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Organizational imprinting and the welfare practice of Chinese state-owned enterprises

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Abstract

Drawing on a survey of randomly selected firms from 12 representative Chinese cities, we analyze the differences between Chinese state-owned enterprises (SOEs) and non-SOEs in their organizational welfare practices. We apply the organizational imprinting theory to explain these differences. The institutional environment during the firms' founding period has a lasting effect on their current practices. Only the most significant changes in the institutional environment weaken the organizational imprinting effect. By focusing our analyses on Chinese SOEs, this research enriches and extends the organizational imprinting theory and its implications to a transitional economy. In addition, our research has managerial and policy implications for managing Chinese SOEs in a changing domestic and global environment.

Keywords: Organizational imprinting, Organizational welfare practices, Enterprise restructuring, State-owned enterprise

Introduction

Firms with different types of ownership coexist in China. Despite a continuous decline in number, state-owned enterprises (SOEs) are still significant in scope and are greatly influential in China's economic development. For example, most of the 115 Chinese corporations on the 2017 Fortune Global 500 list are SOEs. Between 1994 and 2008, the value of output by SOEs increased from 2.63 trillion RMB (or $381 billion) to 14.395 trillion RMB (or $2.09 trillion), even though their share of the total industrial output decreased from 37.35 to 28.38% (National Bureau of Statistics of the PRC 2000; National Bureau of Statistics of the PRC 2009). SOEs are also crucial for employment; the ten largest SOEs currently have over six million employees (Fortune China 2017). Prior studies on SOEs focus mainly on macrolevel socioeconomics and policies (see Lin et al. 1997 for summary). Organization theory, built on studies of private corporations in developed countries, has only limited explanatory power for SOE behavior. Research on SOEs must consider their unique founding environment before integrating organization theory to explain their modus operandi.

Over the past 30 years, SOEs have gone through systematic reform and restructuring. The changes in market rules and institutional environment have had a profound influence on SOEs. It is no longer appropriate to equate SOEs to inefficient bureaucracy or welfare organizations. Since the enactment of the 1994 Corporate Law, SOEs have remodeled themselves on the "modern enterprise system," and subsequent legislation makes it clear that social insurance will replace within-corporate welfare. For instance, in 1995, the National Economic and Trade Commission, the former National Education Commission, the Ministry of Finance, the Ministry of Health, and the former Ministry of Labor jointly issued the "Guidance for Detaching the Social Function from Enterprises and Relocating Oversupplied Personnel in Multiple Cities." In 2000, a further policy, "Guidance for Further Detaching the Social Function from SOEs" issued by the National Economic and Trade Commission and other agencies of the State Council, proposed separation of affiliated middle schools, primary schools, hospitals, and other such institutions from large and midsized SOEs. Moreover, SOEs' subsidies on housing and transportation have also been gradually marketized. In 2003, the State Council established the State-owned Assets Supervision and Administration Commission (hereafter "State-owned Asset Commission") to coordinate a comprehensive restructuring of SOEs.

As SOEs strive to uproot their historical burden of social responsibility and to marketize their operations, both domestic and international societies have developed an almost exactly opposite institutional demand—corporate social responsibility (CSR). For example, in 2008, the State-owned Asset Commission issued a "Guidance on SOEs' Social Responsibility" that encourages SOEs to include social responsibility in their operations. The International Standard Organization (ISO) includes CSR-related issues in multiple standard systems, including ISO9000, ISO14000, and ISO26000, the passage of which signals the importance of sustainable corporate development.

How do SOEs respond to and cope with the institutional demands of CSR during the time of restructuring that emphasizes economic efficiency? To address this question, we must move beyond an ahistorical view. The coexistence of multiple ownerships in China provides nuanced understanding of different management models. New institutionalists contend that corporations, both state-owned and private, become isomorphic overtime and therefore should not be significantly different in terms of CSR practices (DiMaggio and Powell 1983). Coercive pressures from authorities and the society, learning from each other under uncertainty, and norms from professional consultants all provide a theoretical foundation for similar CSR behavior between SOEs and private firms. However, this homophily hypothesis does not fit the current reality since SOEs are shouldering more social responsibility than other firms. As illustrated in the "Blue Book of Corporate Social Responsibility" issued by the Chinese Academy of Social Sciences in 2011, SOEs have a much-higher score on the "social responsibility development index" than do private or foreign enterprises (Chen et al. 2011). How do we account for this mismatch between theory and reality?

Scholars have increasingly adopted organizational imprinting theory (Stinchcombe 1965; Marquis and Tilcsik 2013) in order to better understand organizational dynamics, especially those that cannot be explained by new institutionalism's ahistorical tendency. Imprinting theory contends that an organization is influenced not only by the current institutional environment but also by the market, technological, and institutional environment at the time of its founding. These founding factors do not fade away on their own but continue to impact the organization's operation. In China, SOEs and non-SOEs were founded at different times with different founding conditions, a factor that could offset isomorphic pressures and lead to noticeable differentiation through distinctive imprinting.

Examining homophily and differentiation of Chinese firms not only helps better understand their capabilities in changing environments but also helps these firms take on social responsibilities more effectively. In addition to managerial and policy implications, our research also contributes to organizational imprinting theory. Prior imprinting research mainly focuses on organizations that operate in stable institutional conditions. In a fast-developing environment such as China's, it is theoretically valuable to investigate whether and how organizational imprinting mechanisms still hold during organizational restructuring and changes.

Using randomly sampled corporate data from 12 cities, this research uses multilevel regressions to investigate the difference between SOEs and non-SOEs in terms of providing welfare benefits for their employees, as well as the influence of restructuring on SOEs' imprinted welfare practices. The remainder of this paper is organized as follows. The next section summarizes organizational imprinting theory, discusses its integration into the work unit system, and proposes several hypotheses regarding firm ownership and welfare provision. We next introduce our data, followed by empirical results. We conclude the article by discussing limitations, theoretical and practical implications, and future research.

Theory and hypotheses

Regarding CSR, some argue that a corporation's social responsibility is simply to increase its profit (Friedman 1970). On the one hand, making profit is the outcome of division of labor for firms, yet more profit means slack resources that make a firm more capable of shouldering social responsibilities. Organization scholars' increasing interest in the effect of the institutional environment on corporations gave rise to the new institutionalism, which emphasizes the nonmarket environment of organizations. In particular, new institutionalists regard the institutional environment as a key factor for firms' operation, and argue that institutional pressures from stakeholders drive convergence in terms of both organizational structure and practice, a process of "isomorphism." There are three major isomorphic mechanisms (DiMaggio and Powell 1983): coercive isomorphism such as governmental regulations; normative isomorphism like product standards set by professional organizations; and mimetic isomorphism that follows pioneering and successful peers, especially under uncertainty. These three isomorphic drivers often coexist, driving firms to behave similarly over time. However, organizations sometimes demonstrate great differentiation that cannot be explained by exogenous factors like the current institutional environment. For example, the telecom firms Huawei and ZTE are both located in Shenzhen and operate in an identical market niche and institutional environment. However, the two firms have significant differences in management style and corporate culture because their founders had different backgrounds and personalities.

Business historians also emphasize the importance of organizational history. Chandler Jr. (1962) and Chandler Jr. (1965) contend that because the market economy grows out of corporations, the explanation for economic phenomena must be guided by the development paths of firms. Firms develop as they continuously learn and keep strengthening their organizational capacity. More specifically, the importance of organizations' early history on their present and future conditions is realized through technological systems, such as the railroad, the telephone, or cable. However, while emphasizing the role of corporations and their history, Chandler fails to explain the cyclical development pattern brought by destructive innovations. In this regard, in addition to the founding history, every temporal piece of an organization's evolution is important and warrants investigation. Stinchcombe (1965) first advances the argument that during an organization's historical development, the founding period has the most significant molding effect. An organization is unavoidably marked by the temporal conditions of its founding period, and then carries these marks in its future operations. Especially when facing an uncertain environment, members of an organization tend to look for references in their organizational history. In summary, founding conditions affect the basic features of an organization, which label the organization and are carried along to have a continuous influence.

Empirical research has found multiple mechanisms by which early organizational history affects the organization's current strategies and practices, including founder's characteristics, early employees, and resource and institutional environments. Studies on high-tech companies in the Silicon Valley reveal that the experiences of the founders and early management team prior to founding a focal company can actually affect the new company's structure and management model (Baron et al. 1999; Burton and Beckman 2007). In this regard, knowledge of a Silicon Valley company's early history and its founder's experiences is crucial to understanding its management style. Founders not only unconsciously bring in their personal characteristics and experiences but also intentionally choose other technological and institutional factors to integrate into their ventures, thereby generating long-term influence on its management and practice. In a time when entrepreneurial spirit is lacking, early technological and institutional resources may have an even more-profound effect on firms. Marquis's (2003) empirical study on American corporations discovers that transportation and information technologies at an organization's founding stage can foster successful localization strategies through solving information and trust issues. Apart from a technological system, network relations and institutionalized learning preferences at the early stage are also influential in organizational localization.

The aforementioned works enrich organizational imprinting theory at different levels. For example, Marquis (2003) clearly spells out two mechanisms by which organizational imprinting affects localization strategies. Firms founded around the same time are affected by the broader social background of that time, and therefore display similarity in their structures and activities. Since founding conditions directly affect these organizational characteristics, we call them *direct imprints*. Firms established in the same area at a later time likely follow the pioneers and emulate them; we call this phenomenon *indirect imprints.* Direct imprints explain the origin of organizational imprinting, while indirect imprints explain its reproduction and diffusion.

Several aspects of organizational imprinting theory are worth mentioning. First, this theory emphasizes the decisive effect of a firm's founding conditions. Compared to Chandler's (1965) research on organizations' chronical history, it is less likely to ignore the uneven influence of different historical episodes. Moreover, Chandler focuses too much on the determinacy of technology, while imprinting theory also accounts for the effect of institutions and founders. Second, imprinting theory attends to the long-lasting influence of the previous institutional environment and significant actors such as founders, while the new institutionalism focuses on the effect of the current institutional environment. Lastly, imprinting theory does not equalize organizational structure and stability of organizational activities with barriers to innovation or changes (Kogut and Zander 2000). Instead, organizational imprinting can constitute an internal resource for adaptation. This is in contrast to inertia theory (see Hanna and Freeman 1984), which argues that a mismatch between organizational structure and environmental changes can result in resource depletion and a developmental plateau.

Most empirical research on organizational imprinting investigates the relatively stable Western market institution, and may overestimate the imprinting effect. Over the past 30 years, the Chinese society and market experienced major transformations, which provide a scenario for a deeper understanding of organizational imprinting and its attenuation, if any. In the transition from social enterprises to modern corporations, the managerial logic of becoming fully marketized provides theoretical ground for SOEs' restructuring and other enterprises' pursuit of profit maximization. When this institutional logic becomes widely accepted and appraised, to some extent global reflections represented by a call for CSR have brought back the idea of a socialist enterprise.

In China, large-scale industrialization began in the 1950s, when the dominant institutional logic was state- or collective-owned enterprises that fulfilled both production and social welfare functions, an institutional arrangement later known as the work-unit system. As described by Lu (1989, p. 71), "What people called a 'work unit' could be every social organization that they worked in—a factory, a store, a school, a hospital, a research institution, a cultural group, a governmental agency, and so on." The then SOEs included some key attributes of modern corporations, such as hierarchical division of labor and efficiency targets, but they also shouldered social responsibilities such as social welfare. In a sense, a work unit resembled a community that housed, nurtured, and educated its employees and their families. To some extent, previous SOEs were a combination of the Western modern corporate organizational form and an urban community.

Welfare distribution within a work unit was related to the administrative level, political identity, length of work, education attainment, and so on (Li and Li 1999), but some universal welfare existed. "Once one entered a state-owned work unit, one automatically enjoyed a life-long, full-package security protection, including wage, welfare, and insurance. ... To internalize service organizations (dining halls, shower rooms, stores, barber shops, schools, hospitals, cinemas, etc.) into a work unit, and have their financial balance integrated into the work unit's budget, is essentially to provide services to members of the work unit in the form of social welfare" (Lu 1989, pp. 74–76). Generally speaking, organizational welfare included (a) subsidies to labor and daily life within in the organization, such as cooling and heating fees, healthcare, and job security, which were sometimes extended to employees' families; (b) distribution of scare goods at that time such as grain, oil, vegetables, soaps, and working clothes; (c) welfare institutions such as canteens, clinics, childcare, and affiliated elementary and junior high schools. Traditional work- and routine-related family life and social services were thereby all transformed into the work unit system (Tan 1991). Given the limited space, our paper focuses on two types of organizational welfare: the distribution of subsidies and tangible goods (welfare investment per capita), and internal welfare institutions.

Economists have repeatedly taken on the policy burden issue of SOEs (Lin et al. 1995; Lin et al. 1997). They categorize policy burdens into unnecessary social burdens and necessary strategic burdens. The former consist of SOEs' pension and social welfare, while the latter include primary industries featuring large and midsized SOEs. To reduce social burdens, Lin (2006) suggests retirees be insured in the social security system. From an imprinting perspective, enterprises likely inherit these policy burdens, which hold steadfast even though policy factors weaken. International research on Chinese corporations commonly holds that Chinese firms could achieve the goal of building a modern corporation by emulating the organizational structure and management practices of Western firms (Guthrie 2001). This echoes a new institutionalist view that regards external factors as a primary source of organizational changes.

Most SOEs were founded earlier than enterprises of other ownership forms. Differences between ownership structures reflect not only management style variations but also the historical contexts of their founding periods. Research on work units (Walder 1986; Lu 1989; Tan 1991; Li 1993; Li et al. 1996; Li 2002; Sun 2004) documents how prior to the comprehensive restructuring in the early 1990s SOEs offered wages that could barely satisfy basic needs, but at the same time provided various resources like labor protection, living subsidies, and affiliated institutions. In contrast, after the market reform, SOEs started to gradually offer multiple financial and cash incentives and benefits.

Based on SOEs' complicated historical experiences, especially that of transitioning among multiple managerial logics including social enterprises, overmarketization, and CSR, we propose the following hypotheses.

Direct imprints

As the longest-standing organizational form under the socialist planning economy, the work-unit system is likely to leave behind unchangeable imprints. Although most SOEs adopted modern corporation management principles after the deep marketization in the 1990s, the lasting influence of the work-unit system cannot be ignored. This influence may be especially salient regarding organizational level welfare provision. Since many Chinese firms, especially SOEs, experienced the volatile institutional transformation, we take founding ownership as our analytical starting point. Using questions in the enterprise survey as benchmarks, we chose two typical welfare provisions to test our hypotheses.

> Hypothesis 1: ceteris paribus, firms that started as SOEs will provide more organizational benefits than those that started as non-SOEs.

Imprint persistence

The extant organizational imprinting literature mainly discusses sustaining imprints under relatively stable institutional environments. Even Stinchcombe (1965) himself argues that a relatively stable environment does not entail survival competition. However, we are interested in testing whether organizational imprints can be sustained through volatile changes.

Firms founded as SOEs may provide more welfare benefits, an outcome of the influence of the early institutional environment. Organizational restructuring can be a critical juncture that weakened SOEs' socialist imprints, but it is also a natural experimental scenario for testing imprint persistence. If the imprinting effect is indeed strong enough, even institutional transformations should not entirely wipe out the founding imprints. Even though some governments have chosen to concentrate on large-scale SOEs and focus less on smaller ones, the smaller or restructured SOEs should still retain important imprints from their founding years, and therefore show similarities in welfare practices with the larger SOEs or those that have not been restructured.

Hypothesis 2: even after restructuring, firms founded as SOEs do not significantly change their welfare provision.

Indirect imprints

As stated above, we distinguish between two types of organizational imprints: direct and indirect. Direct imprints stem from the temporal context at the founding period. The number of SOEs exploded in the 1950s—the beginning of the socialist economy—and that historical context has had a profound effect on SOEs. This founding imprint influences not only the SOEs established at that time but also SOEs founded later. The latter are expected to emulate the former to minimize uncertainty and increase legitimacy, thereby preserving the imprint of generous welfare provision. Apart from mimicking, organizational learning, institutional legitimacy, and expectations or demands from stakeholders could all lead to isomorphism among firms with the same organizational identity (e.g., SOEs), which are irrelevant to their founding years (Albert and Whetten 1985; Whetten 2006). We call this intergenerational imprinting "indirect imprints." If a mechanism exists for indirect imprints to affect SOEs' welfare practices, we should observe little correlation between an SOE's welfare practices and its age (or founding period). We term the rather-stable period between an SOE's founding and its restructuring an "imprint duration."

Hypothesis 3: an SOE's organizational welfare provision has no relationship to its imprint duration.

Imprint decay

If hypothesis 3 is supported, we can reasonably infer that restructuring cannot bring immediate changes in welfare provision because of SOEs' strong organizational imprints. However, this does not mean that restructuring will not bring changes in welfare practices. Organizational scholars (Tolbert and Zucker 1983) have found that institutional changes in terms of adopting novel organizational practices take place stage—by stage. Earlier adopters usually initiate changes because of a rational choice to become more efficient, but numerous later adopters are more sensitive to institutional pressures such as government regulations or consumer boycotts. During the gradual process of restructuring, the driving force at the later stage is often a concern about legitimacy instead of a rational expectation. Some scholars also point to the importance of organizational learning. Influenced by interorganizational imitation and intraorganizational learning, earlier imprints are more likely to be gradually picked up (Sullivan et al.

2014). This alludes to the possibility that most SOEs, under the pressure or restructuring, will choose a gradual transformation over an immediate switch. The further along an organization is in the restructuring process, the more it gets in touch with new ways of thinking and new ideologies of managing, and the more likely that it moves away from pre-restructuring imprints. As such, the time between an SOE's restructuring to the present can influence its current organizational welfare provision. We call the time between an SOE's restructuring and the time of the survey (2006) its "restructuring duration."

Hypothesis 4: an SOE's organizational welfare provision is negatively correlated with its restructuring duration.

Among the four hypotheses, hypothesis 1 considers the full sample, comparing enterprises that started as SOEs to those that started with other ownerships. Hypothesis 2 uses the subsample of enterprises that started as SOEs to analyze the limited influence of restructuring on organizational imprinting, comparing restructured SOEs and those that have not been restructured. Hypothesis 3 considers the subsample of restructured SOEs, and tests the effects of two preserving mechanisms of organizational imprints—direct and indirect imprints—and whether imprint duration has a correlation with the imprinting effect. Hypothesis 4 also uses the subsample of restructured SOEs, but focuses on the process by which imprints fade—SOEs' founding imprints are maintained before restructuring, but after restructuring, their imprints have a negative association with time span.

In addition to the imprinting effect, corporate welfare provision may also be enhanced by higher profit (Margolis and Walsh 2001). The current institutional environment can also push organizations to provide more welfare (Campbell 2007). If the imprinting effect on welfare practices still holds after controlling for the current economic and institutional factors, we can argue that founding imprints do have a significant influence on SOEs that cannot be neglected in policy and management practices.

Research design

Data and methods

This study uses data from the Industrial Enterprise Survey 2006 from the Data Center of Peking University's National School of Development. The survey was jointly conducted by Peking University's China Center of Economic Research and the National Bureau of Statistics, and covers a wide range of aspects ranging from business management to social responsibility. It also includes a good number of state-owned, private, and joint venture enterprises and is representative to this extent. In the survey, department heads of each firm provided responses regarding financial performance, management practices, labor protection, environmental protection, other social responsibility practices, and so on. The survey was completed in 2006, and the authors supplemented information on founding environments through coding firms' documents, websites, and telephone interviews. The new information includes the firm's founding year and founding ownership, CEOs' SOE-related work experience, as well as case studies of several typical firms in the survey.

The survey was conducted in 12 cities—Changchun, Dandong, Chifeng, Beijing, Shijiazhuang, Xi'an, Zibo, Chongqing, Shiyan, Wujiang, Huangzhou, and Shunde, chosen based on geographical and economic representativeness. Firms with an annual revenue of more than five million RMB (or US$ 724,000) were randomly drawn from these cities. This cutoff point was chosen simply because at that time the National Bureau of Statistics only included firms with an annual revenue of over five million in its dataset. The companies were asked to provide data from between 2000 and 2005, but the most comprehensive information focused on 2004 and 2005. As of 2006, among 1037 companies 11% were SOEs, 21% were joint ventures, and the remaining 68% were private firms. We find that many SOEs had become privatized through restructuring. In terms of founding ownership, 23% were state owned, 22% were joint or foreign owned, and 55% were private firms.

Dependent variables and statistical models

The welfare practices of Chinese SOEs include multiple aspects and, as stated before, are reflected mainly through the unique organizational model of the work-unit system. There are two basic types: financial investment in welfare and organizational structures dedicated to welfare provision.

Financial investments consist of money allocated to employees' labor protection and living subsidies, as well as subsidized goods. Organizational structure includes a wider range of institutions. We chose several departments that are most relevant to employees' working and living conditions. The survey included each company's total investment in welfare provision in 2005, which we treated as a continuous variable. We divided this number by the company's number of total employees to obtain a value for per-capita welfare investment.

The survey also had questions related to organizational structures involved in welfare provision. We chose three to construct three dummy variables: (1) whether it had an employee dining hall, (2) whether it had a clinic, and (3) whether it had a childcare facility. We chose dining, healthcare, and childcare facilities over a wide range of other departments that SOEs used to have, mainly because these three services usually entail more investment and continuous maintenance costs and therefore indicate a serious consideration of employees' benefits.

Our unit of analysis was the firm. Firms were drawn from 12 cities, and therefore the data had a multilayered hierarchical structure in which firms are nested in cities. Considering the effect of city characteristics on firm behavior (Lounsbury 2007), we applied both the hierarchical linear model (HLM) and the hierarchical logistic model. Both models belong to the broader category of hierarchical generalized linear models (HGLM), which often have more meticulous coefficient estimations than fixed effect models (Raudenbush and Bryk 2003). We formulated the HLM[1] as follows:

Enterprise unit level:

$$Y_{ij} = \beta_{oj} + \beta_{ij} X_{ij} + r_{ij}, \tag{1}$$

City unit level:

[1]The HGLM has the same logic as the HLM, and therefore we do not list its formulation here.

$$\beta_{\mathbf{o}j} = \gamma_{oo} + u_{\mathbf{o}j}; \;\; \beta_{ij} = \gamma_{\mathbf{io}} + u_{ij}, \tag{2}$$

Combined multilevel model:

$$Y_{ij} = \left(\gamma_{0\mathbf{o}} + \gamma_{\mathbf{io}} X_{ij}\right) + \left(u_{oj} + u_{ij} X_{ij} + r_{ij}\right), \tag{3}$$

Equation (1) represents the influence of a series of predictors, X_{ij}, on the welfare input of a firm. Equation (2) represents the different intercept term u_{ij} and slope terms β_{ij} in (1) for different cities. Because we did not consider city-level variables, we included the random error terms $u_{\mathbf{o}j}$ and u_{ij} The first half of Eq. (3) denotes the model's fixed effect, whereas the latter half represents the model's random effect.

Independent variables

Considering a possible lagged effect, we used the previous year's value for each explanatory variable, that is, we explain changes in the dependent variable's 2005 value by changes in the independent variables' 2004 values.

Ownership structures and SOE experience

Our main explanatory variable was a firm's founding ownership, which includes state, private, and jointly owned. This information was not collected in the original survey but supplemented by the authors. Most SOEs were founded in the 1950s and 1960s, while private and joint-venture firms have mainly been established since the 1980s.

In addition to organizational imprints, firm leaders' work and education experiences can also influence its behavior, leaving individual imprints on the organization. We collected the background information on individuals who were leaders of each firm in 2004—CEOs or executive board members. We used a dummy variable that takes the value of 1 if the leader worked in an SOE, and 0 if otherwise.

SOE imprints and restructuring

Another key explanatory variable for our last three hypotheses is whether a SOE had been restructured. For those that have become private or jointly owned, an explanatory variable related to restructuring is imprint duration—the time span between an SOE's founding and its restructuring. This duration not only measures the stability of a firm's management model but also documents a unique SOE founding imprint—the implanted social welfare institution inside the SOE. Privately and jointly owned companies do not have such an imprint. Another relevant variable is what we call the restructuring duration, that is, the time between the start of an SOE's restructuring and the time of the survey (2006). This study discusses both the mechanisms by which organizational imprints emerge and are sustained, but also those by which imprints change. For instance, we expect to see imprints change with time only after a SOE restructures, but no correlation between the two before the restructuring.

Profitability

Normally, a more profitable firm can afford a higher welfare cost, so we controlled the log of a firm's profitability. Moreover, considering organizational welfare as a supplement of wage, wage can also affect the organization's welfare investment. Therefore, we also controlled for average wage.

Institutional environments

According to the new institutionalism, a number of current institutional factors could influence an organization's welfare provision. These can include customers' demand for employee benefit provision, the frequency of government regulation, education level of leadership (we used the percentage of leaders with college education or above), and the CEO's participation in policy making (we looked at whether the CEO was a representative in the National People's Congress, a committee member of the People's Political Consultative Conference, or a consultant to the government). If after accounting for the effect of these institutional elements on a firm's welfare behavior we still observed a significant effect of organizational imprints, we could be more confident that imprints do mold current management.

Empirical results

Descriptive statistics

We used the log of employee size and profit to keep variables on a comparable magnitude. Note that coefficients of logged independent variables reflect the effect of their rate of change on the dependent variable (Studenmund 2001). Table 1 presents the descriptive statistics of all variables.

The effect of direct imprints

To test hypothesis 1, we ran HGLM regressions on all firms. Table 2 reports the results. Firms that started as SOEs have shouldered more social responsibility from the

Table 1 Descriptive statistics of variables

Variables	Observations	Mean	Standard deviation	Minimum value	Maximum value
Per-capita welfare investment (10,000 RMB)	1037	2.5	4.12	0	62.54
Dining hall	1026	0.83	0.3	0	1
Clinic	1030	0.24	0.43	0	1
Childcare	1027	0.06	0.24	0	1
Started as SOE	1037	0.23	0.42	0	1
Restructured	237	0.59	0.49	0	1
Started as private firm	1037	0.55	0.5	0	1
Started as joint venture	1037	0.22	0.42	0	1
Log of profit (in 10,000 RMB)	1037	11.41	0.44	0	14.78
Average wage (RMB)	1023	1281.52	642.22	400	8200
Log of number of employees	1037	5.39	1.3	0.69	11.37
Imprint duration (year)	137	21.23	16.24	0	50
Restructuring duration (year)	137	6.2	0.36	1	18
Customers' demand for labor protection	1037	0.33	0.47	0	1
Annual frequency of government inspection	932	2.36	0.337	0	36
CEO's political participation	1023	0.38	0.48	0	1
CEO's education	1026	2.39	1.28	1	4
CEO'S SOE experience	1037	0.36	0.48	0	1

Table 2 Effect of ownership form at founding on organizational welfare practices

Independent variables	Model 1	Model 2	Model 3	Model 4
	Per-capita welfare investment	Dining hall	Clinic	Childcare facility
Started as private firm	− 1.155** (.557)	− 1.442* (.788)	− .828** (.366)	− .362* (1.016)
Started as joint venture	− .745* (.382)	.282 (.292)	− .456* (.259)	− 2.015*** (.664)
Log of profit (in 10,000 RMB)	0.174 (.278)	− .040 (.203)	.039 (.164)	.012 (.181)
Average wage	.001*** (.000)	.000 (.000)	− .000* (.000)	.000 (.000)
Log of number of employees	.226** (.109)	.168* (.088)	.803*** (.089)	.767*** (.158)
Customers' demand for labor protection	.213 (.254)	.617*** (.218)	.215 (.187)	− .100 (.384)
Annual frequency of government inspection	.029 (.036)	.042 (.041)	.024 (.024)	.063* (.036)
CEO's political participation	− .258 (.259)	.033 (.205)	.047 (.186)	.165 (.375)
CEO's education	.089 (.099)	.006 (.078)	.107 (.073)	− .032 (.153)
CEO's SOE experience	− 1.241** (.518)	− 2.014*** (0781)	− .060 (.335)	1.865* (1.004)
Constant	− .897 (3.173)	2.385 (2.440)	− 5.599*** (1.910)	− 9.431*** (2.489)
LR test	1.66*	2.38***	0.05	.355**

beginning, and provided more organizational welfare. The dependent variable in model 1 is per-capita welfare investment, with firms founded as SOEs being the reference group. The result supports our hypothesis since firms that began as privately and jointly owned provided lower welfare investment than firms founded as SOEs. We did not see a significant effect of either profitability or average wage, indicating that organizational welfare is not purely an economically rational action of compensating for low wages. Firm size had a positive effect, indicating that it is more difficult for larger firms to eliminate organizational imprints. The negative effect of leaders' SOE-related experience on founding imprints is in line with the Chinese reality. In a traditional SOE, executive managers often have little autonomy, and therefore tend to be critical of the SOE welfare system. When they leave SOEs and join a private or a joint-venture firm, they are more likely to adopt the management ideology that prioritizes efficiency.

Models 2, 3, and 4 test the welfare institutions (e.g., organizational structures) inside an enterprise, using the existence of dining halls, clinics, and childcare facilities as the dependent variable respectively. The significant coefficients for privately and jointly owned firms show that firms that started as SOEs are more willing to establish welfare institutions. The results from all four models lend support to hypothesis 1, which maintains that, ceteris paribus, firms founded as SOEs provide more organizational benefits than other firms.

The effect of imprint persistence

Models in Table 3 use the subsample of firms that started as SOEs to test whether organizational imprints survived restructuring. Comparing SOEs that had been restructured to those without such experience, we did not observe a significant effect of the restructuring variable in any models in Table 3. Due to the lack of longitudinal panel data, we cannot compare the welfare practices of an SOE before and after restructuring. This may

Table 3 Influence of restructuring on organizational welfare practices

Independent variables	Model 5 Per-capita welfare investment	Model 6 Dining hall	Model 7 Clinic	Model 8 Childcare facility
Restructured	.224 (.584)	.365 (.422)	.115 (.358)	− .298 (.489)
Log of profit (in 10,000 RMB)	− .011 (.329)	− .093 (.211)	− .121 (.265)	.042 (.187)
Average wage	.002*** (.000)	.000 (.000)	− .000 (.000)	− .000 (.000)
Log of number of employees	.253 (.215)	.002 (.158)	.816*** (.160)	.929*** (.218)
Customers' demand for labor protection	.621 (.640)	1.124** (.496)	− .731* (.401)	− .916 (.577)
Annual frequency of government inspection	− .096 (.141)	.173 (.155)	− .019 (.085)	− .063 (.129)
CEO's political participation	− .174 (.589)	− .002 (.408)	.239 (.356)	.026 (.523)
CEO's education	− .408 (.259)	− .029 (.181)	.217 (.153)	− .024 (.225)
Constant	− .785 (.379)	1.564 (2.525)	− .3981 (3.063)	− 7.859*** (2.426)
LR test	0.01	11.03***	0.07	2.65**

introduce a potential bias, that is, restructured SOEs may have already changed their organizational welfare practices. However, it is unlikely that the restructured SOEs already provided less organizational welfare than other SOEs even before their restructuring, since previous studies have found that SOEs with better conditions in most aspects were in fact more likely to be restructured (Song and Yao 2005). In general, the results reported in Table 3 support hypothesis 2—that SOEs with restructuring experience were not significantly different in terms of organizational welfare provision from those without such experience.

The effect of indirect imprints

For this part, we used the subsample of SOEs that had been restructured. In Table 4, imprint duration was calculated by subtracting an SOE's founding year from the year it began restructuring. This variable is insignificant throughout all four models in Table 4, which lends support to hypothesis 3. SOEs founded during the early stage of socialist industrial development (the 1950s) were left the founding imprints of that historical context, and SOEs established after this era were much more likely to have imitated them because of the shared organizational identity. Moreover, organizational learning, institutional legitimacy, and demands from stakeholders can all push newer SOEs to learn and inherit older SOEs' founding imprints, fostering an indirect imprinting effect. The combined force of direct and indirect imprinting produces a certain level of isomorphism in the welfare practices among SOEs, even though they were founded in different time periods.

The effect of imprint decay

The models in Table 5 use the same subsample of the restructured SOEs. Restructuring duration was calculated by subtracting the year an SOE started restructuring from 2006, the year of the survey. In model 13, the restructuring duration has a significant and negative coefficient, which indicates that the longer the time since its restructuring, the less a SOE invests in per-capita welfare. After the institutional changes from a planned economy to a market economy, SOEs' founding imprints do not change

Table 4 Influence of imprint duration on organizational welfare practices

Independent variables	Model 9	Model 10	Model 11	Model 12
	Per-capita welfare investment	Dining hall	Clinic	Childcare facility
Imprint duration (year)	– .061 (.037)	– .010 (.023)	.028 (.018)	.094 (.050)
Log of profit (in 10,000 RMB)	– 2.310 (2.358)	4.445 (3.045)	.789 (1.568)	– .1568 (1.684)
Average wage	.003*** (.001)	.000 (.001)	– .001 (.001)	– .001 (.001)
Log of number of employees	1.158*** (.518)	– .439 (.372)	.913*** (.303)	1.114* (.597)
Customers' demand for labor protection	.341 (1.195)	.975 (.798)	.233 (.596)	.416 (1.276)
Annual frequency of inspection	– .189 (.246)	.155 (.244)	– .254 (.297)	– 1.015 (.730)
CEO's political participation	.671 (1.067)	.563 (.681)	– .671 (.553)	– .132 (1.272)
CEO's education	– 1.1013** (.504)	.375 (.333)	.042 (.240)	.332 (.592)
Constant	21.595 (25.365)	– 48.088 (3.3799)	– 14.089 (17.120)	7.209 (17.722)
LR test	3.00**	4.80**	0.01	0.03

immediately but weaken over time. Regarding welfare institutions, restructuring duration only has a significant and negative effect in model 15, meaning clinics or attached hospitals were less likely to survive restructuring as time goes on. The results in Table 5 provide only partial support to hypothesis 4, showing an unequal change in welfare imprints after SOEs restructure. Financial investment in welfare is much easier to change than welfare institutions, but among institutions high-skilled departments that have a higher level of marketization—clinics and firm-affiliated hospitals—were easier to be peeled off from SOEs.

Table 5 Influence of restructure duration on organizational welfare practices

Independent variable	Model 13	Model 14	Model 15	Model 16
	Per-capita welfare investment	Dining hall	Clinic	Childcare facility
Restructure duration (year)	– .259** (.126)	.144 (.104)	– .109* (.066)	– .153 (.111)
Log of profit (in 10,000 RMB)	– 2.608 (2.216)	4.201 (2.911)	.254 (1.497)	– 1.350 (1.419)
Average wage	.004*** (.001)	.000 (.001)	– .001 (.000)	– .001 (.000)
Log of number of employees	.659 (.433)	–.570* (.326)	1.122*** (.281)	1.691*** (.539)
Customers' demand for labor protection	1.113 (.991)	1.175 (.717)	– .098 (.533)	– .421 (.888)
Annual frequency of government inspection	– .069 (.234)	.242 (.298)	– .177 (.251)	– 1.142* (.642)
CEO's political participation	– .013 (.946)	.478 (.633)	– .301 (.510)	– .235 (1.008)
CEO's education	– .923** (.429)	.370 (.304)	.097 (.219)	.685 (.488)
Constant	24.661 (2.3818)	– 45.618 (32.251)	– 9.572 (16.447)	4.344 (14.598)
LR test	3.00**	6.54***	0.01	0.01

$N = 137$
Standard deviations are in parentheses
LR test compares with nonlayered regression
Restructured SOEs are the reference group
$^*p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$

Robustness checks

Based on the type of dependent variables, we chose HGLM for regression analyses. In testing multicollinearity, the variable inflation factor (VIFs) of all independent variables were smaller than three and much lower than the threshold for multicollinearity, which is five.

As for common methods variance (CMV), we have two reasons to believe it does not affect our analyses. First, different sections of the survey were answered by different managers of a firm, and we chose variables from different sections whenever we could. Additionally, one of the dependent variables, welfare investment, comes from a firm's official report instead of the survey. Second, we applied factor analysis to all variables in the full model and found that they do not form one factor. This provides technical evidence that CMV is not a problem for this study (Podsakoff et al. 2003).

This study used several dependent variables that are qualitatively different from each other, and the logistic regression models for the three separate welfare institutions show generally similar results. We take this as evidence of robustness. In summary, the empirical results from our statistical analyses fully support hypotheses 1, 2, and 3, and partially support hypothesis 4.

Discussion and conclusion

In their more than 60 years of practice, SOEs have produced valuable experience and abundant historical materials. Systematic studies on their founding, restructuring, and transformation can help theorize SOE experiences and offer insights into their future practices. Both the new institutionalism in organization studies and economic analysis tend to emphasize the influence of external environments, but presume the organizations themselves to be an empty box that can change along with institutional and market patterns (Meyer and Rowan 1977). Our study points out the limitation of this presumption. When we consider the effect of organizational imprints on an enterprise's current welfare investment, the effects of both profitability and external institution become weaker. These findings remind us that firms are entities with their own history (founding imprints and imprints at later temporal stages), and bounded rationality (Cyert and March 1992).

In addition to founding ownership, we also find organizational identity to be a key factor in determining organizational welfare practices. SOEs' welfare practices bear profound organizational imprints that persist to date through several mechanisms. This study therefore contributes to the organizational imprinting theory from three aspects. First, previous empirical research on organizational imprinting concentrates on either the social-historical level (Marquis 2003; Marquis and Huang 2010) or the individual level (Baron et al. 1999; Burton and Beckman 2007). By analyzing ownership, our study focuses on the organizational-level investigation by discussing the inheritance and transformation of founding imprints, further illustrating that organizational identity can be the medium of organizational imprints.

Second, the existing research mainly focuses on firms in developed Western countries, which have a more stable institutional environment for founding imprints to be reproduced. In a rapidly developing society like China, we find founding imprints persist despite the drastically changing external environment. Third, most of the previous research discusses only the emergence and reproduction of organizational imprints rather than the complete process of their production, persistence, change, and potential decay. Using Chinese SOEs' unique experience, we systematically demonstrate the development of organizational imprints at each stage, which can help integrate and deepen the various branches of research on organizational imprinting.

Our research also has managerial and policy implications. In recent years, the idea of CSR has gained momentum in the public, and organizational survival depends not only on efficiency but also on legitimacy. SOEs may not be as efficient as non-SOEs (Liu 2000; Yao 1998), but in terms of CSR, especially with the organizational welfare provision that is the focus of our study, SOEs are not disadvantaged. After nearly 60 years of operation in China, the work-unit system left behind imprints that are hard to change, and some of them may be beneficial to corporations' current development. For instance, the US firm Motorola emulated the work unit system and built a "Motorola Village" for its employees in Tianjin in 1995, which includes such facilities as stores, kindergartens, and family service centers (Zhou 2010). Recently, more private companies have introduced dining halls, dormitories, and childcare facilities. In summary, employee benefits cannot be seen simply as a policy burden but as a management consideration that has universal value. The SOEs' tradition of attending to employee welfare can be summarized as a unique management model that originated in China and expanded to firms of other ownership structures.

Admittedly, the welfare system of SOEs is by no means ideal. First, SOEs' previous comprehensive welfare package was a trade-off for low wages, which is also related to the underdeveloped social welfare systems before restructuring. Second, we must acknowledge that employees who are laid off during restructuring are systematically excluded from this kind of organizational welfare (Lv 2006). Our interviews also show that even for employees who remain in SOEs, their actual welfare has declined. In addition, internal social responsibilities such as welfare departments are gradually being removed. Despite this, some employees still expressed confidence in their firm's continuous provision of such benefits. For example, one employee noted, "It cannot be changed by anyone overnight. In spite of the restructuring experience and the establishment of the stock-holding system, the welfare practice is still the same."

This study has several limitations. First, limited by the data, we could only conduct a comparison between the welfare practices of different types of enterprises as of 2006, but not a before-after comparison of SOEs. In this regard, we cannot formulate the development and transformation process of any particular SOE in terms of its organizational welfare provision. Such analysis should be carried out whenever historical data are available. Second, the data we use is self-reported. Although different variables were reported by different managers, there may be a gap between actual circumstances and self-reported information. Future research should use a different data collection method to address this issue. Third, we have not included a systematic analysis of the distribution of welfare among employees. For example, how do SOEs allocate welfare within themselves? Do hierarchies within and outside of the organization have a significant influence? Due to the lack of data, we are not able to address these important questions. Finally, limited by space, we have not discussed possible negative influences of the work-unit system's imprints. We expect more empirical research will be conducted to address these limitations.

Abbreviations
CMV: Common methods variance; CSR: Corporate social responsibility; HGLM: Hierarchical generalized linear models; HLM: Hierarchical linear model; SOE: State-owned enterprise; VIFs: Variable inflation factors

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We have included an "Availability of data and materials" section in our article detailing where the data could be found and how we constructed our variables.
The data are not owned by the authors, but publically available via the National School of Development, Peking University.

Competing interests
The authors declare that they have no competing interests.

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