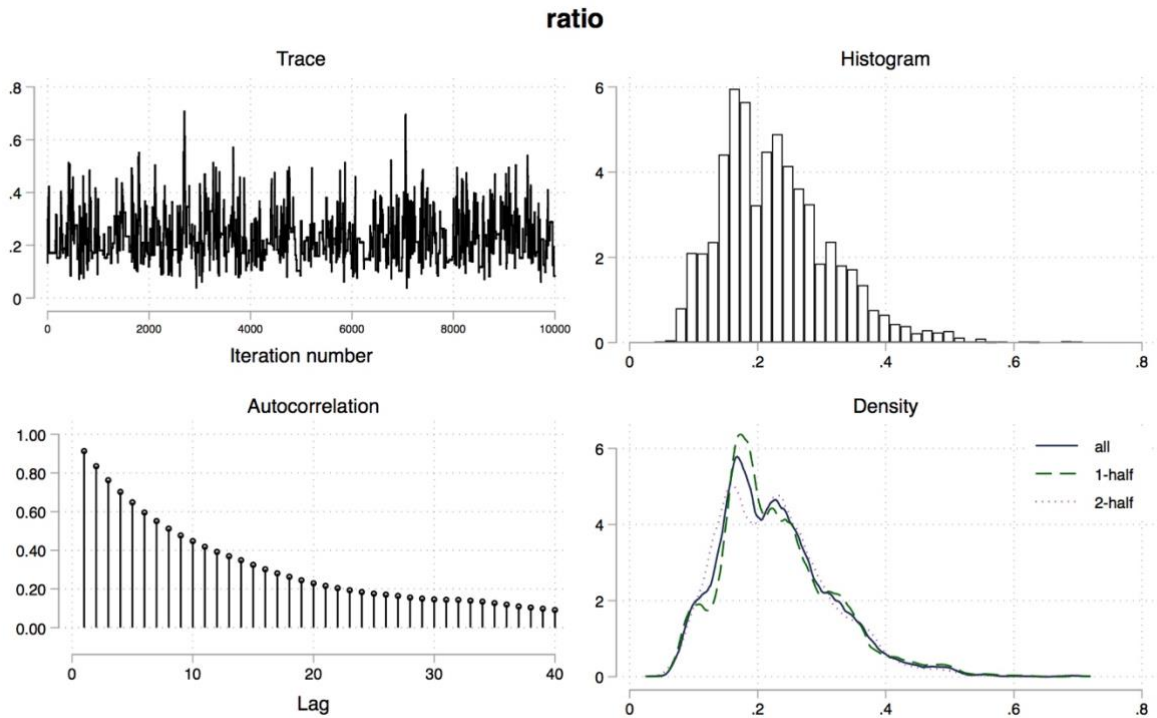
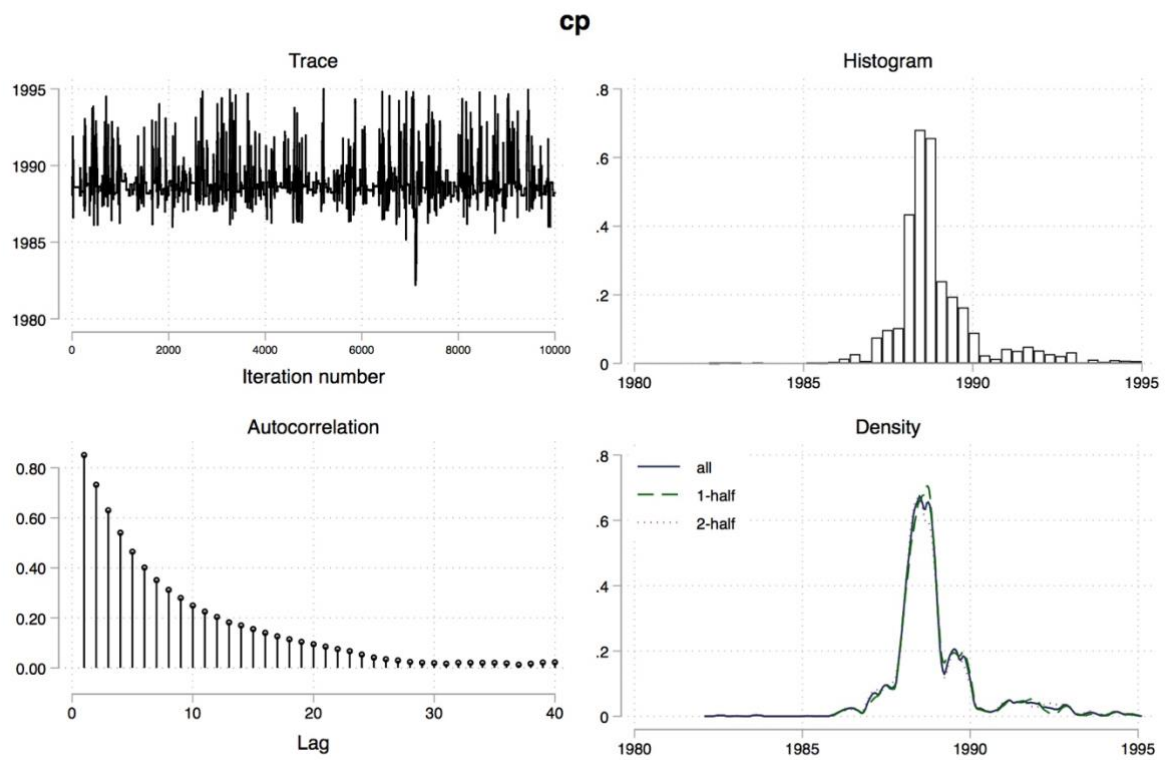
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 2: Model 2, Change point and estimated ratio of Period 1 and Period 2



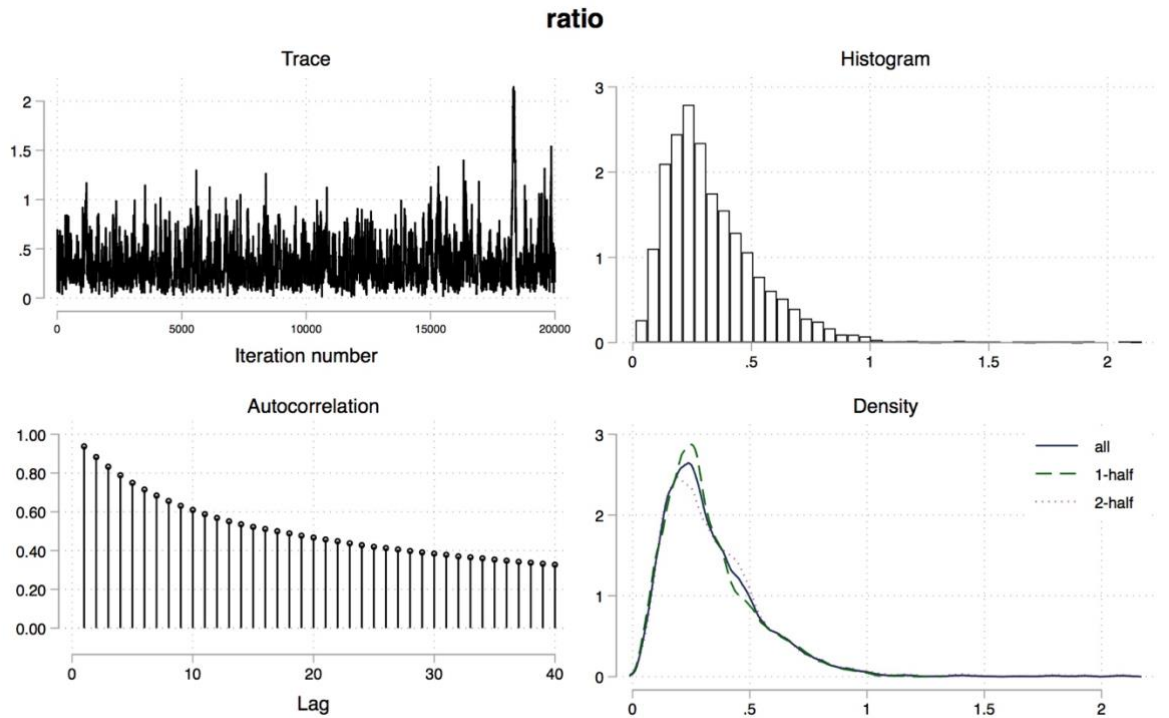
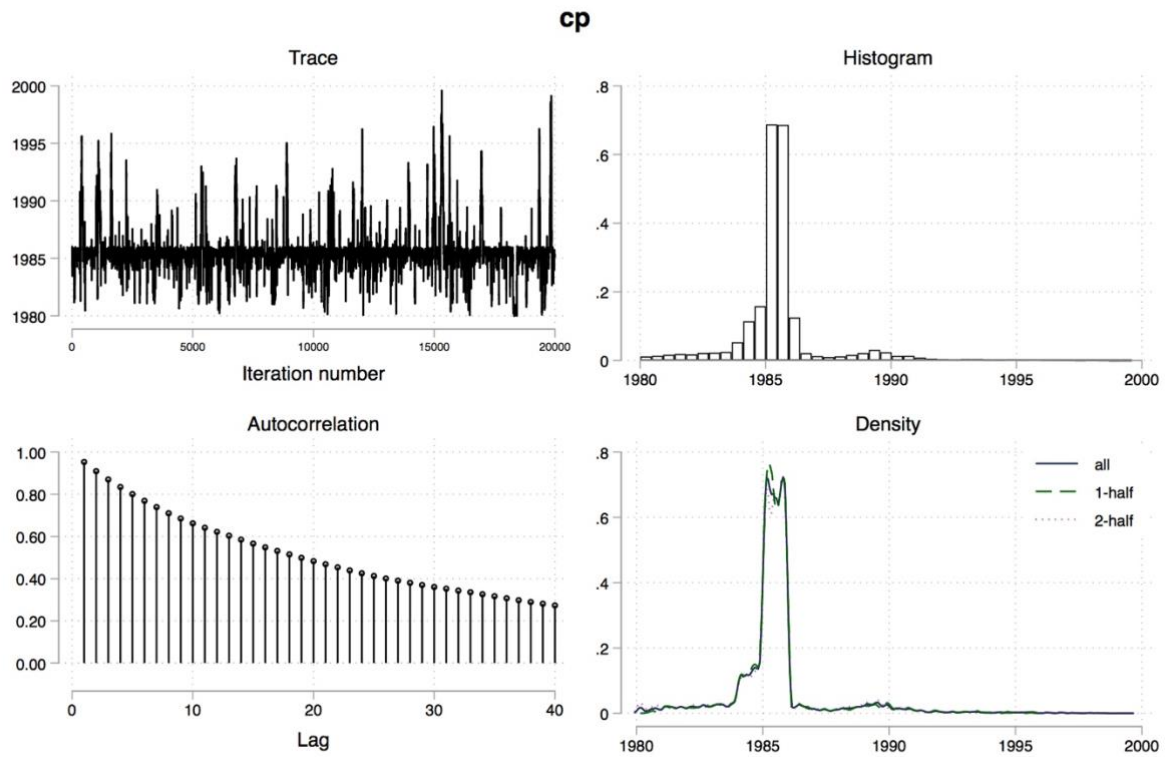
ratio:  $\{\mu_2\}/\{\mu_1\}$

Figure 3: Model 3, Change point and estimated ratio of Period 1 and Period 2



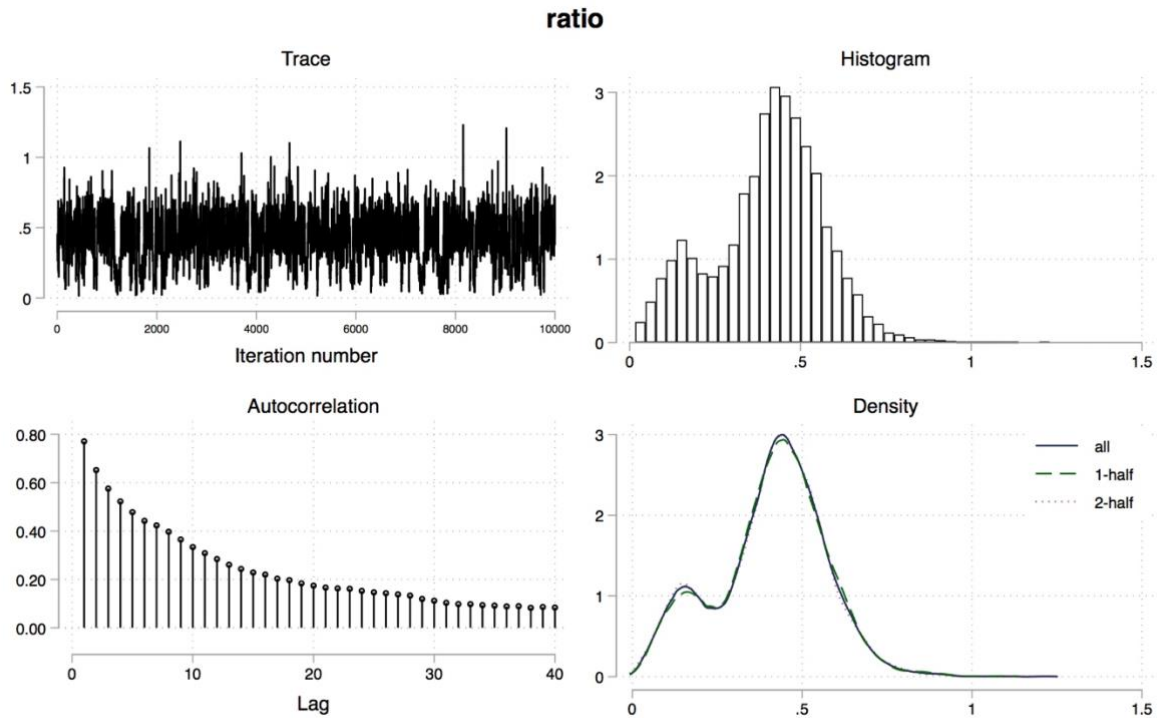
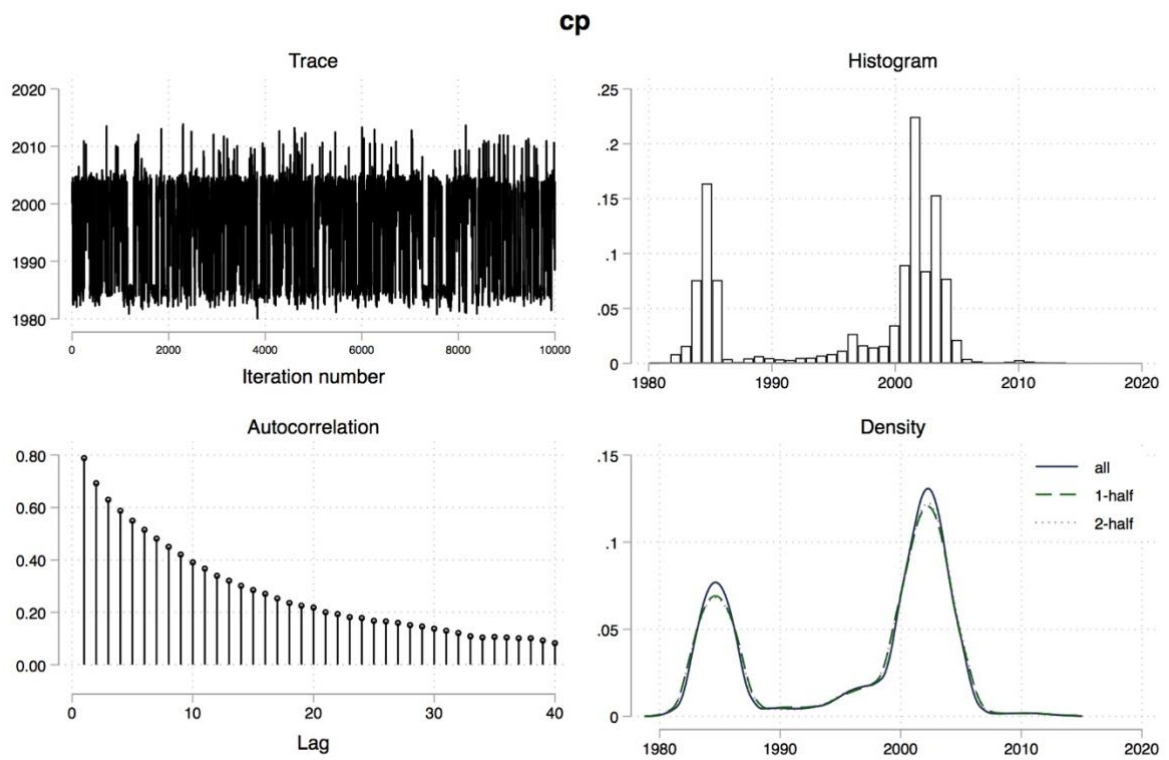
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 4: Model 4, Change point and estimated ratio of Period 1 and Period 2



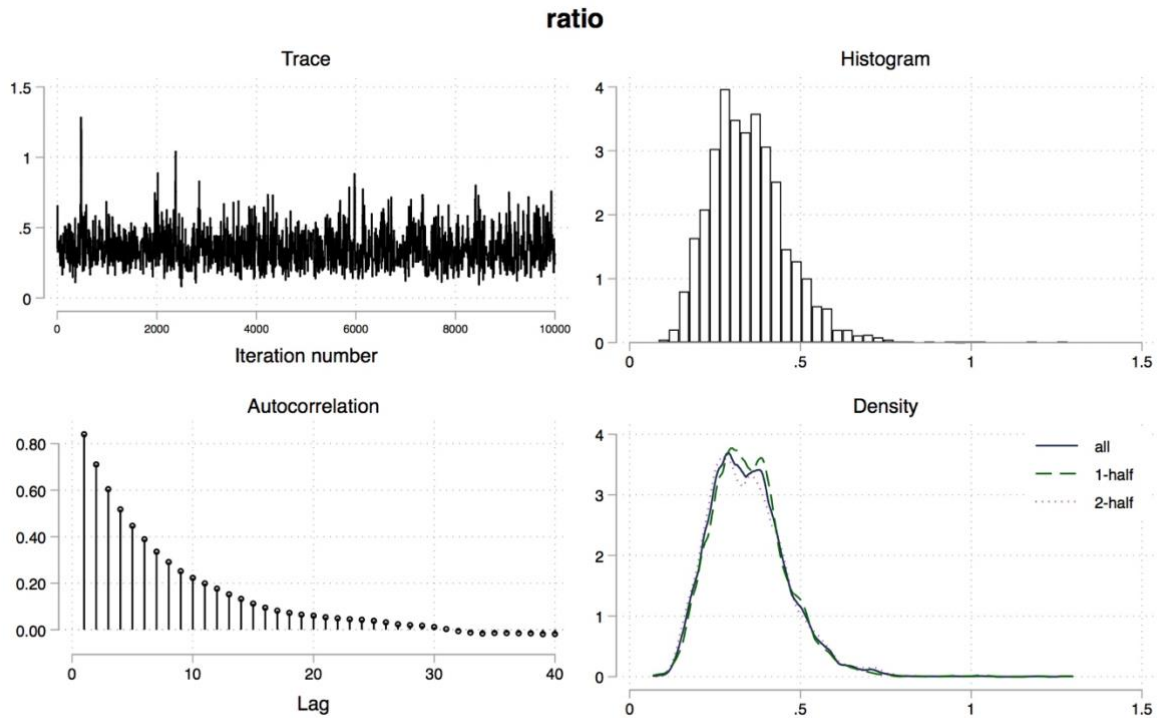
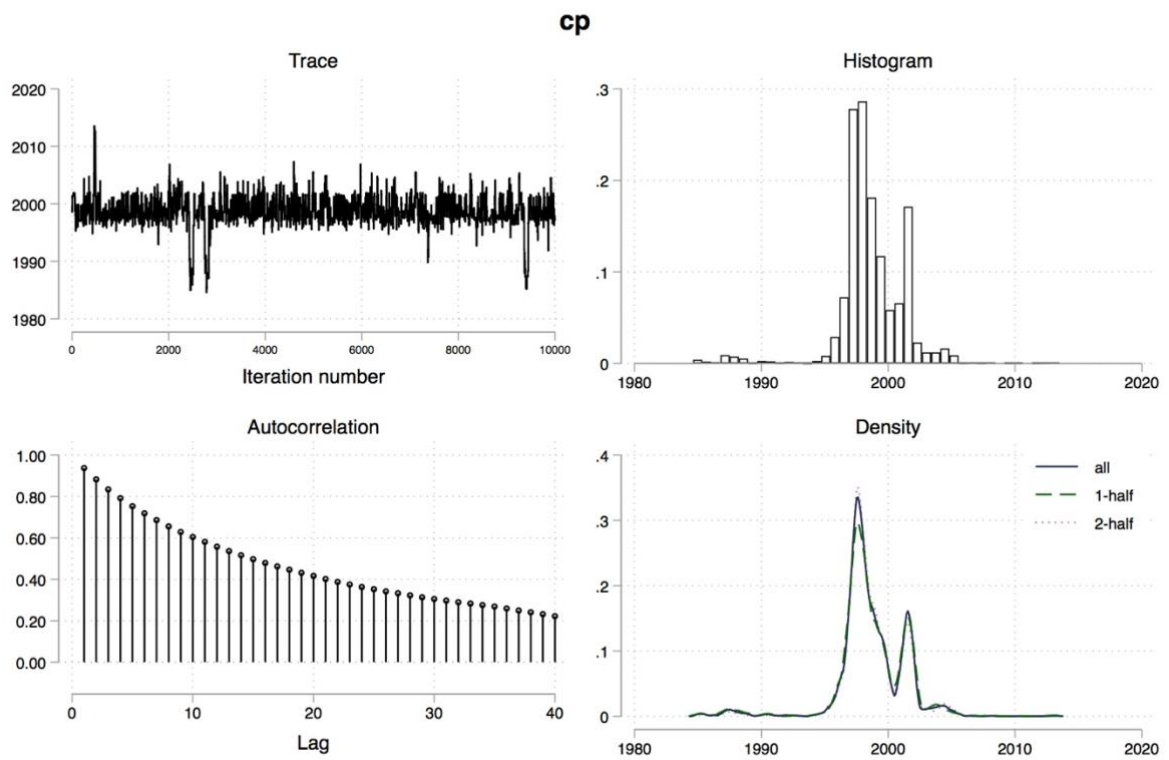
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 5: Model 5, Change point and estimated ratio of Period 1 and Period 2



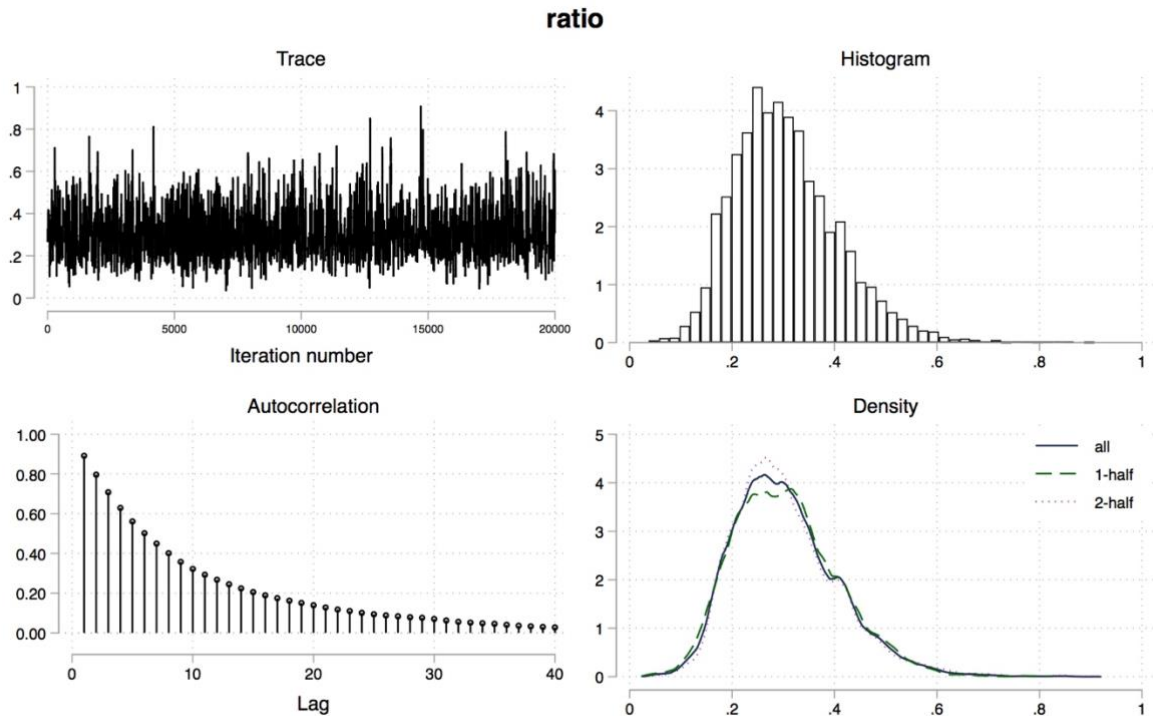
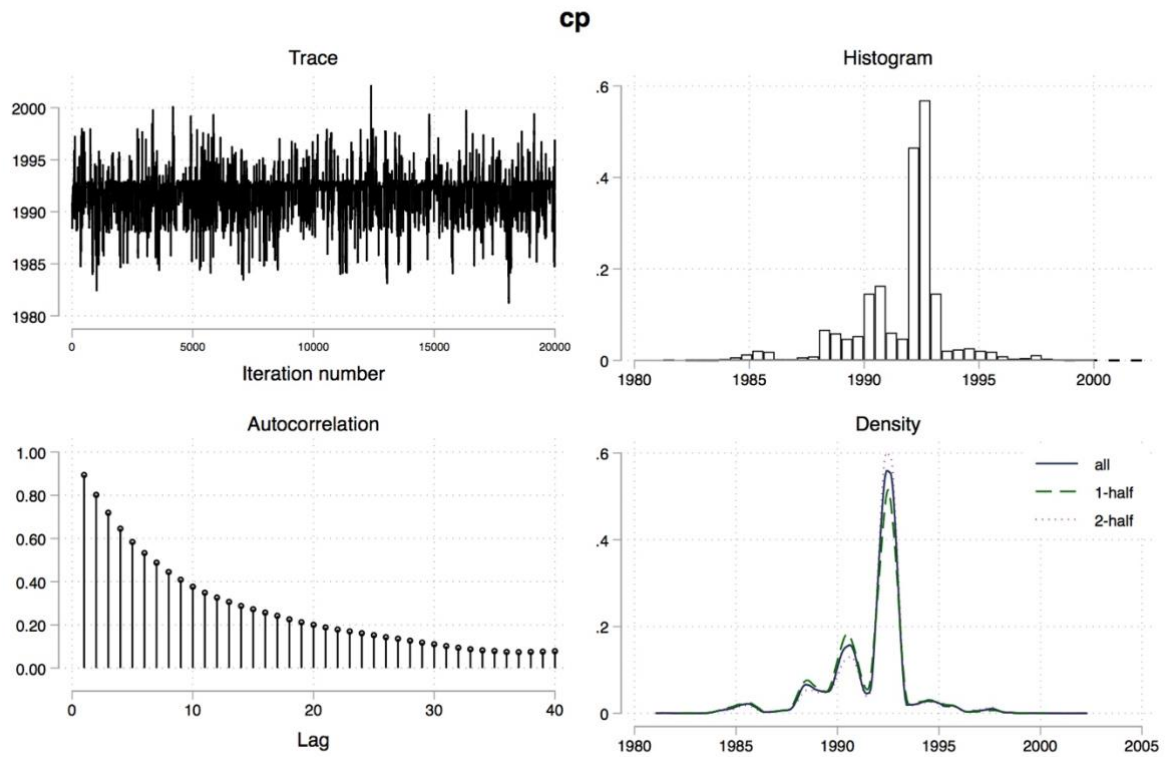
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 6: Model 6, Change point and estimated ratio of Period 1 and Period 2



ratio:  $\{\mu_1\}/\{\mu_2\}$

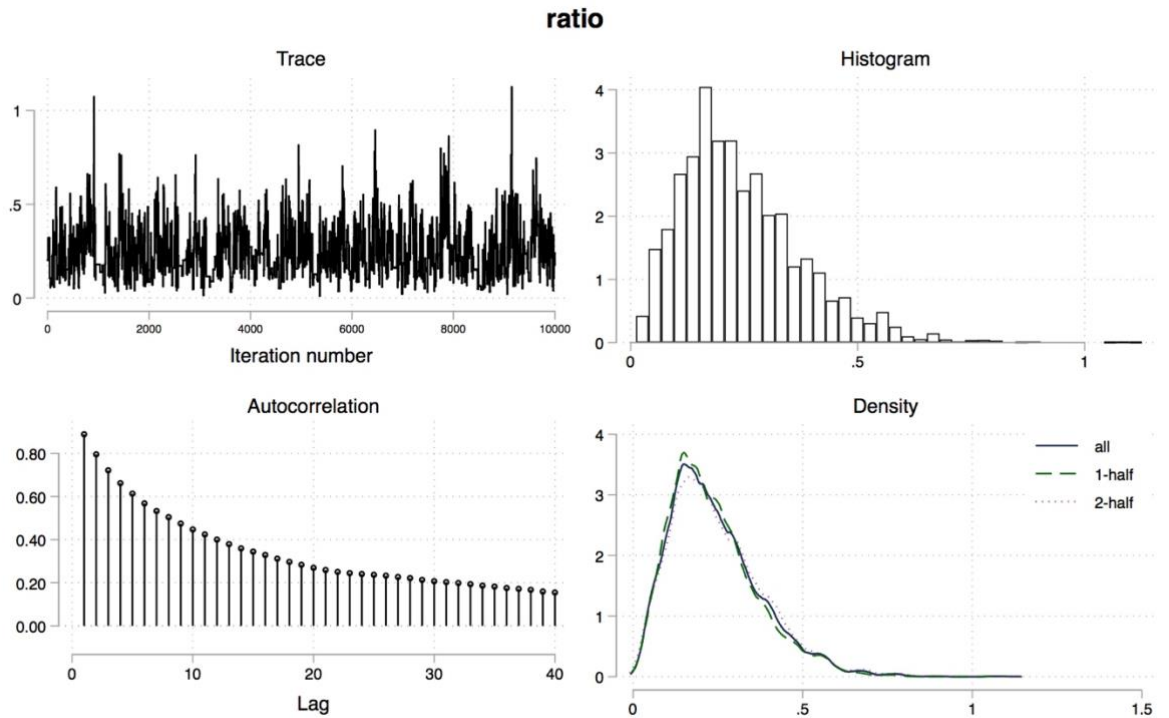
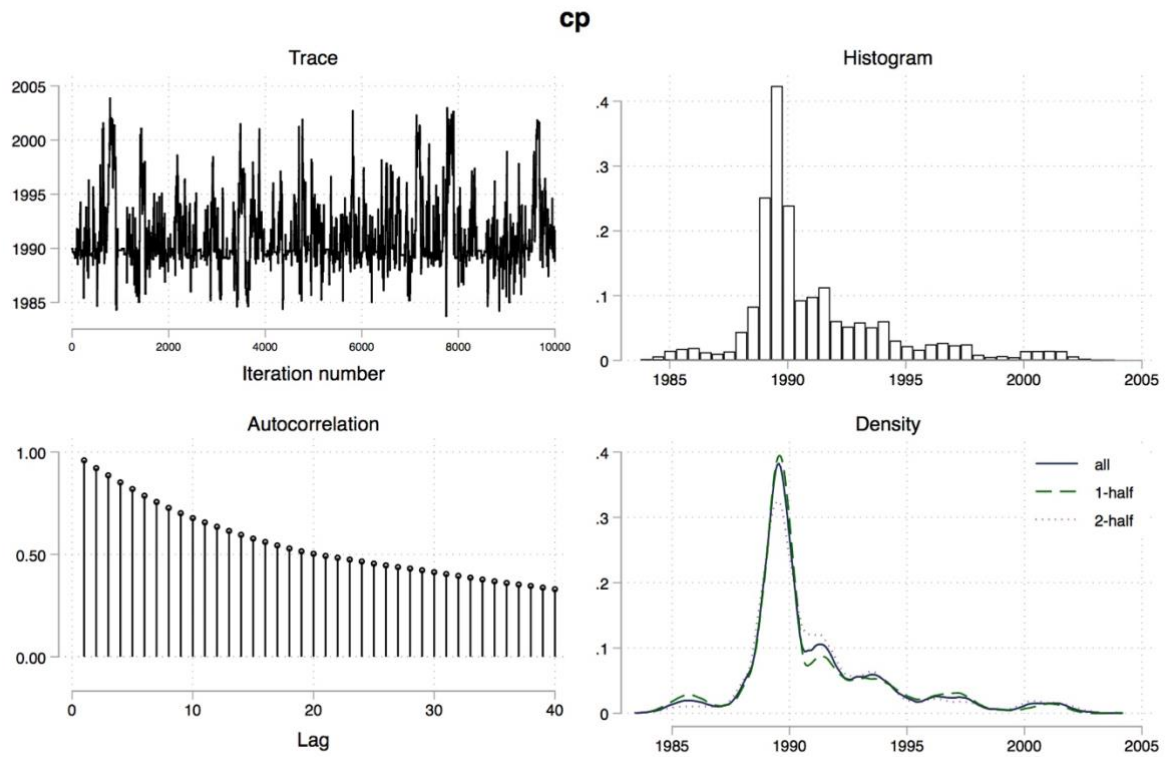
Figure 7: Model 7, Change point and estimated ratio of Period 1 and Period 2



ratio:  $\{\mu_1\}/\{\mu_2\}$

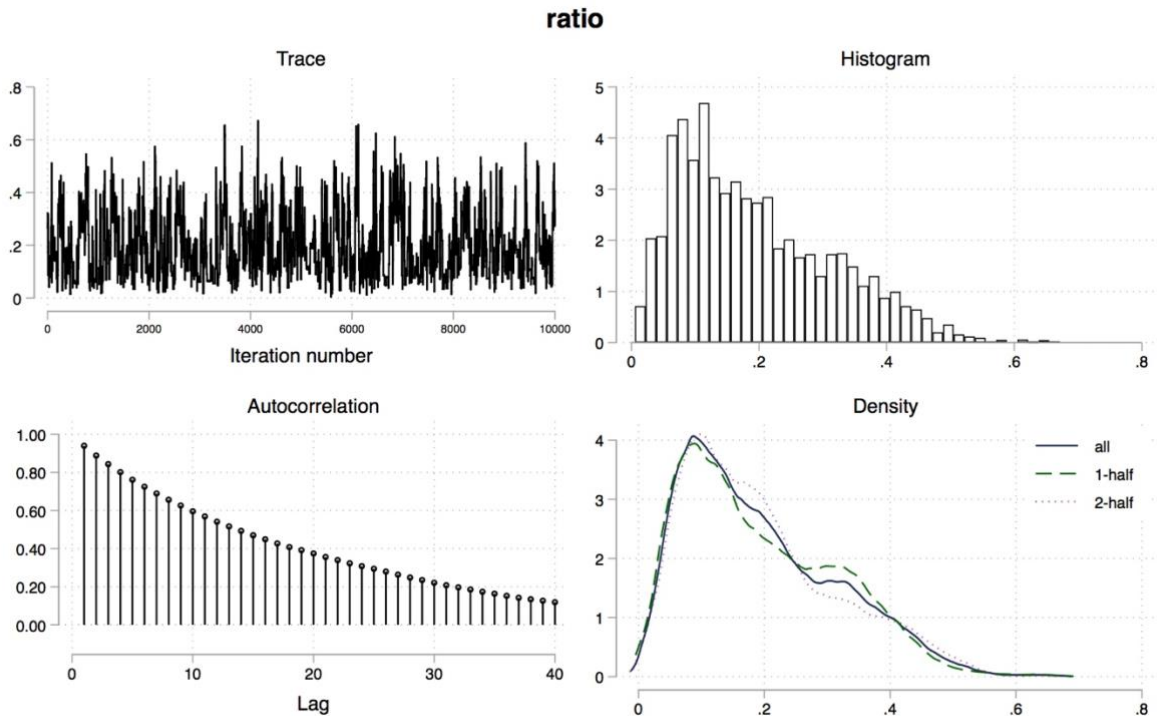
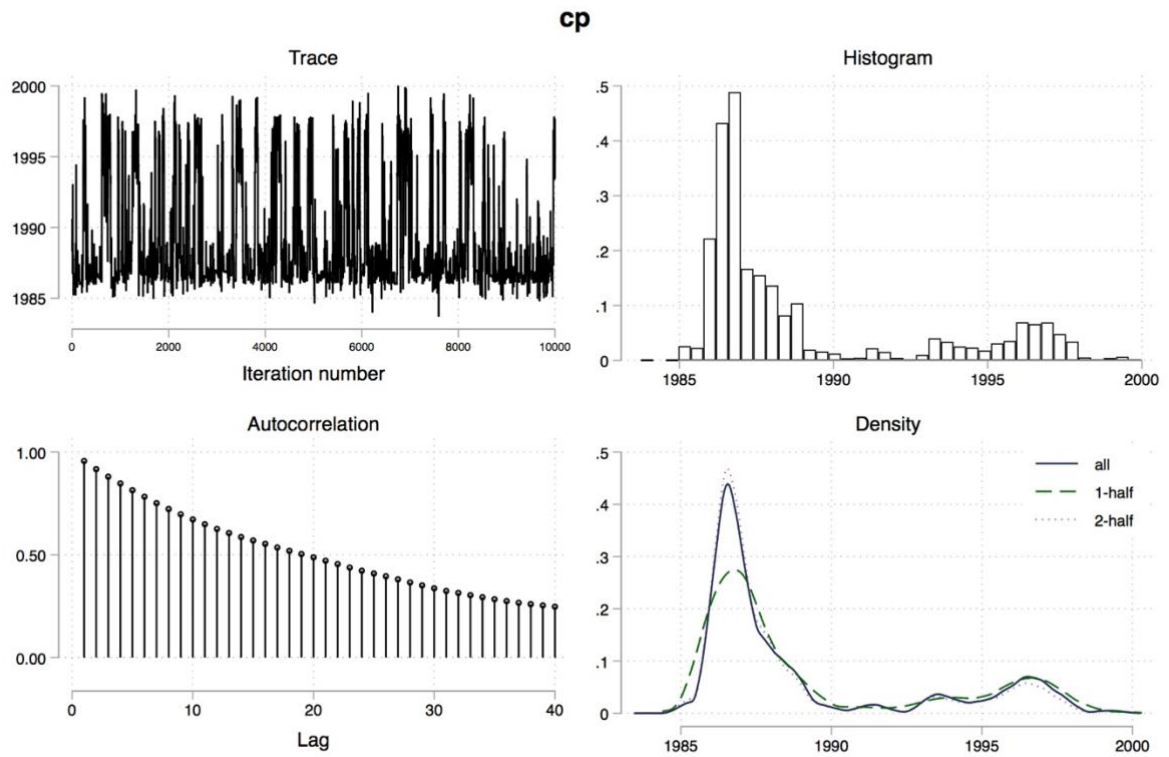


Figure 8: Model 8, Change point and estimated ratio of Period 1 and Period 2



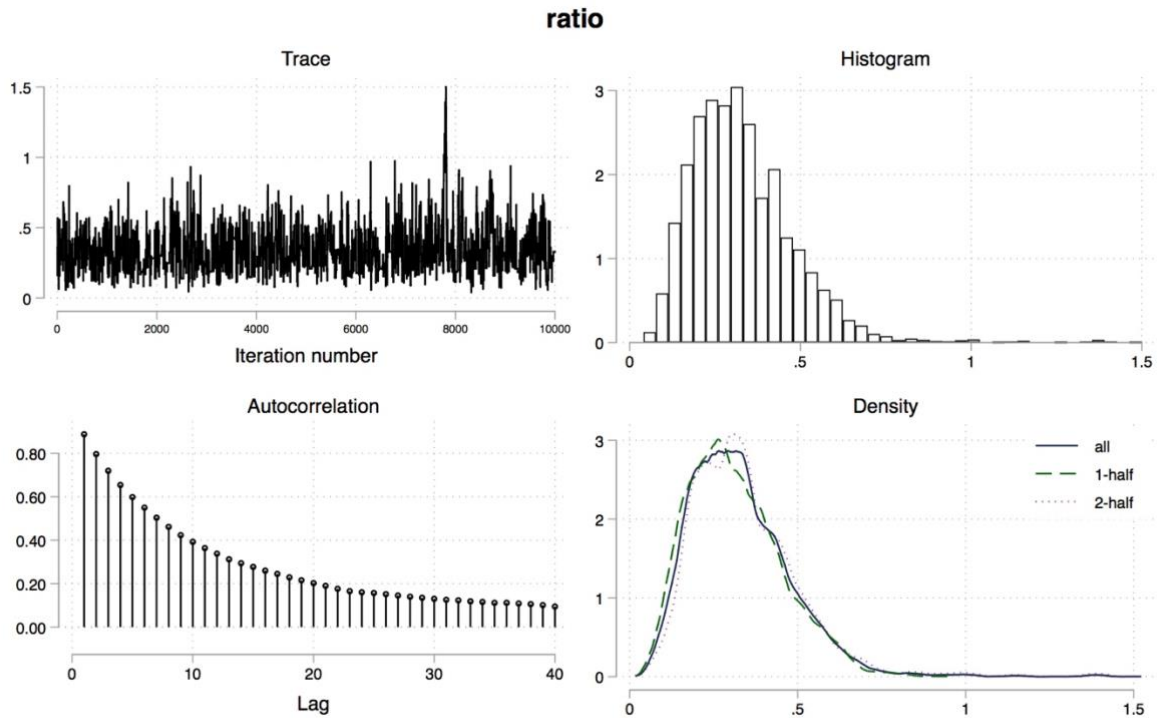
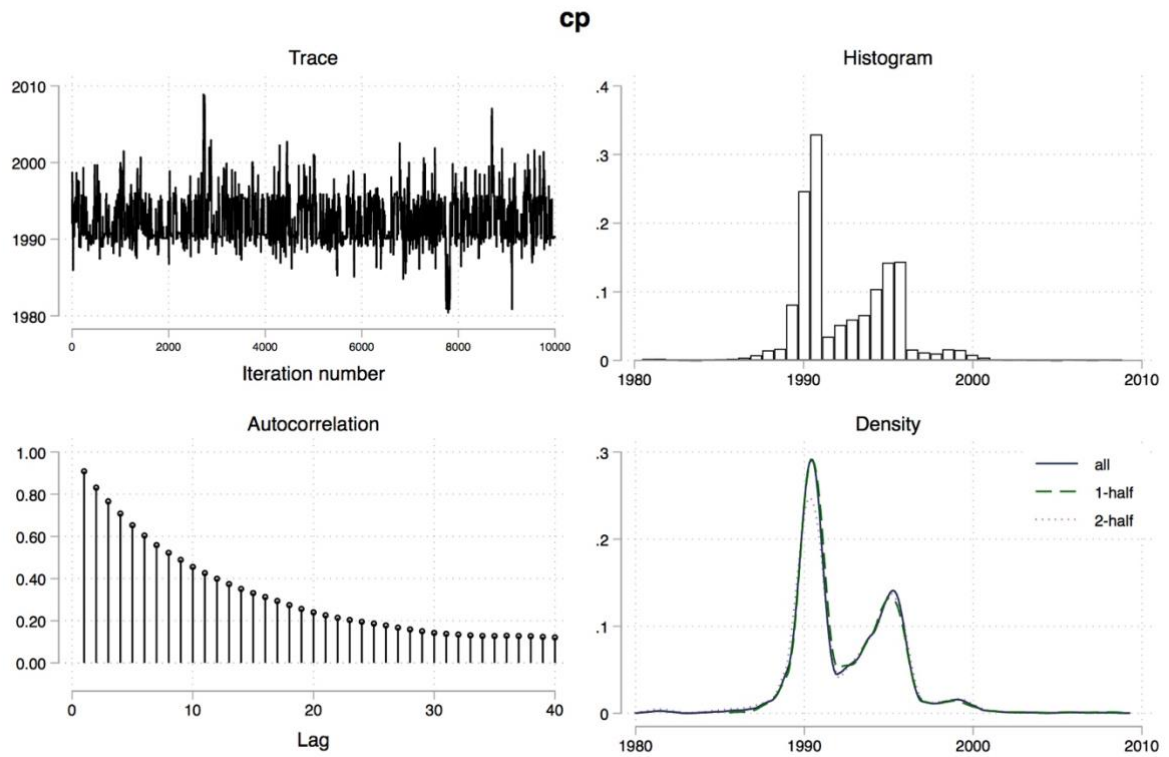
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 9: Model 9, Change point and estimated ratio of Period 1 and Period 2



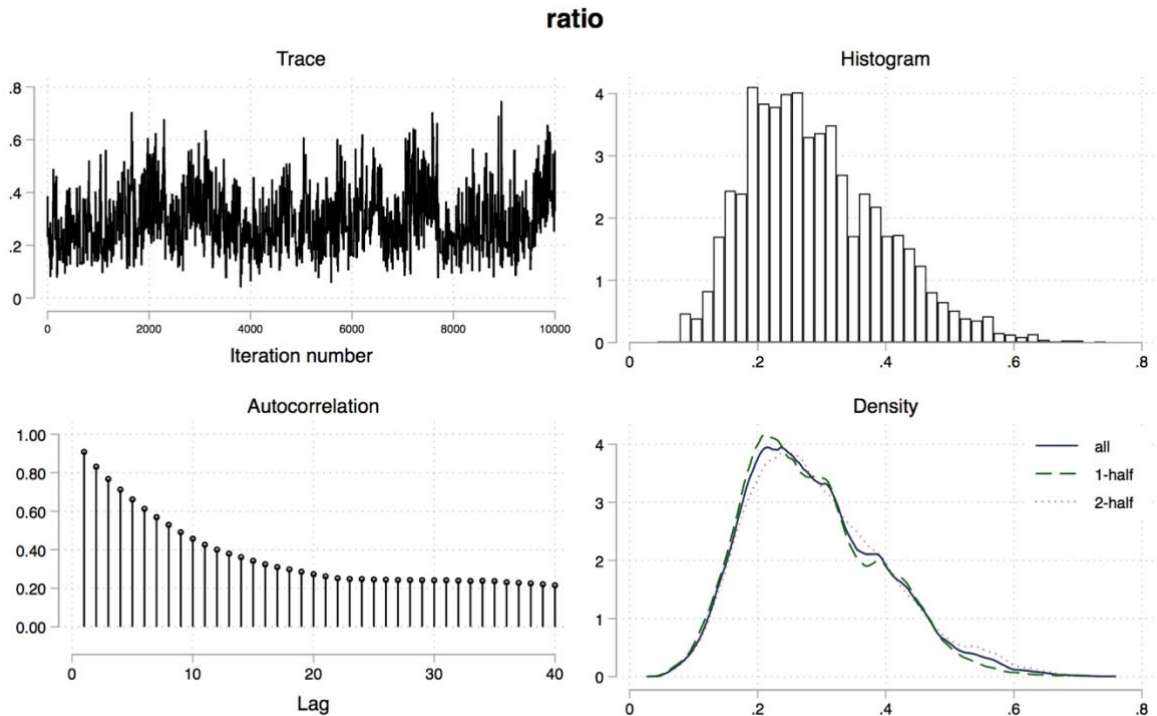
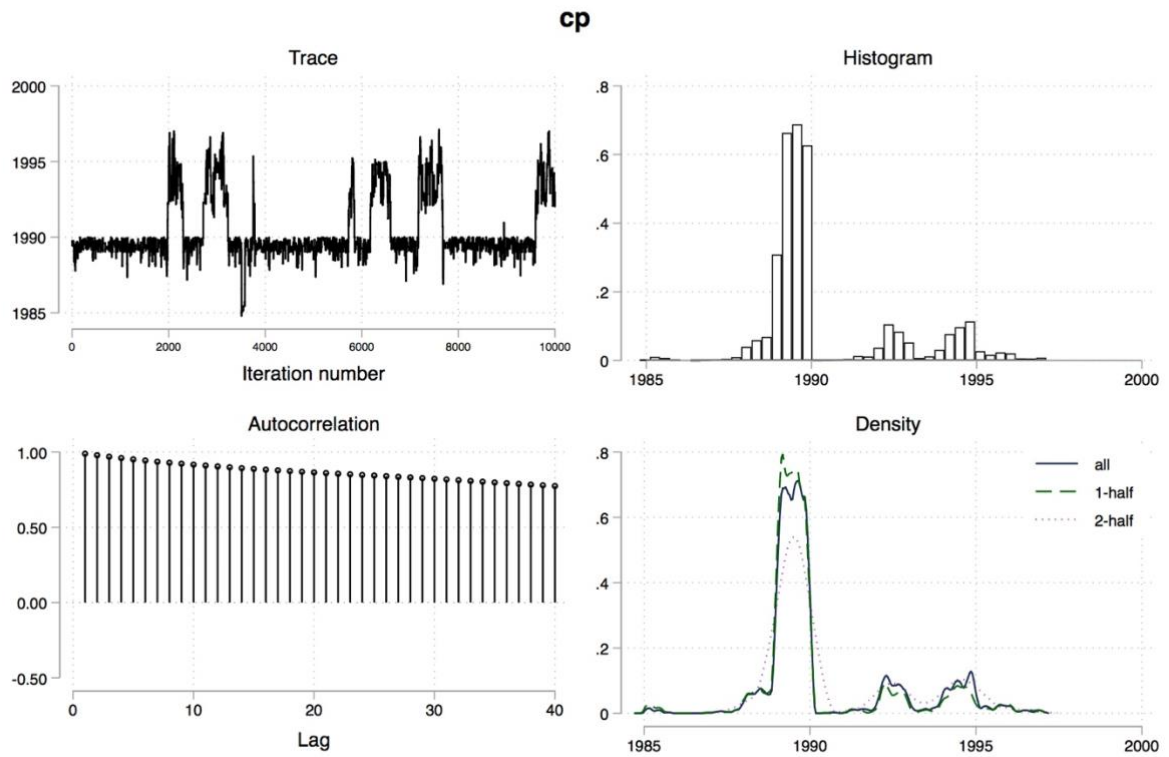
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 10: Model 10, Change point and estimated ratio of Period 1 and Period 2



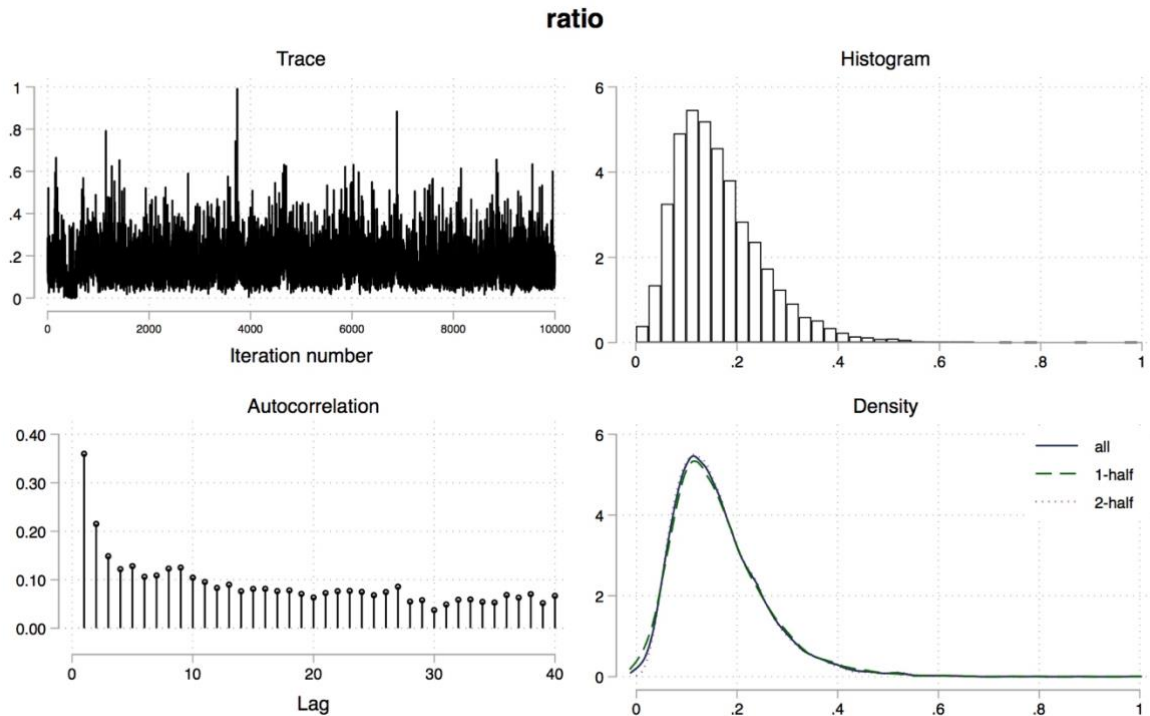
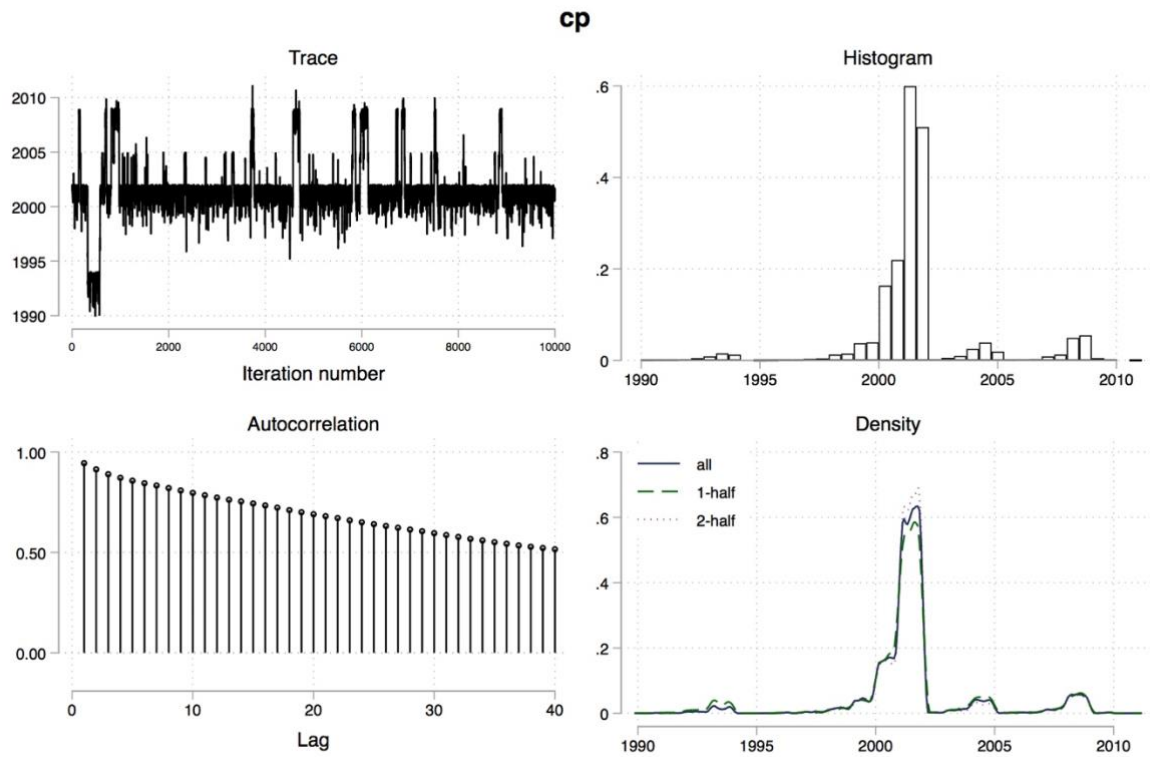
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 11: Model 11, Change point and estimated ratio of Period 1 and Period 2



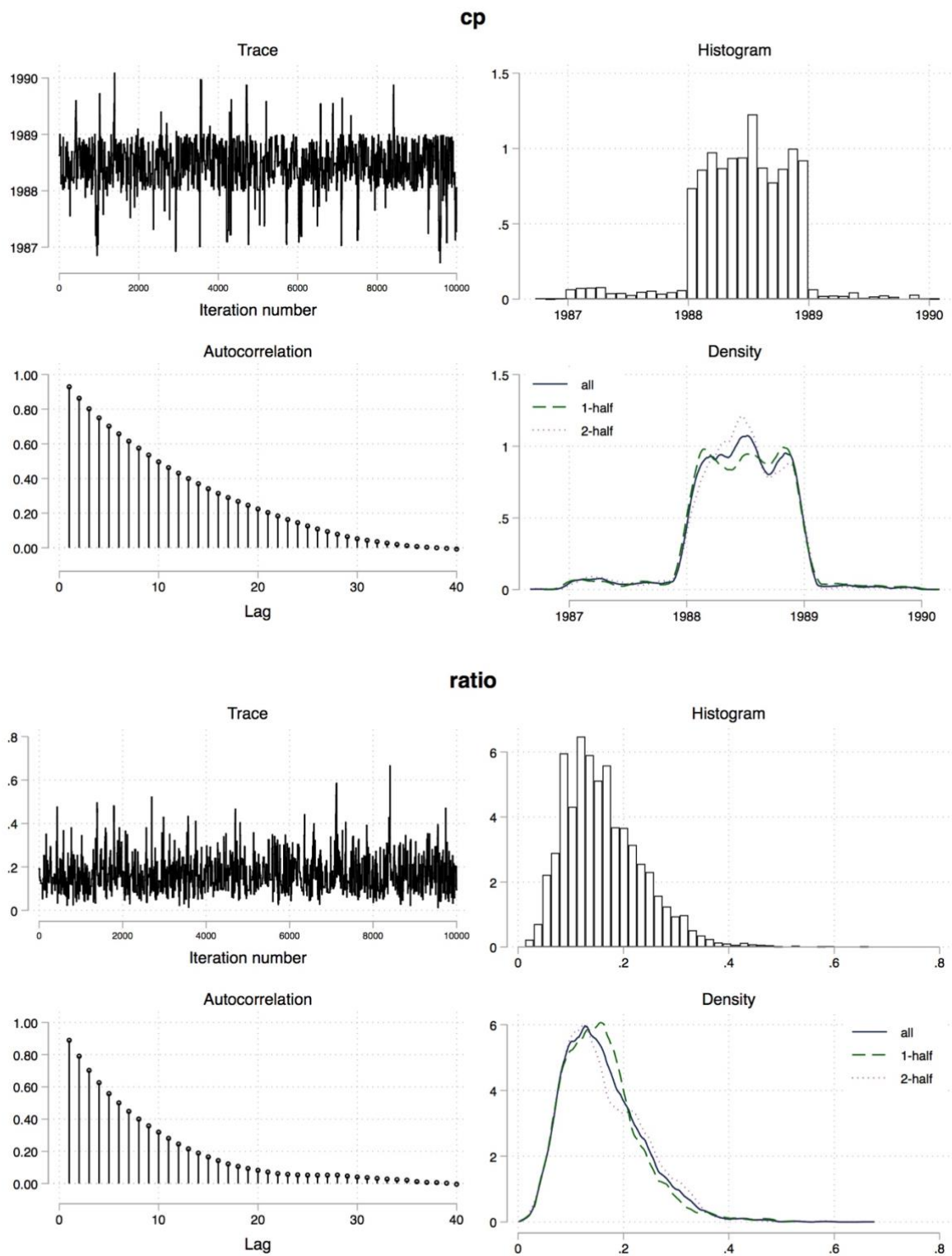
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 12: Model 12, Change point and estimated ratio of Period 1 and Period 2



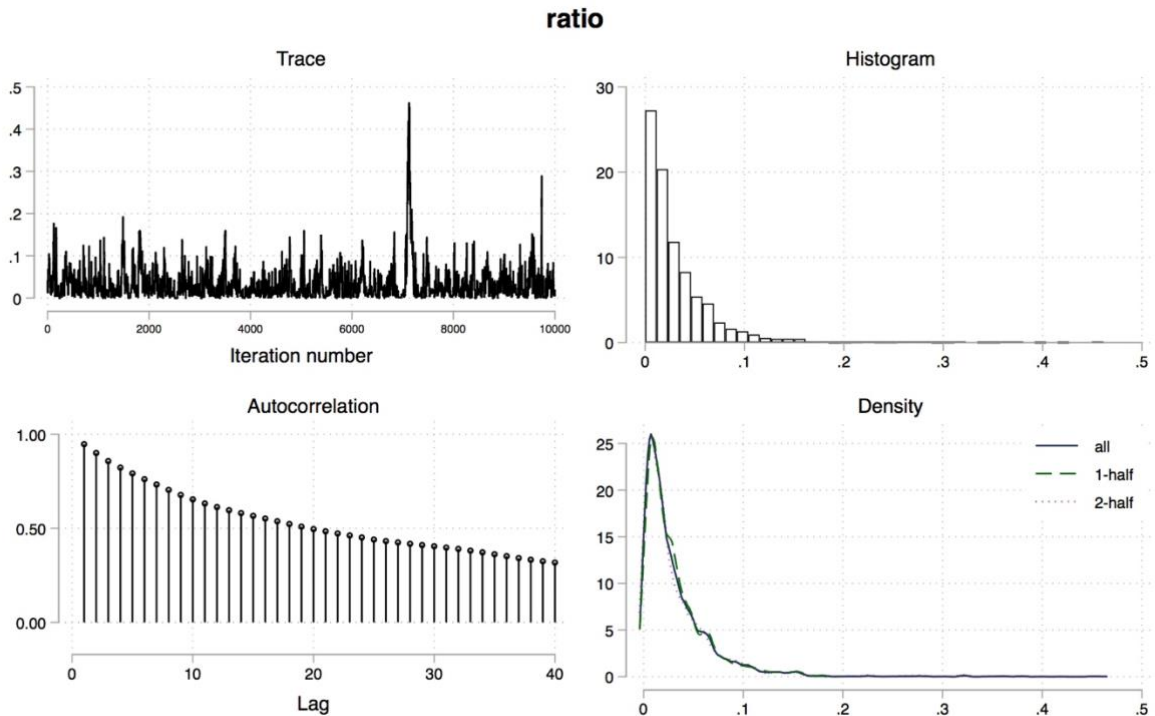
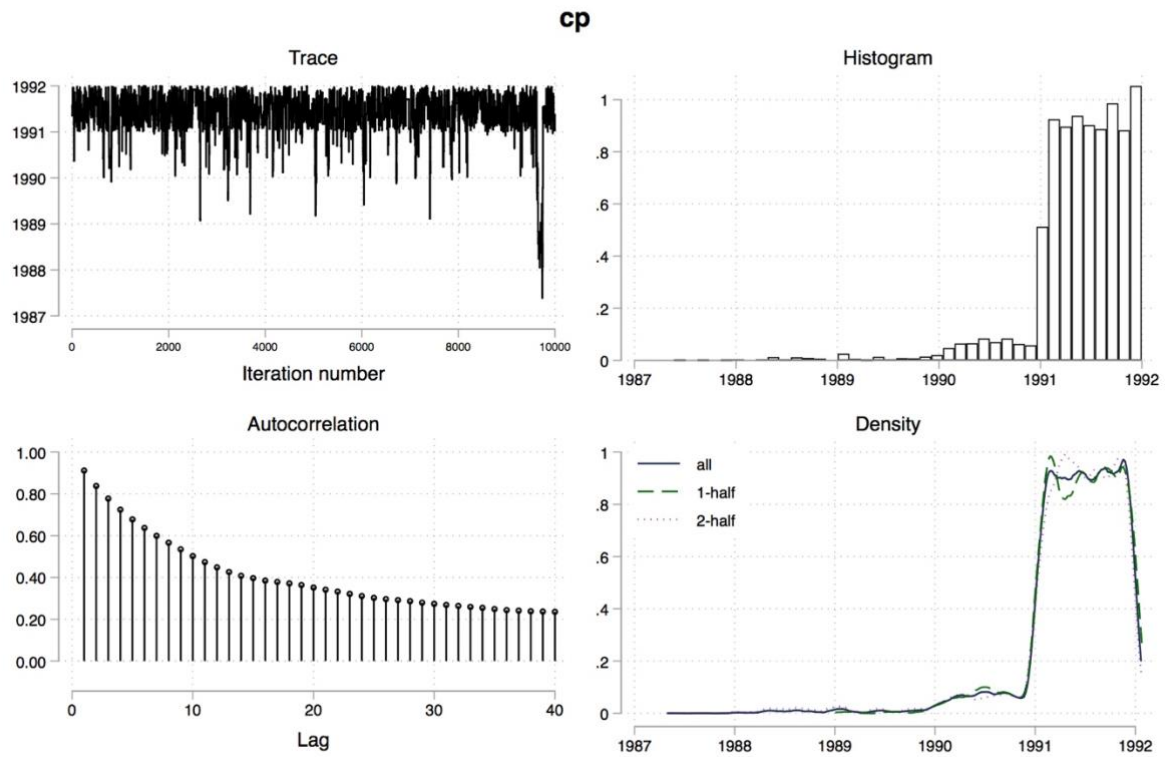
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 13: Model 13, Change point and estimated ratio of Period 1 and Period 2



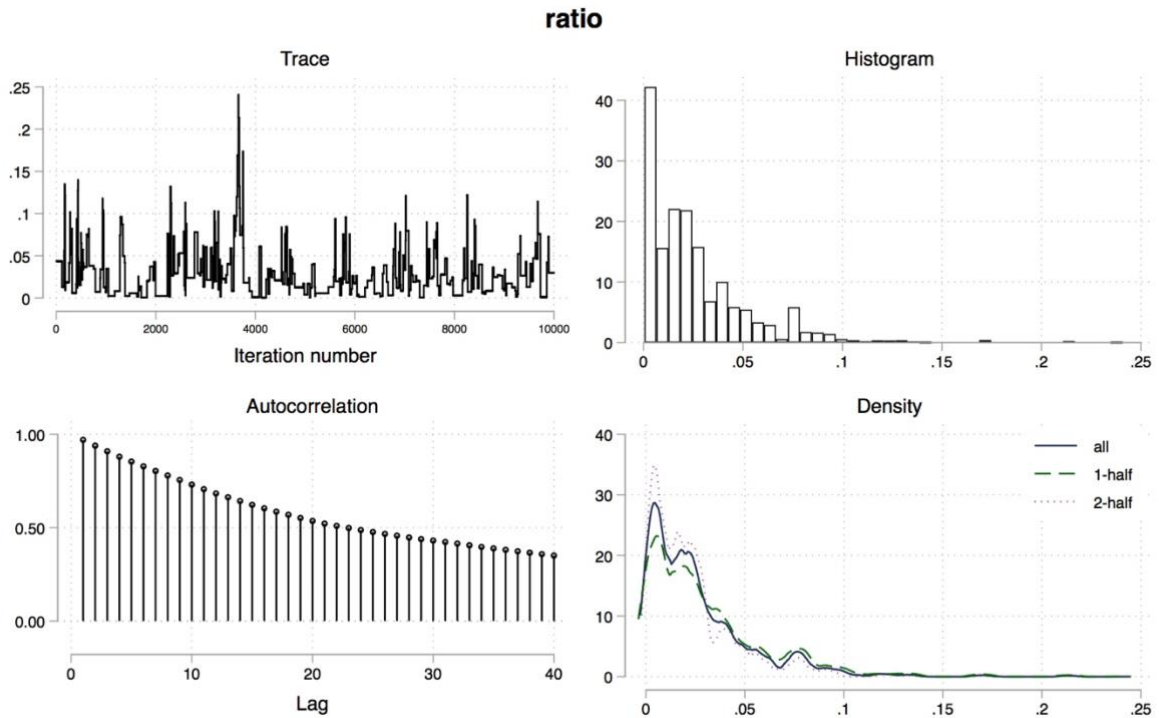
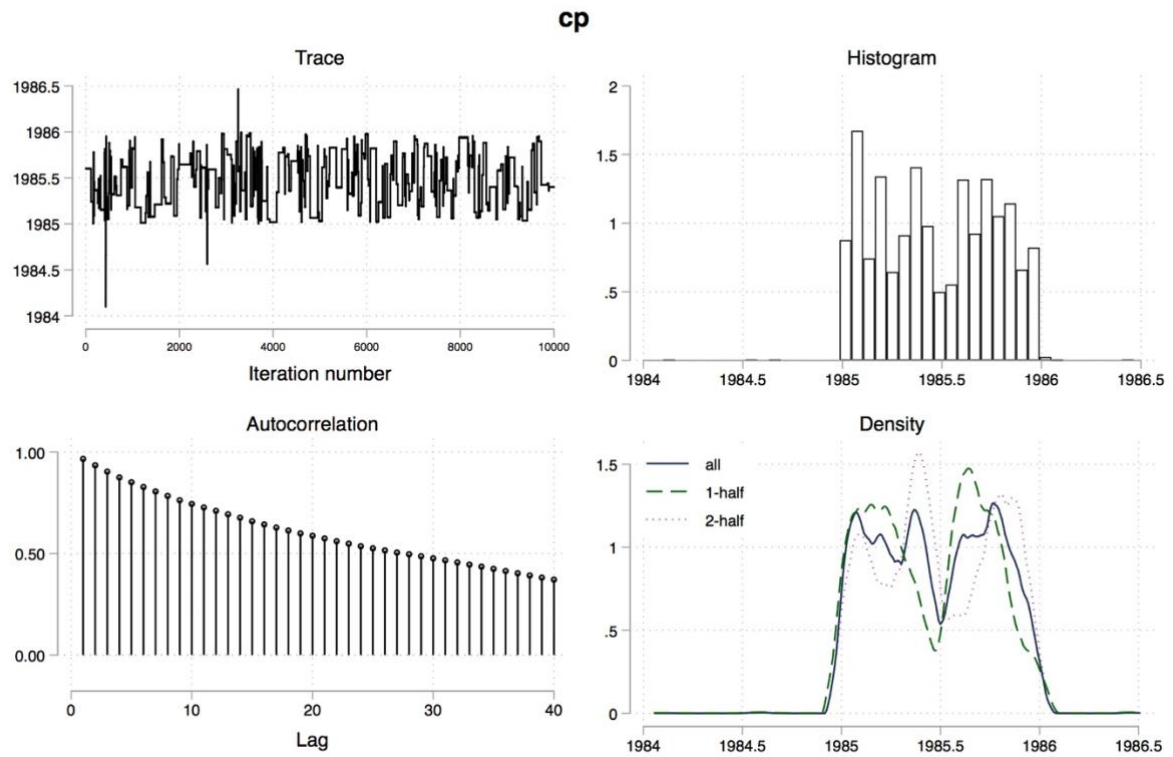
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 14: Model 14, Change point and estimated ratio of Period 1 and Period 2



ratio:  $\{\mu_1\}/\{\mu_2\}$

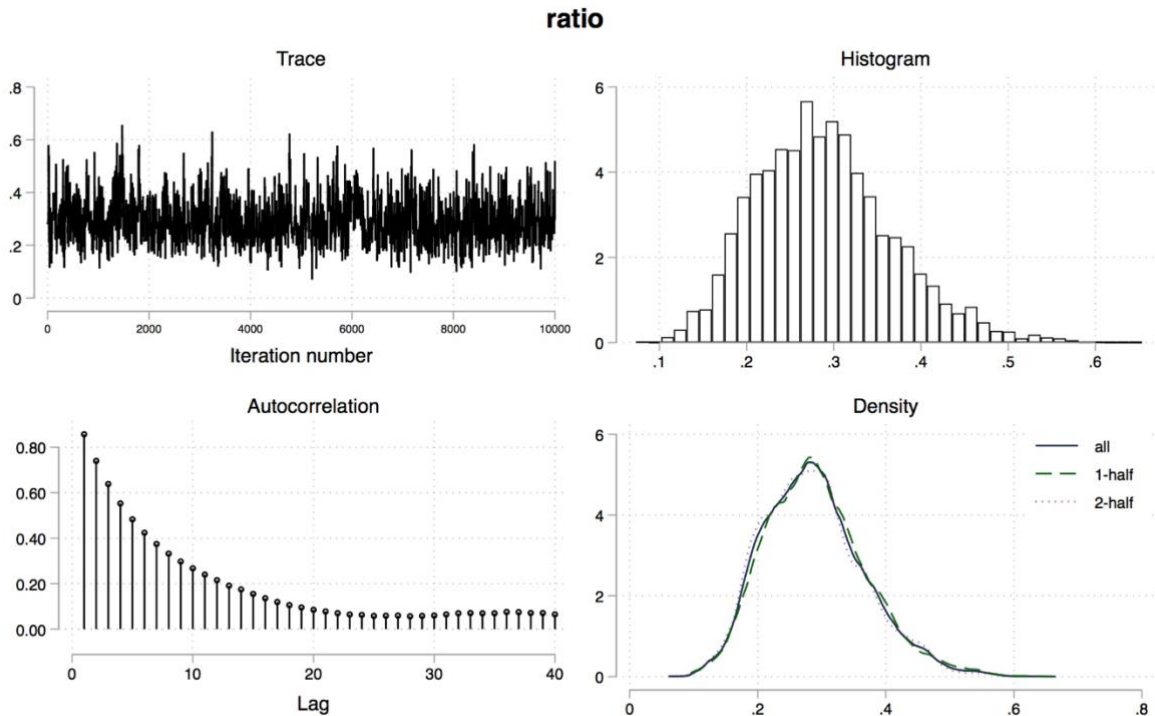
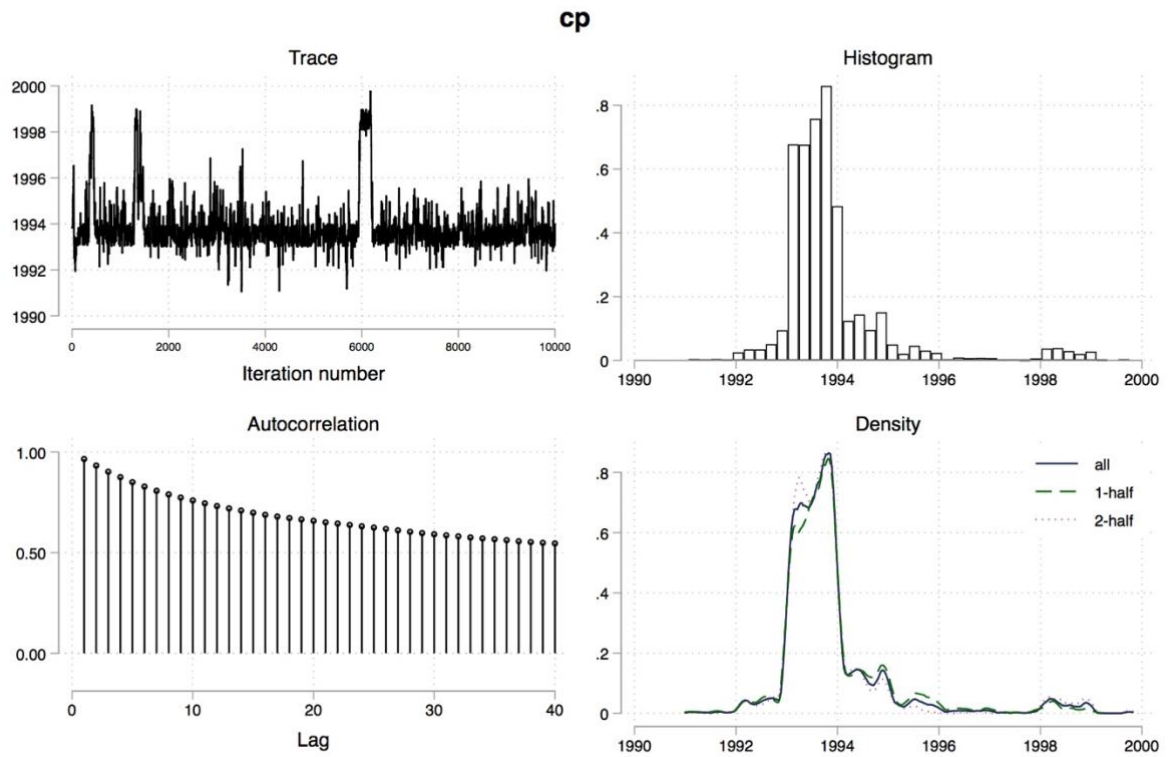
Figure 15: Model 15, Change point and estimated ratio of Period 1 and Period 2



ratio:  $\{\mu_1\}/\{\mu_2\}$

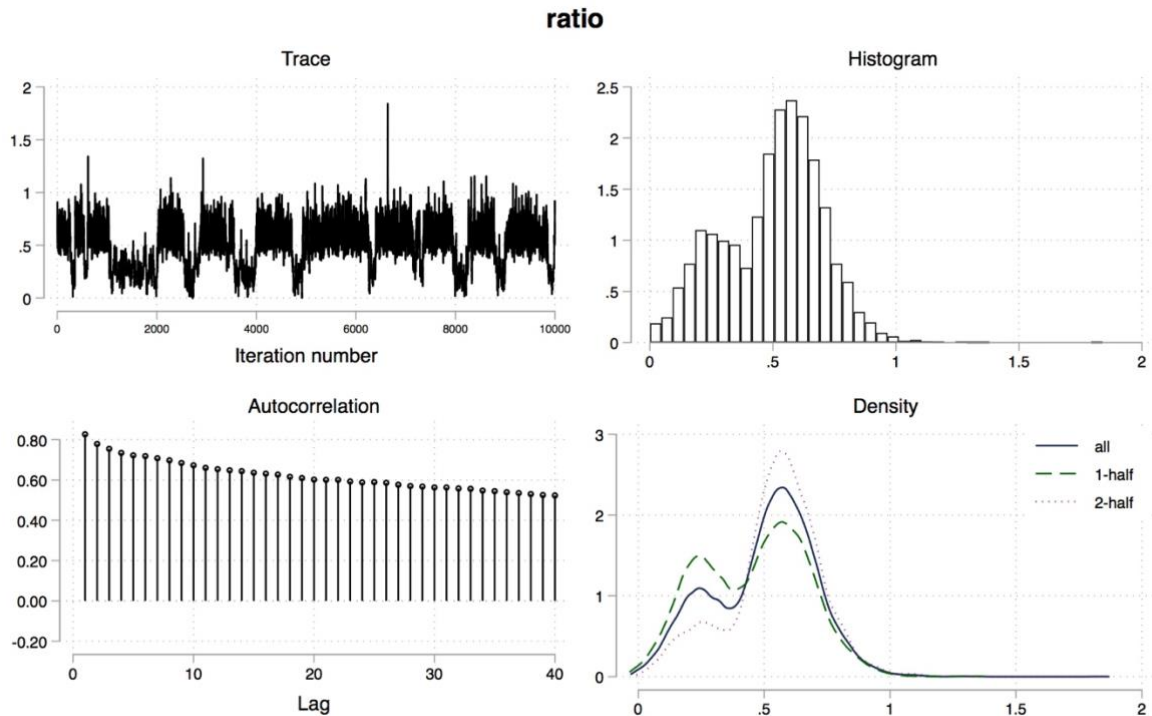
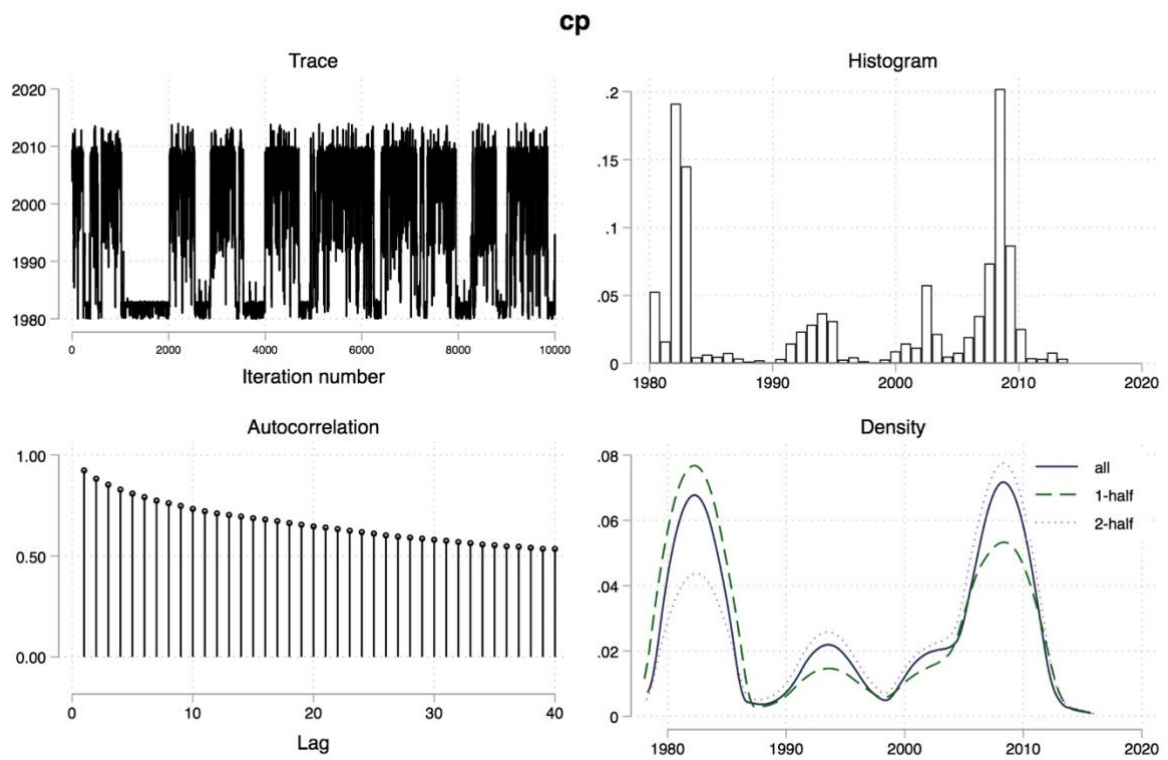


Figure 16: Model 16, Change point and estimated ratio of Period 1 and Period 2



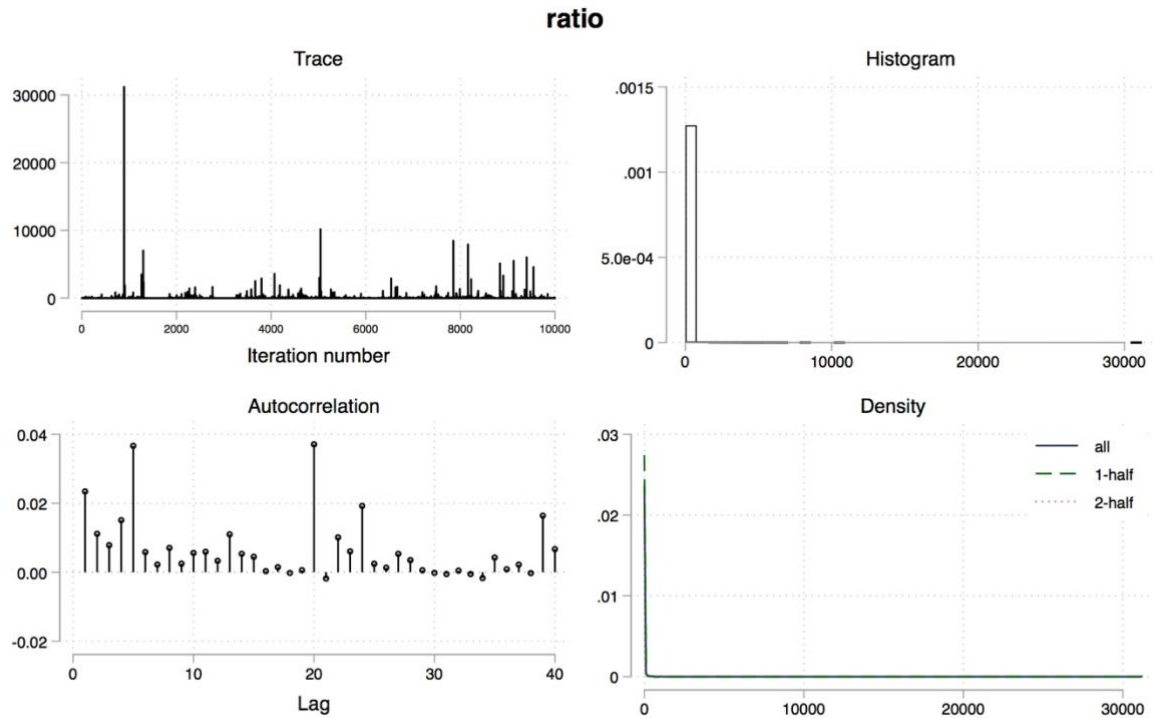
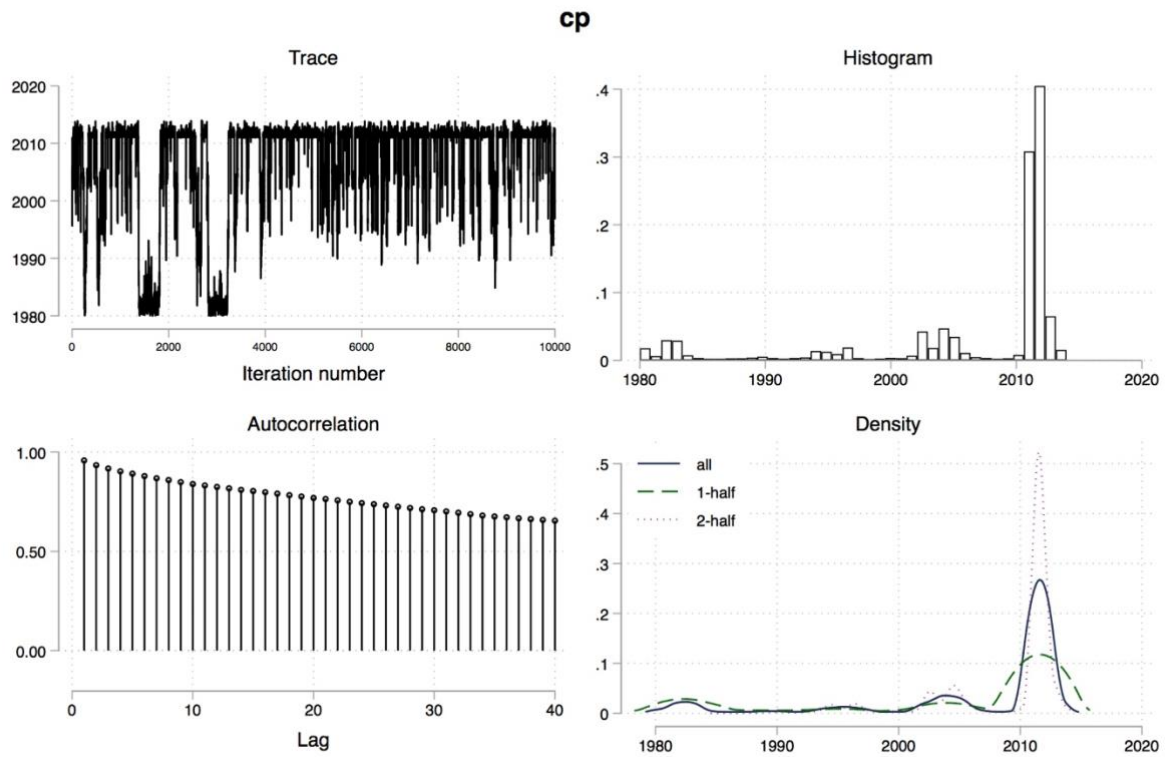
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 17: Model 17, Change point and estimated ratio of Period 1 and Period 2



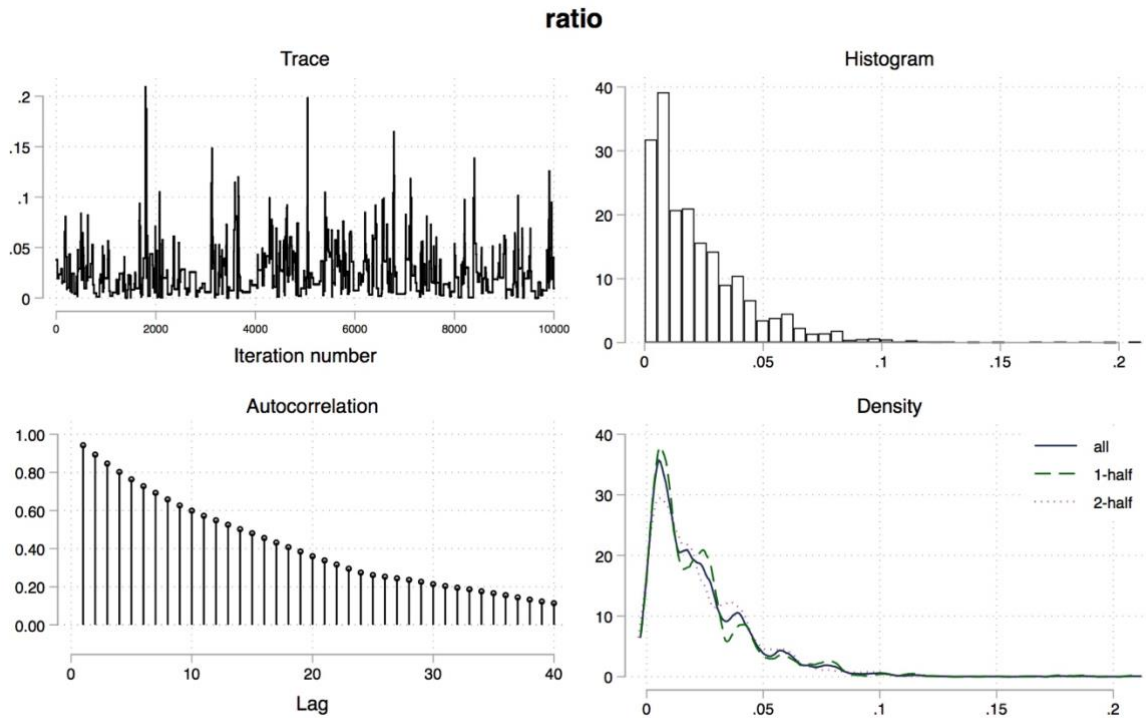
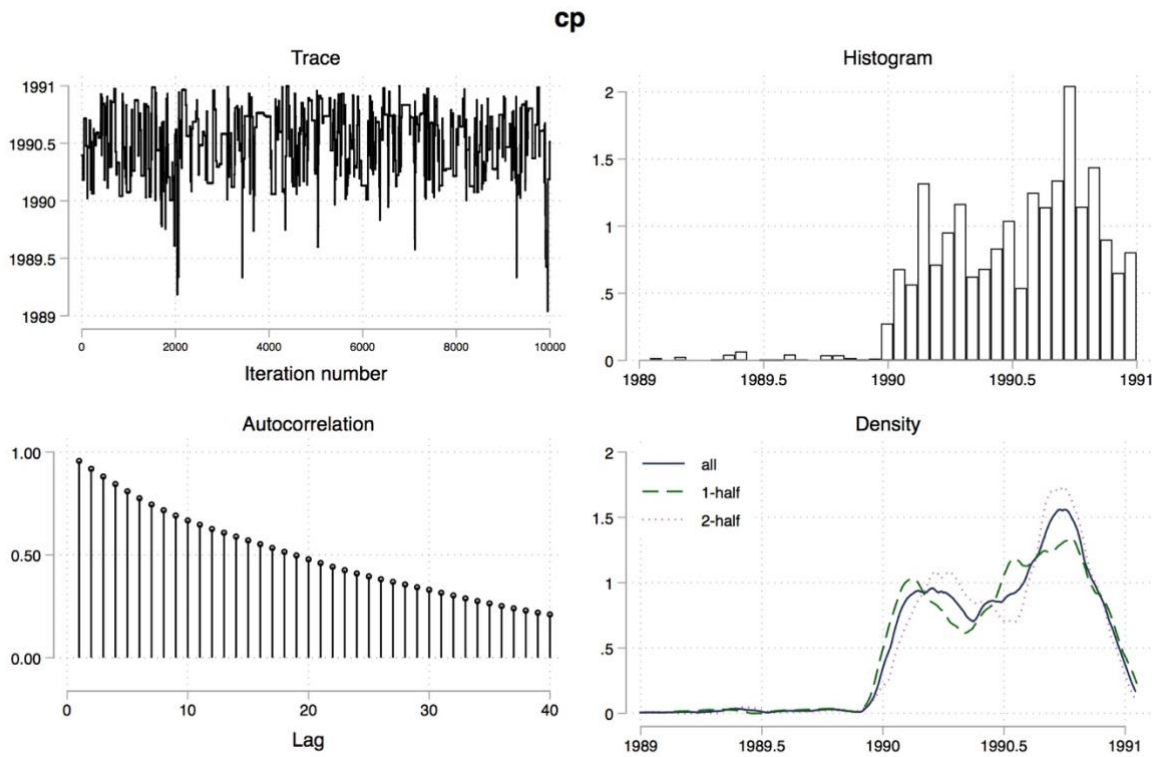
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 18: Model 18, Change point and estimated ratio of Period 1 and Period 2



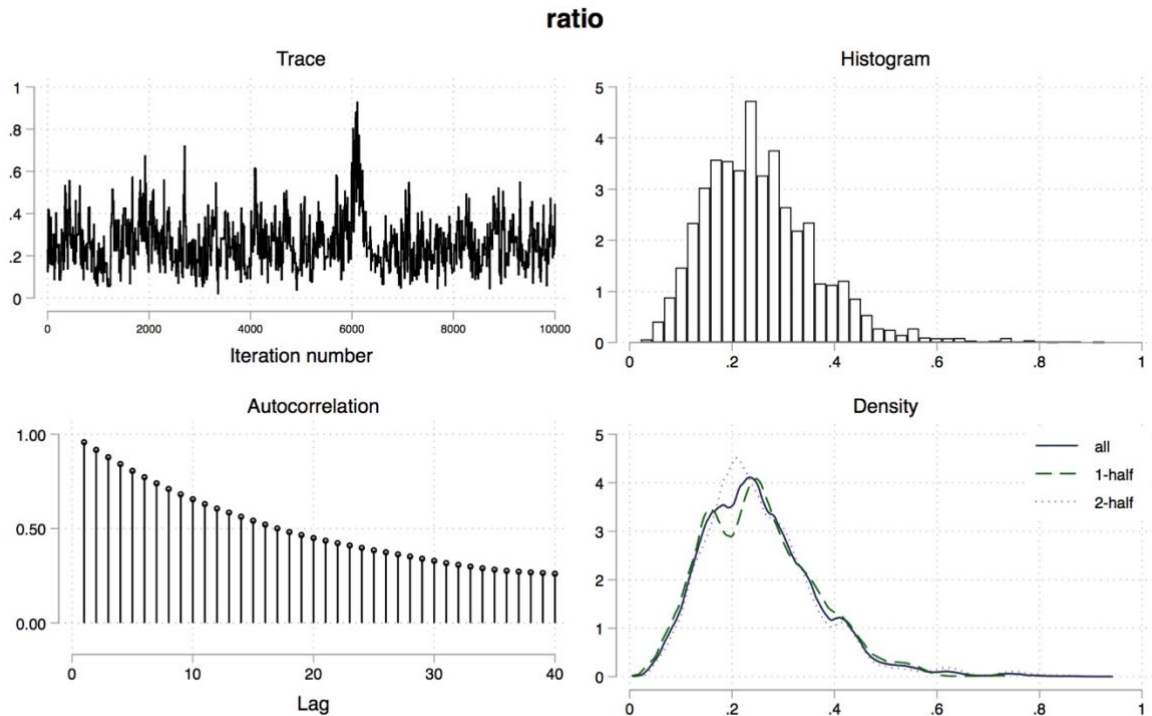
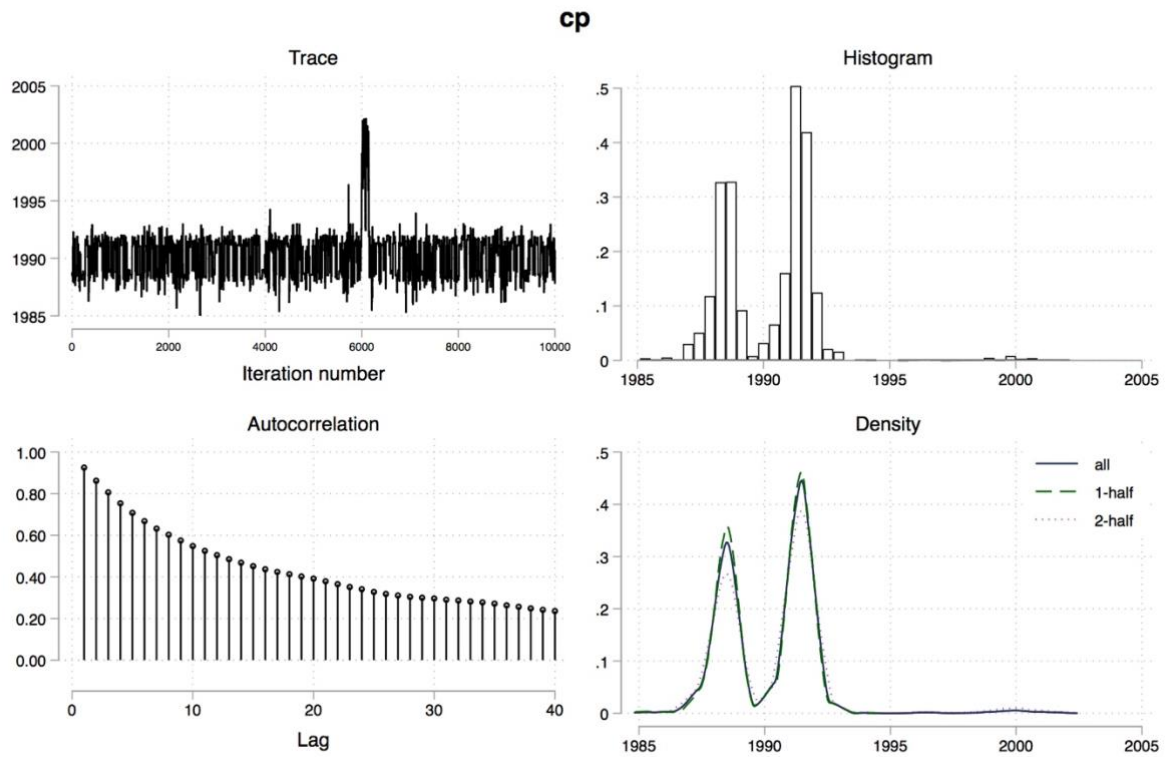
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 19: Model 19, Change point and estimated ratio of Period 1 and Period 2



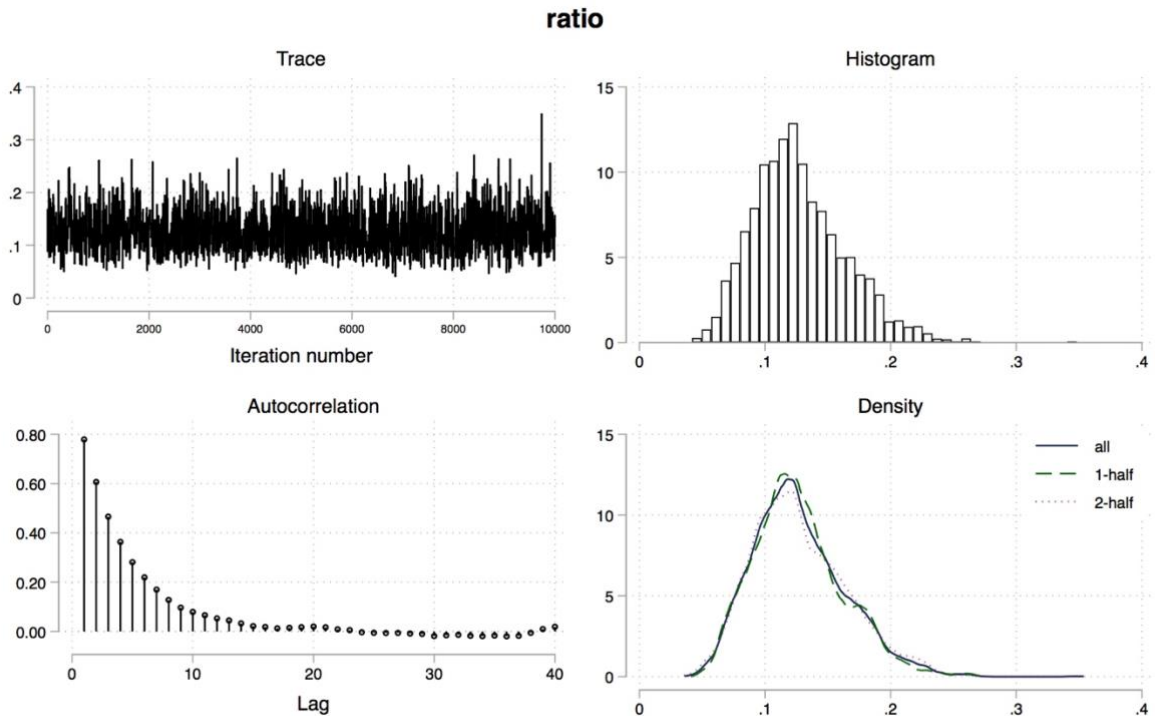
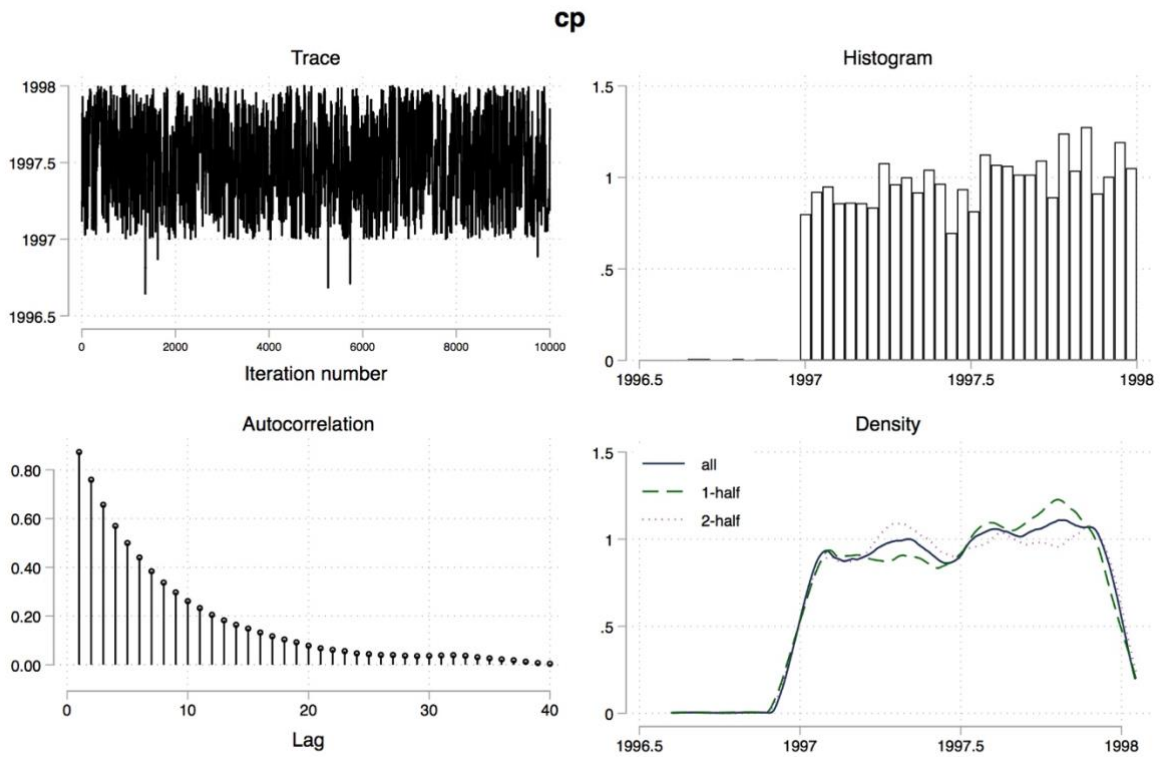
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 20: Model 20, Change point and estimated ratio of Period 1 and Period 2



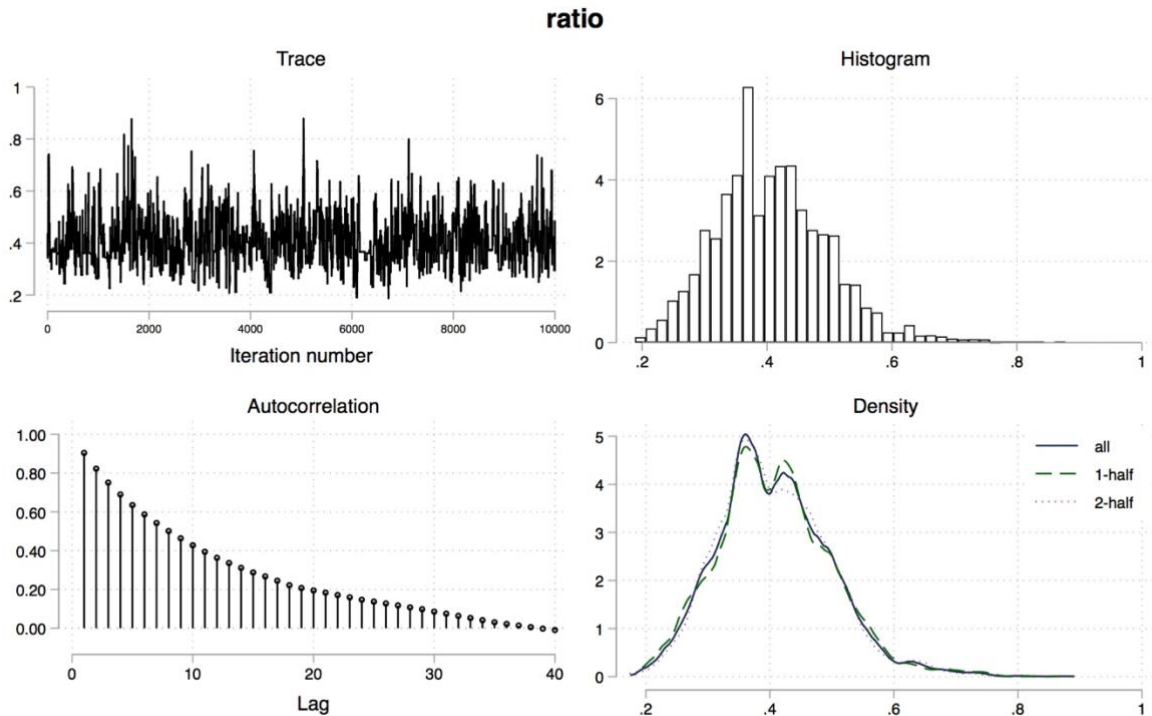
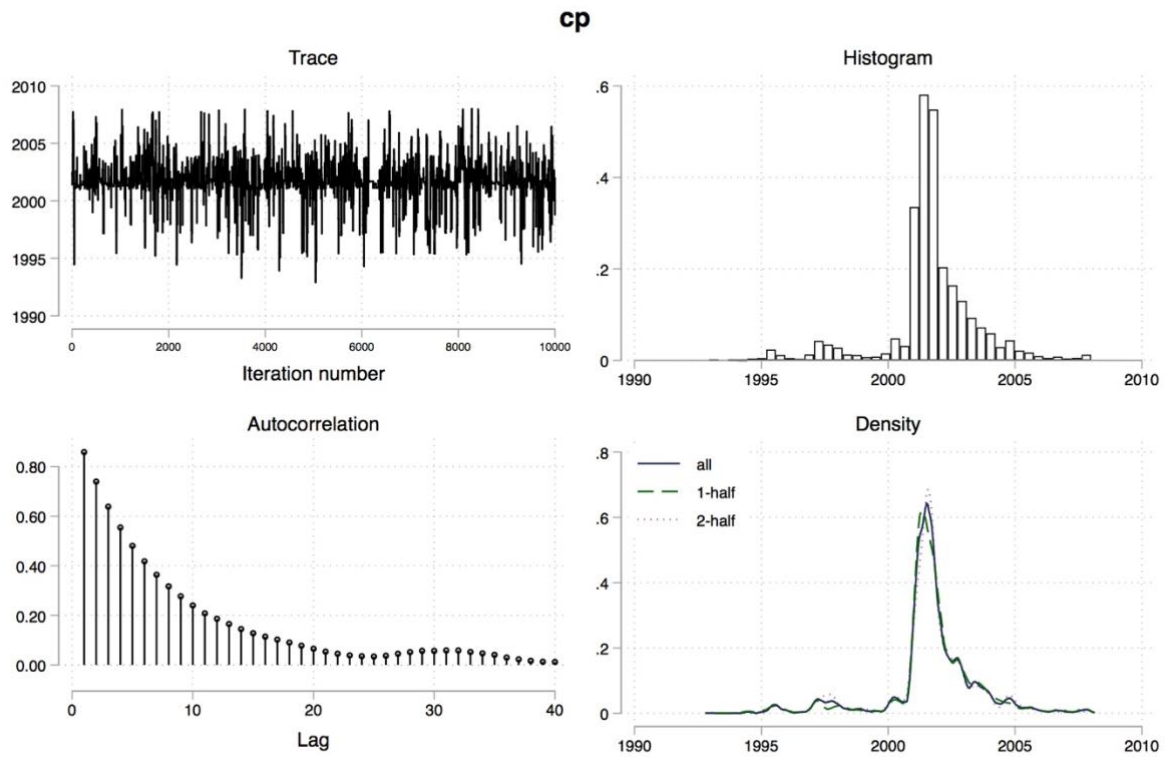
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 21: Model 21, Change point and estimated ratio of Period 1 and Period 2



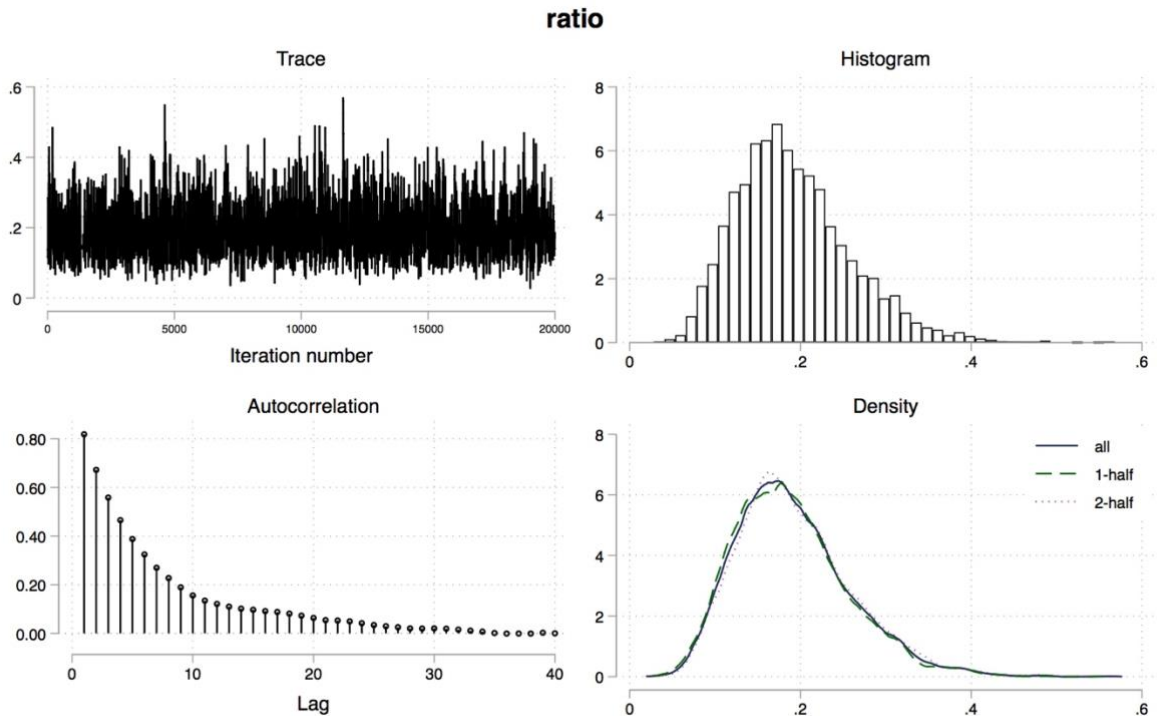
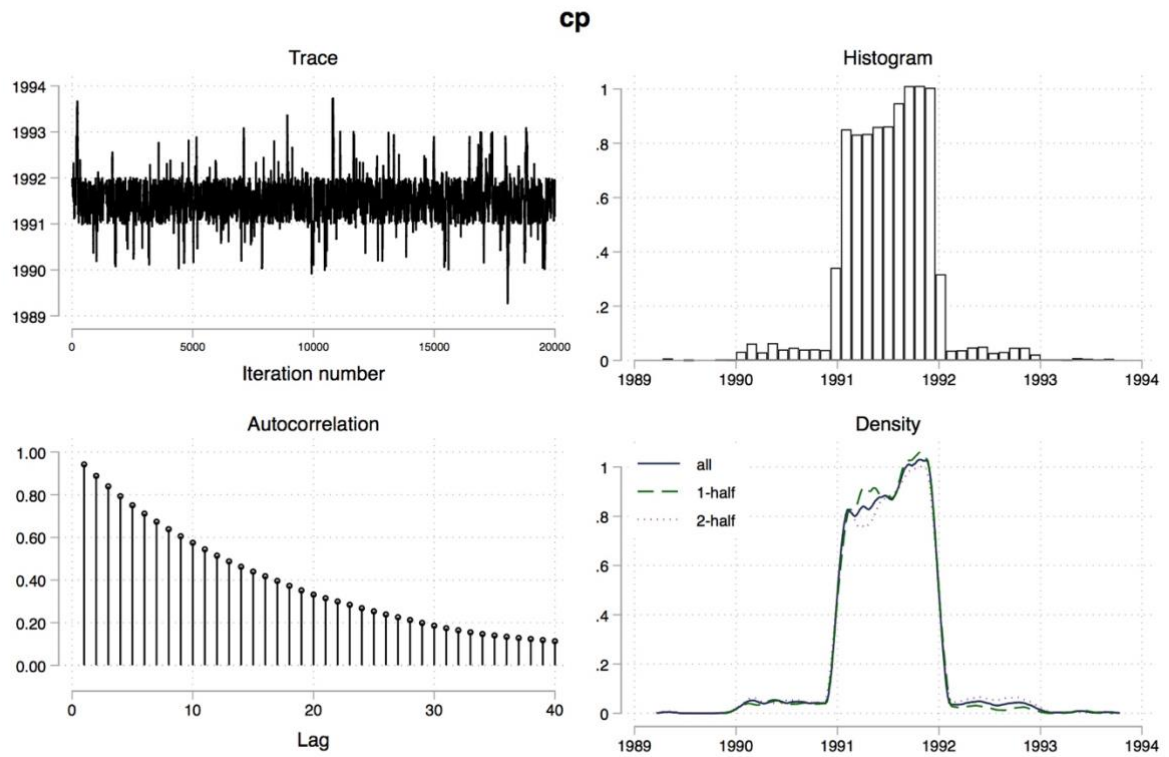
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 22: Model 22, Change point and estimated ratio of Period 1 and Period 2



ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 23: Model 23, Change point and estimated ratio of Period 1 and Period 2



ratio:  $\{\mu_1\}/\{\mu_2\}$



Figure 24: Model 24, Change point and estimated ratio of Period 1 and Period 2

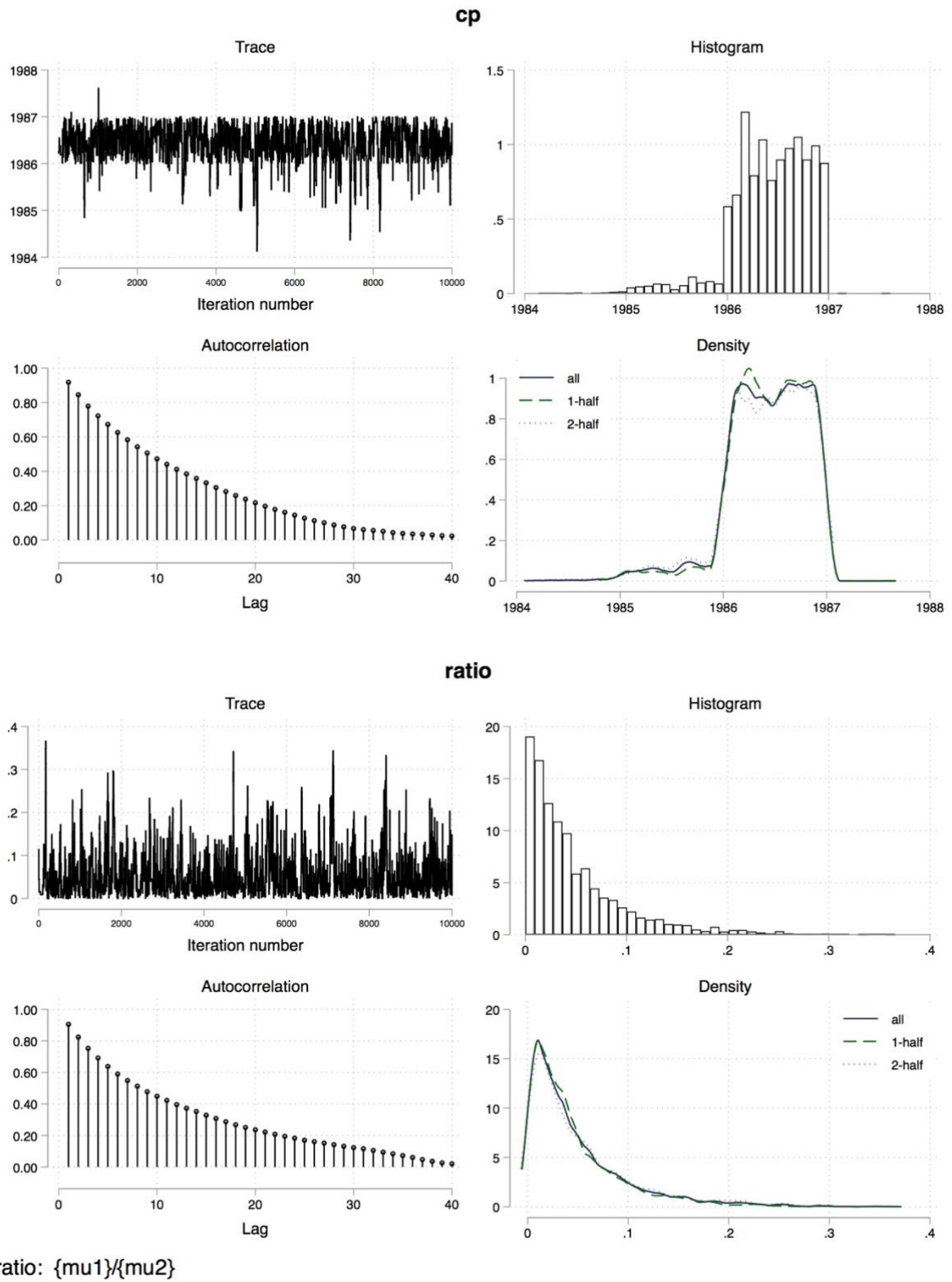
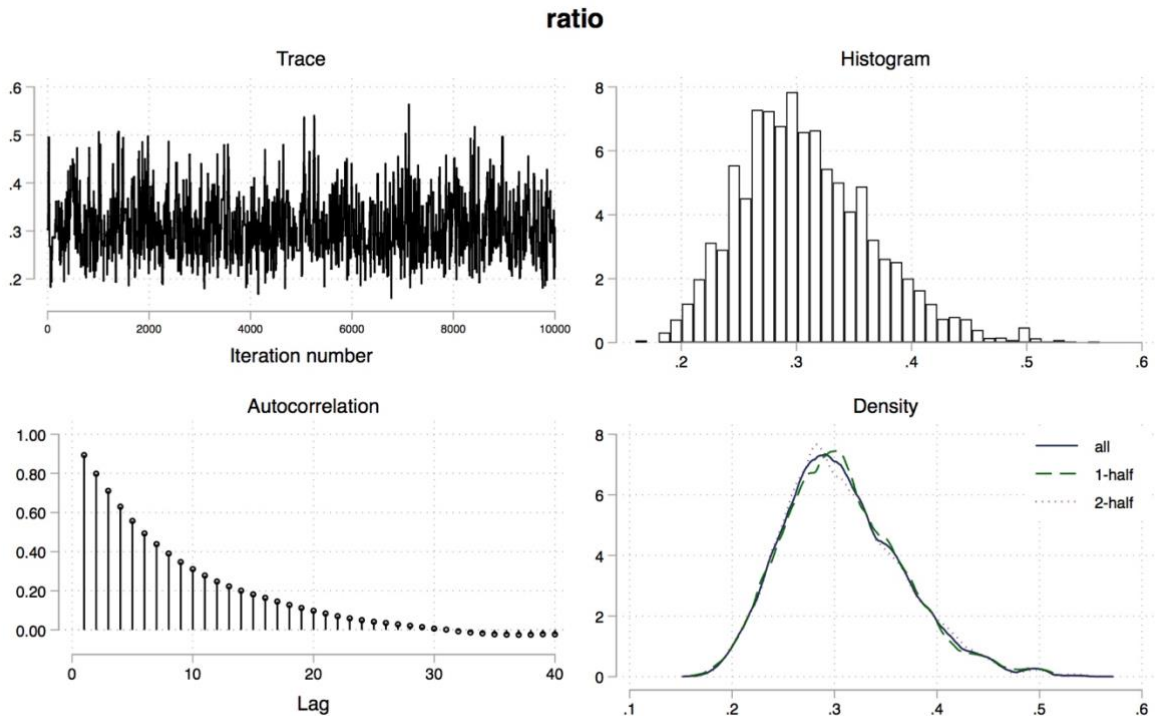
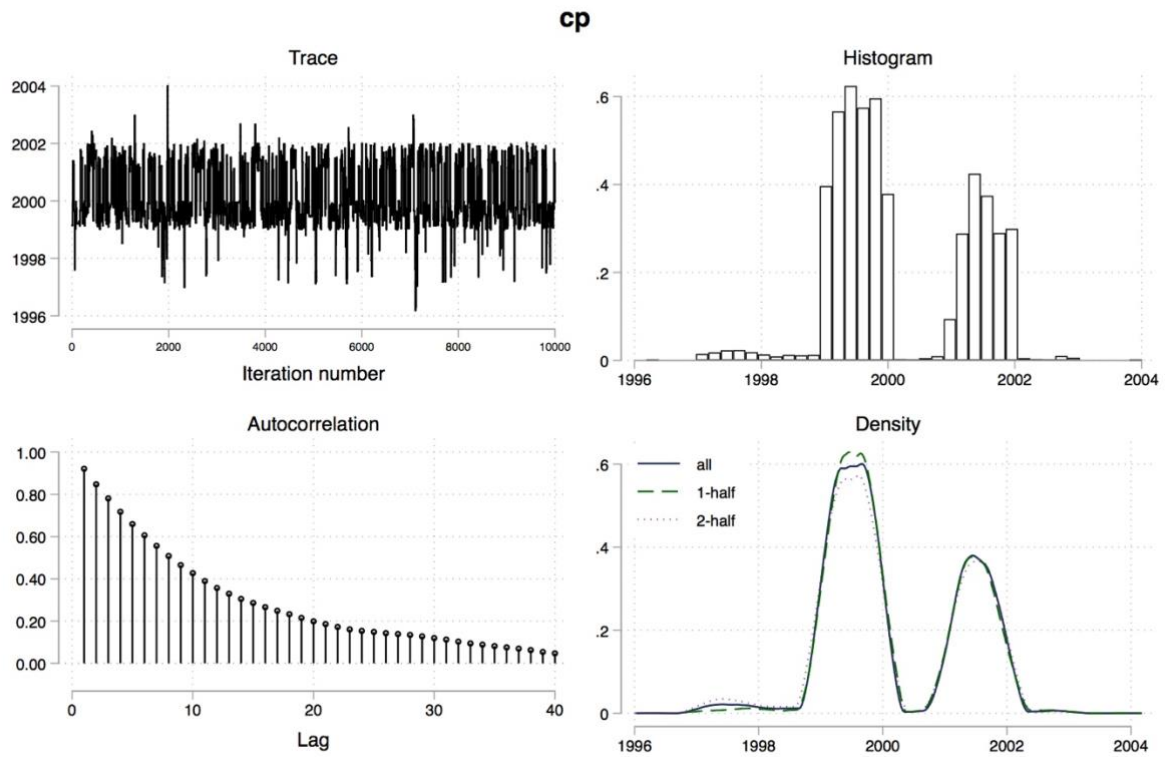
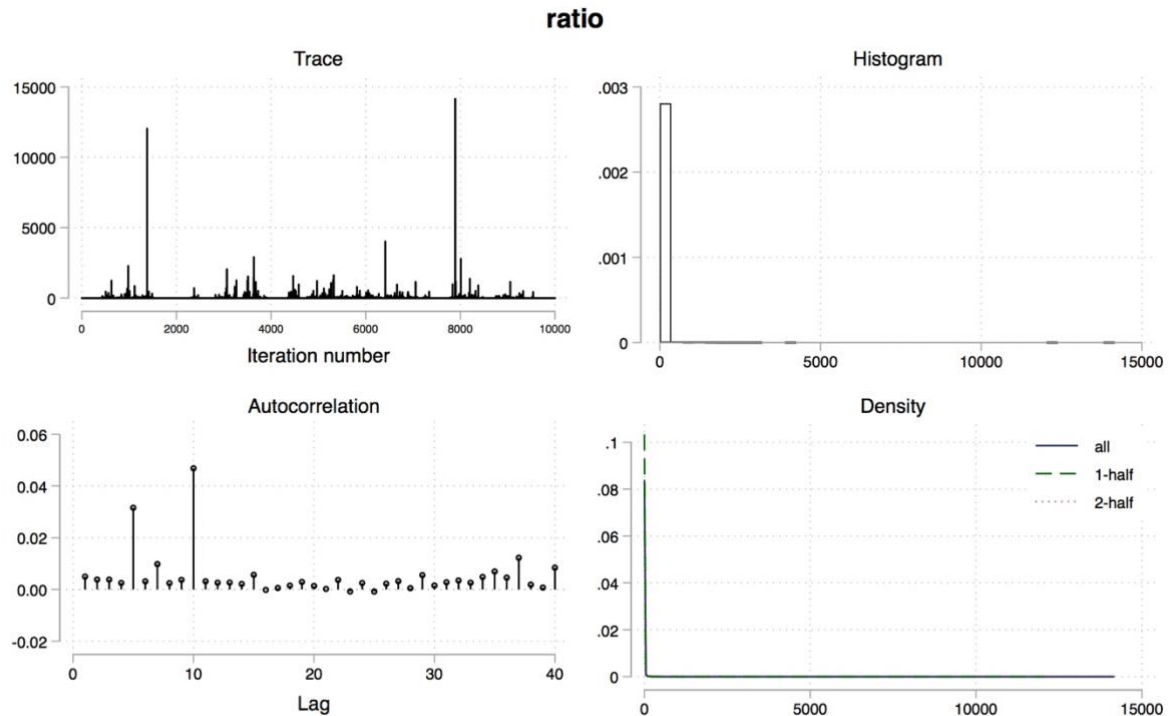
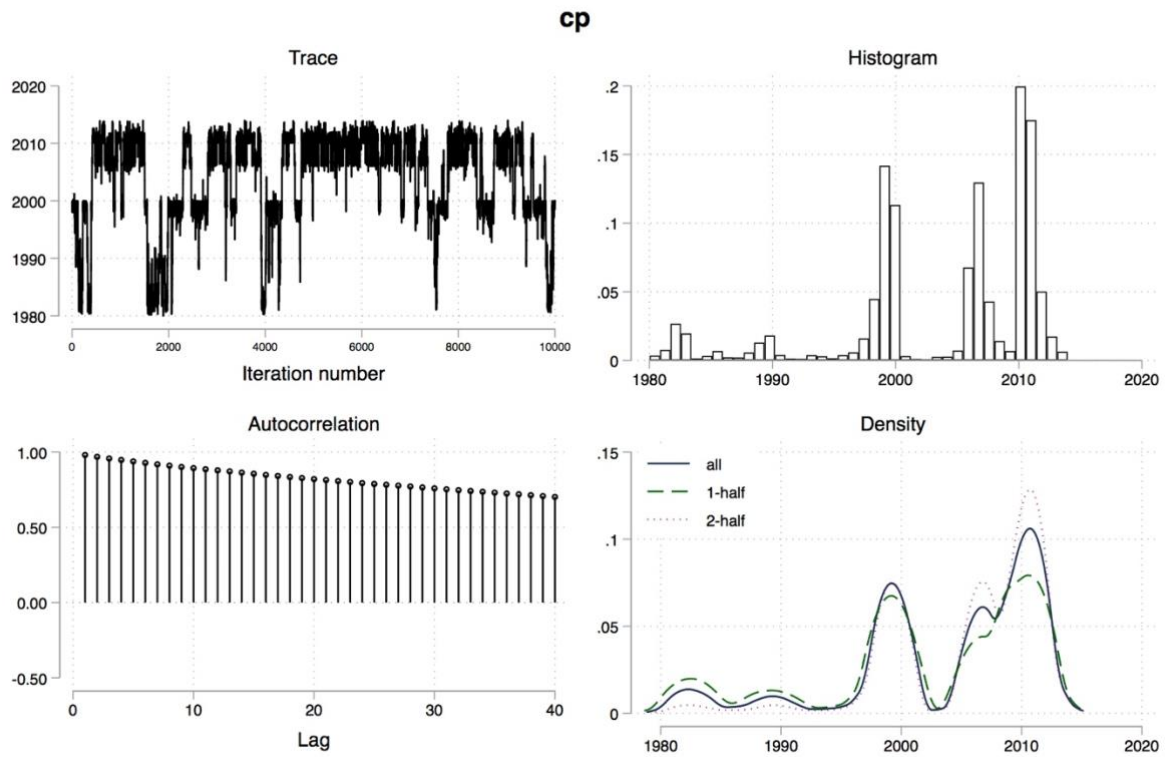


Figure 25: Model 25, Change point and estimated ratio of Period 1 and Period 2



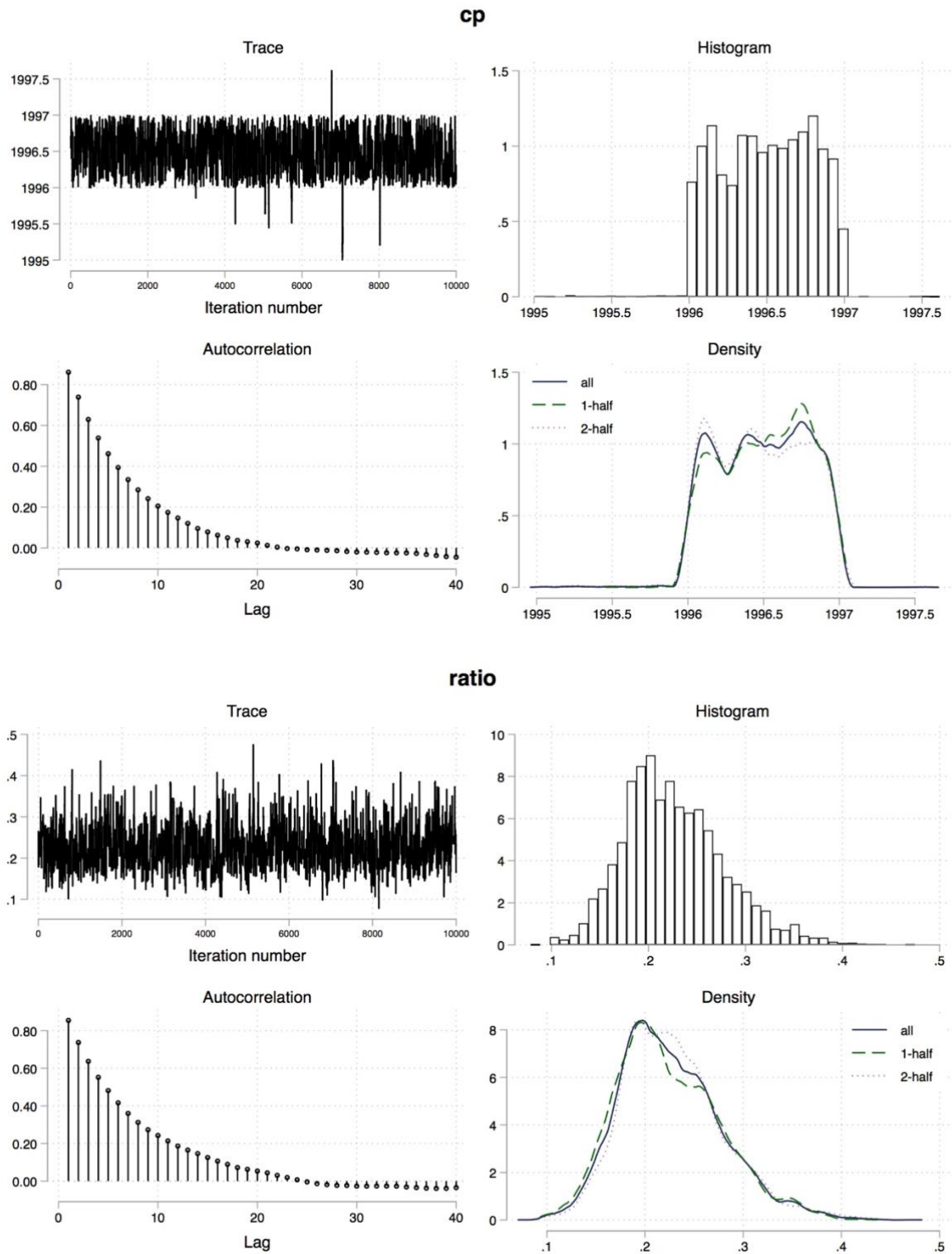
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 26: Model 26, Change point and estimated ratio of Period 1 and Period 2



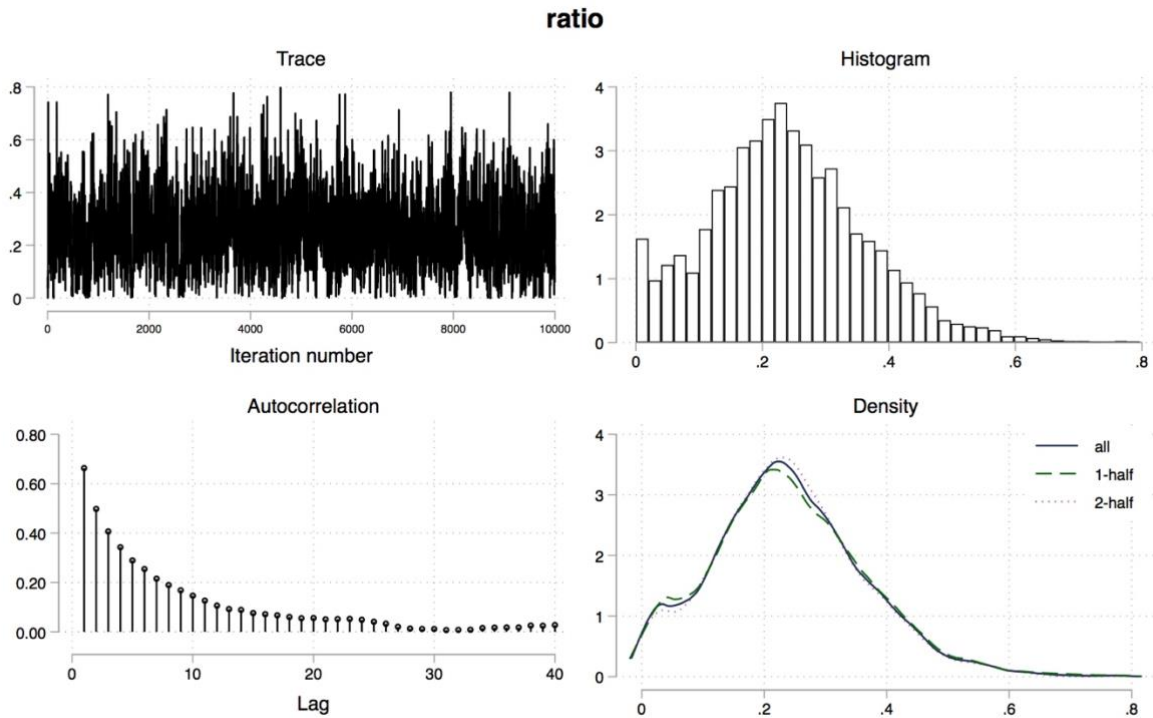
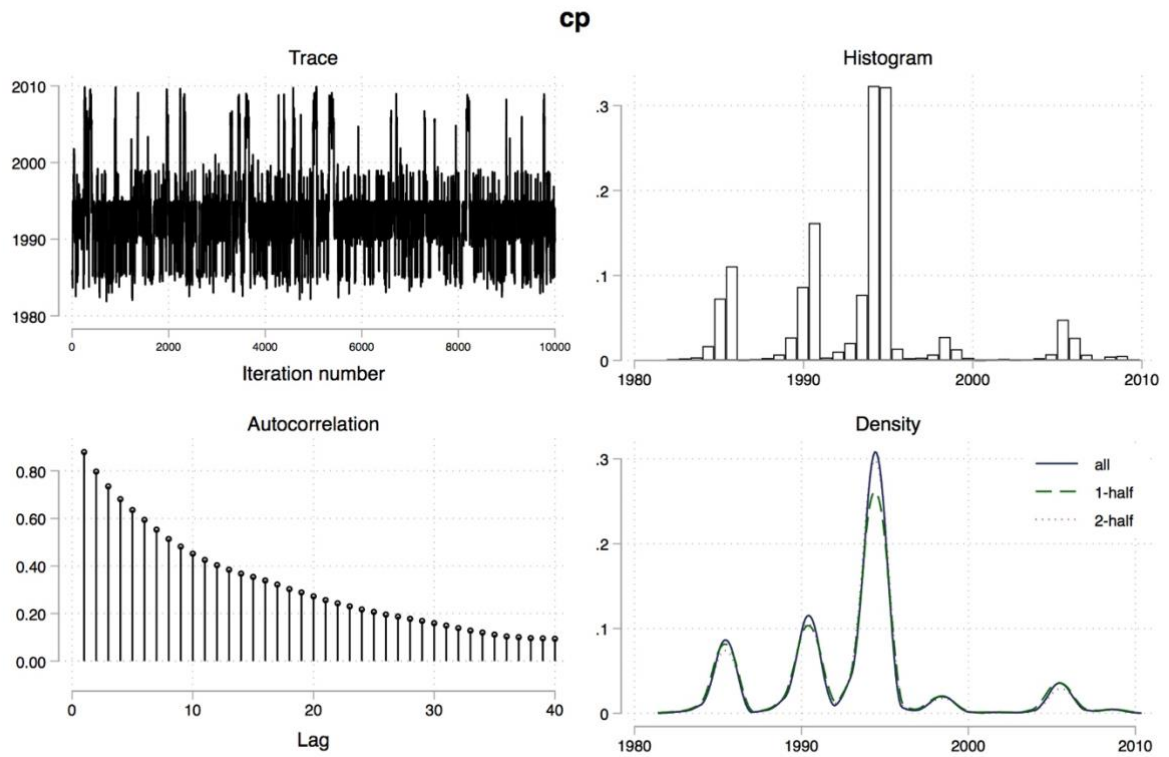
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 27: Model 27, Change point and estimated ratio of Period 1 and Period 2



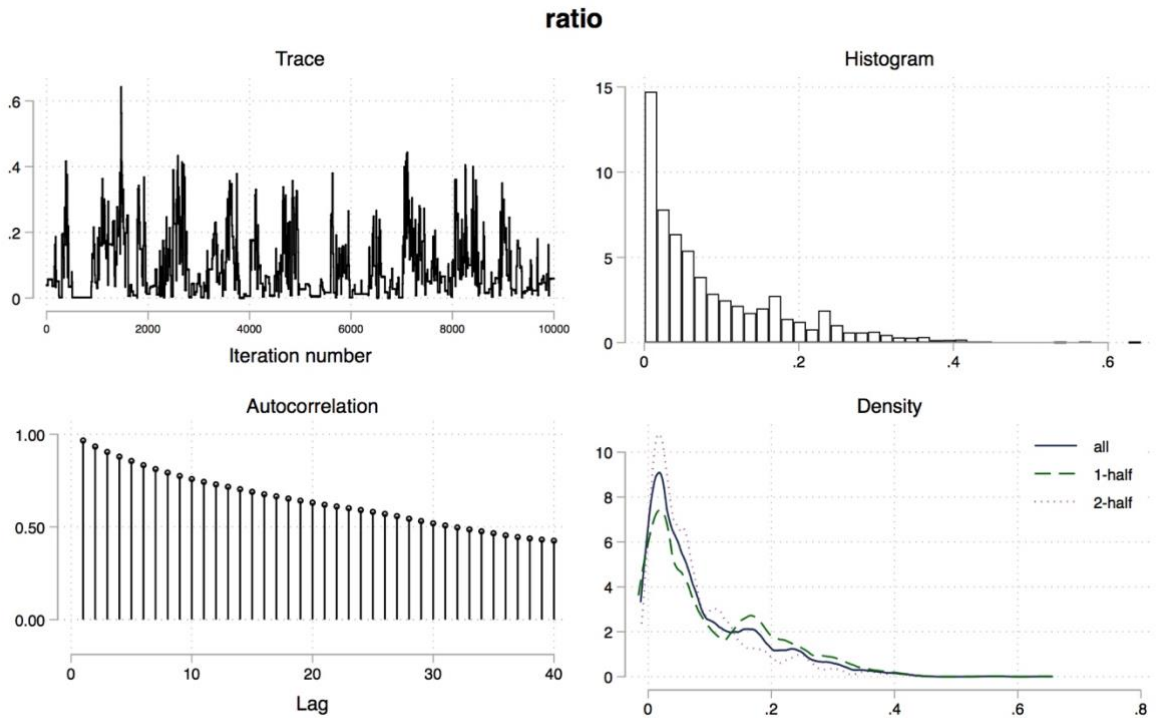
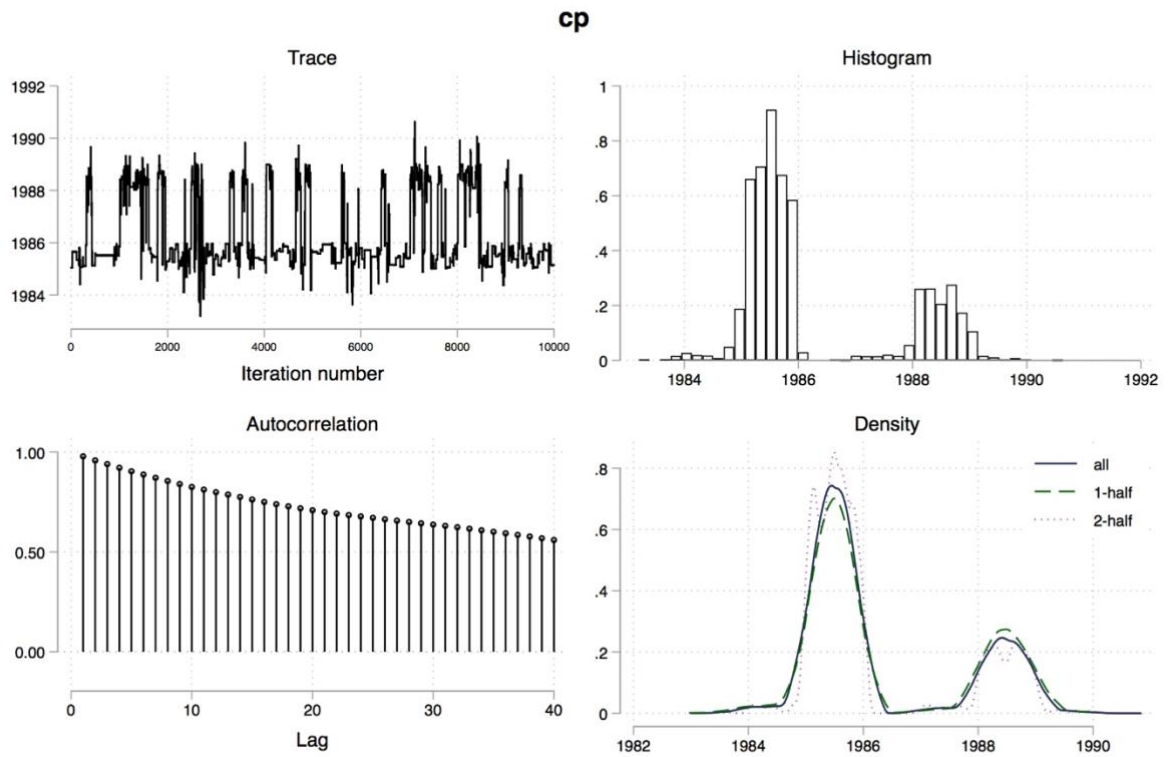
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 28: Model 28, Change point and estimated ratio of Period 1 and Period 2



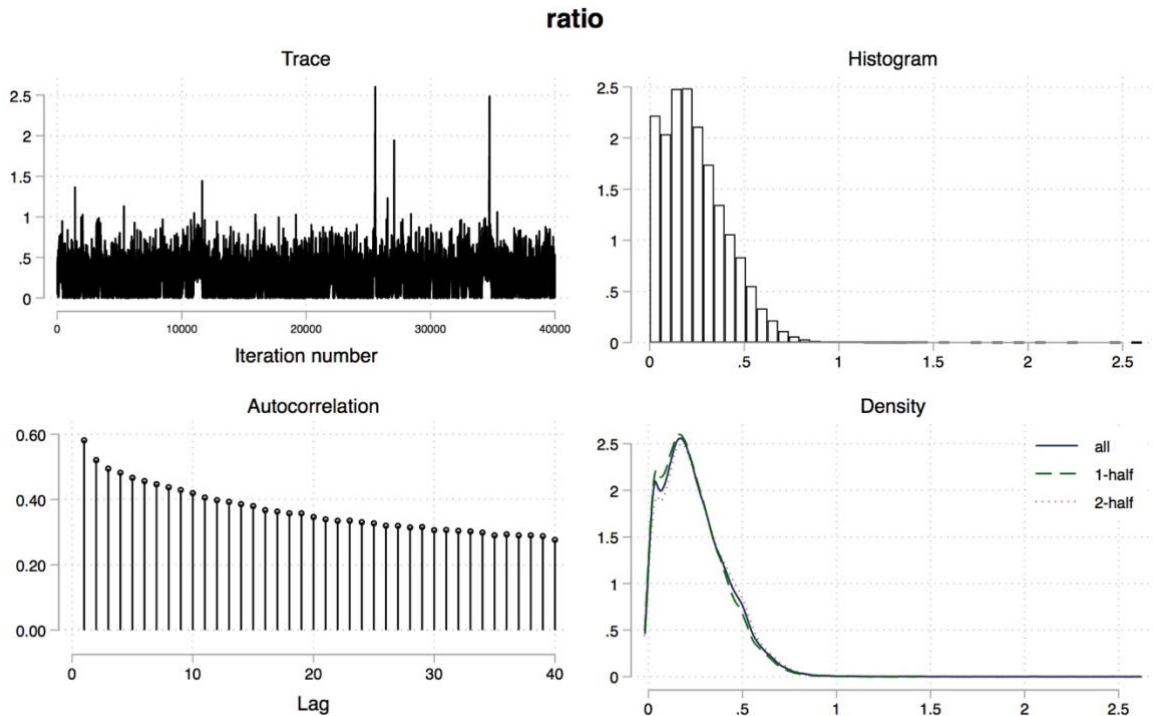
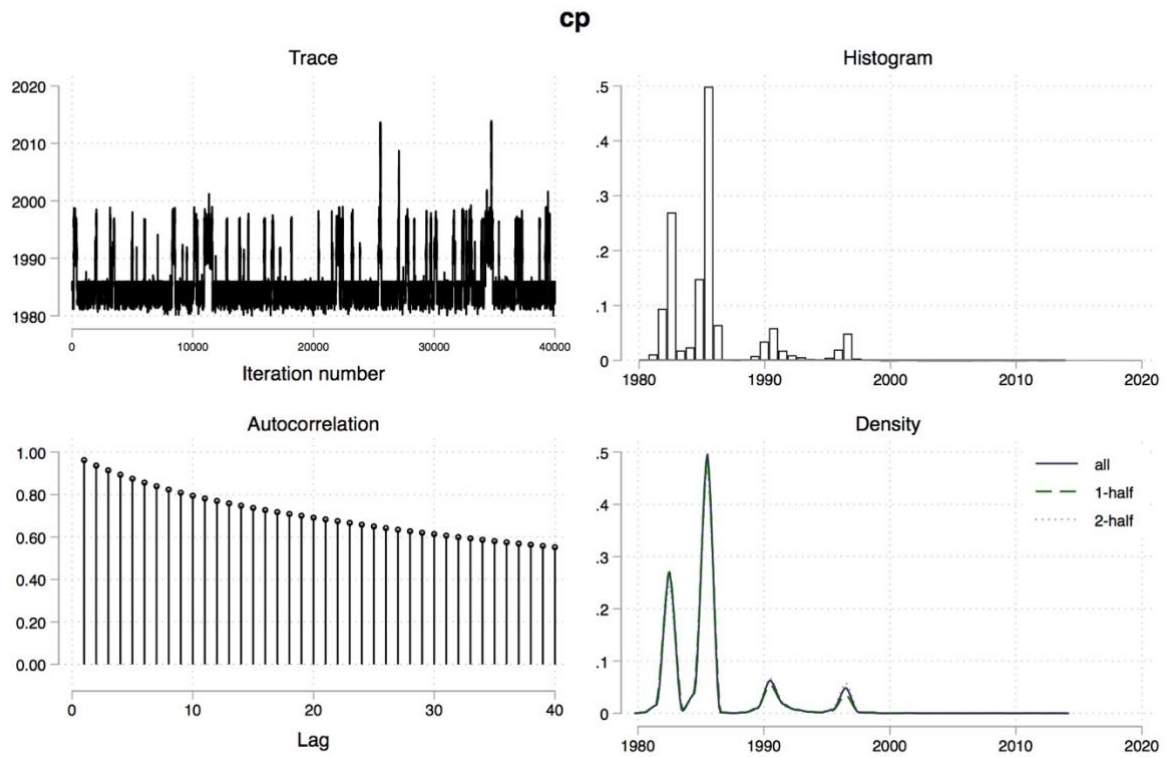
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 29: Model 29, Change point and estimated ratio of Period 1 and Period 2



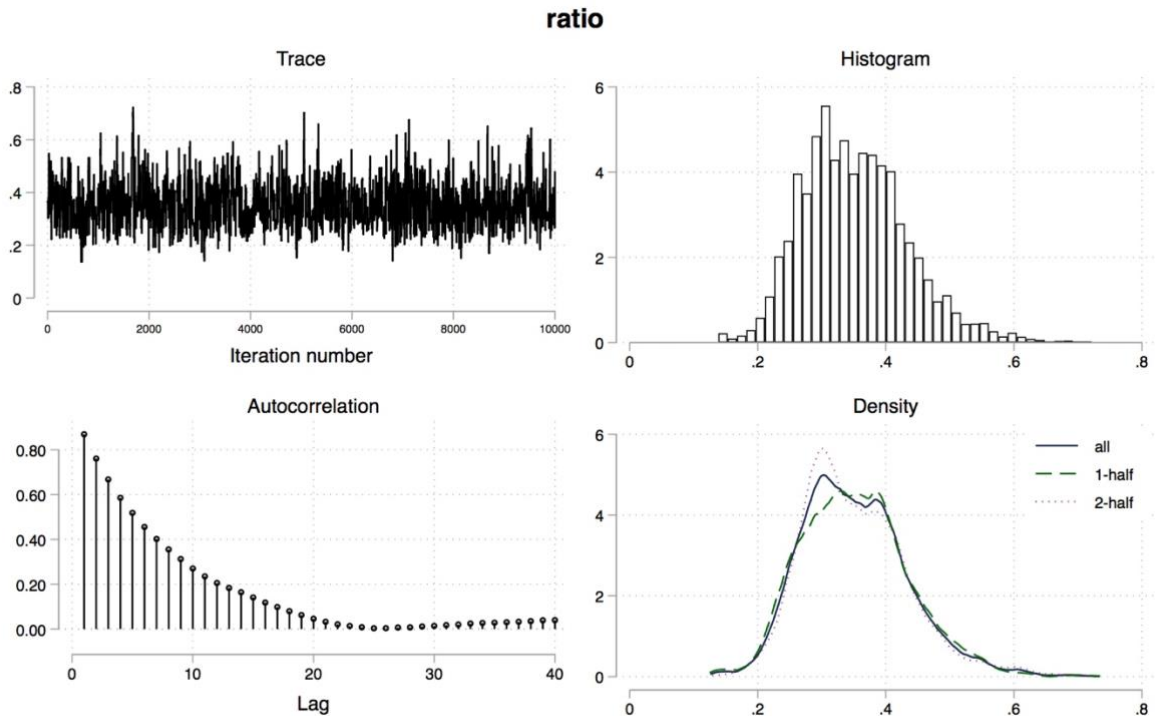
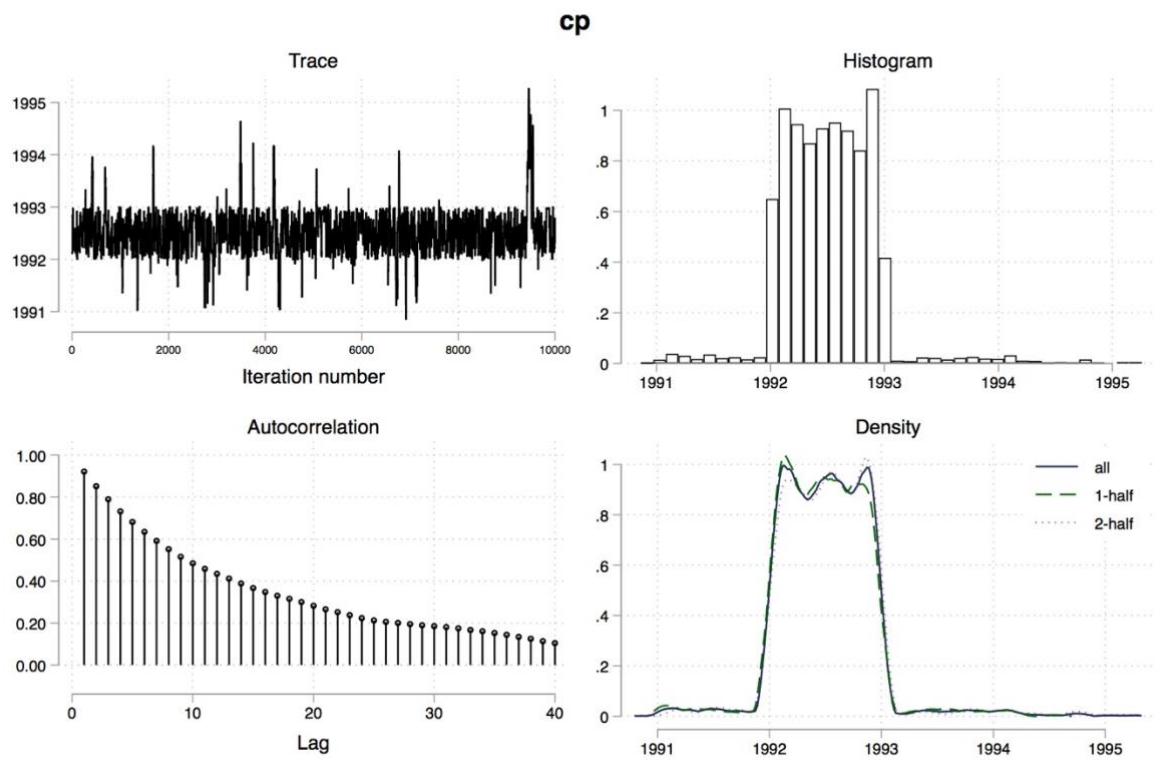
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 30: Model 30, Change point and estimated ratio of Period 1 and Period 2



ratio:  $\{\mu_1\}/\{\mu_2\}$

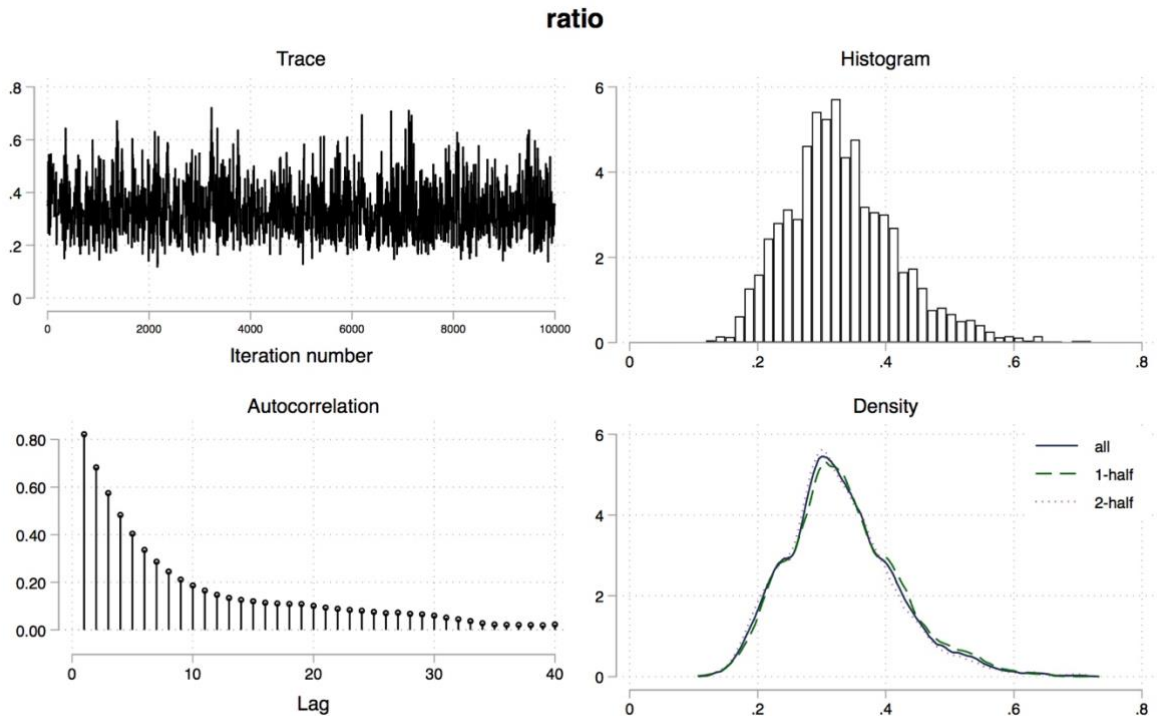
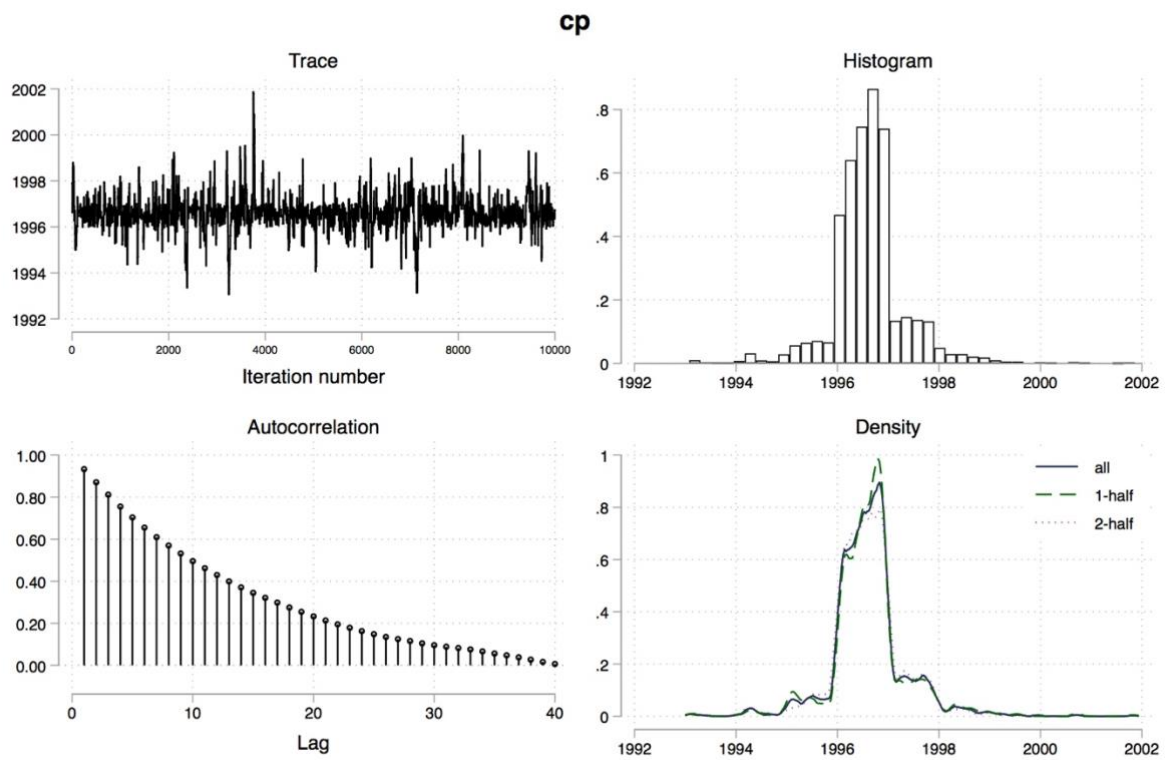
Figure 31: Model 31, Change point and estimated ratio of Period 1 and Period 2



ratio:  $\{\mu_1\}/\{\mu_2\}$

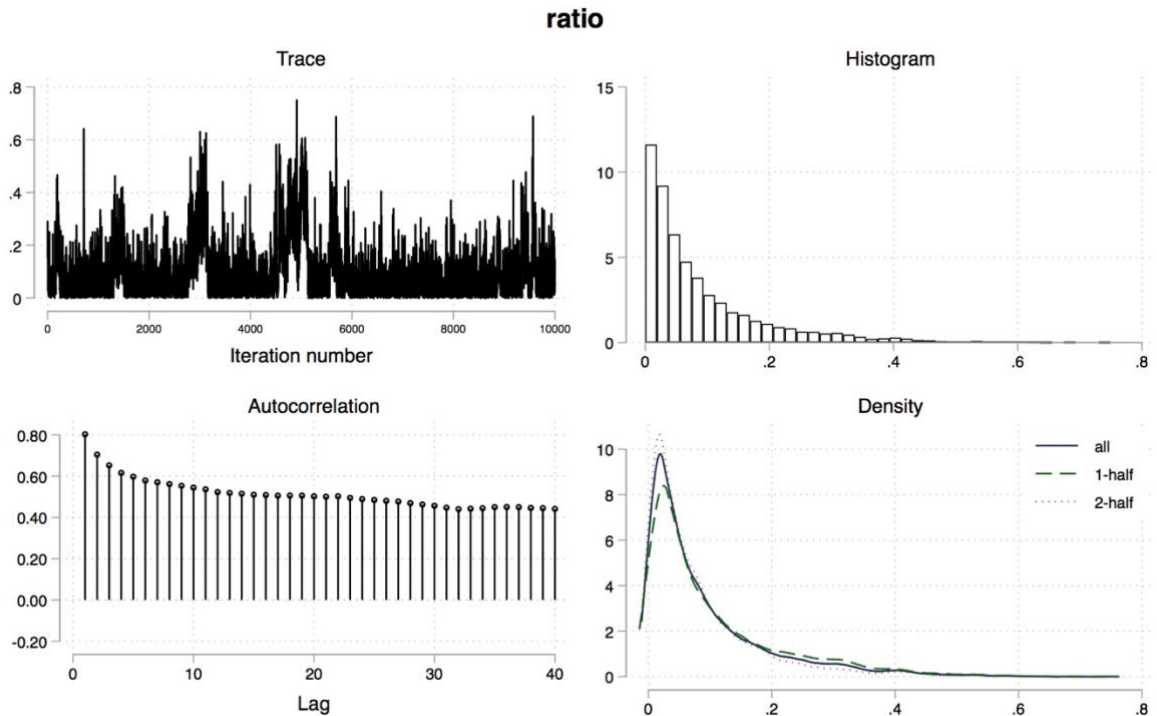
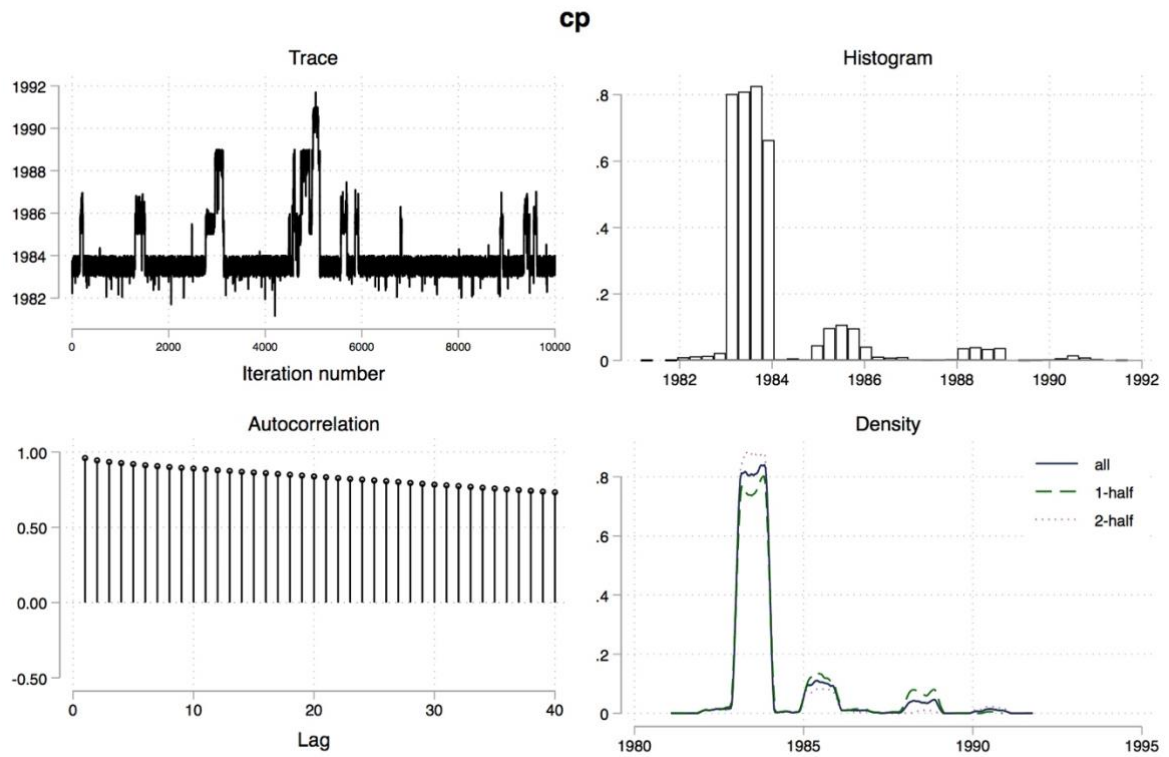


Figure 32: Model 32, Change point and estimated ratio of Period 1 and Period 2



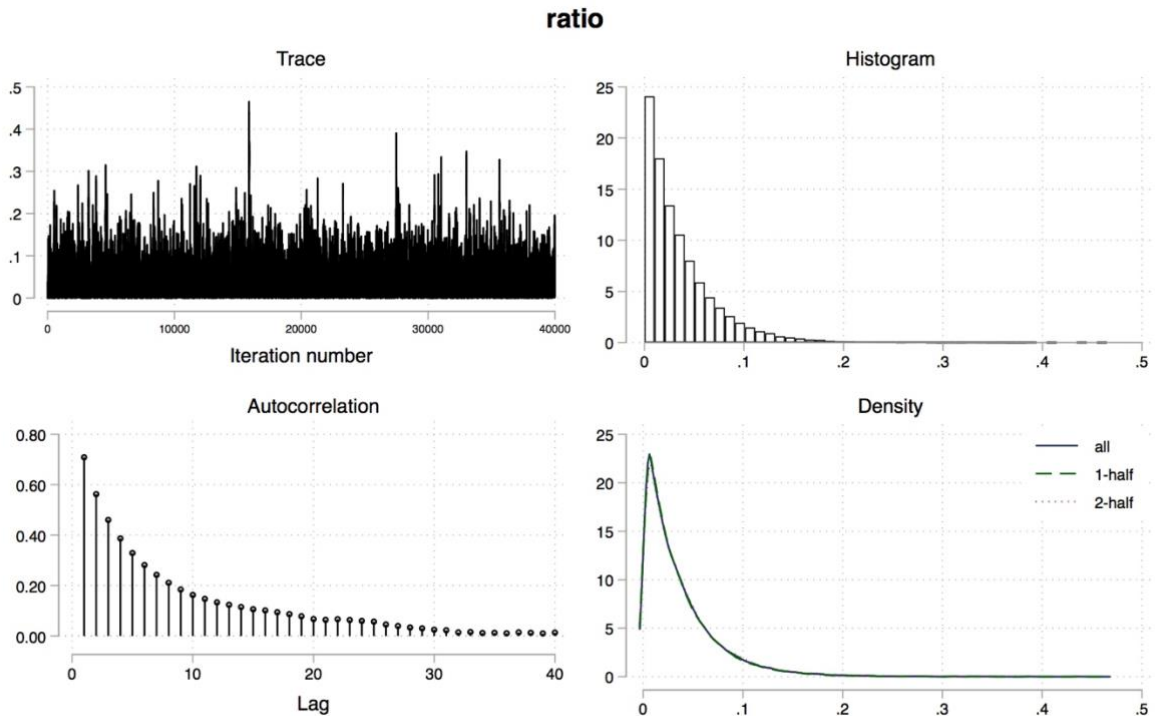
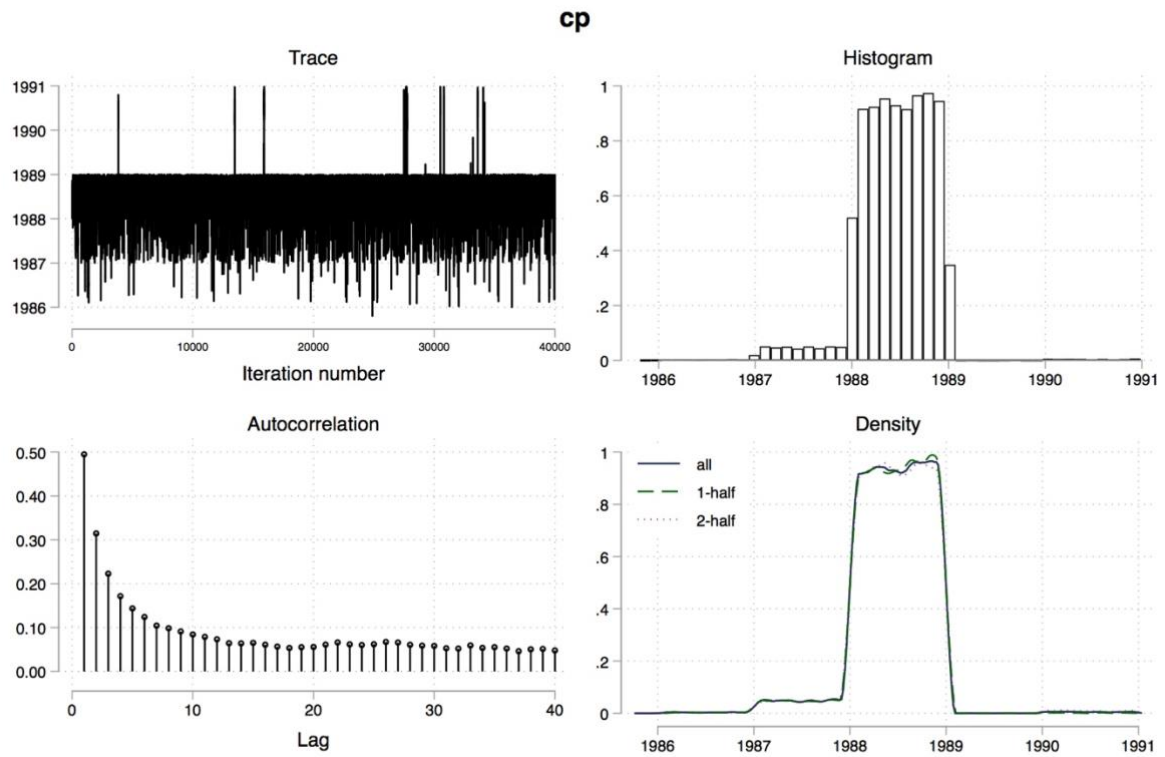
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 33: Model 33, Change point and estimated ratio of Period 1 and Period 2



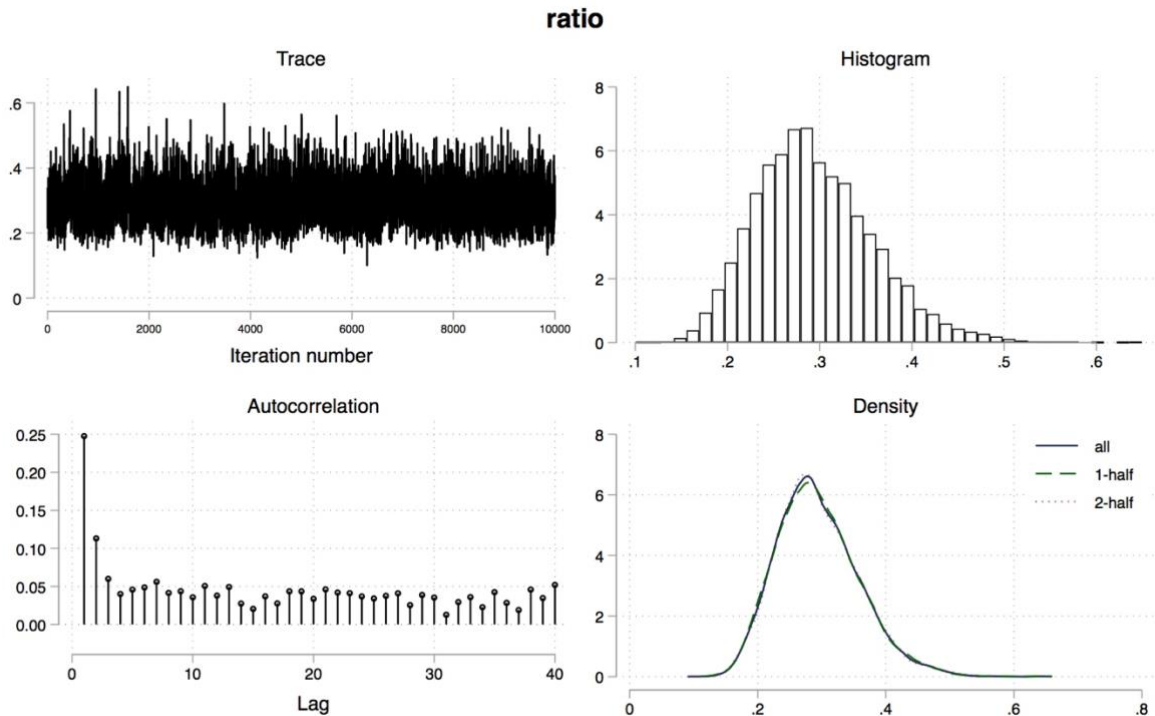
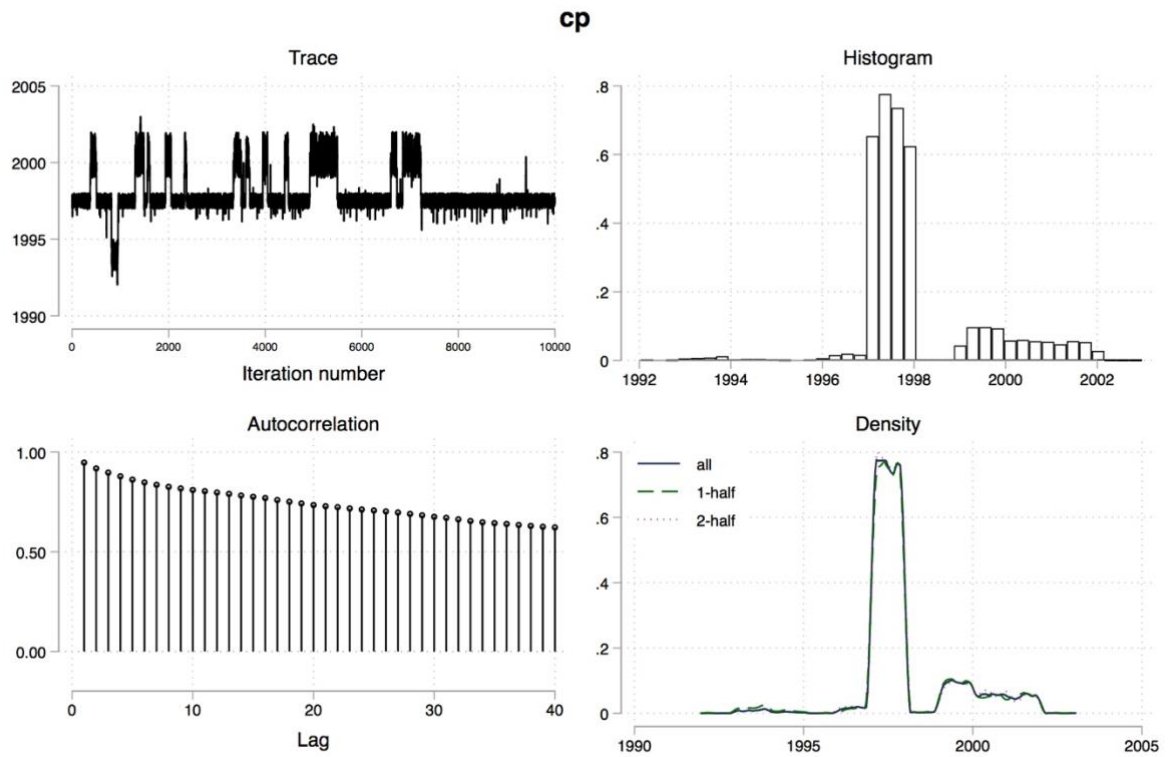
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 34: Model 34, Change point and estimated ratio of Period 1 and Period 2



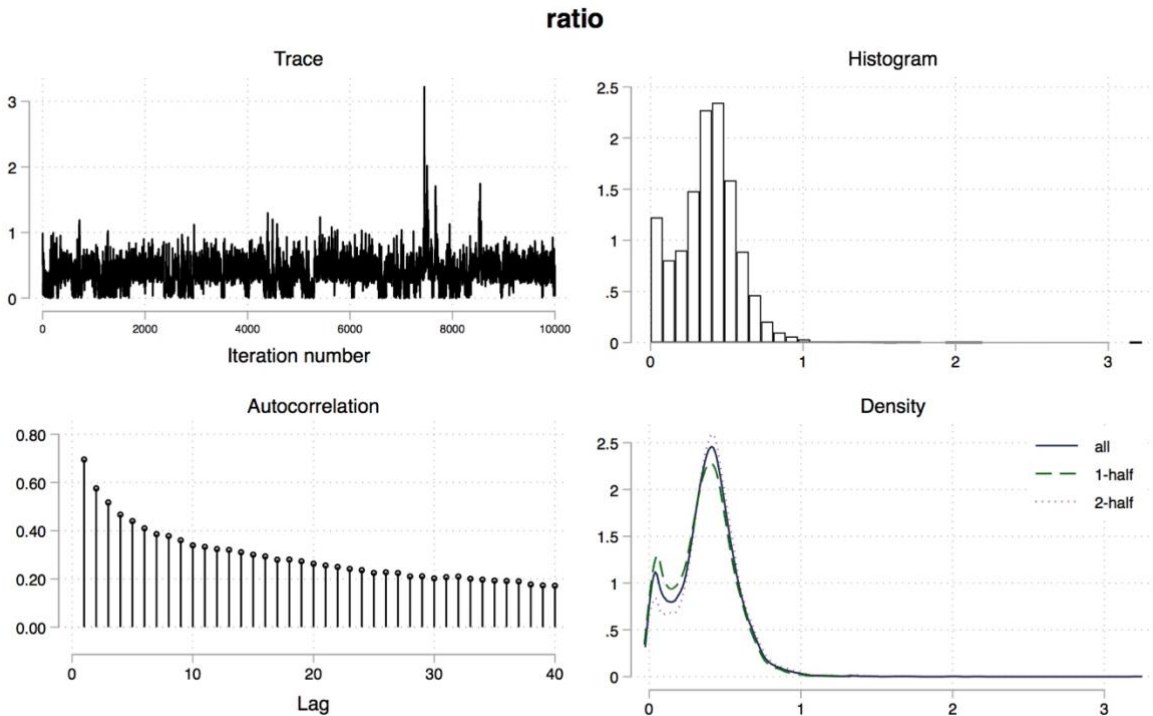
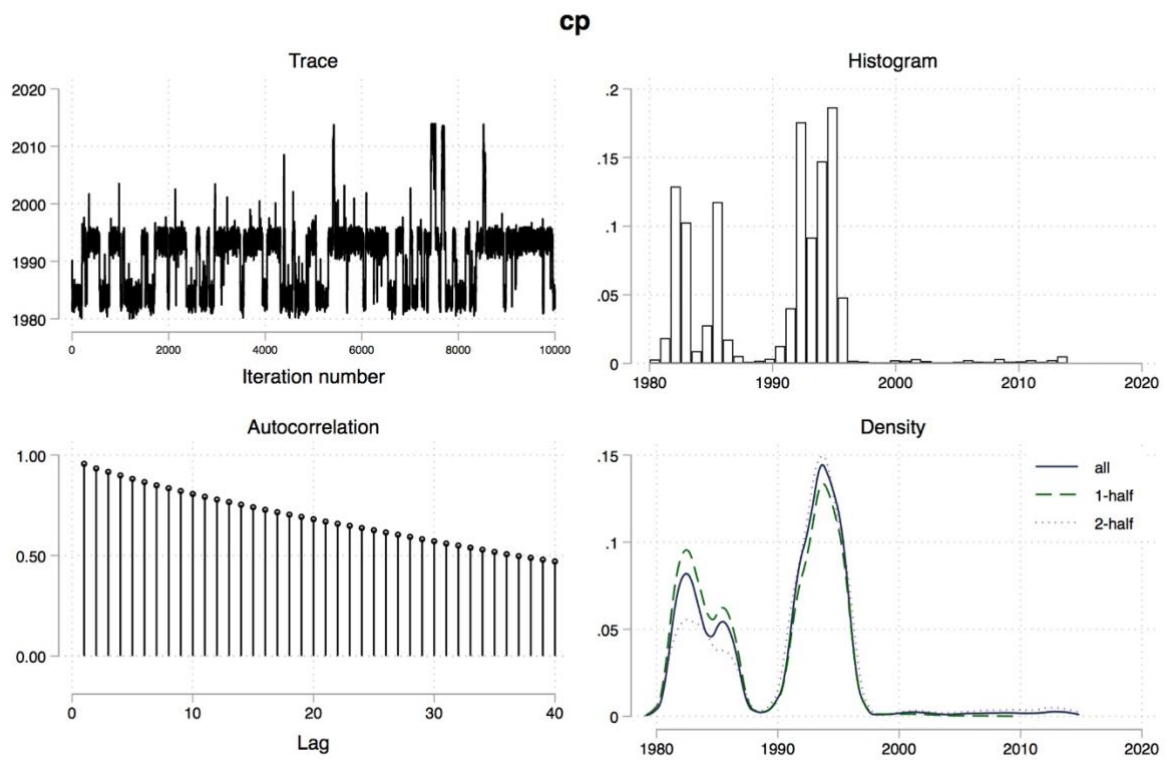
ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 35: Model 35, Change point and estimated ratio of Period 1 and Period 2



ratio:  $\{\mu_1\}/\{\mu_2\}$

Figure 36: Model 36, Change point and estimated ratio of Period 1 and Period 2



ratio:  $\{\mu_1\}/\{\mu_2\}$