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The Benefits of Port Liberalization

A Case Study from India

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Executive Summary

In contrast to the rest of India, where it is the government that predominantly owns and manages ports, the Indian state of Gujarat has implemented various forms of port liberalization since the 1990s. This has helped it become the country's fastest growing state. Gujarat's economy has grown at an average of 10.14 percent per year from fiscal year 2001 to fiscal year 2006, the last five years for which data are available. This is comparable with China's average growth rate since 1978, and is distinctly faster than the growth of the other Asian tigers in the 15 years before the Asian financial crisis of 1997.

Gujarat has broken new ground with different forms of privatization, ranging from private provision of port ser-

vices to completely private ownership of new ports. The process started in the 1980s and gathered momentum rapidly after the central government in New Delhi enacted major economic reforms in the early 1990s. Gujarat has taken advantage of a constitutional loophole to convert its minor ports into some of the biggest ports in the country, vastly improved the availability and efficiency of port infrastructure, and facilitated the development of industrial centers that otherwise would not have existed.

Gujarat's port liberalization, along with its status as one of the economically freest states in India, should serve as a model for the rest of India and other developing countries, which can also benefit from the dynamic gains of port privatization.

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India's economic reforms in 1991 made it possible for individual states to attract industry through competitive policies and institutions.

Introduction

Until the 1990s, Indian policymakers swore by self-reliance and public sector dominance. All major ports were owned and operated by the government. India's share of world trade fell from 2.2 percent at independence in 1947 to 0.4 percent in the mid-1980s.¹ This was regarded as an achievement, not a tragedy, by socialist planners at the time. Not surprisingly, these planners failed to pay enough attention to developing ports: after all, self-sufficiency should, logically, lead to the abolition of all ports. So, India's ports in the 1980s suffered from obsolete technology, low loading rates, chronic congestion and delays, and poor connectivity with the hinterland.²

However, one state, Gujarat, decided to go in the opposite direction and reaped enormous economic success as a result. In the early 1980s, the state decided to harness ports and international trade as vehicles for economic development. It created the Gujarat Maritime Board in 1982 to upgrade and expand its ports. Over the next two decades, the GMB planned the integrated development of several new ports, along with the required road and rail links. It experimented with several forms of privatization, from privatizing port services to facilitating private jetties, and from joint venture ports to completely private ports. The state's Port Policy Statement of December 1995 spelled out an explicit strategy of port-led development, including the creation of 10 completely new, world-class ports, in which private-sector participation would play a large role.

The initial tentative steps in the 1980s did not yield dramatic results. India's industrial licensing policy at the time empowered the central government to decide on the location of all industries, and so industrialists could not move to business-friendly states of their choice (like Gujarat) even if they wanted to. However, India's economic reforms in 1991 virtually abolished industrial licensing and made it possible for individual states to attract industry through competitive policies and institutions. Gujarat's port policies, which emphasized a

lead role for the private sector, greatly magnified its ability to seize the new opportunities created by economic liberalization. The happy outcome was that Gujarat became the fastest growing state in India (excluding minor states like Delhi and Goa). This carries a lesson for all Indian maritime states and for other developing countries, too.

As Table 1 shows, Gujarat topped the growth rate of major states, averaging 10.14 percent per year in state gross domestic product in 2000–06.³ An earlier study by economist Montek Ahluwalia also showed Gujarat on top in 1991–99, with growth averaging 8.15 percent per year.⁴

Yet Gujarat was not always among the fastest growers. In the 1980s, when the central government determined all industrial locations, the state grew at only 5.08 percent per year, below the national average of 5.47 percent. What made the big difference after 1991 was economic liberalization, which freed industries to go to states of their choice. Even in the heyday of socialism, Gujarat had always been business-friendly, and it further improved its business climate after economic liberalization.⁵ Quantifying economic freedom or business climate in different states is a difficult and complex exercise. Such an exercise was undertaken by the Rajiv Gandhi Foundation, which constructed an *Economic Freedom for the States of India* index, analogous to the Fraser Institute's *Economic Freedom of the World* index.⁶ That index rated Gujarat as number one among Indian states in 2004. The exercise was repeated in 2005, and rated Gujarat as number two.

After 1991, Gujarat's good business climate attracted industrialists in droves. The key was the state's emphasis on port liberalization. Gujarat has become, in effect, an Asian economic tiger. In the 15 years before the Asian financial crisis, Thailand and Korea averaged 8.7 percent growth, Taiwan 8.0 percent, Singapore 7.8 percent, Malaysia 7.3 percent, and Indonesia 7.1 percent. Gujarat's growth rate in 1991–98, also before the Asian financial crisis, was a comparable 8.15 percent. Like the tigers, Gujarat harnessed international trade to accelerate growth. And like the tigers, it was hit in

Table 1
Annual Average Growth of State GDP for 14 Major States (percent)

State	2000–01 to 2005–06	1991–92 to 1998–99	1980–81 to 1990–91
Gujarat	10.14	8.15	5.08
W. Bengal	6.32	6.97	4.71
Rajasthan	5.01	5.85	6.60
Haryana	8.29	5.13	6.43
Karnataka	5.84	5.87	5.29
Kerala	6.76	5.61	3.57
Andhra Pradesh	6.45	5.20	5.65
Maharashtra	7.06	8.01	6.02
Tamil Nadu	4.87	6.02	5.38
Madhya Pradesh	4.37	5.89	4.56
Orissa	7.84	3.56	4.29
Punjab	4.19	4.77	5.34
Uttar Pradesh	4.17	3.58	4.95
Bihar	2.51	2.88	4.66
ALL INDIA	6.98	6.50	5.47

Source: Calculated by author based on data from India's Ministry of Statics and Programme Implementation, www.mospi.nic.in; and Montek S. Ahluwalia, "State-level Performance under Economic Reforms in India," Paper presented at Advancing Policy Reforms, Stanford University, May 2000.

Note: Excludes minor and special category states (e.g., Delhi, Kashmir) and new states (Uttranchal, Jharkand, Chattisgarh) carved out of old states.

1997–2002 by the slowdown in world trade and growth caused by the Asian financial crisis and global recession. In this period, its major industries grew at barely 2 percent annually, and its textile industry suffered greatly.⁷ The state's development was also hit by two major natural disasters: a cyclone in 1998 and an earthquake in 2001. But after 2001 the state resumed rapid growth.

From the 1950s to 1980s, India's faith in socialism was so strong that no state grasped the logic of port-led development. In China, trade liberalization and export-led development transformed the eastern seaboard provinces, leaving the hinterland provinces far behind. Some economic studies have shown how maritime states have a growth advantage over landlocked ones.⁸ But trade relies on reasonably open trade policy and good ports to prosper. China's maritime provinces recognized this and developed their ports to provide the infrastructure for rapid industrial growth. Gujarat followed the same path from the 1980s onward.

Private enterprise in minor and major ports can improve the availability and quality of infrastructure, thereby reducing the transactions costs of international trade, boosting trade, and raising incomes. India's major ports remain firmly under central government control, though since the mid-1990s private parties have been allowed to run container terminals within these ports. To better understand current government policy, a brief historical overview is useful.

Historical Background

For millennia India was among the world's greatest mercantile powers. This explains the title of a recent book, *Reintegrating India with the World Economy*.⁹ In opting for trade-led growth after 1991, India did not break new ground—it simply went back to its historical traditions.

Through most of its history, Gujarat had a major comparative advantage in international

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trade: it was the closest maritime outlet for the great empires of North India, such as the Moghul Empire. Surat and Bharuch, near the mouths of the Narmada and Tapti rivers, were great historical ports, and the state capital, Ahmedabad, was a great textile and administrative center. A sense of that historical tradition can be gathered from the following passage describing Gujarat during the 18th and 19th centuries, drawn from *The Oxford History of Indian Business*:¹⁰

During this period, Ahmedabad and Surat had provided leadership in shipping and trade in the whole of the western region. Ahmedabad was the “emporium” of the West, with every possible commodity from across the world on display and for sale to the hinterland markets. This was possible only because Ahmedabad was part of all-important trade routes in India and even in neighboring regions. Ahmedabad also had a significant presence in cotton trade, production of textile and fabric, special brocades, basic chemicals, and extraordinary skills in setting stones in jewelry.

Virji Vora of Surat and Zaveri of Ahmedabad, along with several other powerful merchants of Gujarat, held sway over trade, shipping, money-lending, and international money transfers for several decades, sometimes even lending money to Governments and to the East India Company in their times of need! Most markets for money as well as for goods and services were totally unregulated at the time. The foundation of the financial architecture of international transactions of money was developed successfully in Gujarat, popularly called the “Hundi” System and monopolized by the sarafs (now called shroffs) and Gujarati traders, in the earlier period. Creative management structures of companies such as the agency management concept as well as use and performance accountability of professionals were experimented with successfully and informally institutional-

ized in the structure of several business houses. Clearly there was a vibrant entrepreneurship, which took risks, experimented with new ideas and led the way in creating wealth and successes. It is said that one Mr. Abdul Gafar of Surat alone traded as much as the entire East India Company, with his own ships numbering more than 20 at the time! It is therefore little surprise that the entrepreneurs of Gujarat were amongst the first to reap the benefits of the technology that drove the industrial revolution in England, whether it was steam engines, power looms, shuttles, or automated factory processes that improved quality, increased output, and standardized products. “Yesterday’s” suppliers of Indian goods to the East India Company became their biggest distributors in India, following the reversal of the direction of trade.

What led to a reversal of this trend? One answer comes from development economist Deepak Lal:

By the 1850s, Indian enterprise and capital using modern imported technology had set up its own mills, which by 1875 were exporting modern textiles to Lancashire. This overturning of tables led the English manufacturers to demand (in collaboration with various do-gooders) that the newly introduced Factory Acts, to protect industrial labor in Britain, should also be adopted by India—to create a level playing field! This agitation succeeded, and from 1881 India introduced the labor laws—whose net effect was to raise the effective price of labor to industry—which to this day have hobbled Indian industry.

The Indian textile industry, which had pioneered industrialization in the Third World, now found that it could not compete in export and later domestic markets with the rising industry of Japan. Whereas the Japanese textile industry was built on using female labor working two shifts a day, the Bombay textile industry was

hamstrung by labor laws which forbade such long working hours.

Indian textile producers demanded protection and got it. The large home market, which provided an easy life as it was increasingly protected from imports, gave little incentive for Indian producers to raise efficiency. Thus, began that long decline which ended up with many mills in the list of sick industries during the post-Independence period.¹¹

The problem worsened with centralized planning and industrial licensing in India after independence in 1947. Bad industrial policy was compounded by bad port policy.

Major vs. Minor Ports

Gujarat's ports in the 18th and 19th century were shallow ones that could accommodate the small ships of the time. But as ship sizes increased, modern ports with dredging and breakwaters had to be built. The Indian Constitution of 1950 provided that major ports would fall under the jurisdiction of the central government, and minor ports largely under the jurisdiction of state governments.¹² Minor ports were viewed at the time as suitable mainly for fishing and coastal trade. The major ports were viewed as the principal gateways for international trade.

However, given the ideological emphasis of both central and state governments on self-sufficiency in the period 1947–90, port development and modernization were never given sufficient attention. Lack of port capacity proved to be a bottleneck even for India's modest trade growth. A World Bank study by Hans Jurgen Peters in 1990 highlighted the key problems.¹³ First, container ships were rapidly replacing traditional cargo carriers, but Indian ports had created very little container capacity. Second, port expansion required commensurate expansion of road and rail links, and Indian planning had neglected this factor. Third, the world was shifting to multimodal transport—the same container was moved first by ship, then by rail, and

then by road—and so trade required a single set of multimodal transport documents. But obsolete Indian rules required dozens of different documents for each mode of transport. Finally, labor-intensive loading at Indian ports was very slow, but strong trade unions prevented mechanization or even labor discipline. The most devastating critique of this situation comes in a footnote by Peters: "Because of the low efficiency of unionized labor gangs, most ship operators prefer to pay these gangs a fee for leaving the site, and use their own staff—much fewer in number—to do the same job at substantially higher productivity rates."¹⁴

The only major port that the central government built in Gujarat was at Kandla, in the remote Gulf of Kutch. This port had only a meter-gauge railway and so could not connect with the major broad-gauge railways of the hinterland. Road links were also poor. So international traffic to and from North India, which in the 18th and 19th centuries passed mainly through Gujarat's ports, passed in the 20th century mainly through Mumbai, Kolkata, and Vishakapatnam (which used to be called Bombay, Calcutta, and Vizagapatm, respectively, in colonial and early post-independence years).

However, the state's resourceful politicians found a way out. The Indian Constitution nowhere defined the size of a major or minor port. Major ports were simply those covered by a central government law. Thus, Gujarat found that it could keep expanding its "minor ports" without limit, even if they became larger than some major ports! The state now has as many as 40 minor ports (some of which are loosely called intermediate ports because of their size), including so-called captive ports built by big industries.

Captive ports are jetties, with or without a breakwater, set up by corporations (such as Reliance Industries Ltd.) to serve their own import, export, and coastal movement needs. The corporation alone can use such ports, so they are called captive ports. The central government, which has always insisted on controlling major ports, has not seen the captive ports of companies as an ideological or practical threat and so has not objected to their

India's major ports remain firmly under central government control.

Table 2
Largest Ports, by State (millions of tons loaded, 2006–07)

State / UT	Major ports	Minor ports	Total	Rank
All India	463.8	171.9	649.2	
Gujarat	53.0	123.6	176.6	1
Maharashtra	97.2	11.8	109.0	2
Tamil Nadu	82.1	0.6	82.7	3
Andhra Pradesh	56.4	18.6	75.0	4

Source: Indian Ports Association, 2006–07, <http://www.ipa.nic.in/oper.htm> and <http://shipping.gov.in/writereaddata/mainlinkfile/File342.xls>.

emergence. Gujarat has actively encouraged them.

In terms of efficiency, captive ports would most sensibly be converted to general ports (so that other companies could also use the facilities). Limiting port facilities to just one captive user wastes infrastructure. To the extent Gujarat has not pressed for the conversion of captive ports into ports for general use, it has failed to carry liberalization far enough. However, companies with captive ports have not pressed for such liberalization either. They fear that conversion of a captive port into a general cargo port would bring in so many bureaucrats, customs staff, and inspectors that their own speed of operations might be adversely affected.

For most of the last decade, India's biggest port has been Vishakapatnam in the state of Andhra Pradesh. But in 2004–05, the minor port of Sikka in Gujarat overtook Vishakapatnam to become India's top port. That demonstrates how flexibly Gujarat defined "minor port." The latest data show that Vishakapatnam once again became number one in 2006–07, with 56.3 million tons of cargo compared with Sikka's 55.9 million tons. However, projections suggest that Sikka will soon regain the top spot, and handle 127 million tons by 2020.¹⁵

Table 2 shows how well Gujarat has exploited the loophole of minor ports and gone far ahead of other maritime states:

- In the fiscal year ending 2007, its minor ports handled 123.6 million tons of cargo, compared with the 53.0 million tons

handled by its only major port (Kandla).

- Its minor ports handled more cargo than all major ports put together in any other state; the closest rival was Tamil Nadu, whose three major ports loaded 82.1 million tons.
- Its minor ports accounted for 123.6 million tons of the total of 171.9 million tons handled by all minor ports nationwide.
- Among the states with minor ports, Andhra Pradesh came in a very distant second to Gujarat, with just 18.6 million tons.

Evolution of Gujarat's Port Policy

Gujarat state was created in 1960, when the erstwhile state of Bombay was split to form Gujarat and Maharashtra. In 1982, the state government enacted a new law creating an autonomous Gujarat Maritime Board, which was free to pursue its own initiatives, unencumbered by the bureaucratic rules of government departments.

Because of budget constraints, as well as the state's business-friendly culture, the GMB from its inception engaged in a dialogue with local businessmen. Over the next two decades, that partnership led to wideranging experiments with private-sector involvement in ports, including the following:¹⁶

- private provision of port services (steve-

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doring, piloting, tug towing, lighterage, and dredging)

- captive ports set up by coast-based industries
- privately managed jetties and terminals within GMB ports
- new joint-venture ports
- special purpose vehicles to build broad-gauge rail links to the country's rail network
- completely private ports, including foreign-owned ones

The state government found that industrialists favored the creation of brand new, or greenfield, ports with world-class facilities and loading rates. They wanted modern ports that were highly automated and free of obstructive trade unionism. And they wanted quick approvals for captive ports to serve industries located near mineral deposits (limestone, salt, lignite).

The government-business dialogue influenced the formulation of Gujarat's Port Policy Statement of December 1995. This document provided for increased private-sector participation in existing GMB ports in three ways. First, incomplete jetties and wharves (still at the planning or construction stage) would be privatized. Second, private parties could bid to install modern mechanical equipment on existing GMB jetties. Third, private parties could bid to build new jetties within GMB ports.

The Port Policy Statement also identified 10 greenfield sites for development, each with its own cargo specialization. Four sites were to be developed by the GMB along with consortiums of public and private sector companies.¹⁷ Another six sites were proposed for outright private-sector development.¹⁸ These private ports were to be built on the basis of "BOMT": build, operate, maintain, and transfer (see Figure 1).

In most Indian states, public enterprises ostensibly set up for the public good are in practice used by politicians for kickbacks and creating patronage networks. Such public enterprises are typically given a local monopoly or preferred access, are typically run to the

ground, and are not considered for privatization until they have piled up huge losses and become nonfunctional. Gujarat has been an exception to this pattern. From its inception, the GMB saw itself as an incubator of private ports, not as a protector of a public-sector port monopoly (see Box 1). The GMB encouraged joint ventures, provided a significant portion of the equity, and facilitated quick passage through the bureaucratic gauntlet of clearances. Once a joint venture began turning a profit, the GMB would disinvest its equity stake and use the proceeds to start work on another port.¹⁹

Gujarat sought to exploit its natural maritime advantages. The state's deeply indented shores provide 1,600 kilometers of coast, the most of any state. Almost all India's coastline is hit by seasonal monsoons, necessitating the construction of costly breakwaters (jetties without breakwaters have to stop loading in the monsoon months). The Gulf of Kutch in Gujarat is the only coastal area in India that is monsoon-free, and so ports and jetties located there can function all year without breakwaters. The Gulf of Kutch also has the deepest water in India: a natural draft of 17 meters without dredging is available at ports like Mundra and Positra, deep enough to accommodate the biggest container ships and large bulk carriers. Very large crude carriers of up to 400,000 tons can anchor at single-point moorings in deep waters many kilometers from the shore, and unload their cargo through pipelines. No other part of India's long coastline can accommodate such large vessels.

The disadvantage of the Gulf of Kutch is that its northern shoreline is semi-desert, and the region historically has not been well connected to the rest of India. Gujarat's best-connected and most-industrialized belt historically has been in the stretch between Bombay and Ahmedabad. But the ports in that region are subject to silting and monsoonal rains, and so require dredging and breakwaters. The GMB has sought private investment in this region too, starting with the ports at Hazira and Dahej.

Given the ideological emphasis on self-sufficiency in the period 1947–90, port development and modernization were never given sufficient attention.

Figure 1
Ports in Gujarat



Note: This map does not include two other proposed greenfield ports at Mitihirwidi and Vansi Borsi, on which little progress has been made. Pipavav and Mundra used to be joint sector ports but are now fully private. Sikka and Dahej are sites having both government and private ports.
Source: Adapted from the Gujarat Maritime Board, www.gmbports.org.

The Business Response

Businessmen from all over India have flocked to Gujarat since industrial licensing was abolished in 1991. Gujarat has long enjoyed a high rate of industrial growth and investment, which has accelerated since 1991. One study points out that Gujarat was eighth in industrial output among Indian states in 1960 but had risen to second position by 2001.²⁰ In the 40 years since its creation, Gujarat's industrial output has quadrupled every 10 years, with the exception of 1990–2000 when it quintupled.

State-level data on a wide variety of issues are limited and incomplete. The 2004 Gujarat Human Development Report says that Gujarat accounted for a little under 5 percent of India's population but 7 percent of its GDP, 13 percent

of its industrial output, and no less than 16 percent of all-India investment in 1991–2003.²¹ So, Gujarat's share of investment was more than double its share of national production, reflecting its business popularity. But the state lagged behind some others in attracting foreign direct investment (see Box 2).

Another study estimates that the state represents 20.87 percent of India's exports and 20.11 percent of imports.²² This highlights the extent to which Gujarat has harnessed international trade for economic development. Not all of this trade is port-related: air cargo accounts for a substantial share of exports and imports. India is the biggest exporter in the world of cut and polished diamonds. The rough stones are imported, then cut and polished by thousands of small-scale manufacturers (mostly in

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Box 1

True Liberalization or Industrial Policy?

Is Gujarat's port liberalization really a form of industrial policy? After all, the experiences of Mundra and Pipavav suggest that privately owned ports can be profitable. So why did the Gujarat Maritime Board incubate these ports, privatizing them only much later, instead of just freeing the entire port sector? And why did Gujarat plan a series of industrial parks instead of freeing private ventures to decide for themselves where to set up shop?

The historical context is that infrastructure of all sorts was neglected in colonial times. After independence, state governments lacked the resources to create good infrastructure everywhere. So they sought to create enclaves of decent infrastructure in the form of industrial parks. The private sector could not set up large industrial estates and the attendant infrastructure (such as ports) because of industrial licensing requirements, lack of access to financing, undeveloped capital markets, and draconian tax rates.

From the 1960s to the 1990s, high tax rates on income (which at one point touched 97.75 percent) and wealth made it impossible for individuals to legally own significant wealth. All big banks were nationalized, and the capital markets were moribund. Thus, private-sector projects depended on loans from government financial institutions, which regarded infrastructure as the responsibility of the public sector. However, economic liberalization in the 1990s gradually lowered the income tax rate to 33 percent, abolished the wealth tax on shares, and enabled private-sector companies to accumulate internal resources and develop international reputations. Private banks emerged, and capital market reforms attracted large funds from Indian as well as foreign investors. Today, many Indian companies can raise billions from capital markets for new projects. Because of this, the new Special Economic Zones will mainly be privately owned. This raises the hope that government-owned industrial parks may become obsolete.

Gujarat's two private ports, Mundra and Pipavav, took many years to attract enough cargo to become viable. For this reason, state governments see themselves continuing to play a promotional, incubatory role in minor port development. However, the big privately run Special Economic Zones should be able to provide enough assured cargo to convince the capital markets to provide financing for ports serving the SEZs. In November 2007, Mundra Port and Special Economic Zone, which operates Mundra, made an initial public offer of 40.25 million shares, and received applications for 105 million shares in the first half hour on the National Stock Exchange. This provides business confidence that future public issues by private ports/SEZs will also be able to raise sufficient money from the investing public. That will help phase out aspects of Gujarat's port-led development that today look like industrial policy.

Gujarat), and then exported. Both imports and exports go by air. A portion of garment exports also go by air.

Table 3 shows that, among Indian states, Maharashtra is number one in industrial output, a long way ahead of Gujarat, which is in second place. But Gujarat is number one in terms of fixed capital. That demonstrates that

Gujarat has been notably successful in attracting investment, but of a capital-intensive nature. Its very high level of fixed investment is not matched by commensurately high output or jobs. This is because the state has in recent decades specialized in chemicals, oil, gas, and metals—all of which are notably capital-intensive. The share of chemicals and oil in indus-

The new ports have also helped bring forth new industries.

Box 2

Foreign Direct Investment Lags in Gujarat

In 1997–2003, Gujarat attracted 16 percent of all investment (domestic plus foreign), but it attracted less than 6 percent of all-India foreign direct investment (FDI) in this period, and its share of FDI was far behind that of Maharashtra (18 percent), Karnataka (9 percent), and Tamil Nadu (8 percent).²³ Many multinational corporations have invested in Gujarat: General Motors, General Electric, AT&T, ABB, DuPont, Novartis, Matsushita, and Siemens. But their investments have been modest.

Three reasons explain the state's modest performance in FDI. First, Gujarat specializes in oil and gas, which were public-sector monopolies until the mid-1990s. Second, the state also specializes in chemicals. However, multinationals have been hesitant to invest in hazardous chemicals since the Union Carbide disaster of 1984 that killed thousands and maimed hundreds of thousands in Bhopal. (India still seeks extradition of the Union Carbide president to face criminal charges.) Third, Gujarat's traditional neglect of English language skills (now being rectified) has translated into relatively few companies in computer software and business-process outsourcing, sectors in which FDI has flooded into other states.

Recently, Gujarat's port-based growth has begun to attract much more FDI. Major international corporations such as Shell and British Gas are investing in the state.²⁴ The Special Economic Zone being set up by Reliance Industries Ltd. at Jamnagar has already attracted Chevron and Rohm and Haas, and expects to attract many more.

Table 3
Fixed Capital, Workers, and Output in Indian States

State	Fixed Capital (millions of rupees)	Number of Factories	Number of Workers	Gross Output (millions of rupees)	Net Value Added (millions of rupees)
Gujarat	870,780	13,950	521,528	1,475,500	168,860
Maharashtra	689,750	17,853	816,501	1,812,220	293,910
Tamil Nadu	358,960	18,912	896,732	943,600	146,210
Karnataka	316,100	6,987	366,403	551,340	97,710
Uttar Pradesh	302,140	9,157	382,821	670,370	100,060
Andhra Pradesh	300,720	14,238	751,005	639,190	103,350
West Bengal	249,120	6,195	432,930	439,140	62,590
Rajasthan	142,130	5,279	178,521	322,270	48,230
Madhya Pradesh	133,300	3,019	158,230	382,260	59,560
Punjab	84,180	7,249	271,845	380,260	54,290
All India	4,319,600	128,549	5,957,848	9,624,560	1,443,020

Source: Sunil Parekh, "Gujarat's Industrial Development: A Perspective," Working paper presented at workshop at Indian Institute of Management, Ahmedabad, September 24, 2004.

Note: Fixed capital is depreciated book value of assets.

trial output is the biggest and fastest growing (see Appendix). The share of metals and alloys has also risen rapidly.

The Contribution of Ports to Development

How does one measure the contribution of ports to Gujarat's economic development? Clearly, the state's business climate is such that it would have fared comparatively well even had it been landlocked. But one way of measuring the value added by the state's port-led development policy is to look at the proportion of Gujarat's international trade that serves the hinterland of North India, and the portion that serves the state's own industries.

One study estimates that as much as 70 percent of the state's imports are used within the state, and only 30 percent go to the hinterland.²⁵ This suggests that Gujarat's ports have not been gateways to North India as much as gateways to Gujarat's own industries. The Port Policy Statement of 1995 projects that 50 percent of newly created port capacity will be for use within the state. That is an extraordinarily high proportion. It suggests that ports have contributed, and will continue to contribute, a great deal to the addition of value within the state and to its overall growth.

Creating a large number of new ports is not necessarily the best form of development.²⁶ Some experts have objected that, to the extent that cargo is meant for the hinterland, new ports may simply "cannibalize" cargo from older ports. Economies of scale suggest that expanding older ports may be more efficient than building new ones. After all, the older ports already have rail and road connections.

However, this logic does not apply to captive ports and jetties built by coast-based industries. Captive jetties obviously address business needs better than existing ports that are some distance away. New ports will not cannibalize the cargo of older ports if they serve new SEZs that generate fresh cargo. Gujarat has progressed fast on captive ports and jetties, positioning it do well in new SEZs.

Three of India's biggest cement companies—Grasim, Gujarat Ambuja Cement, and Sanghi Industries—have a total of seven captive jetties in the state, and other major Indian and international corporations have set up captive jetties or specialized terminals as well.²⁷ By far the biggest captive jetties are those of Reliance Industries Ltd. at Sikka, which currently load 52 million tons per year of crude oil, refined products, and chemicals.²⁸

According to projections made by Credit Rating Information Services of India Ltd. (a subsidiary of Standard and Poor's) additional port capacity to be created by 2020 will be 127.57 million tons at Sikka, 97.86 million tons at Mundra, 45.23 million tons at Pipavav, and 37.07 million tons at Dahej.²⁹ To put these figures in perspective, Vishakapatnam, India's biggest major port, handled no more than 55.8 million tons in 2005–06.

The new ports have also helped bring forth new industries. The most important example of this is the emergence of a global pipeline hub at Anjar, near Mundra port, which caters to the burgeoning oil and gas industry worldwide, as well as to Indian needs for water and sewerage pipes. Five companies have already set up a combined pipeline capacity of 1.5 million tons per year, and this is being doubled.³⁰ These companies make the entire range of gas, oil, and water pipes, including the extra-wide and thick pipes required for the deepest ocean waters. Pipes for oil and gas are bulky, up to 20 meters long, and Mundra has ample space for handling such pipes (whereas this would be difficult at big ports in major cities like Mumbai).

Heavy plate, which is needed for manufacturing oil and gas pipelines, is currently being imported from Europe. To overcome this dependence, Welspun Gujarat Stahl Rohrer has set up a captive plate mill, and plans to set up a captive steel plant too. Jindal Saw has set up a blast furnace to produce iron for ductile pipes. And other companies are also contemplating steel-making facilities. So, the pipeline hub is becoming a steel hub, too. The new steel plants use imported coal and iron ore, so their port location is ideal. Pipe factories have also

The railways are a monopoly of the central government and have been unable to meet the needs of major ports.

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been built at Dahej. B. K. Goenka, CEO of Welspun Gujarat Stahl Rohrer, estimates that India now accounts for almost a quarter of world steel pipe exports.³¹

Another example of port-induced industrialization is the ship-building industry. For a long time, Gujarat was famous for ship-breaking rather than ship-building. It boasted the biggest ship-breaking yard in the world at Alang. Ships would be beached at high tide and then cut apart manually using blow-torches. Alang's main advantage was cheap labor, an advantage that began to disappear when Bangladesh created rival ship-breaking yards with even cheaper labor.

Alang is now declining, but new shipyards and repair facilities are sprouting. ABG Shipyard is setting up a major ship-building facility at Dahej, capable of constructing very large crude carriers. The Adani group is setting up another major shipyard at Mundra, capable of building Panamax-size bulk carriers. SKIL Infrastructure Ltd. is setting up a major shipyard at Pipavav, where it earlier built a private port. L&T has long been building offshore platforms and support vessels at Hazira. Smaller facilities for building and repairing ships are operated by Alcock Ashdown in Bhavnagar, and Orum Shipyard in Porbandar. Ship building is a highly cyclical industry, so the new facilities in Gujarat will also be used for ship repairs, which are not cyclical. Ship building and ship repairing are highly labor-intensive, so Indian companies are confident of beating old shipyards in Europe and America, as well as the newer ones in Japan and Korea.

Looking to the Future

Gujarat's future port policy appears to have two prongs. One is to become India's main gateway to the North Indian hinterland. The second is to create Special Economic Zones adjacent to its new ports to attract export-oriented industries.

Currently, the North Indian hinterland is served mainly by Mumbai Port and the neighboring Jawaharlal Nehru Port Trust, both in

the state of Maharashtra. Gujarat's ports are much closer to North India, but they are less well connected by rail and road than Mumbai. In India, the railways are a monopoly of the central government. Despite many decades of planning, the railways have been unable to meet the needs of even these major ports, and so have lacked both the finances and motivation to help develop the minor ports run by state governments.

To get past this problem, Gujarat has created special purpose vehicles (SPVs) for building rail links. The state government, private port players, and the railways all participate in these SPVs. This arrangement has overcome the usual financial and managerial constraints: the railways are happy to collaborate in ventures that require limited funds from them but generate substantial additional revenue. Through SPVs, broad-gauge links have been built between the new ports at Mundra and Pipavav and the Delhi-Mumbai rail artery, thus providing national connectivity to the minor ports. SPVs will be created whenever necessary to ensure connectivity for the 10 new ports that are planned. In essence, SPVs respond to the central government's ban on private-sector construction and operation of railway tracks. This remains an issue for the unfinished reform agenda.

To meet India's burgeoning traffic needs, the railways now plan to build a new, dedicated Delhi-Mumbai freight corridor. Gujarat is getting ready to link its ports to this new rail corridor. By doing so, it hopes to get the lion's share of hinterland traffic. It can also hope to add at least 10 percent in value to hinterland cargo through consolidation, packaging, and processing.³²

The second prong of Gujarat's future strategy is to cash in on the central government's policy for SEZs. The chief minister of Gujarat, Narendra Modi, says he wants his state to become the SEZ capital of India. He boasts in public speeches that 33 SEZs in the state have already been approved.³³

The government of Gujarat decided long ago that, to ensure cargo for its port-led strategy, it needed to create industrial parks linked

to each port. It commissioned Credit Rating Information Services of India Ltd. to prepare the report, *BIG 2020: Blueprint for Infrastructure in Gujarat 2020*. The report called for the construction of 17 industrial parks which would be “demand drivers” of new ports (and also of air cargo).³⁴

However, state governments all over the country have built industrial parks, and many have not been successful. Corporations will not flock to industrial estates unless they offer something special. That extra something may now come from tax breaks and good infrastructure promised by the new SEZ policy.

Since the 1960s, India has attempted to encourage exported-oriented industries by creating eight Free Trade Zones. These have achieved only modest results in terms of investment and exports. All but one of them was built by the government. These zones have often lacked good infrastructure, and typically have offered modest-sized industrial plots unsuitable for large industries. In contrast, China has succeeded by building large SEZs with world-class infrastructure (captive power supply, water supply, ports, and airports).

To try to imitate China’s success, the Indian government announced the new SEZ policy in February 2006. Companies setting up factories in SEZs will have a total tax holiday for five years, 50 percent tax exemption for the next five years, and exemption for reinvested profits for five years more. Unlike the old Free Trade Zones, the SEZs are to be developed by the private sector and foreign investors, with developers getting a tax holiday for 10 years. Industries in SEZs will probably have more flexibility in hiring and firing employees than industries outside. India’s labor laws prohibit any firm with more than 100 employees from shedding labor, save with the permission of the relevant state government, and in practice this permission is rarely given. The SEZ law provides that state governments can relax labor laws for units located in SEZs, and Gujarat has formally said that it will provide such flexibility.

The central government has received proposals for more than 400 SEZs. Many of these are tiny enclaves of 10 to 40 hectares, and this

has attracted some criticism. Shenzhen SEZ in China occupies 45,000 hectares. China’s success has been based not only on liberal policies such as tax breaks, but also on world-class infrastructure for large manufacturing complexes. Indian critics worry that the SEZ policy may create a multitude of small tax havens rather than a focused group of world-class manufacturing enclaves.

Gujarat is well placed to build some of the biggest SEZs in India. It has a relatively good business climate, and businessmen believe Gujarat’s government is serious in promising labor flexibility within SEZs. The state wants its new ports to be highly mechanized and deep enough to receive the biggest container ships, bulk carriers, and tankers. Other states are planning SEZs around major ports, but major ports are typically located at large cities with little spare land in the neighborhood. Gujarat’s new ports, however, are all located far from major cities and have much spare land for large SEZs. Population density is especially low (and land availability correspondingly high) in the semi-desert areas of Kutch, so displacement and resettlement problems (which have plagued projects in other states) should be minimal there.³⁵

The Gujarat government should abandon its old plans for industrial parks in favor of SEZs. This will reduce bureaucracy and implicit subsidies. Whereas industrial parks are typically government-owned, the SEZs will typically be private-sector ventures.

Lessons for Other Developing Countries

Historically, ports in virtually all developing countries were built and run by government agencies. But in the last decade, port liberalization has been gathering momentum in Africa, Latin America, and Asia. Resistance has sometimes come from entrenched government agencies and trade unions fearing a loss of jobs. Political instability sometimes deters foreign investors, and local investors often lack the required skills and access to finance.

State governments can relax labor laws for units located in SEZs.

Gujarat's success holds lessons for developing countries.

In Africa, almost 70 percent of ports are still run by the public sector. Russia has introduced private participation in only one port, St. Petersburg.³⁶ In Pakistan, as many as 13 ministries have a say in the running of the country's biggest port at Karachi, causing delays and procedural hurdles (which have eased recently after private participation was invited at some terminals). In Bangladesh, successive governments have considered private participation in running the country's main port, Chittagong, but have always backed down in the face of trade union threats. The current caretaker government (controlled by the Army) has brought in a private operator to perform some functions at one terminal, but this may not last when a civilian government returns to power.

Gujarat's success holds lessons for developing countries searching for ways to improve efficiency. It has shown how to first develop minor ports and then upgrade them to become major ports. In some countries, political opposition to full-scale privatization may exist, and local entrepreneurs may lack the skills and financial capacity they need to participate in full-scale port privatization. Gujarat has shown how to overcome such problems through privatization in stages. A start can be made by privatizing the provision of port services such as stevedoring, piloting, tug towing, lighterage, and dredging. The next step can be the creation of privately managed jetties and terminals within government-owned ports. Next, captive jetties can be set up by coast-based industries. Finally, entirely new, privately owned ports can come up. An important supplementary investment will be needed in rail links from new ports to the hinterland. This strategy of privatization in stages can reduce the financial strength needed to get into the business, and thus increase the universe of entrepreneurs capable of competing and decrease political opposition to privatization. Using this step-by-step approach, Gujarat has shown that it is feasible for all developing countries to pursue port liberalization and privatization. It has also shown how private investment can be used to create rail links with the hinterland, an important requirement for most ports. This approach

yields major gains—better and cheaper infrastructure (which increases the profitability of exports and hence economic growth), the development of new port-based industries, and skill development—which will come in handy when developing new ports in the future.

Conclusion

Gujarat has pioneered the concept of port liberalization in India and used this to become the country's fastest-growing state. It has shown vision in converting "minor ports" into some of the biggest ports in the country. The state has broken new ground with different forms of privatization. It has devised SPVs to build rail links between new ports and the country's main rail system. The state's private ports have greatly improved its ability to take advantage of the central government's recent scheme for Special Economic Zones.

Historically, ports have been inefficient government monopolies. Gujarat has demonstrated that various forms of private participation can greatly improve the availability and efficiency of port infrastructure. Those improvements, in turn, can create industrial centers (such as the pipeline hub at Anjar and several new shipyards) that did not exist earlier.

These results hold salutary lessons for other Indian states. Having seen Gujarat's success, other Indian coastal states want to follow suit. Most have now set up their own state maritime boards, but it will be a long time before they catch up with Gujarat. The Maharashtra Maritime Board aims to upgrade Maharashtra's 48 minor ports, typically with private participation, and make some of them bigger than existing major ports. Rewas port is going to be developed by Reliance Industries Ltd. as the deepest port in the state, serving a Special Economic Zone being set up by the same company.

The central government has only half-learned the lessons from Gujarat. In the 1990s, it began to allow private-sector operators to build and run new container terminals within its major ports. That is partial liberalization. Yet it is bad practice for the government, which is

the port landlord and regulator, to run some of the berths and terminals itself: it may be tempted to give special attention and benefits to its own terminals but not those run by private operators. For good governance, the port landlord and regulator should avoid operating any jetties or terminals itself. Unfortunately, the Indian government is unwilling to privatize existing terminals, let alone existing major ports.

Finally, Gujarat's experience holds lessons for other developing countries wishing to con-

vert minor ports to major ones, and for those seeking to introduce private-sector investment and management in ports. Gujarat has shown how this can be done in phases, gradually building up local skills and capacity. Ideally, countries should freely permit private investment in any port facility. But for historical and political reasons, phased liberalization in some developing countries may prove more practical, and attract less political and trade union resistance, than outright privatization.

Having seen Gujarat's success, other Indian coastal states want to follow suit.

Appendix

Production Growth in Gujarat's Industrial Sectors, 1991–1992 to 2000–2001 (millions of rupees)

	1991–92			1992–93			2000–01		
	Output	Net value added	Fixed Capital	Output	Net value added	Fixed Capital	Output	Net value added	Fixed Capital
Textile	46,220	5,650	13,050	53,220	6,750	23,220	153,570	15,360	97,580
Chemical*	83,610	14,490	54,780	122,920	27,860	94,160	537,390	93,300	371,630
Machinery	29,740	5,370	12,410	33,710	5,990	15,530	80,270	24,840	19,570
Plastic and Petroleum**	29,670	1,420	15,020	48,390	16,250	27,750	139,890	11,410	38,660
Food Processing**	39,480	3,040	9,300	48,030	2,730	9,370	118,770	8,290	19,500
Metals and Alloys**	24,370	2,890	9,000	29,390	3,960	13,440	78,930	9,710	76,250
Others	33,600	7,510	17,810	46,120	7,290	18,360	141,860		
Nonmetallic minerals							39,320	8,350	43,960
All Industry	307,630	40,920	170,620	414,290	80,390	260,130	1,289,620	191,490	717,510

*Chemicals constituted 15 percent of national chemical production.

**The state's economy saw three additional major areas emerge: plastics and petroleum, food, and metals and alloys.

Source: Sunil Parekh, "Gujarat's Industrial Development: A Perspective," Working paper presented at workshop at Indian Institute of Management, Ahmedabad, September 24, 2004.

Notes

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1. India's fiscal year runs from April 1 to March

31. FY 2001 is often referred to as 2000–01.

2. Hans Jurgen Peters, *India's Growing Conflict between Trade and Transport: Issues and Options* (Washington: World Bank, 1990).

3. The growth rates for 2000 to 2006 are calculated from data for gross state domestic product, India's Ministry of Statistics and Programme Implementation, www.mospi.nic.in.

4. Montek S. Ahluwalia, "State-level Performance under Economic Reforms in India," Paper presented at the Centre for Research on Economic Development and Policy Reform Conference on Indian Economic Prospects: Advancing Policy Reform, Stanford University: May 2000, www.planningcommission.nic.in/aboutus/speech/spemsa/msa007.pdf.
5. Ravindra Dholakia, "Role of State Government to Promote Private Sector: The Case of Gujarat in India" in *State Level Reforms in India*, eds. S. Howes, D. Lahiri, and N. Stern (New Delhi, India: Macmillan, 2003).
6. Bibek Debroy and Laveesh Bhandari, *Economic Freedom for States of India* (New Delhi: Rajiv Gandhi Foundation, 2004); and Sunil Parekh, "Gujarat's Industrial Development: A Perspective," Working paper presented at workshop at Indian Institute of Management, Ahmedabad, September 24, 2004.
7. "Tenth Five Year Plan," www.planningcommission.nic.in.
8. Jeffrey Sachs, Nirupam Desai, and Ananthi Ramiah, "Understanding Regional Economic Growth in India," *Asian Economic Papers* 1, no. 3 (Summer 2002).
9. T. N. Srinivasan and Suresh Tendulkar, *Reintegrating India with the World Economy* (Washington: Institute for International Economics, 2003).
10. Dwijendra Tripathi, *The Oxford History of Indian Business* (Oxford University Press, 2004).
11. Deepak Lal, *Failure to Industrialise Efficiently*, Rediff.com, January 31, 2003.
12. Technically speaking, the Constitution lists minor ports as a concurrent subject, meaning that both the central and state governments have jurisdiction. The central government lays down overall port standards for safety, customs procedures, etc., and the states develop minor ports within those overall standards.
13. Peters, 1990.
14. Ibid.
15. Credit Rating Information Services of India Ltd. (CRISIL), *BIG 2020: Blueprint for Infrastructure in Gujarat 2020* (Gandhinagar: Gujarat Industrial Development Corporation, 2004).
16. G. Raghuram, *Regulation and Privatization: A Comparative Case Study of Gujarat Maritime Board and Jawaharlal Nehru Port Trust* (Ahmedabad: Indian Institute of Management, 2000).
17. These were Mundra (general cargo), Dahej (gas and industrial cargo), Positra (container and oil terminals), and Rozi (agricultural goods).
18. Simar (power generation), Mithiwirdi (steel and automobile port), Dholera (general cargo port), Hazira (industrial port), Vansi Borsi (petroleum and liquid chemical port), and Maroli (industrial port).
19. GMB initially held 26 percent of the equity in Gujarat Pipavav Port Ltd., but sold this in 1998, making Pipavav the country's first completely private port. The controlling interest in the port is now held by Maersk of Denmark. Similarly, the GMB started with 26 percent equity in Mundra port, later reduced its share to 11 percent, and later sold that too to the private investor, Gautam Adani, converting it to a fully private port.
20. Parekh, 2004.
21. Indira Hirway and Darshini Mahadevia, *Gujarat State Human Development Report 2004* (Ahmedabad: Mahatma Gandhi Labour Institute, 2004). The reference is to outlays proposed in Industrial Entrepreneur's Memorandums, which are statements of intent submitted by investors to the government.
22. Dholakia, 2005.
23. Parekh, 2004.
24. For example, Shell has set up a liquefied natural gas terminal at Hazira and is now building a new port there. British Gas has invested in offshore gas fields and the state's gas network. P&O runs a container terminal at Mundra port, and Maersk runs Pipavav port. Gujarat hopes to create 25 SEZs that will attract FDI. One of the biggest is at Jamnagar, where Reliance Petroleum Ltd. is setting up an SEZ specializing in oil and chemicals. Chevron has just picked up a 5 percent stake in Reliance Petroleum Ltd. for \$300 million, with a provision to raise its stake to 29 percent, worth \$1.74 billion. Dow Chemical, Exxon-Mobil, Lyondell, Innovene, and SABIC are among the corporations interested in setting up facilities in the SEZ, according to Reliance spokesman Parimal Nathwani (news report in *Times of India*, March 30, 2007).
25. Credit Rating Information Services of India Ltd., 2004.
26. G. Raghuram, "Privatization of Ports: Framework for Governmental Action," *Western Regional Cooperation Infrastructure: Vision 2000* (Mumbai: Indian Merchant's Chamber, 2000).
27. Birla Copper, India's biggest copper producer, has a captive jetty to import concentrates and ship copper coastally. Petronet and Shell have set up terminals for liquefied natural gas at Dahej and

Hazira. Three companies have set up captive jetties at Hazira: Reliance Industries Ltd. (for petrochemicals and fibers), Larsen and Toubro (for engineering products), and Essar (for steel and sponge iron).

28. Three other companies, Essar Oil, Gujarat State Fertilizer Corporation and Shri Digvijay Cement, also have captive jetties at Sikka. While Sikka is nominally a state government port, virtually all the cargo is handled by the captive jetties, which are privately operated. Hence Sikka is, operationally, both a government port and a private one.

29. Credit Rating Information Services of India Ltd., 2004.

30. Those companies are Gujarat Welspun Stahl Rohrer, Jindal Saw, PSL, Man Industries, and Ratnamani Metals.

31. Swaminathan S. Anklesaria Aiyar, "Tehsils as

SEZs," *Times of India*, May 5, 2006.

32. Credit Rating Information Services of India Ltd., 2004.

33. News item "Gujarat Bullish on SEZ Investments, says Modi," *Financial Express*, Mumbai, January 5, 2007.

34. CRISIL 2004. The plan envisaged five industrial parks for textiles and apparel at Surat, Choryasi, Navsari, Kachch, and Rajkot; five agro-industrial complexes at Dahej, Bhuj, Veraval, Hazira, and Surat; four chemical complexes at Dahej, Surat, and Bharuch ; auto parks at Halol and Rajkot; and a gems and jewelery park at Ichhapore.

35. Aiyar, 2006.

36. Personal conversation with World Bank port-sector staff, June 2007.

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