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Bringing the Economy to Life: Growth without Industrial Policy

The Chinese era of economic reform began at the crucial "Third Plenum" meeting in December 1978. At this meeting, a new political configuration was on display and it signaled the beginning of a new era of market reform and economic opening. It is equally true, if much less remarked, that this meeting also signaled the abandonment of a specific economic plan and development strategy. Chinese policy-makers did not decide to move away from the planned economy in general, they made a much more specific, concrete —and painful— decision to abandon a particular plan. The beginnings of market-oriented reform in China were inextricably linked to this concrete decision. In fact, this type of action occurred repeatedly during the reform era (1978-2005), as plans and industrial policies were proposed—only to be ultimately discarded as unrealistic, unfeasible, or dysfunctional. It is worth recounting some of these successive attempts, as they form the common learned experience of Chinese policy-makers and planners.

The first part of this chapter describes the pattern of unrealistic planning that led to the repeated proposal and abandonment

of plans. As unrealistic plans were discarded, new approaches to planning were proposed and these are briefly discussed: such initiatives are worthy of note as "sprouts" that were developed much later, they do not change the basic picture described earlier. Next, I ask what actually mattered to the changing structure of the economy. After all, if planning and industrial policy were not ushering structural change and growth, what was? In fact, once posed, the answer to this question is obvious. The process of market reform —which took place at different paces in different sectors— drove the process of structural change. In other words, the uneven progress of "enlivening" the economy determined outcomes. Sectors that were "enlivened" grew more rapidly, and this unbalanced process drove growth and development. Finally, by the late 1990s, a "new normal" had emerged, as policy-makers and planners absorbed their experience over the previous two decades and focused on the development of a more efficient market economy. Premier Zhu Rongji took important steps to build the institutions behind this market economy, and he all but abandoned efforts to shape the economy through plans and industrial policy. There was every reason to expect that this "new normal" would be a stable attribute of China's economy. However, as the following chapter makes clear, this was not to be the case.

2.1. A Series of Failed Plans

Chinese policy-makers have been repeatedly tempted by two ambitious goals: rapid growth and restored economic order. Neither of those ideal goals is unreasonable. The Chinese economy has in fact been characterized by tremendous growth potential, and at the same time institutional distortions and macroeconomic imbalances have led to repeated episodes of imbalance and disorder. However, the desire to achieve these contrasting ideals has led to extremely unrealistic plans, particularly during the first 20 years of the reform era. As a result, a pattern of unfulfilled and ultimately discarded plans has characterized most of the post-1978 period.

2.1.1. The Planning Failure that Began the Reform Era

When China entered the crucial year of 1978, it had an operational development strategy that had been carried over from the period before the death of Mao Zedong. That strategy was embodied in the Ten-Year Plan (covering 1976-1985), which had been formulated in 1975. This was a modified heavy-industry-first strategy. At the core was development of the steel and chemical industries. The purpose of the modifications was to foster industrial developments that would target the agricultural bottleneck by providing agricultural machinery, fertilizer, and pesticides to farmers. The plan was formulated in two stages: first, create a basically self-sufficient industrial system by 1980, including "basically realizing agricultural mechanization." In the second stage, between 1980 and 1985, growth would accelerate, six distinctive regional industrial systems would take shape, and the "Four Modernizations" would be under way (Liu 2006). Interrupted by the succession struggle following the death of Mao, this plan was resurrected in 1977 as the framework for the rehabilitation of the economy. As part of the program, China planned to step up the import of equipment embodying modern technology and pay for it with petroleum exports. The initial draft of the program, in July 1977, proposed importing $6.5 billion worth of new industrial plants in the eight years from 1978 through 1985.

This initial plan had a certain coherence. As China began to open up in 1977-78, policy-makers sought to carry through the plan while opening more rapidly to the outside world and accelerating the import of foreign technology. In successive meetings, the import target was doubled, and then doubled again. In the summer of 1978, the State Council held a series of "theory-oriented" meetings that approved a total import program of $80 billion (through 1985) (Li 2010). In only a year, the scale of anticipated import increased more than ten times! In practice, the expansion of import plans was completely unrealistic, and at the end of 1978, the program suddenly imploded. Only after that program had

collapsed did China begin to make the irreversible steps that would transform it into a predominantly market economy —and the most successful economy in the world— over the next thirty years.

This plan was inflated by the extreme high hopes of the Chinese leaders, fueled by their visits abroad after the long isolation of the Cultural Revolution. Projects were greenlit without real project planning or serious economic analysis. Each of the several hundred large projects should have gone through a rigorous process of site selection and preparation, financing selection, and supply decision, none of which actually happened. Even the flagship Baoshan Steel Mill in Shanghai, expected to be the pioneer and proof of concept, ran into substantial problems with site preparation and supply coordination. In addition, the program was extremely risky, since China had essentially no foreign exchange reserves, and payment depended on export earnings, primarily of petroleum.[1] During 1978, China's petroleum ministry discovered it would not be able to increase its exports of oil at all. The ten-year plan had projected 1985 crude oil production at 250 million metric tons (MMT); but actual production turned out to be exactly half of this (125 MMT). In fact, China's crude oil output has never reached the 1985 target, and probably never will.[2] The poor planning that characterized the technology import program was revealed to have been endemic in domestic industry as well. These short term problems brought down the import program at the end of 1978.

Even more relevant, the technology import program was premised on the idea that imported technology could provide a "quick fix" to the economy, without making the far more fundamental

1 According to corrected foreign reserve data subsequently released, China had only $167 million in reserves at the end of 1978. This was enough to cover five and a half *days* of imports, while the "rule of thumb" for reserve adequacy is that reserves should cover three months-worth of imports. See NBS (2019:164) (or any post-1992 statistical source). In the adjustment of this program, China was able to shift some outlays to the credit of long-term suppliers.

2 Instead, crude oil output peaked thirty years later in 2015 at 215 MMT and has declined annually since.

—and difficult— changes in the economic system and strategy that were needed. For thirty years, China had been following a policy of extracting resources from the countryside and pumping them into heavy industry investment. This strategy of forced draft industrialization was not working well. What better way to resuscitate the faltering industrialization drive than to inject a massive dose of foreign machinery into China's factories? In fact, this program involved driving the domestic economy in precisely the wrong direction. Importing embodied industrial technology was part of a program of increasing domestic investment in heavy industry. Yet at this time the most urgent need was for China to increase food supply and buttress consumption. Together, the short-term and long-term problems with the plan effectively doomed it. Within days after the Third Plenum, the veteran leader Chen Yun regained control over economic policy, and he immediately instituted dramatic measures to cut back the plans for 1979 and 1980, knowing that this was equivalent to cutting the cord for the entire plan. Support for the Ten-Year Plan collapsed, and a completely different approach to economic development strategy emerged.

2.1.2. Subsequent Failed Plans

In the wake of this dramatic reorientation of the economy, the focus of policy-makers shifted to "reform," the difficult search for policies to carry out profound marketization. The heightened priority given to market reforms did not mean that planners became quiescent. They continued to produce regular five-year plans, but in an environment of extraordinary change. Each of the next three five-year plans —the 6th (1981-1985); 7th (1986-1990); and the 8th (1991-1995)— was an intentionally conservative undertaking. These plans were designed to tamp down the excessive "animal spirits" that tended to develop in the wake of reforms. The Sixth Five-Year Plan (1981-1985) called for continued slow growth, controls on investment so that consumption would grow at least as fast as total output, and concentration of investment on

bottleneck sectors, particularly energy (Plan Chronology 1987; Liu 2006; Naughton 1990). Due to the conclusion that problems in energy production in particular were severe and required deep restructuring and extensive investment, output of bottleneck sectors was expected to increase relatively slowly. Output of electricity was planned to increase 20% over five years, and coal, China's main source of primary energy, only 13%. Oil production would not grow at all. Meanwhile, the planned increase in gross output over the five-year period was 22%. Improved energy utilization was a central part of the plan. The Sixth Plan sent clear messages that investment restraint would continue and that the supply of energy would not improve substantially. In practice, the economy grew far faster than this, largely because economic reform unleashed substantial productivity growth, and the structure of the economy shifted to much less energy-intensive light industry and services. In annual terms, planned growth for both industry and agriculture had been only 4%, while realized growth was 12% and 8% respectively. Obviously, planners had overshot in their effort to restrain investment, and were unable to commit to a stable, unchanged macroeconomic policy.

The Seventh Plan (1986-1990) was prepared in an orderly fashion, with planning exercises carried out throughout the bureaucracy and input-output matrices used for the first time to evaluate alternate projections (Chen 1989; Hamrin 1990:40-50, 119-138). The Seventh Plan was formulated in terms of gross national product for the first time, slated to grow 7.5% annually. Actual growth during the first three years of the Seventh Plan was substantially more rapid than envisaged, at 10% annually from 1985 to 1988, and most industrial output targets for 1990 were actually attained in 1988. But the Seventh Plan was still a poor predictor of the future: growth accelerated uncontrollably between 1985 and 1988, and then the brakes were pressed on hard before and after June 1989. Because the central government was unable to predict its own behavior in the sphere of macroeconomic policy, the plan as a whole turned out to be unrealistic. Chinese planning has been hampered by inconsistent and unpredictable behavior at the

central government level, as well as political disruption (CCP Central Committee 1990).

In the Eighth Five-Year Plan (1991-1995), a re-empowered State Planning Commission saw itself as rectifying all the imbalances that had arisen during the 1980s, and the disruption caused by the political turbulence of 1989. It produced a Five-Year Plan that prioritized comprehensive rebalancing and "integration of plan and market," and a GDP growth rate of 6% annually, with worker wages growing 2% annually (Liu 2006:552, 557). Planners also envisioned a new program of investment in "basic industries," like that of the 1950s (and uncomfortably similar to those of the abandoned Ten-Year Plan of 1975-1985). However, the conservatives running the Planning Commission faced a fundamental problem: the issues they were most concerned about had pretty much disappeared by the end of 1990. Inflation was over —replaced by mild deflation in urban areas— while shortages of producer goods and electricity had evaporated. The conservatives had no real forward-looking program to implement for the next steps. The actual development of the economy in the plan period turned out to be nothing like what the planners expected. Stimulated by Deng Xiaoping's "Southern Tour" and the resumption of reform, growth was far higher than what planners anticipated. Annual GDP growth reached 12%, compared to just under 6% in the plan. GDP in 1995 was 76% greater than in 1990, instead of the 33.6% projected. The plan represented a kind of willful refusal to see what the economy was capable of, carried out by planners with ideological blinders that prevented them from seeing the economy's potential with market-oriented reform.

Thus, by the mid-1990s, each of the last four Five-Year Plans had been abandoned halfway through. Naturally, Chinese policymakers were aware of this failure, and the disillusionment with the planning process was virtually complete. Five-Year Plans were still announced for the 9th (1995-2000) and 10th (2001-2005) Periods, but they were very short and vague guidance documents. The compilers of the 9th Plan faced the challenge that the ambitious aspirational target for 2000 GDP, laid out by Deng Xiaoping in

the previous decade, had already been achieved in 1995. The plan sidestepped the question of growth targets altogether, and instead put forward targets for labor productivity increase, investment rate, and energy utilization. The official Plan Outline mainly discussed the most urgent tasks facing the country, which it defined as controlling population growth, reforming state enterprises, reducing poverty, and redistributing growth toward inland regions (Guo 2006:858-1028). The 10th Plan (2001-2005) was even less specific, and explicitly stated that growth should be based on market signals and competition (Guo 2006:1030-1295). Thus, by the turn of the century, the traditional planning process had widely been seen to fail and was abandoned in all but name.

2.1.3. Discussion

The pattern of unrealistic plans, subsequently abandoned, was thus repeatedly in evidence between 1978 and 2000. In most cases, plans were discarded because the overall growth assumptions on which they were based —that is, the broad macroeconomic growth conditions of the economy— changed in ways that planners were unable to predict. Moreover, the changes in the economy wrought by market-oriented reforms were so profound that "planners" struggled to keep up with what had already changed in their economy. They did not even have the ability to forecast likely futures with any accuracy, much less shape those outcomes according to their will. Increasingly, they felt that the job of planners was simply to get out of the way.

2.2. Alternative Approaches

To be sure, during this period, the traditional Five-Year Plan cycle was not the only game in town. During the 1980s and 1990s, Japanese-style "industrial policy" was frequently cited as an objective for policy-makers to work toward (Heilmann and Shih 2013;

Heilmann and Oliver 2013:520-628). Industrial policy seemed to promise something for everyone. Japanese principles made it clear that firms constituted the basic decision-making units, and so the Japanese approach was attractive to market reformers who needed theoretical support for a further expansion of enterprise decision-making authority. At the same time, "industrial policy" seemed to promise planners a continued role and function in steering the economy toward desired outcomes and away from the worst manifestations of market irrationality. Indeed, at the end of the 1980s, Premier Zhao Ziyang declared his support for industrial policy, and took the first steps to creating industrial policy divisions within the existing planning bodies. Zhao argued that in China's immature market conditions of the 1980s, it was impossible to solely rely on market forces, and that industrial policy could serve to integrate the economic development strategy with economic system reform (Zhao 1987). This is an attractive concept, but China in practice never came close to realizing it.

In science and technology policy, new forms of government support developed during the 1980s with a dramatic burst of *consultation,* and then gradually coalesced into a more institutionalized system with greater division of labor and more clearly specified objectives. In 1986, a series of meetings between top politicians and scientists (triggered by a March letter from prominent scientists to Deng Xiaoping) quickly led to a new policy framework: a Science and Technology Leadership Small Group was established for coordination; the China National Natural Science Foundation was set up to distribute billions of RMB in grant money; and the 863 Plan was drafted to guide research priorities (Yu 2014). External evaluation of funding proposals was established, and the share of grants awarded by competitive evaluation increased through the 1990s. Still this program was primarily an enhancement of budgetary procedures, designed to distribute research funds more efficiently and to a broader range of clients. Moreover, the amounts were small well into the next century.

Interesting ideas were put forward, and the attraction of Japanese industrial policy is undeniable. Yet, by unanimous agreement,

such efforts never really gained traction. Heilmann and Shih, in their penetrating discussion of industrial policy in China, attribute the failure during this period to the lack of "crucial institutional prerequisites, instruments, and bodies for implementing such policies" (Heilmann and Shih 2013:10). This is certainly true, but it must also be noted that the inconsistency of overall macroeconomic policy by itself made it impossible to lay out a coherent industrial policy. By trying to formulate and implement an industrial policy in a rapidly changing environment without adequate skills or instruments, industrial policy-makers were doomed to fail.

2.3. Waves of "Enlivening"

If industrial policy and planning did not steer the economy, what did? The answer is straightforward: market-oriented economic reforms are what actually shaped development. China followed a gradualist approach to economic reform and was careful to avoid the disruption and instability potentially caused by a "big bang." Inevitably, this implied that the implementation of reforms was uneven, coming at different times in different sectors. Generally, the sector with the biggest problems and the lowest profitability demanded reforms —something had to be done— and these reforms, after a lag, were generally successful in resolving the initial critical problems. In this way, successive waves of sector-focused reforms led to a pattern of other waves of "enlivening" and growth, of which it is straightforward to identify seven. These "waves" were the most important policy-induced forces shaping the composition (and thus ultimately the speed) of growth.

The first great enlivening took place in the farm economy from 1979 through 1983.[3] In the first step, constraints on farmers were relaxed beginning on what is, by convention, the very first day of the reform era. When the communique of the Third Plenum of the Eleventh Central Committee was published in December 1978,

3 This section draws on Naughton (2019).

it called for giving agriculture a chance to "catch its breath." This vague promise was quickly made good as policy-makers eased off on agricultural procurement quotas and provided better prices to farmers for their output. Note that this step took place at exactly the same time that policy-makers were abandoning the grandiose Ten-Year Plan. Indeed, the resources released by abandoning the plan were immediately made available for the relaxation of agricultural procurement policy (including through the expanded import of food grains). The liberalization of farm policy was a major policy shift, but it was not until the grant of land to the farmers, spreading nationwide between 1980 and 1982, that the farm economy was really enlivened. With various systems of contracting land to rural households, farmers were given the freedom to decide what to farm, when to farm, and when not to farm. The results are, of course, known to everyone: the farmers who had struggled to feed China for the previous twenty years, left to themselves, quickly produced surpluses that have been more than enough to provide abundance and diversity to China's mass middle-class society (Lin 1992). The relaxation of food constraints, in turn, gave policy-makers much greater room for maneuver, economically and politically, and set the stage for future waves of reform.

In parallel with the transformation of the agricultural economy, but logically dependent upon it for success, was the liberalization of the rural nonagricultural economy. This was the second great wave of enlivening. Left to their own devices, farmers found they could squeeze out a portion of household labor for nonagricultural tasks. Once farmers and villages were allowed to set up businesses, and send out salesmen and purchasing agents to support those businesses, a new explosion of labor-intensive manufactures emerged from the Chinese countryside. These new producers dramatically transformed the availability of simple but diverse products that broke the bleak monotony of consumer-goods supply under the bureaucratic economy. In addition, these new "township and village enterprises" (TVEs) provided competition for the state-owned enterprises (SOEs) that had been exploiting their monopoly position in industrial-product markets since the 1950s.

As policy-makers absorbed the lessons of the rural transformation, they began to allow a parallel relaxation in the urban economy. Cities were enlivened first by an explosion of small-scale private businesses that transformed services, retail, restaurants, and then small-scale industry. It took the personal approval of Deng Xiaoping to allow a seller of dried melon seeds from Anhui (*Shazi Guazi*) to expand a private business beyond household scale. Spanning a decade from about 1983 through 1993, China's cityscapes came alive. Indeed, the "internal opening" of Beijing to small-scale retail business after 1993 was one of the quickest signals that China had resumed liberalization after the post-Tiananmen reform rollback. To be sure, there was at this time no protection for the property rights of private corporations, but when the dams were torn down, there was an enormous reservoir of pent-up labor and entrepreneurship ready to step in and make China's small-scale sector an important contributor to growth and prosperity.

After the initial three waves of enlivening had taken place, Chinese policy-makers developed the will to engage the "hard core" of the socialist economy, large-scale state industry. These big SOEs were floundering during the 1990s, due to the enhanced competition from TVEs and private firms. Their situation was increasingly critical, as the net profit (after deducting losses) of all industrial SOEs declined, essentially to zero, in 1997. Yet the flip side of the impending bankruptcy of the SOEs was the fact that alternate businesses and ownership forms had reached sufficient scale to absorb the workers, land, and disused structures shed by bankrupt or collapsing SOEs. Moreover, an intensive effort to build fiscal, taxation, banking, and regulatory institutions appropriate to a market economy —sketched out in the 1993 Third Plenum (of the Fourteenth Central Committee)— achieved substantial success during the mid-1990s, sufficient to guide a profound institutional restructuring. As a result, it was possible to enliven the large-scale industrial sector by subjecting the state-owned enterprises to the nearly full brunt of competitive pressures for the first time in their history.

Self-evidently, the restructuring of state-owned industry was not the simple happy story of enlivening like the one that took place in the rural and private sectors. During a drastic and painful period from about 1996 to 2002, the state enterprise work force shrank by more than 40 percent, and the majority of smaller industrial SOEs went out of business. Many laid-off workers were unemployed for years before being either gradually absorbed back into the labor force at lower wages and status or accepting early retirement and withdrawing from the formal labor force. Despite this mid-term pain, the SOE reforms were in the end a story of enlivening as well. The remaining SOEs were substantially restructured around the turn of the century, often remade into joint-stock corporations, and most survived and returned to profitability.

As the earliest enlivening measures were running out of steam, and as the state sector was absorbing the shock to which it had been subjected, the greatest enlivening of all was finally building strength. Beginning in the 1990s, but accelerating steadily into the 2005–2010 period, the barriers between urban and rural were finally torn down, and 200 million migrants flooded into the urban economy. This fifth wave of enlivening gave an entirely new scale to the Chinese economy. The "floating population" —individuals away from their place of permanent household registration for more than six months— increased from almost nothing in 1990 to a peak of 253 million in 2014. These workers, literate, ambitious, equipped with cell phones and the will to build a new, modern China, were the key driver of growth acceleration in the twenty-first century. The gradual lowering of barriers to movement allowed under-employed rural young people to find new jobs and roles in the urban economy. As their potential productivity was brought into play, economic growth remained robust and even accelerated.

Even with rural China on the move, the potential of enlivening was not exhausted. Two more waves loomed, both of which were generally unanticipated consequences of decisions made during the accelerated reform period in the late 1990s. The sixth wave arose because of the decision made in 1998 to privatize urban

housing. This decision was itself an offshoot of the great SOE reform and downsizing carried out at this time. In order to allow SOEs to go under without taking workers' living spaces with them, Premier Zhu Rongji agreed to a relatively comprehensive program of low-cost privatization of existing residential property. Most urban housing at that time was owned by the work unit, and each apartment built by the work unit now passed into the hands of the workers and staff who lived there. This simple decision triggered off the great Chinese housing boom that accelerated after about 2003. As Chinese households realized they had a valuable and appreciating asset that could be swapped for other, even nicer assets, with even greater appreciation potential, a new wave of upgrading and real estate speculation began. This became another of the great drivers of Chinese growth in the twenty-first century.

Finally, the decision to enter the World Trade Organization (WTO) touched off the seventh, export-oriented, wave of enlivening. As was the case with the housing market, there was a significant lag between the time the nominal decision was made and the time the response to that decision became manifest. China's WTO entry was agreed in 1999, but membership did not become final until December 2001, and even then, some of the most important provisions phased in over the next three years. As the new rules kicked in, as new producers and merchants entered while old ones learned new tricks, and as clumsy old businesses were forced out of the way, China's exports began to accelerate. Between 2004 and 2007, China's exports grew more than 30 percent per year, as new players found new markets. The enlivening of China's export economy was the seventh wave, the last in a series of enlivening reforms that released structural potential that had previously been suppressed.

2.4. The New Normal: Policy-Making Under Zhu Rongji

As described earlier, by the mid-1990s, disillusionment with planning and the success of market reforms meant that government intervention in sectoral development policy declined steadily. Such interventions reached a minimum during the Premiership of Zhu Rongji (1998-2003), when they were almost zero. On one side, technology policy became largely de-coupled from industrial policy, and instead became an almost purely "horizontal" policy for building human resources. Under the policy labeled "Revitalize the Nation through Science and Education [*kejiao xingguo*]," budgetary allocations for the Chinese Academy of Sciences increased, while competitive research grants through the National Natural Science Foundation of China expanded dramatically. The May 1998 "985 Program" increased funding for elite universities, and overall university enrollments began the rapid acceleration that would increase the number of college graduates from one million in 2001 to five million by 2007. Inputs into science, technology and innovation increased as budgetary resources became available.

In the industrial sector itself, Zhu Rongji abolished most of the industrial ministries in 1988, and converted that 242 national research institutes that had been affiliated with industrial ministries into independent enterprises. At the same time, during Zhu's premiership, the central government scaled down the large state-owned industrial projects that were intended to absorb advanced technology and reshape sectoral technology trajectories. This is evident in all three of the flagship high-tech investment projects: integrated circuit (IC) fabrication; nuclear power technology; and civilian aircraft. The 1995 government investment in IC fabrication, a joint venture with the Japanese firm NEC, was the last large-scale central government investment in IC production for over a decade. The project, as implemented under the Zhu administration, was not an abject failure, but was plagued by delays and cost overruns, and no successor project was initiated. In nuclear

power, two large-scale projects had been ongoing since the 1980s, a domestically developed project (Qinshan) and a French turn-key project (Daya Bay near Hong Kong), both of which involved substantial investment in expanding domestic technological capabilities. Zhu did not approve any additional nuclear power plants during his administration. Finally, large civilian aircraft projects had been undertaken since the 1970s in a series of stop-and-go initiatives, with frequently shifting strategies. After the breakdown of cooperation with foreign partners in 1997-98, Zhu Rongji declined to resume independent efforts, and there was no large aircraft project for the remainder of his term.[4]

To be sure, the Chinese never adopted a laissez-faire philosophy towards technology, but practically speaking, the Chinese government by 2001 had stopped trying to enact specific industrial and technology outcomes. Industrial policies were maintained for a handful of the highest priority sectors, such as ICs, software, and automobiles, but the approach shifted to a relatively "light touch" policy, relying overwhelmingly on indirect instruments. The main industrial policy support for ICs and software was Document No. 18 of 2000, which threw the sector open to private and foreign investment, and which provided tax incentives to producers regardless of their ownership status.[5] China supported several industrial standards designed to benefit local firms, the most important of which was the TD-SCDMA third generation telecom standard (Linden 2004). No other sectors received anything like the level of attention given to ICs and telecom. Thus, by the end of the Zhu Rongji administration in 1998-2003, the government had wound down old-style government investment in state-owned techno-industrial projects, and had committed to a new, market-driven process.

Moreover, Zhu presided over an extensive government re-organization, specifically designed to reduce the amount of government oversight and control of firms, in order to make enterprises

4 For further documentation, see Chen and Naughton (2016).

5 IC industrial policy has been well covered in the literature. See Yinug (2009). Policies were further scaled back in 2004 to conform with WTO rules on tax rebates.

more fully market-oriented. Most industrial ministries were abolished, and the total personnel of the comprehensive economic agencies was reduced by 41% from 1,768 to 1,040. The authority to "draw up and implement industrial policy" was explicitly taken away from the State Planning Commission and given to the State Economic and Trade Commission, which did not have the institutional structures to formulate industrial policy, and in fact never did so (Jung 2008). In other words, there literally was no government agency taking charge of industrial policy. As Heilmann and Melton (2013) describe, while "planning" was still practiced, it was re-defined to produce a long-term strategic vision, without any imperative economic targets (Heilmann and Melton 2013:620-639). The 11th five-year plan (2006-2010) still fit in with this evolution. It laid out a development strategy rather than a bundle of industrial policies. It envisioned a broader and more environmentally-friendly development strategy, based on human capital development, poverty alleviation, and growth of the middle class (Naughton 2005). The 11th Plan thus represented the culmination of an evolution toward a more market-driven process, in which government largely withdraws from direct intervention and "vertical" policy-making.

The driving force of industrial development in Zhu's administration was market-oriented economic reform. Zhu took the difficult step of closing down under-performing state enterprises and further opening China's economy, a process that culminated in China's 2001 entry into the World Trade Organization (WTO). The de-emphasis and virtual abolition of targeted industrial interventions was a conscious and intentional part of this process, as can be seen from the fact that the organizational structures that organize policy-making were re-shaped to the type of market-friendly outcomes considered rational by the Zhu Rongji administration. This policy evolution at first seemed destined to continue under the new leadership post-2003, as exemplified by the new Premier Wen Jiabao. It seemed probable that technology and innovation policy would continue to evolve in the direction of market guidance. The expectation of continuity was reinforced by China's economic

success, and deep integration into global production and technology networks. There had been fears in China of a painful economic consolidation in the wake of China's 2001 WTO membership. Instead, China's GDP growth *accelerated,* and stayed above 10% for five years beginning in 2003. Incoming foreign investment increased, for example in the semiconductor industry, where eight new plants were on the line and another 13 under construction by 2003, all foreign-invested or private (Chen 2011). Chinese firms were forced to upgrade to meet the intense competition, while the new foreign-invested firms had to localize activities and transfer technology to Chinese partners in order to be cost competitive. Both processes were effective in compelling technology adoption and improved productivity (Brandt, Van Biesenbroeck and Zhang 2012). China's integration into global production networks deepened, and China became the world's largest exporter of high-tech products (surpassing the US in 2005), with 88% of those exports produced by foreign-invested firms. China's success was especially marked in information and communications hardware (ICT), which offered relatively low-technology and low-capital intensity entry points, and also multiple pathways for upgrading to higher valued hardware, software, and service activities. For all these reasons, most analysts expected continuity in China's movement towards more market-based instruments, and few anticipated major changes.

2.5. Conclusions

By 2005, the Chinese economy was unquestionably a success of a global and historic dimension. Not only was overall growth extraordinarily rapid, but it had been accompanied by all the hallmarks of a broad development process. Living standards had improved rapidly in both city and countryside, skill and education levels had jumped, and urbanization was proceeding rapidly. In the international dimension, China had progressed far beyond the initial, limited export promotion through special policies, and was now

entering an era of deeper openness. The harmonization of domestic and international economic rules, symbolized by WTO membership, seemed to be well under way. Moreover, China was entering an explosive growth phase in which integration of Chinese workers and producers into global value chains was transforming the world economy.

How much of that success could be attributed to industrial policy and planning? The answer is simple: none. So long as we retain a relatively narrow definition of industrial policy, it is quite clear that China through 2005 had very little of it, and that what it had was rarely even implemented, much less in an effective way. It was not unreasonable to expect continuity. However, as we show in the next chapter, the reality was that China was now poised to make a fateful turn in policy direction.