

Driving Development? The Problems and Promises of the Car in Vietnam

Arve Hansen

Centre for Development and the Environment, University of Oslo, Norway

ABSTRACT

The private car comes with promises of modernity and comfortable mobility for the growing middle class in Vietnam. Vietnam's government has also targeted the domestic automobile industry as a "spearhead industry" in an attempt to achieve industrial upgrading. Paradoxically, the government is simultaneously restraining the market for this industry through imposing high taxes and fees on cars, making them available only to a limited number of people. This article discusses the promises and problems of the automobile in Vietnam. It analyses policies related to the development of the automobile industry, and discusses the reasons for the relative failure of the project. The article argues that the failure is linked to weaknesses in Vietnamese development strategies, but also to the potential problems an expansion in car ownership in Vietnam would lead to. The article contends that the car represents a development dilemma between industrialisation and urban mobility, and that environmental, energy and social concerns add to the rationale for limiting car ownership. Furthermore, although forces promoting car-driven industrialisation appear to be gaining ground, the requirements for regional economic integration may challenge the future of the infant automobile industry.

ARTICLE HISTORY

Published online
26 February 2016

KEYWORDS

automobile industry;
development; mobility; cars;
motorbikes; Vietnam

The car is in many ways a contested commodity. It is at the very core of the global challenges to sustainable development and can be seen as one of the defining parts of the environmental degradation associated with "modernity." This is particularly because of its close connection with fossil fuels, but is also caused by its large demand for space and its impact on urban mobility and urban geography. In this vein it is also central to the environmental concerns surrounding the "rise of the South." More than any other single commodity, the private car calls into question the sustainability of a developing world adopting similar consumption patterns to those of the already mature capitalist countries. Although some environmentalists suggest the car belongs to the past, for many people it rather represents an image of a desired future (Hansen and Nielsen 2014). This future is rapidly materialising in many emerging economies, and brings along urban challenges in the form of congestion and pollution. As the most extreme example, 23.5 million new cars went on the road in China in 2014 (OICA 2015a), a number expected to reach more than

CONTACT Arve Hansen  arve.hansen@sum.uio.no  Centre for Development and the Environment, University of Oslo, Pb 1116 Blindern, 0317 Oslo, Norway.

© 2016 Journal of Contemporary Asia

30 million by the end of 2020 (LeBeau 2012). Globally, greenhouse gas emissions from the transport sector have more than doubled since 1970, and around 80% of this increase is estimated to have come from road vehicles (IPCC 2014).

At the same time, in the words of Sheller and Urry (2000, 738), the car is the “quintessential manufactured object” and “an extraordinarily powerful machinic complex.” The car has a central place in the history of capitalism and industrialisation.¹ Particularly the automobile industry’s strong backward and forward linkages to the rest of the economy has made it “the industry of industries” (Drucker 1946, 149), to the extent that regimes of accumulation are defined as pre-Fordist, Fordist and post-Fordist. In East Asia, the automobile industry played a central role in the successful industrialisation of Japan (see Chang 2008; Flink 1988) and South Korea (see Amsden 1989; Chang 2002), but also Taiwan (Amsden and Chu 2003), and now China is emerging as one of the world’s largest automobile manufacturers (Gallagher 2006). More than half of total global automobile production now takes place in Asia (OICA 2015b). In Southeast Asia particularly Thailand and Indonesia, but also Malaysia and the Philippines have developed automobile industries (Doner and Wad 2014; Wad 2009).

This double position of the car as a development challenge and a driver of development is the starting point of this article. Based on extensive fieldwork in Hanoi, it uses this backdrop to discuss the problems and promises of cars in Vietnam, focusing particularly on the automobile industry and the negative “externalities” of increased car ownership.²

Vietnam is a country of motorbikes, but the car is entering the streets and has emerged at the core of the material aspirations of an increasingly affluent population.³ At the same time, Vietnam has joined the club of Asian automobile manufacturers, and aims to supply the rising demand with domestically produced vehicles. The article starts by introducing the development of motorised mobility since *Doi Moi* and the successful development of the motorcycle industry, before considering the promises of the car, focusing mainly on industrialisation. It then moves on to the relative failure of the Vietnamese automobile industry, and considers this against the views of foreign manufacturers and relevant government institutions. The article then moves beyond the political economy of development to discuss the many potential problems of an influx of cars in the streets of Vietnamese cities. The article argues that the seemingly contradictory policies are in many ways rational, and suggests the car in Vietnam currently poses a development dilemma between industrialisation and urban mobility.

Transport in Transition: *Doi Moi* and Motorised Mobility

Vietnam has attracted a great deal of scholarly attention since the economic reforms known as *Doi Moi* and the efforts of the Vietnamese government to “industrialise and modernise” the country. Usually translated as “renovation,” *Doi Moi* refers to the economic reforms launched in 1986 (for overviews, see Masina 2006 and Van Arkadie and Mallon 2003). The reforms meant a transition towards what is officially described as a “market economy with a socialist orientation,” or what Hansen (2015a, 96) has described as “state capitalism with a Leninist orientation.” Much less attention has been given to the transformations in the country in terms of mobility and its associated industries, with the work by Truitt (2008) on motorbikes and middle-class

mobility, as well as Fujita (2013a, 2013b) and Patarapong and Fujita (2008) on the motorcycle industry as notable exceptions.

Since *Doi Moi*, the increase in motorised vehicles on Vietnamese roads has been extraordinary, and has particularly been driven by motorbikes. From around four million motorbikes in 1996 to 19 million in 2007 and an estimated 39 million in 2014, the motorbike has effectively replaced the bicycle as major means of transportation (MONRE 2007; National Traffic Safety Committee, cited in *Thanh Nien News* February 28 2014).⁴ Crucially, the high demand is now mainly met by a domestic motorcycle industry that has developed from very small to the fourth largest in the world in less than a decade (Fujita, 2013b; see Table 1). Although partly achieved through import-substitution policies, the main turning point of the industry came when cheap Chinese imitations of Japanese models flooded the market in 2000–2001, often by circumventing import bans through the use of complete knockdown kits that was assembled by a rapidly increasing number of Vietnamese entrepreneurs. This in turn forced the previously dominating actors (mainly Honda), earlier protected behind high import barriers, to develop lower priced models designed for the Vietnamese market (Fujita 2013a).

Vietnam now has a successful motorcycle industry with a high local content ratio (Fujita 2013b). And, as argued below, the motorbike is vital for urban mobility in the overall absence of sufficient public transport. Much to the dismay of foreign motorcycle manufacturers, however, the Vietnamese government is planning on restricting motorbike ownership (Sasaki 2014). In 2013 an adjustment to the *Vietnam Road Transport Development Scheme to 2020 and orientation towards 2030* was published. It states that the government will aim to:

reduce the growth in quantity of motorbikes using administrative, economic and technical measures in order to limit the quantity of motorbikes nationwide; motorbikes are *primarily used in rural areas and the areas without public passenger transport; there will be 36 million motorbikes by 2020* (Prime Minister of Vietnam 2013, n.p., emphasis added).

Table 1. Vietnam motorbike sales and production 1998 – 2013.

Year	Motorbike sales (million units)	Domestically produced motorbikes (million units)
1998	0.3	n.a.
1999	0.5	n.a.
2000	1.7	0.5
2001	2.0	n.a.
2002	2.1	1.1
2003	1.3	1.2
2004	1.4	1.8
2005	1.6	2.0
2006	2.4	2.1
2007	2.8	2.7
2008	2.6	2.9
2009	2.7	3.1
2010	3.1	3.5
2011	3.3	4.1
2012	3.1	3.6
2013	2.8	3.7

Notes: Compiled by author. Numbers have been rounded off. n.a. means data is not available.

Source: Sales: 1998–2005: *Motorbike Joint Working Group* (2007); 2006–2008: estimated from Fujita (2013a); 2009–2010: *Yamaha Motor* (2011); 2011–2013: Numbers from *Vietnam Association of Motorcycle Manufacturers in BMI* (2014). Production: *GSO (various years)*.

At the same time the government states its goal for public transport: “Public passenger transport [will] satisfy 25% of demand in Hanoi and 15% of demand in Ho Chi Minh City by 2020” (Prime Minister of Vietnam 2013, n.p.). If motorbikes are to be primarily used in rural areas, public transport is to satisfy 15–25% of demand in major cities, and we know that the bicycle has diminished as means of transportation, we are left with the car (although the report expected only a modest increase in cars). This plan states the attitude towards motorbikes that is prevalent among many people and policy makers in Hanoi. The motorbike is a sort of necessary evil, and does not any longer seem to hold a central position in the national vision of industrialisation and modernisation.

As [Table 1](#) shows, the sales of motorbikes have been slowing since 2011, and there has been much discussion in Vietnamese media of the domestic motorbike market reaching its saturation point (see, for example *Thanh Nien News* February 18 2014; *Tuoi Tre News* July 3 2014). On the other hand, although far behind motorbikes in sales numbers, the number of cars has rapidly increased in recent years. In 1996 there were only around 200,000 four-wheelers, including trucks and buses. As seen in [Table 2](#), this number has increased steadily, and in 2014 was estimated to have reached two million (National Traffic Safety Committee cited in *Thanh Nien News* February 28 2014). In Hanoi alone, the World Bank (2014a) reports a 222% increase in car ownership between 2005 and 2011. A significant increase in car ownership started in 2007, coinciding with a stock exchange boom in which many people were able to accumulate significant amounts of money (see Quan Hoang Vuong 2014).⁵ Nonetheless, Vietnam has a low car ownership per capita ratio, at about 22 per 1,000 inhabitants in 2012 (MOIT, 2013). Yet APERC (2013) expects the number of cars to double and reach 3.5–4.0 million by 2020. According to the Ministry of Industry and Trade’s projections for the auto industry, the number should reach between 11 and 17 million by 2030 (MOIT 2013). This expansion gives many reasons for concern, as will be discussed in the second part of this article. At the same time, it also reflects the hopes of the growing “middle class,” as well as the ambitions of the government to develop a domestic automobile industry.

Table 2. Vietnam auto sales, including imports (in units), 2005–2014.

Year	Vehicles, total	Passenger cars
2005	35,264	24,888
2006	41,133	23,335
2007	81,056	40,115
2008	111,950	50,877
2009	119,459	62,722
2010	112,224	57,778
2011	110,938	64,564
2012	80,487	44,070
2013	96,692	59,857
2014	133,588	79,806

Notes: Compiled by author. “Vehicles total” refers to all four-wheeled motorised vehicles, including passenger cars. “Passenger cars” are in OICA statistics understood as motor vehicles with at least four wheels that are used for transporting passengers, and with a maximum of nine seats including the driver’s seat.

Source: OICA (2015a)

Driving Development: The Many Promises of the Car

There are many promises associated with the car. Although the position of the car versus the motorbike among consumers will briefly be considered, the main focus here will be on the car as a driver of development through the automobile industry. This article began by relating the car to modernity. How we understand modernity is culturally and socially contingent, but certain global blueprints of “the modern society” exist. The personal automobile is certainly at the core of such conceptions, and has been for at least a century. As Paterson (2007, 133) argues, since the early 20th century the car has been “a primary symbol of modernity itself.” In Vietnam, the car has reduced the motorbike to a basic commodity (Earl 2014).

Vietnam took a short-cut to motorised mobility through the motorbike. As an affordable, intermediate technology between the bicycle and the car it has been, as Arnold and DeWald (2011, 973) characterised the bicycle in colonial Vietnam, an “icon and instrument of the accessibly modern.” For the consumer, in addition to the significant difference in symbolic value, the motorbike has many limitations compared to the car (see Earl 2014; Hansen 2015b). It is hot in the sun, it is cold in winter, it is wet in the rain, it is uncomfortable over long distances, it is inconvenient when more than two people are travelling, and it leaves its driver vulnerable in traffic and exposed to dust and exhaust fumes. Although Truitt (2008, 3) found the motorbike to “embody the promise of autonomy and freedom of movement associated with trade liberalization,” the car embodies the promise of modernity, safety, comfort and cleanliness (Hansen 2015b).

In other countries with high levels of motorbike ownership, such as Thailand, the dominance of motorbikes has declined over time and car ownership has increased significantly with rising incomes (Jakapong and Chumnong 2010). The MOIT (2013) makes it clear that this is the expectation also for Vietnam, with the government aims to meet rising demand with domestically manufactured cars, as indeed was accomplished in Thailand (see Natsuda and Thoburn 2013).

Driving Industrialisation?

To understand Vietnam’s interest in the automobile industry, we need to understand some of the country’s economic development challenges. Like other late-industrialisers, Vietnam is facing the opportunities and challenges of entering the globalising economy, particularly the challenge of developing domestic industrial capacities in the face of fierce international competition (see, for example Amsden 2001; Lin and Chang 2009; Wade 1990). Japan, South Korea and Taiwan are famous for overcoming these challenges through a variety of industrial policies involving considerable state intervention. Conversely, Southeast Asian countries, entering later as “second-tier” late developers to a regional productive system dominated by Northeast Asian economies, have generally not had the same success in industrial upgrading, and have not experienced the same economic “catch-up” with mature capitalist economies (Masina 2015). Rather, they are characterised by being stuck in low-value added production while becoming less competitive internationally in the market for cheap labour (see Masina 2015).

In Vietnam, even though growth has been impressive, and despite the success of some sectors such as the motorbike industry, most industry is still labour-intensive manufacturing (such as footwear, textiles and electronics). Analysts and Vietnamese policymakers alike fear that Vietnam, similar to other Southeast Asian countries, will be unable to upgrade. The government has a goal of changing this, and is trying to develop approaches to restructure the development model towards high-technology and high value-added industries, what in Vietnam is often referred to as going from high quantity to high quality growth (Government of Vietnam 2013).

The automobile industry is designated as one of the “spearhead industries” that are intended to drive growth and economic development (Prime Minister of Vietnam 2007). In approving the master plan of the automobile industry in 2004, the Prime Minister (Prime Minister of Vietnam 2004, n.p.) stated: “The automobile industry is a very important industry which should be prioritised for development in order to contribute to efficiently serving the process of industrialization and modernisation.” In their draft for the new master plan for the automobile industry, the MOIT (2013) finds that this industry can play an important role in the overall project of modernisation and industrialisation through reducing the trade deficit, attracting capital and advanced technology, upgrading the labour force and positively impacting other industries. As is claimed in the draft: “That the automobile industry contributes not only to the amelioration of the quality of the labour force, but also to the development of industry, to the economy and to the society is an obvious fact recognized by most countries which have developed automobile industries” (MOIT 2013, 5, own translation). In this sense, going for the automobile industry can be seen as a strategy for Vietnam to, in the words of Ha-Joon Chang, “defy its comparative advantage in order to upgrade its industry” (cited in Lin and Chang 2009, 489), by taking on a role in industrial strategies like that in successful late industrialisers such as South Korea and Japan.

Before *Doi Moi*, the automobile industry was virtually non-existent, except for the state-owned enterprise Hoa Binh producing military vehicles. The few passenger cars available were mainly imported from the Soviet Union. In the early 1990s, when the policies of *Doi Moi* began to take effect, this started changing (Sturgeon 1998). At the early stages of reform the goal was to develop a Vietnamese car brand. This succeeded in the truck and bus segment, where domestic producers are still supplying large parts of the domestic market (MOIT 2013). It was, however, quickly abandoned in the private vehicles segment, and the strategy turned to attracting foreign direct investment to establish joint ventures. The first joint ventures, the only option for foreign companies wanting to establish in Vietnam at the time, obtained licenses during this period (Sturgeon 1998). Japanese firms, and particularly Toyota, have played a central role, as they have in the automobile industries of Thailand, Malaysia and Indonesia (Doner 1991; Doner and Wad 2014). But also Korean, Taiwanese, American and European companies are involved to different degrees, and today there are 12 different foreign companies and six domestic companies producing or assembling cars in Vietnam (see Table 3). As already noted, domestic companies mainly produce trucks and buses. However, the largest domestic company, Truong Hai, also produces the South Korean brands Kia and Hyundai cars as well as the Japanese Mazda through its subsidiary VinaMazda.

Table 3. Automobile manufacturers in Vietnam, 2012.

Manufacturers	Sales volume	Market share (%)	Year Established
Toyota	24,927	31.0	1995
Truong Hai	24,001	29.8	1997
GM Vietnam	5,613	7.0	1993
Ford	4,790	6.0	1995
Vinaxuki	4,453	5.5	1992
Visuco	3,409	4.2	1995
Vinamotor*	2,555	3.2	1995
Mercedes-Benz	1,929	2.4	1995
VEAM*	1,881	2.3	1990
Honda	1,804	2.2	1996
Vinastar	1,595	2.0	1994
Isuzu	1,217	1.5	1995
Hino	632	0.8	1996
VMC	470	0.6	1991
Mekong	464	0.6	1991
SANYANG	344	0.4	2005
SAMCO*	341	0.4	1975
Vinacomin – Vinacoal*	62	0.1	1994
GRAND TOTAL	80,487	100.0	

Notes: Compiled by author for Vietnamese Automobile Manufacturers' Association (VAMA) member companies.

* Indicates state-owned enterprise. Grey shading indicates Vietnamese majority ownership. GM Vietnam is the only 100% foreign-owned company (since 2000), the rest are joint ventures.

Source: Numbers from VAMA (2013), ownership information and year established from personal communication with VAMA.

Table 4. Vietnam domestic automobile production (in units), 2000-2013.

Year	Automobiles
2000	6,862
2001	10,673
2002	12,317*
2003	21,492*
2004	19,868*
2005	31,600
2006	18,211
2007	23,898
2008	33,018
2009	32,969
2010	42,286
2011	31,181
2012	40,470
2013	40,920*

Notes: Compiled by author. In cases where numbers vary in different reports, the latest published data has been used. Numbers marked by * have been reported by OICA as estimations.

Numbers exclude assembly of imported completely knocked down or semi-knocked down kits.

Source: OICA (2016).

The industry is still small, even by regional standards. However, from a very low starting point, output has grown substantially since the turn of the century (see Table 4). Production has also varied owing to economic downturns, and, as will be discussed below, alongside a changing policy environment. As will be indicated in the next section, overall, the automobile industry has performed far below the expectations of the government.

The Failures of the Automobile Industry

Although the automobile industry is recognised as making significant contributions through raising taxes and creating jobs, it is widely regarded as a failure in terms of spill-over effects to the rest of the economy and in terms of leading to the expected development of domestic supporting industries. The MOIT (2013) concludes that the development of the automobile industry in Vietnam has so far been a disappointment, that there is little integration of the industry in the national economy, that the rate of technology transfer is very low and that the use of domestically produced components is very low. The auto industry today mainly consists of assembling imported parts, and has so far seen a very different development from that of the motorcycle industry (Fujita 2013a, 2013b).

Contested Cars and Inconsistent Policies

What can explain the poor performance of the automobile industry? Based on talks with policy makers and foreign manufacturers, two main and related issues are obvious: first, inconsistent and highly opaque policies; and second, the relatively small market for cars. To start with the former, the policies regarding the automobile industry have been altered repeatedly. The MOIT (2013, 13) provides many examples of this, such as the following:

In three years from 2005 to 2007 ... the Law on value added tax and excise special tax were promulgated for the first time, and were amended twice; CBU [completely built unit] tax was adjusted 8 times; import duty for components was adjusted 4 times; registration fee was adjusted 7 times...

The policy changes have been strongly influenced by global and regional economic integration. Although in the early 2000s domestic production was heavily protected, this started changing from 2003 when Vietnam was preparing for WTO accession, and thus had to liberalise trade. Without wanting to reduce the overall tax level, this led to an increase in excise tax for domestically assembled cars. Between 2003 and 2005 this tax went from 5% to 24% and to 50%, whereas the same tax for imported small cars (five seats) was reduced from 100% to 50%, in other words to the same level as for domestically assembled cars (MOIT 2013). Furthermore, Vietnam had joined ASEAN (Association of Southeast Asian Nations) and the ASEAN Free Trade Agreement (AFTA) in 1995, and the requirements associated with this have been gradually implemented, reducing import duties, while also allowing for imports of second-hand cars (which influenced negatively the sale of all vehicles apart from trucks).⁶ The import duty on CBUs was on a rollercoaster, reduced four times in 2007 alone, from 100% down to 60%. In 2008 the same import duty increased from 60% through 70% to 83%, as the maximum allowed under Common Effective Preferential Tariff (MOIT 2013).⁷ The CBU import duty will have to be removed completely by 2018 following AFTA requirements, although it is still uncertain how exactly this shift will take place (see below).

The frequent changes in taxation and import duties can be understood as part of Vietnam's position somewhere between the developmental state and neo-liberalism,

trying to balance protection of domestic industry and deeper integration into regional and global trade regimes (Masina, 2012). A range of other taxes and fees (registration tax, road fees and bridge fees) have also been subject to frequent changes (MOIT 2013). The fluctuating tax and tariff regimes also reflect the fact that the car is still a contested commodity between the different ministries and the result is that car ownership is kept lower than its potential. The MOIT is determined to develop the auto industry, and has been working with Japanese assistance to achieve this (Ohno, 2006). Meanwhile, the Ministry of Transport (MOT) is worried about increased traffic and the potentially negative impacts of a rapidly growing number of cars on mobility in Vietnamese cities. Thus, although not necessarily arguing against the development of the auto industry, MOT has been championing restrictions on the market through policies aimed at limiting the number of vehicles through both taxes and different kinds of restrictions on driving in the cities. MOT has had the Ministry of Finance on their side, which sees these taxes as vital state income. Inconsistent policies and lack of inter-ministerial coordination is nothing new, but rather reflects an overall weakness of the Vietnamese development model (Malesky and London 2014; Ohno 2009). For foreign manufacturers, this has meant an unstable policy environment.

Views from the Industry

In interviews with representatives of foreign automobile manufacturers in Vietnam, issues related to policies were the main concerns raised. All informants in this sector talked about the government actively limiting their market through tax policies. They drew particular attention to constant policy changes, which made planning difficult, a problem that was further exacerbated by the opacity of policy processes. They were able to voice their opinions to the government, but considered they were left out of planning processes, often with very little information about ongoing or future policy changes. Such statements resonate with the findings of Ohno (2009) concerning the exclusion of industry representatives in policy making processes in Vietnam, particularly where an industry is dominated by foreign investors.

Two examples were frequently raised by the informants. The first was that all the companies knew that by 2018 the import tax would be 0%, but no one knew anything about how this reduction would be accomplished; that is, whether it would be reduced suddenly or gradually. The second example was the anticipated new Automotive Industry Master Plan. They did not know when this would be ready or what its contents would be. Some informants speculated whether the lack of information was used as a deliberate strategy to foster corruption, as in a closed political system as that of Vietnam, information holds very high value. Another possible reason identified by some informants was that these were strategies to maintain the industry's strict government dependency. Regardless of the reasons, however, the companies reported the lack of transparency as a serious impediment to their ability to plan for the future, and stated that the uncertain policy environment had led to a cautious approach to doing business in the country (Interviews, February–December, 2013).

In interviews, members of the Vietnamese Automobile Manufacturers' Association (VAMA) stated that they frequently heard that the government aimed to focus on developing the automobile industry, but that they had seen little of this in practice

(Interview, April 2013). Again this reflects a well-known weakness in Vietnam's development strategies. Despite the many overall goals and visions, Vietnam has been lacking what Ohno (2009, 35) describes as "the hallmark of East Asian industrialization": clear strategies and action plans. There was also clear discontent with this in the MOIT, the main proponent for developing the car industry. In talks with Ministry officials, a point was rather sarcastically made about how "[the government] tell us to move from quantitative to qualitative industrialization blah blah blah," while not providing any clear industrial policy for how to achieve this (Interview, April 2013).

The main strategy for developing supporting industries has been to set targets for local content, but without any apparent strategies as to how to reach this and without any strict measures for compliance. Foreign automobile manufacturers stated that they knew very well what the requirements were on paper, but they were aware that no penalties would be imposed should they not meet these (Interviews, February–December, 2013).⁸ The result was that, although targets for local content had been 25% in 2005 and 30% by 2007 (BMI 2011), in 2013 the local content was only about 15% (MOIT 2013). This was achieved only by a few manufacturers, such as Toyota Vietnam, increasing the industry average.

The most obvious problem, however, is the relatively small market for cars. Again, this is closely related to government policies. In interviews with policy makers and representatives of car manufacturers, this was referred to as the main problem for both the automobile industry in general and for the failure to develop so-called supporting industries (domestic suppliers). Production capacity is many times actual output. Owing to relatively high production costs caused by fees on imported parts as well as lack of economies of scale, Vietnam's industry is mostly targeted to the domestic market. But, market size for cars is reduced by government policies, with taxes and fees making cars extremely expensive.⁹ The government is thus paradoxically restricting its own possibilities to succeed in one of its targeted "spearhead" industries. As discussed above, different ministries have also disagreed regarding appropriate policies. This cannot, however, only be attributed to poor inter-ministerial co-ordination, lack of planning or weaknesses in development strategies. These are all important factors, but a strict focus on these ignores the fact that the car represents an actual development dilemma. Few in Vietnam would contest the appeal of industrialisation. But encouraging increased car ownership, as China has done in order to increase the market for its booming automobile industry, comes with a host of problems (Gallagher 2006).

Car Trouble: The "Externalities" of a Four-Wheeled Transition

As stated above, the car is a contested commodity owing to its significant impacts on the environment, urban geographies and mobility. Even though the traffic of Vietnamese cities is famous for its rather chaotic appearance, the prevalence of motorbikes has actually maintained reasonable mobility despite the underdeveloped urban public transport networks (World Bank 2011). The car, however, would fundamentally challenge this.

Rapid urbanisation and the strong growth in demand for urban transport has been met mainly through private vehicles, making up 80–90 % of total trips in cities and straining the road network (Asian Development Bank [ADB] 2012).¹⁰ Motorbikes,

where annual sales have been consistently higher than 2.4 million since 2006 (see Table 1), continue to predominate in private transport. Still, the growing number of cars is having an impact and is challenging mobility in cities, particularly in Hanoi. As early as in 1995, Japanese urban transport consultant Yachiyo Engineering recommended restrictions on car use there (Baye et al. 2010). More recently, a World Bank (2011, 130) urbanisation review found that high population densities and sparse road networks in the capital are “simply incompatible with adoption of private cars as a major means of transport” and that “one of the city’s main challenges is now traffic congestion and impaired mobility.” The review furthermore found that, as “the demand for street space rises by about a factor of 4 with each trip that shifts from motorcycle to motorcar” (World Bank 2011, 137).

In addition to the issue of road networks, it has been estimated that downtown Hanoi has parking capacity for cars to meet about 10% of demand (Hanoi People Committee 2011). With its high population density, improving parking is likely to prove difficult and costly. Policies such as moving schools and universities out of central Hanoi to where road networks are better are being considered. The history of suburbanisation is closely linked to the rise of the car (Paterson 2007), and this pattern seems to likely to hold for the future in Hanoi, with the number of “New Urban Areas” designed for cars rapidly increasing (see Hoai Anh Tran 2015).¹¹ The Ministry of Transport has tried to deal with increasing downtown traffic through a range of unpopular and usually failed policies, such as limiting vehicle ownership or limiting access by number plates (see Truitt 2008).¹² Hanoi also has an impressive presence of the equally unpopular traffic police, notorious in their search for quick money from drivers. None of this, however, does much to reduce congestion in downtown areas.

The government expects increasing urbanisation and views it as a part of the overall development process. Vietnam’s *Socio-Economic Development Strategy 2011–2020* states that the urbanisation rate should reach 45% by 2020 (Government of Vietnam 2011). That being said, this massive influx of people cannot have been entirely planned. This is particularly the case for transport, and the government has so far largely failed to keep up in terms of infrastructure and public transport. The streets of Hanoi are simply incompatible with the number of vehicles, and this has led to a situation of urban planning trying to keep up by extinguishing the worst effects. In the short term, relatively effective flyover bridges are examples of this. In this context, it might be considered that the tax regime promoted by the Ministry of Transport is actually quite progressive as Vietnam’s cities are not ready to accommodate a “democratisation” of car ownership. In terms of mobility, motorbikes remain preferable unless urban authorities are able to create a functional public transport system.

Although concerns related to urban congestion are probably the main reason for MOT’s restrictions on cars, there are other problems associated with a transition towards car ownership. First, air pollution is a serious problem in Vietnam’s cities, and the Ministry of Natural Resources and the Environment estimates that 70% of pollution comes from the transport sector (MONRE, 2007). The East-West Center (2007) found that PM10 concentrations in Hanoi was up to 10 times that recommended by WHO (World Health Organization), leading respiratory disease and premature deaths. Although it is hard to generalise the emissions from cars versus motorbikes (cars in general emit more, but the most polluting motorbikes can emit more than the

least polluting cars [IPCC 2014]), traffic congestion dramatically increases emissions (TØI 2011).

A second problem is energy consumption. Vietnam is a net exporter of crude oil, but a net importer of oil products. With rapid economic growth, oil consumption has increased rapidly, tripling between 1990 and 2000, and doubling again between 2000 and 2012 (EIA 2014). With cars using significantly more fuel than motorbikes, an increase in car ownership will lead to a continued surge in oil consumption. Based on expectations of a rapid increase in car ownership, APERC (2013) estimates that oil consumption will triple by 2035. Even though refinery capacity is expected to increase, it is unlikely to be able to meet the dramatic growth in demand. Increased car ownership thus contributes significantly to a stronger dependency on energy imports, in turn worsening the trade deficit.

A third problem is related to the politics of inequality. Since the car is extremely expensive there is a sharp divide between those who own a car and those who do not, with those only able to afford a bicycle now at the bottom of the transport hierarchy. Cars and two-wheelers are also meant to be physically separated with many new highways designated strictly for cars. Moreover, the expenses associated with running and maintaining a car are high. Car-owning informants spend between 3 and 10 million Dong a month on fuel, parking, insurance and the like, more than the average monthly income of a worker.

This social dimension of cars is connected to their environmental consequences. In its measurements of air quality, the East-West Center (2007) found that the exposure to particle emissions was by far worst for those riding a motorbike, and that the use of air-conditioning in cars significantly reduced exposure to PM10. Compared with motorbikes, the car is a shield against the deteriorating air quality, and thus represents a potential health inequality. Car owners can pay their way out of the degradation of urban air they are part of creating. In addition, car owners guard themselves against the high-risk traffic accidents associated with bicycle and motorbike use. Although such inequality dimensions of car ownership are not a likely reason for state policies, they add to the problematic aspects of wider car ownership and point to a policy dilemma: democratise car ownership and ruin mobility, or limit it and uphold traffic and possibly health inequality?

A Development Dilemma

The above discussion shows the development dilemma between industrialisation and urban mobility in Vietnam, as well as the environmental, energy and social dimensions that give further reasons for caution when it comes to the car. The problem is that there are good reasons both to increase and to decrease the number of cars on Vietnamese roads. For the sake of expanded industrialisation, the domestic market cannot remain restricted to the extent that it is today. In order to be able to expand and attract more investment in supporting industries, investors need to view the market as profitable. Indeed, the MOIT (2013) recommends significantly reducing taxes and fees in order to achieve this. The MOIT sees this mainly as a question of infrastructure. The car is a necessary step up the development ladder, and all it needs to thrive is the right infrastructure. At the same time, and even though unpopular among the automobile

industry and among the public, the high taxes on cars are in many ways progressive, as the infrastructure of Vietnam's cities are not yet suited for "democratising" car ownership. The motorbike is in this way a possible salvation, although it also brings with it a host of problems such as accidents, pollution and congestion.

The negative "externalities" of increased car ownership are not restricted to mobility concerns. An influx of cars in Vietnamese cities is likely to worsen the already serious levels of air pollution. Furthermore, although road development plans state that Vietnam will "prioritise the application of new and eco-friendly technologies to minimize the negative impacts on the environment" (Prime Minister of Vietnam 2013), "greener" cars are not part of the plans of the domestic automobile industry. The manufacturers interviewed claimed the market was "not ready for this." A spokesperson of a foreign car manufacturer explained how, "owning a car is a dream. [People] don't care about the technology as long as it has four wheels" (Interview, November 2013). Although there are some incentives to produce cars that consume less fuel, there are no specific policies for using unconventional fuels. APERC (2013) finds that 100% of the fuels used for road transport in Vietnam in 2012 were oil-based, and that they are expected to remain at that level until 2035.¹³

However, the high taxes on cars have the effect of limiting car consumption to the elites. This could perhaps simultaneously lead to a challenge. The car is arguably a material manifestation of the inequalities embedded in Vietnam's mix of capitalism and political Leninism (Hansen 2015a). Although the official story claims Vietnam follows a new development model, making use of the market economy to deliver socialism in practice without embarking on a capitalist transition, socialism "appears as far away as ever" (Beresford 2008, 240). The effects of the commodification of health and education are other clear examples of a larger trend of increasing inequalities in Vietnam (London 2014; Taylor 2004; World Bank 2012). Despite its socialist rhetoric, the Vietnamese state has proved relatively weak in insulating society against the negative effects of marketisation. The extent to which these trends represent a threat to the legitimacy of the socialist project of the Party is a much debated issue, but that this legitimacy is under a certain level of threat seems quite clear (Le Hong Hiep 2012; Quan Hoang Vuong 2014).

In other words, although the main dilemma is between mobility and industrialisation, environmental, social and ideological concerns complicate the issue further. However, the extent to which the authoritarian regime would risk further limiting access to a commodity towards which so many of its citizens currently aspire remains uncertain. Car ownership in Vietnam is thus likely to continue increasing, and a central question is whether future demand will be met by domestically produced or imported cars. Plans are being made as to what to do when the requirements to remove tariffs on import duties on completely built units from ASEAN materialise in 2018, and MOIT (2013) suggests imposing a range of other barriers for imported cars. Nevertheless, imports will increase if the domestic auto industry is not able to compete with other ASEAN-based manufacturers by then.

Despite these dilemmas, there are signs that the ministries are converging in their views on cars. MOIT have been trying to convince the other ministries that a growing automobile industry will contribute greatly to the economic development of the country, and that the other ministries also will benefit from this. Their argument is that

growth in car manufacturing on Vietnamese soil will create positive spill-over effects to other industries and provide important tax revenues. Instead of worrying about the current state of road infrastructure being unfit for car ownership, the MOIT argues, increased tax revenues from car manufacturing can be used for infrastructure development. MOIT stated in an interview that they were succeeding in convincing the MOT and the Ministry of Finance of the potential positive effects of growth in car manufacturing (Interview, March, 2013). Representatives of VAMA also reported that the MOT had not tried to impose new restrictions on cars in 2013, interpreting this as a sign that the MOT was being persuaded by the potential benefits of developing the automobile industry (Interview, April, 2013). Indeed, in an interview with MOT, it was claimed that there was not necessarily a contradiction between upholding urban mobility and increasing the market for cars, as the car market is national and not restricted to cities (Interview, May 2013). The government thus appears to be leaning towards the industry side of the development dilemma. It is, however, too early to tell whether this will lead to a significant expansion of car manufacturing in Vietnam.

Conclusions

The private car is a contested yet powerful commodity. As a comfortable, clean and status-enhancing means of transportation, it is at the core of aspirations towards higher living standards. As a material agent its production and use shapes urban geographies and mobility through the need for road space, and as a manufactured object its production holds the promise of industrialisation and spill-over effects in the quest for economic growth and development. In Vietnam, the car has replaced the motorbike as the main object of desire. Furthermore, the government aims to restrict motorbike ownership, which in turn could pave the way for cars. Crucially, Vietnam has joined the club of Asian auto manufacturers, and through foreign direct investment has tried to develop the domestic auto industry. This has so far been a disappointment, particularly in the expected stimulating effects on the rest of the economy. The relatively few cars produced in Vietnam today are mainly assembled from imported parts.

The reasons for this relative failure are many, but a central issue is that Vietnam is trying to develop a domestic automobile industry, but at the same time limiting the market this industry needs in order to thrive. Through high taxes and fees car ownership is restricted to the elites. From an industrial policy viewpoint this makes little sense, and reflects the weaknesses of Vietnam's development strategies plagued by failures to develop a coherent industrial policy and lack of inter-ministerial co-ordination. It is obvious that these taxes and fees should be reduced significantly if the industry is to be successful.

The problem is that the policies to restrict car ownership make perfect sense from a mobility and environmental planning perspective, as an influx of cars would likely lead to complete gridlock in Vietnam's urban areas. This would in turn significantly worsen the already serious situation of air pollution. In this sense the article has argued the car represents a development dilemma in Vietnam. The forces pushing for the automobile industry appear to be winning. However, the economic integration into ASEAN draws closer, and a local Vietnamese auto industry may not be able to survive the competition from established ASEAN automobile manufacturers. An alternative approach is to shift

focus towards parts production and positioning the industry within regional value chains. This, however, would require significant development of the necessary supporting industries, currently the weakest link in the existing Vietnamese automobile sector.

Notes

1. Indeed, the automobile also had an important role in socialist industrialisation (see Siegelbaum 2008, 2011).
2. The article draws on long term fieldwork in Hanoi during 2012 and 2013, with semi-structured and in-depth interviews with policy makers, car retailers, car manufacturers and car and motorbike owners. The latter group of informants mainly belonged to what broadly can be described as the middle class in Vietnam (see Gainsborough [2010] for discussion), although their incomes ranged from average to very high. In addition this research has benefitted from a very large number of informal talks about cars and motorbikes with people all over Vietnam during numerous visits to the country since 2010.
3. The article uses, as is common practice in Vietnam, the general term motorbike for all kinds of two-wheelers. The most popular types are between 100 and 125 cc fully or semi-automatic bikes, many of which would be referred to as scooters elsewhere.
4. Vietnam has one of the highest per capita motorbike ownership ratios in the world. For Asia, comparing the numbers used by Nagai et al. (2003) with Vietnam today, only Taiwan scores higher on motorbikes per capita. Thailand, another country known for high levels of motorbike ownership, has significantly lower ratios of motorbikes per capita than Vietnam. In 2000, when Thailand's GDP per capita was similar to that of Vietnam today, Thailand had 215 motorbikes per 1,000 persons. In Vietnam the number is currently around 430 motorbikes per 1,000 persons.
5. Car owners spoke of how cars were in such high demand during this time that there was a waiting time of 6 months to get a car, unless you had the money or contacts to reduce this.
6. Allowing the import of second-hand vehicles with lower taxes also led to some unintended consequences. In early 2013, one car importer carefully explained to me how they imported new cars from South Korea as second hand through middlemen in South Korea. Not long after, the government tried to crack down on this practice through increasing taxation on second-hand imports.
7. There is no common external tariff on imported goods within AFTA, but there is on goods originating within ASEAN. The Common Effective Preferential Tariff refers to this arrangement, and more recent members, such as Vietnam, were given additional time to comply with the reduced rates.
8. According to VAMA representatives the government has considered rewarding companies meeting a 40% local content target (instead of penalising those that do not meet the requirement). This caused discontent among manufacturers, who claimed only Toyota could meet this target, seeing it as an example of a tight relationship between Toyota and the Japanese and Vietnamese governments.
9. Although it may be possible to acquire a used car for 200-300 million Dong, a new car usually starts at more than 500 million. A comparison to another car manufacturing country may be useful. A new Toyota Yaris in Thailand starts at 469,000 Baht (approximately 290 million Dong). A Yaris in Vietnam starts at 638 million Dong (according to the official websites of Toyota Thailand and Toyota Vietnam on 1 February 2016). ILO (2014) estimates the average monthly wage in 2013 to have been US\$ 197 (close to 4.5 million Dong) in Vietnam and US\$ 391 in Thailand.
10. In 1989, 19.8 % of Vietnam's population was classified as urban (Drakakis-Smith and Dixon 1997), a number that had risen to 32% by 2012 (World Bank 2014b).

11. These are suburban complexes for the richest segments of society. Some of them are completely gated communities that come with the full range of services available within the gates. These are also usually designed for cars, and some of the most luxurious ones, like Vincom Village east of central Hanoi, have their own malls. Vincom Village is also far enough from downtown Hanoi to give a powerful incentive for driving cars instead of motorbikes.
12. Informants reported that this policy led to people borrowing motorbikes, buying a second one or even acquiring two different number plates.
13. In contrast, the first electric motorbikes have recently been launched in Vietnam by a Japanese company, and electric bicycles have grown popular, particularly among teenagers.

Disclosure statement

No potential conflict of interest was declared by the author.

Acknowledgements

The author is grateful to Hege Merete Knutsen, Harold Wilhite, Desmond McNeill, Ulrikke Wethal, Ida Rudolfsen and the anonymous reviewers for very helpful comments and suggestions on earlier drafts. Any remaining errors are the author's. He is indebted to his excellent research assistants in Hanoi for making the research behind this article possible.

References

- Amsden, A. 1989. *Asia's Next Giant: South Korea and Late Industrialization*. New York: Oxford University Press.
- Amsden, A. 2001. *The Rise of "The Rest": Challenges to the West from late-industrializing Economies*. Oxford: Oxford University Press.
- Amsden, A., and W. Chu 2003. *Beyond Late Development: Taiwan's Upgrading Policies*. Cambridge: MIT Press.
- APERC. 2013. *APEC Energy Demand and Supply Outlook*, Tokyo: Asia Pacific Energy Research Centre.
- Arnold, D., and E. DeWald. 2011. "Cycles of Empowerment? The Bicycle and Everyday Technology in Colonial India and Vietnam." *Comparative Studies in Society and History* 53 (4): 971–996.
- Asian Development Bank. 2012. *Viet Nam Transport Sector Assessment, Strategy, and Road Map*. Mandaluyong City: ADB.
- Baye, E., J.-M. Cusset and Nguyen Thien Phu. 2010. "Relations between International Consultants and the Local Engineering Force in Urban Infrastructures." In *The Vietnamese City in Transition*, edited by P. Gubry, F. Castiglioni, J.-M. Cusset, Nguyen Thi Thieng and Pham Thuy Hung, 239–270. Singapore: ISEAS.
- Beresford, M. 2008. "Doi Moi In Review: The Challenges Of Building Market Socialism In Vietnam." *Journal of Contemporary Asia* 38 (2): 221–243.
- BMI. 2014. "Industry Trend Analysis - Domestic Slump Will Not Hinder Motorcycle Production." Business Monitor International. Accessed February 4, 2016. <http://www.autosinsight.com/industry-trend-analysis-domestic-slump-will-not-hinder-motorcycle-production-jan-2015>.
- BMI. 2011. *Vietnam Autos Report Q1 2012*. London: Business Monitor International.
- Chang, H.-J. 2008. *Bad Samaritans: The Guilty Secrets of Rich Nations and the Threat to Global Prosperity*. London: Random House Business Books.

- Chang, H.-J. 2002. *Kicking Away the Ladder: Development Strategy in Historical Perspective*. London: Anthem Press.
- Doner, R. 1991. *Driving a Bargain: Automobile Industrialization and Japanese Firms in Southeast Asia*, Berkeley: University of California Press.
- Doner, R. and P. Wad. 2014. "Financial Crises and Automotive Industry Development in Southeast Asia." *Journal of Contemporary Asia*, 44(4): 664–687.
- Drakakis-Smith, D. and C. Dixon (1997). "Sustainable Urbanization in Vietnam." *Geoforum* 28 (1): 21–38.
- Drucker, P. 1946. *Concept of the Corporation*. New York: John Day.
- Earl, C. 2014. *Vietnam's New Middle Classes: Gender, Career, City*. Copenhagen: NIAS Press.
- East-West Center. 2007. "Commuters' Exposure to Particulate Matter and Carbon Monoxide in Hanoi, Vietnam: A Pilot Study." East-West Center Working Papers Vol. 64. Honolulu: East-West Center.
- EIA (2014). "Vietnam Country Analysis Note." US Energy Information Administration. Accessed February 4, 2016. <http://www.eia.gov/beta/international/analysis.cfm?iso=VNM>
- Flink, J. 1988. *The Automobile Age*. Cambridge: MIT Press.
- Fujita, M. 2013a. "Does China's Economic Rise Help or Hinder the Development of its Neighbours?" Evidence Report Vol. 45. Brighton: Institute of Development Studies.
- Fujita, M. 2013b. "The Rise of Local Assemblers in the Vietnamese Motorcycle Industry: The Dynamics and Diversity of Industrial Organization." In *Vietnam's economic entities in transition*, edited by S. Sakata, 146–166. Basingstoke: Palgrave Macmillan.
- Gainsborough, M. 2010. *Vietnam: Rethinking the State*. London: Zed Books.
- Gallagher, K. 2006. *China Shifts Gears: Automakers, Oil, Pollution, and Development*. Cambridge: MIT Press.
- Government of Vietnam. 2013. "Master plan on economic restructuring in association with conversion of the growth model towards improving quality, efficiency and competitiveness during the 2013-2020 period." Hanoi: Socialist Republic of Vietnam.
- Government of Vietnam. 2011. "Vietnam's Socio-Economic Development Strategy for the Period of 2011-2020." Hanoi: Socialist Republic of Vietnam.
- GSO – General Statistics Office of Vietnam (various years). *Statistical Yearbook*, Hanoi: Statistical Publishing House.
- Hansen, A. 2015a. "The Best of Both Worlds? The Power and Pitfalls of Vietnam's Development Model." In *Emerging Economies and Challenges to Sustainability: Theories, Strategies, Local Realities*, edited by A. Hansen and U. Wethal, 92–105. London: Routledge.
- Hansen, A. 2015b. "Transport in Transition: Doi moi and the consumption of cars and motorbikes in Hanoi." *Journal of Consumer Culture*. DOI:10.1177/1469540515602301
- Hansen, A. and K. Nielsen. 2014. "Cars of Future Past in Vietnam and India." *Tvergastein* 4: 72–79.
- Hoai Anh Tran. 2015. "Urban Spaces Production in Transition: The Cases of the New Urban Areas of Hanoi." *Urban Policy and Research* 33 (1): 79–97.
- ILO. 2014. "Wages in Asia and the Pacific: Dynamic but uneven progress." Global Wage Report 2014/2015. Asia and the Pacific Supplement. Bangkok: ILO Regional Office for Asia and the Pacific.
- IPCC. 2014. *Climate Change 2014: Mitigation of Climate Change*. Working Group III Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press.
- Jakapong Pongthanaisawan and Chumnong Sorapipatana 2010. "Relationship between level of economic development and motorcycle and car ownerships and their impacts on fuel consumption and greenhouse gas emission in Thailand." *Renewable and Sustainable Energy Reviews* 14 (9): 2966–2975.
- Le Hong Hiep. 2012. "Performance-based Legitimacy: The Case of the Communist Party of Vietnam and Doi Moi." *Contemporary Southeast Asia* 34 (2): 145–172.
- LeBeau, P. 2012. New Survey Predicts China Will Add 30 Million New Cars Each Year. *cncb.com*. Accessed February 4, 2016. <http://www.cncb.com/id/46748270>

- Lin, J. and H-J. Chang. 2009. "Should Industrial Policy in Developing Countries Conform to Comparative Advantage or Defy it? A Debate Between Justin Lin and Ha-Joon Chang." *Development Policy Review* 27 (5): 483–502.
- London, J. 2014. "Welfare Regimes in China and Vietnam." *Journal of Contemporary Asia* 44 (1): 84–107.
- Malesky, E. and J. London. 2014. "The Political Economy of Development in China and Vietnam." *Annual Review of Political Science* 17: 395–419.
- Masina, P. 2015. "Miracles or uneven development? Asia in the contemporary world economy." In *Emerging Economies and Challenges to Sustainability: Theories, Strategies, Local Realities*, edited by A. Hansen and U. Wethal. London: Routledge.
- Masina, P. 2012. "Vietnam between developmental state and neoliberalism – the case of the industrial sector." In *Developmental Politics in the Neoliberal Era and Beyond: Critical Issues and Comparative Cases*, edited by K.S. Chang, B. Fine and L. Weiss. Palgrave: London.
- Masina, P. 2006. *Vietnam's Development Strategies*. New York: Routledge.
- MOIT. 2013. *Quy hoạch phát triển công nghiệp ô tô Việt Nam đến năm 2020, tầm nhìn đến năm 2030* [Vietnam Automotive Industry Development Master Plan to 2020, with Vision to 2030]. Ministry's Draft. Hanoi: Ministry of Industry and Trade.
- MONRE. 2007. *National State of Environment 2007*. Hanoi: Ministry of Natural Resources and Environment.
- Motorbike Joint Working Group. 2007. "For sound development of the motorbike industry in Vietnam" Hanoi: Vietnam Development Forum.
- Nagai, Y., Y. Okada, A. Fukuda and Y. Hashino 2003. "Two-wheeled Vehicle Ownership Trends and Issues in the Asian Region." *Journal of the Eastern Asia Society for Transportation Studies* 5: 135–146.
- Natsuda, K. and J. Thoburn. 2013. "Industrial policy and the development of the automotive industry in Thailand." *Journal of the Asia Pacific Economy* 18 (3): 413–437.
- Ohno, K. 2009. "Avoiding the Middle-Income Trap: Renovating Industrial Policy Formation in Vietnam." *ASEAN Economic Bulletin* 26 (1), 25–43.
- Ohno, K. 2006. "Vietnam's Industrial Policy Formulation: To Become a Reliable Partner in Integral Manufacturing." Hanoi: Vietnam Development Forum.
- OICA. 2016. "World Motor Vehicle Production." International Organization of Motor Vehicle Manufacturers. Accessed February 4, 2016. <http://www.oica.net/category/production-statistics/>
- OICA. 2015a. "OICA 2005-2014 Sales Statistics. World Motor Vehicle Sales." International Organization of Motor Vehicle Manufacturers. Accessed February 4, 2016. <http://www.oica.net/wp-content/uploads//total-sales-2014.pdf>
- OICA. 2015b. "World Motor Vehicle Production by Country and Type 2013-2014." International Organization of Motor Vehicle Manufacturers. Accessed February 4, 2016 <http://www.oica.net/wp-content/uploads//total-2014-Q4.pdf>
- Patarapong Intarakumnerd and M. Fujita. 2008. "Coping with a Giant: Challenges and Opportunities for Thai and Vietnamese Motorcycle Industry from China." *Science, Technology & Society* 13(1): 35–60.
- Paterson, M. 2007. *Automobile Politics*. Cambridge: Cambridge University Press.
- Prime Minister of Vietnam. 2013. "Approving the Adjustment on Vietnam Road Transport Development Scheme to 2020 and Orientation Towards 2030." *Decision No. 356/QĐ-TTg*. Hanoi: Socialist Republic of Vietnam.
- Prime Minister of Vietnam. 2007. "Approving the List of priority industries and spearhead industries for the 2007-2010 period, with a vision to 2020, and a number of incentive policies for these industries." *Decision No. 55/2007/QĐ-TTg*, Hanoi: Socialist Republic of Vietnam.
- Prime Minister of Vietnam. 2004. "Approving the planning on development of Vietnam's automobile industry till 2010, with a vision to 2020." *Decision No. 177/2004/QĐ-TTg*. Hanoi: Socialist Republic of Vietnam.
- Quan Hoang Vuong 2014. "Vietnam's Political Economy: A discussion on the 1986-2016 period." CEB Working Paper 14. Brussels: CEB.

- Sasaki, M. 2014. Japanese companies lobby against Vietnam's plan to restrict motorcycles. The Asahi Shimbun. Accessed February 4, 2016. "<https://protect-us.mimecast.com/s/Y1zJBRtAqvZ7tl>" <http://ajw.asahi.com/article/business/AJ201402210048>
- Sheller, M. and J. Urry. 2000. "The City and the Car." *International Journal of Urban and Regional Research* 24 (4): 737–757.
- Siegelbaum, L. H. 2008. *Cars for Comrades: The Life of the Soviet Automobile*. Ithaca: Cornell University Press.
- Siegelbaum, L. H. 2011. *The Socialist Car: Automobility in the Eastern Bloc*. Ithaca: Cornell University Press.
- Sturgeon, T. 1998. "The Automotive Industry in Vietnam: Prospects for Development in a Globalizing Economy." Report Prepared for Development Strategy Institute, Ministry of Planning and Investment. Hanoi: Socialist Republic of Vietnam.
- Taylor, P. 2004. *Social Inequality in Vietnam and the Challenges to Reform*. Singapore: Institute of Southeast Asian Studies.
- TØI. 2011. "NO₂-utslipp fra kjøretøyparken i norske storbyer: Utfordringer og muligheter frem mot 2025." Transportøkonomisk institutt TØI rapport 1168/2011. Oslo: TØI.
- Truitt, A. 2008. "On the back of a motorbike: Middle-class mobility in Ho Chi Minh City, Vietnam." *American Ethnologist* 35(1): 3–19.
- VAMA. 2013. "VAMA Sales Report – December 2012," Hanoi: VAMA.
- Van Arkadie, B. and R. Mallon. 2003. *Viet Nam: a Transition Tiger?* Canberra: Asia Pacific Press.
- Wad, P. 2009. "The Automobile Industry of Southeast Asia: Malaysia and Thailand." *Journal of the Asia Pacific Economy* 14 (2): 172–193.
- Wade, R. 1990. *Governing the market: economic theory and the role of government in East Asian industrialization*. Princeton: Princeton University Press.
- World Bank. 2014a. "Motorization and urban transport in East Asia: Motorcycle, Motor Scooter & Motorbike Ownership & Use in Hanoi." Hanoi: World Bank Technical Report No. 1.
- World Bank. 2014b. World Development Indicators, online database.
- World Bank. 2012. *Well Begun, Not Yet Done: Vietnam's Remarkable Progress on Poverty Reduction and the Emerging Challenges*. Hanoi: World Bank.
- World Bank. 2011. *Vietnam Urbanization Review*. Hanoi: World Bank.
- Yamaha Motor. 2011: 'Annual Report 2010'. Accessed February 4, 2016. <http://global.yamaha-motor.com/ir/annual/pdf/2010/2010annual-e.pdf>

Copyright of Journal of Contemporary Asia is the property of Routledge and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.