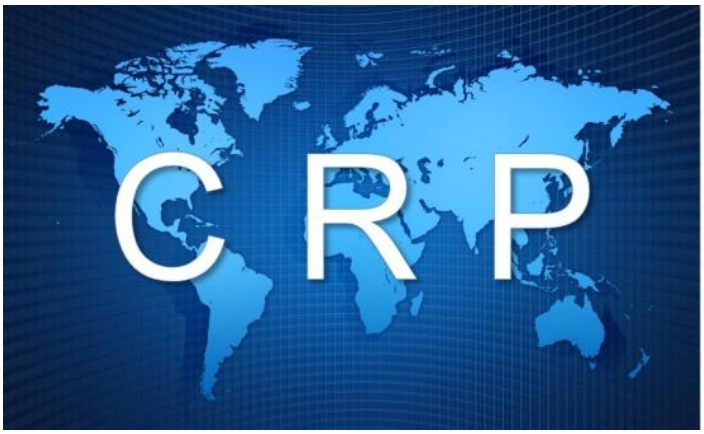

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The Political Economy of Rapid Transport Infrastructure Expansion in China

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'China's strength is that it can plan and implement. Our system, which is too democratic with too much individual freedom that often disregards the rights of others, has made it difficult for us to build infrastructure…' [On the building of toll roads]: 'As long as individual right is above public responsibility, we will not progress...That's the only problem we have now.'

Then Vice President Jusuf Kalla told press conference after meeting with Chinese Vice President Zeng Qinghong in China, The Jakarta Post, 10 June 2007.

Introduction

A common narrative circulates among policymakers, news pundits and media analysts that China's success in rapid economic development is chiefly possible due to the visible hands of the "strong state" in the People's Republic of China. A post-ideological Leninist party-state, riding atop a largely docile bureaucracy, demands individual-level compliance and tough sacrifices for the collective goals to produce phenomenal results. Other developing countries' inability to match China's success is invariably due to a more complicated and less coherent policy including a weaker core of reform leadership, contentious political parties, and democratization process that bring in grassroots voices. As illustrated in the quotations above, these political transaction costs have been blamed for Indonesia's far slower growth in road infrastructure expansion. From 2001 to 2005, the total length of national expressways in China rocketed from 19,453 kilometers to 41,005 km. In comparison, the cumulative length of expressways in Indonesia rose gradually from approximately 26,000 km. to 34,000 km. By 2009, China surged ahead with 65,065 km. while Indonesia appeared stuck at 34,600 km.[1] This is to say that Indonesia in the immediate aftermath of the Asian Financial Crisis had actually more kilometers of expressways but was quickly overtaken within a few years and left behind in a less than decade.

Even more enviable as from a statist point of view, Chinese roads pay for themselves. Starting with 4,700 km. of toll-bearing roads in 1998, various levels of the Chinese government have charged tolls on nearly all existing expressways as well as numerous provincial and municipal higher-graded highways. In contrast, only 533 km. in 1998, 556 km. in 2005, and 693 km. in 2009 were are toll-bearing in Indonesia.[2] The total toll road investment in Indonesia from

[1] *Indonesian Commercial Newsletter* 2005; *Indonesian Commercial Newsletter* 2010

[2] For a regularly updated statistical overview of transport in Indonesia, see World Bank, "Transport in Indonesia," available on: http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/EXTEAPREGTOPTRANSPORT/0,,contentMDK:20458729~menuPK:2066318~pagePK:34004173~piPK:34003707~theSitePK:574066,00.html

1990 through 2006 was US$ 3,335 million, paled in comparison to US$ 20,045 million for China.[3] The tight linkage between investment sources and residual claimant property rights in China appears to be a major contributing factor to rapid capitalization for road construction. Given China's authoritarian politics and unitary state structure, how does Beijing motivate localities to invest aggressively in infrastructure, and how does it maintain control over the forces unleashed by decentralization? Through an overview of the political institutions that shape sub-national official rent-seeking behaviors, supported by empirical data on the financing of highways, I demonstrate the non-unitary structure and disjointed processes of infrastructure politics. It suggests China's rapid addition of roads should not be seen as an output of top-down resource mobilization capacity unique to China's regime type as often characterized by the outsider—such as indicated in the above quote from Jusuf Kalla—but rather as a suboptimal outcome of bureaucratic fragmentation and local officials bent on a short-term fiscal opportunistic calculus. In particular, provincial governments have played a key intermediating role in the financing, construction, and redistributive aspects of highway and rural road expansions, for which they sought rewards in charging tolls irrespective of the legality and economic welfare consequences.

The paper draws on statistical data at the national and provincial levels, Chinese journals and industry-related websites, as well as the author's 2005 fieldwork in the Chinese province of Guangxi and results of collaborative research with the Chinese Academy of Social Sciences.[4]

Actors and institutions in infrastructure policymaking

In the meta-narrative of new institutional economics, the ruler as a 'stationary bandit'—facing a long term horizon for calculating the returns on policies and capital investments.[5] As the world's

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[3] Sihombling 2008

[4]The Chinese-language literature on the political economy of roads and road-building is considerably larger in output but not more diverse in perspectives and applied methodology than English-language publications by the World Bank and Asian Development Bank. Similar to the English-language studies, their common focus is documenting and explaining the mechanisms for the contribution of roads to rural development. More varied, interdisciplinary, and bottom-up perspectives can only be obtained by careful readings of specialized transport journals such as 中国交通报 (China Communications News) and 中国交通 (China Communications), and related industry journals such as 建设机械技术与管理 (Construction Machinery Technology and Management Journal), as well as several officially sponsored websites. Provincial and sub-provincial publications also provide a wealth of information, of which I have taken advantage in preparing case studies in this paper. Household surveys and post-project completion evaluations of road projects have been conducted for most major, higher-class road projects, but they are often held by provincial governments and consulting companies as proprietary documents and thus not readily available to the general public.

most powerful Leninist political party overseeing the fastest output growth rates in post-WWII history, the Chinese Community Party can be counted on to intuitively recognize that some institutional check on central state extraction and rent-seeking by its agents would be desirable for regime survival. The proper extent of revenue imperative should stop at the marginal point when the scale and unpredictability of corruption and inefficiency in capital usage become sufficiently high as to deter further investment—in short, a point where government intervention is tantamount to killing off the goose that lay the golden egg.[6] China under Jiang Zemin's leadership of Chinese Communist Party approached this calculus in a characteristic way toward infrastructure expansion—by emphasizing the principle of local financing of public goods under central governmental guidelines. In the late-1980s, Beijing institutionalized the residual claimant rights of local agents in paying for road construction, hoping that this form of administrative decentralization would encourage local officials to make good use of local information and financial resources to increase investment in roads.[7] In order to maintain control over the aggregate outcomes of local initiatives, Beijing neither gives localities independent fundraising authorities commensurate with the expenditure on public works, nor allows them to determine their needs in road projects as would be the prerogatives in a federalist system. As a result, sub-national officials in charge of meeting the aggregate targets have exploited the revenue potentials of the higher grades of roads—in particular Class I and Class II Highways which are typically under provincial jurisdiction, whereas Beijing has a direct role in National Expressways—to create a general fund to build lower grade and rural roads with lesser prospects in commercialization. The redistribution is essentially non-institutionalized and unregulated through the local budgets and the central funnel of the Ministry of Transport—which, over the past decade, has created entrenched bureaucratic interests that have successfully resisted Beijing's effort to change the decentralized framework even as it produces poor resource allocation and corruption.[8]

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[5] Olson 1993; MacIntyre 1994; Goodpaster 2002

[6] Bellier and Zhou 2003, p. 7

[7] For an economic model summarizing the basic arguments, see Qian and Xu 1993.

[8] In the late-1990s Beijing had reversed gears on the decentralization momentum, engaging in re-centralization of authority and resources in several significant areas including the financial sector, commanding heights, and social services. Lin 2008; Lin 2006; Yang 2009; Naughton 2008. The persistence of local financing of roads represents a failed attempt at recentralization.

The politics of infrastructure expansion in China is marked by four key policy dynamics since the 1990s:[9]

1) The central government sets quantitative targets for national trunk-line expansion and regional variations on network connectivity;

2) Economic decisions and organizational capacities to launch a road project are committed at the provincial governmental level in China;

3) The financial model involves using a small amount of central government funding to bait the bulk of highway capitalization from domestic commercial banks and local governmental fiscal resources, in which private and foreign investors play a marginal and short-term rent-seeking role;

4) National legal and regulatory codification has little impact on how localities conduct their road-building strategies in China, as epitomized by the indefinite postponement in the implementation of the national fuel tax.

The national bureaucracy overseeing the development of the national highway network has been stable through the reform era. As the functional ministry in charge of road matters, the Ministry of Communications—restructured and renamed the Ministry of Transport in 2009[10]—collects vehicle surcharges and road maintenance fees from new car buyers and local governments in amassing a general fund from central transfers and subsidies to localities for road-building were drawn. Presumably, the Ministry of Finance also has a hand—if not much of a say—in Beijing's financial allocation. The National Development and Reform Commission—as the latest reincarnation of the State Planning Commission—plays the critical role of approving expressway and higher-grade highway project proposals and reviewing supporting documents including various impact assessment reports at the proposal stage and post-construction evaluation reports. Finally, the Ministry of Railway and the former Ministry of Construction have influenced the supply-of construction capacity as quasi-commercial bidders of road projects. The collective effort of these ministries under the State Council supplies the architectural blueprint and coordination in the expansion of transport infrastructure—in the 8th Five Year Plan (1990-94) the central government set up the major highway framework for the country—called the 'five verticals and seven horizontals' (*wu zong qi heng*)—including twelve high quality national trunk lines with a total length of 35 thousand km. The 9th FYP (1995-2000) initiated the construction of 'two verticals and two horizontals' and three important trunk line sections, with a total length

[9] Data cited below draw on research findings discussed in Lin 2011.

[10] For details on the administrative change, see http://www.caijing.com.cn/2009-03-18/110123414.html

of 17,000 km. These goals were accomplished by the end of the 10th FYP. Under the 11th FYP (2006-2010), Beijing has put forward the goal to construct 380,000 km of highway, among which 24,000 km of expressway should be built during this period. In particular, the State Council has approved a 'Rural Road Construction Plan' which represents the first national infrastructure construction plan for the rural areas. The plan incorporates goals stated in the above-mentioned Developmental Plan.[11]

Central priorities are communicated to local officials through the local bureaus of the Ministry of Communications and planning agencies at each level of the government. The results of local activities are summarized in annual work reports submitted to Beijing and five year plan reviews, primarily through three summary indices: 1) nation-wide aggregate road length, 2) length of high-grade highways (defined as expressways and highways above Class II in technical specifications[12]), and 3) road density or geographical coverage as measured by the extent to which townships and administrative villages are connected by roads. At the commencement of reform in 1978, the total length of highways within the country was only 890,000 km, with a density of 9.3 km/hundred square km.[13] Only 91.5% of townships and 65.8% of administrative villages were connected by roads.[14] In the early years of reform, tightly controlled money supply and credit policy had hampered road-building, leading to widespread urban congestions and transport bottlenecks.[15] After more than a decade of construction, the total length of highways came up to 1.028 million km by 1990, among which the county and town roads accounted for 33% and 36% respectively.[16] By 1995, the total length of highways reached 1.157 million km, and roads connected 97.1% of townships and 80% of administrative villages. From 1995 to 2000, the percentages of townships and administrative villages connected by roads had increased by 1.2% and 9.5% respectively.[17] By 1999, all counties of China were connected by roads.[18] With a

[11] *Economic Daily* 2005

[12] The classification based on technical grounds used by the World Bank measures the width of the road surface and includes Expressways (width 28m), Class I (25.5m), Class II (12m), Class III (8.5m) and Class IV (7m). http://siteresources.worldbank.org/EXTSARREGTOPTRANSPORT/Resources/579597-1128434742437/1735263-1128434796061/China_Study_Tour_Report_Rev3.pdf?&resourceurlname=China_Study_Tour_Report_Rev3.pdf

[13] The above data are based on: *China Transport* 2005

[14] 交通与发展研究课题网站 2005

[15] Fan and Chan-Kang 2005

[16] *China Transport* 2001

[17] *China Transport* 2000

highway density of 14.6 km/hundred square km, the total length of highways reached 1.402 million km by 2000. The proportion of high-class roads jumped to 13.5% of total roads in 2000 from only 1.3% in 1978. The 10th FYP (2001-2005) saw the completion of 24,700 km of highways, which was 1.5 times the combined length of highways constructed under the 7th, 8th, and 9th FYP's.[19] The total investments in rural road construction during the 10th FYP amounted to 417.8 billion Yuan, which was three times the investment under the 9th FYP.[20] As of 2005, the cumulative length of highways stood at 1.930 million km, of which county and township roads accounted for 25.6% and 50.3% respectively. Highway density rose to 20.1 km/hundred square km, or 2.6 km/hundred square km higher than that at the end of the 9th FYP. The percentages of townships and administrative villages connected by roads reached 99.8% and 94.3% respectively, representing increases of 1.5% and 4.8% over the figures at the 9th FYP.[21] In the 11th FYP, Hu Jintao and Wen Jiabao expected *all* towns and administrative villages in Eastern China to have be connected with paved roads constructed using concrete cement, while Central and Western China enjoy lower quotas of 100% and 90% concrete roads for townships and 88% and 50% for villages, respectively to these two regions.[22]

The above indicators capture how the infrastructure expansion is seen through the eyes of national politicians and central planners in Beijing. Localities see the projects quite differently. The following analysis of local governmental incentive schemes focuses on their approach to financing highways (Class III roads and above) which constitute a relatively small percentage of total roads, but as toll-able roads they form the foci of rent-seeking activities. Their fiscal importance is revealed by their faster growth rates per annum compared to the lower-grade roads, and by local officials' resistance to Beijing's repeated attempts to change or enforce contractual terms of tolls. For the present discussion, I will set aside discussions of rural roads, which are based on a different financing model and typically involve different agencies and interests.[23]

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[18] The above data are based on: *China Transport* 2005

[19] Ministry of Communications 2005

[20] *Xinhua Agency* 2006

[21] There were still 75 towns and 38426 administrative villages which with no road connectivity at all at the end of 2005. The above data are based on the Ministry of Communications 2006.

[22] *Nongmin Ribao* 2006

[23] Rural roads and have been handled differently by central planners under Jiang Zemin and Hu Jintao, with the latter explicitly incorporating their lengths into aggregate accounting for the national highway plans. See Lin (IFRI, 2010) for details.

Financing Highways under Quasi-Federalism

The provinces have been the dynamic players in transport development throughout the reform era. The broad framework for the provision of highway projects can be characterized as a fiscal federalist one. Far from a static institution, this framework has allowed the terms of decentralization and cost-sharing arrangements to vary over time, mostly in accordance with the central government's interests. In the mid-1980s, central planners began to liberalize preexisting constraints on the local states' fundraising. Under the planned economy, road building had been predominantly financed by government appropriations, profits from the state-owned enterprises, and local government levies.[24] In 1984, the State Council gave the green light to local governments to construct toll roads and to seek multi-source funding, including funds from international organizations, domestic banks, and private investors. During the 7th FYP (1985-89), the government further approved various vehicle surcharges, port construction fees and so on. Even more significantly, local transport agencies were given the green light to charge tolls on roads for which they had fundraised. In addition, the government continues the policy of expropriating agricultural land for infrastructure development at low, non-market prices. These new financial incentives and options have contributed to the rapid road growth.[25]

The Ministry of Communications amasses two major sources of finance: 1) a vehicle purchase levy (*chegoufei*, about 10% of the total cost of the car), which is intended for use in road construction; and 2) road maintenance fee (*yanglufei*, about 100 Yuan per ton of goods, mainly levied on transport companies) collected by local transport authorities on behalf of the central ministry. The vehicle purchase levy used in rural transport development amounted to 1.4 billion Yuan in 2001, 10.8 billion in 2003, 22.7 billion in 2006, 36.54 billion in 2007, and in 2008 to 22.07 billion.[26] Central transport officials anticipated spending an additional 45.4 billion in 2009-2010. Interestingly, these amounts represent only around 40% of the total revenue from this levy, which poses a question as to how the remainder has been spent.[27] The road maintenance fee invested in all types of road constructions amounted to 86.089 billion Yuan in 2005, which

[24] Fan and Chan-Kang 2005, p. 19.

[25] Based on Vice Minister of Communications 1995.

[26] Data available on: http://news.chinavoc.cn/Tax/Files/200707/37779.html and http://www.gov.cn/jrzg/2009-04/17/content_1287925.htm

[27] See http://news.chinavoc.cn/Tax/Files/200707/37779.html

was only a minor portion of the predicted total investment for 2005 of 488 billion Yuan in roads.[28] (See Table 1 in Appendix.)

Consistent through the reform era is the provincial government's primary role in funding sub-national highways, with the latest requirement that provinces raise 35 percent of the initial capital from their own revenue streams (including tolls) and selling treasury bonds – the other 65 percent of the cost may come from bank loans.[29] While central transfers (ministerial special funds and treasury bonds) rarely exceed 10% of the total funding of major expressway and highway projects, provincial officials cannot afford to disregard lobbying since a host of issues that are more important than the central subsidies are at stake with these central-local co-financing (*peitao*) projects. These issues include approval of future projects, routes of national trunk lines, anti-poverty subsidies, terms of toll roads, credit access, and cadre management assessment of individual officials, etc.

Throughout the 1980s and 1990s, the main source of funding for road projects at the provincial and lower levels was road maintenance fees (*yanglufei*) levied by all levels of the local government. By definition, road maintenance fees are exacted not for the purpose of building new roads but for maintaining existing ones. Vehicles affected by these fees include farm tractors, passenger vehicles and freight carriers. In rural areas, farm tractors provided the bulk of taxation. Local highway authorities collect these fees on behalf of the Ministry of Communications (MoC), and since 1996 they have come under local state management. In short, the fees first go into the local treasury, and part of the sum would be submitted to the MoC, while the localities also directly tap into this fund for their expenditures. The MoC kept the cash flow largely as a black-boxed internal operation.[30]

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[28] Ibid.

[29] Fan and Chan-Kang 2005, p. 21. See also http://www.hebjtinfo.com/UpFiles/Article/专题研究/农村公路管**养**专题/资金**筹**措管理/农村公路建设融资的可行性路**径**分析.pdf.

[30] In 2006, under pressure from various governmental sources, the MoC released the 2003 data on the usage of road maintenance fees. Apparently, 45% of that fund went into maintenance and upgrading of roads, while 15.5% was allocated for the construction of new roads and another 15% specifically supported the construction and maintenance of rural roads. The remaining 24.5% mostly paid for overhead costs. *Zhongguo Jiaotong Bao*, 11/24/06, posted on the official MoC website: www.moc.gov.cn/06jiaotongbaoxw/lishixw/06nian11y/200611/t20061124_125372.html. Since these fees are suppose to be eliminated upon the implementation of the national fuel tax in 2009, it may be impossible to find data for the other years.

Over time, road maintenance fees have dried up due to the changing nature of traffic and tax evasion by tractor owners.[31] Even more importantly, transport authorities blamed a diminishing law-abidingness among drivers. In fact, 'in certain regions, resistance has evolved from the individual acts of disobedience in the past to collective action in resisting, gang beating, and taunting and scolding fee collectors.'[32] Reinforcing the trend of tax evasion is the general fee-to-tax reform. While widespread implementation of this major reform and dramatic tax cancellations were not achieved until 2003, policy pressures to reduce local fees and levies had mounted in prior years.[33] In fact, the 1999 revision of the Highway Law officially banned further collection of road maintenance fees: 'drivers no longer need to pay highway maintenance fees, and highway agencies should not ask for such fees from drivers or collect fees in arrear.'[35] While localities have ignored the central prohibition, they do so under the perils of penalty from Beijing and further lawful resistance from vehicle owners.

The 1997 PRC Highway Law formulated a series of criteria and regulations on highways financed by loans that were then repaid by fees and levies on road users, on toll roads with domestic and foreign investments, and on the transfer of residual highway property rights. Given the improved legal groundwork, financing sources for highways have been increasingly diversified. For instance, during the 'Ninth Five-Year' period, road maintenance fees accounted for 53% of the total funds for road constructions, far lower than in the past. A further 36% came from other domestic sources including vehicle purchase levies, various government transfers, domestic bank loans, and treasury bonds. Beijing started to issue long-term public bonds in reaction to the need for domestic fiscal stimulus in the aftermath of the Asian Financial Crisis. Around 87 billion Yuan in bonds were issued between 1998 and 2002, creating a major boost in the construction of rural roads.[36] That sum represented 13.2% of the entire bond issuance during the same period. However, under Wen Jiabao the State Council has discussed reducing bond support for highways—to about 10% of the total bond issuance—as part of a less inflationary macroeconomic policy with tempered fixed capital investment.[37] This objective is under discussion, as officials fear the implications for the overall financing of roads; in particular

[31] *Renda Yanjiu*, Vols. 98 and 9 (2000), p. 22.

[32] Idem.

[33] *Jiaotong Caihui* 2003

[35] *Jiancha Ribao* 2006

[36] Fan and Chan-Kang 2005. p. 19

[37] *Jianshe Jixie Jishu yu Guanli* 2004

domestic commercial banks may pull back on their lending in view of the reduced bond support. These considerations might well have been overtaken by the massive stimulus package in 2008-2010 to counter the global recession.

With increased cash flow and pressures for divestiture of formerly state-owned enterprises, provinces have found more actors queuing up for a slice of highway pork. Commercial banks have found highways to be the next best thing to real estate as politically insured, high return investments.[38] International financial organizations have enthusiastically lent to highway projects consistent with poverty reduction goals, and have been getting deeply involved in micromanaging the environmental, compensatory, resettlement and other social externalities of road projects. With increasing participation by the World Bank, ADB and foreign investors, foreign loans and foreign direct investment constituted around 8% and 3% of total, respectively, in total highway capitalization in recent years. More troubling for governance is the provincial governments' sponsorship of 'recombinant propert' (Stark 1996) or 'quasi-private' firms (Barbara-Francis 2001) in search of private gains and funding flexibilities. Two typical measures are publicly listed stock companies based on highway projects, and privatized construction firms that were spin-offs from provincial highway bureaus (*gongluju*) or communications department (*jiaotongting*) agencies seeking to bid on parts of highway projects. As will be described later in the case studies, these well-networked firms maintain significant influence over the provinces' allocation of resources and residual property rights, and in the process shape the quality of private participation or market forces in the transport sector.

Lest we jump to the conclusion that decentralization in China has successfully devolved liability to localities, the empirical relations suggest a more complicated set of variables and causal mechanisms. It has been observed that at a lower marketization level in 1986–1992, fiscal decentralization had positive effect on development expenditure and negative effect on other expenditure. However, when the level of marketization increased, such effects were reversed.[39] In the late 1990s, China spent around 9 per cent of its GDP on physical infrastructure [of which 3 percent was on roads], with transport constituting around 50 per cent of the total infrastructure spending followed by electricity at 40 per cent.[40] What might it mean in the future when fiscal

[38] Author's interview of MoC official, July 2005, who claimed that banks don't even bother to do serious due diligence on the investment risks of highways.
[39] Chakraborty and Zhang 2009

[40] Postigo 2008

decentralization, if persisting, start to reduce development expenditure? Does the pace of decline hinge on the fiscal insolvency of the localities?

Since the mid-1990s local governments in poorer regions have increasingly accrued debt to meet the central government's expectations on transport infrastructure expansion.[41] In the face of a dwindling local revenue base and constant central transfers—amounting to around 25-30% the total capital needed—Gansu became increasingly indebted through bank loans and international organizations and foreign private lenders, incurring about 7 billion Yuan in loans as of 2000.[42] Henan province accumulated 32 billion Yuan in debt just for provincial highways, generating an interest payment of 2.5 billion per year in 2006. The entire sum of toll collection for the year was only 2 billion Yuan, making repayment impossible. As a result, 87 toll stations in Henan were handed over to creditor banks.[43] Nationwide in the early 2000s, about 17 provinces are running net deficits on their roads, usurping resources estimated at about one-third of the total central transfers for road projects.[44]

Ironically, under extreme fiscal duress, local transport officials may be further incentivized to favor additional constructions of higher grade roads to earn tolls and to charge tolls beyond the legally-permitted period. For example, at the end of 2008, 95% of Expressways, 60.77% of Class I highways, and 44% of Class II highways nation-wide were toll roads. However, in the impoverished Hunan Province, 94.25% of Class II highways charged tolls.[45] This suggests an interaction effect between provincial fiscal shortage and state-led investment biases that are detrimental to rural development. The resulting financial profligacy and low economic returns can only cause further strain on the banking system and, ultimately, the national treasury. In Hunan, total governmental and private debts relating to Class II highway constructions amounted to nearly 30 billion Yuan, of which 60% can be attributed to the provincial government.[46]

Furthermore, active local governmental investments in infrastructure expansion show evidence of crowding out effects on private efforts. Although compared to other developing

[41] *Fazhan* ,Vol. 7 (2002), p.5

[42] *Renda Yanjiu*, Vols. 98 and 99, 2000, p. 22.

[43] *Zhongguo Jinji Zhoukan*, 2006

[44] *Zhongguo Qingnian Bao* 2007.

[45] See http://unn.people.com.cn/GB/14778/21707/9216467.html

[46] According to the MoC, the debts of Class II roads financed by government loans have piled up to 500 billion yuan as of 2009. This figure likely underestimated the extent of damage, as most provinces were still in midst of doing debt audits at the time of the report. See http://news.csonline.com.cn/hn/200904/t20090430_940258.htm

countries China has been quite successful in attracting private capital into transport projects, the private sector finances less than 7% of total road investments, mostly as joint ventures in toll roads.[47] This low figure might attest to the relatively small ratio of commercially viable highways —e.g. in 2003, only 8% of total roads in China were toll roads—in the total network. Understandable, private investors would not be interested in rural roads. While China has pioneered experiments with road securitization, the vehicle of highway corporations has received severe criticisms for its rent-seeking record and poor corporate governance practices.[48]

Where private firms are bidding for road projects, they are often sourced from dubious stakeholders. The main culprit of corrupting private capital is the Build-Operate-Transfer (BOT) model.[49] BOT is a form of delegation in project financing, wherein a private company receives a contract from the provincial government to finance, design, construct, and operate a highway for a specified period, after which ownership is transferred back to the province. During that period the private company has residual rights to charge tolls to enable a speedy recovery of its investment and to pay for operating and maintenance expenses in the project. The Chinese provinces have embraced BOT—more popular in Asia than in Western countries—as an appealing alternative to lengthy procedures in public sector financing of highways. BOT road projects started in 1992 and gathered momentum rapidly. In recent years, about 50-60% of new projects are BOTs, raising alarms in Beijing on management issues. Naturally, BOT projects only concern roads with profit-making potentials, but profit could come from genuine commercial opportunities or from political licenses.

In comparison to entirely publicly financed projects, BOT projects go through relatively lax approval procedures and supervisions. The private company that won the bid for a BOT road project would obtain a maximum of thirty years in ownership and residual property rights. The BOT firm submits a feasibility report to the provincial Communications Department, which would then forward it to National Development Reform Commission (NDRC) for review and approval. Beijing also conducts an audit to see if the responsible legal party has enough capital to put up the required 35% of the entire project cost for the initial capitalization. Generally, BOT projects receive no government subsidies or direct equity participation, hence the rate of return on investment is set at a higher level of about 17% to reflect the greater risk.

[47] World Bank 2006

[48] Ojiro 2003

[49] Unless indicated otherwise, all data below derive from the author's interviews of officials in Beijing and Guangxi in June-July 2005.

The problem with BOT projects is essentially one of local political entanglements and unreliable actors emerging from the problematic legacy of reforms in separating the government from enterprises and divesting state-owned enterprises.[50] About 60% of all BOT projects were ruined as of 2005. In Guangxi, BOT companies show significant networking relations with the provincial Communications Department, although no official would disclose the specifics in interviews.[51] The relationship shows in the institutionalization of the exchange relations—for example, the Infrastructure Construction Bureau has received payments for project designs before the 'winner' of the open bidding process was declared. Upon winning the bid, the BOT company deposits 240,000 Yuan and signs an agreement with the Communications Department. After that point, the firm is pretty much off on its own, enjoying the autonomy deriving from its independent fundraising role.

The financial background of most of these BOT companies is troubling. Deceptions abound, as BOT firms commission feasibility studies from consulting (*zixun*) companies that are paid to upwardly revise costs, which help to justify additional loans. This behavior is sustainable only because of rampant collusion and corruption in the construction industry. BOT entrepreneurs typically roped in a reputable government work unit (*shiye* or *qiye*) in a nominal business partnership. However, when problems arise the leading cadres of the work unit are understandably reluctant to help bail out the project. At the same time, the original entrepreneurs or their backstage bosses (*muhou laoban*) could not care less about the firm's loss of money. In fact, it is common practice for BOT funds to be diverted to speculators on real estate and private consumption. In the end, domestic commercial banks and vulnerable private investors (including shareholders for publicly-listed BOT firms) shoulder the liabilities in default and bankruptcy. The road project languishes, falls into public hands, or comes to an end. In effect, the risk is transferred to the general public.

All together, governmental rent-seeking through investment vehicles, heavy fees and levies, and collusion with private firms have created made Chinese highways an unreasonably expensive proposition for freight and passenger traffic.[52] Deterred by an excessive number of toll

[50] Since 1997, seventeen director-level provincial Communications Department officials have been convicted of corruption, including the provinces of Beijing, Henan, Hunan, Sichuan, Guangxi, Guangdong, Guizhou, Xinjiang, Anhui, Jiangsu, Heilongjiang and Yunnan. See *Xinhua* 2005.

[51] They did reveal that only a handful of companies bid on these road projects, and all of them were former SOEs or affiliates.

[52] It is interesting to recall that the American automotive culture and the myth of individual freedom of physical mobility were built on freeways. How would the car-loving Chinese middle class see their own automotive future and identity? See Economist 2005.

stations and high fees—among the highest in the world relative to income—Chinese drivers keep using congested second-class roads, leaving many expressways underutilized. Even in highly trafficked areas, many toll roads have failed to generate sufficient returns to repay loans and distribute dividends.[53] Overloaded cargo trucks, buses at dangerous overcapacity, and official vehicles roam brand new four-lane highways as private vehicles stay away from these roads, unable to cope with the high transaction costs of long-distance highway journeys. The high cost of transport has affected logistics and trade competitiveness—according to one recent estimate, transport costs amount to one third of the final producer cost of goods.

Contentious Politics and Regulatory Outcomes

Legal ambiguities in China's highway regulatory framework have encouraged local official opportunism, representing unstable stalemates in central-local political struggles. Several rounds of revisions of the Highway Act of 1988 attempted to clarify fiscal relations such as options for local states to fundraise for roads, as well as residual property rights in terms of duration and terms of toll collection. In this process, the political limitations of Beijing have been revealed by the rampant disregard for the laws on the books, requiring stern languages and repetitions of same demands in subsequent revisions. Significant issues such as property rights concerning land reallocation and appropriate compensations for dislocated peasants have received address in vague terms. One is tempted to conclude that ambiguities are inherent in the legal framework to enable 'particularistic bargaining' among bureaucratic actors over locale-specific rent-seeking opportunities and developmental objectives.[54]

The local states' collective tax resistance against Beijing's is epitomized by the contentious national fuel tax. First proposed in 1994, debated, rejected, and then accepted in a modified form by the National People's Congress in 1999, the national fuel tax intends to replace various levies including the road maintenance fees with a single petroleum tax levied at point of purchase. For over a decade, the implementation of the fuel tax has been postponed due to concerted local government resistance. Arguing that the fuel tax would undermine their ability to fundraise for roads under their jurisdictions and thus prevent them from fulfilling a key developmental objective, localities continue to levy road maintenance fees, forcing the central government to come up with excuses for policy delays and exceptions. In 2000, a State Council

[53] World Bank 2007b; World Bank 2007a

[54] Susan Shirk 1993

document on traffic and vehicle taxation reform stipulated that before the implementation of the fuel tax, localities could continue to levy various road maintenance fees. 2004 revisions stipulated maximum periods allowed for charging tolls by region. A year later, the State Council urged localities to use road maintenance fees for the stated purpose of road maintenance.[55] Only after that aim has been met can the remaining money be allocated for other usage such as building new roads. In 2007, a MoC official reiterated that "facing a huge shortfall in public financing of roads, we have no choice but to accept the continuation of toll roads."[56] This statement arrived on the heel of a central directive seeking that all existing Class II tolls to cease immediately.

In 2009, taking advantage of the global plunge in petrol prices, Beijing sought to launch the fuel tax on top of existing fees and levies, and to phase out the latter in due time upon the availability of transfer payments to provinces to offset existing debt and finance new roads. It appears that as of 2010 drivers simply pay the fuel tax in addition to all other pre-existing fees, with Beijing asserting its rent-seeking role alongside other local state agents. The 2009 implementation guidelines even included loopholes to accommodate local governmental rent-seeking interests, mainly the exemption of expressway and Class I roads from limits on tolls. Clearly, localities resented the recentralization of tax collection with the fuel tax, through gas stations and the national oil corporations. The localities would effectively lose control over this revenue stream. For the same reason, officials in the MoC have also opposed this reform since they too will lose an undefined but predictably huge tax base in road maintenance fees.[57] Moreover, without this revenue source, localities would find it even more difficult to obtain credits from commercial banks and foreign sources.

In the fiscal battle over the fuel tax, the central state does not appear to be winning. The downside of China's rapid highway expansion is not just a cautionary tale of local state recalcitrance. Beijing must share the blame in not making progress in setting up a clear regulatory framework that decisively separates out the executive (bureaucratic principal in proposing projects), supervisory (highway authority), and ownership (highway corporation and operator) roles of the local government in highway projects.[58] These roles spill over onto each other,

[55] *Zhongguo Jiaotong Bao*, 11/24/06, posted on the official MoC website: www.moc.gov.cn/06jiaotongbaoxw/lishixw/06nian11y/200611/t20061124_125372.html

[56] "交通部有关负责人：公路收费政策不会动摇," 11/17/2007, available on: http://business.sohu.com/20061117/n246450615.shtml

[57] *Zhongguo Qingnian Bao*, 2/4/05, available on: http://news.xinhuanet.com/auto/2005-02/04/content_2545298.htm

[58] Du and Watanabe 2005b; X, Du and Watanabe 2005a

causing managerial complications and vulnerabilities to pressures from interest groups. For example, reacting to a high-level corruption scandal involving BOT agents, the Beijing Municipal Government annulled the levy of toll on users of the 5th Beijing Ring Highway after two months of its commencing operation on January 1, 2004. Furthermore, the municipal government unreasonably took over the responsibility of debt repayment which should have been undertaken by the Beijing Capital Highway Development Corporation, promising to pay it back by the fiscal revenue of Beijing government.[59] The inherent problems in these ad hoc interventions tend to undermine the institutionalization and legal legitimization of concessionary contracts.

Conclusion: Comparing China and Indonesia

Returning to the comparison of China and Indonesia posited at the introduction, one might find justification in similarities in the broad contours of authoritarian developmental states. Both countries have inherited the institutional legacies of a unitary state structure, prone to cyclical episodes of decentralization and recentralization under the authoritarian sway of charismatic leaders. Both countries embarked on neoliberal marketization in the aftermath of charismatic leaders who can hold together centrifugal forces in a fragmented national economy—the death of Deng Xiaoping in 1997 and the resignation of Soeharto in 1998.[60]

In China, at the heart of the politics of infrastructure lies a tug-of-war between central and local governments, while in Indonesia it encapsulates a battle of wills between technocratic reformers and old-time politico-business interests.[61] Soeharto had relied on ad hoc and personal interventions to break up highway franchise privilege abuses centered on concessions held by his family members and their cronies. Since 1998, and despite successive Indonesian presidents' prioritization of infrastructure development, Indonesia has experienced weak momentum in road-building as points of socio-political contentions proliferate and as the national and local policymaking process become more complex. Interestingly, underlying these contentions is a great deal of continuity in the rent-seeking interests over specific highway projects and patron-client networks nested in the national bureaucracy.

Whereas Chinese decentralization in the 1990s pertained narrowly to administrative and fiscal decentralization under the tight reins of a monopolistic party-state, Indonesia, in contrast,

[59] X, Du and T. Watanabe 2005a; Caijing 2004.

[60] Ferrazzi 2000

[61] Davidson 2010a; Davidson 2010b

rushed headlong into decentralization in the post-Suharto period with political liberalization, devolution of public services to local authorities, and implementation of reform policy and institutional design templates recommended by the international financial institutions (IFIs). Multi-front decentralization has been seen as a touchstone of the country's democratization, as a corrective to the heavy-handed centralization of the Soeharto era, and as a key component of creating 'good governance'. The latter has ranged from bringing government closer to the people to increase public participation and introducing local knowledge into such sectors as health and education to giving the local state incentives and measures to raise revenue locally to enhance autonomy. After a decade of experience with this experiment, the record has been decidedly mixed. While the central government has been frustrated with the performance of local governments, who still largely depend on central government hand-outs, neither has the former embarked on any large-scale, concerted efforts to recentralize authority.

In contrast to China's national bureaucratic stability, Indonesia has experienced dramatic changes in national administrative structures overseeing road projects. A National Committee on Policy for the Acceleration of Infrastructure Development (KKPPI) was established in 2001 to coordinate the acceleration of infrastructure provision with the objective of national economic recovery. Its relatively weak functions did not decisively The Road Law of 2004 was followed by administrative reshuffling that altered inter-ministerial relations and created numerous new agencies, making it more difficult integration of planning and coordination of various aspects of infrastructure development.[62] Now heading road works is the Toll Road Authority Agency (BPJT).[63] Comprising of representatives from the government bureaucracy, the academic community, the private sector, and civil society, BPJT reports to the Ministry of Public Works.[64] BPJT assumed the regulatory functions from JSMR, allowing the latter to focus on its ownership and operational roles. Jasa Marga lost its monopolistic status as the state's road operator and is now 30% privatized; it currently controls and operates about 75% of the toll road network (about 530km).

One of KKPPI's core mandates was to promote private sector participation (PSP) and public-private partnerships (PPP) in infrastructure development. In 2005, KKPPI strengthened the regulatory framework for PSP through replacing the earlier Presidential decree (No. 7/1998) by a Presidential regulation (No. 67/2005). The new regulation defined partnerships and

[62] World Bank 2004

[63] Asian Development Bank 2008a

[64] Asian Development Bank 2008b

licensing agreements in PSPs, stipulated the rules and procedures for selecting private sponsors through open and transparent bidding, and outlined an approach for dispute resolution. Tariffs were set for full cost recovery. If this exceeded customer's affordability to pay, the difference was to be compensated by a public service obligation subsidy from the Government. Unveiling the new framework for infrastructure investment, the Infrastructure Summit in January 2005 attracted some 91 projects with public-private partnerships (PPP).

The new regulatory framework and procedures for risk-sharing with the central government created opportunities for rent-seeking. Former lieutenants of Soeharto and surviving business partners of the New Order reconstituted themselves through new alliances to capture rent opportunities in road projects. Among these players were Jusuf Kalla and Aburizal Bakrie, who brushed aside blatant conflicts of interests in serving as ministers while operating highway investment companies.[65] In fact, the new alliance of predatory interests reached further down to the local state levels as Indonesia's democratization process offered them control over parliaments and political parties, and via business alliances and assorted instruments of political violence in a battle of newly decentralized, competing, and sometimes overlapping networks of patronage.[66] In short, decentralization is facilitating the emergence of more localized patronage networks that are relatively autonomous of central state authority. They have found that the local institutions of democratic governance, once captured, can provide the protection of their interests that previously required centrally organized authoritarian controls and a repressive military apparatus.

Lastly, foreign and private sector participation has taken centre stage in assisting officials in legal design of the new regulatory framework, as local governments are not yet able to devote financial resources to expressway construction as the Chinese provinces have been able to do. Thus the 'weakness' of the Indonesian state stems from a direct penetration of the national policymaking process on highway projects by powerful political entrepreneurs from the Suharto era, a fluid yet evident national cabal of business elite that have survived the Asian financial crisis eager to diversify their holdings to reap short-term benefits of the privatization of megaprojects.
In the terminology of new institutional economics, infrastructure politics in Indonesia is characterized by concentrated benefits and concentrated costs for a small number of players, whose inability to resolve their differences has lead to protracted policy formulation processes. China, on the other hand, suffers a different kind of political problem in that Beijing is unable to

[65] Davidson 2010b

[66] Hadiz 2003; Robison and Hadiz 2004; Hadiz 2008

impost a standardizing fuel tax measure due to the reform's diffused benefits for consumers and concentrated costs in upsetting local states as residual claimants of highway tolls. The powerful confluence of interests of provincial officials and their business partners vitiates against a more efficient method of fundraising and capital allocation.

Precisely due to their access to the national policymaking arena, Indonesian interest groups and regulators fought over precise terms of contracts and legislations pertaining to highways. While the central reformers appear equally interested as their Chinese counterparts in using national legislation as incentive structures to obtain the kind of local commitment to rapid development of transport infrastructure, they face additional constrains in at least many ways. First, elite politics intrudes on the desirable legal framework, as surviving New Order stakeholders oppose or divert legal changes to facilitate projects under their patronage. Second, under the auspices of decentralization, all matters pertaining to land has been delegated to district-level governments. So, the central government is forced to work at the pace local governments set at expropriating the necessary land.[67] This occurs despite the fact that toll roads legally are considered "national" roads and thus under central government authority.

As the national bureaucratic arena has expanded and ties to private sector has become increasingly complicated, the Indonesian central government finds itself having to put up more in upfront costs of road-building than it's decentralized framework of governance might suggest. In contrast, Beijing's direct financial contribution remains smaller than one might imagine for a strong developmental state.[68] As the result of the above political dynamics, Jakarta has to make an *ex ante* credible commitment on a project-by-project basis in infrastructure investment. The resulting specificity in the objectives of business lobbying has frustrated central reformers' desire to build roads quickly. The Chinese appears to operate on the reverse logic of broad national guidelines, interpreted locally to suit short-term fiscal and political motivations. Over time, while the road network has grown rapidly, local officials typically show weak commitment to regulatory governance, whose desirability is primarily assessed in view of *ex post* redistributive

[67] Hofman et al. 2006; Green 2005; Lewis 2003, p. 63; Lewis and Woodwawrd 2010.

[68] Jakarta still takes the lion's share of infrastructure investments. See Lewis and Chakeri 2004

outcomes.[69] From a long-term developmental perspective, neither country has a sustainable model of infrastructure development.

[69] Postigo (2008) points out that during the last 15 years the main focus of road transport policy-makers in China has been on new construction with management of road assets lagging behind. China has spent on road maintenance a third of actual needs - 0.1% of its GDP - and only six of the 31 provinces, all of them on the east, generated sufficient funds for adequate maintenance of their road asset base. Also Donnges, Edmons and Johannessen 2007.

APPENDIX:

Year	Number of Projects	Total Mileage (Km)	Among which are Expressways (mileage)	Total Investment (Billion Yuan)	Arranged Plan Investment (Billion Yuan)	Among Which (Billion Yuan)			
						Central Investment	Self-raised by Privince or City	Domestic Loan	Foreign Capital
2002	209	27700	14600	550	120	25.2	25	63	9
2003	219	26100	14700	580	130	24	25	56	8
2004	371	34800	21400	970	190	35.5	33	115.3	6.2
2005	434	41400	25500	1227.3	258.5	34.7	54.3	158.5	11
2006	559	43224	22189	1232.2	299.9	31.2	65.3	197.1	6.2
2007	493	35143	25247	1369.4	338.2	42.909	78.7	209.6	7.1

Source: Calculated based on data from: *Yearbook of China Transportation & Communications*, Yearbook of China Transportation & Communications Press, various years from 2003 to 2008

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