

Attention, institutional friction, and punctuated equilibrium in China's budget: Changes in social security and employment expenditure

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Abstract

Based on the literature on punctuated equilibrium theory (PET), we conducted an empirical analysis on the changes in China's social security and employment budget expenditure at the subnational level from 2009 to 2020. We calculated the kurtosis value for 31 provinces to check whether they conform to PET. We used the number of policy documents and resource congestion as indicators of attention allocation and decision cost, respectively, to determine the impacts they have on budget changes. We then performed regression with a fixed effect model. The results show that the budgetary changes of only 20 provinces obey a leptokurtic distribution. Moreover, the allocation of attention by decision makers and institutional friction can explain this pattern of change. This article enriches the empirical study and extends its applicability to PET at the subnational level, especially in authoritarian regimes such as China, and provides some evidence for subsequent research on selecting indicators.

KEYWORDS

attention allocation, budget changes, China, decision cost, employment expenditure, incrementalism, institutional friction, leptokurtic distribution, public budget, punctuated equilibrium, social security

Related Articles

Kwon, Sung-Wook, and Sylvia Gonzalez-Gorman. 2019. "Influence of Local Political Institutions on Policy Punctuation in Three Policy Areas." *Politics & Policy* 47(2): 300–25. <https://doi.org/10.1111/polp.12295>.

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Public budget expenditure is the allocation of fiscal resources to achieve specific public goals, which influences the prioritization of the policy agenda as well as the implementation of public policies (Gerwin, 1969; Haggard & Kaufman, 2008; Liu & Li, 2020). To a large extent, budget capacity decides governing capacity (Schick, 1990; Wildavsky, 2001) and budget expenditure is both a policy issue and a governance issue (Davis et al., 1966). From the perspective of decision making, the public budget is a set of policy goals with monetary values. Budget expenditure also documents the decision-making process—including political negotiations and conflicts among different stakeholders (Baumgartner & Jones, 2012; Cao & Hao, 2020). In the meantime, any alterations in policy decisions can give rise to changes in budget decisions as well. Therefore, recognizing the changes in budget expenditure helps us understand the decision-making process. Traditionally, the incrementalism model based on the theory of bounded rationality has been used to explain the process of modern budgeting (Kuang, 2011; Reddick, 2003; Zhu et al., 2012). Simon (1986) developed the theory of bounded rationality in the 1940s to describe the decision-making process under the limitations of human cognitive ability and environment uncertainty. In the 1950s, Lindblom (1959) developed the incremental model of decision making based on Simon's theory and pluralism. Later, Fenno (1962) and Wildavsky (1964) introduced the incremental model into budgetary decision making. They also integrated political conflict and bureaucratization into the model. Supporters of this model believe incrementalism is the result of political conflicts and pay attention to marginal adjustment when allocating budget expenditure. In empirical studies, budget change rates ought to obey normal distribution.

Since the 1970s, the revolution in economic and social environments has led to drastic changes in policies, including environmental protection, nuclear power, tobacco, and urban governance. The incremental political agenda was interrupted by abrupt changes. To explain the dynamics of U.S. politics, Baumgartner and Jones (1993, 2005, 2009) posited punctuated equilibrium theory (PET). PET assumes that political agendas evolve gradually (in a state of equilibrium), but sometimes there are large and abrupt changes (punctuations). In most cases, these changes lead to stagnation, but occasionally they lead to crises. Punctuation and equilibrium are two crucial factors in the political process. The established incremental model explains the equilibrium factor well, while PET clarifies both during the whole process (Baumgartner & Jones, 1993, 2009). PET developed the bounded rationality model and theory of incrementalism and provided a framework that includes the concepts of policy images, institutional settings, attention, and information to explain long-term changes in policy (Baumgartner & Jones, 1993, 2012). PET has proved to be a cogent and convincing explanation of the political dynamics of the United States and other democratic authorities (Kuang, 2015). It can also explain the political dynamics under authoritarian regimes, such as Hungary (Baumgartner et al., 2015) under an authoritarian government. Evidence from China's mainland and Hong Kong can support PET as well (Lam & Chan, 2015; Nok & Zhao, 2015). Indeed, comparative studies have shown that more centralized regimes or more authoritarian systems exhibit greater political stability and adaptability (i.e., less punctuated politics) than more democratic and less authoritarian regimes (Jones et al., 2019; Robinson et al., 2015); the intensity of punctuation is greater when politics is more centralized (Jones et al., 2019; Lam & Chan, 2015).

PET was also introduced for state budgets soon after its first use in the political agenda and policy dynamics areas. PET in the budget model is based on some key elements, including attention allocation, institutional friction, the information process, and the policy agenda. Attention allocation and institutional friction are important factors that affect the intensity of punctuation. There are also assumptions about the leptokurtic distribution pattern (i.e., "high peak, thin shoulders, and fat tail") of the budget changing the curve and hypotheses regarding the reasons for this change pattern—reasons that have been empirically tested with budget data from different countries as well as different sectors or departments (Jones et al., 1998; True et al., 1999). Based on the budget data from the United States, the United Kingdom, Germany, and France, Jones and others (2009) concluded that punctuated equilibrium can be considered as a rule of



thumb for a public budget. Budget data from authoritative regimes (including Brazil, Hungary, Turkey, Malta, and Russia) followed PET even before they transformed into democratic institutions (Baumgartner et al., 2017; Rey, 2014; Sebők et al., 2022).

PET has also attracted increasing attention from scholars in China, the world's second largest economy, and has been used in agriculture (Chen, 2016), environmental protection (Fan & Guo, 2019; Kuang, 2015; Wang & Wang, 2020), the education agenda (Cao & Hao, 2019), livelihood (Li et al., 2022), emergency management (Wang & Sun, 2021), disaster relief (Xu & Wu, 2022b), government regulation (Sun, 2021), intellectual property (Wang, 2021), social security (Kang, 2019; Zhao & Wang, 2020), forestry (Huang & Huang, 2021), and other policy areas. In the relative long run, PET can explain changing patterns as well as policy punctuation. In the area of public budgets, empirical studies show that the changes in China's total public budget expenditure are consistent with PET and comparable to those of OECD countries (Cao & Hao, 2020), and the intensity of the punctuation does not differ much across countries (Li et al., 2019). Moreover, the budget expenditures at the provincial level obey PET, although the intensity differs across provinces (Li & Li, 2021). In more concentrated areas such as child-care (Xu & Wu, 2022a) and environmental protection (Kuang, 2015), PET can explain changing patterns well. A measurement visualization analysis of the overall development and distribution across disciplines of PET applications in China from the China National Knowledge Internet (CKNI), China's largest academic publication database and academic electronic resource integrator, is shown in Figures 1 and 2, respectively.

Although using PET in budget analysis is an emerging area in China, much remains to be explored. First, the research on policy has not yet covered sufficient fields. As mentioned above, Chinese scholars have tested and analyzed PET in environmental protection, education policy, regulatory policy, substantial allowances, etc. However, these analyses do not cover all the policy areas mentioned in the annual government report and the publicly available budget report.¹ Moreover, some important areas are still under exploration, including national defense, diplomatic policies, public transport, and infrastructure. Regarding public budget expenditure, existing studies tend to be relatively crude. They focus only on the phenomenon of punctuated equilibrium and rarely go further to explore the reasons behind it. Most often, public expenditure is considered as a whole, and the uniqueness of the individual subsectors is simply suppressed. For example, Cao and Hao (2020) explored the budget expenditures of different items at the national level under the guidance of PET. Still, they only focused on the changing patterns and did not delve deeper into the reason(s) behind them. Li and Li (2021) conducted subnational analyses of PET in the budget and tried to measure the intensity of the punctuation. However, they neglected a further, deeper analysis surrounding the formation of the punctuation and did not distinguish each subdomain under overall budget expenditures. This is because the reasons for punctuating each budgetary expenditure will never be the same. Second, analyses of the subareas of budgetary expenditures remain insufficient and more subareas need to be explored. Kuang (2015) and Xu and Wu (2022a) focused their analyses on one particular budget expenditure. They not only aimed to test whether the PET budget model could explain the changing patterns of this expenditure, they also conducted empirical analyses to investigate the reasons based on two other key factors from PET: attention allocation and institutional friction. Yet, similar to the use of PET in the policy arena, many budget items—including Medicare, social security, employment, and defense—are still under exploration.

Apart from the limitations on existing studies in China, PET itself is confronted with certain limitations and has been the subject of heated debates. Take the measurement of institutional friction and attention allocation, for instance, which are significant in explicating punctuation. Different scholars have very different views here. Regarding attention allocation, the number of

¹Which can be viewed on the official website of the government of the People's Republic of China.

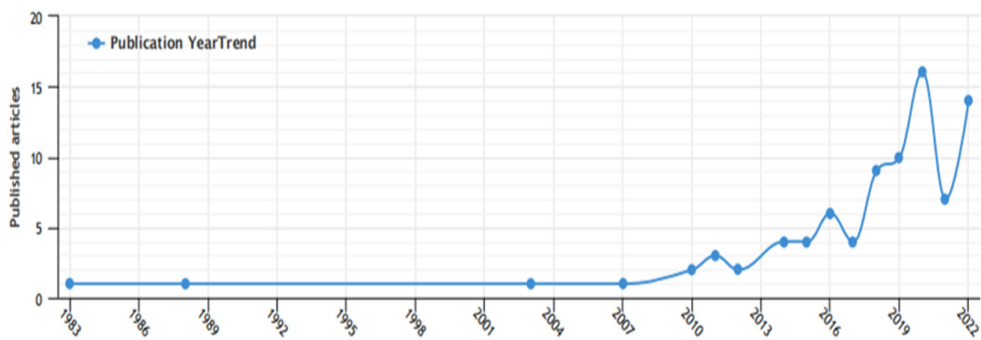


FIGURE 1 General trend of PET in China. *Source:* China National Knowledge Internet (CKNI), <https://oversea-cnki-net-s.webvpn.cufe.edu.cn/kns/Visual/Center>.

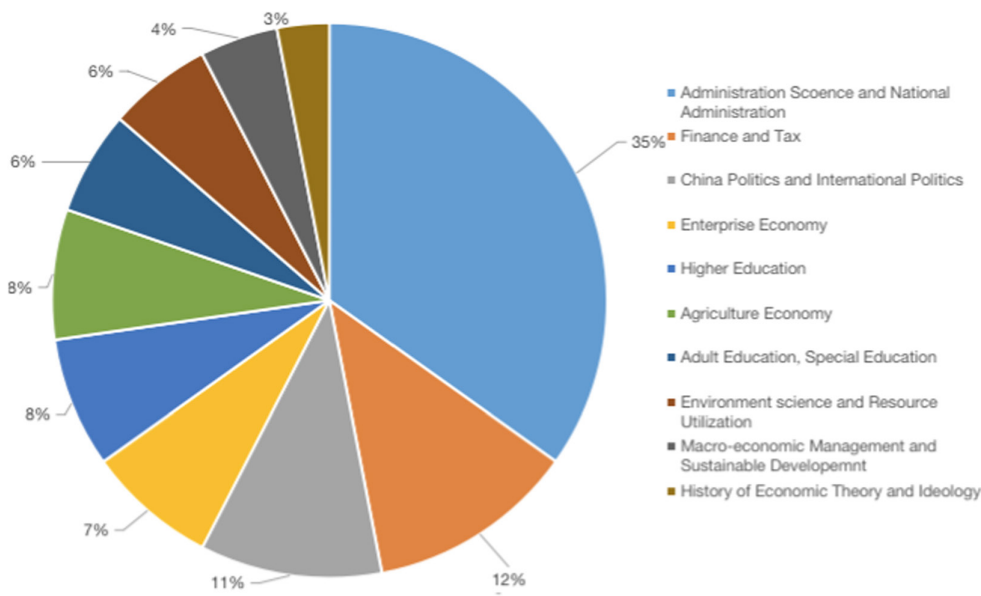


FIGURE 2 Application disciplines of PET in China. *Source:* China National Knowledge Internet (CKNI), <https://oversea-cnki-net-s.webvpn.cufe.edu.cn/kns/Visual/Center>.

policy documents issued officially (Xu & Wu, 2022b), the priority of a particular issue mentioned in government annual reports (Kuang, 2015), the number of keywords mentioned in the state council government work papers (Zhao & Wang, 2020), and the number of articles on specific issued in newspapers with official backgrounds (Cao & Hao, 2019) are chosen according to the accessibility of the data, as well as previous study. Regarding institutional friction, resource congestion (deficit) (Hartley & Russett, 1992; Kuang, 2015), the number of bureaucratic levels (Kuang, 2015), and the proportion of shared tax revenue of local governments (Li et al., 2021) are selected for the same reason. There are not enough theoretical analyses, ground rules, and standards for selecting variables to measure the two major elements systematically.

Therefore, we focus on a single item of budget expenditure and explore more deeply within this subdomain. We only test the PET arising from the pluralistic background and we focus on the individualized democratic regimes and national level to see whether the data from the subnational level (i.e., provincial) in China can support the theory; in addition, we suggest



hypotheses related to the reasons for punctuation from the perspectives of attention and friction and test them to explain the internal mechanism for this phenomenon in China's own narrations and context. We aim to make contributions on the subnational level and in subfield analysis, as well as to authoritarian applications of PET.

For the subdomain, we chose social security and employment expenditure, as social security and employment are related to the most important issues faced by the Chinese people, and policies in this area are closely related to the livelihood and well-being of citizens (Zhao, 2018; Zhao & Wang, 2020). In terms of policy making, social security and employment are closely related, and their public budget expenditures are calculated in a line item in the public budgets in the *Statistical Yearbooks of China* published by the National Bureau of Statistics of China. In addition, social security and employment are managed by the same agency, the Ministry (or Department) of Human Resources and Social Security. Some previous studies have more-or-less addressed the issue of PET. Kang (2019) discussed the changing patterns of the pension system, a subdivision of the social security system, in the context of punctuated equilibrium. Zhao and Wang (2020) stated that the changing process of China's social security system is related to the allocation of attention by the government, which is one of the most important elements in PET. However, there is no such discussion about the budget. Therefore, we aim to go a step further, create a framework for discussing the budget expenditure on social security and employment, and include both allocation of attention and institutional friction in the budget model. We attempt to find indicators to measure institutional friction and attention allocation in the hope of contributing to the emerging literature on empirical analysis and possibly providing some guidance for further studies on the principles of indicator selection.

In what follows, we first review the previous literature on PET and its major applications. Then, we build a framework to analyze the changes in social security and employment expenditure, which is also the main structure of this empirical study, in which we discuss the measurement of attention allocation and institutional friction. Next, we clarify our data sources and conduct empirical analyses based on three hypotheses. In the discussion and conclusion, we evaluate the results and develop them in relation to the political background in China under PET as well as note the contributions and limitations of this study.

LITERATURE REVIEW AND FRAMEWORK

PET in the policy agenda

PET originated in the field of paleontology to explain a phenomenon in the process of species evolution (Breunig & Koski, 2006). Over a relatively long spectrum of time, the biological evolution of a species is in a stable state (equilibrium), mixed with sporadic drastic evolution or extinction (punctuation) (Eldridge & Gould, 1972). In the 1990s, Baumgartner and Jones (1993) famously employed this theory to explain changes in the American policy agenda in nuclear power, tobacco, pesticides, environment, and urban governance. They argued that a political system has considerable stability in the way it deals with problems. However, politics is not in long-term equilibrium, but experiences periods of disruption and dynamic change, as the arrival of new information and ideas can render a policy that previously had advantages unstable. In further research, Baumgartner and Jones (2009) elaborated PET from the perspective of attentional dynamics and information processing. Figure 3 shows the basic framework of PET.

PET and bounded rationality

PET is built on the foundation of scarcity of resources and attention and is based on attention rather than the preference that dominates traditional decision theory. It was discovered that the

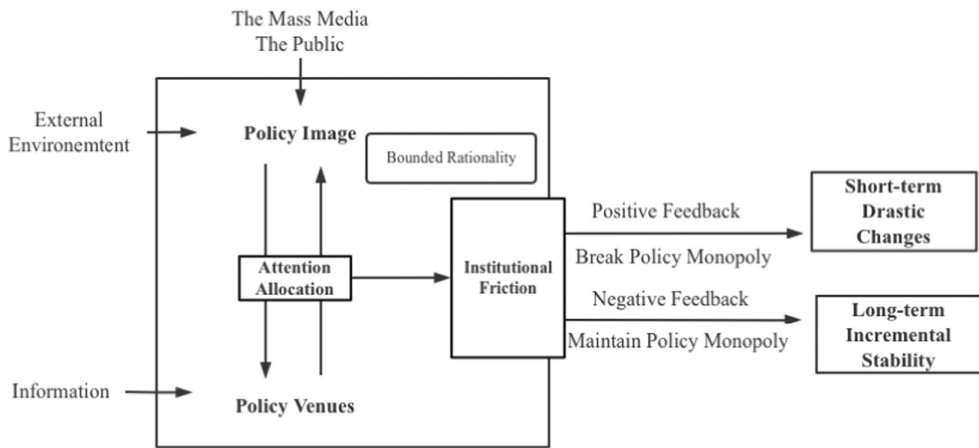


FIGURE 3 Basic framework of PET.

rational perspective seemed to have limitations when the incentive structure is unclear or the situation changes rapidly. Thus, the analytical framework of attention assumes that decision makers have bounded rationality, which is consistent with Simon (1986) and accounts for people's limited cognitive processing capacity and the complexity of the environment. Simon acknowledged that people's political behavior is driven by rationality. However, given their limited cognitive capacity and the complexity of the political world, political people appear to pursue strategies related to their higher-level goals. For Simon, political behavior operates on the model of “bounded rationality”—purposive means are employed within the constraints of the environment and cognitive processing.

Policy image and policy venue

PET begins with defining the problem and setting the agenda—which changes from time to time because some issues that have priority on the agenda are later replaced by others. Changes in problem definition often bring new issues to the public agenda. PET focuses not only on the reasons for the changes but also on the outcomes (Baumgartner & Jones, 1993). In agenda setting, PET is generated by the interaction between the image of the policy and the place of the policy.

Political image is the way the public and the media understand and discuss a particular political issue. It is a mixture of experience and feeling that contains their values and political beliefs (Lindblom, 1959). Only when the political institution is well established and the feasibility of solving a particular social problem is clearly considered by policy makers can that problem transform into a social problem and gain access to the political agenda. Every policy image is often attached to problem identification (True et al., 1999) and consists of experience and evaluation (Baumgartner & Jones, 1993). Policy images can be split into positive and negative. The former, preserving the political monopoly, are positive standpoints from the media and public. The latter are rather negative, inclining to “smash up” the monopoly (Givel, 2006). The change of the external political environment and conflict among a series of breaking news items would help to reshape the policy image.

Policy venue, which consists of policy-making subsystems (institutions), is the place where particular policy issues are discussed and decisions are undertaken officially (Baumgartner & Jones, 1993). They are not immutable. Different policy issues have different policy venues, and one specific issue may not only be confined to only one venue (Zhu et al., 2012).



Throughout the reshaping of the policy image, policy venues change continuously, driving the issue initially in the subsystem up to a macro level. The interaction between policy image and policy venue brings about either negative or positive feedback. Negative feedback causes long-term stability and strengthens the policy monopoly (the current authoritative allocation), while positive feedback leads to abrupt, dramatic changes and the breakdown of the monopoly (Baumgartner & Jones, 1993). In many political systems, perpetual and constant negative feedback is always followed by short bursts of positive feedback.

Attention allocation and information processing

To further explain PET and construct a general framework of agenda setting, Baumgartner and Jones (2005) incorporated attention allocation and information processing into the decision-making process.

Attention is key to understanding information processing and decision-making processes and lies at the core of PET. Jones (1995) argued that the traditional decision model focused on preferences; yet most traditional decision models treat decisions as if they occur only once when, in reality, people make decisions all the time and often must make similar decisions at different times. It is not uncommon for decisions to be reversed—the same decision made at one point in time is made completely differently at another point in time. Two assumptions explain this inconsistency. One is that people's preferences change rapidly, the other is that decisions are made based not on individual preferences but on attentions. Each issue has different characteristics or dimensions and there is more than one characteristic and evaluation dimension when people face a choice. When they are evaluated, these features and dimensions are called preferences. However, because preferences are multidimensional and often conflict with each other, decision makers face difficulties integrating the different preferences and are reluctant to change their preferences (Baumgartner & Jones, 1993; Jones, 1995). This leads to the paradox of temporal choice: preferences remain the same even though choices have changed. However, changes in attention to preferences are generally a way to integrate different dimensions; and changes in attention can change the preferences on which decision makers focus. Moreover, preference maximization models generally consider only incremental changes in public policy because people usually believe that preferences are more stable; but changes in the external environment and the arrival of new information can cause dramatic changes in attention, leading to a large inconsistency between decisions made at different times. Therefore, people need to focus on how decision makers divide their attention in specific situations (True et al., 1999).

People are often reluctant to change their preferences. However, attention to these preferences can change rapidly because people usually process information continuously and sequentially (Baumgartner & Jones, 1993; Jones, 1995). In general, decision makers can devote their attention fully to only one activity at a time—and the decisions individuals and organizations make are greatly influenced by how attention is distributed. On the one hand, attention is insufficient and the impact that attention allocation has on decision making is far greater than that of preference changes. On the other hand, however, the supply of information is infinite and policy institutions always have to tackle copious policy issues simultaneously. To select and process the information resources entering the policy agenda is the key. The decision maker's prioritization of problems and choice of solutions is guided by the allocation of attention, which is an “attention bottleneck” (Baumgartner & Jones, 2005).

Information processing includes gathering, organizing, interpreting, and prioritizing information (signals) from the environment (Baumgartner & Jones, 2012). In the policy-making process, the information is interpreted by policy activists. Due to limited attention, information organization bias, and the limited rationality of the activist, the policy response during interpretation may not accurately reflect the meaning of the signal (Baumgartner & Jones, 2012).

Integrating information into policy requires two mechanisms: first, the provision of information; and second, the prioritization of information supply by the policy system. Information prioritization involves filtering, selecting, and sorting information. Inappropriate information processing leads to extreme instability and occasional interruptions rather than steady adjustments or stasis (Baumgartner & Jones, 2012). Policy interruptions reflect the interactions between the external environment and internal responses within the policy system. Jones and other scholars introduced the concept of policy image and venue to explain the interactions (see e.g., Baumgartner & Jones, 2012). Unbalanced information processing is related to the lack of understanding of information interpretation. Political image change is one of the outcomes of unbalanced information processing (Baumgartner & Jones, 2012). When the policy image changes, punctuated equilibrium will emerge. Political institutions often deal with large numbers of policy issues simultaneously. This process is imperfect (Baumgartner & Jones, 2012) since a flow of information may overcome the institutional frictions inherent in the policy venue. Changes of the policy image will lead to shifts of limited attention allocation, generating changes in external signals (information) and disputes within the policy agenda (Givel, 2006).

As mentioned earlier, institutional friction will increase as new sources of information flow into policy from the outside (Zhu et al., 2012). Institutional friction thus leads to punctuated equilibrium. Institutional frictions arise from the transformation of policy inputs—such as changing policy preferences, new participants, and new information—into policy outputs. Institutional frictions include institutional costs, transaction costs, information costs, and decision costs (Jones et al., 2003). These frictions exist in every organization and maintain the political monopoly (Baumgartner et al., 2009).

Attention allocation and policy image

In the policy agenda, changes in problem definition focus the attention of policy makers on a particular policy issue. Thus, the allocation of attention is influenced by political imagery. In this process, policy entrepreneurs frame a policy issue in such a way as to draw policy makers' attention to it. Attention is a key factor for political systems to identify problems. Therefore, organizational cognition and political image are linked through attention.

In general, policy makers are usually confronted with more than one issue and aspects in the policy image simultaneously. Due to the scarcity of attention and bounded rationality, policy makers cannot always give an immediate response to the latest issues and information. Specifically, decision makers can only address a single issue during a particular period. It is not arduous for people to maintain the *status quo*, whereas it takes effort to switch attention to new issues in the new policy image, which could explain the reason why people are inclined to repeat their decisions. Therefore, policy often changes incrementally, even if the policy image changes—here there is an inconsistency between attention and the new policy image. In the new policy image, when issues and attribute information previously ignored by decision makers gradually reveal their importance and urgency, the pressure from new policy images reaches the “threshold,” and decision makers are propelled to shift their attention to the new information and issues (Baumgartner & Jones, 2005).

This shift of attention gives rise to the redefinition of problems and political rhetoric and deviates the trend of incremental changes off its original track; such new information is introduced into the policy agenda. Participants related to new issues and information who were originally cast aside thus gain access to policy venues as well, applying pressure to change an issue and pushing policy venues to alter, for which policy makers spare more attention to new policy venues. New participants and political venues face institutional friction, and the political monopoly is able to withstand this pressure for a time, while generating negative feedback. When the pressure to collapse the political monopoly crosses the threshold, a “window of opportunity” opens and positive feedback occurs, leading to drastic political change (Jones et al., 2003). Most of the time, however, policy changes are gradual, and this explains why abrupt and severe changes occur in a steady political process.



The PET policy mechanisms traced above are based on pluralism and Western democratic regimes. However, PET has also extended into analyses of other political regimes. For example, in China, PET was tested in certain specific policy fields and proved to be applicable in agriculture (Chen, 2016), environmental protection (Fan & Guo, 2019; Kuang, 2015; Wang & Wang, 2020), education (Cao & Hao, 2019), subsistence allowance (Li et al., 2022), emergency management (Wang & Sun, 2021), disaster relief donation (Xu & Wu, 2022b), government regulation (Sun, 2021), intellectual property (Wang, 2021), social security (Kang, 2019; Zhao & Wang, 2020), forestry (Huang & Huang, 2021), and so forth.

Evidence shows that PET is largely applicable to nontraditional democratic regimes and differences exist between democratic and nondemocratic regimes. Extant studies have already stepped into this area from the perspective of attention and information. Lam and Chan (2015) found that the friction in authoritative political systems leads to low responsiveness and more instability (punctuations) in the policy agenda. They contend that policy consensus is difficult to challenge in authoritarian institutions due to centralization, lack of competition, and hierarchical control, and political actors are more willing to stick to the *status quo*. Therefore, some potential conflicts that lead to attention shifts and incremental changes will be suppressed, resulting in negative feedback and enhancing instability in the policy agenda. Chan and Zhao (2016) measured punctuation intensity in social conflicts and disputes. Due to the lack of information, decision makers in their view have no incentives to address the conflicts until the threats are potentially devastating. In such cases, the changes are radical and so the intensity of punctuations is greater. Chan and Zhao (2016) concluded that poor exposure to diverse, independent channels of information contributes to a higher intensity of punctuation.

Some scholars conducted broader comparative studies that focus on different political systems. Sebők and others (2022) compared socialistic authorities, democratic institutions, and hybrid regimes and found that PET is applicable even beyond democracy. Based on the political spectrum, from the least democratic to the most democratic institutions, Jones and others (2019) extracted from previous literature four key factors that may affect punctuations in policy making: friction, incentives to solve problems, centralization, and information. They concluded that less democratic regimes (which are characterized by more friction in policy-making systems), fewer incentives for political leaders to solve the problems, more centralized policy-making processes, and less diversified channels of information contribute to more punctuations. Yet, due to the cluster of these factors, they did not detect the effect that each specific factor has on policy making. In all, the intensity of punctuations is more pronounced in authoritarian regimes.

In addition to the intensity of punctuation emanating from the political system, there are also differences in the function of the media. PET assumes that media attention has an impact on the political agenda. However, in China, Cao and Hao (2019) found that the interaction between media attention and the education policy agenda coincides very little with PET, although the policy agenda still coincides with PET in the long run. They attribute this phenomenon to the different relationships between the media and the government in the West and China. In pluralistic regimes such as the United States, social media plays an important role in the political agenda by constructing a particular political image and then influencing problem definition through the allocation of attention. In China, the influential media can be roughly divided into two types: the official media and the “less official media.” The attention of the official media (such as *People's Daily* and *China Daily*) is determined by the government's agenda, while the attention of the less official media (such as *Southern Weekend*) is less correlated with agenda setting than that of the official media.

PET in the budget

Before introducing PET into the public budget, we should first give a brief introduction of previous budget theory. Public budget theory can be categorized into descriptive and normative

theory (Rubin, 1990). The latter emphasizes Key's (1940) question: on what basis should X dollars be allocated to A rather than B, such that the allocation is rationalistic? An important basis for normative theory is that decision makers are rational and able to form a comprehensive picture of all alternatives. Consequently, they can identify and choose the optimal alternative (Lindblom, 1959; Zhu et al., 2012). However, this theory assumes that not all alternatives are comparable, though this is not always true in reality (Key, 1940). Moreover, ignorance of the political process, bounded rationality, and ever-changing environments (Simon, 1986) make the theory inadequate to cover the actual budgeting process, and the normative theory can be barely established in reality (Wildavsky, 1961). Since the 1960s, descriptive theory has gained popularity; it focuses on the budgeting process and sees the budget as embedded in the political system. It also takes into account the interests and preferences of different departments, sectors, interest groups, and individuals. Therefore, there is no concept of "better budgeting" in the sense of efficiency; instead, budgeting focuses on "who benefits and who loses" (Wildavsky, 1961). Descriptive theory evolved from a paradigm of incrementalism to that of punctuated equilibrium.

Incrementalism budget theory and its critics

Fenno (1962) and Wildavsky (1964) first introduced incrementalism into the decision-making process of budget allocation. In 1964, Wildavsky published *The Politics of the Budgetary Process* and incrementalism dominated the field of government budgeting until the early 1990s. Given the bounded rationality of individuals and the constraints of pluralistic institutions, incremental budget theory assumes that policy makers must allocate annual budget expenditures by adjusting margins based on the previous year's budget, which can significantly reduce annual administrative burdens and control bargaining costs. Additionally, budget changes between adjacent years are small. In the United States, many scholars have tested and proved the budget theory of incrementalism using federal, state, and local data (see e.g., Cowart et al., 1975; Crecine, 1967; Davis et al., 1966; Gerwin, 1969; Sharkansky, 1968). Further studies found that there was no strict relationship between changes in ideology or political systems and budgets (McDonald, 1984; McDowall & Loftin, 1984).

The increasing prevalence of incrementalism has been accompanied by criticisms regarding the concept, empirical evidence, and methodology. Regarding concepts, Berry (1990) collected 12 concepts of "incremental" mentioned in existing studies and concluded that the vague definition of "incremental" and the broad scope of "growth" severely undermine the persuasiveness of the incremental model. Boyne and others (2001) found that the incremental model is not applicable to public sector budgeting in the United Kingdom in terms of evidence and methodology. Dezhbakhsh and others (2003) argued that the incrementalism methodology used by Davis and others (1966) would lead to spurious regressions and that incrementalism is also not applicable to budgeting in the United States. In a stochastic process, the incremental budget model should follow a Gaussian distribution (normal distribution) with first-order differences from year to year. Yet, some empirical studies show that the annual budget series do not follow this distribution pattern (Breunig & Jones, 2011; Padgett, 1980) and the incremental budget theory is not able to explain the occasional "abrupt changes" in the budget (Kuang, 2011). Others contend that the features of incrementalism are more obvious in the changes of the total budget and less obvious in the budgets of functional categories (Jordan, 1999; Kleinman et al., 1990). Moreover, the incrementalism model is only applicable when the budget environment is stable and rich. However, the budget process itself is subject to external circumstances and uncertainties (Wildavsky, 1975).

Incrementalism is overused in the face of this criticism. How can the coexistence of incremental and nonincremental change be explained? Since the 1990s, the PET of public policy has been gradually extended to the budgetary sphere, and the PET of the budget has been developed to compensate for the shortcomings of incrementalism.



Punctuated equilibrium budget theory

The budget is driven by the political agenda and changes in policy entail changes in expenditure. The distribution of the budget represents the priority of a set of parallel policies. In this case, the changing patterns of budget expenditure can reflect the changes in agenda settings in a quantitative way. The PET has been extended from the policy agenda to budgets. For the policy agenda, PET focuses on the decision-making process and dynamic theoretical construction. For the budget, on the other hand, PET focuses more on the distributional patterns of budget changes and empirical analysis.

In the United States, there has been evidence of occasional drastic changes in federal budget expenditure (True, 1999), and budget data from 1947 to 1994 show that the distribution pattern obeys a leptokurtic distribution rather than a normal distribution. The leptokurtic distribution means that there are sporadic and abrupt decisions during a period (Jones et al., 1996). After analyzing data on the U.S. social security budget from 1940 to 1998, True and others (1999) found that changes in social security policy led to budget punctuation. Jones and Breunig (2007) analyzed the federal defense and domestic expenditures from 1800 to 2004. The results showed that changes in the two budget categories obey a punctuated equilibrium. Yet not all functional budgets conform to the punctuated equilibrium model. After conducting a series of statistical tests, Reddick (2003) found that only three functional budget categories are subject to a leptokurtic distribution and another 13 categories are consistent with incrementalism.

State and local governments also test PET against their budget data. After analyzing ten categories of budget expenditure in 50 states from 1982 to 2002, Breunig and Koski (2006) found that they followed the same distributional pattern as federal expenditure. Jordan (1999) found that PET can explain the distribution pattern of the different categories of local functional budget data, but the intensity of punctuation varies. In general, the punctuation intensity is less evident in budget expenditures for the day-to-day city management. Epp (2011) analyzed data for all budget categories at all government levels and found that changes in each budget category are consistent with punctuated equilibrium. However, punctuation intensity varies across government levels and budget categories. Using kurtosis analysis and multiple discrete logistic regression, Caver (2005) examined the effects of urban governance structure on budget expenditures in PET. He found that the budgets of cities with unreformed structures (i.e., cities with a mayoral committee and district/city councils) were more likely to match PET than those of cities with reformed structures (cities with executive management). Analyzing functional budget data between 1984 and 2009, Breunig and Koski (2012) found that policy changes that fit PET had larger effects on long-term budgets compared to those that fit incrementalism.

Budgetary PET has gradually gained in popularity beyond America. In Britain, the distribution pattern of central government budget expenditure from 1951 to 1996 (e.g., social security, education, national defense, industry, health, housing, and industrial expenditure) are all subject to PET (John & Margetts, 2003). Statistical analysis of four categories of Danish local governmental expenditure from 1991 to 2003 came to the same distribution conclusion (Mortensen, 2005). Furthermore, the intensity of punctuation varies by categories. Empirical studies on budget data from Belgium, Denmark (Baumgartner et al., 2009), Hungary (Sebők & Berki, 2017), and other OECD countries (Martin & Streams, 2015) came to the similar conclusion of a leptokurtic distribution. Through empirical analysis of budget data in seven counties and two local governments, Jones and others (2009) found that budget changes in many Western democracies are largely incremental, but exhibit occasional fluctuations caused by dramatic changes. Moreover, there are fewer fluctuations in the budgets of local governments than in those of national governments.

As noted earlier, the verification of the punctuated equilibrium hypothesis on budget expenditure has extended from democratic regimes into authoritarian areas. Rey (2014) analyzed the changing patterns of Brazil's public budget in authoritarian and democratic systems, deducing that PET suits both. Sebők and Berki (2018) expanded their period of investigation from 1991–2013 to 1868–2013 and discovered that budget expenditure changes in Hungary are subject to the leptokurtic

pattern in both democratic and authoritarian regimes. Building on Lam and Chan (2015) and Chan and Zhao (2016), who focused on authoritarian regimes, Baumgartner and others (2017) focused on systematic differences and conducted comparative studies of countries transitioning toward greater freedom—including Russia, Brazil, Turkey, and Malta. They collected public budget data on these countries and calculated the kurtosis and L-kurtosis before and after transition. Results show that, in democratic regimes, kurtosis values are lower than in other regimes, implying that punctuation intensity is less pronounced in democracies than in authoritarian forms. Seboők and others (2022) calculated progressive friction, including the policy output (budgetary authority and budget outlays) of socialism, democracies, and hybrid regimes. Their results confirmed that the policy agenda in nondemocracies fits PET—and their punctuations are more pronounced.

In China, PET has attracted increasing attention in the budgetary area. Empirical analysis on main functional budget expenditures (in education, science and technology expenditures, medical and health expenditures, transportation, and so on) at both national and subnational levels illustrated that the changing patterns are consistent with PET (Cao & Hao, 2020; Li et al., 2019). Punctuation intensity also varies in terms of levels of government. Empirical tests show that the level of punctuations in subnational governments is higher than that of the central government (Cao & Hao, 2020). Studies also show that the intensity of punctuations differs in different budget categories (Cao & Hao, 2020) and jurisdictions of the same administrative level (Li & Li, 2021).

Since the allocation of attention and institutional frictions have a major impact on the policy agenda, and since the budget agenda is also a part of the policy agenda, they also affect budget output; that is, they lead to changes in budget expenditure. The general framework is depicted in Figure 4. This also provides the framework for our empirical analysis.

Searching for, and reviewing the evidence of, attention and friction affecting the budgetary process in PET is another focus area in China. Kuang (2015) concentrated on environmental protection expenditure. Institutional friction is divided into decision costs and transaction costs. The budget deficit and the proportion of bureaucrats in government agencies are two indicators of decision costs. Emissions taxes, the number of factories that have to pay them, and the share of tax revenues from secondary industries in total tax revenues figure here. Environmental protection priorities in the annual local government report are used to measure the intensity of attention. For childcare expenditure, Xu and Wu (2022a) use the number of policy documents to measure the intensity of attention. They also collected childcare expenditure data from different interest groups and calculated the percentage of these expenditures in the income of the interest groups to measure the friction between different parties. Li and others (2021) introduce the reform of China's tax distribution system as an indicator of institutional friction and evaluated its effect on the rapid and sudden punctuations in China's budget-changing course.

There are also in-depth studies that focus on a single item in the budget expenditure; here there is much room for further investigation. With this in mind, we chose social security and employment

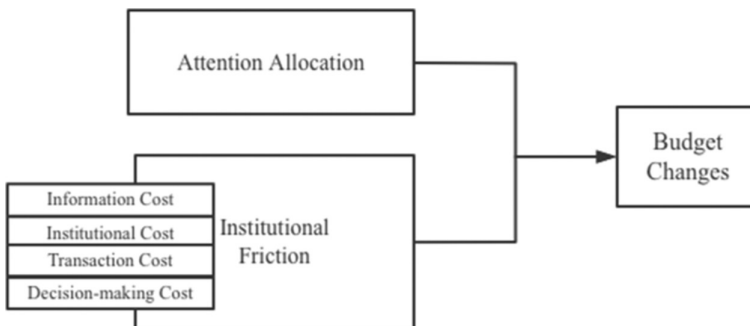


FIGURE 4 General empirical framework of PET in budgets.



expenditure because both are fundamental and crucial to people's livelihood, both have accelerated their reform process since 2009, and there are many drastic changes in the subsectors of both (Wang & Sang, 2020; Zhu & Dai, 2020). Indeed, social security and employment are closely related and their public budget expenditures are combined into one category in *China's Statistical Yearbooks* by the National Bureau of Statistics. Social security and employment are also managed by the same agency.² In cities like Beijing and Shanghai, the Human Resources and Social Security Bureaus are responsible for employment and social security matters. In provinces such as Jiangsu and Zhejiang, and in autonomous regions such as Xinjiang and Tibet, the Departments of Human Resources and Social Security should be responsible for these matters. Municipal government, province, and autonomous regions are all provincial levels—and so we consider them as one subject in terms of budget data accessibility and their joint responsibility. We also discuss the empirical results with PET in the policy agenda and make some suggestions for policy makers in light of the situation in China.

Generally, as noted earlier, Chinese researchers prefer to measure attention allocation with indicators from policy documents and contexts and they measure friction with indicators regarding political structure and fiscal resources. However, the indicators to measure attention and friction are still under discussion. Scholars have not agreed on the rules and standards for selecting variables to measure these two major elements. The number of policy documents issued by governments, the ranking of a particular issue official annual reports, the number of keywords mentioned in the central government's working papers, and the number of articles on specific issues in official newspapers (Cao & Hao, 2019; Kuang, 2015; Xu & Wu, 2022a; Zhao & Wang, 2020) are chosen to measure attention allocation. Deficit, the number of bureaucratic levels (Kuang, 2015), and the proportion of shared tax revenue of local governments (Li et al., 2021) are selected to measure institutional friction. It should also be mentioned that the choice of indicators is largely based on data accessibility and information disclosure. In the next section, we aim to give some sound reasons to support our choices based on existing studies and the accessibility of data and, in consequence, hope to make some contributions on the choice of indicators in the future. Although the indicators we discuss are largely based on existing empirical research, we nevertheless believe this is a good start and provide some guidance for subsequent theoretical and systematic analyses on the selection of indicators in an authoritarian context. In the end, we hope to enrich the research on authoritarian applications of PET on both subnational- and subfield-level analysis.

RESEARCH DESIGN AND METHODS

Consistent with the PET and existing literature, decision makers' attention allocation and institutional frictions in the information process have a significant impact on budget expenditure. Therefore, we first hypothesize the changing patterns of budget expenditure. We then discuss the effects of institutional friction and attention allocation, resulting in the next two hypotheses. We also offer appropriate indicators to measure them before presenting our research methods. To test Hypotheses 2 and 3, we create new penalty data based on the completeness of the data from 2009 to 2020, and the kurtosis values calculated when testing Hypothesis 1.

Hypotheses and variables

Punctuated equilibrium hypothesis

China's social security system is currently undergoing comprehensive and profound reform (Zhou, 2021) that has been accelerating since 2009 (Zhu & Dai, 2020). China initiated reforms of the new social insurance for rural residents in 2009 and promoted compensated housing

²The Ministry of Human Resources and Social Security of the People's Republic of China (or the Human Resources and Social Security Bureau and Department of Human Resources and Social Security at the provincial level).

construction. In 2010, the social insurance law was promulgated. In 2014, China's State Council decided to unify urban and rural social insurance systems and social welfare and reform the capital insurance system of public institutions. In 2018, China restructured the social security administration as part of the State Council's institutional reform and, in 2019, China merged health and maternity insurance (Long et al., 2020; Zhu & Dai, 2020). The employment system is also undergoing significant reforms (Wang & Sang, 2020) following a similar pace as the social security system. Since 2008, China introduced a number of relevant policy documents on the provision of labor services and vocational training, the protection of rights and interests, and social insurance policies for migrant workers (Ji & Li, 2019). Governments at all levels have issued several policies to support students in employment and entrepreneurship (Ying, 2020). The fiscal response to these policy changes is budget amendments. Are the budget changes consistent with PET, or are these changes incremental or leptokurtic? Based on previous work on China's budget expenditures, we propose the first hypothesis:

Hypothesis 1. The distribution pattern of growth rates of social security and employment budget expenditure in China is leptokurtic.

Considering data accessibility, we excluded Hong Kong, Macau, and Taiwan and used the budgetary data for social welfare and employment in the remaining 31 provinces³ in China. National and provincial data are collected from the *China Statistical Yearbook*, an informative annual publication that systematically contains economic and social statistical data, as well as major national statistics in the previous year, and several important historical years. The *Yearbook* is widely used in Chinese empirical studies, including analyses mentioned earlier. The item of "Social Security and Employment Expenditure" can be found in the main item of "General Public Budget Revenue of the Central and Local Governments," under the section "Government Finance." To calculate the 2009–2020 growth rate, data were selected from 2008 to 2020. As the price level varies each year, to make the annual budget expenditure each year comparable, we chose the Consumer Price Index (CPI) to adjust 31 groups of provincial budget expenditures at the price level to the base year of 2019.

Methods widely used to test leptokurtic distribution pattern include kurtosis value (Baumgartner et al., 2017; Breunig & Koski, 2012), K-S test and S-W test (Baumgartner et al., 2009) for normal distribution, and regression analysis (Breunig & Koski, 2006; Jones et al., 2015). Based on existing research, we chose to calculate the kurtosis value to examine the distribution pattern of changes in social security and employment expenditure of 31 provincial administrative units. After this, we calculate the kurtosis value for each province.

The formula to calculate the growth rates and kurtosis value (Baumgartner & Jones, 2005) is:

$$r_t = \frac{(E_t - E_{t-1})}{E_{t-1}} \times 100\% \quad (1)$$

where R_t is the growth rates of budget expenditure on social security and employment from year $t-1$ to year t , E_{t-1} represents the budget expenditure on social security and employment in year $t-1$, and E_t stands for the expenditure in year t . Additionally, we used the following formula:

$$K = \frac{\frac{\sum (X - \mu)^4}{n}}{\left(\frac{\sum (X - \mu)^2}{n}\right)^2}, \quad (2)$$

³Including Anhui, Beijing, Chongqing, Fujian, Jiangsu, Jiangxi, Jilin, Gansu, Guangdong, Guangxi, Guizhou, Hainan, Hebei, Heilongjiang, Henan, Hubei, Hunan, Liaoning, Inner Mongolia, Ningxia, Qinghai, Sichuan, Shaanxi, Shandong, Shanghai, Shanxi, Tianjin, Tibet, Xinjiang, Yunnan, and Zhejiang.



where μ is the mean value. When the K value is equal to 3, the changing pattern conforms to normal distribution, when the K value is larger than 3, it obeys leptokurtic distribution, and when the K value is less than 3, it is subject to flatter distribution.

Attention allocation hypothesis

Government attention is a key factor in whether a policy is included in the political agenda and changes in government attention often lead to changes in the policy itself (Li & Wang, 2018). Similarly, shifts in policy makers' attention lead to changes in budget decisions. In China's budgeting process, the attention of key decision makers guides the budget decisions of other actors. Budget departments in charge of different social sectors are informed about policy priorities before they prepare budget proposals, and they focus on policy priorities during the preparation process (Kuang, 2015). Budget proposals are more likely to be adopted if they are consistent with these priorities. Thus, if policy makers consider social security and employment more important and pay more attention to them, it will be easier to obtain more budgetary resources for this area. We then posit the hypothesis about the allocation of attention:

Hypothesis 2. For the provincial administrative regimes whose budget changes conform to PET, the more allocation on social security and employment, the higher the growth rate of social security and employment budget expenditure.

Measurement of the independent variable

Public policy documents are vehicles for political ideas and can reflect priorities (Zhao & Wang, 2020). Policy documents can be considered as a promise or declaration to the public on which areas the government will focus resources (Wen, 2014). In addition, policy documents from a particular department must be reviewed and approved by key decision makers before they are released to the public. The release of a policy document also means that they have already noticed and paid attention to that particular issue. Therefore, we chose the annual frequency (number) of policy documents issued by the Human Resource and Social Security Bureau or Department of Human Resource and Social Security of provincial jurisdictions to quantify the attention paid to the issue of social security and employment. Since the degree of publication varies across departments or bureaus in different places—and some provinces, such as Tibet, did not publish policy documents until 2018—we selected data from 20 provinces (based on the kurtosis value of each province). These institutions take charge of subnational social security and employment affairs. We went to the official website of the Human Resources and Social Security Bureau or the Department of Human Resources and Social Security of each provincial jurisdiction and found “Government Affairs” in the banner. We calculated the number of policy documents in the “Policy and Regulations” or “Regulatory Documents” sector under “Government Affairs Disclosure.” The documents we counted are formal with an issuing code, which contains an “Issuing Institution,” “Issue Number,” and “Issue Date,” and the issuing institution was a provincial agency in accordance with those mentioned above.

Institutional friction hypothesis and the independent variable

Institutional friction consists of information costs, knowledge costs, decision costs, and transaction costs (Jones et al., 1998). In this study, we focus on decision costs as one dimension of institutional friction. Decision costs occur after the information process, when actors within

the decision-making system are close to reaching consensus (Jones et al., 2003). Resource overload and levels of hierarchical control are two components of decision costs. When resources are sufficient, actors find it easier to reach consensus (Kuang, 2015). When resources (usually funding) are limited, more compromises and concessions are required from all stakeholders, increasing decision costs. In addition, the consensus previously reached is vulnerable to failure (Rubin, 1989). Jones and others (1998) found that as the deficit increases, decision makers face more severe conflicts, and it is difficult to change the *status quo*. Therefore, the intensity of punctuation decreases, and changes are more likely to be gradual. China is facing a tight fiscal situation and is undergoing budgetary reform. Government at all levels should thus “spend the limited budget where it counts” (Cao, 2021)—and the budget is a game between different budget departments, so allocating to different fields requires negotiations and compromise, resulting in incremental changes in each item of budget expenditure. More hierarchy levels will increase the levels/procedures of coordination and communication required for decision making, and the decision cost will rise. This damages the organizations' ability to make an immediate response to the environment, rendering policy changes more difficult (Chubb & Moe, 1990; Robinson et al., 2007). Moreover, in authoritarian regimes, centralization does not provide institutional efficiency (Baumgartner et al., 2017), which helps to maintain policy monopoly.

However, the *Yearbook* and the website of Human Resources and Social Security Bureau/Department of Human Resources and Social Security in each provincial administrative regime have not yet provided relevant detailed information on their administrative staffing. We thus take resource congestion as indicator of decision cost and propose the hypothesis on institutional friction:

Hypothesis 3. For the provincial administrative regimes whose budget changes conform to PET, the lower the resource congestion, the higher the growth rate of social security and employment budget expenditure.

Measurement of the independent variable

The deficit can be a fiscal indicator to measure the intensity of resource scarcity in the decision-making process (Hartley & Russett, 1992; Kuang, 2015; Xu & Wu, 2022b). Since budget decisions are usually made based on the previous year's budget situation and the deficit enters the budget decision process with a time lag, we used the previous year's budget deficit to measure the resource congestion in the following year. This means that the deficit in year $t - 1$ will influence the decision in year t . Since Hypotheses 2 and 3 are tested simultaneously, to be consistent with Hypothesis 2, we selected the budget revenue and expenditure data of 18 provincial governments from 2008 to 2019 from the *Yearbook*, calculated the budget deficit for each previous year (from 2008 to 2019) and then measured the intensity of resource congestion in the next year (from 2009 to 2020). The formula for calculating the deficit is:

$$C_t = D_{t-1} = R_{t-1} - BE_{t-1} \quad (3)$$

where C_t represents the intensity of resource congestion in year t , D_{t-1} represents the fiscal deficit in year $t - 1$, R_{t-1} represents the budget revenue in year $t - 1$, and BE_{t-1} stands for the budget expenditure in year $t - 1$.

Control variables

Given the data accessibility for each provincial jurisdiction from 2009 to 2020, we chose population at the end of the year, natural growth rate of population, and unemployment rate as our

control variables. Data are selected from the *China Statistical Yearbook*, *China Social Statistical Yearbook*, and *China Population and Employment Statistics Yearbook*, respectively. Generally, to increase the natural growth rate of population, and to decrease the unemployment rate, the government needs to invest in social security and employment.

The variables involved in this study are presented in Table 1.

Methods

Descriptive analysis

Regarding descriptive statistics, we conducted a descriptive analysis of the growth rates of provincial budget expenditures for social security and employment from 2009 to 2020. We also calculated the kurtosis value (K value) to determine whether the panel data of 31 provincial jurisdictions conforms to a leptokurtic distribution pattern, which is obvious evidence verifying punctuated equilibrium. We then calculated the kurtosis value of each province, respectively, to see how many provinces conform to PET.

Regression

We can detect from the K values which provinces' data conform to PET. We consequently built new short-panel data for the provinces whose K value is obviously larger than 3. Provinces whose policy document data are incomplete were excluded due to lack of information disclosure. To verify whether China's social security and employment expenditure changes are related to attention allocation and resource congestion and to what extent they are correlated, we performed regression analysis on the new short-panel data. We also take natural growth rate of population in year t , unemployment rate, and the population at the end of year t into consideration as control variables. Panel data are introduced into fixed effects and random effects models, respectively. We performed the Hausman test to choose the appropriate model to explain the result and test Hypotheses 2 and 3.

TABLE 1 Variables.

Sign	Name	Details	Variable
r_t	Growth rate of social security and employment budget expenditure from year $t-1$ to year t ($2009 \leq t \leq 2020$, t is an integer)	The intensity of changes in social security and employment budget expenditure	Dependent variable
P_t	Number of policy documents ($2009 \leq t \leq 2020$, t is an integer)	The intensity of attention allocation to social security and employment	Independent variable
C_t	Resource congestion in year t ($2009 \leq t \leq 2020$, t is an integer)	The resource congestion in year t is measured by the budget deficit of year $t-1$	Independent variable
$NGRP_t$	Natural growth rate of population in year t ($2009 \leq t \leq 2020$, t is an integer)		Control variable
UR_t	Unemployment rate in year t ($2009 \leq t \leq 2020$, t is an integer)		Control variable
PP_t	Population at the end of year t ($2009 \leq t \leq 2020$, t is an integer)		Control variable

DATA ANALYSIS AND EMPIRICAL RESULTS

Distribution pattern analysis

First, we performed a descriptive analysis and calculated the K value of the growth rate for the aggregate data pool of 31 provinces and then for individual provinces. The results are presented in Tables 2 and 3.

Table 2 shows that the K value of the time series is 15.65, which is much higher than the value of the normal distribution, whose K value is equal to 3. The growth rates of the aggregated 31 provinces correspond to a leptokurtic distribution.

However, not all the data of the 31 provinces correspond to PET, as seen in Table 3. The growth rates of only 20 provinces obviously obey the leptokurtic distribution. Therefore, PET can interpret the pattern of change in the growth rates of China's social security and employment expenditure from 2009 to 2020 in some provinces. During this period, the other provinces tended to make a gradual budget adjustment. Hypothesis 1 is partially tested here.

Analysis of the influencing factors

Considering the completeness of the data and the K values results, we created new panel data for 12 provinces, including Shanghai, Qinghai, Guangdong, Guangxi, Yunnan, Chongqing, Anhui, Tianjin, Fujian, Beijing, Hainan, and Gansu. Preliminary estimates show that the panel data are strongly balanced and the structure is a short panel. First, we conducted an LLC unit root test. The results are significant, indicating that there are no unit roots. Then we performed the Kao and Pedroni test for cointegration and the test results show that there is no covariance between the variables. We next performed regression with the fixed and random effects models, respectively. The Wald F test value is 4.63 from the report of the fixed effects model and the significance is .0000, indicating that there is an individual effect and no need to perform pooled regression. The Hausman test value is 49.20 and the probability is .0000, rejecting the null hypothesis that “individual effects are independent of the regression variables.” Therefore, we chose the fixed effects model. The results of the different models and tests are shown in Table 4.

TABLE 2 Results of descriptive analysis on expenditure growth rates (aggregated).

	Number	Mean	Median	Standard error	Maximum	Minimum	K value
r_t (%)	372	12.55	10.64	13.95	98.43	−32.18	15.65

Source: China Statistical Yearbook.

TABLE 3 K value of expenditure growth rates for each provincial jurisdiction.

Location	K value	Location	K value	Location	K value	Location	K value
Shanghai	12.97	Qinghai	7.03	Guangdong	4.28	Zhejiang	2.54
Guangxi	10.09	Yunnan	6.73	Chongqing	4.20	Jiangsu	2.12
Anhui	8.73	Hebei	6.64	Tibet	3.86	Hubei	2.08
Ningxia	8.62	Tianjin	6.47	Fujian	3.52	Shaanxi	2.07
Inner Mongolia	7.91	Beijing	5.50	Jilin	3.09	Shanxi	1.92
Hainan	7.86	Heilongjiang	5.23	Guizhou	3.01	Sichuan	1.62
Liaoning	7.65	Henan	4.62	Jiangxi	2.79	Hunan	1.12
Xinjiang	7.04	Gansu	4.57	Shandong	2.71		

Source: China Statistical Yearbook.

TABLE 4 Results of model estimations.

	Variable	Fixed effect	Random effect
Dependent variable	GR		
Independent variable	AA	.36167*** (.000)	.06796* (.073)
	D	-.06793*** (.002)	-.00686 (.557)
Control variable	UR	4.74106* (.070)	1.02623 (.463)
	NGRP	.90486 (.284)	.68242* (.069)
	PP	.00328 (.439)	-.00004 (.919)
Constant		-22.80576 (.167)	4.40388 (.421)
Number of observances		144	144
Number of groups		12	12
R ²		.053	.076
Wald test		$u_i = 4.63$	Wald Chi2(2) = 7.65
Significance of Wald test		Prob > F = .0000	Prob > Chi2 = .0217
Hausman test		Chi2 = 49.20	
Significance of Hausman test		Prob > Chi2 = .0000	

Note: ***, and * indicate that the correlation coefficient passed the significance test at the level of .01 and .10, respectively.

Source: *China Statistical Yearbook*, Official website of the Department of Human Resources and Social Security of Qinghai, Guangdong, Guangxi, Yunnan, Chongqing, Anhui, Tianjin, Fujian, Hainan, and Gansu, the official website of Human Resources and Social Security Bureau of Shanghai and Beijing, *China Social Statistical Yearbook* and *China Population and Employment Statistics Yearbook*.

As can be seen from the above results, attention has a larger effect on the two independent variables. The coefficient of attention allocation is .36167 and passed the significance test at the .01 level, which means that one unit of attention allocated to social security and employment increases the growth rate of budget expenditure by .36167%. As for the resource congestion, one of the institutional frictions, we also see from Table 4 that the growth rate decreases when the magnitude of the resource congestion becomes larger. The coefficient of attention allocation is -.06793 and passed the significance test at the .01 level, hence one unit of resource congestion decreases the growth rate of budget expenditure by .06793%. Hypotheses 2 and 3 are tested here.

For the control variables, only the unemployment rate passed the significance test at the level of .1. This means the unemployment rate will also affect budget changes.

DISCUSSION

From the above analysis and tests, there are only 20 provincial governments in the period from 2009 to 2020 whose budget changes in social security and employment are consistent with PET. Unlike other subnational-level studies on China, Hypothesis 1 (China's provincial-level budget changes are consistent with PET) was not tested for all provincial administrations in this study. One possible reason is that the period we chose is not long enough, and the budget changes in the remaining 13 provinces are still in a state of equilibrium. They face intense institutional frictions and are still making marginal adjustments under the pressure of decision making, transactions, information, and institutional costs. Under the general constraint of “tight budget balance,”

governments break even and run the risk of overspending, and some provincial governments can barely increase one category of functional budget expenditure. However, while local governments are taking on increasingly burdensome public functions, their fiscal and other resources are scarce (more resources are centralized). Therefore, the findings suggest there is a mismatch between fiscal power and administrative tasks (Long et al., 2020). Social security and employment departments are not the only ones that provide public services; civil affairs departments, health committees, and so on, also fulfill this function. These departments and offices are all asking for more funding. Since the budget is limited, it is not easy to reach consensus in negotiations. Therefore, in some provinces the changes are more likely to be gradual if the pressure to solve the problem and the bargaining power are not strong enough, even though some related problems are already perceived by the decision makers.

In the provinces whose budget changes conform to leptokurtic distribution, we found that attention allocation and resource congestion can explain this changing pattern—and attention allocation has a more significant impact on budget expenditure change decisions. As the external environment evolves and shapes the new image of politics, some issues previously ignored by decision makers will gradually reveal their importance. When the pressure to address the issue of social security and employment reaches the “threshold” of recognition, policy makers will turn their attention to the new issue. The window of opportunity opens when the pressure is strong enough to overcome institutional friction. In this case, a surge of budget expenditure on social security and expenditure will be introduced into the policy agenda, and the original status of incremental changes in expenditure will be broken.

Since the period of the 13th Five-Year Plan, the governments in 31 Chinese provinces have been shouldering the responsibility to alleviate poverty and build a moderately prosperous society in all respects. At the same time, China is confronted with a series of social issues, including an aging population, employment issues, and the increasing pressure of public security and social services produced by increased population mobility. These require governments to provide better and more comprehensive services on social security and employment, including care of the elderly, employment training for migrant workers, and uniform benefit standards for basic insurance (Chen et al., 2021; Long et al., 2020). As the environment and information changes, the policy image constructed by the mass media and the public will be reconstructed as well. Therefore, governments at all levels have to focus more on improving people's livelihood—and an obvious fact is that they ought to increase social security and employment expenditure in terms of budget.

Given the slowdown in GDP growth and fiscal constraints, governments at all levels must do all they can to alleviate significant fiscal pressure. Policy makers must indeed make every dollar count. In addition, the central government issues mandates to local governments scattered across all departments. Combating poverty and building a reasonably prosperous society will require a joint effort by all these departments and, naturally, each branch of government will demand more budgetary resources for its projects and programs. Decision makers must thus balance urgent and important social issues with higher-level government mandates. As policy makers pay more attention to the issues of employment, care for the elderly, livelihood security for people with disabilities, protection of migrant workers' rights, and some other aspects of social security, the pressure to increase budgetary resources will also increase. If the pressure has not yet reached the “threshold,” changes will be gradual. When the pressure breaks through the institutional friction, the window of opportunity will open and the question of more investment in social security and employment will be brought to the table. However, it should be underlined that the window of opportunity will likely pass in a flash, and only social security and employment expenditure will see drastic changes. Most of the time, they will only be incremental changes.

As China has ushered into the 14th Five-Year Plan period, social security and employment are about to witness profound development. To improve the efficiency of the decision-making process on expenditures, the findings of this study show that policy makers need to take both



attention allocation and institutional friction into consideration. In terms of attention allocation, agencies need to keep up with the “policy image” constructed by the media and the public, be more open to the public, and adjust their attention in a timely manner. To reduce institutional frictions, especially the overloading of fiscal resources in decision making, governments can involve the private sector in public projects related to social security and employment, such as public–private partnerships in more public sectors like care of the elderly, to reduce fiscal pressure. To reduce information, transaction, and institutional costs within the decision-making system, governments could consider revising the policy-making process to include multiple information channels (hearings, social media platforms, etc.); broad participation by the public, experts, and volunteers; and greater interagency collaboration.

CONCLUSION

In this article, we surveyed the existing literature on PET regarding the political agenda and public budget in both democratic and authoritarian regimes. Based on existing in-depth studies on a single item in the budget expenditure, as well as previous research on social security and employment, we chose the budgetary expenditure of social security and employment combined. We then conducted an empirical analysis on the changes in social security and employment provincial-level budgetary expenditure in China through PET. We found that budgetary changes in only 20 provinces between 2009 and 2020 conform to a leptokurtic distribution. This shows that PET can explain part of the budget changes at the subnational level in China and that the extent of intensity varies among the provinces whose expenditure changes obey PET principles during this period. By applying a fixed effects model to short panel data, we found that decision makers' attention allocation and institutional friction (we tested only resource overload, a dimension of institutional friction) can explain this pattern of change.

Based on previous studies, we enriched the empirical analyses and extended their applicability to PET at the subnational level, especially in authoritarian regimes such as China. We focused only on one category concerning public budget, social security, and employment and found that budget expenditures in some provinces continue to show incremental changes over a relatively short time period, which departs from previous studies on subnational budget changes in China (Cao & Hao, 2019; Li & Li, 2021). In existing studies on China's budget expenditure, almost all the results support PET thoroughly at both the national and subnational level. As for social security and employment expenditure itself, we went further to discuss the changing pattern at the subnational level. We found that the changing pattern varies in different provinces—and not all provinces conform to a punctuated equilibrium distribution pattern during 2009–2020. One possible explanation is that our time period is not long enough so that the budget expenditure in some provinces is still in a state of equilibrium. Taking existing literature into account, this suggests that PET is better suited to explain long-term changes in the budget. In other words, PET may not always be an alternative of incrementalist models, but it is an improvement and development on them. Therefore, we offer our empirical results to enrich and improve existing research in China that considers the two theories as opposites.

We also built a budget model based on PET that incorporates attention allocation and institutional friction to discuss the factors that contribute to the leptokurtic distribution of budget changes. Since there are no ground rules or gold standard for selecting variables to measure the two major elements in our framework, we carefully examined the existing literature on indicator measurements. Public policy documents can be considered as a promise to the public on which areas the government will focus its resources; indeed, the release of policy documents means that key decision makers have already noticed and paid attention to that particular issue (Wen, 2014). Given this, we think the number of policy documents can measure attention allocation well. To narrow our focus, we discussed only one dimension of institutional friction: decision-making

costs, of which resource congestion is an important component. China is facing a tight fiscal situation and governments at all levels should, of course, “spend the limited budget where it counts” (Cao, 2021). Clearly, resources are insufficient, policy actors find it harder to reach consensus, and more compromises are required (Kuang, 2015). To measure the intensity of resource congestion, deficit can be a sound choice (Hartley & Russett, 1992; Kuang, 2015; Xu & Wu, 2022). Considering the previous literature and data accessibility, therefore, we attempted to use the number of policy documents and the deficit as indicators to measure attention allocation and resource congestion, respectively. This may provide guidance and support for further studies on the principles of indicator selection. From the perspective of attention allocation and the reduction of institutional friction, we made suggestions for policy makers in the light of the Chinese case based on empirical results.

We simplified the PET model and included only the dimension of institutional friction because of data accessibility. There are, of course, other dimensions, including information, transaction, and institutional costs, that remain to be explored. Meanwhile, the choice of indicators entails further discussion. For example, we decided on the number of policy documents issued by the Department of Social Security and Employment and the logical basis of this choice is still under discussion. We also found that some provinces do not provide full access to all documents owing to the different level of disclosure of information. This led to another limitation: we did not include all the provinces adhering to PET in social security and employment expenditure. Nevertheless, we hope our analysis is useful in providing empirical evidence on the selection and measurement of variables. As for financial data, it is not hard to obtain from official *Yearbook* data. Regarding data related to policy making, however, it is not easy to get all the data needed, since not all provinces disclosed their policy documents from 2009 to 2020. We therefore omitted some provinces in China. Nevertheless, the available data still covered different areas of China—which we hope will be an important ground for future studies.

Throughout our analysis, we found that the level of punctuation varies across provinces. Further, in-depth research on the reasons for this is clearly needed. The reasons could be many. For example, the levels of economic development and government transparency, multiple channels of information, fiscal conditions, and intensity of hierarchical control vary across provinces and could differentially influence the attention of authorities and the institutional frictions in decision-making systems. How do we identify the factors that contribute to the diversity of punctuations within a single regime and choose the right indicators to measure them? There is still a long way to go. Nevertheless, our study could enrich PET analyses in authoritarian regimes and potentially provide ideas for further studies.

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