

# Vietnam's Growth Strategy: Roads, Rails, Rivers

An improved freight infrastructure will launch Vietnam  
onto the global sourcing stage



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Vietnam is gaining popularity on the global map of sourcing destinations, and could one day become a top manufacturing location, rivaling China for cargo. But as Vietnam attracts foreign investment—relying mainly on cheap labor—its inadequate freight infrastructure and high logistics costs are still holding it back. Part of the problem was solved this year as the country launched its first deepwater port and began investing in portside development. But the bottlenecks remain. For Vietnam to reach its true growth and outsourcing potential, it has to invest in the three Rs—roads, rails, and rivers.

Vietnam started its economic renovation eight years later than China, took more cautious steps, and did not become a member of the World Trade Organization (WTO) until 2007. But a slow start has not prevented Vietnam from becoming one of the world's fastest-growing economies.

In the past decade, Vietnam's economy has boomed, with an average 7.3 percent gross domestic product (GDP) growth per year. As production costs in China rise, more manufacturers are gradually moving production to Vietnam—both to benefit from lower labor costs and to diversify manufacturing investments. For example, Vietnam was Nike's top producer of shoes last year with a 37 percent share in production, compared to 34 percent for China, its former top producer. Taiwanese

contract manufacturing giant Foxconn, which opened two factories in North Vietnam in 2007, plans to revive its billion-dollar investment plan to make the country one of the world's largest high-tech manufacturing bases.

The growing interest in Vietnam as a sourcing destination has led to more freight throughput and placed more pressure on Vietnam's humble freight infrastructure, which must be improved if the country is to succeed on the global sourcing stage.

### Today's Infrastructure, Tomorrow's Vision

Vietnam's freight infrastructure is considered poor by international standards (*see figure 1 on page 2*). For a long time, road transportation dominated the freight market, but traffic congestion now

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clogs connections between major industrial zones and sea ports. Rail transportation is almost non-existent in the country’s freight market thanks to decades of limited investment in railroads. And while the country’s natural network of rivers and canals integrate nicely with inland waterways into a domestic transport process, poor port handling and inadequate water traffic management have chipped away at the potential of waterways for transporting goods.

Similarly, seaports across the country are inefficient. Before 2010, Vietnam didn’t have any deep-water seaports. With depth limits and obsolete handling facilities, most ports could only handle

a maximum of 2,000 twenty-foot equivalent unit (TEU) vessels; all seaborne cargo is transshipped in Singapore, Hong Kong, Malaysia, or Taiwan before reaching the United States or Europe. Overall, with poor landside port access and an insufficient port network, Vietnam is at a disadvantage compared to other Asian countries (see figure 2).

Then, January 11, 2011, arrived—an important milestone for Vietnam’s shipping industry. The first super post-Panamax ship-to-shore cranes arrived at Cai Mep International Terminal (CMIT), the first port in Vietnam able to handle 15,000 TEU vessels.<sup>1</sup> CMIT, with a 1.1 million

**Figure 1**  
Vietnam freight infrastructure scores below the worldwide standard in all surveyed transport modes

Infrastructure	Vietnam score	Worldwide average score	Ranking
Quality of roads	2.7	4.0	117 out of 139
Quality of railroad infrastructure	2.9	3.2	59 out of 116
Quality of port infrastructure	3.6	4.3	97 out of 139

Source: World Economic Forum, *The Global Competitiveness Report 2010-2011*

**Figure 2**  
Costs to move containers from factories to seaports are comparatively higher in Vietnam

Country	Cost to export (US\$ per container)	Cost to import (US\$ per container)
Malaysia	450	450
Singapore	456	439
China	500	545
Hong Kong	625	583
Thailand	625	795
<b>Vietnam</b>	<b>756</b>	<b>940</b>

Source: *The World Bank’s Doing Business 2010*

<sup>1</sup> Panamax ships are vessels designed to fit through the locks of the Panama Canal. This size is determined by the dimensions of the locks and the depth of the canal’s water. Ships that do not fall within these dimensions are called post-Panamax.

TEU annual capacity, is one of five new container terminals in the Cai Mep-Thi Vai deep-water port complex (see figure 3). When finally completed in 2012, Cai Mep-Thi Vai will be a vital import and export gateway to the southern region of Vietnam, which is projected to produce annual throughput of 4.8 million TEU by the end of 2011.

Cai Mep-Thi Vai will reduce transit times from Vietnam to the U.S. West Coast and Western Europe by four days and eliminate bottlenecks and the need for costly transshipments. Cai Mep-Thi Vai is just the beginning of Vietnam’s long-term port development strategy, which will feature many other projects through 2030. Some say that logistics is the only barrier keeping Vietnam from becoming the next China. The new deepwater port and the ambitious port expansion plan could change this.

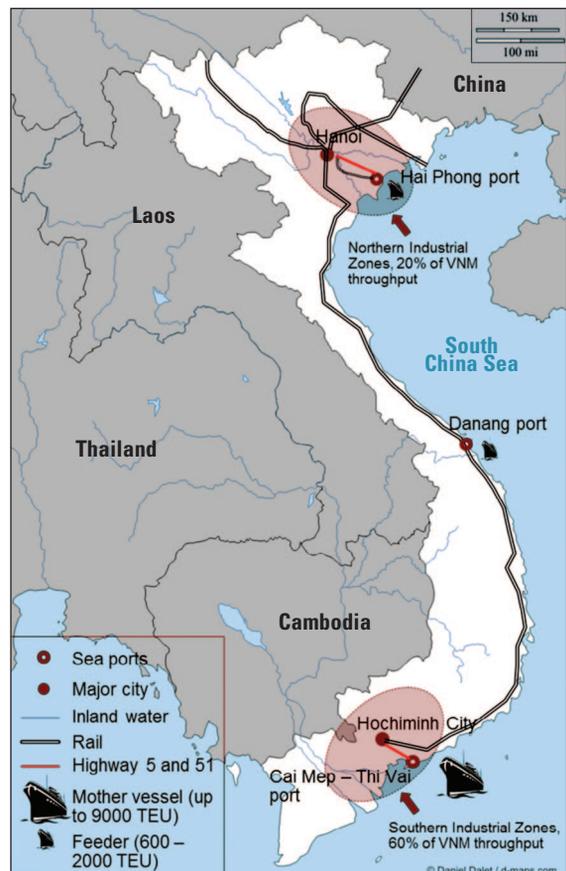
Yet, there is still the question of Vietnam’s ability to take full advantage of its modern port facility given its poor inland infrastructure of roads, railways, and waterways. The following discusses each in more detail.

### The Road Network

Road transportation has been the backbone of Vietnam freight transport. From 2001 until 2009, hauling by road consistently accounted for 70 percent of domestic volume (see figure 4 on page 4). Today, according to the World Bank, Vietnam’s network has roughly 222,179 kilometers (138,056 miles) of roads, only 19 percent of which are paved. Expressways are still uncommon in Vietnam; most of the widest roads have fewer than four lanes and separate interchanges. The mix of traffic with cars, trucks, and other slow-moving vehicles such as buses, motorcycles, and even trains causes serious congestion on all major routes.

The two most popular freight roads—Highway 5, which links the industrial parks to Haiphong ports in the north, and Highway 51, which links Ho Chi Minh City to Cai Mep-Thi Vai in the south—are very congested and in poor shape. The maximum traffic speed barely exceeds 60 kilometers (or 37 miles) per hour and can easily go down to 20 kilometers (or 12 miles) per hour during rush hour. Consequently, 90 percent of containerized cargo going through Cai Mep-Thi Vai is loaded onto

**Figure 3**  
Vietnam freight infrastructure



Sources: d-maps.com ([http://d-maps.com/carte.php?lib=vi-etnam\\_map&num\\_car=716&lang=en](http://d-maps.com/carte.php?lib=vi-etnam_map&num_car=716&lang=en)); A. T. Kearney analysis

barges, which costs half as much as trucking on Highway 51.

Indeed, 55 barge calls are needed to support four mainline vessels each week. Barge operations, on the other hand, reduce the capacity of the new terminals by half because barges take berth space that should be occupied by mainline vessels.

Vietnam’s capacity to profit from the port boom and realize its trade potential largely depends on how quickly it can upgrade its road network. Expanding Highway 51 to six lanes is a top priority because this highway facilitates the flow of goods from almost 50 major South Vietnam industrial parks to the new port.

The country’s operational goal should be to reduce by half the transit time between Cai Mep-Thi Vai and inland industrial zones. This will bring down trucking costs to the current level of barge costs. What is the best way to reduce transit times? We have two ideas: First, building dedicated truck lanes for freight traffic to reduce

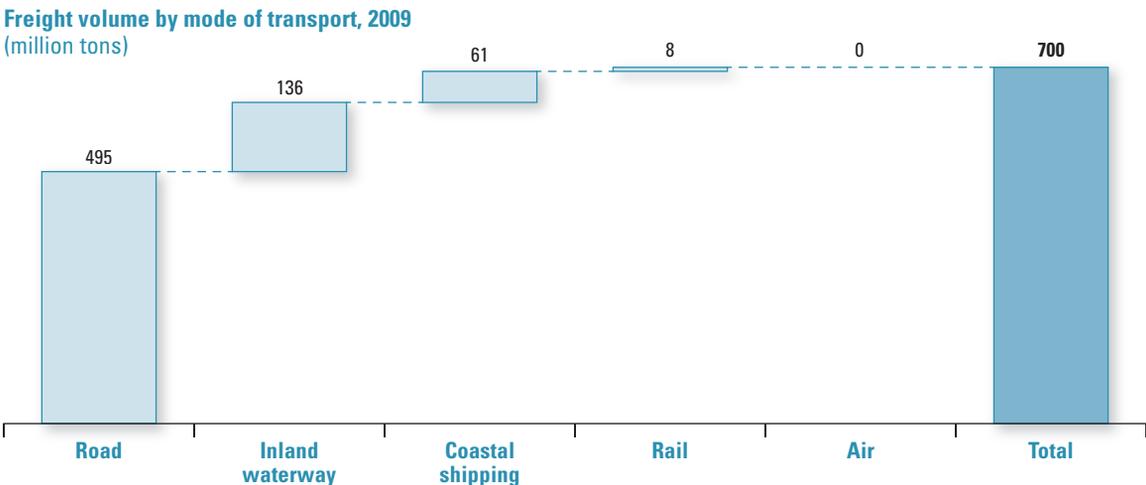
congestion, improve safety, and offset the maintenance cost of general purpose lanes. Second, adopting an electronic payment system, charging drivers to drive on certain roads and for congestion at certain times; this will direct demand for road usage, especially in peak hours.

Both initiatives require strong commitment from the government in terms of legislation and enforcement. And the government will have to provide adequate alternatives for passengers—such as subway, intercity rail, and a bus system—and be transparent and equitable in managing these operations.

### Railroads: A Heated Debate

Between 2001 and 2009, railroads accounted for about 1 to 3 percent of Vietnam’s freight traffic. Traditionally, investment in rail infrastructure has been low—only 3 percent of annual transport investment was spent on railroads, compared to almost 90 percent for roads. The Vietnamese

**Figure 4**  
Road is the dominant mode of freight transport in Vietnam



Source: General Statistics Office of Vietnam

## *The Vietnamese government seems determined to take bold steps toward shifting a sizable portion of passenger and freight transportation to railroads.*

government has made multiple attempts in recent years to rectify the situation, including a \$55 billion project (equal to roughly half of Vietnam's current GDP) to construct north-south express railways, which can slash transit times for the 1,700 kilometers (1,056 miles) between Hanoi and Ho Chi Minh City from 32 hours to five hours. The project, however, was stopped in 2010 by the Vietnam National Assembly, which was concerned about the project's debt burden and an uncertain return on investment because the new rail line would only focus on passenger transport. Even as the debate continues over viable railroad strategies, the Vietnamese government seems determined to take bold steps toward shifting a sizable portion of passenger and freight transportation to railroads.

Why does the government hesitate to invest in railroads, especially when roads are overloaded and freight volumes continue to rise dramatically each year? One answer lies in Vietnam's geography. The country is a strip of land shaped like the letter S, with more than 3,200 km (1,988 miles) of coastline access to the South China Sea and the Indian and Pacific oceans. Its width from east to west is 600 kilometers (373 miles) at its widest point in the north, 400 kilometers (249 miles) in the south, and 50 kilometers (31 miles) at the narrowest part in the center. From any location in Vietnam, it is only 600 kilometers to the nearest international sea port or to a location with the potential for building a seaport. Furthermore, all major industrial zones of the country (north,

south, and in the center) are no more than 200 kilometers (124 miles) from the sea. Generally, within that 200 to 600 kilometers, railroads have no cost advantage over road transport, even compared to the current congested road network. Therefore, the benefit of railroads to seaborne trade in Vietnam is slim.

The second answer, as mentioned earlier, is the sizeable investment that railroads require. About 84 percent of the network in Vietnam has a track gauge of just 1,000 millimeters, which does not allow for high-speed, high-stability, or double-stacked containers that are popular in the United States, China, and India. The Vietnamese government is considering converting some of its rail system to 1,435 millimeter standard gauge, which will be an enormous improvement. With more than 50 percent of government debt to GDP reported in 2010, it is wise to be prudent before taking on extra debt.

Despite some doubt about the role of railroads in promoting seaborne trade, we believe that strong investment in Vietnam railroads is economically justified in northbound and westbound continental trade. The China–ASEAN Free Trade Area came into effect on January 1, 2010, eliminating the tariff for 90 percent of imported goods between China and six of the original members of the Association of Southeast Asian Nations (ASEAN)—Brunei, Indonesia, Malaysia, the Philippines, Singapore, and Thailand. Vietnam will follow suit in 2015,

## *The dense river network connecting Vietnam with neighboring countries could position it as a transit country for Southeast Asia, much like the Netherlands is for Europe.*

by which time the flow of goods moving continentally between Vietnam and China, Cambodia, Malaysia, Singapore, and Thailand is expected to rise significantly.

Long-distance and missing inland water links in some corridors will differentiate railroads from other competing transport modes, such as roads and barges. Rather than allowing rail strategy to fall under a single state-owned operator, Vietnam would do well to devise a long-term rail strategy. Latin American countries achieved enormous success in the late 1990s by privatizing railroad infrastructure development and operations. In particular, Brazil's freight movement by rail grew 86 percent between 1997 and 2010 as a result of privatization.

We believe a similar evolution could occur in Vietnam's railroad network, especially if railway operators improve their marketing capabilities and become actively involved in product development. Operators that deliver higher quality transport service can differentiate their services from competing transport modes.

### **Inland Waterways**

Transport along inland waterways depends heavily on geographic conditions. In this area, Vietnam enjoys some of the most favorable natural resources in Southeast Asia. The river network totals 42,000 kilometers (26,098 miles) in length, of which 8,000 kilometers (4,971 miles) are used for inland water transport. This international river network connects

neighboring countries, including southwestern China, Laos, Cambodia, and Thailand, and leads to the South China Sea gateway in Vietnam. Benefiting from this excellent natural resource, Vietnam carries about 20 percent of its annual freight volume on its inland waterways. As mentioned earlier, barge transport has been feeding cargo to most of the mainline vessels at Cai Mep-Thi Vai.

However, the small amount of domestic volume moved on rivers means Vietnam's inland waterways have not yet reached their full potential. With adequate investments, the dense river network connecting Vietnam with neighboring countries could position Vietnam as a transit country for Southeast Asia, much like the Netherlands is for Europe.

Vietnam will have to first overcome some barriers, however. Low-clearance bridges and poor river port facilities are the first impediments. Most bridges on the two main rivers of Vietnam—the Mekong River in the south and the Red River in the north—do not allow passage of big barges; maximum capacity is limited at 96 TEU, while barges used on the Rhine River, which connects the Netherlands to inland Europe, have a capacity of up to 208 TEU. Inadequate dredging and navigational aids constrain the 24-hour use of large barges. Also, Vietnam's inland ports are generally small and in poor condition, with loading and unloading mainly carried out on the river bank because few ports have proper handling facilities.

## The 2 Rs—Roads and Rivers

We still do not know if Vietnam's railways can support international seaborne trade, so for now inland water transport and roads are the only sustainable alternatives. If inland waterways and roads receive equal attention and investment, Vietnam's supply chain will become more efficient—and the country could finally realize its potential as a major manufacturing base. Indeed, by upgrading major road networks, expanding north- and west-bound railroad connections, and investing in inland waterways, Vietnam could one day join an elite group of countries known far and wide as the world's most-desired sourcing destinations.



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