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**Developmental Challenges**  
**to Small and Medium Scale Industrial Enterprises**  
**in the People's Republic of China:**  
**Results of a 2001 National Sample Survey**

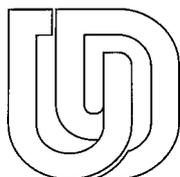
**Carsten Herrmann-Pillath, Li Kai and Pan Jiancheng**

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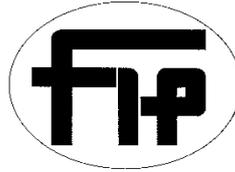
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**Developmental Challenges to Small and Medium Scale Industrial Enterprises in  
the People's Republic of China:  
Results of a 2001 National Sample Survey**

by

Carsten Herrmann-Pillath<sup>1</sup>, Li Kai<sup>2</sup> and Pan Jiancheng<sup>3</sup>

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## **Keywords/Schlagwörter**

Kleine und mittlere Unternehmen in China/Small and medium scale enterprises in China, Qualitative Erhebungen in der Wirtschaft/qualitative business surveys, KMU-Fördermaßnahmen/supporting institutions for SME

## **Zusammenfassung**

The report summarizes the main results of the SME research that has been conducted in the framework of the “Sino-German Cooperation Program in Empirical Economic Research”, with the ifo Institute, Germany as the core unit to provide methodological support. The program focused on business cycle analysis and structural analysis of SME development in China. The SME survey was based on a representative sample with a two-stage sampling procedure on a national scale (1600 enterprises), and consisted of four special surveys on finance, supply and marketing, human resources and innovation. Main insights are the clear diagnosis of financial repression and discrimination against SME and a very serious lack of technical expertise in Chinese SME.

## **Bezug/ Download**

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## 1. The problem: understanding SME development in complex environments of transition

Small and Medium Scale Enterprises (SME) are receiving a lot of attention all over the world. Depending on the general political mood and on the prevalence of different theoretical positions, SME are either regarded as a problem or a high potential. Both views, however, agree that SME play an important role for growth and employment. According to the first view, SME face particular difficulties because of their limited size, which is especially salient in innovation and finance, where small size implies less access to resources and knowledge.<sup>1</sup> The second view emphasizes flexibility and entrepreneurial dynamics, and hence, advantages in the exploitation of market opportunities.<sup>2</sup> Both views are not mutually excluding, so that the resulting policy conclusions depend on the mix of assumptions. In general, even in the most developed competitive market economies there is a widespread use of special support schemes for SME, which are based on the diagnosis of certain market failures in SME development. However, whereas the first, rather pessimistic view leads to the development of special supporting organizations for SME (like government-sponsored R&D facilities or educational institutions), the second optimistic stance favours policies lowering barriers to market entry and fostering business upstarts.<sup>3</sup>

The topic deserves particular attention in the case of transition economies like China. The SME problematique is here linked with the general challenge of systemic change and the emergence of a new system of property rights, namely privatisation. SME development is a crucial element of “privatisation from below” via the unleashing of the entrepreneurial energy of individuals. Accordingly, privatisation might be

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<sup>1</sup> For example, until recently SME policies in Japan were based on the assumption of the existence of a „chūshō kigyō mondai“, a medium size enterprise problem, which is a term with a distinctively negative connotation, see Cornelia Storz, *Der mittelständische Unternehmer in Japan*, Schriftenreihe zur Ostasienforschung Band 7, (Baden-Baden: Nomos 1997), 15ff.

<sup>2</sup> This is the guiding principle, for example, of the enterprise support system in Germany, where medium-scale enterprises traditionally have been regarded as the backbone of the economy, see, for example, the official “Small Business Policy Homepage” of the Federal government ( [http://www.bmwi.de/Homepage/English%20pages/Small%20Business%20Policy/small\\_business\\_policy.jsp](http://www.bmwi.de/Homepage/English%20pages/Small%20Business%20Policy/small_business_policy.jsp), accessed September 12, 2002), and of a specialized policy bank ( <http://www.kfw.de/EN/Service/Onlinelibr23/ResultsofE74/SMEPromoti.jsp> ) accessed September 15, 2002)

<sup>3</sup> For a useful survey on SME-related policies, see the UN-ECE website ( <http://www.unece.org/indust/sme/ece-sme.htm> , accessed September 11, 2002) where a large collection of texts and links can be accessed, especially including policies of different countries.

hampered by just the same obstacles as of SME development in general, with a possible vicious circle that slow privatisation might also affect changes in the business environment which in turn slow private entrepreneurial activity even further. Such a mutual dependence may be particularly strong when the government does not pursue a clear policy agenda, hence causes a high degree of policy uncertainty.<sup>4</sup> Although in China there is still no political recognition of any sweeping change of the property rights regime, most observers agree that in fact China is undergoing a rapid privatisation after the 15<sup>th</sup> Party congress in 1997 and after the acknowledgement of private enterprise in the changes of the constitution of 1999. In the late Nineties, the State Economic and Trade Commission established a special department for SME related policies. In spite of these trends, at the same time large-scale state-owned enterprises continue to enjoy many privileges and are clearly an industrial policy priority. Only in 2002, with the promulgation of the SME support law, a clear shift of official emphasis can be diagnosed.<sup>5</sup> This is politically supported by the “three representations doctrine” developed by President and Party chief Jiang Zemin which requires the party to represent and promote “advanced productivity,” “advanced culture” and the “fundamental interests” of China’s broad masses. The latter includes private businessmen and SME entrepreneurs, which have been invited by Jiang Zemin to join the Communist Party.

That being stated, another conceptual issue needs to be emphasized. When planned economies undergo the transition to the market, this does not only imply that there is increasing free space for the growth of the SME sector because of the retreat of the government from the economy, but at the same time there might arise a new need for government intervention in favour of SME. That is to say, transition of the economy

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In the international context, there are different public statements on best practice and principles, as the OECD Bologna declaration, also available via that website.

<sup>4</sup> A notorious case is Russia, where criminalization and a poor legal environment seriously blocked SME-development, with large regional differences, however. Compare the TACIS Report SMERUS 9803, 2000, “Exploring bureaucratic barriers” ( [http://docs.rcsme.ru/eng/RC/Analisis\\_Adm\\_Barrier/Admbar\\_eng.doc](http://docs.rcsme.ru/eng/RC/Analisis_Adm_Barrier/Admbar_eng.doc) , accessed September 12, 2002), and “Recent SME trends. Analytical report prepared by the Russian SME Resource Centre for OECD/FEED Forum in St. Petersburg in June 2001” ( <http://docs.rcsme.ru/eng/RC/RC-publications/oecd-final-2001.doc> , accessed September 15, 2002) and the special issue “Maloe y srednye predprinimatel'stvo” (Small and medium scale enterprises), *Politekonom* (1998, No. 1).

<sup>5</sup> The State Economic and Trade Commission has set up a special website containing relevant information and legal documents, see ( <http://www.chinasmb.gov.cn/index.htm> , accessed September 11, 2002). On the recent trends in Chinese industrial policies the Planning Commission’s website is useful, ( <http://www.sdpc.gov.cn> , accessed September 22, 2002). For a related Chinese view, see Zhou Tianyong, “Fazhan zhongxiao qiye: weilai shehui wending zui

and transition of government institutions have to play hand in hand in order to secure a sound and smooth development. Otherwise, marketization might not lead to the expected results. But then there is the imminent danger that a continuation of government intervention in new clothes might simply prolong traditional ways of policy-making, thereby eventually blocking the systemic change that is expected to be propelled by SME development.

As we see, economic transition entails some difficult issues in policy design, which lend special importance to relevant empirical results. In this paper, we wish to reach a better understanding of the Chinese case by presenting the results of the first representative national sample of SME in China which has been prepared by a Sino-German research consortium. For the first time, we will try to understand the structural and developmental aspects of this class of enterprises which are linked exclusively to size, whereas the existing literature so far emphasizes ownership (“private enterprise”) and location (“township and village enterprises”).<sup>6</sup>

## **2. Limitations of existing data resources on Chinese SME and outline of the new survey**

### *2.1 Conceptual issues in the official economic data*

In China, the category of SME has come to the fore only in the recent years, reflecting important changes in the policies of transition and a general trend of structural convergence of classes of enterprises according to other criteria than size. This evolutionary process poses some serious difficulties with getting the respective

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zhongda de zhanlue/The development of SME: the most important strategy for social stability in the future”, *Zhongguo gongye jingji/ China Industry Economy* (No.7, 2000): 5-11.

6 Related recent survey studies focusing on private enterprises are International Financial Corporation, *China's Emerging Private Enterprises: Prospects for the New Century* ( [www.worldbank.org.cn/English/IFC/pss.shtml](http://www.worldbank.org.cn/English/IFC/pss.shtml) accessed on September 22, 2002 ), Ross Garnaut et al., *Private Enterprise in China* (Canberra: Asia Pacific Press, 2001) and Thomas Heberer, *Unternehmer als strategische Gruppen: Zur sozialen und politischen Funktion von Unternehmern in China und Vietnam* (Hamburg: Institut für Asienkunde, 2001). Township and village enterprises have been the object of several survey studies since the seminal World Bank publication, William Byrd/Lin Qingsong, *China's Rural Industry: Structure, Development and Reform* (New York: Oxford University Press, 1990). More recent survey studies are, amongst others, Tetsushi Sonobe (2001), *Productivity Effects of TVE Privatisation: The Case Study of Garment and Metal Casting Enterprises in the Great Yangtze River Region*, data of 158 enterprises from 53 counties in this region were collected. See: <http://www.nber.org/books/ease12/sonobe9-11-01.pdf>, accessed 20 September 2002. However, none of these studies attempts at constructing a national sample according to a well-defined statistical approach to representativeness.

statistical categories right. Basically speaking, this is related to the fact that in the past three other dimensions than size were dominating the classification procedure in official statistics: ownership, location and sector.

*Ownership:* The distinction between different kinds of ownership interferes with size, because in the past it was warranted that virtually all large-size enterprises were state-owned, with the categories of collectively and individually owned companies virtually identical to SME. With the rapid economic growth after Deng Xiaoping's "journey to the South" 1992 this simple rule of thumb increasingly distorts our picture because not only the aforementioned categories but also newly emerging ones like "enterprises with foreign capital" or "joint-stock companies" include enterprises of large size. Furthermore, even in the past the category of state-owned enterprises included a large number of state-owned SME mostly on low levels of administration (for example, county administration).<sup>7</sup> In official statistics all these categories have become even more blurred because there are sometimes entire categories missing (like "private" as compared to "individual"), categories are drawn differently across different statistics, and because of the transition to the new legal categories of "modern" enterprises, like shareholding companies.

*Location:* A similar rule of thumb applied to the category of location. The distinction between "Township and Village Enterprises" (TVE) attracted a lot of scholarly projects and policy efforts in the past and was almost identical with the set of "SME in the rural areas". Again, rapid structural changes in the Nineties led to an increasing share of non-SME enterprises in that subset. At the same time, the policies of "releasing the small and retaining the big" announced by the 15<sup>th</sup> Party Congress in 1997 led to the phenomenon that a growing number of state-owned SME in the urban areas was de-facto or even de jure privatised, so that a structural convergence took place with the TVE. In more recent times, the successful TVEs also adopt more sophisticated local strategies and change their sites and registration to urban areas. The aforementioned introduction of new legal forms also merges companies with different origin into one class, as for example in the case of "cooperative

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<sup>7</sup> The latest national industrial census (once in a decade) of 1995 shows that 50100 SOEs, 57% of the total, are under the administration of county level government, with an average number of employees of 225. The average employment numbers for the 4700 central government SOEs and the 33100 provincial and prefecture level SOEs are 2300 and 400 respectively. That means that the major share of the number of SOE is SME in nature. See "Quanbu gongye qiye zhuyao jingji zhibiao/Major economic indicators of all industrial enterprises", in *Zhonghua remin gongheguo 1995 nian disanci quanguo gongye pucha ziliao huibian/The data of the third*

shareholding companies” which may stem from TVE predominantly, but also emerge out of the small SOE sector.<sup>8</sup> On the other hand, the very category of TVE was only fixed as a legal form in 1997, when the “TVE law” have been promulgated that did not refer to size as a defining criterion but to the registration of the major shareholders (“rural”) or to ownership (“collective”).<sup>9</sup>

*Sector:* The final source of statistical problems results from the lopsided emphasis on industry in Chinese statistics which reflects the low value attached to services in the traditional socialist economic doctrine. In the past the Soviet model of national accounting did not include non-material-producer service sectors (example: culture, education, medical care, tourism, etc) into regular statistics, because they were regarded as non-productive. However, during economic transition, services development is the driving force of small enterprise development, mostly reflected in the category of “individual” in Chinese statistics. Also in this field, especially in the most developed metropolitan areas of China services are no longer the exclusive domain of petty capitalists but include rapidly growing companies, for example, in the IT sector. Yet compared with industrial statistics, service statistics is rather weak in Chinese official statistics. The National Bureau of Statistics is only responsible for the statistics of retail, wholesale, transportation and telecommunication, whereas the data of other services like foreign trade, FDI, tourism, hotel, finance, education, medical care, culture and recreation etc are collected by different government departments. Data of the enterprises below a certain size, or data from the private sector which are not under the administration of the related departments, are almost impossible to access.<sup>10</sup>

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national industrial census of the People’s Republic of China in 1995”, Zhongguo tongji chunbanshe/China Statistics Press, 1997: P2

8 Recently the Ministry of Agriculture, responsible for the administration of TVEs, launched an ambitious plan to support enterprise groups of TVE which will contribute to substantial increases of size, see *Zhonghua gongshang shibao*, June 4, 2002. One of the top ten news about TVE in 2001 is that Jili Group, a TVE in Zhejiang province, joined the auto manufacturing industry, which is normally considered in China an area for the large state owned and joint-venture companies, see *Jingji ribao*, January 18, 2002. Some TVE giants, like Chun Lan Co., have been moving their headquarters into Shanghai, remaining their manufacturing factories in the original rural areas.

9 On recent TVE development, see Zhongguo shehui kexueyuan nongcun fazhan yanjiusuo/Guojia tongji ju nongcun shehui jingji diaocha zongdui, bian, 2001-2002 nian: *Zhongguo nongcun jingji xingshi fenxi yu yuce, nongcun jingji lupishu/Analysis and forecast of the trends in the rural economy* (Beijing: Shehui kexue wenxian chubanshe, 2002): 82-97, and Katō Hiroyuki, ed: *Chūgoku nōson no shijōka to gōchin kigyō no henyō/Marketization of China’s rural economy and change of TVE*, Kobe University Research Report, (mimeo, 2001)

10 In every ten year NBS (on behalf of State Council) conducts a tertiary industry census. The first census was completed in 1994, covered all of economic sectors except agriculture, excavation and manufacturing industries, government organizations, military force also included The main

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## Explanations:

1. Source "China Statistical Yearbook, 2000", Zhongguo tongji nianjian, China Statistics Press, pp. 407-61, contains data of 1999. Data with underline are computed from the original data of the yearbook.
2. **Number of units:** Number of enterprises in the concerning category.
3. **%:** Percentage share to the total. *Italic number* represents percentage share to the sub-total. For example, in SOE category, 0.77 means 0.77% of the total enterprises are SOEs, 46.49 means 46.49% of SOEs are above CNY 5 million.
4. **GIOV:** gongye zongchanchi, Gross Industrial Output Value, refers to the total volume of industrial products sold or available for sale in value terms. Since replicate counting exists among different enterprises in the calculation of GIOV, it is getting less significant in economic analysis.
5. **VAI:** gongye zengjiazhi, Value Added of Industry, newly added value in industrial production and transferred value from fixed asset.
6. **Total:** Total value of the related indicators
7. **SOE:** guoyou ji guoyou konggu qiye, State-owned enterprises, here also including enterprises with controlling share hold by the state. No data across size are available in the yearbook, \* indicates data computed from Register Database of Industrial Enterprises in China (1999).
8. **Above CNY 5 million:** Industrial enterprises with annual sales above CNY 5 million. 5 million is a very important distinctive level in Chinese official statistics, most of the industrial statistics are completed and published in this category (See 21).
9. **Non-SOE:** feiguoyou qiye, Non-state-owned enterprises, mainly including the following 10- 13 groups.
10. **Collective-owned:** jiti qiye, Collective-owned enterprises, refers to enterprises whose properties are owned collectively. They are a special branch of firms boomed in the 80's, without clear property rights, whose ownership usually belong to preliminary local governments, mainly townships and villages (called Township and village enterprise, or TVE) and urban blocks. Data of group of Below CNY 5 Million are calculated by deducting value of Above CNY 5 million from the sub-total.
11. **Individual-owned:** geti qiye, Enterprises created and property owned by individuals, usually very small firms with the number of employees less than 8.
12. **Share holding:** gufenzhi qiye, Share-holding corporations Limited, with total registered capitals divided into equal shares and raised through issuing stocks. Calculations see 10.
13. **Foreign-funded:** waishang ji gang-aotaishang touzi qiye, enterprises funded by foreigners or by entrepreneurs or organizations from Hong Kong, Macao and Taiwan. Calculations see 10.
14. **TVE:** xiangzhen qiye, Township and Village Enterprises. See 10. TVE data in this table are from China Statistical Yearbook, 1999. NBS stopped publishing TVE statistics since 2000
15. **Large & Medium:** Large and medium sized enterprises, defined by the current criteria of size classification( By this criteria, there are only 7864 large companies in China, comparing with 7.93 million firms in total). It is reasonable to combine the large and medium sized enterprises into a large group as comparing with SME, since the number of large and medium sized enterprises with the current criterion is 22200, which is very close to 22700, the number of enterprises with annual sales greater than CNY 50 million, which is defined as large firms in this project.
16. **Large:** See 15
17. **Medium:** See 15

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survey indicators include number of units, employment, turnover, cost, profit, or income, expenditure for non profit institutes(See web site of NBS: ( [www.stats.gov.cn/was40/detail?record=13&channelid=4343&presearchword=%C6%D5%B2%E9](http://www.stats.gov.cn/was40/detail?record=13&channelid=4343&presearchword=%C6%D5%B2%E9) , accessed 21 September, 2002). NBS is now preparing the second tertiary census, which is to be completed in 2004.

**Table 1: Data on size-related properties of industrial enterprises in the “China Statistical Yearbook, 2000”<sup>1</sup>**

	number of units <sup>2</sup>	share of units, % <sup>3</sup>	GIOV <sup>4</sup>	share of GIOV, %	VAI <sup>5</sup>	share of VAI, %
<b>Total<sup>6</sup></b>	<b>7929.9</b>	<b>100.00</b>	<b>12611.1</b>	<b>100.00%</b>	<b>3497.5</b>	<b>100.00</b>
	1000 units		billion yuan		billion yuan	
SOE <sup>7</sup>	61.3	0.77	3557.1	28.21		
Above CNY 5 million <sup>8</sup>	28.5*	46.49*				
Below CNY 5 Million	32.8*	53.51*				
Non-SOE <sup>9</sup>	7868.6	99.23	9054.0	71.79		
Collective-owned <sup>10</sup>	1659.2	20.92	4460.7	35.37		
Above CNY 5 million	42.6	2.57	1241.4	27.83		
Below CNY 5 Million	1616.6	97.43	3219.3	72.17		
Individual-owned <sup>11</sup>	6126.8	77.26	2292.8	18.18		
Share-holding <sup>12</sup>	14.2	0.18	1227.4	9.73		
Above CNY 5 million	4.5	31.69	524.7	42.75		
Below CNY 5 Million	9.7	68.31	702.7	57.25		
Foreign funded <sup>13</sup>	62.3	0.79	2007.8	15.92		
Above CNY 5 million	26.9	43.18	1895.4	94.40		
Below CNY 5 Million	35.4	56.82	112.4	5.60		
TVE <sup>14</sup> (data of 1998)	6620.0	83.01			1553.0	46.46
Large & Medium <sup>15</sup>	22.2	0.28	4143.9	32.86	1328.0	37.97
Large <sup>16</sup>	7.8	35.14	3158.2	76.21		
Medium <sup>17</sup>	14.4	64.86	985.7	23.79		
SME <sup>18</sup>	7907.7	99.72	8467.2	67.14	2169.5	62.03
Small1 <sup>19</sup>	139.8	1.77	3126.8	36.93	828.5	38.19
Small2 <sup>20</sup>	7767.9	98.23	5340.4	63.07	1341.1	61.81
<b>Major Enterprises<sup>21</sup></b>	<b>162.0</b>	<b>100.00</b>	<b>7271.0</b>	<b>100.00</b>	<b>2157.0</b>	<b>100.00</b>
Coast <sup>22</sup>	103.8	64.07	5100.0	70.14	1392.0	64.53
Large & Medium	13.9	13.39	2719.0	53.31	796.0	57.18
Small 1	89.9	86.61	2381.0	46.69	596.0	42.82
Center <sup>23</sup>	39.6	24.44	1470.0	20.22	513.0	23.78
Large & Medium	5.5	13.89	929.5	63.23	344.7	67.19
Small 1	34.1	86.11	540.5	36.77	168.3	32.81
West <sup>24</sup>	18.6	11.48	701.0	9.64	252.0	11.68
Large & Medium	2.8	15.05	495.0	70.61	187.5	74.40
Small 1	15.8	84.95	206.0	29.39	64.5	25.60
Light Industry <sup>25</sup>	81.8	50.49	3051.5	41.97	844.8	39.17
Farm Products Based <sup>26</sup>	54.3	33.52	1893.1	26.04	549.4	25.47
Large & Medium <sup>27</sup>	6.5	11.97	816.5	43.13	273.9	49.85
Small 1	47.8	88.03	1076.6	56.87	275.5	50.15
Non farm Products Based <sup>28</sup>	27.5	16.98	1158.4	15.93	295.4	13.69
Large & Medium	5.3	19.27	868.9	75.01	222.9	75.46
Small 1	22.2	80.73	289.5	24.99	72.5	24.54
Heavy Industry <sup>29</sup>	80.2	49.51	4219.2	58.03	1311.6	60.81
Mining and Quarrying <sup>30</sup>	7.1	4.38	423.9	5.83	232.2	10.76
Large & Medium	0.8	11.66	333.8	78.74	200.3	86.26
Small 1	6.3	88.34	90.1	21.26	31.9	13.74
Raw Materials <sup>31</sup>	23.5	14.51	1664.0	22.89	528.9	24.52
Large & Medium	5.7	24.39	1406.6	84.53	452.4	85.54
Small 1	17.8	75.61	257.4	15.47	76.5	14.46
Manufacturing <sup>32</sup>	49.7	30.68	2131.3	29.31	550.6	25.53
Large & Medium	3.6	7.20	676.7	31.75	171.0	31.06
Small 1	46.1	92.80	1454.6	68.25	379.6	68.94

18. **SME:** Small and Medium Sized Enterprises, representing all industrial enterprises excluding above mentioned large and medium ones. Data calculation: Total- Large & Medium
19. **Small1:** Small enterprises in Major Enterprises (See 21). It includes both medium and small sized enterprises defined in this project. Data calculation: Major Enterprises- Large & Medium
20. **Small2:** All non-SOEs with annual sales below CNY 5 million, one part of the small enterprises defined in this project. Data calculation: SME- Small 1
21. **Major Enterprises:** Normally called in the statistical work as all state-owned and non-state-owned above designated size industrial enterprises, *quanbu guoyou ji guimoyishang feiguoyou gongyeqiye*, refer to all SOEs plus the non-SOEs with an annual sales over CNY 5 million, which are composed of the major part of industrial statistical work, and most of the published indicators take this scale as statistical base. Actually the small SOEs (annual sales under CNY 5 million) are also included in this category, sharing an insignificant proportion.
22. **Coast:** In the research and policy making, China is often divided into three economic belts. The original definition is from the Seventh Five Year Plan by Chinese Government. The coast area includes 11 provinces: Beijing, Tianjin, Liaoning, Hebei, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Hainan and Guangxi.
23. No data concerning the three belts are available in the China Statistical Yearbook. All data (including also Centre and West) are calculated from data across provinces in the table 13-8 and 13-18 of the yearbook,
24. **Centre:**The centre area includes 9 provinces: Neimenggu, Shanxi, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hubei and Hainan. Calculation see 22.
25. **West:** The centre area includes 10 provinces: Sichuan, Chongqing, Guizhou, Yunnan, Shaanxi, Gansu, Qinghai, Ningxia, Tibet and Xingjinag. Calculation see 22.
26. **Light Industry:** *qinggongye*, Industry that produces consumer goods and hand tools, consisting of two categories as Farm Products Based and Non Farm Products Based industry
27. **Farm Products Based:** *yi nongchanpin wei yuanliao*, Industries using farm products as raw materials, including manufacturing of food, beverages, tobacco, textile, clothing, paper making and printing etc.
28. No data are available in the yearbook concerning industry defined across size. Data of large&medium here are calculated from the table 13-7 of the yearbook, by regrouping the 37 industries into 5 branches, 2 in Light Industry and 3 in Heavy industry (see 25,29). Since data of some sensitive industries like national defense are not published, the total of the regrouping will be slightly smaller than the actual value. Data of small 1 group are calculated by deducting value of large&medium group from the sub-total.
29. **Non Farm Products Based:** *yi feinongchanpin wei yuanliao*, Industries using non-farm products as raw materials, including manufacturing of cultural, educational, sports articles, consumer chemicals, synthetic fiber, medicine, glass, metal, hand tools, instruments, etc. Calculation see 27
30. **Heavy Industry:** *zhonggongye*, Industry that produces capital goods, consisting of three branches as Mining and Quarrying, Raw Materials and Manufacturing industry.
31. **Mining and Quarrying:** *caijue gongye*, Extraction of natural resource (petrol, coal, metal, non-metal ores) and logging. Calculation see 27
32. **Raw Materials:** *yuanliao gongye*, Industry providing raw materials, fuels and power, including smelting and processing of metals, coking and coke chemistry, chemical materials, building materials, power, petroleum refining and dressing. Calculation see 27
33. **Manufacturing:** *jiagong gongye*, Processing raw materials, including machine building, metal structure and cement products, chemical fertilizers and pesticides etc. Calculation see 27

Since the official statistical system still shows many vestiges of the past, our picture of the current situation of SME in China is deficient in many ways. In table one, we present the pertinent data of the National Statistical Yearbook. The data focus on

industry.<sup>11</sup> The subsequent observations spring to the eye, as far as the dimension of size is concerned:

- State-owned enterprises now encompass only one-third of industrial gross output value, and constitute only 0,77 percent of the number of enterprises which implies that there is a pronounced structural bias toward larger enterprises in that category. In the official statistics, this bias is somewhat increased because all small state-owned enterprises are automatically included into the category of “large and medium scale enterprises”, reflecting the aforementioned rule of thumb.
- The term of medium sized enterprise is quite vague in China, which appears almost always in pair with either “large enterprises” or with “small enterprises”. In terms of the government policy, the former case is often related to economic transition by speaking of “large and medium sized enterprise reform”, usually referring the state-owned firms in the “large and medium” group in Table 1. In the latter case, it is rather related to non-state-owned sector, which is frequently expressed as “Promoting the development of SMEs”. SME here mainly refers the “small” group in table 1. In a recent speech concerning the issue of SME Promotion Law (29 July 2002, People’s Daily) by Li Rongrong, director of SETC of China, the scale of SME seems even smaller than the above mentioned “small” group. In fact, the law does not give a clear definition but refers to the respective government regulations in its first paragraphs.
- These government regulations define the set of “large and medium” enterprises according to the official criteria of enterprise size classification. There is a difference between two possible delineations of SME, therefore: One following the official threshold and one alternative which is proposed subsequently, that is to include medium scale enterprises up to a sales volume of CNY 50 million into the category of SME. The current official criteria of enterprise size classification named as “Classification Criterion of Large, Medium and Small Sized Enterprises” (Dazhongxiaoxing qiye huafen biao zhun)

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<sup>11</sup> The China Statistical Yearbook is the most comprehensive statistical yearbook compiled by NBS, with an editorial board composed of all department directors and chaired by the commissioner of NBS, a special division in the Department of Comprehensive Statistics is devoted to the editing work. Some special statistical yearbooks are also edited by different departments of NBS in more detail, such as industrial, commercial, real estate and urban statistical yearbooks. While these yearbooks cover mainly large and medium sized enterprises, they provide no further information about SME than those published in China Statistical Yearbook.

was set in 1978 by National Planning Commission and revised in 1988 by State Economy and Trade Commission. This criterion relies mainly on the designed production capacity of the enterprises, without considering the real output the firms are currently producing, which adds a further source of uncertainty in determining the total number of SME.

- In the context of the highly prominent “Go West” structural initiative of the Chinese government it is important to note that in table one there is a very clear concentration of major enterprises in the coastal provinces, also leading to an corresponding distribution of GVIO and VAI. It is significant, however, that the shares of the subtotals are distributed differently, that is, at the coast the share of SME in GVIO und VAI are clearly higher than in the other belts, which compares to a similar distribution of the number of enterprises.
- With reference to industrial branches we recognize that SMEs in farm product based industries, equipment and machinery manufacturing industries contribute a significant proportion (more than half without counting those with annual sales below CNY 5 million) to the economy in terms of GVIO and VA. In contrast, SMEs in Mining and Quarrying, Raw Materials Producing and Non-farm Products Based Light Industries play a relatively less important role. However, one should note that the category “major” excludes all non-state-owned enterprises with a sales volume below 5 million CNY: We can safely assume that this category also shows a biased distribution across industries, so that the omission affects the sectoral data differently, as for example is obvious from the very low share of SME in the “Non-farm-products-based” category. We do recognize, however, that SME play an important role even in heavy industries, so that SME is an industry-wide organizational form.

All in all, the importance of SME for China’s development cannot be in dispute. With the background of the developmental experience in other Chinese contexts, we might even argue that SME will become the hallmark of the Chinese economy in the future, alongside the foreign-invested sector. This is because in Chinese economic culture there is a strong preference for individual entrepreneurship leading to notorious problems of industrial fragmentation alongside a vibrant dynamics of the market.<sup>12</sup> In

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12 The case in point, of course, is the developmental experience of Taiwan, which, however, also features a distorted policy environment with a mix of supporting policies (R&D) and discrimination (credit). Therefore, many observers argue that there is no clear proof for a “cultural disposition to SME” to be drawn from the Taiwanese case. On this see Joseph Bosco, “Taiwan jiating qiye de wenhua lunshi”, in: *Zhongguo shehui kexue jikan* (1996, No.14): 41-60.

the PRC, this general trend is somewhat diluted because of the impact of two factors: First, SME development in the rural areas is very closely related to TVE development, which implies that the policy context is different from urban areas, with local governments exerting a strong influence on development and decision making. The classical example is the famous “Sunan model” of TVE which is now being dismantled in favour of private enterprise. In other areas, however, TVE development is still supported by local governments. Therefore, in policy contexts as well as in analysis there is still a tendency to separate the TVE topic from the SME issue.<sup>13</sup>

The second factor is the divestiture of state-owned enterprises. This has long taken place in the practice of leasing out small SME. However, especially in the Western literature there is a tendency to focus on “private enterprise” exclusively when analyzing, in fact, SME. This is, of course, simply the mirror of the planned economy rule of thumb, so that the special role of small SOE in the general SME problematique is lost out of sight.

Both factors contribute to increasing difficulties in dealing with the SME sector statistically. This paper gives a short report on one of the recent attempts at solving the conceptual issues and introducing a clear-cut statistical approach to SME in China.

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<sup>13</sup> The thesis of a peculiar “Chinese capitalism” has been thoroughly criticized by Arif Dirlik, „Critical Reflections on ‚Chinese Capitalism‘ as a Paradigm“, in: Brown, Rajeswary Ampalavanar (ed.), *Chinese Business Enterprise, Vol. I*, (London: Routledge, 1996): 17-38. Implicitly, the Sunan model has been the object of many studies on Chinese TVE because Southern Jiangsu mostly belongs to the places included in selective sample surveys. Special studies on the Sunan model include J. Bruce Jacobs, “Uneven development: Prosperity and Poverty in Jiangsu”, in: Hans Hendrischke and Feng Chongyi, eds., *The Political Economy of China’s Provinces, Comparative and Competitive Advantages* (London and New York: Routledge, 1999): 113-154, Qiu Chengli, Fen Jie “Sunan moshi de fazhan jiqi lujing yilai/The development of Sunan Model and path dependence”, *Zhongguo gongye jingji/China Industrial Economy*, No.7, 2000: 51-55; Xin Wang, “Sunan moshi: xiang shuo zhongjie bu rongyi/ Sunan Model, difficult to say bye”, *Zhongguo gaige/China Reform*, No.4, 2001: 24-5. Frequently, analysis of the Sunan model is done on comparative terms with the Zhejiang (Wenzhou model), as in Chen Jianjun, *Zhongguo gaosu chengzhang diyu de jingji fazhan – Guanyu Jiang Zhe moshi de yanjiu* (Shanghai: Shanghai sanlian shudian/Shanghai renmin chubanshe, 2000) and Chen Hongchang, “Shututonggui de Sunan moshi he Wenzhou moshi/Sunan model and Wenzhou model, convergence from different way”, *Zhongguo gaige/China Reform*, No.10, 2001: 59-60 On the recent privatisation surge following the Wenzhou model, see the special focus “Sunan yuyan” in *Cajing*, May 2001: 33-51.

## 2.2 Organization of SME-related statistics in China

The data to support the SME research in China is far from sufficient, hence research on China's SME are mainly qualitative, based on rough estimations or focus on particular case studies of selected regions.

As is true for the large majority of statistical data on China, most data on SME come from the National Bureau of Statistics of China.<sup>14</sup> The statistics are collected and reported to the bureau by the local branches (from counties to cities to provinces and to the national bureau) on a monthly, quarterly and annual basis, in accordance with the predefined set of indicators. Information of a few of indicators such as Gross Output, Sales Revenue, and Profit of these firms are collected and reported monthly or quarterly, information other details such as those in financial statements are only provided annually.

The problems with the SME data result from the simple fact that so far statistical work is fragmented according to functional or jurisdictional criteria:

- The Industrial Statistical Department of the NBS is responsible for large and-medium-sized industrial enterprises, which excludes small-sized enterprises.
- The Trade Statistical Department is responsible for the large and medium-sized enterprises in retail, wholesale and some other service sectors such as tourism,
- There is a functional specialization among statistical departments, with data on foreign trade being provided by the Customs Administration, on FDI by the Ministry of Foreign Economic and Trade Cooperation, and tourism by the National Bureau of Tourism.
- The Investment Statistical Department provides data on fixed assets investment and information of enterprises of construction and real estate, mostly of large and medium sized firms.
- These affiliations are overlapping with the special focus on TVE by The Ministry of Agriculture. In 2000 the China Statistical Yearbook stopped publishing TVE data provided by the Ministry.

As we see, one of the fundamental features of the statistical system is the intentional neglect of small enterprises and the separation of statistical work in the urban and the rural areas. Furthermore, the functional division of labour implies that SME-related

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14 For a general survey of the contemporary Chinese statistical system, see John Wong, "Understanding Recent Changes in China's Statistical System", *China Perspectives* (No. 35, May-June 2001): 56-62.

statistical work can be in a different state of development and elaboration. Regarding the general exclusion of small establishments in official statistics, the reason is, of course, the simple fact that the very high number cannot be included in regular reporting systems, either because of the administrative costs or because of the lack of interest on part of the owners for self-registration. Therefore, there is deep methodological divide in the statistics on small-sized enterprises and medium-sized ones. Small enterprises are only included in the national statistics via sampling schemes.

The Enterprise Survey Organization, a subsidiary survey network of NBS, is responsible for the statistics of the small enterprises (annual sales below CNY 5 million) in the industrial, retail and wholesale sectors.<sup>15</sup> The statistical information on gross output, revenue, profit and tax are provided through an annual sampling survey. There are various sampling methods to be chosen by provincial branches of ESO, based on the respective availability of enterprise register data. Since most of the small firms are TVEs and individual-owned enterprises, the survey population is divided into two subpopulations according to the level of government to which the enterprises are assigned administratively. Usually a complete register databank of township or higher level enterprises is available in most provinces, therefore a list stratified systematic sampling approach can be applied. For companies on the village level and below, which are mostly very small firms or individually owned firms, normally no complete registers are available. Therefore a two stage sampling method is used, with a cluster sampling method in the second stage.<sup>16</sup>

In addition to the above statistical work, NBS conducts a census of industrial enterprises every ten years, covering detailed information of all industrial enterprises. The last industrial census was taken in 1995, 7.34 million firms were surveyed. Obviously, these data are now outdated especially with reference to the most dynamic sectors of the Chinese economy, including the SME.

The organization of the statistical system described so far causes various deficiencies of SME statistics. These are further enhanced, however, because of the general problems of statistical reporting in China. Suffice to mention the widespread misreporting and falsification of data, which is mostly resulting from the interference

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15 For more detailed information see NBS website:  
(<http://www.stats.gov.cn/tjzd/gjtjzd/200203270104.htm>, accessed 21 September, 2002).

of local governments who wish to provide a good picture of local development.<sup>16</sup> TVE data are therefore especially prone to serious distortions. For example, in the Statistical Yearbook of 1996 TVE data of GIOV in Shandong in 1995 reached 84% of the provincial total and that of Jiangxi (a province to be known as TVE are not well developed) even 10 percent exceeds the provincial total. Furthermore, development of statistics is hampered by departmental egoism which leads to a less than optimal degree of sharing of data and other resources. In case of SME an additional source of errors is the registration system, which is split into the registration for tax purposes and general registration with industry administration. It is very difficult to verify the reliability of enterprise registers independently. This problem is exacerbated in case of transitional forms of enterprise organization, like mergers during the process of restructuring or privatization.

In sum, the existing data on SME cannot provide a comprehensive picture, because the scope is limited and because the most important policy issues cannot be dealt with adequately. The latter point is related to the fundamental deficiency of the statistical system which has not been highlighted so far, namely the very limited number of statistical categories that can be referred to SME when basing the analysis on officially released data. The limited data sources do not allow to answer more detailed questions, for example, on innovation and human resources. This means, however, that neither analysis nor policy design can be based on reliable and objective information.

### *2.3. The project and the national sample*

Taking stock of the achievements and deficiencies of Chinese statistics, a workable new approach to SME statistics would need to meet the following criteria:

- The statistical basis should be clearly and exclusively related to size, and there should be a unified approach to the threshold values, hence implementing a neat definition of SME.

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16 Compare Thomas G. Rawski, "China by the Numbers. How reform has affected China's economic statistics", *China Perspectives* (No. 33, January-February 2001): 25-34, or Quan Jianzuo, "Zhuangui shiqi Zhongguo tongji de maodun, chongtu yu chulu/Contradictions, Conflicts and Solutions in China's Statistical System of the Transition Period", *Tongji yanjiu* (No. 9, 2001): 8-14.

- As long as there is no reasonable way to set up a nationwide data base, a workable sampling approach should be designed which is as close as possible to established standards of representativeness.
- As far as possible, the base unit should include all existing enterprises independent from location and ownership categories.

As was already mentioned in the former section, the NBS either relies on complete registers for industrial enterprises with a size larger than 5 million CNY yearly turnover, or applies a sampling approach. The latter is split between the urban and rural areas. Furthermore, sampling procedures differ across the provinces, because the ESO delegates the sampling task to its provincial branches (which is a common procedure also in other statistical departments). In the majority of provinces, sampling relies on complete registers of companies at the township level and above, so that a list stratified systematic sampling approach is applied: suppose sample size is  $n$ , the enterprise name list is sorted by an order of an economic indicator like annual sales, then the list is divided into  $n$  intervals (in each interval one enterprise is to be selected) , making a random start from the first interval and picking up the firm met by the random start, and then take the next selection with constant interval. In some provinces a two-stage sampling is employed, and counties and districts of cities are taken as primary sampling units to be selected randomly, then from each selected county (or district) , the above mentioned list sampling is used. For small enterprises in the rural areas below the township level, mostly there are no registers available, so that another two-stage sampling procedure is applied: ranking the villages or blocks in the urban areas by the number of firms or by some other economic indicators available, then selecting a certain number of villages. Once a village is selected, all firms in the village are to be surveyed.

This sampling approach has been developed in the recent years by the National survey units. Meanwhile another approach has been developed by the “Sino-German Cooperation project in Empirical Economic Research”, which was realized by Chinese partners (see below), Witten University and one of the leading economic research institutes in Germany, the ifo Institute.<sup>17</sup> In Germany, ifo Institute is responsible for conducting regular surveys of business climate and business cycle,

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17 There are other SME related projects between Chinese and German partners, based on the aforementioned, long-standing emphasis on SME (“Mittelstand”) in Germany. One of these also did some survey research, focusing on Anhui province. A summary of the results has been made available recently on the website of the State Economic and Trade Commission, (<http://www.chinasmb.gov.cn/150/154/20020808/18126.htm> , accessed on Sept 12, 2002).

adding regular surveys of special aspects of industrial development like innovation surveys. The Sino-German project was designed to transfer the special methodology in conducting qualitative surveys to the Chinese organizations working in that field. Aside from this, the project pursued the following objectives.

- First, the problem of organizational fragmentation was overcome by developing a network of Chinese organizations which would pool some resources and information in order to implement the project. On the Chinese side, all the central organizations dealing with enterprise surveys were involved, namely ESO and RSO of National Bureau of Statistics, Statistics Department of People's Bank of China, CESS and DRC Institute of Development Research Center, Forecasting Department of National Informational Center, Beijing International Trade Research Institute. During the long gestation period of the project, some organization left and some changed, with the final participants CEInet Co., ESO, CESS, GuoJin SME Research Center, and Beijing International Trade Research Institute.
- Second, the project aimed at getting an in-depth perspective on the developmental challenges currently facing SME in China. In that regard, even the more detailed data bases of the NBS do not allow this kind of analysis because of the low number of indicators. Furthermore, even the sampling approaches cannot avoid falsification and misrepresentation of data. The project therefore introduced a qualitative questionnaire with a minimum of exact data requirements, so that the incentive for falsification would be as low as possible. Quantitative data were limited to categories needed for the classification of enterprises. Furthermore, the project introduced the ifo Institute method to provide the companies that participate with an exclusive report of the results, in order to increase incentives for participation.
- Third, the project developed strict criteria of statistical representativeness in the construction of the sample. As will be demonstrated below, these criteria could only serve as a benchmark, since some of them could not be fulfilled even in this project, yet the benchmark is useful to evaluate other survey results.
- Fourth, the project included a learning procedure, with two pilot surveys preceding the two main surveys. The pilot survey mainly served to investigate into the response behavior of the companies and to check possible

misunderstandings of questions. There were regular Sino-German workshops to discuss the progress of the project.

- Fifth, sampling design proved to be one of the crucial challenges of the project which had to cope with a limited amount of resources. The fact is that not only the number of companies is daunting, but furthermore, the regional distribution across a highly divergent economic space of China means that SME operate under very different environmental conditions.

The project introduced a new criterion for identifying SME, that is all enterprises with an annual turnover of less than CNY 50 million. According to the NBS database on all state-owned and non-state-owned enterprises with annual sales more than CNY 5 million (Quanbu guoyou he guimo yi shang feiguoyou), the number of large firms is 22, 700, medium sized firms (annual sales between CNY 50 million and 500 million) is 111,750, and of small firms is 7.80 million. So the total population of SME in China reaches a number of 7.93 million firms. This is the target population. In table 2, we compare the different size categories in the project and in official statistics.

**Table 2: A comparison between different definitions of enterprise size**

A: Table 1 <sup>1</sup> (data from yearbook)		B: Project Criterion (data from project resource)	
Size	number of enterprises	Size	number of enterprises
	1000		1000
Total	7929.9	Total	7929.9
Major	162	Register <sup>2</sup>	162.3
Large <sub>A</sub>	7.86	Large <sub>B</sub> <sup>3</sup>	22.7
Medium <sub>A</sub>	14.37	Medium <sub>B</sub> <sup>4</sup>	111.75
Small 1	139.8	SME <sub>B</sub> <sup>5</sup>	7907.2
Small 2	7767.9	Small <sub>SOE</sub> <sup>6</sup>	32.8
SME <sub>A</sub>	7907.7		

Note:

1. Data and explanations of column A are the same to Table 1.
2. Register: Enterprise register database bought from the company. Number of total enterprises slightly different from that published in the yearbook
3. Large<sub>B</sub>: Defined in this project, enterprises with annual sales above CNY 50 million.
4. Medium<sub>B</sub>: Not used in the project, referring to enterprises with annual sales between 5 million and 50 million.
5. SME<sub>B</sub> = Total - Large<sub>B</sub>: While SME<sub>B</sub> have a size very close to SME<sub>A</sub>(A:7907.7, B:7907.2), we argue here that it represents more exactly the true SME, since its size classification is only related to size.
6. Small<sub>soe</sub> = Register - Large<sub>B</sub> - Medium<sub>B</sub>: Enterprises in Register(Major) with annual sales below 5 million. Since non-state-owned with annuals sales below 5 million are not included in the register (Major), so they must be state-owned enterprises.

A target population of such a large size is very difficult to handle. Therefore a two-stage sampling approach was designed with the prefecture as the primary sampling units and the enterprises to be selected from the prefectural subsamples. This methodology introduced a completely new approach into Chinese statistics because so far either the provinces or the counties have been used as units in statistical research. Both approaches have been rejected in the project because provinces are too large in size and still very heterogeneous in their internal economic conditions, which will decrease the sampling efficiency when selecting some provinces first and then enterprises from those provinces randomly. On the other hand, counties would introduce an urban/rural split because cities are not included in counties. Thus, the prefecture emerged as the optimal solution: The prefecture is an administrative region between province and county. Most of the prefectures in China now are cities or going to be transformed to cities, with a number of periphery counties as sub administrative areas. However, there is no complete database on prefectures in China, because the data are collected and published within the context of the provincial statistics. One of the most important tasks of the project resulted therefore to be the construction of an independent prefectural-level database.<sup>18</sup>

The correct procedure would then use complete databases of enterprises in the prefectures to select companies. This approach, however, was not possible to realize in the project because of limited funds. Enterprise registers are treated as confidential information by local authorities. Since the project involved a Sino-foreign cooperation, and since it was not included in the regular governmental tasks of statistical reporting, the only way would have been to offer large amounts of funding for the respective organizations. Therefore, existing databases of the participating central government organizations were merged. This ended up with a set of 540,000 SME all over China which could be assigned to the different prefectures selected in the first stage sampling. Of course, this means that a sampling bias can exist in the entire procedure, depending on certain determinants of the selection of the national registers. However, there is no way to assess the effect of this bias in our results, though there are good reasons to assume that this very large sample is constructed

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18 A complete description of this data base and a survey of the data categories can be found in [www.on-china.de](http://www.on-china.de), section of discussion papers, accessed on 22 September, 2002. See also Carsten Herrmann-Pillath/Daniel Kirchert/Pan Jiancheng, "Prefecture-level Statistics as a Source of Data for Research into China's Regional Development", *The China Quarterly* (December 2002, in print).

by the official statistical organizations according to the standard of representativeness.

In the next step the required sample size had to be estimated. This was calculated to be about 1600 units, a number twice as much as that required by a simple random sample to meet the same sampling precision, which implied that with a response rate of 1/3 a set of 4800 units would be needed in the actual survey to represent the basic population.<sup>19</sup>

The two-stage sampling proceeded as follows. In the first stage, prefectures are ranked and divided into 6 strata based on GDP value. The three metropolitan cities of Beijing, Shanghai, and Tianjin form the first independent stratum:

STRATA	GDP/Capita Scale(Y)	Number of diqu(PSU)	% of GDP to Total	% of Population to Total
1		3	9%	3%
2	Y>=10,000	49	32%	14%
3	7,000<=Y<10,000	50	18%	14%
4	5,000<=Y<7,000	76	20%	21%
5	3,000<=Y<5,000	94	16%	32%
6	Y<3,000	53	5%	16%

3 prefectures are selected with systematic sampling by random from each strata (2-6) as PSUs (Primary Sampling Units), and an additional PSU comes from the first stratum. Some selected prefectures (mostly from underdeveloped regions) are too small to form a PSU in terms of number of firms, hence some adjacent prefectures are merged. In the fieldwork 16 PSUs covering 27 prefectures were selected in the first stage. The PSUs are as follows:

Strata	PSUs(Prefectures)
1	Beijing
2	Guangdong/Dongguan, Fujian/QuanZhou, Zhejiang/Jinhua, Taizhou)
3	Jiangxi/Nanchang, Guangdong/Zhaoqing, Hunan/Zhuzhou
4	Henan/Sanmenxia, Puyang, Zhejiang/Quzhou, Guangdong/Shaoquan
5	Guangdong/Meizhou, Shaanxi/Hanzhong, Baoji, Henan/Nanyang, Anyang Zhejiang/Lishui, Hunan/Hengyang, Huaihua, Yongzhou, Shaoyang, Jiangxi/Ganzhou
6	Sichuan/Guangyuan, Nanchong, Guizhou/Qiannan, Anshun

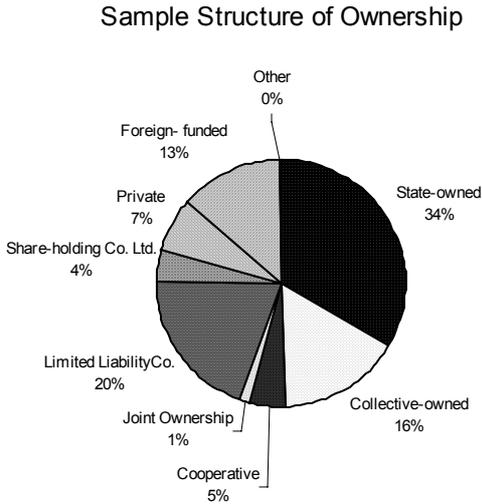
100 units (effectively responded) were randomly selected with systematic sampling approach from each PSU in the second stage, to meet a sample size of 1600 in total.

<sup>19</sup> The estimators in this project are all proportions since the questions are all qualitative. A precision requirement is set for this project as the maximum relative sampling error is controlled within 3.5% with a probability of 95%, i.e. the design has 95% confidence to guarantee that the

In the practical survey, because of the different response rates in different regions, the final responses to different PSUs have fluctuations, while the total sample size are basically reached. Furthermore, because of the adjustment of PSUs made by the main survey organizer, the final sample is not well distributed across strata, especially the third stratum (medium level region) has too few firms (166), while the fourth stratum (underdeveloped region) has too many firms (544). In the final data procession, this bias caused by the non-equal-probability selection across strata is adjusted by weighting. The shares of GDP in different strata (% of GDP to total in Table 2 ) are used as weights.

The final sample displays the following structure in terms of ownership, employment and annual sales:

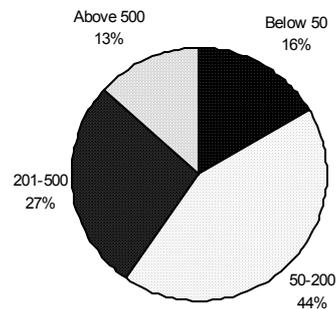
**Figure 1: Structure of the national SME sample in terms of ownership, employment and sales volume**



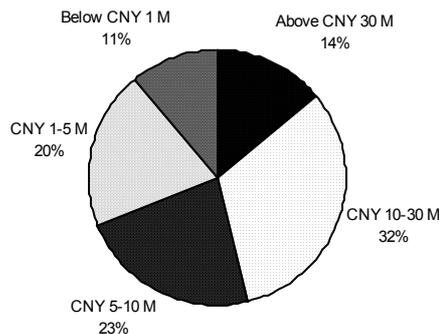

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difference between the true value (which is unknown) of the population and the estimated value with the sample is less than 3.5%.

### Sample Structure of Employment



### Sample Structure of Annual Sales



To test the feasibility of questionnaires, two pilot surveys were conducted successively in June of 2000 and November of 2000, with a sample size of 150 for each survey. The surveys were completed by a joint work of CEI.net Company and CESS of DRC.

The two main surveys were conducted in April and August of 2001 successively, done by ESO of NBS. The surveys were split into two parts in order to avoid time overload for the enterprise managers. The first main survey on distribution/marketing and innovation got 1606 responses, the second on human resources and finance got 1540 responses, of which 1536 are overlapping, so that the cross analysis among the 4 topics based on these 1536 units is thus feasible. The final results of the project were officially released in June 2002 on occasion of an international conference in Beijing.

### **3. Major results of the survey**

The entire “Sino-German Program in Empirical Economic research” was devoted to the transfer of the methodology of the regular business surveys of the ifo Institute to the Chinese partners.<sup>20</sup> In this context, the research groups were divided into two parts, one dealing with the business cycle survey and one dealing with the so-called “special surveys” which are regularly included in the business cycle surveys. The SME survey was designed according to the latter type of survey. Apart from the focus on SME, special surveys investigate into some special economic issue. In the project, four issues were selected which had been identified as most important challenges to SME development in China: Finance, supply and marketing, innovation and human resources. For each issue a separate questionnaire was designed and sent to the companies.

#### **3.1 *Properties of companies***

For the first time the survey produced results that reflect common properties across the ownership spectrum, and which can be interpreted as approximating the representative national situation of enterprises belonging to the same class of size. Roughly 1/3 of the companies are state-owned, with another share of about 16 percent of the non-state owned companies appearing as “collectives” and 20 percent as “limited liability”. Only 7 percent clearly identified themselves as “private”. This structure shows that a larger share of SOEs was actually surveyed as compared to the base population. One of the reasons might be that the response rate of SOEs is much higher than Non-SOEs in an officially administrated survey. This might cause some bias in the survey results which should be kept in mind when interpreting the data.

Another reason can be the possibly lopsided structure of the original databases. However, we also recognize the transitional state of SME in China, with “collectives” almost certainly being companies under control of local governments, yet undergoing de-facto privatization in many regions, as for example even in the model case of Sunan. Nevertheless, according to the standards of developed market economies, about 50 percent of SME in our sample are public companies. This fact is also salient

from the period of founding, with one third of the enterprises already operating before 1978, when no private enterprises existed. That means, the SME sector is also facing some problems of transition because we may safely assume that these long-standing enterprises are public ones to a large extent. We cannot yet assess whether the distribution across loss-making and profitable industries shows a systematic pattern with reference to ownership. However, we note that about one third of the companies report losses in 2000 and 2001, with a slightly decreasing share of loss expectations in 2001.

Chinese SMEs are largely concentrated in labour intensive industries, however the survey showed that the largest group is machinery (20 percent), whereas electronics is of minor importance. This is a pattern which is not fully congruent with the normal relation between developmental stage and SME structure and which reflects again the fact that SME play an important role in local public economies.

### 3.2 Finance

The topic of finance is one of the most salient ones in recent debates about SME in China. For years Chinese economists have pinpointed the discrimination of SME and private enterprises by the large state-owned commercial banks.<sup>21</sup> Regarding TVEs this issue has become very serious since the closing down of the rural credit foundations in late 1999 which shut down one of their primary sources of credit in the 90s.<sup>22</sup> Our sample directly reflects this fact, with about two thirds of companies reporting that within the last two years access to credit has become more difficult. This is especially true for longer-term credits, where almost 90 percent of the companies report that they are only partially or even not satisfied with the situation, both for medium-term (1-3 years) and long-term credit (more than 3 years). Only one third of the companies receive long-term credit with a period of more than 3 years.

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20 For a survey on the ifo methodology, see "The surveys of the Ifo Institute", <http://www.ifo.de>, section of survey participation, accessed on 22 September, 2002

21 For recent statements, see Fan Gang, Progress in Ownership Changes and Hidden Risks in China's Transition in: Transition Newsletter, May-June 2002: 1-5, and Justin Lin Yifu/Li Yongjun, Zhongxiao qiye jinrong jigou fazhan yu zhongxiao qiye rongzi/Promoting the growth of SMEs through the development of SME financial institutions in: Jingji yanjiu (No. 1, 2001):

22 For a detailed case study on Sichuan province, see Zhang Jun, "Guantuan jijinhui dui nongcun fazhan de yingxiang – yi Sichuan Jingyan xian wei anli yanjiu/The Effects of the Closure of the RCF on the Prospects of Rural Development", in: Zhongguo shehui kexue yuan nongcun fazhan yanjiusuo, bian, *Zhongguo nongcun fazhan yanjiu baogao*, No. 3 (Beijing: Shehui kexue wenxian chubanshe): 112-131.

This observation should be related to the fact that for Chinese SME bank credit is by far the most important source of financing. The questionnaire included several questions on enterprise finance which showed a remarkable resilience of traditional patterns of finance. The data are almost similar for the period of establishing the company and the current situation, with the notable exception of an increase of the importance of “usurping other enterprises funds”. 70 percent of SMEs get loans from the banks, 32 percent get their capital via equity investment. Within the latter category, for nearly 80 percent of the companies, retained profits are the most important source of equity capital, with only 20 percent relying on stocks and related forms of capital investment. Bank credit is to a large extent provided by the state-owned commercial banks, with rural credit institutions and private credit both resulting in less than 20 percent. This is congruent with the long-standing picture of China’s financial repression, which results in an underdevelopment of alternative credit institutions outside the government sector, which at the same time discriminates against the SME.

The survey allows to identify some of the reasons of this situation. The companies themselves attribute the difficulties to the government’s credit policy in the first place (53 percent) as well as to bureaucratic procedures and some backdoor troubles, including lack of appropriate personal relations (66, 10 and 22 percent respectively). The other reasons are related to the problem of credit rating, which has become the “hot topic” in SME finance which is also reflected in the survey.

Loss making companies are especially prone to rely on bank credit (more than 90 percent). This implies that banks might perceive a high risk of lending to SME, even though companies themselves report that the problem of bad loans has been decreasing in the recent two years. There is a significant result in the survey which is related to the recent surge of interest in credit ratings in China (which, however, should be related again to the possibly distorted structure of the base population).<sup>23</sup> It is noteworthy that almost 50 percent of the companies did participate in a rating procedure, with 53 percent of them obtaining a rating of AA and higher. Only ten percent of the companies reported a rating of B and less, which may be compared to the share of about 4 percent of companies reporting serious losses. Almost all the companies received their assessment by rating agencies that have been established by the banks. Notwithstanding, 75 percent of the companies report that banks do not

accept this rating when deciding about a credit. This result strongly confirms the general view of credit rationing being the regular situation in China. Curiously, 76 percent of the companies even report to get special treatment by the bank, which, therefore, might reflect the individual relief of getting credits at all.

This result demonstrates that banks face serious difficulties in assessing credit risk and therefore refrain from lending even though there is a widespread use of ratings now. This is related to the second cause of credit rationing in China, that is a lack of well-developed procedures for credit guarantees. Only 23 percent of the credits are provided merely on the basis of the business plan, whereas mortgaging underlies 70 percent of the transactions. As is well known, this presents difficulties especially for start-ups which do not yet own substantial equipment and premises. The most important alternative that is also being promoted in China is guarantees by third parties. However, only one third of the companies rely on guarantees, and almost forty percent report that the difficulties in getting guarantees block access to credit. Most companies rely on other companies to get guarantees or manage to get project-related guarantees. The role of individuals, of the government or special organizations is still negligible.

Importance is added to these observations because cost of credit is not an obstacle for further expansion of SME. The debt/asset ratio of 60 percent of the companies is lower than 60 percent, with only 20 percent transgressing the 80 percent line. Companies pay interest within the 10 percent p.a. bracket, with only 7 and 5 percent reporting interest rates of more than 10 and 15 percent respectively. This, of course, can be one of the reasons of credit rationing because there is still a government imposed cap on interest rates, so that banks are not allowed to cash in on assuming risky positions. On the other hand, deflation in the recent years turns this interest rate in to a real load which is different from the negative real interest rates of the first half of the 90s. Only thirty percent of the companies, furthermore, report to pay floating interest rates.

What is the main effect of the credit drought in China? First, Chinese SME seem to follow the well-known pattern of Chinese state-owned companies which rely heavily on credit to finance operating expenses (so-called circulation funds). 87 percent of SME companies report that they are at least only partially satisfied with their liquid funds. The companies offer the expected replies on the question which activities are

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23 Xie Ping, et al. "Yunyong xinyong pingji yuanli jiaqiang jinrong jianguan/Enforcing financial

hampered by lack of credit, however, difficulties in expansion and installment of new equipment clearly figure most prominently. This pattern is familiar from other countries, that is, enterprise growth seems to be limited because of financial constraints.

### *3.3 Supply and marketing*

The survey focused on this dimension in order to understand the patterns how SME are embedded into the larger economic context. For example, in the emerging stage of TVE development many TVE relied on supplier relations to SOEs and outsourcing to develop their own business.

There are some salient patterns that can be discerned in the replies of this special survey. One is related to the spatial scope and reach of SME activities. In both supply and marketing SME seem to be deeply entrenched in the local economies. Regarding supplies, only 8 percent regularly use imported supplies, whereas 65 percent regularly get their supplies within their region. Taking the province as a unit, only 31 percent of enterprises regularly receive their inputs from other provinces. The assumption of a high degree of local embeddedness is further supported by the fact that the vast majority of enterprises receive their supplies from fixed suppliers – which seems to work out very well: China has become a buyers market also in the producers field, which is evident from the fact that the various choices for identifying problems in supplies all met almost negative response (about only 15 percent of companies ticking these choices), with 45 percent of the companies identified no problems whatsoever. Indeed, the “shortage economy” is a story of the past.

These observations are mirrored in the data on marketing: Only 30 percent of companies report that they export more than thirty percent of their products to other provinces, with more than half (55%) of the companies export less than 10 percent of their products, and 15% of the companies between 10 and 30 percent.<sup>24</sup>

Chinese SME display a clear pattern of information activities and market behavior which might be summarized as relying on own human resources, personal

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supervision through credit rating approaches”, Guanli Shijie/Management World, No.1, 2001.

24 These results seem to match the findings from econometric research into the degree of economic integration among Chinese provinces, which still show a pronounced fragmentation resulting from regional protectionism, see, for example, Tam Kang-Ki, Economic Integration of the Chinese Provinces: A business cycle approach, ANU National Centre of Development Studies, Report 98-1 (<http://ncdsnet.anu.edu.au/pdf/china/ce98-1.pdf>), and Sandra Poncet, The Magnitude of Chinese provinces’ internal and international trade integration (<http://www.cerdi.org/Colloque/IDREC/1/Poncet.pdf>).

networking and stable relations with customers and suppliers. For example, market intelligence in sales is mostly collected by the salespeople of the company (70 percent), whereas special agencies, advertisements, or public bodies linger around 10-20 percent. Retail trade and final consumers also provide substantial information (both about 30 percent). Aside from the dominating direct sales (70 percent), supply to certain other companies and to wholesalers figure prominently as marketing channels. This pattern is also reflected in the logistics, because shipment is mostly organized either by the company or by the customer, with only 30 percent of companies also employing special transport companies. Interestingly, transport is no longer mentioned as a problem for SME marketing.

This is exactly mirrored in supply intelligence which is mostly gathered by the supply managers, and directly via the salespeople of other companies. There is a very low importance attributed to advertisement (10 percent), the Internet (7 percent) or special consulting organizations (13 percent).

### *3.4 Innovation*

Regarding SME one of the most frequent concerns is whether there are size-related obstacles to innovation. Therefore the survey attempted at collecting pertinent information, which, however, turns out to be difficult to interpret. This is related to the notorious problems of separating innovation activities from general management activities in the case of SME. For example, 70 percent of the companies do not have a R&D department which, of course, is a rather natural situation in SME. Indeed, the upper management results to be by far the most important group in promoting innovations (76 percent) which is a familiar picture in SME worldwide.

Chinese SME consciously adopt the follower's strategy in order to get access to new knowledge, however, do not mainly rely on direct copying. 42 percent of the companies apply the strategy to imitate new technological knowledge by reengineering, but only 26 percent tick the variant "copy". This observation is corroborated by the information that only one third of innovations is referred to copying, with the rest being based on own efforts. One should note that Chinese SME seem to be aware of a strong pressure to innovate: 70 percent respondents realize that market demand and competitors provide the strongest motives for innovation. This is, however, not related directly to market innovation: Competitive pressures foster quality improvement and cost cutting. Respondents see the effects

of innovation predominantly in these two dimensions (70 and 60 percent respectively), whereas new products and new markets only play a secondary role (45 percent each). The importance of innovation proper is further reduced when realizing that in Chinese SME products based on new technologies only represent a minor share of sales: 55 percent of companies report that new technologies constitute less than 5 percent of their sales.

Therefore, it comes out that the very meaning of “innovation” does not refer directly to the introduction of new products and techniques into the market, with 80 percent of the companies owning no patent rights. 50 percent of the respondents use “innovation funds” for training of personnel, and only 20 percent spend the funds in own projects. That is, SME mostly try to purchase new technology from external sources and try to develop the knowledge base to adapt this technology. This approach is also clearly reflected in the responses which identify the most important obstacles to innovation, namely capital (74 percent) and personnel (44 percent). Institutional factors (property rights, market structure) are of minor relevance, and even information does not seem to be a substantial issue (23 percent).

### *3.5 Human Resources*

As is already obvious from the section on R&D, human resources are an important bottleneck for SME development in China. This can be directly observed from the responses concerning the availability of personnel. There is an acute shortage of technicians (88 percent) and trained personnel (46 percent) whereas 80 percent of SME complain about surplus labour in their enterprises. Remarkably, 42 percent even complain about surplus management personnel. The respondents do not expect any substantial change of this situation in the immediate future. Hence we can state that there is a structural problem of employment in SME, which seems to be alleviated by an outflow of labour from public to private enterprises, which are identified as by far the main recipient sector of workers leaving a company.

The structural imbalances are reflected in some interesting observations on the channels of personnel recruitment. There is a systematic difference between administrative and technical personnel in two regards. First, 30 percent of respondents ticked the choice “appointment from upper level units” in case of managers, but only 10 percent with technicians. The role of talent markets is just the reverse. That means that a considerable number of SME still experience government

intervention in personnel matters (here, the aforementioned possible bias toward SOE in the sample may partially be responsible for the result).

Most companies heavily rely on internal recruitment. It is also interesting that self-introduction becomes more important the lower the level of qualification. Given the dearth of qualified personnel, companies apply certain instruments to attract human resources. Interestingly, this is less salary and fringe benefits (18 percent) and career opportunities (9 percent) but mostly the general outlook of the company and, especially, job security (58 percent). This is a somewhat unexpected ranking given the fact that job security is strongly associated with the “iron rice bowl concept”, so that traditional workplace expectations still seem to dominate also the SME sector. On the other hand, when asked for the internal incentive system, increases in salary and position figure most prominently.

If internal recruiting is an important source of qualified personnel, training must be an integral part of enterprise management. In fact, more than 70 percent of the companies report that they formulate a yearly training plan, which includes about ten days of effective training in every category of employees per year. Managers and technicians enjoy much more opportunities for outside training than ordinary workers. There is a very clear preference for short-term courses. Companies believe that gaining technical and management expert knowledge is by far the most important objective of training. With a distance, next in their priorities are new laws and regulations and foreign languages.

#### **4. Further reasonable guesses and policy conclusions**

Because of certain limitations of the sample, the survey cannot provide a full picture of SME development in China. These limitations are especially relevant for putting the policy recommendations into perspective.

##### *4.1 Differences across regions and branches*

The sample does not allow any conclusion about regional differences across China because the two-stage sampling procedure means that the enterprises that have been chosen randomly from the subsamples may not be representative for the

respective region. However, some aspects of the results are congruent with our background knowledge about the situation of SME and can be reported here as hypotheses deserving further scrutiny with a survey that focuses on regional differences exclusively. Furthermore, additional analyses of the data may uncover certain relations between location and other enterprise properties, which, however, cannot be interpreted as regional characteristics either.

One important fact may be that most of the new establishments concentrate in the developed regions, which means that SME development in the less developed regions is also hampered by the typical transitional problems of public companies, aside from size-related difficulties. Accordingly, a larger share of private companies is located in the coastal areas. There is also a corresponding bias of more sophisticated industries.

This pattern as well as other observations fit our preconceived view on the differences between SME in developed and less developed regions. The latter have more outdated equipment, less modern products and less exports. They are also more dependent on bank credit in external finance and they face more direct government intervention in their personnel decisions.

With reference to branches, the remarks on regional differences apply in the same way, that is, the companies selected within the branches may not be representative for the branch. In many rubrics of the survey there are no salient differences across branches. Nonetheless it is interesting to note that the share of companies established after 1993 is the highest in the food and beverages industries, textile and garment and chemical/pharmaceutical industries (above 40%) which means that these industries grew with the general economic expansion of the Nineties. There is a clear “old industry”, namely machinery which also shows the lowest share of equipment of the 90 vintage. This compares with electrical/electronic industry which also has a low share of newly established companies, yet with a high share of new equipment. This industry also includes by far the largest number of companies that invest more than 3 percent of turnover into R&D. However, this industry is the one with by far the lowest share of enterprises investing more than 2 percent of wages into training and education. Here, the industry leading the pack is pharmaceuticals. Another interesting observation results to be that there are two branches in which there is a very high share of exporters, namely textiles/garments and metallurgy,

which is a somewhat unexpected result because of the low importance of exporting SME in the electronics industry, for example.

All these observations show that there is a need to investigate further into structural features of SME in the different regions and branches. SME display a large variety of types and contexts which means that their developmental challenges are different. Policy recommendations need to adapt to these special circumstances. However, regarding the similar patterns in certain respects we may safely draw some general policy conclusions even on this first stage of developing representative SME statistics.

#### *4.2 Policy recommendations resulting from the survey*

The survey included questions about the companies' preferences for government action, always by means of providing a particular list of policy instruments. In the field of finance, companies vote for the development of a government sponsored SME development fund and a special organization offering credit guarantees. Shortages in funding are always mentioned as prime reason of troubles, for example, in marketing and training.

Apart from these rather non-specific complaints, the results reveal the following possible priorities for policy.

1. There is an obvious discrepancy between the dynamics of the SME sector and its access to the government banks. Therefore, banks should set up special facilities for SME customers, which is actually beginning to take shape. Furthermore, the closure of rural credit foundations should be reconsidered which was accompanied by a general reduction of branches of financial institutions in the countryside. There seems to be no special need for subsidies because the real costs of finance are not very high.
2. One special problem linked with the financial sector is the rating system. The existing approaches to government guarantees might be a good way to open up the credit system to start-ups. It is important to build-up expertise in business plan design and assessment in order to ease the constraints of a credit system that is based on mortgaging. This is true for the banks as well as for SME consulting.
3. SME suffer from very serious shortages in qualified technical personnel. This is an area where discrimination favoring privileged employment in the state

sector is strong. One possible solution would be to set up special organizations with short-time experts and consulting services that might support SME at market rates, yet without any need to change affiliation for the qualified personnel.

4. There are some indicators showing that SME suffer from a less than optimal integration into the social division of labour, which in turn (as in transport) might be caused by underdevelopment of complementary services. This can be a possible field for government intervention, for example, by means of the establishment of associations or special organizations catering the needs of SME. Aside from logistics, market intelligence is an obvious candidate, especially in inter-provincial or international business.

However, policy recommendations ultimately cannot be given without considering the context of regions and branches. Thus, SME policies cannot be formulated on the national level, with the possible exception of finance. In the other areas, policies should be analyzed and implemented on the lower level of regions (like the less-developed ones) and branches (for example, via industrial associations).<sup>25</sup>

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25 SME policies in China, therefore, should follow the recent approaches in developed industrial countries which favour a „regionalization of regional policy“ and a decentralization of enterprise support policies, with tight budget constraints. See, for example, the overview by Jörg Meyer-Stamer, “Paradoxes and Ironies of Locational Policy, and how to Deal with them”, ( <http://www.meyer-stamer.de/2002/JMS-LocParadox.pdf>, accessed on 22 September, 2002 ).





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